Progress in Research on Sustainable Urban Renewal Since 2000: Library and Visual Analyses

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Abstract: Urban renewal is an ideal approach to promoting the value of the urban fabric and improving the sustainability of the urban environment. This study, which shows the continuity of research on sustainable urban renewal, aimed to identify sustainable urban renewal literature based on a library analysis of scientific research since 2000. A total of 3971 scientific papers from the SCIE (Science Citation Index Expanded) and SSCI (Social Sciences Citation Index) databases were reviewed to examine how research concerning “sustainable urban renewal” has emerged and developed in the past 20 years. The h-indices and impact factors of the most relevant journals in urban renewal and sustainable development since 2000 were analyzed. The most frequently cited articles were analyzed using analysis of social networks (VOSviewer). The results revealed potential future focuses of research and guidelines that link urban renewal and sustainability: the engagement of all stakeholders in the decision-making process; the involvement of residents in projects; the development of cooperation between towns and cities; the preservation and reuse of built and industrial heritage while respecting environmental law; and, finally, the search for new financing techniques. These potential future research topics were analyzed in four research areas so that sustainable development can easily be integrated into an urban renewal project.

Keywords: research progress; urban renewal; sustainable city; sustainable development and library and visual analysis

1. Introduction

For a long period, “bulldozer” policies adopted to clear non-integrated, precarious, and unsanitary urban centers were the mainstream solution to improving urban landscapes. However, problems associated with old urban centers persisted until the end of the 18th century. It is clear to public authorities that the scope of these policies is assessed, above all, based on their consequences for residents’ daily lives. Thus, urban renewal is a concept that emerged at the beginning of the 19th century around several initiatives. Urban renewal is a solution for neighborhoods subject to socio-economic weaknesses and difficulties, and is considered ideal for transforming urban development, public facilities, and housing. Drawing on these facts, urban planning actors have contributed through research related to sustainable development and urban renewal on a global scale [1], and the actual reconstruction of sustainable cities. According to the research by Donaldson and Plessis [2], urban renewal is a vast concept [2] and has various meanings, depending on the approach and interpretation of the concept [3]. Urban renewal has been considered an ideal approach to enhance urban fabrics and improve the quality of the environment [4]. This desire to rebuild cities is undoubtedly a strong vision of related policies that are currently being implemented, and is a response to several different urban problems. However, the contribution of urban renewal to sustainable development depends on the approaches...
implemented and the urban, economic, or technical constraints which often lead decision-makers to demolish buildings rather than renovate them. According to the research by E. Berlin [5], case studies reveal significant consequences for urban development and urban renewal, demonstrated by the constitutional decision to return all real estate in East Germany to its original owners [5]. As in other European countries, the renewal of post-war housing estates was a major political issue in the Netherlands, aiming to modernize post-war neighborhoods through demolition, renovation of social rental housing, and owner-occupied construction dwellings [6]. To address long-standing problems of urban centers, several alternative approaches [7] identified the urban reconstruction of slums as a more sustainable method of urban renewal.

Sustainability is a complex concept, and is applied to urban areas [8,9]. Cities encompass a range of major problems that are difficult to resolve, and the results of the application of sustainability in urban settings has a long history in the assessment of sustainable urban redevelopment [10,11]. This began with the Rio Protocol of 1992 on the environment and sustainable development (UN, 1992) that encouraged the implementation of Agenda 21, which defined the framework and guidelines for sustainable development. This meeting has given new impetus to sustainable urban renewal projects in recent years [8]. In short, urban renewal has become a major theme in the urban planning and construction industry [12,13]. Faced with the need for more efficient and sustainable buildings, designers are increasingly looking for ways to minimize the environmental impact [13] and energy consumption of buildings [14,15]. However, some urban landscapes have not improved due to rapid economic development, and acceleration of urban and demographic growth, causing social problems and delaying sustainable development. However, it is crucial to assess the main issues clearly, so that urban development can be integrated into sustainable development.

Research on theory and methodologies shows various approaches that are more likely to address the issues and result in more informed discussions. However, some methods have gaps or are insufficient regarding the correct integration of sustainable development into urban renewal. For example, cities’ growth problems include social disintegration, economic recession, environmental pollution, and urban function deterioration [3]. This study is a continuation of sustainable urban renewal research, and aims to provide a vision of scientific research progress since 2000 by analyzing the literature on sustainable urban renewal using library indicators. The h-index and the impact factor were used to assess the most productive journals and classify them according to the most cited authors and their country/institution. According to their countries and the most frequently cited articles, the different authors’ interactions were analyzed using social networks (VOSviewer). Then, specified in detail research topics using bibliometrics relating to the theme of urban renewal and sustainable development, namely:

- the current performance of the publication in the diversity of sustainable urban renewal;
- the distribution of categories and thematic reviews in the variety of sustainable urban renewal;
- the contribution of countries and institutions to the diversity of sustainable urban renewal;
- the most influential authors on the topic of sustainable urban renewal and the most influential topics on urban renewal and sustainable development.

Finally, some of the most cited documents are discussed to highlight four main areas of future research for sustainable and equitable urban renewal. We propose guidelines as a summary of each debate so that urban renewal can contribute to sustainable development.

This study is timely because urban renewal is undoubtedly a major issue for the proper functioning of a city. It provides an appropriate response to issues of inhabitants’ housing, living environment, and infrastructural needs, contributing to their spatial, social, and cultural integration, and improving their living environment. Through our approach,
shown in Figure 1, we are able to present and consider the literature on urban renewal and sustainable development.

![Diagram showing research content (methods)](image)

**Figure 1.** Research content (methods).

### 1.1. Urban Renewal

Urban renewal is a strategic set of principles that works to overcome segregation between social classes [16] and work simultaneously for integrated economic development and social equity. Urban renewal operations play an essential role in reconstructing old urban spaces to improve the physical [17], socio-economic, and ecological aspects of urban areas through various actions. Nonetheless, the growing problems currently facing cities are complex and varied, and include social disintegration, population growth, economic recession, environmental pollution, and deterioration of urban functions [3]. Urban renewal also provides an opportunity to prepare the infrastructure for smart cities [11], which is now an important concept, especially for overcrowded and polluted cities [15]. Redevelopment, rehabilitation, and heritage preservation share similar meanings in town planning but differ in terms of scale [14,16]. In summary, urban renewal is a concept that [1] creates an opportunity to develop sustainable urban areas and improve inhabitants’ living conditions.

### 1.2. Urban Renewal and Sustainable Development

Urban renewal provides an opportunity to address various problems, such as urban degradation [3,18], social inequalities, and environmental pollution in cities, and to achieve sustainable development [3,19]. Sustainable urban development is based directly on the coexistence of social groups, cultures, functions, and types of construction. The terms “sustainable city” and “sustainable urban renewal” are the focus of our study. These terms are derived from the more general notions of “sustainable” and “development”. Both of these concepts first emerged in the 1970s [18] in recognition of the need to balance the need of the present generation with the demand and dignity of future generations [12]. Thus, sustainable urban renewal is considered a healthy approach to promote land values and
improve the quality of the environment, limit the problem of urban growth, and control the rural exodus to achieve various socioeconomic objectives [20]. The United Nations New Urban Agenda [16], which was held in Surabaya, Indonesia, in 2016, promoted a shared vision of a better and sustainable future, in which all peoples have equal rights [16] and access to the advantages and opportunities that cities can offer [17]. Sustainable urban development is the metabolism of transformation through the interrelationships between good governance, a sustainable economy, social and environmental sustainability, and improvement of living conditions. Urban renewal practices can improve urban social sustainability through well-designed and well-constructed built environments [18,21,22].

2. Methods/Data

2.1. Bibliometric Analysis

A more realistic goal for urban planning is to reduce the negative effects of urban problems as much as possible, and the negative consequences of urban fragilities from a sustainable development perspective. Urban renewal is a deliberate effort to change the urban environment [23] through a planned and large-scale adjustment of existing urban areas to meet the demands on human life and urban work [21]. It is an essential answer to the decaying nature of ageing cities and the ideal concept for the current development of sustainable cities through various actions.

In the current study, we applied mathematical and statistical methods [24] to documents to examine progress in sustainable urban renewal research. Created by Alan [25], library analysis is a common technique that allows researchers to conduct a quantitative analysis of literature to identify research characteristics. Bibliometric analysis has become the most widely used method for researchers to assess scientific research progress across various specializations areas. The overall goal of this work was to undertake library analysis of the progress of sustainable urban renewal since 2000. This paper discusses the arguments of previous research on urban renewal and urban sustainability, highlighting research gaps to formulate innovative propositions for future research so that sustainability can easily be integrated into urban renewal. We initially used the Web of Science, Scopus, and other databases as analytical tools based on collaboration between authors and the number of publications, to measure and compare researchers’ results across institutions and countries. Then, VOSviewer was used as a visual analysis tool to provide a relevant picture of scientific knowledge [26–28] through several nodes identified as authors, cited references, and keywords. VOSviewer was used to analyze the research collaboration network, researcher performance, and the orientation of future research areas related to increasing the sustainability of urban renewal.

2.2. Impact Factor/H-Index

The journal impact factor (IF) is the average number of citations of articles in a journal divided by the number of articles published in that journal [29]. It measures the scientific visibility of a journal over time [30–32]. This study used the IF (2018) as an indicator to assess the scientific performance of exams [30]. The ratio between the number of citations received by a journal in a year and the number of articles published by that journal during the two preceding years was calculated using data from Journal Citation Reports (JCR). A journal’s relevance has largely been assessed by its impact factor [29]. The importance of journals in urban studies and sustainable development has been evaluated to orient disciplinary specialities and influence urban renewal practice, which is also discussed in the current study.

Hirsch developed the h-index in 2005 [29]. The h-index is a measure for evaluating an individual scientist’s performance based on his/her career publications rather than for a particular journal [29,30]. For our case study, the h-index was used to assess the influence of journals, countries/territories, authors, and institutes to objectively measure the impact and relevance of scientific production based on publications, institutions, and quotes from authors in the field of urban renewal and sustainable development. The calculation was
based on data from Google Scholar. For example, an h-index of 10 indicates that the researcher has 10 articles cited at least 10 times by other research papers.

2.3. Data Sources

We selected scientific papers in areas related to urban renewal and sustainable development. Web of Science (WoS) is considered an essential data source for a bibliometric analysis [30,33]. To identify publications that are of interest to our research from 2000 to 2020 years, we used the following search strategy to retrieve SCIE and SSCI data (conference reports and proceedings, editorials, and book reviews were not considered). Subsequently, “sustainable urban renewal” or “urban renewal” or “sustainable city” were selected as keywords in the context of the subject research, and were applied to titles, abstracts, and keywords of the publications. The search for literature related to sustainable urban renewal published during the period 2000–2020 in the databases mentioned above, and were retrieved as illustrated in Figure 2 on 6 July 2020.

![Figure 2. Outline of literature search and analysis processes.](Image)

Our analysis identified 5414 articles, distributed as follows. Approximately 95.6% of the publications were published in English, 3.5% in French, and 0.9% in Chinese. As English is an academic and international language, only literature publications in English were included in this study. In addition, during this research, journal articles (409 publications) and research articles (5005 publications), representing approximately 7.6% and 92.4%, respectively, of the total international language literature, were published in various reviews. That is, only 3971 publications (i.e., review and research documents) were finally selected as of 6 July 2020 for further analysis in this study. The specific data collection process is shown in Figure 3.
2.4. Bibliometric Analyses Results

2.4.1. Selected Publishing Performance

As shown in Figure 4 and Table 1, in addition to the gradual increase in the annual number of publications between 2000 and 2019, the yearly total of citations peaked six times in 2001, 2011, 2013, 2016, and 2019, then decreased during 2006, 2012, 2014, and 2017, and dropped from 2019 to 2020. The average number of annual citations increased linearly from 2006 to 2011, and from 2012 to 2019. The number of all documents published per year increased from 98 in 2000 to 454 in 2019, and then dropped to 250 in 2020. As the number of publications was estimated per year, we note a linear increase in the number of reviews since 2000 of studies on urban renewal and sustainable urban development. According to the documents reviewed about other related concepts, urban renewal and sustainable urban development remain challenging fields for researchers. Despite the exceptional progress made in this area, we note the significant potential for future research due to diminished research results in some years of study.
Table 1. The performance of selected publications by year.

| Years | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Journal | 98   | 103  | 96   | 101  | 95   | 106  | 95   | 116  | 138  | 167  | 202  | 181  | 218  | 218  | 258  | 289  | 284  | 394  | 454  | 113  |

2.4.2. Distribution of Categories and Subject Reviews

Of the 3971 publications recorded in this study of 160 data reviews (SCIE and SSCI), the top five journals were *Cities* (184 publications), *Urban Studies* (149 publications), *Sustainable Cities and Society* (105 publications), *Journal of Urban History* (84 publications), and *PloS ONE* (83 publications). Figure 5 shows the number of articles published in the five main categories of subjects over the study period. The 2000–2020 period was divided into seven stages, aimed at better assessing the research trend related to urban renewal and sustainability in multiple classes. For each class, the number of publications has increased and decreased over time, except in the *Journal of Urban History*, for which the trend of research in the field of sustainable urban renewal has not decreased. The results in Table 2 also show that the annual number of total publications has fluctuated in publications related to urban renewal, and that there is promising research progress in certain dominant classes, particularly in *Sustainable Cities and Society* and *Cities*.

Figure 5. The top 5 journals.
As shown in Figure 6 and Table 3, regarding source journals, the most productive journals account for 22.43% of total publications. *Cities* was the most productive with 184 articles (4.63% of total publications) with an impact factor of 3.853. *Urban Studies* ranked second with 149 articles (3.75% of total publications) with an impact factor of 3.272. *Sustainable Cities and Society* ranked third with 105 articles (2.64% of total publications) with an impact factor of 4.624. Overall, nine journals (from 50 to 100 articles) published 505 papers, representing 12.71% of the total, and 148 journals (from three to 49 articles) published 3029 articles, representing 76.27% of the total. The *Journal of Cleaner Production* had the highest impact factor of the ten most productive reviews and ranked eighth with 57 publications (1.43% of total publications).

![Figure 6. Characteristics of the top 10 most productive journals since 2000.](image-url)
Table 3. Characteristics of the top 10 journals since 2000.

| Source Title                                           | Tp    | Tp (%) | IF(2018) | H Index | Country          |
|--------------------------------------------------------|-------|--------|----------|---------|------------------|
| Cities                                                 | 184   | 4.63   | 3.853    | 81      | United Kingdom   |
| Urban Studies                                          | 149   | 3.75   | 3.272    | 138     | United Kingdom   |
| Sustainable Cities and Society                         | 105   | 2.64   | 4.624    | 43      | The Netherlands  |
| Journal of Urban History                               | 84    | 2.11   | 0.339    | 24      | USA              |
| PloS ONE                                               | 83    | 2.10   | 2.776    | 300     | USA              |
| Habitat International                                  | 65    | 1.63   | 3.846    | 69      | United Kingdom   |
| International Journal of Urban and Regional Research   | 59    | 1.48   | 2.768    | 105     | United Kingdom   |
| Journal of Cleaner Production                          | 57    | 1.43   | 6.395    | 173     | The Netherlands  |
| Land Use Policy                                        | 54    | 1.35   | 2.143    | 103     | The Netherlands  |
| European Planning Studies                              | 51    | 1.28   | 2.101    | 75      | United Kingdom   |

2.4.3. Contribution by Country

Figure 7 shows the global distribution of publications related to sustainable urban renewal since 2000, covering 106 countries. Among the 106 countries, the United States (948 articles), representing 23.87% of the total, published the largest number of articles, followed by the United Kingdom (658 articles, representing 16.57% of the total), China (374 articles, representing 9.41% of the total) and Australia (243 articles, representing 6.11% of the total). Seven countries globally (from 100 to 199 articles) represented 28.10% of the total, and 95 countries published from 1 to 99 articles, representing 15.94% of the total. Of the 15 most productive countries, only India was a developing country, with 2.10% of the total among developed countries. These results indicate that the United States, the United Kingdom, and China are the most important contributors.

![Figure 7](image_url)

Figure 7. The top 15 global distribution of publications related to sustainable urban renewal.

The academic cooperation between the 15 international institutions of the most productive countries is illustrated in Figure 8. We used VOSviewer (a visualization analysis tool) for data processing. It is evident in Figure 8 that the United States, the United Kingdom, and China are the three most productive countries and have a cooperative relationship. The United States is the most active country in terms of international cooperation, notably with China (35 documents), the United Kingdom (16 papers), Hong Kong (5 papers), and Australia (6 papers). The United Kingdom has also actively cooperated with other countries, such as China (12 documents) and Spain (13 papers). Finally, China has also collaborated on this subject with a number of countries, such as Hong Kong (30 documents) and Australia (16 papers). This close cooperation of countries with a large number of
academic publications indicates a close relationship because researchers can easily find potential research partners from these countries because of their similar research interests. In essence, this international academic cooperation has strengthened their research capacity and improved sustainable urban renewal studies.

After evaluating the 15 most productive countries in our field of study, we note that countries with greater economic power (the United States, United Kingdom, China, and Australia) have published the greatest number of publications, which shows the significant correlation between academic productivity and the economic development of a state.

2.4.4. The Contribution from Institutions

Figure 9 and Table 4 show the 15 most productive institutions relating to sustainable urban renewal studies since 2000. The Chinese Academy of Sciences ranks first with most publications, then the Delft University of Technology, followed by two Hong Kong Universities, and UCL. This indicates that British institutions (UK) made significant contributions in international cooperative relationships, followed by Chinese institutions, in terms of research trends in urban renewal and sustainable urban development.

| Affiliation                                      | TP 1 | TRP (%) 2 | Country            |
|-------------------------------------------------|------|-----------|--------------------|
| Chinese Academy of Sciences                     | 65   | 1.64      | China              |
| Delft University of Technology                  | 63   | 1.58      | The Netherlands    |
| The University of Hong Kong                     | 54   | 1.34      | China              |
| Hong Kong Polytechnic University                | 48   | 1.20      | China              |
| UCL                                             | 38   | 0.95      | United Kingdom     |
| Arizona State University                        | 33   | 0.83      | United Kingdom     |
| The University of Manchester                    | 32   | 0.80      | United Kingdom     |
| The University of Toronto                       | 32   | 0.80      | Canada             |
| OTB - Onderzoek Voor de Gebouwde Omgeving, TU Delft | 32   | 0.80      | United Kingdom     |
| The University of Melbourne                     | 31   | 0.78      | Australie          |
| The Universiteit Van Amsterdam                  | 30   | 0.75      | United Kingdom     |
| The University of the Glasgow                   | 29   | 0.73      | United Kingdom     |
| University of Birmingham                        | 26   | 0.65      | United Kingdom     |
| Newcastle University                            | 25   | 0.62      | United Kingdom     |
| CNRS                                            | 24   | 0.60      | France             |

1 Total publication of an institution since 2000; 2 Rank of total publications since 2000 (in percentage).
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2.4.5. Author Analysis

A total of 156 authors published articles on urban renewal and sustainable urban development during the study period according to the SCCI and SCI databases. Chan, E.H.W. was the most productive author, publishing 14 articles. Kearns, A published 12 papers and ranked second. Bibri, S.E ranked third with 11 papers and Kleinhans, S.E ranked fourth with 10 articles. Six authors published nine articles each (Figure 10). However, most authors (83.31% of all authors) contributed from three to five papers, which indicates that a small number of researchers have made substantive contributions to this field.
Figure 11 shows the research network of co-authors relating to sustainable urban renewal. The analysis was based on the authors with the most vital connections. There are 50 nodes and 75 edges in this network. A node represents an author, and the thickness of the node shows the number of posts. The edge connecting one node to another represents the collaboration of the two authors, and the thickness of the border shows the collaborative relationship according to the number of co-authored documents. The principal authors are Zhang, X, Zhang, Y, Wang, J, and Wang, H. This indicates that these authors have greater cooperation between institutions/countries, but the geographical position has an effect on the collaboration. The emphasis on the sustainable urban renewal of urban centers and the researchers through their studies highlights the different methods and strategies used in their research of the sustainable redevelopment of city centers or old neighborhoods.

3. Review of Existing Studies on Urban Renewal and Sustainability Cities

To summarize recent progress in studies on urban renewal and sustainable urban development, this study undertook a systematic review of the literature by analyzing the aspects of the urban planning subsystem for sustainable urban renewal, the social subsystem in urban renewal, and the assessment of sustainable urban revitalization. Based on 81 journal articles, this paper presents a critical review of recent studies on sustainable urban renewal during the 1990–2012 period [34]. According to the research by H.W. Zheng, Q. Shen, and H. Wang [34], critical gaps in the process of sustainable urban renewal are the dominant theme in sustainable studies of qualitative and quantitative factors [35,36], and will be considered in future research as temporal and spatial perspectives [34].

The dominant topics reflect concerns about subsystem planning for sustainable urban renewal (e.g., land, infrastructure, culture, and heritage), which serves as a decision-making process regarding the location and physical fabric of investment in the built environment [34] and the adaptation of these decisions for functional and aesthetic purposes [36].
Secondly, stakeholders and their commitment (stakeholders and community participation), and the evaluation of sustainable urban renewal, can help stakeholders improve their strategies or solutions to achieve sustainable urban renewal. The findings of this paper provided a critical overview of the future research program on sustainable urban renewal. They consider the sustainable city to be a sustainable urban renewal system of sustainable development based on the weight of housing standards. According to the research by H.W. Zheng, Q. Shen, and H. Wang [34], the city is considered to be a spatial building and system comprising two major subsystems (town planning and social). The town planning subsystem comprises the material elements of a city (environmental factors), and the social subsystem focuses on the inhabitant [36–38].

According to the research by S. Yildiz, S. Kivrak, A. B. Gültekin, and G. Arslan [22], sustainable urban regeneration is a community process that changes many aspects, including economic, environmental, and social well-being [38,39]. Urban renewal studies related to sustainable development cover a wide range of subjects, many of which are encroaching and therefore cannot be easily categorized. Thus, to discern future research areas and to identify possible weaknesses in sustainable urban renewal, our study offers a major assessment since 2000 of the concept of sustainable urban renewal through the examination of existing studies based on four sections: the first section addresses residential mobility in sustainable urban renewal [40]; the second section concerns social change and urban development; and the third section refers to the review of studies based on the most frequently cited articles and keyword research areas. The final section briefly assesses urban renewal as a sustainable development approach. In short, these sections relate to the dynamics of land use, social dynamics, decision-making dynamics, and economic dynamics in sustainable urban renewal.

3.1. Thinking About Residential Mobility in Sustainable Urban Renewal

Generally, mobility has a complicated relationship with residential segregation, which mixed policy is intended to combat. Its influence on the social and ethnic composition of territories is equivocal [41]. Policies of urban renewal increasingly involve habitat destruction followed by reconstruction [42]. This translates into relocation to another part of the city. According to the research by L. Neto, N. Pinto, and M. Burns [42,43], about 1,300,000 residential buildings (which represent 40% of the existing housing stock) in Portugal were built before 1970, and the building ageing index is therefore essential. Renovation policies were implemented to adapt residential buildings to normative requirements [44] and current social needs [45]. This research establishes the importance of involving residents in these summary studies of urban renewal by working with an interdisciplinary method that combines urbanization and environmental psychology to successfully promote urban regeneration and ageing [45]. It is essential to consider owners’ financial vulnerability as a factor in any building renovation to propose interdisciplinary study parameters for the development of sustainable and effective strategies [45].

3.2. Social Change and Planning

Previous studies have recognized the importance of the social dimensions of ecosystem services and their integration into planning processes [46,47]. However, the unclear status of social aspects in the sustainability debate is also because the social sciences have long ignored the sustainable development discourse. Environmental sciences have deepened ecological sustainability and clarified urban ecological development since the first climate conferences. Space is seen as a social remedy in urban renewal due to the manner in which architectural and urban transformation changes the neighborhood community, its ways of life, aspirations, and relationships between its members. Thus, poor policies of urban renovation are those whose impact transforms the morphology of urban space by altering its population and affecting the links of those who live there. The vision of a sustainable urban renovation leads to reflections on a well-oriented social policy and future research must first consider any social dimension in the process of urban renewal.
4. Discussions and Innovations

In this discussion section, we present and review the literature on urban renewal and sustainable development. First, we identify and review studies based on the most frequently cited articles and major areas of research. Then, we highlight the evaluation of sustainable urban renewal to identify innovations.

4.1. Review of Studies Based on the Most Frequently Cited Articles and Key Research Areas

The variation in annual citations can be used to assess the academic influence of publications [32]. Figure 10 and Table 5 show the total number of citations and the total binding force of the most productive authors from 2000 to 2020.

Table 5. The most cited articles.

| Years | Annual Quote | Papers | Journal | Citation | Author | Ref |
|-------|--------------|--------|---------|----------|--------|-----|
| 2004  | 4.93         | The role of urban parks for the sustainable city | Landscape and Urban Planning | 1043 | Anna Chiesura | [36] |
| 2006  | 5.24         | Urbanization in developing countries: Current trends, future projections, and key challenges for sustainability | Technology in Society | 729 | Cohen, B. | [37] |
| 2016  | 5.98         | Supilinn, Tartu—The lively vernacular against urban renewal: A Lefebvrean critique | Space and Culture | 646 | Nutt, N.; Hiob, M.; Kotval, Z.; Kennedy, C.; Cuddy, J.; Engel-Yan, J. | [43] |
| 2007  | 4.90         | The changing metabolism of cities | Journal of Industrial Ecology | 630 | | |
| 2005  | 6.83         | Rethinking sustainable cities: Multilevel governance and the ‘urban’ politics of climate change | Environmental Politics | 569 | Bulkeley, H. | [49] |
| 2005  | 6.83         | A SWOT analysis of the field of virtual reality rehabilitation and therapy | Presence: Teleoperators and Virtual Environments | 484 | Rizzo, A. | [50] |
| 2005  | 6.83         | The compact city fallacy | Journal of Planning Education and Research | 409 | Neuman, M. | [51] |

The total number of citations of articles published in the past six years is less than that published in 2013, 2011, and 2007, which experienced more citations due to the rapid development of sustainable urban planning research. Therefore, by comparing the total quotes of a publication, Figure 10 shows that the analysis of the annual citations of a publication can provide more rational explanations and more precise details.

Table 6 and Figure 12 present the seven main characteristics of the most frequently cited articles (more than 400 citations). They are notably different from the “ordinary” papers cited. Naturally, they are written by a large number of scientists, often involving international collaboration [32,48]. Based on the analysis of the annual citations of articles and their research axis concerning urban renewal and the practice of sustainable urban renewal, we selected seven highly cited papers in Table 6, following a model of the largest number of citations to the smallest number. Our debate revolves around the results (quality dynamics and visibility dynamics) of these articles by introducing a vision of sustainability in urban renewal projects.

Table 6. The total number of citations and the total binding force of the most productive authors from 2000 to 2020.
The interaction between urban renewal and public spaces has been highlighted in many studies. For example, [48] analyzed the actors who shape urban green space development in a medium-sized city whose land shortages [54], budgetary constraints, and community expectations are the source of the need for leadership [55]. Regarding mobility, parks and green spaces are reconceptualized and advanced to solve multiple urban problems (such as social integration, storm-water mitigation, and health promotion) [55].

To do this, providing urban green spaces consists of more than giving land and income for the development of facilities. Another study examined user-generated data to provide dynamic information regarding the use of urban green spaces [53,56]. and to understand and compare the capacity of the different data sets generated. Social media and surveys are therefore a rich and versatile source of data on activities and leisure. Such a reflection of the renovation of urban green spaces must be based on information about where, when, and how people use and value urban green spaces [57–59] to make the project more sustainable.

The fragmentation of urban green spaces using landscape measurements (case study: District 2, City of Tehran) [60–62] and the potential accessibility of green spaces through urban collective gardens are seen as alternatives to address the environmental problems generated by urbanization [53], thus contributing to cities’ sustainability [48–50].

The Role of Urban Parks for sustainable City

Of these articles, that written by Anna Chiesura in 2004, published in Landscape and Urbanism and entitled “The Role of Urban Parks for the Sustainable City” [36], is the most cited publication in sustainable urban renewal research during the study period of 2000–2020, with about 1043 citations. This document’s main contribution is to address the importance of the urban nature for citizens’ well-being and the sustainability of the cities they inhabit. Urban sustainability and regeneration strategies focus primarily on the urban environment’s artificial and constructed components [31,32,52]. Urban collective gardens are seen as alternatives to address the environmental problems generated by urbanization [53], thus contributing to cities’ sustainability [48–50].

The interaction between urban renewal and public spaces has been highlighted in many studies. For example, [48] analyzed the actors who shape urban green space development in a medium-sized city whose land shortages [54], budgetary constraints, and community expectations are the source of the need for leadership [55]. Regarding mobility, parks and green spaces are reconceptualized and advanced to solve multiple urban problems (such as social integration, storm-water mitigation, and health promotion) [55].

To do this, providing urban green spaces consists of more than giving land and income for the development of facilities. Another study examined user-generated data to provide dynamic information regarding the use of urban green spaces [53,56]. and to understand and compare the capacity of the different data sets generated. Social media and surveys are therefore a rich and versatile source of data on activities and leisure. Such a reflection of the renovation of urban green spaces must be based on information about where, when, and how people use and value urban green spaces [57–59] to make the project more sustainable.

The fragmentation of urban green spaces using landscape measurements (case study: District 2, City of Tehran) [60–62] and the potential accessibility of green spaces through urban collective gardens in Nanjing was also assessed [63–65]. According to the research by X. Du, X. Zhang, H. Wang, X. Zhi, and J. Huang [17], we note that green spaces play an essential role in improving the health and quality of life of urban dwellers, which has become one of the most debated topics for researchers around the world, and the Chinese government in particular. The importance of urban parks in old urban centers has been particularly highlighted, and relevant measures have been recommended for residents’ well-being and the sustainability of the cities they inhabit.

Figure 12. The total number of citations and the total binding force of the most productive authors from 2000 to 2020.
In summary, governments should consider increasing green space supply and promoting equal access concerning the well-being of residents. According to the research by S. Nasehi and A. Imanpour Namin [61], to understand the negative effects of inappropriate land use and land-use change, it is necessary to know and understand the process of exchangeability to assess sustainable urban development’s environmental impacts. This focuses on the use of land for urban parks in sustainable urban renewal projects through appropriate and sustainable use of natural resources.

- Urbanization in developing countries: Current trends, future projections, and key challenges for sustainability

The second most cited article is “Urbanization in developing countries: Current trends, future projections, and key challenges for sustainability” [38], written by Barney Cohen in 2006 and published in Technology in Society, with approximately 729 citations. This paper’s main contribution is to provide a general overview of recent urban growth trends in developing countries. It noted that the current levels and trends of urbanization closely mirror global industrialization and economic development patterns [38]. By 2025, African society will become predominantly urban [62]. As a result, Africa’s urban population is expected to more than double, from 295 million in 2000 to 748 million by 2030, so that within 25 years, Africa’s urban population will be larger than that of the continents of North America, Europe, or Latin America [63]. The article also noted that much of the current debate on sustainable cities focuses on the challenging problems for the world’s largest urban centers. As a result, issues of urban sprawl and population expansion are considered necessary by various stakeholders.

Thus, the challenges of achieving sustainable urban development are particularly acute in Africa [64]. A comprehensive understanding of future global urbanization trends could benefit from a long-term analysis of city size, which is a key variable influencing population growth [60,65]. Therefore, the analysis of changes in the relationship between a city’s size and population growth contributes to the debate on the future development of urban centers globally [65].

In Africa, taking the example of the peri-urban area of the city of Bahir-dar in Ethiopia, based on a socio-spatial analysis of land use dynamics and the land response process, a previous study examined practical measures to combat and control undesirable changes in land use [60]. Thus, a framework for monitoring land use interventions is needed for strategy implementation and decision-making in regulating and managing land-use dynamics in peri-urban areas. It is important to limit population expansion and peri-urban sprawl using an integrated approach to solving existing problems while considering the capacity of financial resources. This is because urban dwellers continue to reside in much smaller urban areas, and rapid urban growth in cities in developing countries severely exceeds most cities’ ability to provide adequate services to their citizens. Therefore, the challenges in achieving sustainable urban development are mainly located in Africa [64].

The Millennium Development Goals (MDG) are a plan endorsed by all countries globally and by all major global development institutions to eradicate hunger and poverty. Unfortunately, many African cities continue to experience uncontrolled growth of the population, unrestricted spatial growth, hunger, and precarious and worsening living conditions. In contrast, large reserves or former industrial reserves exist in the center of well-developed cities with dilapidated and unsanitary conditions, whose renovations make them challenges for sustainable development.

In other continents, urbanization is interpreted as a manifestation of agglomeration economies and, following this logic, a concentration of urbanization around a single site could result from particularly effective agglomeration economies [66]. In the Amazon, the previous study underlined the importance of researching urban planning, and enhancing the context and the daily existence of the lifestyles specific to each place. Hence, in the case of the Amazon, the need to link urban theory to an “empirical course,” as suggested by J. A. Telles in 2006 [67], introduces the notions of context and practice to the heart of the debate in social sciences, and is a trajectory that has been insufficiently analyzed to
date. This practice could lead to strong urban growth around a single site, thus causing various problems, such as the shortage of drinking water, sanitary issues, and congestion. Therefore, it may be preferable to confront these problems directly rather than attempt to articulate a mode of intervention around a development issue.

• Supilinn, Tartu—The lively vernacular against urban renewal: A Lefebvrean critique

The third most cited article is “Supilinn, Tartu—The lively vernacular against urban renewal: A Lefebvrean critique” [43], written by Nele Nutt, Mart Hiob and Zenia Kotval in 2016 and published in the journal Space and Culture, with about 646 citations. This paper studied many aspects of urban development (urban analysis, human values, adopted space projects, etc.) to provide an overview of the issue that characterizes the city as being animated by reliable planning and design. However, current efforts to regenerate the region can ruin the precious vernacular environment [68]. Nonetheless, officials respond to real demands by creating new spaces and transforming unpleasant spaces.

The importance of integrating culture into a built heritage for a sustainable city [69] is a reason to abandon the idea of demolition in favor of improving living conditions in old urban centers. For example, community left to die has been resurrected using bottom-up planning and citizen initiatives to become one of the preferred places to live, to the point that the neighborhood today faces the threat of gentrification with social displacement and complete renewal [69]. According to the research by M. Ročak, G. J. Hospers, and N. Reverda [68], social capital can facilitate social sustainability in the context of urban shrinkage [68,70]. However, trust and empowerment are not guaranteed in the context of this shrinkage. More investments should be made in cities in decline to foster cooperation between civil society and politics, resulting in the development of mutual trust [66,68]. However, a slum that survived the socialist government system has turned into a sustainable residential area through an urban renewal process. In addition, the best qualities of its outlook outside the site are well-preserved buildings, plot structure, authentic historical surroundings, natural surroundings, and a healthy community.

In summary, social sustainability is often combined with social conditions such as a sense of belonging, trust, participation and resources, empowerment, cultural identity, and quality of life [22]. Thus, sustainable urban renewal must involve particular “aesthetic qualities,” with buildings that they qualify as “of a certain standard” or in a “beautiful and harmonious architectural space that retains its cultural identities” [71]. To avoid saying “if they are razed, there is nothing left,” urban renewal is forced to integrate “quality,” “harmony,” and “cultures” to achieve urban sustainability [72].

• The changing metabolism of cities

The fourth most cited publication is entitled “The Changing Metabolism of Cities” [46], written by Christopher Kennedy, John Cuddihy, and Joshua Engel Yan and published in the Journal of Industrial Ecology in 2007, with 630 citations. The main contribution of this paper is an overview of the evolution of the metabolism of cities. This paper also identified metabolic processes that threaten the sustainability of cities. These include altering groundwater levels, depleting local materials, accumulating toxic materials, summer heat islands, and irregular accumulation of nutrients [69]. According to the research by M. Hiob and G. Lyons [73,74], the urban metabolism, which concerns the flows of material resources and waste that characterize the functioning and sustainability of a city, are fundamentally associated with human behavior.

Although humans have existed for a long period, emissions generated through human activity have become so pervasive and that they appear to rival natural processes. To address this issue, we must quantify problems caused by urban metabolism or related to the exploitation of environmental resources, and mitigate them to achieve sustainable urban development. Many researchers consider urban metabolism to be a concern common to all humanity. Thus, a panoramic analysis of the research progress of the urban metabolism was carried out based on trends and the current situation [62,63]. This paper proposed future research directions in climate change and targeted policy directions for diagnosing
sustainable urban problems. According to the research by T. Dai and R. Liu [75], the issue of resources and the environment in Beijing, the center of China’s politics, economy, and culture, has become a focus of attention, both domestically and internationally. This analysis, which was based on the Tapio decoupling model and the logarithmic division index method, was used to analyze the level and influence of Beijing’s dematerialization factors [75]. The results of the study showed that, from 1992 to 2015, Beijing’s GDP increased from 61.25 billion yuan to 623.45 billion yuan; during the same period, direct material inputs and domestic production were also transformed, increasing from 139.88 and 78.63 million tonnes in 1992, to 205.17 and 166.27 million tonnes, respectively, in 2015 [75]. This study concludes that the influencing factors of dematerialization can be quantified to provide a scientific basis for the future sustainable development of the city. According to a mission report by ANRU (the national agency for urban renovation) [76], 396 projects approved by the ANRU committee involved the regeneration of 332,481 units of social housing, the upgrade of residential areas for 338,853 units, the demolition of 139,986 units, and the restoration of 135,979 units, and provided funding for home improvements and equipment [76]. For the mission of monitoring the demolition of several high-rise buildings, expertise was applied to the reuse of demolished materials for the development of public spaces and construction of new living environments. Several prototypes have been constructed from reused materials to create continuity between the past and the future of this district. The main objective is to forge a social bond between residents and local structures (schools, neighborhood associations, neighborhood authority) within this new place of life.

In summary, urban metabolism examines the type and quantity of resources that fuel the city and its people, to highlight prospects for sustainability [77], and allow more holistic intervention strategies for integrated and sustainable urban renewal. Thus, urban metabolism is more than an urban development project. Above all it is a political project, in which local authorities attempt, with the assistance of external providers, to make the city of tomorrow more sustainable.

• Rethinking sustainable cities: Multilevel governance and the ‘urban’ politics of climate change

The fifth most cited article is “Entitled Rethinking Sustainable Cities: Multilevel Governance and ‘urban’ politics of climate change” [49], written by Harriet Bulkeley and Michele Betsill in 2005 and published in Environmental Politics, with approximately 569 citations. This article highlights a multilevel governance perspective to examine the discursive and material struggles which take place in creating sustainable cities [49]. Investments in urban equipment (infrastructure) contribute to a country’s economic development by facilitating its opportunities. However, the analysis of urban governance objectives in sustainable cities has also led to a relatively impoverished view of the governance context in many sustainability reports. As climate change is one of the most common problems of our time, a critical analysis of the role of cities in tackling climate change and the prospects for urban sustainability is of interest to researchers interested in local and global sustainability. Local adherence to best practices highlights the authentic struggles of urban sustainability locations in competition with other governments seeking to shape the sustainable urban future [74].

Accordingly, research into sustainable development in urban renewal includes the search for new tools and renewed legitimacy [75,78], which focuses on the assessment of sustainability as a key technique and method to pursue the political objective of “sustainable development” in urban planning.

• A SWOT analysis of the field of virtual reality rehabilitation and therapy

Based on the model of the most cited articles in our analysis, the sixth most cited article is entitled “A SWOT analysis of the field of virtual reality rehabilitation and therapy” [50], written by lbert Rizzo and Gerard Jounghyun Kim in 2005 and published in Teleoperators and Virtual Environments, with about 484 citations. This strengths, weaknesses, opportunities,
and threats (SWOT) analysis suggests that the field of virtual reality rehabilitation is still at an early stage of development, characterized by successful “proof of concept” systems, encouraging initial research results, and a few applications finding their way into common and practical clinical use. Many virtual reality strengths are specified and continue to justify the evolution of existing applications and new creations. For example, this virtual reality force analysis can be used in urban renewal and sustainable urban development as a general examination of strength, threats, opportunities, and weaknesses to make proposals for the sustainable reconstruction of old urban neighborhoods. An analysis based on SWOT [79], of experienced rapid advancement and technology, which has established itself as a valuable training tool in many fields, was carried out to promote off-site construction in the context of China’s new urbanization.

This document also offers roadmaps and top-to-bottom implementation strategies that could significantly contextualize China’s New National Urbanization Plan 2014–2020 and help the Chinese construction industry improve its urban land renewal skills. Introducing SWOT in urban renewal is recognized as a guideline towards sustainable development. A study based on SWOT facilitates a deeper understanding of the development status of planning management of prefabrication housing production (MPHP) in Hong Kong. The balance between supply and demand for housing is one of the most critical concerns in Hong Kong, which is why SWOT analysis offers the opportunity for major players to perceive the external and internal conditions of the development of prefabrication in Hong Kong [49,80].

In summary, SWOT-based analysis has seen rapid advancements in force-based virtual reality technology, but remains a challenge in many areas. SWOT analysis can be used in urban renewal and sustainable urban development as a general examination of strength, threats, opportunities, and weaknesses to make proposals for the sustainable reconstruction of old urban districts.

- The compact city fallacy

The seventh most cited article is entitled “The compact city fallacy” written by Michael Neuman, and published in the Journal of Planning Education and Research in 2005, with 409 citations. This article examined empirical evidence on the sustainability of compact cities whose urban sprawl has been debated to achieve the goals of these cities. However, the re-examination of old urban centers is a sustainable solution to limit urban sprawl and make cities compact. A design error of the compact city [78,81] has resulted in an increase in light and air. This has led to a less compact urban form, and the paradox is still unresolved despite recent research into compact cities, smart growth, and community health, and new urban planning efforts. The document concludes that designing the city in terms of form is neither necessary nor sufficient to achieve compact and sustainable city goals. Sustainability and mutability converge around the reconstruction of the city in the city [82]. Instead, designing the city in terms of process is more promising in achieving a sustainable city’s elusive goal [78,83]. For example, the project in Besancon [50], aims to assess the consequences of implementing a future urban renewal scenario at the urban level by 2030 based on the use of old fortifications.

In summary, linked to urban renewal and the compact city, a large amount of work has been evaluated and carried out for more sustainable urbanization. This is based on the interest in these spaces in terms of urbanization (urban form and mobility) and on a simulation of the urban growth over a long-term horizon, as part of a compact urban renewal scenario.

4.2. Evaluation of Sustainable Urban Renewal

As mentioned above, urban renewal studies related to sustainable development cover a wide range of topics, in which numerous researchers have evaluated sustainable urban renewal using various methods, techniques, and indicators. A culture-led urban regeneration strategy used the fuzzy Delphi method as an evaluation indicator [80,84] to develop a model to evaluate the management strategies of urban regeneration stations.
in Taipei City [51,85]. This method can be used as a benchmark to review and improve policy performance and identify key factors relevant to promoting urban regeneration by governments globally. The urban regeneration stations of Taipei City (a platform, network, and campaign) promotion project was launched in 2010 based on renovation without the use of demolition and reconstruction. The project combined new concepts and old guidelines, using historic buildings to encourage private investment and give investors the freedom to express their creativity [80,85]. The results showed that aspects of the city could be aligned to make Taipei a creative city through industrial promotion, based on the creation and revitalization of regional characteristics. This method constitutes a whole that includes urban regeneration, promotion, advice for urban renewal, restructuring of urban space, and community building.

Research by Y. Wang, J. Li, G. Zhang, Y. Li, and M. Henry [84], examined an urban renewal project that used a comprehensive system to calculate the evaluation values of the renewal of the village of Lieder in Guangzhou. This evaluation was based on the method called fuzzy theory [84]. The results show that the collective lands of Lieder are acquired by auction to address the issue of the source of reconstruction funds and to minimize tax penalties. The overall benefit of urban renewal is integrating and unifying government benefits, benefits for residents, and benefits for developers. This shows that the integrated evolution of urban renewal in the urban project has a remarkable effect on financial dynamism [86]. A systematic review of the literature based on PRISMA (preferred reporting items for systematic reviews and meta-analyses) methods was carried out [83,86,87]. The indicators affecting the regeneration of historic urban cores were examined and assessed according to their approach, period, and geographic and regional characteristics. The assessment was based on the interaction of four dimensions, namely, physical, economic, social, and cultural dimensions, to address the problems associated with urban centers. The result shows that the identity threats of these areas cause decomposition and deterioration of these urban textures or lead to the appearance of slums.

However, the unclear status of the social aspects in the sustainability debate is also because the social sciences have long ignored the sustainable development discourse. Thus, one model explains the relationship between the design of the built environment and social sustainability in urban renewal [22,36,39,88], based on a comprehensive review of the literature followed by a pilot study. The result of this study is a model that sensitizes urban renewal actors to social sustainability, clearly demonstrating the design elements to be taken into account to improve the social sustainability of urban renewal projects [36]. Attempts have been undertaken in various parts of the world to combine real estate development and conservation [69,71,89], based on the Coase Theorem. These include an exploration of how to preserve the built heritage and urban renewal in Hong Kong. This study approaches the potential of real estate development in the light of “urban renewal.” It then offers an analytical model for political orientation, for which the Coase Theorem is essential for a sustainable urban renewal project. For example, urban renewal without heritage reconsideration is equal to zero because a comprehensive conservation policy is a maximum value [84,90]. The loss of heritage in urban renewal is only a possibility and is based on a change of the actors’ mentality. Finally, an analytical model anchored in the Co-Saharan and Schumpeterian economy offers a means of focusing on the possibilities of redeveloping Catallaxis, on the one hand, and the conservation of the built heritage, on the other, through innovations in favor of sustainability.

4.3. Innovations

Cities typically face various challenges, such as urban degradation, environmental deterioration, lack of infrastructure, social problems, and economic decline [91]. Urban renewal is considered the ideal concept for the development of sustainable cities through various actions. This allows urban development to be considered as a system. According to Peter Drucker, “the best way to predict the future is to create it.” Thus, based on literature reviews since 2000, we chose the keywords related to urban renewal and sustainable urban
development. These were then analyzed using VOSviewer to identify the hot spots for future research. For each of the 10,576 keywords found by a pooled analysis of search results, the total strength of co-occurrence links with other keywords was calculated in VOSviewer. Of the 3971 publications analyzed, 1623 publications contained the keyword “urban renewal”, for which the total link number was 28,717. The keyword numbers for each publication were estimated to be between 4 and 5. We note that some keywords have similarities, namely, “urban renewal” and “urban development,” “urban regeneration” and “urbanism,” and “urban area” and “sustainable city”; these similar keywords helped us to study our case further. To better assess and identify hot spots for future research, we selected 1000 individual keywords with strong links for further analysis, as shown in Figure 13. By synthesizing common words and cluster analysis of database samples, the subtitles illustrate the keyword network of publications frequently linked to sustainable urban renewal from 2000 to 2020 (Figure 13). The popular research topics of urban renewal are defined by a complex system [69] based on cities’ key impacts and issues.

Figure 13. Key areas of research.

The grouped analysis of research results of the most cited articles by quotation topic from each country is an essential indicator of urban renewal and sustainable urban development research. This analysis indicates the scientific influence of a country in the current research. Among the 15 most productive countries, the United States was 18.20% and the United Kingdom was 13.66%. However, each country’s quotes also depend on the productivity of institutions, and the above data shows that the United States and the United Kingdom have more citations than other countries (Table 6). The results show advanced progress in research on urban renewal. This clearly demonstrates that sustainable urban renewal is essential to the sustainable development (SD) strategy, because cities are responsible for most of the world’s environmental carbon and resource footprints, and are home to more than half of the world’s population [64]. Consequently, the potential for synergies between urban renewal and the objectives of sustainable development goals enabled us to orient, in summary, four main areas of future research to improve the performance of methods and policies, and identify relevant factors for sustainable urban renewal. Primarily, critical analysis of the internal and external origins of urban and societal problems was undertaken. Then, we focused on the
impacts and challenges of urban renewal to develop land and improve the population’s living conditions and environmental quality. Our strategies also offer a unique opportunity to mobilize all stakeholders regarding the new urban renewal dimensions in a vision of urban sustainability. However, the different parties must engage in the decision-making for innovative solutions to make the urban renewal project sustainable. Urban renewal is a subject of increasing interest in a range of research related to improving and maintaining the living conditions of habitats and the quality of the environment, for a vision of sustainability. Figure 14 shows the axes of future research: (1) evaluation (strengths, weaknesses, opportunities, and threats); (2) analysis of internal and external origins; (3) engagement of different stakeholders; and (4) innovative solutions. In developing our four axes of future research on sustainable urban renewal, evaluation and analysis were combined to facilitate understanding. We also proposed major directions that will be the subject of future research.

![Figure 14. Concept of sustainable urban renewal.](image)

4.3.1. Evaluation and Analysis

The evaluation conducted in this study provides insights into the development of sustainable urban renewal. Based on the previous information, the evaluation is a reflection of awakening and mobilizing local actors to adopt the concept of sustainable communities. Evaluation can help strengthen actors’ collective capacity to act on a given policy, which is a key issue in urban renewal projects whose success depends on the mobilization of many actors and the fragmentation of resources between several institutions.

Evaluating residential mobility in sustainable urban renewal means explaining that land is an essential element and the basis of any urban renewal project. Sustainable urban renewal is also a re-examination of industrial wasteland in cities where the scarcity of land has become one of the main environmental, ecological, and health issues for local communities. However, “nothing is lost, nothing is created, everything is transformed”, as Antoine-Laurent de Lavoisier said [92]. If several factors are responsible for the birth of brownfields, these spaces are often located at the city’s heart. These spaces house key infrastructure services and are close to utilities and facilities. These abandoned wastelands allow real economic, social, and environmental opportunities and optimize abandoned industrial land remediation. This study examined various methods that have been previously developed for urban renewal or urban revitalization of different cities towards a vision of sustainable development. However, the results cannot be compared and may not be consistent with those from other assessment methods.
Another problem is the lack of data required to create social dynamics in neighborhoods, define the groups of inhabitants eligible for housing, and compensate for displacement related to urban renewal operations. A sustainable, fertile, resilient, and intelligent city relies on responsible governance of communicative and environmentally friendly resources and infrastructure, and seeks a high quality of life (urban comfort, convenience, transport, housing, and access to health, education, and culture), in addition to a good work and rich social life. A sustainable solution requires urban renewal, the establishment of an appropriate urban policy, or the rehabilitation of brownfields to reduce urban sprawl and land consumption. In short, the re-use of brownfields also contributes to sustainable urban development, which can be achieved by local authorities by establishing an excellent political and regulatory system. Monitoring of excellent multi-actor interactions is a condition for sustainable urban governance and sustainable urban renewal. Most of the existing research focuses on the social, economic, and environmental assessment of urban renewal. We invite researchers in future urban renewal evaluations to focus on in-depth assessments with four dimensions: social, cultural, economic, and environmental.

4.3.2. The Various Stakeholders

An urban renewal operation aims to transform the social housing neighborhoods that face many problems: being enclosed, remoteness from the rest of the city, economic and social difficulties, degraded outdoor spaces, a lack of public services, etc. Urban renewal is becoming a lasting success through the participation of all stakeholders in the project. This can take many forms: simple identification, information, consultation, mediation, negotiation, collaboration, partnership, and delegation of power. Among these stakeholders, public authorities play a key role in promoting sustainable urban renewal through efficient policies, regulations, and programs. This facilitates the participation of residents in decisions, not only as users, but also as full players in urban renewal projects that are beginning to take hold. To achieve sustainable urban renewal, the various stakeholders must analyze and resolve internal problems (strengths and weaknesses) and external origins (threats and opportunities). Another area of research in the context of sustainable urban renewal is the proposal to public authorities and private partners to act together on existing fabrics by promoting the intensification of residential neighborhoods, the transformation of activity areas, and the rehabilitation of buildings under a genuinely sustainable vision. In summary, the engagement of all stakeholders in the decision-making process in terms of effective collaboration, including the involvement of resident, is essential for future research on sustainable urban renewal. We also invite future research to be articulated around the development of tools and urban renewal methods; the search for new financing techniques for urban renovation projects; and finally, the preservation and reuse of built and industrial heritage by respecting the conservation of the urban renovation project’s environment.

4.3.3. Innovative Solutions

In reality, the problem of a city relates to the precariousness of the lives of its inhabitants, and the fact that the city itself cannot improve inhabitants’ living conditions. Thus, after the analysis of the internal and external origins of urban problems, all stakeholders must decide unanimously to work toward a vision of sustainability as a solution to the various urban problems. In this sense, urban renewal is an effective solution for sustainable urban development over time and in well-managed spaces. Urban renewal and sustainable urban development are recognized as important tools to facilitate the reflection and visualization of the future [70]. An urban renovation project is sustainable, first, when an excellent multi-actor interaction is a prerequisite to sustainable urban governance and sustainable urban renewal; and, second, when the definitions of urban policies and rules are clear.

In general, priorities are proposed to consider the inhabitants’ concerns and the central players in urban planning, for which the consultation method is varied. The main
focus is to facilitate cooperation between the various stakeholders to renovate cities or neighborhoods sustainably. Therefore, it is necessary that all stakeholders are committed to finding innovative solutions. This also offers possibilities for future studies that refer to 1) the scarcity of urban land in developed countries (assessment of the renovation of abandoned areas or brownfields, depending on soil pollution); and 2) urban sprawl and demographic growth in developing countries (the renovation of old urban centers to limit population and spatial expansion as a sustainable solution).

5. Conclusions

Urban renewal has been practiced globally since the 19th century in various forms, such as the recurrent response to the problems of historical urban centers. Urban renewal is an ideal approach to promoting the value of the urban fabric and improving the sustainability of the urban environment. Thus, numerous possibilities for sustainable solutions have been proposed by several researchers relating to urban renewal and sustainable urban development. The current study undertook research on sustainable urban renewal since 2000 using library and visual analysis. This paper provides a major review of research progress based on 3971 scientific papers from the SCI and SSCI databases to address the remaining gaps in sustainable urban renewal research.

Although only the Web of Science was used as a research database, the analysis of impact and relevance measures of scientific output was undertaken for the most productive journals. According to the analysis of the documents reviewed and the annual citations, we note the research progress evident in the journals Cities, Urban Studies, Sustainable Cities and Society, the Journal of Urban History, and PloS ONE. The annual number of total publications has fluctuated and the research progressed in particular categories, including the Sustainable Cities and Society and Cities journals.

Regarding current research topics, keywords of publications related to urban renewal and sustainable urban development were analyzed using VOSviewer to assess and identify potential popular topics for future research. Our assessment was based on seven of the most frequently cited (over 400 citations) articles on urban renewal and sustainable cities' development. The most productive authors are Chan. EHW, Kearns. A, and Bibri. SE, and the most cited authors are Anna. C, Cohen B, and Rizzo A.

Given the academic and institutional contribution to the progress of the research, we proposed future research directions that link urban renewal and sustainability. The engagement of all stakeholders in the decision-making process in terms of effective collaboration, including the involvement of inhabitants, clearly constitutes another area of potential future study on healthy sustainable urban renewal. Another potential research area is the development of cooperation between cities or countries to facilitate the exchange of experiences relating to the search for tools and methods of urban renewal, in addition to new financing techniques. A final topic is the preservation and reuse of built and industrial heritage consistent with laws relating to environment preservation.

A perspective based on our different analyses indicates that a trend has been established in research into sustainable urban renewal methods, and that urban renewal constitutes a popular research topic for sustainable urban development (Figure 14). Four areas of future research encompass the sub-themes raised during the evaluations and debates outlined above, namely: (1) evaluating data and problems associated with renovation of cities; (2) analysis of the internal (strengths and weaknesses) and external (opportunities and threats) origins of the issues; (3) the commitment of all stakeholders in the decision-making process, including the involvement of residents, which is an essential field of future research on sustainable urban renewals; and (4) the search for innovations in sustainable urban renovation to perpetuate urban renewal projects.

This study was subject to some shortcomings. For example, the input data for VOSviewer was taken from Web of Science and Scopus (SCIE and SSCI). In addition, over 98% of the articles collected for our analysis were written in English, and those written in other languages were neglected. Nonetheless, this article could help researchers, via
the review section of existing studies on urban renewal and the discussion section, to also identify directions for future research through the sub-themes that were evaluated.

Author Contributions: Conceptualization, B.Z.; methodology, B.Z. and F.M.; software, F.M.; validation, B.Z.; F.M.; J.Z. and G.M.G.; formal analysis: B.Z.; F.M.; J.Z.; L.L. and G.M.G.; writing—review and editing, B.Z.; G.M.G.; L.L. and F.M.; major revisions, B.Z.; F.M. and G.M.G. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the Research on Spatial Restoration and Landscape Planning Application of Historic Towns in the Xiangjiang River Basin Based on Multi-source Historical Information, grant number XSP20ZDI020; This thesis was also funded by the China Scholarship Council, grant number 202006150051.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Not applicable.

Conflicts of Interest: The authors declare no conflict of interest.

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