

Sustainable Urban Renewal in China Since 1990: A Systematic Review

Wenpu Zhou

¹ *MA Urban Design and Planning*

² *The University of Sheffield*

* *Email: 531169543@qq.com*

ABSTRACT

Urban renewal and sustainable urban development are two important research directions in the development of modern cities, and they are also an inevitable process in the development trend. This paper reviews the development process of Chinese cities since 1990 through the Bibliometric analyse. Through 325 pieces of information about China's urban renewal extracted from the web of science database, understand the research trends in China's urban renewal and sustainable development research. And through co-occurrence analysis and cluster analysis, infer the key points and policy tendencies in China's urban renewal research. At the same time, in the key research on urban renewal, the changing trend of urban renewal was clearly identified, and the research content and policy contained in the past two decades were further investigated.

Keywords: *Urban renewal; China; Policy; Sustainability; Bibliometric analysis*

1. INTRODUCTION

Urban renewal is a promising way to solve a variety of urban problems, and it also plays an important role in promoting the sustainable development of cities [10]. At the same time, urban renewal is also a good measure that can effectively increase the value of land, improve the environmental quality, and at the same time strengthen the social network and increase the inclusiveness of the city [19].

In the process of rapid urbanization, high-speed social and economic development has also brought about population concentration, housing shortages, environmental damage and other issues, which also makes sustainable urban development particularly important [7]. In the rapid development of urbanization in China in recent decades, the accumulation of a large number of people and resources has brought tremendous pressure on the carrying capacity of the urban ecosystem. Following this is a series of ecological and environmental problems, such as the urban heat island effect and environmental pollution [11].

In China's current urban development process, urban renewal has become a very important part of coping with the ever-changing urban space demands. In the past few decades, a large amount of agricultural land has been

converted into urban use. Therefore, in the current large cities in China, the land resources that can be used for urban construction have become very limited. Therefore, the redevelopment of land and urban need to update policy formulation has become increasingly important [5]. In the process of urban development in China, a large number of old urban areas have to be renewed. These areas have more or less construction, environmental and management problems. Urban renewal in these areas will bring huge social, ecological, and economic benefits to the city, thereby maintaining a sustainable urban development state amid the rapid urbanization trend [6].

In this research, the article will use visual charts and data analysis to understand the research trends and basic structure of China's urban renewal in the context of current sustainable development. At the same time, conduct a systematic review of Chinese urban regeneration and its policy related literature to understand the changing process of China's urban renewal. Through the use of Bibliometric analysis, the online bibliographic database (web of science) is used to organize the research data on urban renewal and sustainable development in the past 20 years and use co-occurrence analysis and cluster analysis as the main visual icons to analysis recent years study of the development process of urban renewal in China.

In the process of urban development in China in the future, urban renewal and sustainable development will become increasingly important topics. Through bibliometric analysis and the systematic review, it will be possible to clarify the current problems faced by urban renewal in China. At the same time, updating the sustainability research puts forward suggestions for future research directions and policy improvements.

2. METHODOLOGY

The overall methodology of this paper is based according to the structure of a systematic literature review. It uses a popular online bibliometric database (Web of Science (WoS)) to examine the current trends in urban renewal and sustainable development research. The WoS is a website linked to multiple scientific research databases and is a professional academic search

platform. In this research, the data of bibliographic information comes from the 325 documents downloaded from it using specific keywords. The keywords were chosen to keep the search window broad to extract as many papers as possible. These keywords were "urban renewal" and "China" with search timescale between 1990 to 2021. No paper was found beyond 1990.

The literature primarily was academic journal articles, downloaded in BibTex format that contained full bibliographic information. This data was further cleaned and manually checked for consistency. The keyword search was kept wide to track the broad nature of the topics/ themes associated with urban renewal and regeneration. An additional emphasis was given to analysis the literature associated with sustainable development. Fig.1 shows the distribution of articles over the time-period.

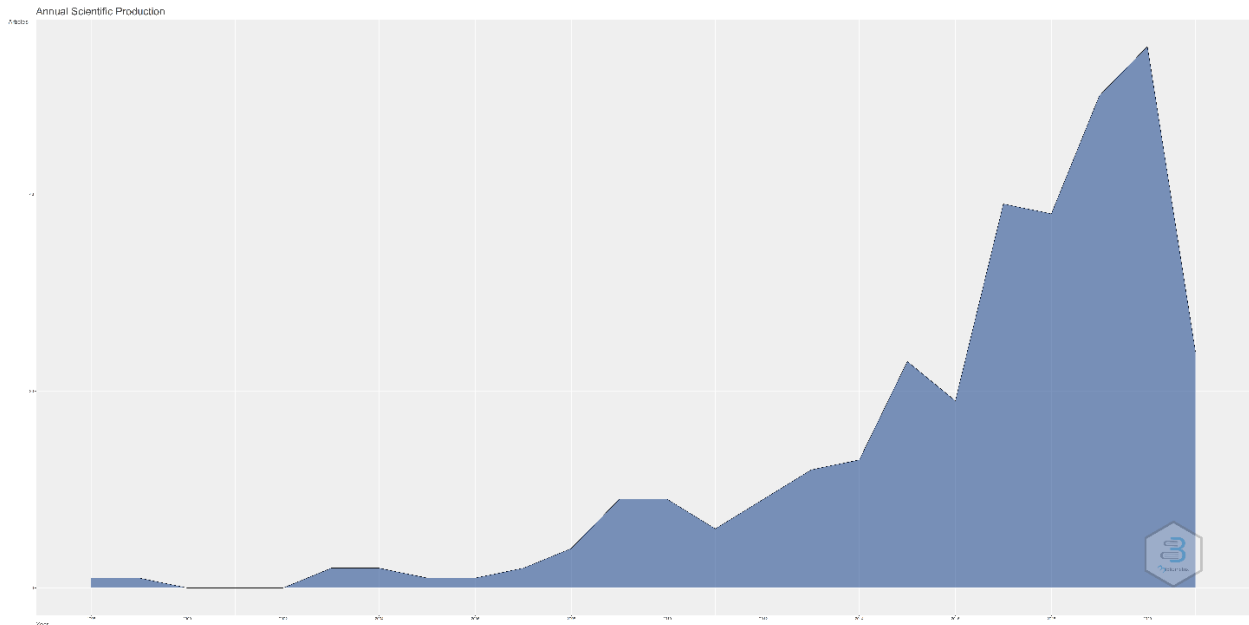


Figure 1 Publication year of articles (n = 325) (biblioshiny for bibliometrix)

With China's urban development advancement, the importance of urban renewal in China's urban development is also increasing. As of 2021, with a timeframe of the past two decades from 1998 to 2021 as an analysis, the attention to urban renewal has gradually become more frequent over time. From 1998 to 2008, there were only 14 research paper on urban renewal on average each year, and in 2020, there were as many as 57 research papers on urban renewal (see Fig.1).

This research uses bibliometric analysis approach as the primary research method. Bibliometric analysis is a statistical evaluation of published scientific literature and is considered an effective way to measure the influence on scientific papers. Bibliometric analysis includes four key stages, data collection, data analysis, data visualization and interpretation. Fig.2 illustrate these stages.

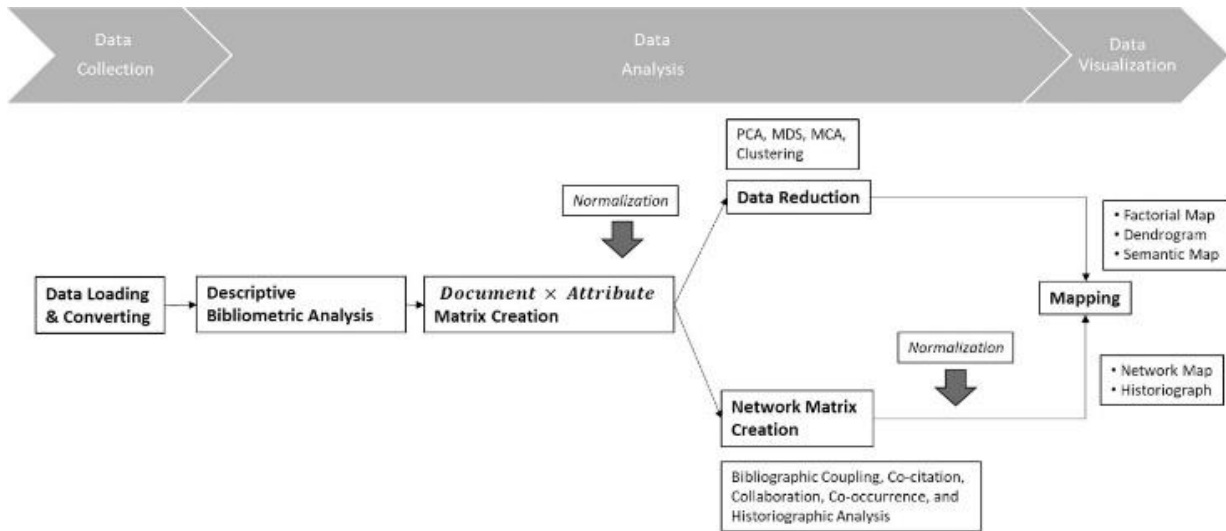


Figure 2 Stages of Bibliometric analysis adopted in this study. [1]

The WoS database extracted 325 papers with full bibliometric information. It contained information on publication year, author, title, source, abstract and cited references. This data base was converted into network file format using R programming language (version 4.0). Data analysis consistent of extracting the descriptive

statistics like frequency of publication, high frequency word count, word cloud and thematic maps. Following the descriptive analysis, a more detailed analysis was conducted using clustering and network sciences. Fig.2 shows these methods, further description of these method can be referred from [1].

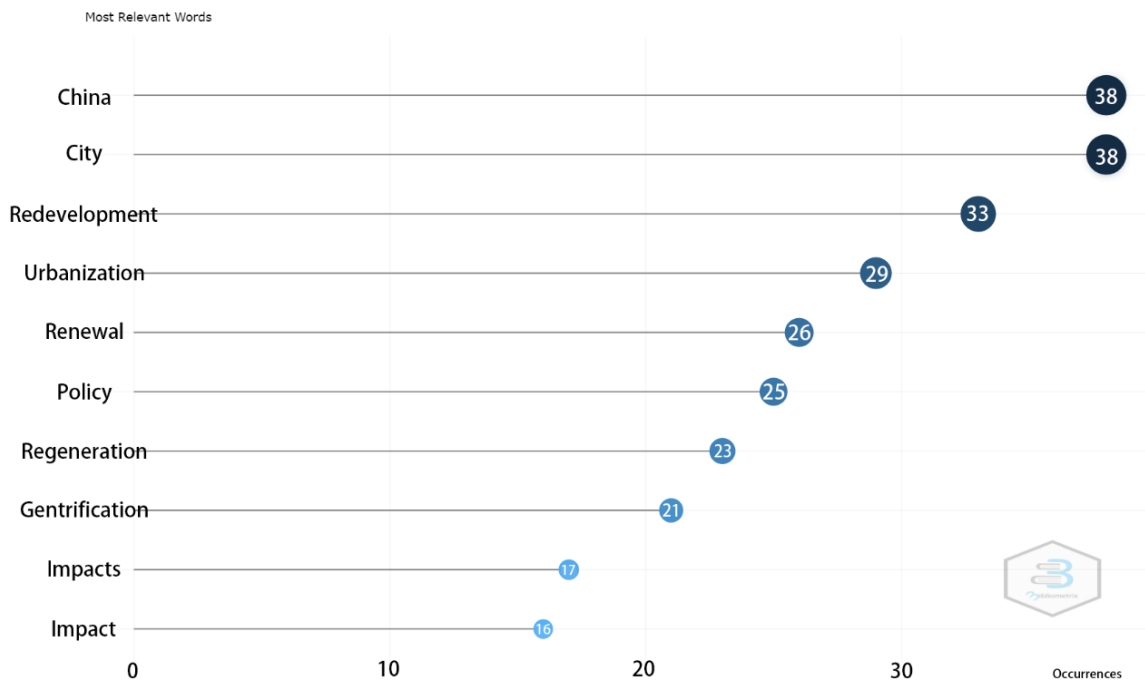


Figure 3 Frequency distribution of words from 325 published literature (biblioshiny for bibliometrix)

The intention behind clustering and network analysis was to understand the underlying structure and future trends of urban renewal research in China in the current context of sustainable development.

3. RESULTS AND DISCUSSION

Bibliometric results are shown through two descriptive representations, i.e., a word cloud and a

frequency distribution of most common words in the document corpus. Word cloud provides a visual representation of most used words by varying its sizes. Frequency distribution shows what keywords are most repeated numerically (see Fig.3).

In Fig.3, words that are repeated at least 5 times in the dataset are plotted to understand the frequency distribution. It can be seen that over 20 years of literature,

the top five most frequent words were 'China', 'city', 'redevelopment', 'urbanization', and 'renewal'. Other significant high frequency words were 'policy', 'regeneration', 'gentrification', 'impacts' and so on (see Fig.3). It can be inferred that the major focus of urban renewal research in China is on urban governance and its impact on regeneration and gentrification policy. It further shows the importance of this topic in the current developmental paradigm of China's urbanization.

Most research in the past focuses on sustainability, transformation, and urban management, but more critical parts in urban renewal such as urban villages and demolition are relatively rarely mentioned (see Fig.3).

Fig.4 represents a word cloud of highly used words in the literature. These words match the terms derived in the frequency analysis in Fig.3. However, it further illustrates 'regeneration' and 'renewal' as critical policy variable for urbanization in China that has been focused by researchers frequently. Fig.3 and Fig.4 implies that the current research direction of urban renewal is more inclined to the impact of policy and urban management in the regeneration and reconstruction of the urbanization process. Over the 20 years period, while the above terms have gained significant importance, the critical implications on density, heritage and ecosystem are weakly represented in the current literature.



Figure 4 Word cloud distribution of the bibliographic database (biblioshiny for bibliometrix)

We further explored the thematic distribution of research topics over time as illustrated in Fig.5, between 1998 – 2010, there were two key thematic focus, 'housing renewal' and 'city'. The thematic focus expanded dramatically between 2011 – 2020, that covered a broad range of new topics like 'impact', 'management' and 'model', possibly indicating a research

shift towards impact assessment, modelling and urban management. The latest theme for 2021 indicates further diversification in the topics associated with 'building' and 'redevelopment' (see Fig.5).

Based on the thematic identification in Fig.5, we further investigated the policy outcomes mentioned in important papers during that period (see Table 1). As mentioned earlier through descriptive analysis that research on urban renewal in China in the past 20 years mostly focused on the content of urban development at a

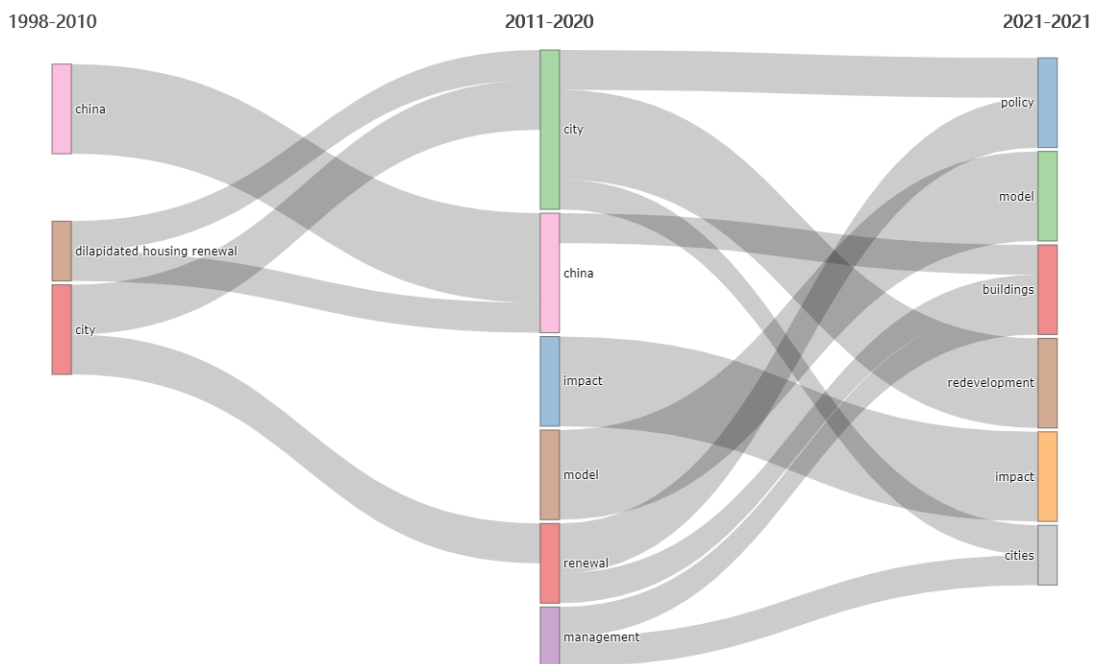


Figure 5 Thematic distribution of topics/keywords in the analysis time period (biblioshiny for bibliometrix)

higher- planning level. In the article by [17], the overall characteristics of the urban renewal network in Shenzhen and Chongqing were analysis. The policy formulation of urban renewal requires a more open participation process for urban residents and strengthens policymaker's interaction with residents (see Table 1). The realization of urban renewal requires effective management and governance plans for the city, strengthens exchanges between stakeholders, and at the same time promotes the development of enterprises to drive urban renewal and improves the formulation of relevant laws and regulations to regulate the behavior of organizations participating in urban renewal.

Unlike other countries, China's unique market-oriented urban renewal is formed with the state as the dominant position. Under this model, through the analysis of the relationship between urban renewal and policies in various cities in China, it can be found that the characteristics of urban change in China are the sustainability of economic, social, and urban environmental facilities. These three aspects make China's urban renewal highly complex. And the policy support and innovation brought by the government will play a very critical role in this process [15].

At the same time, with China's huge population, urban renewal can satisfy the ever-increasing urban population. However, sustainability in this process needs to meet the needs of stakeholder groups, such as local residents, developers and decision-makers. Social conflicts often arise because of the different expectations of different groups. In the current urban renewal pattern, the renewal of the old city is often ignored by decision-makers [18]. Under this circumstance, through public feedback on government policies and actual urban renewal projects, rethinking the positioning of "public interest", and thinking about establishing an effective dialogue mechanism and supporting policies to reduce conflicts, it will be the need of the promotion changes for urban renewal [21].

In the early urban renewal process, large-scale building demolition was advocated [16]. Taking

Shenzhen as an example, a large amount of demolition waste was generated during the urban renewal project in China, which occupied a large amount of land resources and caused serious environmental problems [16]. This has changed the government's policy on urban renewal in the old city to some extent, such as the urban village renewal project in Shenzhen. With the support of the new policy, urban renewal is more inclined to comprehensive renovation. Urban renewal is inevitable, but "large scale demolition and reconstruction" is not needed as suggested by many authors in Table 1. Micro-transformation, which is proposed as a standard for urban renewal in the five aspects of politics, economy, culture, society, and ecology, is a better way to show urban renewal in the future, which can make the community cleaner, comfortable, and sustainable. The area of public green space can be appropriately increased, and community culture can be preserved and enriched, thereby increasing residents' happiness and well-being [9].

Urban renewal will also affect the social capital of the city, among which gentrification is one of the notable phenomena, and it will also have a significant impact on local residents. Table 1 shows many cross-sectional studies that support this impact of urban renewal programs. In the process of gentrification, the local social class will change, and the upper-middle-class will replace the lower-class people, which will lead to changes in the social capital of the residents. This phenomenon poses a threat to social integration and affects citizens' quality of daily life and community satisfaction [2]. The most obvious example is the large-scale demolition of buildings in the early Chinese urban renewal process. In the process of urban renewal, changes in social capital are required to produce positive changes in the community, improve residents' satisfaction, and set the goal to improve the local regional decline problem, and promote the city by balancing the improvement of the community environment and the local physical environment, to create a positive development of renewal [2].

Table 1. Key studies on urban regeneration in China and its policy relevance

Sl. no	Reference	Key outcome	Policy directions/recommendations
1	(Ye et al. 2021)	Enhancing communication among stakeholders is an important factor in achieving effective urban renewal.	Establishing effective communication between all classes of the city will affect the effectiveness of urban renewal projects.
2	(Ye et al. 2021)	Policy support and innovation have played an important role in China's urban renewal process.	Social justice, urban cultural protection and environmental protection will require innovation and attention in urban renewal policies to alleviate the problem of urban decline.

3	(Zhuang et al. 2017)	The different expectations of different groups often cause social conflicts, and decision-makers often ignore residents' expectations in the old city.	Government policies and public feedback in actual urban renewal projects will affect the actual operation process of urban renewal.
4	(Yu et al. 2019)	The demolition waste generated by urban renewal will greatly impact the urban environment and land resources.	A reasonable forecast of the waste generated in the urban renewal process will increase land utilisation and help the government better manage the environmental impact of demolition and relocation.
5	(Liu and Li 2021)	Micro-transformation is a better way to show urban renewal in the future.	Micro-transformation's urban renewal model as a policy tool will bring more positive sustainability impacts than large-scale relocation.
6	(Yang, Song, and Cai 2020)	Sustainability in the process of urban renewal is an important and positive factor in the renewal project.	Sustainable urban renewal is the focus of future urban development. Policy towards sustainable development must align with urban renewal plans
7	(Li et al. 2008)	The preservation of important urban history and the improvement of the urban environment are indispensable parts of the long-term urban development strategy in the future.	Policies should enable simultaneous promotion of the protection of the urban historical texture and the improvement of the urban environment will correct the problems of the overall urban structural layout and at the same time adapt to the new needs of future urban development.
8	(Wang et al. 2020)	The adverse effects of compact cities on urban greening are becoming more and more obvious, which indirectly leads to the reduction of urban green space.	Urban green space will have a significant impact on urban society and ecology, and the potential adverse effects of compact urban space on urban greening will endanger the process of sustainable urban development.
9	(Du et al. 2020)	Urban renewal will cause changes in social capital, which will have a negative impact on gentrification. Therefore, it is necessary to balance the relationship between the social environment and the physical environment in urban renewal.	Gentrification is inevitable in urban renewal, but by balancing the social balance in urban renewal, the negative impact of gentrification will be reduced. Sustainable policy should enable this social balance.
10	(Liu et al. 2019)	Focusing on the gentrification process of the preservation and reconstruction of the urban historical texture will stimulate the internal vitality of the region, improve the social structure and the healthy development of the housing market.	Rely on the development of gentrification to stimulate the inner vitality of the city, thereby reducing the negative impact of gentrification and enhancing the sustainability of urban renewal
11	(Huang et al. 2020)	In sustainable urban development, it is necessary to pay attention to urban renewal decisions at the community level, which will significantly impact society.	Policymakers need to be pay attention to urban renewal decisions and preferences at the community level, which will significantly impact the development of the society.

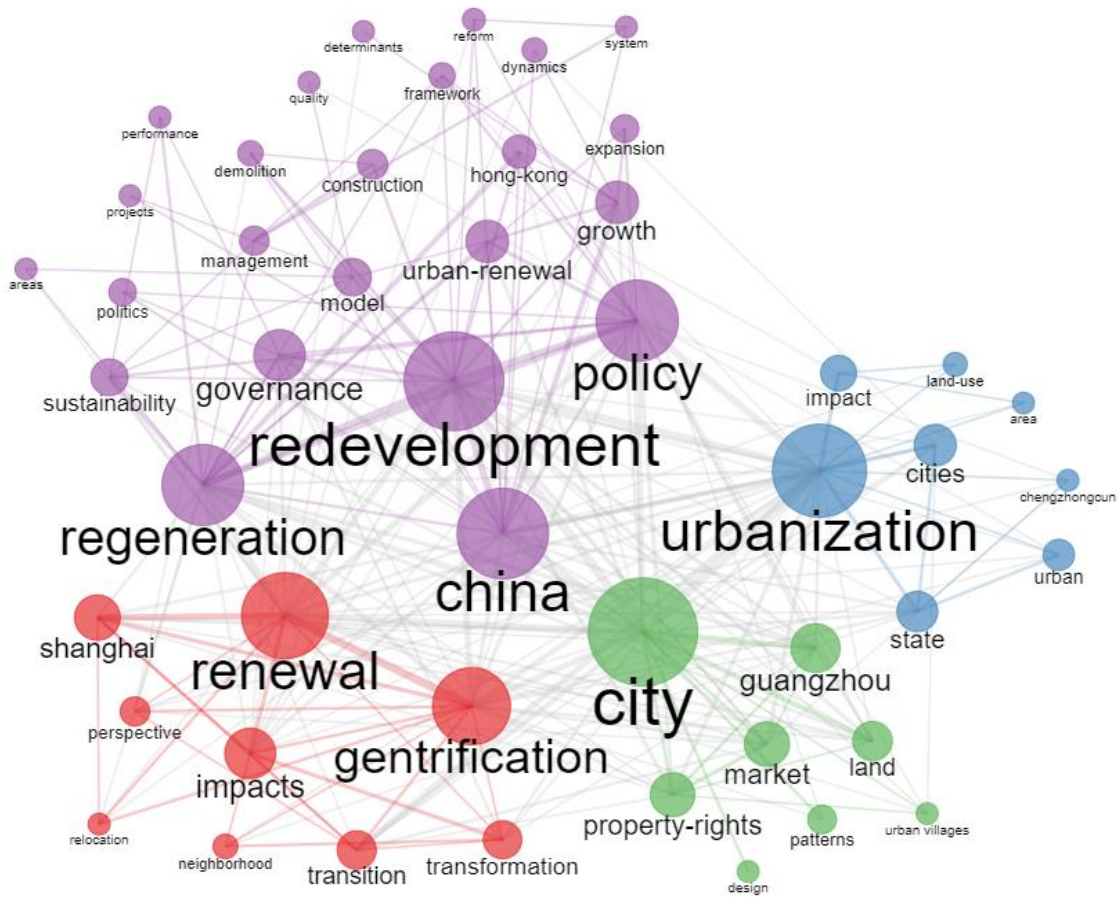


Figure 6 Co-occurrence network of high frequency words in the 325 documents corpus (biblioshiny for bibliometrix)

Gentrification can also bring beneficial effects to the city, improve the urban environment, absorb the middle class into the city, enhance the value of urban space, and provide the impetus for the city's sustainable development. At present, the gentrification generated in the process of urban renewal in China is more inclined to the protection of historical and cultural heritage [2], [9]. Through the protection of historically significant areas, the urban development model is changed, the city's image is improved, and the potential for sustainable development of the city is improved [8]. Furthermore, the preservation and reconstruction of the urban historical texture will stimulate the internal vitality of the region, improve the social structure and the housing market, and form a benign gentrification process.

At the same time, sustainability in urban reconstruction projects is a factor that has an important positive impact on current urban renewal policies. Through the discussion of the differences between the two development policies of Wuhan facing the transformation of urban villages, the top-down reconstruction model emphasizes compensation for disadvantaged residents and reduction of social

inequality [14]. In the bottom-up model, the emphasis is on dialogue with the reconstruction organization through effective communication between stakeholders to achieve sustainable development. The two models have their own focus. The former focuses on improving economic and social security, while the latter focuses on improving life welfare, natural environment, and residents' psychological conditions [14]. At the same time, in the new urban renewal strategy, important urban history needs to be preserved, and environmental improvement is also an indispensable part of the future long-term urban development strategy. These two factors will be an important link in improving future Chinese urban planning [7], as synthesized in Table 1.

In the process of sustainable urban renewal, attention should be paid to the negative social impacts that sometime occur in the process of improving the regional physical environment and the positive urban economy and increasing the value of the land, such as social exclusion and lack of community identity. As the basic unit that constitutes a city, the community is an important factor in promoting sustainable development, and these negative social influences often make the city unable to

achieve overall sustainability [2], [7], [8]. In future urban renewal steps the sustainable development of the community remains particularly important. Therefore, in the process of community renewal, community participation needs to be emphasized to form a good neighborhood renewal strategy to solve the problem of the target area according to the local characteristics [4].

We further explore the deeper interconnections among the critical themes emerged from Table 1 through a network analysis route (see Fig.1). Network analysis-based estimations were used to construct a co-occurrence network of the most common words in the literature. Co-occurrence networks show a graphic visualization of potential relationships between interconnected terms/words within a specified unit of text. Fig.6 illustrates the co-occurrence derived in this study over the 20 years of published literature on urban regeneration in China. The common research points were mainly about urban reconstruction, urbanization development, and urban regeneration. However, only a small part of the issues related to land use types and urban villages were mentioned (see Fig.6).

The co-occurrence network in Fig.6 further shows possible clustering of the terms based on three colors, **Clusters by Documents Coupling**

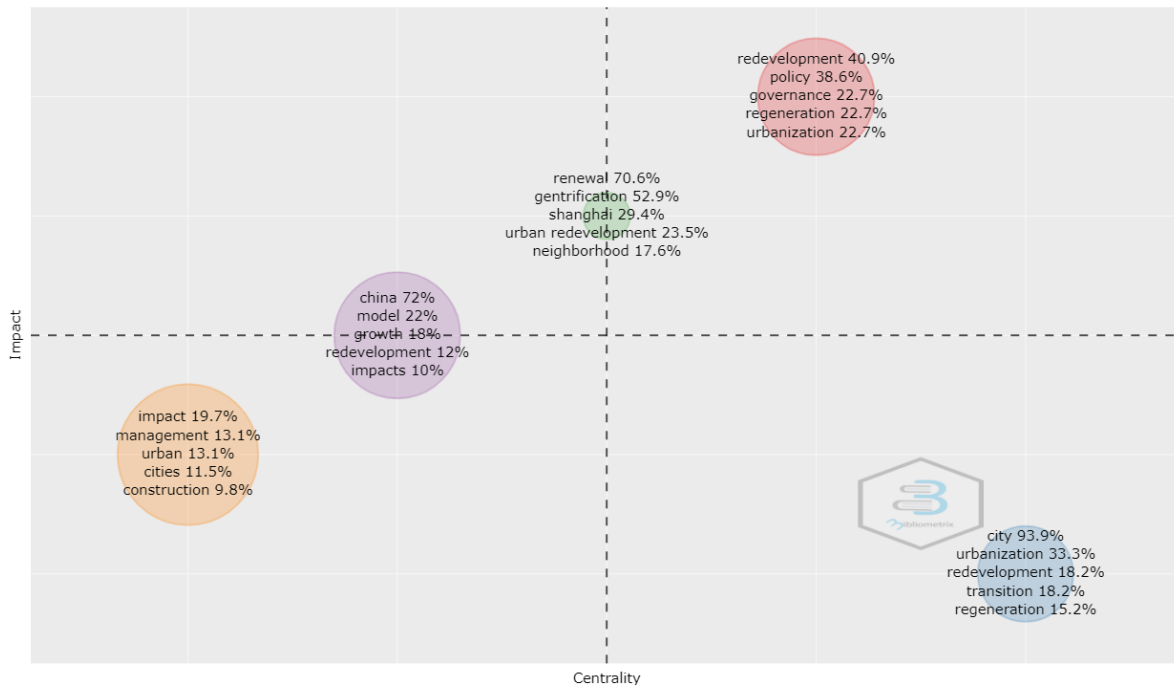


Figure 7 Clusters indicating centrality of topic in the 325-document corpus (biblioshiny for bibliometrix)

Based on this clustering, the trending topics on urban renewal in China is shown in Fig.8. In the published literature after 2017, the research and publication tend to 'growth', 'renewal', 'land use' and 'property rights', while the literature published after 2019 focuses on 'gentrification', 'regeneration', 'redevelopment'. Research papers after 2019 focus on urban renewal policies.

blue, red, purple, and green. It indicates the presence of groups within the networks. For example, the blue cluster represents the policy and governance space, the red cluster illustrates gentrification, transition, and transformational impacts in the urban space; the green cluster shows interdependence on property-rights, densification, urban village and city expansion; and the purple clusters talks broadly about urbanization patterns in China (see Fig.6).

The above clusters are further analysis in detail using clustering analysis as mentioned in Section 2. For this part, we focus on a key clustering measure called 'centrality' which reveals the most important nodes of a graph (which could refer to as the most central). Fig.7 shows the centrality measures of the topics, where the green cluster is most central. It further describes that in 70.6% of the published literature, urban renewal remains a central theme, followed by gentrification (52.9%), urban development (23.3%) and neighborhood planning (17.6%). Shanghai is also represented centrally in 29.4% of the articles, indicating it as a key study area. Other topics that are central to our research themes of urban renewal in China can be seen in Fig.7.

The results so far revealed few salient points associated with sustainable urban renewal approach in China. At present, China's urban renewal projects have changed from demolition and reconstruction as the mainstay to multi-action renewal that combines demolition and reconstruction, comprehensive renovation, and regional function changes. Through government guidance and strengthen communication

with various stakeholder groups to achieve sustainable urban renewal. However, our analysis of the research literature of the past 20 years, showed that the less

attention is given to the issues associated with urban ecological environment and urban villages.

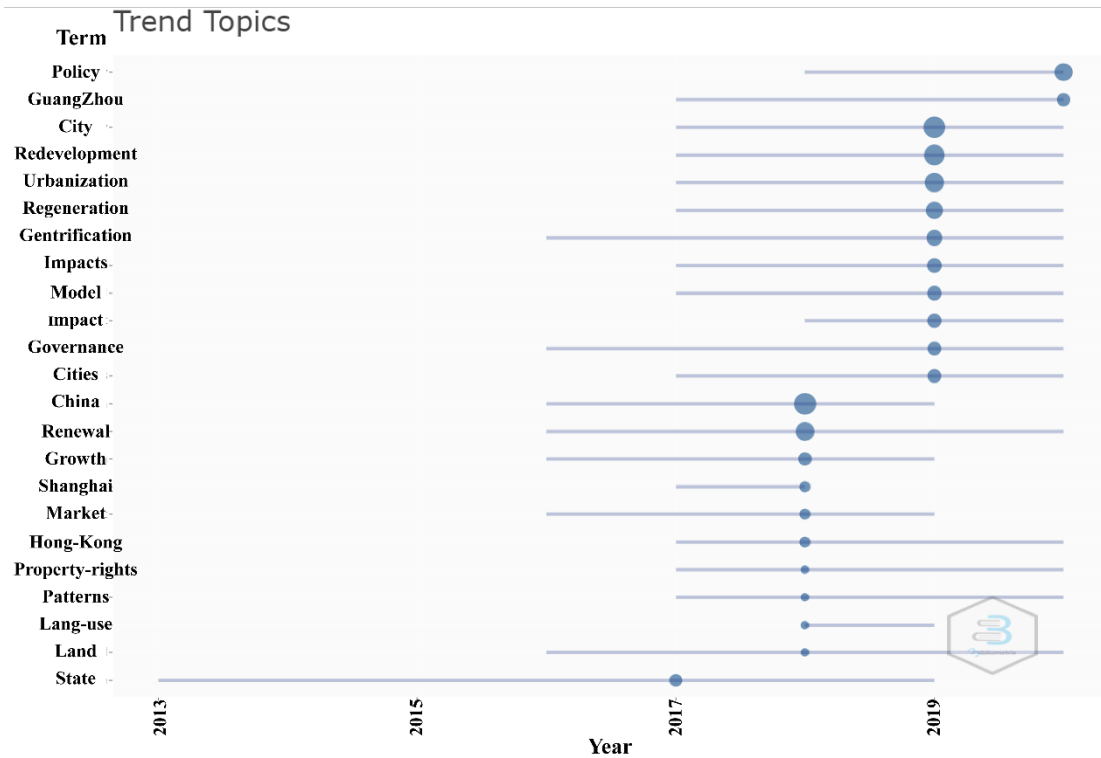


Figure 8 Trending topic extracted through clustering analysis (biblioshiny for bibliometrix)

With the gradual expansion of the scale of cities and the advancement of urban renewal, the urban ecological environment is constantly being squeezed, and the imbalance in the allocation of urban resources is inevitable. With the increasingly compact and utilization rate of China's urban growth model, the decline of the urban natural ecological environment has also become an important urban problem [3]. The passage of a large amount of green space coincides with the intensification of urban land development, which has a very large negative impact on the city's ecological environment. At the same time, the urban village created by China's urban development model, as a unique floating population settlement area in China, covers a very high-density area and a huge floating population [22]. Taking Shenzhen's urban villages as an example, according to the survey conducted by the Shenzhen Municipal Housing and Construction Bureau, 70% of the rental housing is concentrated in Shenzhen's urban villages, which is one of the main suppliers of the rental market, with a population of more than 5 million [20]. Therefore, urban renewal under this premise will generate greater risks of social conflict and at the same time, the complex local environment also makes urban renewal difficult.

In the current paradigm of urban renewal approach in China, the old large-scale relocation will no longer be the first choice [23]. The displacement of residents caused by

large-scale relocation will cause serious damage to the social environment, thereby reducing the residents' sense of identity and belonging to the city [13]. In China's rapid urbanization development, the problem of urban villages is also particularly serious. Random construction and high-density construction environment have seriously affected regional environmental safety and community health. At the same time, large numbers of people gathered in urban villages also made the local social environment particularly complicated. Therefore, in the process of urban renewal, preserving the existing building environment, restoring historical communities, and thus transforming the environment of urban villages will be an alternative to large-scale reconstruction. These points were systematically synthesized in Table 1.

At the same time, the community impact brought about by urban renewal also affects the sustainability of urban development. In China's urban renewal, the gentrification impact of demolition has been very significant, and with it, attention to the protection of regional cultural heritage and the space environment of neighboring communities has increased day by day (as mentioned earlier in Table 1). Maintaining the balance between the renewal of the regional physical environment and the community environment in the process of urban renewal is a very important area that lacks research. A sustainable city needs to establish the

residents' sense of identity and to belong to the city, but the process of gentrification will destroy the relationship between neighbors to a certain extent, rebuild or even destroy the regional social relationship. Therefore, in the process of urban renewal in China, there is a need to know how to change the lives of urban community residents, deeply understand the rights of the low-income residents and integrate policies from the block level to the architectural level. These steps are critical to achieve sustainable urban renewal will be the future direction of thinking.

4. CONCLUSION

The bibliometric analysis and the systematic review of urban renewal research in China performed here showed sustainability as an increasingly important topic in the present context. To achieve this goal, it is necessary to strengthen the exchange of stakeholders from all strata of the city in the process of urban renewal, and to have a deep understanding of the needs of the people at the bottom of the society, so as to strengthen the citizens' sense of urban social identity and belonging. In the process of facing gentrification, it is necessary to pay attention to its negative impact on urban space and balance social relations. At the same time, it is necessary to strengthen the construction of urban green space in the impression of urban renewal on the surrounding urban environment while protecting the city's historical texture. Urban green space will increase citizens' satisfaction with the urban environment and improve urban well-being. Furthermore, through the protection and transformation of the city's historical texture, the residents' sense of place is increased, thereby stimulating the inherent vitality of the city, protecting the social structure from excessive influence, and promoting the sustainable development of urban renewal.

In future research and policy discourse, the emergence of gentrification in the urban villages in China cannot be ignored. However, at present, the focus on gentrification is more concentrated on the large-scale urban level, while the research on the relationship between urban village reconstruction and gentrification is relatively less. At the same time, the research on the problem of urban villages and the relationship between urban neighborhoods is also the missing part. Early large-scale reconstruction of urban villages has not received much attention, and there is a lack of research on how to promote the urban renewal of urban villages further. There is a lack of research on community-neighbor relations in the Chinese environment. Neighbor relations and the environment of the reconstructed area will affect social stability.

Therefore, future urban renewal decisions need to conduct more research on the relationship between urban villages and neighbors to provide greater opportunities for the sustainability of urban renewal.

REFERENCES

- [1] Du, Tongyun, Ningshuang Zeng, Yinxuan Huang, and Henrik Vejre. 2020. 'Relationship between the Dynamics of Social Capital and the Dynamics of Residential Satisfaction under the Impact of Urban Renewal'. *Cities* 107:102933. doi: 10.1016/j.cities.2020.102933.
- [2] Huang, Lijie, Wei Zheng, Jingke Hong, Yong Liu, and Guiwen Liu. 2020. 'Paths and Strategies for Sustainable Urban Renewal at the Neighbourhood Level: A Framework for Decision-Making'. *Sustainable Cities and Society* 55:102074. doi: 10.1016/j.scs.2020.102074.
- [3] Li, Feng, Dan Hu, Xusheng Liu, Rusong Wang, Wenrui Yang, and Juergen Paulussen. 2008. 'Comprehensive Urban Planning and Management at Multiple Scales Based on Ecological Principles: A Case Study in Beijing, China'. *International Journal of Sustainable Development and World Ecology* 15(6):524–33.
- [4] Liu, Fengbao, Xigang Zhu, Jianshu Li, Jie Sun, and Qinshi Huang. 2019. 'Progress of Gentrification Research in China: A Bibliometric Review'. *Sustainability* 11(2):367. doi: 10.3390/su11020367.
- [5] Liu, Jingkuang, and Guokai Li. 2021. 'Comprehensive Benefit Evaluation on Urban Village Micro-Transformation Based on Extension Matter-Element Model'. *International Journal of Construction Management* 21(5):524–37. doi: 10.1080/15623599.2019.1569817.
- [6] Wang, Jing, Weiqi Zhou, Jia Wang, and Wenjuan Yu. 2020. 'Spatial Distribution of Urban Greenspace in Response to Urban Development from a Multi-Scale Perspective'. *Environmental Research Letters* 15(6):064031. doi: 10.1088/1748-9326/ab719f.
- [7] Yang, Qing, Yan Song, and Yinying Cai. 2020. 'Blending Bottom-Up and Top-Down Urban Village Redevelopment Modes: Comparing Multidimensional Welfare Changes of Resettled Households in Wuhan, China'. *Sustainability* 12(18):7447. doi: 10.3390/su12187447.
- [8] Ye, Lin, Xiangeng Peng, Laura Quadros Aniche, Peter H. T. Scholten, and Elena Marie Ensenado. 2021. 'Urban Renewal as Policy Innovation in China: From Growth Stimulation to Sustainable Development'. *Public Administration and Development* 41(1):23–33. doi: 10.1002/pad.1903.
- [9] Yu, Bo, Jiayuan Wang, Jie Li, Jingrong Zhang, Yani Lai, and Xiaoxiao Xu. 2019. 'Prediction of Large-Scale Demolition Waste Generation during Urban Renewal: A Hybrid Trilogy Method'. *Waste*

Management 89:1–9. doi:
10.1016/j.wasman.2019.03.063.

[10] Zhuang, Taozhi, Queena K. Qian, Henk J. Visscher,
and Marja G. Elsinga. 2017. 'Stakeholders'

Expectations in Urban Renewal Projects in China:
A Key Step towards Sustainability'. *Sustainability*
9(9):1640. doi: 10.3390/su9091640.