International Journal of Computer Information Systems and Industrial Management Applications
ISSN 2150-7988 Volume 18 (2026) pp. 1-25

Article

Who is Leading the Housing Satisfaction Study: A Bibliometric Analysis based on Bibliometrix Tools and CiteSpace

Ying Li[1,2], Chin-Hong Puah[1,*] and Hamrila Abdul Latip[1]

[1] Faculty of Economics and Business, Universiti Malaysia Sarawak, Kota Samarahan, 94300 Sarawak, Malaysia
[2] School of Civil Engineering and Architecture, Fuzhou Institute of Technology, Fuzhou, Fujian, 350012, China
* Correspondence author: Yun20071986@126.com

Abstract: Due to its significant implications for individual well-being, community cohesion, and socio-economic development, housing satisfaction has increasingly become a critical topic in urban studies, sociology, and public policy. In 2023 alone, 149 articles related to housing satisfaction were indexed in the Web of Science Core Collection (with a cumulative total of 1,383 articles as of August 15, 2024). While these contributions enrich the research field, they also present challenges of information overload and difficulty in filtering relevant studies for application. Consequently, this study employs bibliometric methods to analyze the performance of existing research, focusing on key actors and influential works from five perspectives: country/region, institutions, authorship, publication sources, and citation metrics. Additionally, it categorizes the main branches of housing satisfaction research based on terminological standards to assist stakeholders in quickly identifying potential opportunities for support, collaboration, and citation. The results indicate that the United States and China dominate the field nationally, with institutions such as the Ohio University System and Hong Kong Baptist University forming the core research collaboration networks. At the author level, Hur Misun, Mouratidis Kostas, and Lu Max emerge as the most influential authors in terms of cumulative impact, short-term influence, and citation frequency, respectively. In terms of research branches, the most concentrated topics include residential satisfaction, housing satisfaction, and neighborhood satisfaction. The study also reveals that the research collaboration network in this field is relatively fragmented, with a reliance on traditional data sources and methods, and an overly concentrated distribution of research topics

Keywords: Satisfaction; Housing satisfaction; Bibliometric; CiteSpace; Bibliometrix Tools

1. Introduction

Habitation constitutes a fundamental prerequisite for human survival [1]. According to the Secretary General (2020), every individual possesses the entitlement to adequate housing standards [2]. Following the controlled demolition of certain Pruitt-Igoe buildings in 1972, authorized by the US Department of Housing and Urban Development, numerous scholars have embarked on studying housing and its quality, with particular emphasis on utilizing housing satisfaction as a widely employed metric for assessing subjective housing quality [3].

1.1. Definition of Housing Satisfaction

Initially, scholars encountered challenges in operationalizing the concept of 'residential satisfaction,' leading most researchers to define it based on responses to specific housing-related questions within a sample group. Notably, the definition presented by Campbell et al. (1976) in 'the residential environment' has had a profound impact [4]. They posit that residential satisfaction is derived from comparing one's evaluation of living conditions with internal standards formed through past experiences and observations. Presently, scholars continue to refine the concept of housing satisfaction.

For instance, Riazi and Emami (2018) assert that housing satisfaction assesses the extent to which current residents perceive their living and environmental quality as meeting their expectations [5]. Shrestha et al. (2023) argue that housing satisfaction reflects how well housing enables residents to achieve their housing goals [6]. Davoodi et al. (2023) propose that housing satisfaction serves as an assessment of whether residents' needs, expectations, and aspirations regarding their dwelling and environment are being fulfilled [7]. This study not only does not limit the definition of housing satisfaction but also encompasses related terms commonly used to express household contentment such as house satisfaction, resident's satisfaction, residential satisfaction, neighbourhood satisfaction, residents' satisfaction, and neighborhood satisfaction [8].

1.2. Background of the Study

According to the literature indexed in the Web of Science database, a total of 83 countries, 458 institutions, 687 authors, and 1,022 articles have been dedicated to investigating "housing satisfaction" since 1974. Since 2006, there has been a consistent growth in research on housing satisfaction, with a current count of 1,410 studies incorporating the terms "housing" and "satisfaction" (or their synonymous counterparts) within their titles as of August 15th, 2024. Additionally, there were also 449 studies encompassing "housing satisfaction" and its synonyms or related terms in their titles. In the year alone of 2023, the former reached a count of 99 while the latter amounted to an additional tally of 42. While these findings have significantly contributed to advancing knowledge within the field of housing satisfaction research, they have concurrently presented challenges for users seeking relevant information due to limitations in financial resources and screening bias arising from an overwhelming number of potential literature candidates [9-10].

1.3. Objectives of the Study

Based on the conceptual definition and background analysis, this study employs bibliometrix tools in R language and Citespace software to analyze the research performance and classify research topics related to residential satisfaction in the Web of Science database using Bibliometric technology. The objective is to assist funding agencies, research institutes, enterprises, and researchers in identifying potential support, collaboration, and citation opportunities efficiently. The study focuses on three specific objectives: (1) Describing the overall development of the research topic based on annual paper publications and citations; (2) Ranking influential research components and significant findings regarding housing satisfaction using widely recognized bibliometric indicators; (3) Conducting collaborative network analysis through CiteSpace to identify key researchers representing different branches of research.

1.4. Article Structure

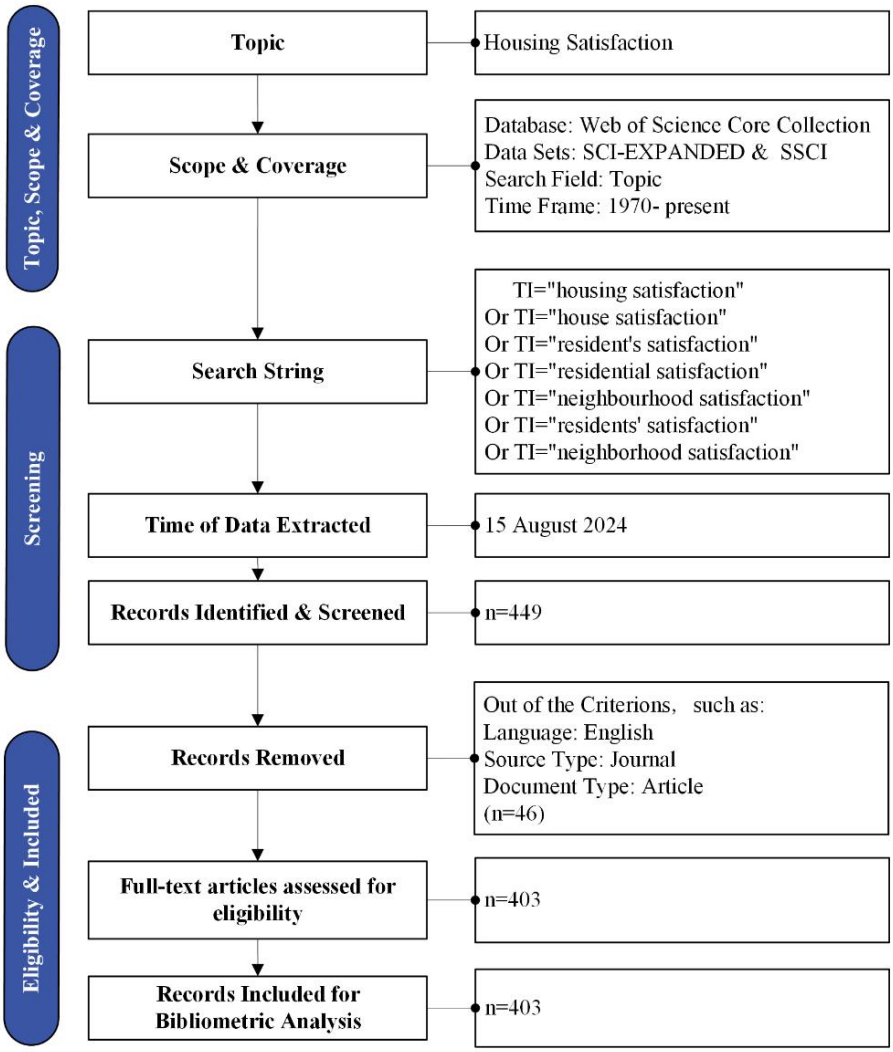
The first part of this paper, namely this section, primarily addresses the definition of the research object, research background, research objectives, and article structure. The subsequent sections are organized as follows. Section 2 describes data sources and bibliometric methods. Section 3 presents the research findings from three perspectives: overall development of this research topic, ranking of research components, and heterogeneous network analysis of research subjects and terms. Section 4 discusses current limitations and future directions for housing satisfaction research cooperation. Finally, Section 5 concludes this study.

2. Methodology

Bibliometrics integrates the methodologies of philology, informatics, mathematics, and statistics to quantitatively analyze the quantity, distribution, and trends of all knowledge carriers [11]. Through these quantitative analyses, bibliometrics can unveil the developmental trajectory of scientific research, knowledge structure, and academic performance of the analyzed components [12]. Currently, it has found extensive applications in various disciplines such as medicine [13-14], education [15], economy [16-17], and other multidisciplinary research topics [18-19]. The functionality of bibliometrics aligns perfectly with the research objectives and methods mentioned in section 1.3 of this study; hence this paper adopts bibliometric analysis as its chosen methodology. The effectiveness of bibliometric analysis is closely linked to data quality and research strategies [20-22]. This section provides detailed information on data sources, data quality testing procedures, data analysis strategies employed as well as interpretation strategies for obtained results.

2.1. Data Sources

While PRISMA (Preferred Reporting Items for Systematic Reviews and meta-analysis) guidelines are widely recognized as a standardized approach for conducting literature reviews [23], they have been extensively employed in the domains of management, business, and other research areas [24-26]. In this study, we adhered to the PRISMA guidelines to ensure transparency and reproducibility throughout the entire process of literature review. To mitigate potential errors arising from manual data integration [20] and address the necessity for accurate citation information on scientific research accomplishments [27], our focus was solely on two core datasets sourced from the Web of Science database: "Science Citation Index Expanded (SCI-EXPANDED) --1970-present" and "Social Sciences Citation Index (SSCI)--1970-present," due to their distinct characteristics and differences. The detailed data collection process is illustrated in Figure 1.



Source: Authors' Creation.

Figure 1. Flow Diagram of Data Collection

The information presented in Figure 1 illustrates that the data collection process encompasses three distinct stages: Firstly, the search scope is tailored to align with the specific objectives of the study. Secondly, building upon Emami and Sadeghlou's (2021) extraction method, a well-defined retrieval strategy is formulated and implemented [8]. Lastly, data were meticulously cleansed based on exclusion criteria [28-29]. As of August 15, 2024, an initial pool of 449 data points was gathered for this investigation. Subsequently, after removing 46 entries during the screening process, a total of 403 data points were ultimately included in the literature metrology analysis (refer to Table 1 for comprehensive details regarding the data cleaning procedure and outcomes).

Table 1. The Details of Data Cleaning

Document Type	Total Publications	Exclusion (Yes/No)	Number Of Inclusion
Article	388	No	388
Article; Early Access	4	No	4
Article; Procedings Paper	11	No	11
Book Review	15	Yes	0
Correction	2	Yes	0
Meeting Abstract	23	Yes	0
Note	1	Yes	0
Review	5	Yes	0

Source: authors' creation.

2.2. Data Quality Testing

Despite the core dataset of the Web of Science database, which is subject to technical limitations [30], academic citation habits [31], policies [32], and language barriers [33], incomplete information may still exist. To ensure accuracy and scientific rigor in literature measurement, it is crucial to prioritize information integrity [34] and structural compliance of analyzed data as much as possible [35]. Therefore, this study employs the Bibliometrix tools based on R language to assess both the information integrity of literature data and suitability of evaluation content [36]. The results are presented in Table 2.

Table 2. The Details of Missing Data and Evaluation Conclusions

Metadata	Description	Missing Counts	Missing %	Status
AU	Author	0	0	Excellent
DR	Cited References	0	0	Excellent
DT	Document Type	0	0	Excellent
SO	Jounal	0	0	Excellent
LA	Language	0	0	Excellent
PY	Publication Year	0	0	Excellent
WC	Science Categories	0	0	Excellent
TI	Title	0	0	Excellent
TC	Total Citation	0	0	Excellent
RP	Corresponding Author	11	2.73	Good
DI	DOI	21	5.21	Good
C1	Affliation	28	6.95	Good
AB	Abstract	54	13.4	Acceptable
ID	Keywords Plus	77	19.11	Acceptable
DE	Keywords	106	26.3	Poor

Source: authors creation.

The evaluation findings presented in Table 2 suggest potential concerns regarding the credibility of analysis results when utilizing the data collected in this study for keyword-related analysis. However, it is encouraging to note that Keywords Plus demonstrates an acceptable level of quality. Therefore, when conducting keyword analysis, it is advisable to employ "Keywords Plus" instead of solely relying on "Keywords". Furthermore, other aspects of the data exhibit satisfactory quality and meet or exceed established standards. Consequently, concerning data quality, the analytical conclusions drawn from this study can be deemed credible.

2.3. Data Analysis Strategies

The core techniques of bibliometrics encompass two key aspects: performance analysis and scientific mapping [20]. The former primarily involves extracting information from research components to evaluate their contribution to the object or field of study, as well as exploring correlations among these components using academic performance evaluation indicators. The latter focuses on visually representing the academic achievements of scientific research through cartographic visualization. In this study, data analysis commences with scientific mapping, followed by integrating a "result interpretation strategy" to summarize node characteristics in the knowledge graph. Ultimately, the performance analysis and generalization of analyzed components are accomplished through querying feature node information.

Different bibliometric visualization tools vary in terms of operational methods, results presentation,

and functional features [20]. Among them, Citespace not only demonstrates the evolutionary patterns of research topics, knowledge structure, and subject distribution but also provides a visual analysis of potential knowledge within research literature data [37]. It has demonstrated significant superiority and accuracy in bibliometric visualization [29], thus this study employs Citespace6.3.R3 software for scientific mapping. Specifically, two functions of the tool - co-citation network analysis and research cooperation network analysis - are primarily utilized to achieve the objectives outlined in this paper [38].

2.4. Results Interpretation Strategies

The visual map generated by CiteSpace consists of nodes and lines, with nodes representing various bibliometric components such as authors, institutions, countries, keywords, terms, disciplines, cited literature, cited authors, and cited journals [38]. The size of a node is proportional to its frequency of occurrence or citation and reflects its importance in the network [28]. Larger nodes indicate higher occurrence frequency or citation counts as well as greater values for Degree Centrality and Sigma in the literature metrology process. This signifies the component's elevated status within the network. Lines connecting nodes represent cooperative relationships between components; their width and density reflect the strength of cooperation while color indicates the time of first collaboration [28]. These connections form a network relationship that can be utilized for comprehensive information mining through network analysis to uncover potential knowledge structures. Network analysis encompasses both 1-mode network analysis where nodes have similar meanings and multi-mode network analysis involving heterogeneous networks [38]. In CiteSpace software specifically, co-citation network analysis reveals co-citation relationships among literature items including authors and journals; research collaboration network analysis exposes cooperative relationships among authors, institutions, and countries [38]. The "Cluster View" command along with "Burstness" are primarily employed in CiteSpace for extracting this information [38].

The Cluster View instruction is based on the natural clustering criterion, which categorizes the analyzed components and promotes close cooperation among nodes within each category, while inter-category cooperation is relatively limited. The significance of the clustering effect can be evaluated through two metrics: Modularity value and Silhouette value. The Modularity value ranges from 0 to 1, with higher values indicating better performance. A Modularity greater than 0.3 indicates a significant network clustering structure. On the other hand, the Silhouette value measures network homogeneity, with values closer to 1 representing higher homogeneity. Clustering results with a Silhouette value not lower than 0.7 are considered highly reliable, while results above 0.5 are also deemed reasonable [38].

The occurrence of a surge in an analyzed component over a specific period can be detected and visualized through the utilization of the Burstness command, which is presented as an outburst map. The red line on the outburst map signifies a significant increase in research results (burst), while the corresponding start and end points indicate the initiation and conclusion of the outburst respectively, with its length representing the duration of heightened activity. Persistent emergent components are often regarded as frontiers in research. Therefore, during document metrology, the primary purpose of employing Burstness instruction is to identify hotspots and frontiers within the research field [29].

3. Findings

Based on the bibliometric analysis, this section primarily presents research findings encompassing three key dimensions: the overall development of housing satisfaction research, an analytical ranking of influential components, and a heterogeneous network analysis examining research subjects and terminologies.

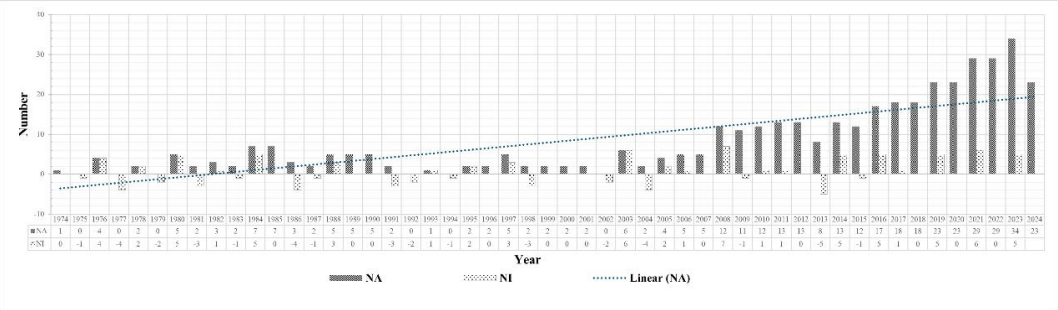
3.1. Overall Development of Housing Satisfaction Research

In this section, we provide a concise analysis of the research progress in housing satisfaction, encompassing the annual publication count, citation count, citation frequency, and average citation frequency.

3.1.1. Annual Number of Publications

Based on the findings from the Web of Science, research on housing satisfaction has evolved over the past 51 years since Spare (1974) published the first paper with the phrase 'housing satisfaction' in its title. As of August 15, 2024, a total of 403 English articles included variations and synonyms of 'housing satisfaction' in their titles. Figure 2 illustrates the annual publication trend in housing satisfaction research literature. The graph depicts an overall upward trajectory in the number of

published papers since 1974. Before 2000, there were significant fluctuations and no notable changes in annual publications. However, after 2000, there was a gradual increase observed in yearly publications, particularly evident since 2016 when there was a substantial rise reaching its peak at 34 papers published annually by 2023. The year-to-year growth displayed greater fluctuations with occasional negative growth rates recorded during certain years as well. Throughout the study period spanning from the seventies to the nineties, most years exhibited negative or near-zero annual growth rates indicating relatively slow or stagnant progress in terms of paper publications during this time frame. Upon entering into the twenty-first century, although volatility persisted regarding annual growth rates for papers published; an overall positive trend emerged especially noticeable after 2016 when positive growth frequency significantly increased. The trend line depicted indicates a gradual upward trajectory from 1974 to 2024 with accelerated growth rates observed post-2003.



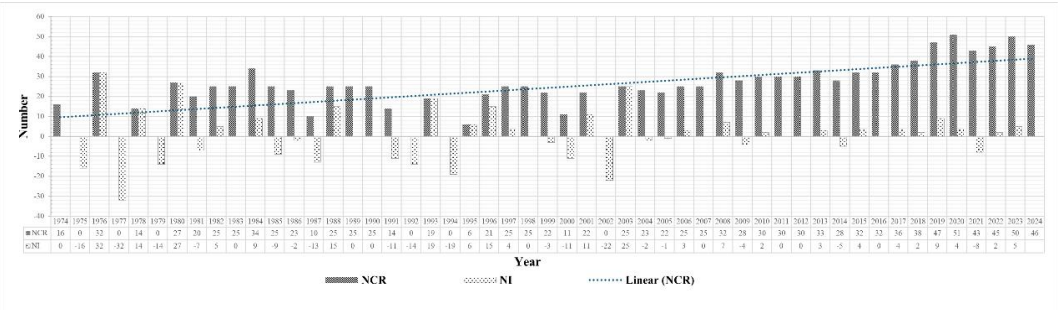
Source: Authors' Creation.

Note: NA=Number of Articles, NI= Number of Increase; The data for 2024 are only collected up to August 15, 2024, so the increase has not been calculated and charted.

Figure 2. Trend of Publication

3.1.2. Annual Number of Cited References

The cited literature is closely associated with the publication of the paper [39]. Among the 403 papers included in this study, a total of 1,086 citations were identified. Figure 3 illustrates the temporal distribution of cited documents concerning housing satisfaction research. Overall, excluding years without any published papers, the average annual number of citations was found to be 27.18, with a peak value of 51 observed in 2020; however, it should be noted that this peak year does not align with the highest number of published papers. Furthermore, unlike the continuous growth observed in recent publications, there were alternating fluctuations in the number of cited documents throughout the entire study period. Nevertheless, an overall consistent trend can still be discerned.



Source: Authors' Creation.

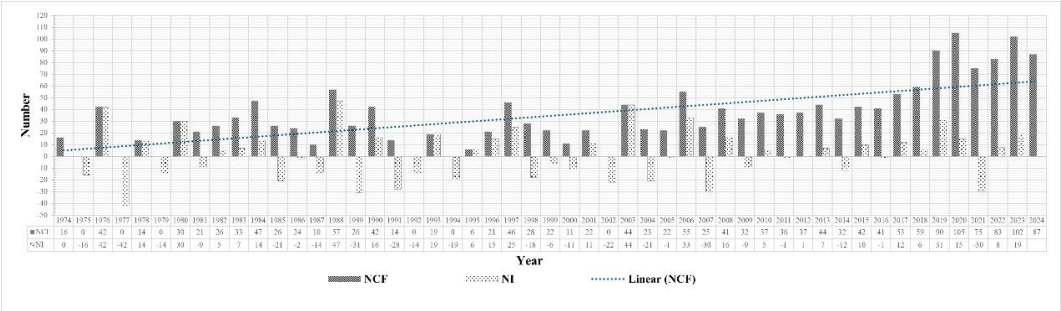
Note: NCR= Number of Cited References, NI= Number of Increases; The data for 2024 are only collected up to August 15, 2024, so the increase has not been calculated and charted.

Figure 3. Trend of Cited References

3.1.3. Annual Frequency of Cited References

Based on the fact that multiple papers can cite the same literature simultaneously, this study presents a statistical analysis of the Citation Frequency, with a total count of 1,768 citation frequencies. Figure 4 illustrates the annual citation frequency of references in the housing satisfaction research. Overall, there is an observed trend of fluctuating growth in annual citation frequencies. Starting from

single-digit numbers in the 1970s, particularly after 2000, there is a significant upward trend in citation counts, reaching its peak at 51 citations in 2020. The increase in citation frequency exhibits irregular patterns with noticeable fluctuations in both directions. In certain years, there are even substantial decreases rather than increases in citation frequencies; this may be attributed to variations in published papers and reference numbers per paper during those specific years. The trend line depicted indicates an overall increasing pattern for citation frequencies from 1974 to 2024 despite some intermediate fluctuations; notably after 2000, the growth trend becomes more pronounced.



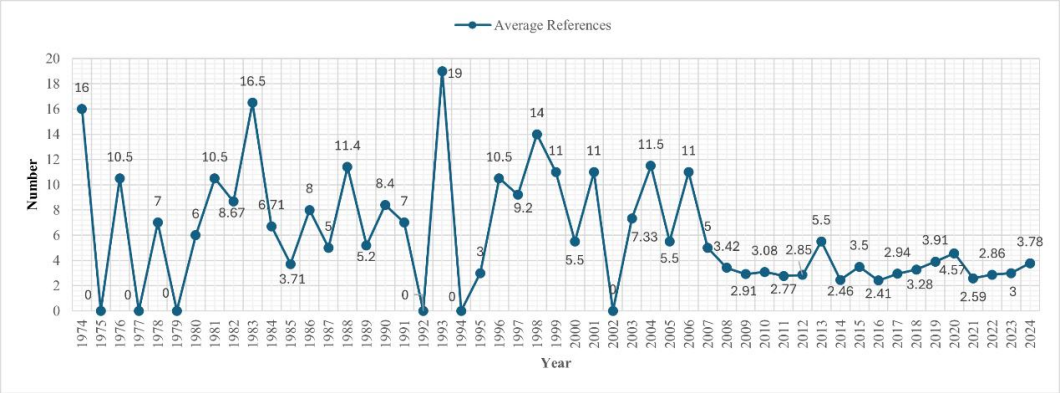
Source: Authors' Creation.

Note: NCF=Number of Citation Frequency, NI=Number of Increase; The data for 2024 are only collected up to August 15, 2024, so the increase has not been calculated and charted.

Figure 4. Trend of Citation Frequency

3.1.4. Annual Average Citation References

The trend in the number of Average References per year in the field of "housing satisfaction research" from 1974 to 2024 is illustrated in Figure 5. Overall, there is significant fluctuation observed in the average number of references, with noticeable variations between different years. Notably, during the period from 1974 to 1994, the average number of references exhibited substantial fluctuations. For instance, citation counts reached 16, 16.5, and 19 in the years 1974, 1983, and 1994 respectively; whereas no articles were published resulting in zero citations for the years 1975, 1977 and 1992. Fluctuations persisted from 1995 to 2005 but peaked around 2004 (11.5 references) before gradually declining after 2006. From 2006 to 2024, the average number of references tended to stabilize with minor fluctuations occurring approximately three times a year on average. The lowest point was recorded in 2008 with an average of 2.08 while 2013 witnessed a peak at 5.5. From then until 2024, the average number of references roughly fluctuated between 2.40 and 4.57.



Source: Authors' Creation.

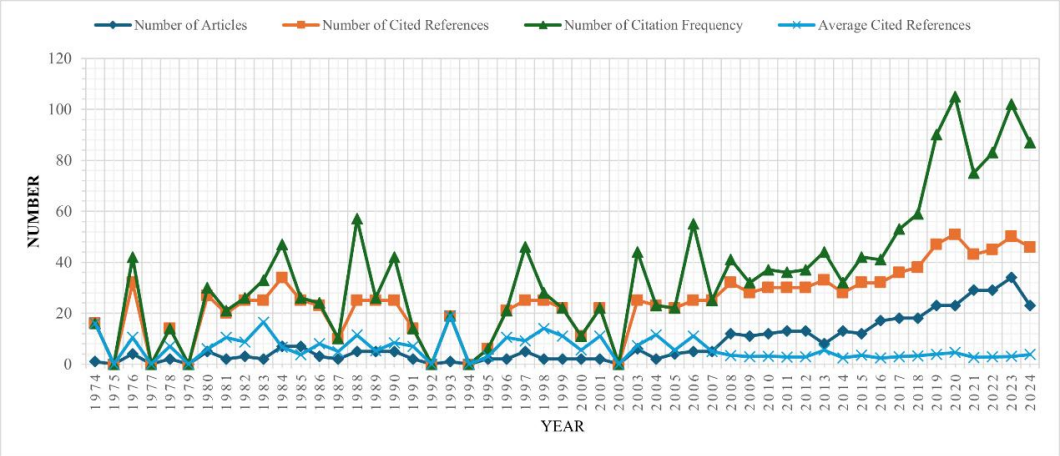
Note: Data for 2024 is only available until August 15, 2024.

Figure 5. Trend of Average Citation References

3.1.5. Summary of Development

Regardless of the number of annual number of publications, the number of annual citations, or the frequency of annual citations, these data exhibit fluctuations in individual years but consistently demonstrate an upward trend (refer to Figure 6 for specific data). This indicates a growing popularity in

housing satisfaction research. Similar to the development observed in general disciplines and research fields, early findings in housing satisfaction research tend to cite more recent literature; however, as they mature, there is a greater inclination towards citing classical works [40]. The average cited literature data presented in Figure 6 reveals that research on housing satisfaction has undergone three distinct stages. In earlier studies (1974-1994), the number of references cited fluctuated significantly, reflecting the potential scarcity or instability of available literature resources during the initial phase of this field's development. As we entered the 21st century, research gradually reached maturity with a stable average number of references cited-indicating an increasing abundance of foundational literature within this domain and researchers balanced and focused approach towards referencing relevant sources while writing papers. Since 2006 onwards, this stable trend has become particularly evident-signifying further maturation within this research field.



Source: Authors' Creation.

Note: Data for 2024 is only available until August 15, 2024.

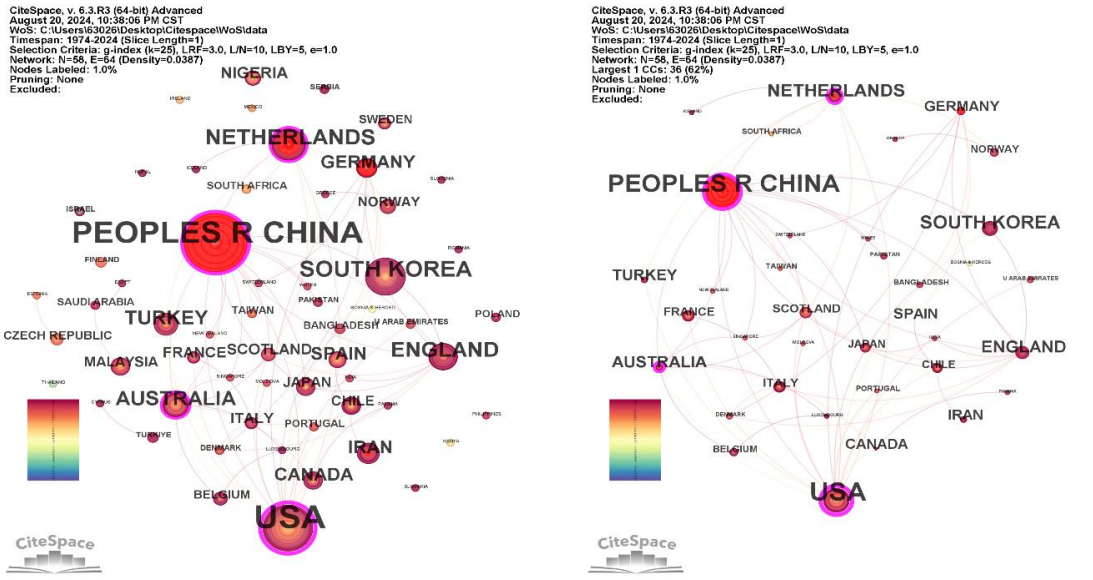
Figure 6. Comparative Analysis of Statistics

3.2. Influential Components

In this section, the ranking of key actors and significant outcomes in housing satisfaction research is determined using widely recognized indicators, including bursts, betweenness centrality, sigma, degree [38], number of publications [39], fractionalized articles [41], h-index [42], g-index [43], m-index [44], and total citations [22].

3.2.1. The Most Productive Countries/Regions

The network relationship of the national cooperative housing satisfaction study, as depicted in Figure 7 using Citespace software, is presented. In Figure 7(a), there are a total of 58 nodes representing different countries/regions involved in housing satisfaction research within the scope of this study's literature requirements. These nodes exhibit three significant characteristics: Firstly, the nodes labeled "USA" and "PEOPLES R CHINA" hold prominent positions in the figure, indicating their crucial roles in this research field. Secondly, four nodes are enclosed by purple rings on the graph, signifying their high intermediate centrality within the network. Thirdly, certain nodes are highlighted with red rings denoting a substantial increase in research output over a specific time period for these countries. To further analyze these phenomena comprehensively, we have conducted detailed queries on relevant nodes and summarized and displayed them in Table 3.



(a) Research Subject - country/region (b) The Only 1 Network of Co-countries/regions

Source: Authors' Creation.

Figure 7. The Network of Co-countries/regions

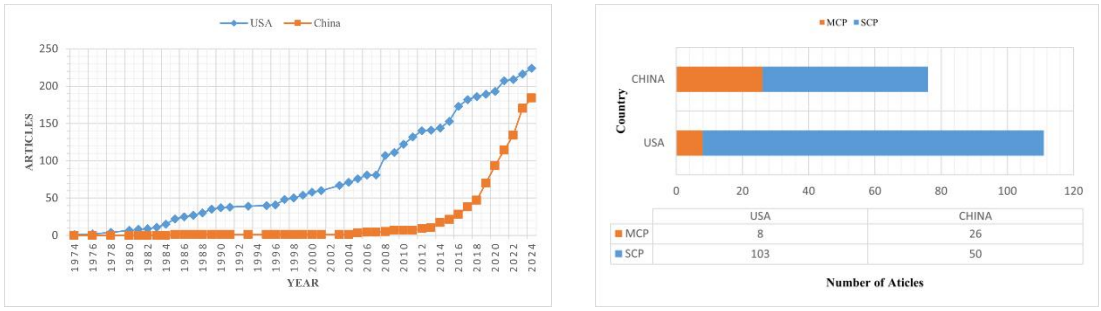
The data presented in Table 3 demonstrate that the USA and PEOPLES R CHINA hold the first and second positions, respectively, in terms of both quantity (NP) and quality (Sigma) indicators. The burst values and betweenness centrality indicators for these two countries indicate significant surges in publication volume within this research domain, highlighting their pivotal role in fostering national collaborative networks. However, it is important to note that their development trajectories differ. Figure 8(a) illustrates a broken line indicating that the United States exhibited earlier attention towards housing satisfaction research compared to China. Notably, China emerged as a later-comer in this field, particularly after 2010; however, its growth rate has gradually surpassed that of the United States. Additionally, Figure 8(b) reveals that Chinese scholars exhibit a greater emphasis on fostering scientific research cooperation compared to their American counterparts. Consequently, China has become the leading country concerning co-authorship within current studies on housing satisfaction (refer to Figure 9). Furthermore, it shares an equal position with the United States as part of the sole national research collaboration network within this specific research area (see Figure 8(b)). Remarkably, at the present stages of investigation (as depicted by Figure 10), China stands out as the only hotspot country.

Table 3. The Top 10 Productive Countries/Regions of Publications

NO	NP	C/RN	BURSTS	C/RN	BC	C/RN	Sigm a	C/RN
1	122	USA	22.63	USA	0.41	USA	2320.7	USA
2	86	PRC	2.71	PRC	0.24	PRC	1.79	PRC
3	25	SOUTH KOREA	2.53	NETHERLANDS	0.17	NETHERLANDS	1.48	NETHERLANDS
4	21	NETHERLANDS	2.5	IRAN	0.1	AUSTRALIA	1.25	GERMANY
5	18	ENGLAND	2.42	GERMANY	0.09	ENGLAND	1	AUSTRALIA
6	16	AUSTRALIA	0	SOUTH KOREA	0.09	GERMANY	1	ENGLAND
7	14	TURKEY	0	ENGLAND	0.06	CHILE	1	CHILE
8	12	GERMANY	0	AUSTRALIA	0.04	SCOTLAND	1	SCOTLAND
9	11	CANADA	0	TURKEY	0.04	CANADA	1	CANADA
10	11	SPAIN	0	CANADA	0.04	NORWAY	1	NORWAY

Note: NP=Number of Publications; C/RN=Countries'/Regions' name; BC=betweenness centrality; PRC=Peoples R China. source: authors' creation.

According to the index rankings presented in Table 3, apart from the United States and China, notable growth in publication output was observed for the Netherlands, Iran, and Germany. The Netherlands and Australia have also played a pivotal role as intermediaries in fostering national collaboration networks. Furthermore, the academic contributions of the Netherlands and Germany in housing satisfaction research exhibit substantial influence, ranking second only to that of the United States and China.

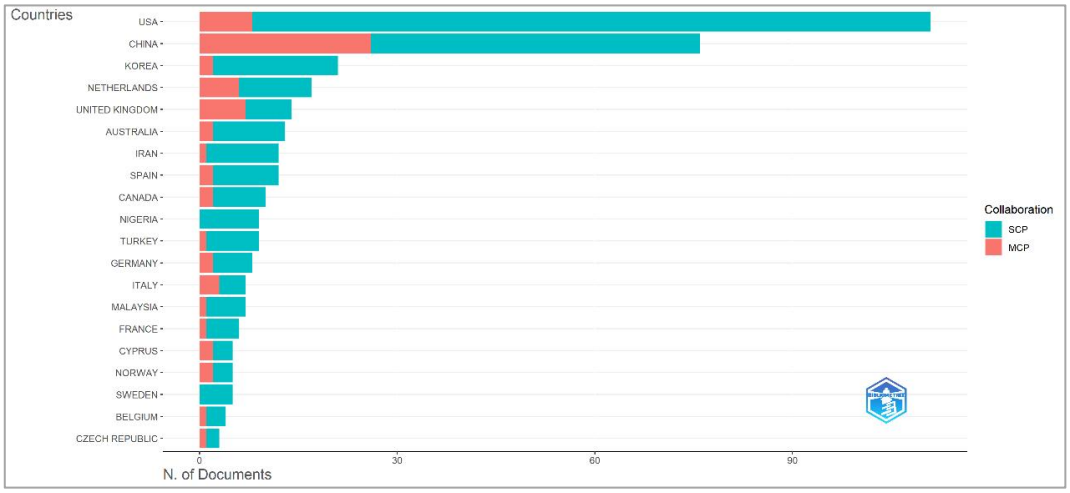


(a) Countries' Production over Time (b) Corresponding Author's Countries

Source: Authors' Creation

Note: SCP-Single Country Publications; MCP-Multiple Country Publications.

Figure 8. The Comparison of Annual Publication Volume and Author Collaboration between the USA and China



Source: Authors' Creation.

Note: SCP-Single Country Publications; MCP-Multiple Country Publications.

Figure 9. The Top 20 Countries with the Highest Number of Corresponding Authors and Their Respective Proportions of Author Types

Countries	Year	Strength	Begin	End	1974 - 2024
USA	1974	22.63	1974	2006	
NETHERLANDS	2003	2.53	2010	2017	
IRAN	2017	2.5	2017	2018	
PEOPLES R CHINA	2005	2.71	2018	2024	
GERMANY	2010	2.42	2020	2021	

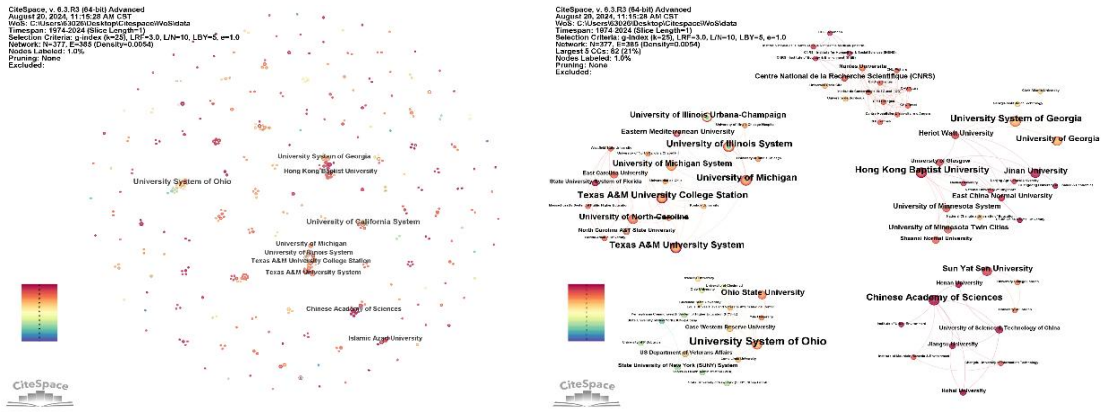
Source: Authors' Creation.

Figure 10. The Only 5 Countries with the Strongest Citation Bursts

3.2.2. The Most Productive Institutions

The network diagram in Figure 11 illustrates the collaborative partnerships among research institutions specializing in housing satisfaction research. As depicted in Figure 11(a), a total of 377 research institutions were included in this study, forming 385 cooperative relationships. Among these, the largest collaborative network consists of the University of Illinois System, University of Michigan, University of Michigan System, Texas A&M University System, and Texas A&M University College Station along with 20 other institutions. This network represents the leading consortium within the field

of housing satisfaction research. Additionally, four other cooperative networks are identified: the University System of Georgia, the University System of Ohio, Centre National de la Recherche Scientifique (CNRS), the Chinese Academy of Sciences and several other affiliated institutions. Notably, Hong Kong Baptist University and the Chinese Academy of Sciences have recently emerged as prominent contributors to ongoing collaborative efforts.



(a) Research Subject - institutions (b) The Top 5 Network of Co-institutions

Source: Authors' Creation.

Figure 11. The Network of Co-institutions

The performance indicators of scientific research institutions (as presented in Table 4) demonstrate that the University System of Ohio not only exhibits the highest productivity among all institutions but also maintains a sustained level of popularity over an extended period. Nantes Universite boasts the most extensive network of partnerships. Furthermore, considering scientific research institutions, the Chinese Academy of Sciences, the University System of Georgia, and Islamic Azad University have all witnessed substantial growth in their scientific research output within a specific timeframe. When combined with the results from explosive power testing conducted on these institutions (as depicted in Figure 12), it becomes evident that the Chinese Academy of Sciences has consistently maintained its research prominence and emerged as the sole leading institution in this field. However, based on BC index analysis, no institution plays a pivotal role in establishing an institutional partnership network for housing satisfaction research.

Institutions	Year	Strength	Begin	End	1974 - 2024
University System of Ohio	1993	2.31	1993	2014	
University System of Georgia	2005	2.17	2005	2009	
Islamic Azad University	2017	2.1	2017	2019	
Chinese Academy of Sciences	2017	2.26	2022	2024	

Source: Authors' Creation.

Figure 12. The Only 4 Institutions with the Strongest Citation Bursts

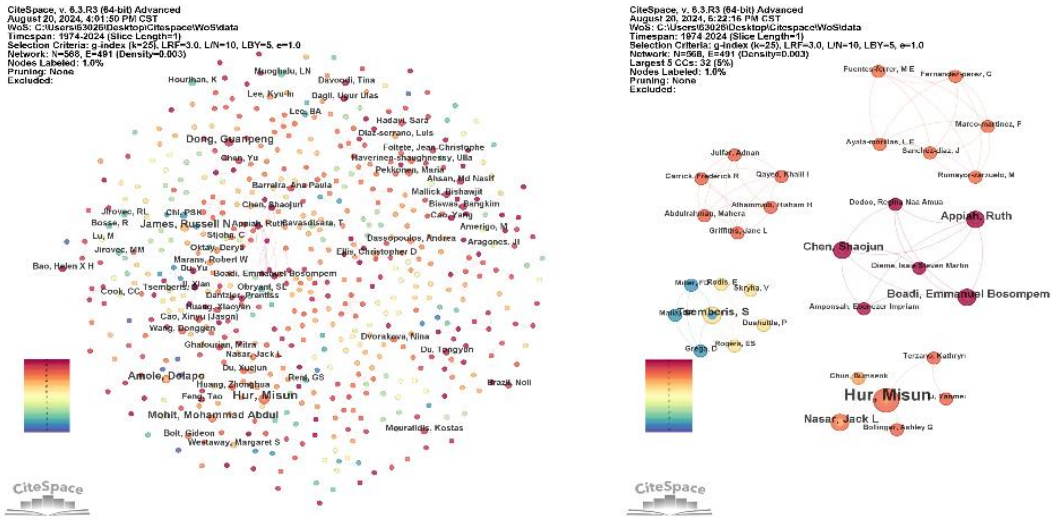
Table 4. The Top 10 Productive Institutions of Publications

No	NP	NI	Bursts	NI	BC	NI	Degree	NI
1	8	University System of Ohio	2.31	University System of Ohio	0	Nantes Universite	11	Nantes Universite
2	7	University of California System	2.26	Chinese Academy of Sciences	0	University System of Ohio	10	University System of Ohio
3	5	Texas A&M University System	2.17	University System of Georgia	0	University of North Carolina	10	University of North Carolina
4	5	Texas A&M University College Station	2.1	Islamic Azad University	0	University of California System	9	University of California System
5	5	University of Michigan	0	University of California System	0	US Department of Veterans Affairs	9	US Department of Veterans Affairs
6	5	Chinese Academy of Sciences	0	Texas A&M University System	0	Texas A&M University System	8	Texas A&M University System
7	5	Hong Kong Baptist University	0	Texas A&M University College Station	0	Texas A&M University College Station	8	Texas A&M University College Station
8	5	University of Illinois System	0	University of Michigan	0	CHU Rennes	8	CHU Rennes
9	5	University System of Georgia	0	Hong Kong Baptist University	0	CHU Tours	8	CHU Tours
10	5	Islamic Azad University	0	University of Illinois System	0	CHU Limoges	8	CHU Limoges

Source: Authors' Creation.
Note: NP =Number of Publications; NI= Name of Institutions; BC= betweenness centrality.

3.2.3. The Most Productive Authors

In this study, a total of 588 authors participated in the housing satisfaction research and were depicted in Figure 13 (a). They formed a cumulative total of 491 partnerships throughout their research. Figure 13 (b) illustrates the five largest co-author networks among numerous collaborations. Regarding the establishment time of cooperative relationships, Chen Shaojun, Emmanuel Bosompem Boadi, and Ruth Appiah exhibited relatively delayed formation of cooperative relationships. Conversely, Sam Tsemberis, Frederick D. Miller and Eleni Rodis. demonstrated comparatively early construction of their collaborative network.



(a) Research Subject - authors (b) The Top 5 Network of Co-authors

Source: Authors' Creation.

Figure 13. The Network of Co-authors

The author performance indicators presented in Table 5 indicate that Hur M has the highest absolute number of publications (as shown by the NP ranking). However, taking into account scientific research collaboration, as suggested by Aksnes et al. (2012), Mouratidis K has the largest number of published papers after converting collaborative papers (as indicated by the AF ranking) [41]. Based on both the H-index and the G-index, Hur M is considered to be the most influential author. Nevertheless, since his first study on housing satisfaction was published in 2008 and there have been no results on this topic since 2015, his M-index ranks only third among the top ten most productive authors. Only 10.30% of all authors have at least one paper related to housing satisfaction research and even Hur M's enthusiasm for this field seems to have waned over time despite having conducted research for a longer duration than others, therefore rendering all authors' M-index rankings irrelevant. Thus, we only present here an M-index ranking for the top ten most productive authors (see M-index ranking). According to Local Citations indicator analysis, Hur M is recognized as being highly influential within housing satisfaction research with a total of 133 citations received; making him also an author with intensive scientific research partnerships as demonstrated in Table 5 through "Degree" index values rankings. In terms of constructing a cooperative relationship network among authors within this field, however, no bridging roles are played by any particular individual(s) nor are there any significant increases observed in anyone's research output (burst=0 for all authors).

Table 5. The Top 10 Productive Authors of Publications

No	NP	NA	AF	NA	H-index	NA	G-index	NA
1	5	Hur M	3.5	Mouratidis K	5	Hur M	5	Hur M
2	4	Mouratidis K	2.5	Amole D	4	Mouratidis K	4	Mouratidis K
3	3	Amole D	2.33	James RN	3	Amole D	3	Amole D
4	3	Dong GP	2.17	Hur M	3	Dong GP	3	Dong GP
5	3	Ellis CD	2	Brazil N	3	Ellis CD	3	Ellis CD
6	3	Ibem EO	2	Hourihan K	3	Ibem EO	3	Ibem EO
7	3	James RN	2	Lu M [45]	3	James RN	3	James RN
8	3	Kaplan R	2	Mridha M	3	Kaplan R	3	Kaplan R
9	3	Kweon BS	2	Muoghalu LN	3	Kweon BS	3	Kweon BS
10	3	Mohit MA	2	Shiue I	3	Mohit MA	3	Mohit MA

Note: NP =Number of Publications; NA= Name of Authors; AF= Articles Fractionalized.
Source: Authors' Creation.

Table 5. The Top 10 Productive Authors of Publications (continued)

No	M-index	NA	LC	Author	Degree	NA	BC	Node Name
1	0.571	Mouratidis K	133	Lu M	7	Tsemberis S	0	Tsemberis S
2	0.429	Dong GP	115	Amerigo M	5	Hur M	0	Hur, Misun
3	0.294	Hur M	115	Aragones JI	5	Appiah R	0	Appiah, Ruth
4	0.25	Ibem EO	98	Hur M	5	Chen SJ	0	Chen, Shaojun
5	0.2	Mohit MA	72	Mohit MA	5	Boadi EB	0	Boadi, Emmanuel Bosompem
6	0.188	Amole D	68	Speare A	5	Ayala-morillas L E	0	Ayala-morillas, L E
7	0.176	James RN	57	Ellis CD	5	Griffiths JL	0	Griffiths, Jane L
8	0.158	Ellis CD	57	Kweon BS	5	Greene RE	0	Greene, Riley E
9	0.158	Kweon BS	54	Ibrahim M	5	Barussaud ML	0	Barussaud, M -L
10	0.075	Kaplan R	54	Rashid YR	5	Qayed KI	0	Qayed, Khalil I

Note: 1. NP =Number of Publications; NA= Name of Authors; BC= betweenness centrality; LC= Local Citations.
2. The M-index ranking in this table pertains exclusively to the top 10 authors with the most publications (NP). Conversely, the remaining index rankings encompass all authors within this research field.
Source: Authors' Creation.

3.2.4. The Most Relevant Sources

Table 6 presents a compilation of academic journals closely associated with housing satisfaction

research. Based on the data provided in Table 6, Demography was the first journal to include literature on housing satisfaction research, while Sustainability emerged as the journal with the highest number of publications in this field. Notably, Environment and Behavior ranked first in terms of citing housing satisfaction research findings. The H-index and G-index rankings indicate that Environment and Behavior has had the most significant cumulative impact among these journals. However, considering time as a factor, Sustainability demonstrates the highest impact according to M-index results. This can be attributed to its substantial increase in annual contributions since it began incorporating housing satisfaction literature into its scope, particularly after 2019; surpassing earlier journals such as Environment and Behavior (refer to Figure 14).

Table 6. The Top 10 Relevant Sources

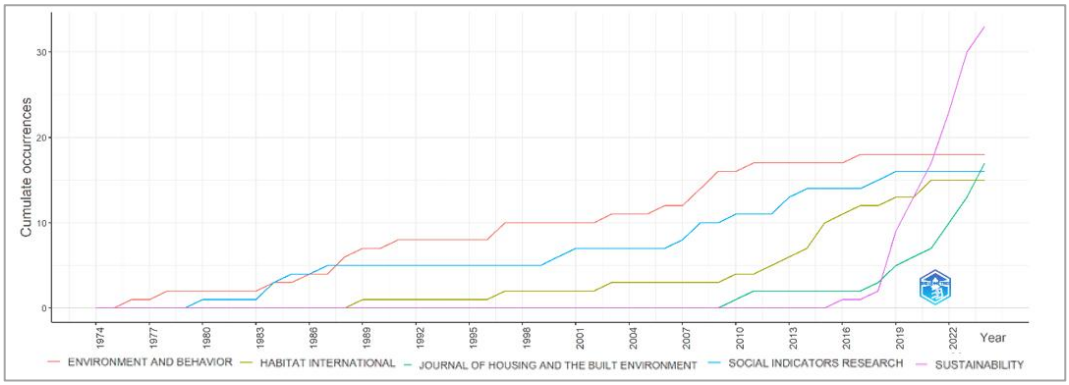
No	PY_s	Sources	NP	Sources	TC	Sources
1	1974	Demography	33	Sustainability	1237	Environment and Behavior
2	1976	Environment and Behavior	18	Environment and Behavior	1141	Journal of Environmental Psychology
3	1976	Journal of Marriage and The Family	17	Journal of Housing and the Built Environment	1088	Habitat International
4	1976	Housing Educators Journal	16	Social Indicators Research	733	Landscape and Urban Planning
5	1978	Journal of Educational Psychology	15	Habitat International	712	Social Indicators Research
6	1980	Social Indicators Research	14	Cities	649	Urban Studies
7	1980	Journal of Consumer Affairs	13	Urban Studies	541	Demography
8	1980	Journal of Social Issues	12	Journal of Environmental Psychology	383	Cities
9	1980	Singapore Journal of Tropical Geography	10	Landscape and Urban Planning	342	Growth and Change
10	1980	Social Psychology Quarterly	10	Journal of Asian Architecture and Building Engineering	341	Housing Studies

Source: Authors' Creation.
Note: PY_s=Start Publication Year; NP =Number of Publications; TC=Total Citations.

Table 6. The Top 10 Relevant Sources (continued)

No	H	Sources	G	Sources	M	Sources
1	16	Environment and Behavior	18	Environment and Behavior	1	Sustainability
2	14	Social Indicators Research	16	Social Indicators Research	1	Land
3	13	Habitat International	15	Habitat International	1	Buildings
4	11	Urban Studies	14	Cities	0.769	Cities
5	10	Cities	14	Journal of Housing and The Built Environment	0.625	IJERPH
6	10	Journal of Environmental Psychology	13	Urban Studies	0.6	Land Use Policy
7	9	Landscape And Urban Planning	13	Sustainability	0.5	International Journal of Disaster Risk Reduction
8	9	Sustainability	12	Journal of Environmental Psychology	0.5	Plos One
9	7	Journal of Housing and The Built Environment	10	Landscape and Urban Planning	0.5	Architectural Engineering and Design Management
10	6	Housing Studies	8	Housing Studies	0.5	Asia Pacific Viewpoint

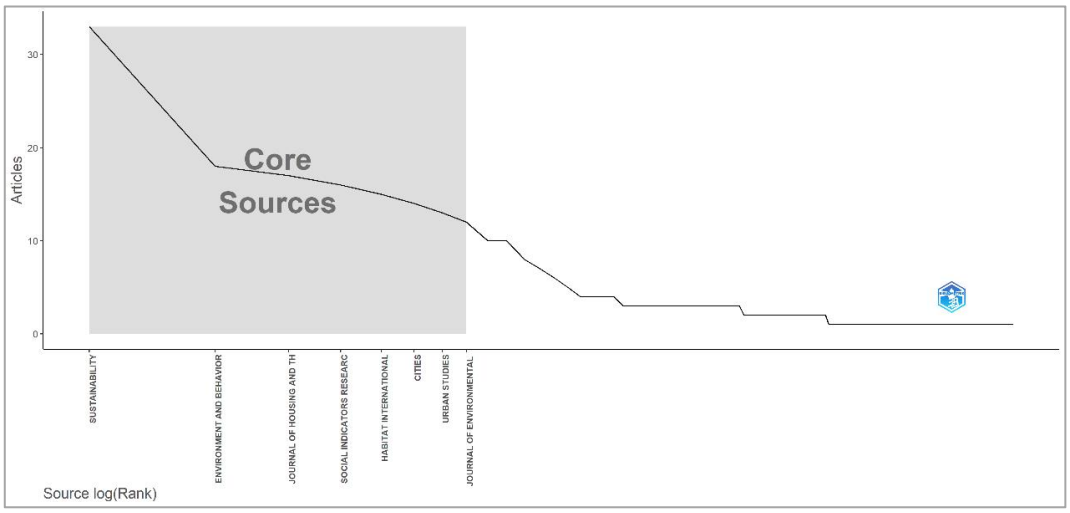
Source: Authors' Creation.
Note: H= H-Index; G = G-Index; M= M-Index; IJERPH=International Journal of Environmental Research and Public Health



Source: Authors' Creation.

Figure 14. Sources' Production over Time

In addition, based on the research process of Venable et al. (2014) [46] and Qiu et al. (2017) [47], as well as under Bradford's Law, it is possible to identify core journals that hold significant academic influence in the field of housing satisfaction research. These journals include Sustainability, Environment and Behavior, Journal of Housing and the Built Environment, Social Indicators Research, Habitat International, Cities, Urban Studies, and Journal of Environmental Psychology (refer to Figure 15).

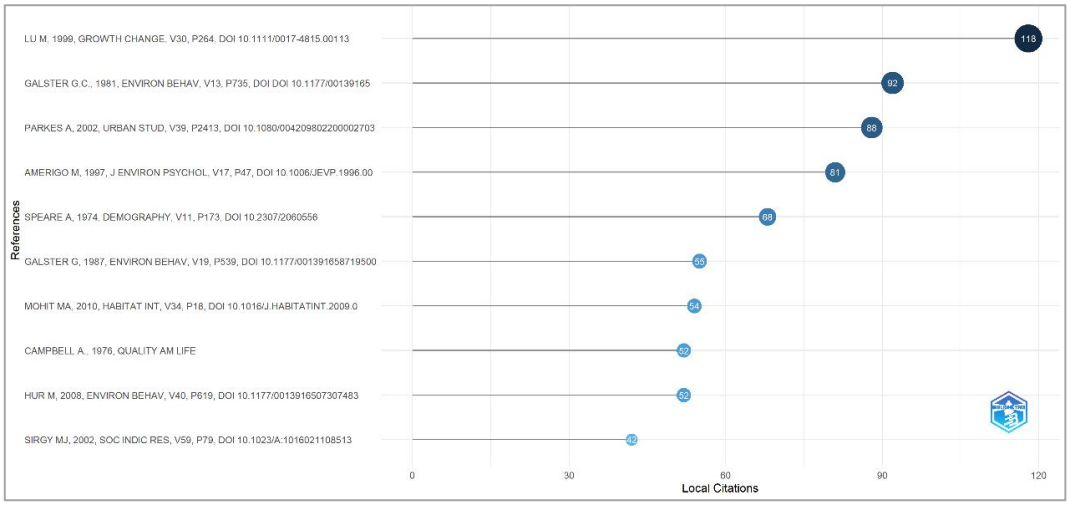


Source: Authors' Creation.

Figure 15. The core sources by Bradford's Law

3.2.5. The Most Locally Cited References

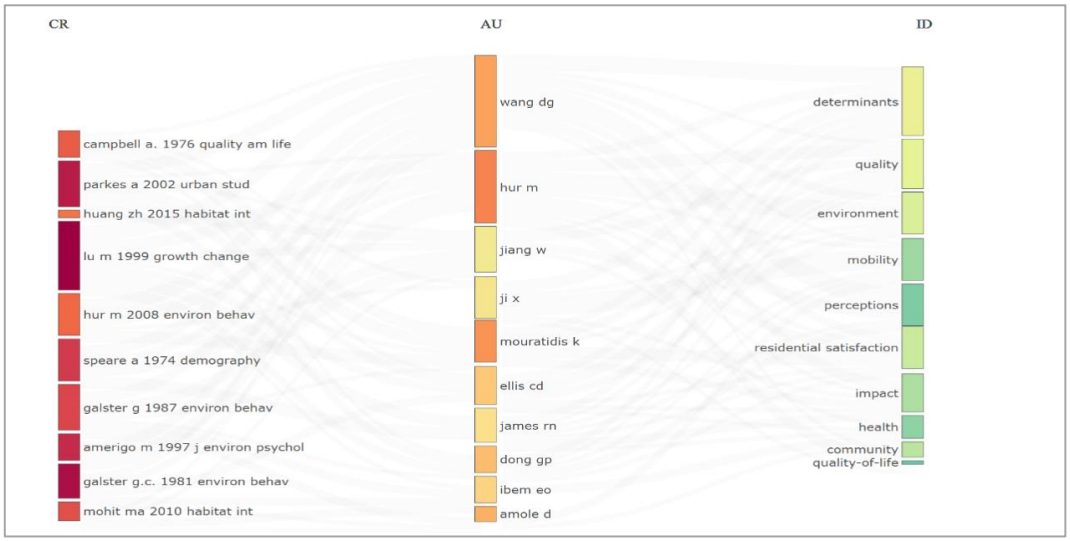
The top ten most frequently cited papers in the field of housing satisfaction research are presented in Figure 16. By conducting information mining on these ten papers (refer to Appendix A), it was observed that seven out of the ten papers originated from England, while the remaining three were contributed by researchers from the United Kingdom, Malaysia, and Spain. Among them, only two studies demonstrated theoretical advancements, whereas the other eight focused on empirical investigations concerning factors influencing residential satisfaction/dissatisfaction within specific research domains. These empirical studies relied on conventional methods such as surveys or interviews for data collection. Consequently, the findings derived from these ten literature sources collectively form a comprehensive knowledge base for housing satisfaction research.



Source: Authors' Creation.

Figure 16. The top 10 local cited references.

Through linkage analysis of the cited references, including authors and keywords plus (refer to Figure 17), we have identified Wang Donggen as the most frequently cited author among the top ten authors who have referenced these highly cited literatures. The other nine authors in descending order are Hur Misun, Jiang Wen, Ji Xian, Mouratidis Kostas, Ellis Christopher D, James Russell N, Dong Guanpeng, Ibem Eziyi Offia, and Amole Dolapo. These ten literatures are extensively utilized in research focusing on determinants, quality assessment, environmental factors etc., as indicated by their frequent appearance with relevant keywords plus (see details in the third column of Figure 17).



Source: Authors' Creation.

Figure 17. The Three-Field Plot among cited references (CR), authors (AU), and keywords plus (ID)

3.2.6. Summary of This Section

This section presents a comprehensive overview of the key subjects and significant findings in the study of housing satisfaction, organized according to performance indicators. By employing linkage analysis of cited literature, including authors and keywords, we delve into the detailed application of these important results. The subsequent section will further analyze representative subjects across different research categories.

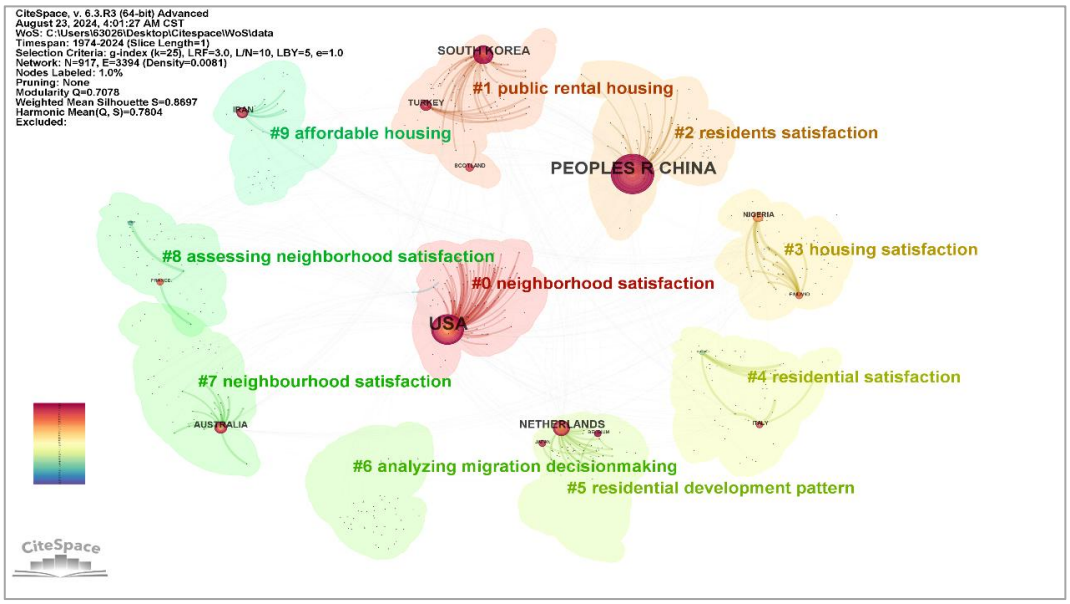
3.3. Heterogeneous Network Analysis of Research Subjects and Terms

A total of 896 terms are encompassed in the investigation of housing satisfaction, with 478

keywords being identified. Considering that the keyword recognition rate did not meet the threshold, this section aims to cluster the research subjects of housing satisfaction based on terms. The objective is to identify representative subjects from various branches of housing satisfaction research, facilitating users in swiftly grasping target subjects and their corresponding scientific findings while enhancing research efficiency.

3.3.1. Country-terms Heterogeneous Network Analysis

The clustering results of the top 10 countries/regions based on terms as classification criteria are presented in Figure 18. As depicted in the figure, cluster members numbered 0 and 7 predominantly focus on research related to neighborhood satisfaction, representing the United States (as evidenced by a large number of publications). Cluster members numbered 1 primarily concentrate on public rental housing, with China being their representative country. Cluster members numbered 3 mainly emphasize housing satisfaction and represent Nigeria. Similarly, cluster members numbered 4, 5, 6, 8, and 9 respectively center around residence satisfaction, residence development patterns, migration analysis and decision-making processes, neighborhood satisfaction evaluation, and affordable housing; their corresponding representative countries are indicated in Figure 18.



Source: Authors' Creation.

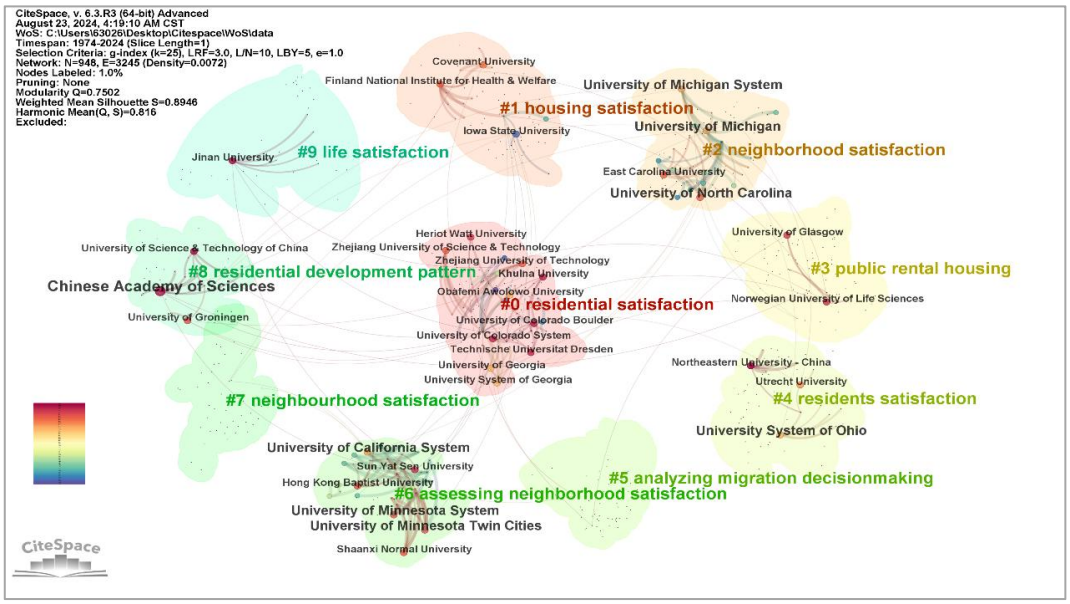
Figure 18. The Top 10 Clusters from Country-terms Heterogeneous Network Analysis

At the country/region level, employing term as the clustering criterion and utilizing Citespace software's Cluster view function, we identified a total of 23 highly reliable clusters (refer to Appendix B). These clusters exhibit a modularity Q value of 0.7078, weighted mean silhouette of 0.8697, and mini silhouette of 0.763. However, due to the limitation that each country and region can only be assigned to one category which may not encompass all their research focuses adequately, certain classified categories lack representativeness; for instance, cluster 6 in Figure 18. In fact, among the thirteen categories beyond Figure 18, only categories coded as 11,12, and 16 have representative countries/regions namely Canada, England, and Germany respectively. The remaining categories involve relatively fewer participating countries/regions with no dominant presence in their respective research outcomes; hence no representative country/region was detected.

3.3.2. Institutions-terms Heterogeneous Network Analysis

The cluster view analysis of the institutions-terms heterogeneous network reveals the 10 largest categories, as depicted in Figure 19. Among these categories, residential satisfaction emerges as the most prominent research focus for a significant number of institutions, with Khulna University and the University of Colorado Boulder being their representative contributors. Subsequently, other notable areas of interest include housing satisfaction, neighborhood satisfaction, public rental housing, residents' satisfaction, migration decision-making analysis, assessment of neighborhood satisfaction

levels, neighbourhood satisfaction, residential development pattern and life satisfaction. The respective representative institutions associated with these categories are also indicated in Figure 19.



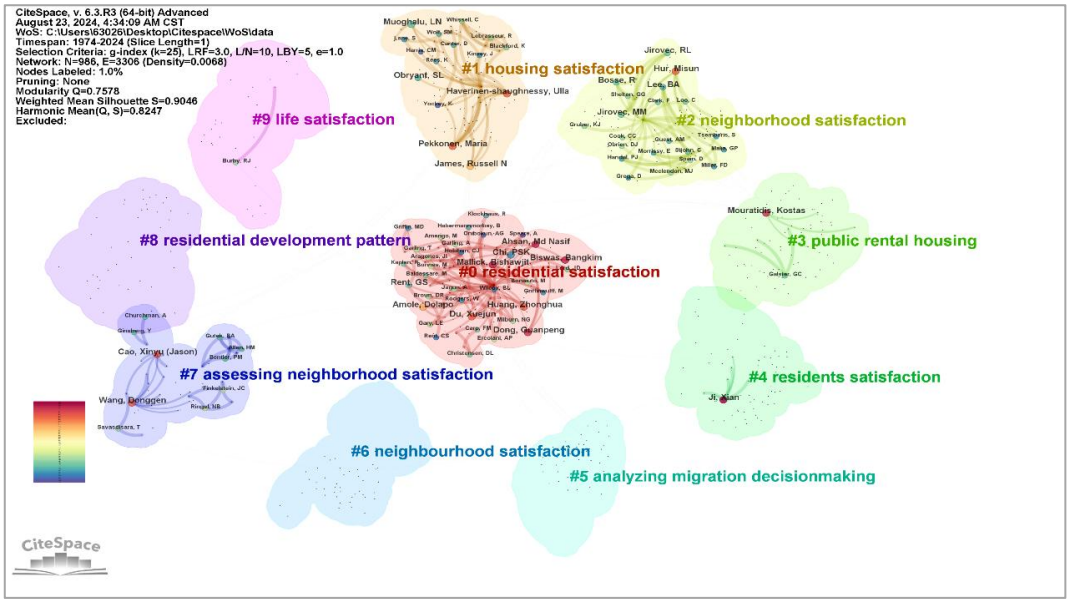
Source: Authors' Creation.

Figure 19. The Top 10 Clusters from Institutions-terms Heterogeneous Network Analysis

At the level of scientific research institutions, a total of 24 clusters with high reliability can be identified using term as the clustering criterion (refer to Appendix B for detailed information). The modularity Q of these clusters is equal to 0.7502, while the weighted mean silhouette and mini silhouette are measured at 0.8946 and 0.8120 respectively. Similar to the heterogeneous network analysis of country-terms, only categories with cluster codes 11, 12, 24, 25 and 29 exhibit representative institutions among the fourteen categories excluding Figure 19. These representative institutions are Hanyang University, Ohio University, State University of New York (SUNY) System, University of Illinois System, and Chulalongkorn University in sequential order.

3.3.3. Authors-terms Heterogeneous Network Analysis

The diagram in Figure 20 illustrates the cluster view of authors-terms heterogeneous network analysis, showcasing the ten clusters with the highest membership and their respective representative authors. Notably, our analysis detected a total of 22 highly confident clusters (refer to Appendix B). Similar to the phenomenon observed in the clustering of the country-terms heterogeneous network analysis, where certain categories lack representative entities, in the clustering of the authors-terms heterogeneous network analysis, only nine categories (coded as 0, 1, 2, 3, 4, 7, 9, 11, and 25) have identifiable representative authors. These authors are Mallick Bishawjit, Haverinen-Shaughnessy Ulla, Hur Misun, Mouratidis Kostas, Ji Xian, Wang Donggen, Raymond J. Burby, Kent P. Schwirian, and Kevin Hourihan.



Source: Authors' Creation.

Figure 20. The Top 10 Clusters from Authors-terms Heterogeneous Network Analysis

3.3.4. Summary of This Section

In this section, we employed heterogeneous network analysis to cluster the research entities at three levels: country/region, research institution, and author using terms as the classification criteria. We identified the representative entities within each category, which can effectively enhance the utilization efficiency of research outcomes in the field of housing satisfaction.

4. Shortcomings and Future Direction

4.1. Shortcomings

The aforementioned analysis process not only reflects the increasing maturity and standardization level of the research field of housing satisfaction but also highlights certain existing shortcomings in its developmental trajectory. Firstly, from a research subject perspective, there is generally a low proportion of international collaboration in current research outcomes. The cooperation network among scientific research institutions remains relatively independent, with no institutions exhibiting a BC index greater than zero. While some researchers, such as Hur M, have demonstrated high research output and academic influence within this field, overall, the researcher cooperation network appears scattered and lacks significant research concentration. Secondly, regarding highly cited literature sources for housing satisfaction studies, data collection still heavily relies on traditional methods like questionnaires or interviews; thus, there is an insufficient exploration of modern technologies such as big data to objectively reflect satisfaction levels. Lastly, concerning research topics within this field, there exists a relatively high concentration which results in an imbalanced distribution of scientific research outcomes across different branches. This imbalance is evident in cluster analyses conducted at three levels: country/region level, scientific research institution level, and author level; furthermore, numerous categories lack representative entities.

4.2. Future Direction

To enhance the breadth and depth of research on housing satisfaction, future studies should focus on strengthening international collaboration and research network development, diversifying data sources and research methods, and balancing the distribution of research topics and subfields. Firstly, creating or participating in international research alliances can establish platforms for international cooperation, promoting collaboration among research institutions and scholars from different countries. Regular international conferences and workshops will further deepen cross-border cooperation and knowledge sharing. Meanwhile, by implementing joint research projects, facilitating collaborative publications by international teams, and sharing research facilities, the connectivity of research networks can be improved, thereby fostering collaboration among institutions and increasing the BC index of these

networks. Secondly, regarding research methods, the application of big data, artificial intelligence, and other digital technologies should be promoted to enrich the data sources and analytical approaches in housing satisfaction research. Encouraging interdisciplinary collaboration among fields such as social sciences, computer science, and statistics will aid in developing new methods and tools, further enhancing the scientific rigor and objectivity of research. Finally, to promote the diversity and balanced distribution of research outcomes, researchers should be encouraged to explore a wide range of research topics, thereby reducing the concentration of specific themes. Supporting the balanced development of different regions and institutions through special funds, research awards, and assistance to underrepresented research groups will contribute to a more equitable distribution of research outcomes across various subfields.

5. Conclusion and Discussion

Based on a comprehensive analysis using the bibliometrix tools in R language and Citespace software, this paper ranks the key subjects and important components of housing satisfaction research. Additionally, a cluster analysis of existing research topics based on terminology is conducted. The results show that:

(1) Since the publication of the first paper titled "Residence Satisfaction" in 1974, significant advancements have been made in this field. This is evident from the gradual increase in annual paper publications, citations, and citation frequency, as well as the stabilization of average references. Notably, after 2000 there has been a substantial rise in published papers along with an increased academic influence and accelerated research interest that reached its peak in 2023.

(2) At a country/regional level, housing satisfaction studies are predominantly dominated by the United States and China. While early contributions were made by the United States, China has exhibited remarkable growth in recent years, particularly regarding research cooperation. At an institutional level, top universities and research institutions such as Ohio University System and Hong Kong Baptist University form core networks for collaborative research activities playing pivotal roles in advancing this field. Analysis at an author level indicates that although some authors like Hur M demonstrate high output and influence within this domain; overall author concentration remains relatively low with dispersed collaboration networks. In terms of cited literature, empirical research outcomes pertaining to factors influencing housing satisfaction serve as classic knowledge within this field while also being widely utilized as foundational evidence for studying determinants, quality, and environment, among other aspects. In the realm of academic journals, Sustainability and Environment and Behavior hold prominent positions in housing satisfaction research, with the remarkable rapid growth of the former being particularly noteworthy.

(3) Countries/regions, institutions, and authors all converge in the selection of research topics, with a focus on areas such as residential satisfaction, housing satisfaction, and neighborhood satisfaction. Although topic clustering reveals more than 20 topics at all three levels, many categories lack a comprehensive scale or fail to identify representative subjects.

It is important to note that our analysis is limited to SCI-EXPANDED and SSCI journals within the science network due to constraints imposed by CiteSpace software. Furthermore, some papers may have been overlooked due to limitations in our search strategy. Consequently, these data may not provide a comprehensive evaluation and our findings may not be applicable to studies published in other languages or beyond the scope of this article's search strategy.

Appendix

Appendix A. The Details of the Top 10 Local Cited References

No	Author(s)	Year	Title	Methodology	country	Data Sources	findings
1	Lu Max	1999	Determinants of Residential Satisfaction: Ordered Logit vs. Regression Models	Ordered Logit vs. egression Models	American	American Housing Survey	The results indicate that residential satisfaction is influenced by various environmental and socio-demographic factors. Notable differences were observed between the outcomes of the OLM and regression models. It suggests that regression model results should be interpreted with caution.
2	George C. Galster & Garry W. Hesser	1981	Residential Satisfaction: Compositional and Contextual Correlates	Two-stage least-squares multiple regression	American	A sample of households interviewed	The results suggest that certain individuals consistently experience lower satisfaction with their residential environment due to differing needs, desires, or ability to influence their surroundings. Some residential and community environments are also generally linked to lower satisfaction. Hierarchical regression analysis shows that only a few household background factors consistently correlate significantly with satisfaction.
3	Alison Parkes, Ade Kearns & Rowland Atkinson	2018	What Makes People Dissatisfied with their Neighbourhoods?	Logistic regression model	England	The Survey of English Housing	Housing satisfaction and neighbourhood appearance were closely tied to dissatisfaction, with noise, friendliness, and crime also significant. Neighbourhood type was a key predictor, especially in less affluent areas, where unfriendliness and crime had more impact. Owner-occupiers were less satisfied where their tenure share was lower.
4	Maria Amerigo & Juan Ignacio Aragonest	1997	A Theoretical and Methodological Approach to The Study of Residential Satisfaction	Literature review and comment.	Spain	Questionnaire on residential satisfaction	In some studies, the definition of the residential environment is either too vague or overly narrow. The multi-dimensional nature of the residential environment requires more precise definitions in research.
5	Alden Speare, Jr.	1974	Residential Satisfaction as An Intervening Variable in Residential Mobility	A model of residential mobility	America	Interviews	Individual and residence characteristics affect mobility through their effect on residential satisfaction.
6	George Galster	1987	Identifying The Correlates of Dwelling Satisfaction An Empirical Critique	Multivariate regression	American	A multistage random sample of homeowners	The theory suggests that residential satisfaction is influenced by a nonlinear relationship between desired and actual situations, varying widely among homeowners based on their dissatisfaction thresholds and aspirations.
7	Mohammad Abdul Mohit, Mansor Ibrahim, Yong Razidah Rashid	2010	Assessment Of Residential Satisfaction in Newly Designed Public Low-Cost Housing In Kuala Lumpur, Malaysia	Multiple linear regression model	Malaysia	Questionnaire survey	Residents are moderately satisfied with support services but less so with dwelling features and the social environment. Satisfaction is strongly linked to dwelling features, social environment, and support services, but less to neighborhood facilities. Age and family size reduce satisfaction, while race, employment type, floor level, and length of residency increase it.
8	Angus Campbell	1976	Subjective Measures of Well-Being	/	American	/	Well-being is influenced by personal perceptions and evaluations, not just objective conditions. Economic status, social relationships, and values affect well-being.
9	Misun Hur & Hazel Morrow-Jones	2008	Factors That Influence Residents' Satisfaction with Neighborhoods	Regression analysis	American	A survey	It highlights that variations in neighborhood satisfaction vary across different neighborhood types.
10	M. Joseph Sirgy & Terri Cornwell	2002	How Neighborhood Features Affect Quality of Life	Three conceptual models	American	A mail survey	The model suggests that satisfaction with physical features affects both neighborhood and housing satisfaction. Neighborhood satisfaction influences community satisfaction, while housing satisfaction affects home satisfaction. Both community and home satisfaction contribute to overall life satisfaction. Social features impact neighborhood and community satisfaction, while economic features affect house and home satisfaction, which in turn influence life satisfaction.

Source: Authors' Own Creation.

Appendix B. The Summary of clusters from agent-term heterogeneous network analysis

No	Countries/Regions					Institutions					Authors				
	ID	Size	S	M(Y)	Cluster Label	ID	Size	S	M(Y)	Cluster Label	ID	Size	S	M(Y)	Cluster Label
1	0	91	0.802	2004	neighborhood satisfaction	0	107	0.854	2006	residential satisfaction	0	120	0.892	2001	residential satisfaction
2	1	82	0.763	2017	public rental housing	1	80	0.866	2007	housing satisfaction	1	97	0.869	2004	housing satisfaction
3	2	68	0.863	2014	residents' satisfaction	2	80	0.853	2003	neighborhood satisfaction	2	91	0.875	2002	neighborhood satisfaction
4	3	68	0.86	2006	housing satisfaction	3	76	0.818	2018	public rental housing	3	81	0.825	2018	public rental housing
5	4	62	0.813	1999	residential satisfaction	4	68	0.812	2014	residents' satisfaction	4	67	0.866	2014	residents' satisfaction
6	5	55	0.796	2015	residential development pattern	5	49	0.962	2003	analyzing migration decision making	5	49	0.975	2002	analyzing migration decision making
7	6	46	0.94	2002	analyzing migration decision making	6	49	0.935	2004	assessing neighborhood satisfaction	6	49	0.879	2011	neighbourhood satisfaction
8	7	45	0.864	2011	neighbourhood satisfaction	7	47	0.873	2011	neighbourhood satisfaction	7	46	0.939	2005	assessing neighborhood satisfaction
9	8	44	0.864	2009	assessing neighborhood satisfaction	8	40	0.887	2014	residential development pattern	8	41	0.857	2013	residential development pattern
10	9	34	0.884	2015	affordable housing	9	33	0.847	2012	life satisfaction	9	31	0.87	2011	life satisfaction
11	10	31	0.864	2010	life satisfaction	10	25	0.922	2004	mosquito abatement program	10	24	0.938	2004	mosquito abatement program
12	11	29	0.898	2004	mosquito abatement program	11	23	0.961	2011	post-socialist countries	11	24	0.988	1995	neighboring residential satisfaction
13	12	22	0.915	2016	social determinant	12	23	0.987	1995	neighboring residential satisfaction	12	22	0.955	2011	post-socialist countries
14	13	21	0.987	2004	factor	13	21	0.98	2005	influencing residents' satisfaction	13	21	0.98	2005	influencing residents' satisfaction
15	14	20	1	1999	predictory	14	20	1	1999	predictory	14	20	1	1999	predictory
16	15	19	0.982	2003	residents service	15	19	0.99	2003	residents service	15	19	0.992	2003	residents service
17	16	19	0.908	2014	large-scale housing estate	16	18	0.998	2000	of-life perspective	16	18	0.998	2000	of-life perspective
18	17	19	1	1993	neighboring residential satisfaction	17	16	0.99	1997	assessment	17	16	0.992	1997	assessment
19	18	17	0.998	2000	of-life perspective	20	12	1	2001	ill person	20	12	0.999	2007	setting
20	19	16	0.989	1997	assessment	21	12	0.997	2007	setting	21	12	1	2001	ill person
21	22	12	1	2001	ill person	22	9	1	1995	life-cycle difference	23	9	1	1995	life-cycle difference
22	23	12	0.995	2007	setting	24	8	0.986	1988	patients' satisfaction	25	7	1	1984	residential satisfaction neighborhood attribute
23	24	9	1	1995	life-cycle difference	25	8	1	1984	residential satisfaction neighborhood attribute	/	/	/	/	/
24	/	/	/	/	/	29	5	0.998	1989	determinant factor	/	/	/	/	/

Source: Authors' Own Creation.
Note: ID = ClusterID; S = Silhouette; M(Y) = mean (Year).

Funding
The research leading to these results received funding from Fuzhou Institute of Technology (FIT) under Grant No FTKY202304.

Data Availability Statement
Not applicable.

Acknowledgments
We acknowledge the financial support provided by Fuzhou Institute of Technology (FIT).

Conflicts of Interest
The authors declare no conflicts of interest.

Declarations
The research leading to these results received funding from Fuzhou Institute of Technology (FIT) under Grant No FTKY202304. The authors have no competing interests to declare that are relevant to the content of this article. The present study adheres to the principles of academic ethics without any violation. And data availability statements do not apply to this article. All authors contributed to the study conception and design. Material preparation, data collection and analysis were performed by Ying Li. The first draft of the manuscript was written by Ying Li. The examination, revision, supervision, and verification of drafts were conducted by Chin-Hong Puah and Hamrila Abdul Latip, and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

References

1. Boi, L., Cannas, A., & Vargiu, L. (2019). Abitare. Approcci interdisciplinari e nuove prospettive. Medea, 1, 1-171. https://doi.org/10.13125/MEDEA-3957.
2. Secretary-General, U. N. (2020). Adequate housing as a component of the right to an adequate standard of living: note. Available online: http://documents.un.org (accessed on 14/08/2024).
3. Chi, P. S., & Griffin, M. D. (1980). Social indicators for measuring residential satisfaction in marginal settlements in Costa Rica. Social Indicators Research, 453-465.
4. Campbell, A., Converse, P. E., & Rodgers, W. L. (1976). The quality of American life: Perceptions, evaluations, and satisfactions. Russell Sage Foundation.
5. Riazi, M., & Emami, A. (2018). Residential satisfaction in affordable housing: A mixed method study. Cities, 82, 1-9.
6. Shrestha, B., Uprety, S., & Pokharel, J. R. (2023). Factors Influencing Housing Satisfaction in Post-Disaster Resettlement: A Case of Nepal. Sustainability, 15(17), 12755.
7. Davoodi, T., Yapicoglu, B., & Dağlı, U. U. (2023). Measuring Residential Satisfaction in Historic Areas Using Actual–Aspiration Gap Theory: The Case of Famagusta, Northern Cyprus. Sustainability, 15(5), 3917.
8. Emami, A., & Sadeghlou, S. (2021). Residential satisfaction: A narrative literature review towards identification of core determinants and indicators. Housing, Theory and Society, 38(4), 512-540.
9. Sanchez, T. W. (2015). Where Has Housing Policy Debate Been? Housing Policy Debate, 25(2), 208–214. https://doi.org/10.1080/10511482.2015.1006030.
10. Halepoto, H.; Gong, T.; Memon, H. (2022). A bibliometric analysis of antibacterial textiles. Sustainability, 14(18), 11424.
11. Zhang, X., Yu, Y., & Zhang, N. (2021). Sustainable supply chain management under big data: a bibliometric analysis. Journal of Enterprise Information Management, 34(1), 427-445.
12. Farooq, R. (2024). A review of knowledge management research in the past three decades: a bibliometric analysis. VINE Journal of Information and Knowledge Management Systems, 54(2), 339-378.
13. Panahi, Z., Akbari, R., & Ghaemi, M. (2024). Recurrent Pregnancy Loss: A Bibliometric Review. Iranian Journal of Public Health, 53(7), 1629.
14. Zhang, J., Shahbaz, M., Ijaz, M., & Zhang, H. (2024). Bibliometric analysis of antimalarial drug resistance. Frontiers in Cellular and Infection Microbiology, 14, 1270060.
15. Oermann, M. H., Bailey, H. E., Carter-Templeton, H., Condy, C., Wrigley, J., & Ledbetter, L. S. (2024). Bibliometric analysis of nursing education reviews. Nurse Education Today, 139, 106217.
16. Khan, A., Goodell, J. W., Hassan, M. K., & Paltrinieri, A. (2022). A bibliometric review of finance bibliometric papers. Finance Research Letters, 47, 102520.
17. Aksoy, B., Akpınar, A., & Ünüsan, Ç. (2024). Export performance: a comprehensive bibliometric overview. Journal of Business & Industrial Marketing, 39(6), 1352-1377.

18. Milfont, T. L., Amirbagheri, K., Hermanns, E., & Merigó, J. M. (2019). Celebrating half a century of Environment and Behavior: A bibliometric review. Environment and Behavior, 51(5), 469-501.
19. Kumar, S., Maggino, F., Mahto, R. V., Sureka, R., Alaimo, L. S., & Lim, W. M. (2021). Social indicators research: a retrospective using bibliometric analysis. Social Indicators Research, 1-36.
20. Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. Journal of business research, 133, 285-296.
21. Bicheng, D., Adnan, N., Harji, M. B., & Ravindran, L. (2023). Evolution and hotspots of peer instruction: a visualized analysis using CiteSpace. Education and Information Technologies, 28(2), 2245-2262.
22. Khaw, T. Y., Azlan, A., & Teoh, A. P. (2024). Factors influencing ESG performance: A bibliometric analysis, systematic literature review, and future research directions. Journal of Cleaner Production, 141430.
23. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews.
24. Aslam, W., Jawaid, S.T., 2023. Systematic review of green banking adoption: following PRISMA protocols. IIM Kozhikode Society & Management Review 12 (2), 213–233.
25. David, A., Yigitcanlar, T., Li, R.Y.M., Corchado, J.M., Cheong, P.H., Mossberger, K., Mehmood, R., 2023. Understanding local government digital technology adoption strategies: a PRISMA review. Sustainability 15 (12), 9645.
26. Zahari, N., Kaliannan, M., 2023. Antecedents of work engagement in the public sector: a systematic literature review. Rev. Publ. Person. Adm. 43 (3), 557–582.
27. Chen, C., Ibekwe-SanJuan, F., & Hou, J. (2010). The structure and dynamics of cocitation clusters: A multiple-perspective cocitation analysis. Journal of the American Society for information Science and Technology, 61(7), 1386-1409.
28. Zhong, D., Li, Y., Huang, Y., Hong, X., Li, J., & Jin, R. (2022). Molecular mechanisms of exercise on cancer: a bibliometrics study and visualization analysis via CiteSpace. Frontiers in Molecular Biosciences, 8, 797902.
29. Cui, Y., Wang, Q., Zhai, H., Yan, G., & Li, J. (2023). The association between epilepsy and synaptic plasticity: bibliometrics research and visual analysis using citespace. Journal of Mechanics in Medicine and Biology, 23(08), 2340078.
30. Glänzel, W., & Debackere, K. (2003). On the "Multi-dimensionality" of Excellence of Scientific Information: A Multi-dimensional Approach. Scientometrics, 58(2), 409-426.
31. Liu, M., & Yuan, W. (2015). Scholarly communication in China: Content analysis of Chinese academic library websites. The Journal of Academic Librarianship, 41(4), 464-470.
32. Visser, M., Van Eck, N. J., & Waltman, L. (2021). Large-scale comparison of bibliographic data sources: Scopus, Web of Science, Dimensions, Crossref, and Microsoft Academic. Quantitative science studies, 2(1), 20-41.
33. Liu, X., Zhang, J., & Guo, C. (2013). Full-text citation analysis: A new method to enhance scholarly networks. Journal of the American Society for Information Science and Technology, 64(9), 1852-1863.
34. Aria, M., Le, T., Cuccurullo, C., Belfiore, A., & Choe, J. (2023). openalexR: An R-Tool for Collecting Bibliometric Data from OpenAlex. R Journal, 15(4).
35. Glänzel, W., & Moed, H. F. (2002). Journal impact measures in bibliometric research. Sciento metrics, 53(2), 171-193.
36. Aria, M. & Cuccurullo, C. (2017). bibliometrix: An R-tool for comprehensive science mapping analysis, Journal of Informetrics, 11(4), pp 959-975, Elsevier, DOI: 10.1016/j.joi.2017.08.007.
37. Chen, C. (2006). CiteSpace II: Detecting and visualizing emerging trends and transient patterns in scientific literature. Journal of the American Society for information Science and Technology, 57(3), 359-377.

38. Li, J. & Chen, C. M. (2017). CiteSpace: Text mining and visualization for science and technology, 2rd ed.; Capital University of Economics and Business Press: Beijing, China.
39. Araya-Castillo, L., Hernández-Perlines, F., Millán-Toledo, C., & Ibarra Cisneros, M. A. (2022). Bibliometric analysis of studies on family firms. Economic research-Ekonomska istraživanja, 35(1), 4778-4800.
40. Leydesdorff, L. (1998). Theories of citation?. Scientometrics, 43(1), 5-25.
41. Aksnes, D. W., Schneider, J. W., & Gunnarsson, M. (2012). Ranking national research systems by citation indicators. A comparative analysis using whole and fractionalised counting methods. Journal of Informetrics, 6(1), 36-43.
42. Hirsch, J. E., & Buela-Casal, G. (2014). The meaning of the h-index. International Journal of Clinical and Health Psychology, 14(2), 161-164.
43. Egghe, L. (2006). An improvement of the h-index: The g-index. ISSI.
44. Novak, D., Batko, M., & Zezula, P. (2011). Metric index: An efficient and scalable solution for precise and approximate similarity search. Information Systems, 36(4), 721-733.
45. Lu, M. (1999). Determinants of residential satisfaction: Ordered logit vs. regression models. Growth and change, 30(2), 264-287.
46. Venable, G. T., Shepherd, B. A., Roberts, M. L., Taylor, D. R., Khan, N. R., & Klimo, P. (2014). An application of Bradford's law: identification of the core journals of pediatric neurosurgery and a regional comparison of citation density. Child's Nervous System, 30, 1717-1727.
47. Qiu, J., Zhao, R., Yang, S., Dong, K., Qiu, J., Zhao, R., ... & Dong, K. (2017). Concentration and scattering distribution of literature information: Bradford's law. Informetrics: Theory, Methods and Applications, 89-119.