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Furniture design based on cultural orientation: a thematic review

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ABSTRACT

Furniture design plays a crucial role in the development and promotion development of culture. The rising spiritual needs of furniture users have opened up new opportunities and challenges for culturally oriented furniture design. However, there need to be more review articles in this field. To address this gap, the researcher utilized ATLAS.ti 23 software to conduct a thematic review of 29 literature sources on culture-related furniture design published between 2013 and 2022. Through thematic analysis, we identified four main themes: furniture design methods, cultural resources, human-centered design, and sustainable development. The study argues that while integrating cultural elements in furniture design remains the predominant strategy, the focus of artistic research is gradually shifting from protection to broader promotion and development. Additionally, the study highlights the growing emphasis on users' cultural preferences and the emerging utilization of new technologies in furniture design. This research provides valuable insights for scholars and designers interested in cultural advancements and trends in furniture design.

PUBLIC INTEREST STATEMENT

In an era increasingly attentive to cultural diversity, furniture design is not just an embodiment of living aesthetics, but also a vital pathway for cultural heritage and innovation. Our study, examining 29 literature sources from the past decade, delves into how furniture design intertwines with culture. We found that furniture design is evolving from mere integration of cultural elements to a comprehensive consideration of users' cultural preferences and sustainable development. This research offers designers innovative ideas for blending traditional culture with modern design, while also revealing to the general public the deeper cultural significance behind furniture design. With technological advancements, we also observe new technologies breathing fresh life into traditional furniture. The insights from this study serve as an inspiration for those interested in cultural evolution and trends in furniture design.

THE AUTHOR'S KEY RESEARCH ACTIVITIES

This research is a part of a broader investigation into how cultural elements influence contemporary design practices. The authors used ATLAS.ti 23 software to conduct a detailed thematic review of 29 culturally relevant academic articles on furniture design spanning a 10-year period. Key activities included identifying recurring themes, analyzing the evolution of design methodologies, and understanding the integration of cultural aspects in furniture design. This study contributes to a wider project that aims to bridge traditional cultural heritage with modern design needs. It emphasizes the growing significance of user-centred design concept and sustainable practices in the context of cultural heritage. The insights gained here extend beyond furniture design, offering a framework for exploring cultural influences in various design fields. This research aligns with contemporary issues of cultural preservation and technological integration in design, reflecting a global shift towards more culturally responsive and sustainable design practices.

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1. Introduction

Furniture, closely linked to people's daily lives, facilitates significantly more direct interaction with its users than other products. This distinctive characteristic enables furniture to encompass diverse forms that can directly and comprehensively represent the user's lifestyle while catering to their material and spiritual needs. As a result, furniture serves as a vital physical conduit of culture, showcasing aesthetic artwork and bearing witness to the advancement of human civilization (Wu & Liu, 2019). Its cultural attributes also reflect users' cultural backgrounds across different periods and geographical locations.

Culture encompasses individuals' attitudes, beliefs, ideas, values, and engagement in traditional patterns of behavior and ways of life. It manifests in tangible and intangible cultural heritage, explicitly and implicitly present in artifacts. Culture is a product of past human behavior and an essential determinant of future conduct (Helen, 2012). However, in globalization, traditional cultures face inevitable influences from modern lifestyles and cultural environments, often stereotyped as outdated (Olalere, 2019; Zhu et al., 2023). Nevertheless, there is increasing recognition of the heritage value associated with traditional culture. Numerous scholars have examined strategies for preserving, conserving, and revitalizing traditional culture from various perspectives, such as business, tourism, and the souvenir industry (Ahmad, 2021; Bullen & Love, 2011; Zhou & Pu, 2022; Zhu et al., 2023, 2023).

In the realm of design, there has always been a close and mutually reinforcing relationship between structure and culture. On the one hand, culture is a creative resource that adds value to design; it is a crucial element and a core value in contemporary design (Lin, 2007; Olalere, 2019). On the other hand, exceptional product design incorporating cultural characteristics exposes a broader audience to traditional culture, promoting it and serving as a significant catalyst for cultural development (Lin, 2007; Ser, 2018). In the present era of globalized markets and localized design, academic researchers devote considerable effort to exploring the influential connection between culture and innovation, particularly in integrating cultural features into product design or infusing the target culture into the product design process. This design trend transcends geographical boundaries and is observed globally (Lin, 2007; Ser, 2018).

Exploring 'culturally oriented product design' has brought the intersection of design and culture to the forefront, leading to in-depth research in this area (Ser, 2018). Numerous scholars have proposed models and frameworks for culture-oriented product design in response to this demand. For instance, Rung-Tai Lin et al. from Taiwan introduced the concept of integrating cultural characteristics into product design, along with a three-level culture and design theory (Lin, 2007). Building this foundation, they developed a culture-oriented product design model (Lin, 2007). Several scholars have subsequently enhanced this model (Xin, 2007), adopted a culture-oriented design analysis model as a basis and introduced the SETIG (Social, Economic, Technological, Ideological, and Geographical) tool for analyzing the cultural context of heritage, employing a case study. In his research, Xin constructed a design framework for developing traditional Chinese cultural products known as PCI (Cultural Products Initiative). Within this framework, he utilizes SETIG to identify cultural opportunities in the initial phase. Subsequently, two tools, ICA (Interpreting Cultural Artefacts) and ICB (Interpreting Cultural Behavior), are employed to identify cultural references, understand them, and develop cultural insights. In 2019, Chen incorporated the PCI design framework and introduced the 'Cultural DNA bank' concept, which aims to effectively utilize cultural elements within the DNA bank to develop cultural products. This approach establishes design rules and guidelines and provides insights into using the cultural knowledge stored in the Cultural DNA bank in contemporary product innovation (Chen, 2019). Another significant design model, proposed by Richie Moalosi (Moalosi et al., 2010), emphasizes the design process and offers a conscious method to specify, analyze, and integrate socio-cultural factors.

The design of furniture, like many other products, is increasingly becoming standardized and globalized (Juvancic & Verovsek, 2018). Consequently, there is a growing call for furniture to serve as a carrier of culture, highlighting the importance of culturally oriented design research in furniture design. Chinese scholars, in particular, have made significant contributions to this area in recent years (Qian, 2017; Wu & Liu, 2019). However, due to the high artistic value of traditional Chinese furniture, most researchers have focused on enhancing and innovating traditional furniture to create potential cultural value in modern furniture design. On the other hand, Manola and Balermipas (Balermipas & Manola, 2020) argue that events and experiences are crucial forms of cultural heritage communication, and designers should

consider the experience of using furniture during the design process. Despite being culturally driven, the cultural experience associated with furniture usage has not received much attention, and it should be considered an essential area for innovation alongside the application of new technologies.

In conclusion, culturally oriented furniture design is experiencing rapid development alongside the growth of the commodity economy and the increasing emphasis on cultural values. However, the existing research papers mentioned earlier have certain limitations. While previous studies have explored various directions and design concepts, they have been constrained by their specific professional and cultural domains, lacking a systematic framework and approach for cultural innovation in furniture design. Moreover, despite the increasing number of publications on furniture design and cultural values, none of the review articles have discussed the latest trends in furniture design from a cultural perspective or provided insights into the future of this field.

Therefore, this study aims to analyze patterns and trends in the literature on culture-oriented furniture design from 2013 to 2022. The study aims to identify research hotspots in culture-led furniture design and understand emerging trends. We expect the findings of this research to offer valuable insights into the sustainable development of culture within the realm of design. Furthermore, based on these findings, the paper will propose new ideas and approaches for cultural furniture design and address the following issues:

What are the current trends in Culture-based furniture design-related publications from 2013 to 2022?

2. Materials and methods

This paper adopts a thematic review approach, which differs from systematic reviews in that it aims to explore the existing literature on a specific topic rather than evaluate the quality of previous research findings. This paper aims to provide an overview of culturally oriented furniture design literature. To achieve this, we employed a thematic review methodology. This review model incorporates thematic analysis, which involves identifying patterns and developing themes through an in-depth literature examination (Braun & Clarke, 2006). Despite abundant publications on furniture design research, the rapid advancement of technology and changing market conditions have resulted in a limited number of articles suitable for a systematic review specifically focused on culturally relevant furniture design over the past decade.

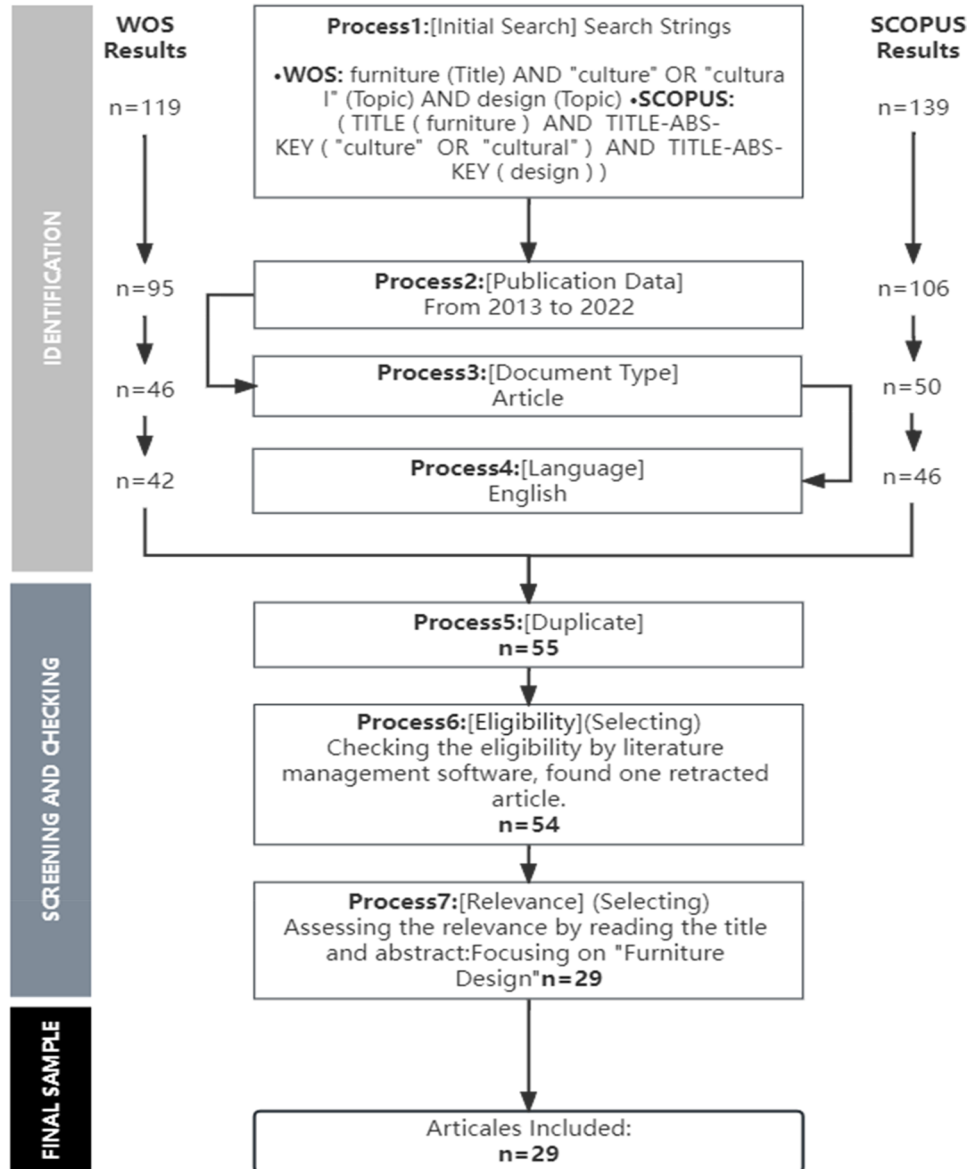
The next step was to search the relevant literature. Considering the impact factor and quality of publications, the databases searched were 'Scopus' and 'WoS', as they are more comprehensive, and many articles overlap with other databases, such as Mendeley, Google Scholar, etc. Based on the above, the review was designed with explicit inclusion and exclusion criteria to select which studies to evaluate and ensure the subject evaluations' reliability and accuracy. After several attempts, we set the search criteria to include the keywords 'furniture,' 'design,' and 'culture' OR 'cultural' in the abstract. Secondly, we restricted the publication period to 2013–2022. Although the literature before 2017 was rare in the initial search, it still had some research value. Thirdly, to ensure the quality of the research, we considered only peer-reviewed journal articles and excluded document types such as conference proceedings and book chapters. Fourth, to ensure accuracy in understanding the meaning of the articles during the thematic analysis, we set the language of the publications as English.

It should be noted that after implementing the above search criteria, the SCOPUS search yielded 47 articles. Still, after checking each article, one was found to be a master's thesis, so the exact result should have been 46. A similar situation occurred with WOS, which yielded search results 43 (Table 1). However, upon examination, we found that one of these was in French, with only the title in English, so we also excluded this, making the exact search result 42. The number of publications dropped to 55 after Duplicate checking, with one more discarded due to retraction. Finally, we also eliminated articles that did not meet the objectives of this paper by reading them, and the number of publications related to the topic ended up at 29 (Figure 1).

For data processing and fundamental quantitative analysis, we utilize ATLAS.ti 23, a software developed by 'Scientific Software Development', now ATLAS.ti GmbH. This tool is widely used for qualitative data analysis and some quantitative analyses. It is capable of systematically organising, analysing and interpreting data, and in particular of handling multi-text data such as large volumes of literature, a

Table 1. Search strings from Scopus and WoS.

Database	Search Strings	Results
SCOPUS	(TITLE (furniture) AND TITLE-ABS-KEY ('culture' OR 'cultural') AND TITLE-ABS-KEY (design)) AND PUBYEAR > 2012 AND PUBYEAR < 2023 AND (LIMIT-TO (DOCTYPE, 'ar')) AND (LIMIT-TO (LANGUAGE, 'English'))	47
Web of Science	'furniture' (Title) AND 'culture' OR 'cultural' (Topic) AND 'design' (Topic) and 2022 or 2021 or 2020 or 2019 or 2018 or 2017 or 2016 or 2015 or 2014 or 2013 (Publication Years) and Article (Document Types) and English (Languages)	43

**Figure 1.** Inclusion and exclusion criteria and process.

feature of Atlas.ti that allows us to generate and analyse themes efficiently. Of course, as a software with qualitative analysis as its main function, it only plays the role of an auxiliary tool in the process of generating themes, and the protagonist of the analysis is the researcher. In addition, the software has some ability to analyse quantitative data, and its versatility is valuable to researchers from a wide range of fields, providing an intuitive platform for comprehensively analysing data. At the beginning of the data analysis, we imported all the papers into imported into Atlas.ti and coded the metadata of each paper including information about authors, journals, publishers, year of publication, and country/region. In the quantitative phase of the analysis, the coding of the above metadata will be combined two by two for comparative analysis to obtain new findings that will help in the study of trends. This software aided in qualitative analysis by drawing on the thematic analysis model proposed by Zairul (Zairul, 2020, 2021;

Zairul & Zaremohzzabieh, 2023) and recommendations. The aim was to identify patterns and construct themes to help comprehend cultural-based furniture design trends.

3. Results

3.1. Quantitative results

This research bases the quantitative part of the results on screening 29 publications. We conducted various analyses, including word cloud analysis, examination of the year of publication, country of study, region, and topics covered. These analyses provide insights into the trends in the design of cultural and creative products. The word cloud analysis highlighted the most frequently mentioned words in the articles. Among these, 'Furniture' appeared 1,737 times, 'Design' appeared 1,575 times, and 'Cultur-' was mentioned frequently. Interestingly, 'bamboo' was mentioned 719 times, a surprising finding that warrants further investigation (Figure 2).

We derived the initial codes for this paper from the analysis of the content of 29 scholarly articles on culturally-led furniture design. We then refined these initial codes through several iterations, including renaming, splitting, and merging, and identified four central themes and eleven sub-themes. The four central themes are furniture design methods, cultural resources, human-centered design, and sustainable development. The qualitative results section provides a detailed analysis of these themes, depicted in [Figure 3](#). The number of studies related to each theme indicates a gradual increase in the overall number of studies, with a particular emphasis on the themes of cultural resources and furniture design methods. However, the other two themes show relatively less significant growth due to a smaller sample size of studies in those areas. In relative terms, the number of studies in this area shows an overall upward trend in the year of publication.

Figure 4 provides an overview of the research trend in culturally-oriented furniture design by illustrating the number of annual publications from 2013 to 2022. The figure demonstrates a significant increase in relevant research over time. Four articles appeared from 2013 to 2016; between 2017 and 2019, publishers released 2 to 3 articles each year. However, the number of publications has been steadily increasing since then. Although no data was available for 2020, nine publications in 2021 indicated a rapid growth in research in that year. The number of publications in 2022 remained high, with eight articles. As can be seen through Figure 4, although the number of publications in this area in 2014 and 2020 does cause the trend to ebb and flow, in general, research in this area shows a growing trend, especially in 2021 and 2022. This suggests that research in the field of culturally orientated furniture design has gained a great deal of scholarly attention in the last five years after a quiet period of many years.

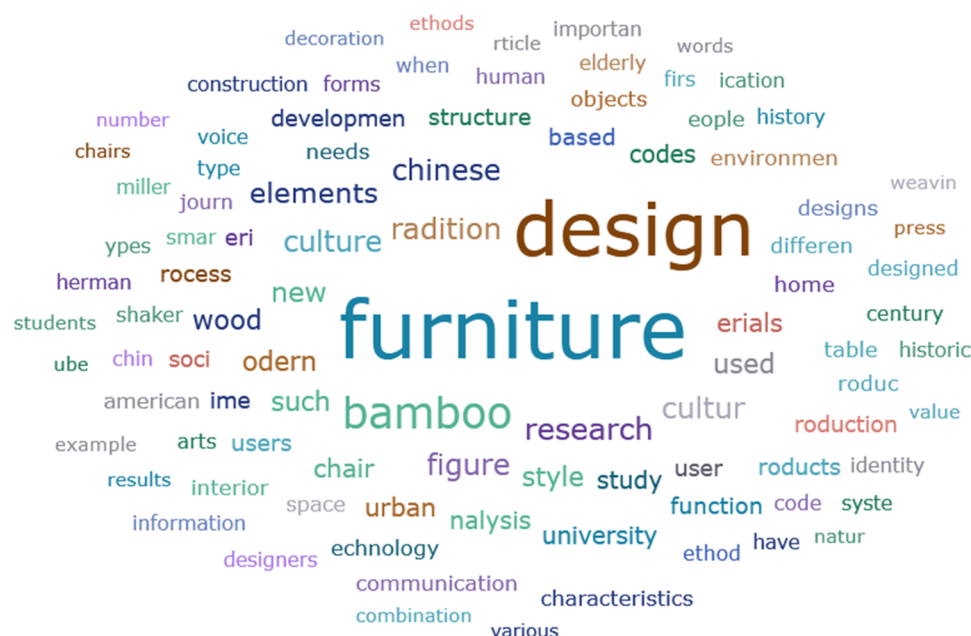


Figure 2. Word cloud generated from 29 publications.

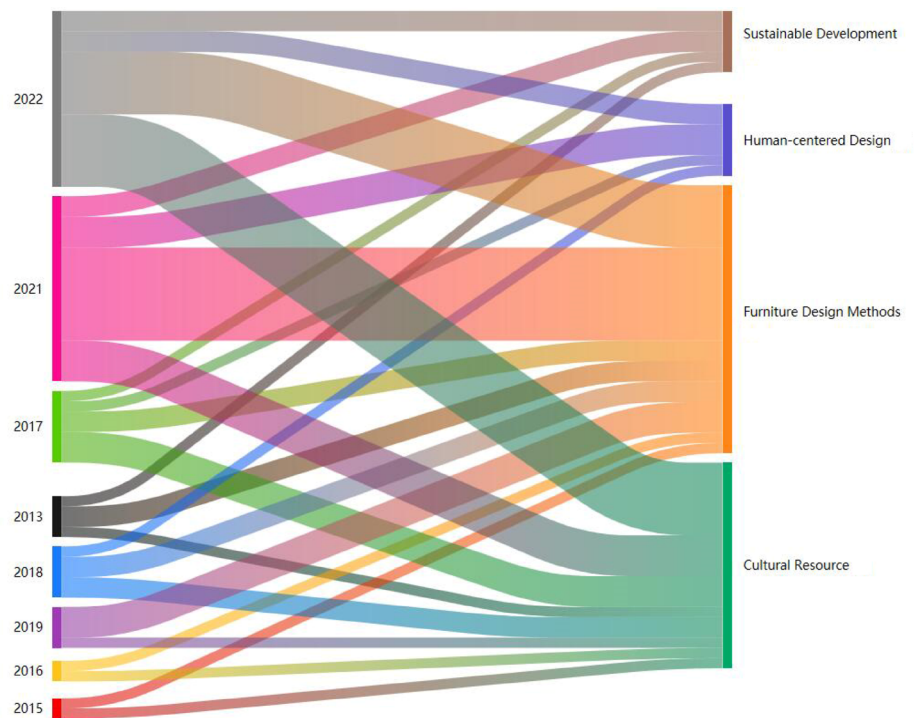


Figure 3. Sankey of themes according to year of publication.



Figure 4. Year of publication.

The decision to start the literature search in 2013 was primarily due to the emerging nature of culturally relevant furniture design research during that period. Focusing on recent publications from the last ten years, particularly the last 5 to 6 years, provides a more accurate representation of the current trends and insights for the future.

According to Table 2, the distribution of publications in terms of countries and regions reveals a relatively even distribution globally, except mainland China, which stands out with a significantly higher number of publications than other countries. This result indicates a more excellent investment and focuses on research in culturally oriented furniture design in China.

Regarding the temporal dimension, the number of studies in this field has not shown significant changes over the last decade in most countries. However, China and Turkey are exceptions to this trend,

showing a notable increase in studies. Overall, the number of studies conducted in the last five years is considerably higher than the cumulative total from 2013 to 2017. This result suggests a growing interest and engagement in culturally oriented furniture design research in recent years.

The analysis reveals that mainland China has gradually increased interest and research output in culturally oriented furniture design. Although no relevant publications met the search criteria until 2021, there has been a rapid increase in the number of studies from two in 2021 to six in 2022. It indicates a growing focus on this topic in China.

Turkey is the second most studied country in this field, with five articles appearing from 2019 onwards. Of these, publishers released three articles in 2021. The USA follows with four articles, and the UK, Malaysia, and Indonesia have two.

When examining the geographical distribution of themes (Table 3), it is evident that the 'Furniture Design Methods' theme garners significant attention in all relevant countries, particularly in mainland China, Turkey, and the USA, where it has received the most emphasis compared to other themes. All relevant countries except Brazil have addressed the 'Cultural Resources' theme, indicating a shared interest in leveraging cultural resources to promote the furniture industry and design development. Although the 'Human-centered Design' and 'Sustainable Development' themes have received comparatively less attention, many countries, particularly developing ones, have focused on these themes.

Our analysis of published sources revealed that we sourced 29 articles from 28 journals. Among these journals, the design and art discipline had the highest representation, with 13 journals focusing on this

Table 2. The paper breakdown according to the year of publication.

Countries/Regions	2013	2015	2016	2017	2018	2019	2021	2022	Total (n/%)
Brazil	–	–	–	–	–	1	–	–	1 3.4
Mainland China	–	–	–	–	–	–	2	6	8 28
Greece	–	–	–	–	1	–	–	–	1 3.4
Indonesia	–	–	–	1	–	–	–	1	2 6.9
Iran	–	–	–	1	–	–	–	–	1 3.4
Malaysia	–	–	–	1	–	–	1	–	2 6.9
Romania	–	–	–	–	–	–	1	–	1 3.4
Slovenia	–	–	–	–	1	–	–	–	1 3.4
Taiwan, China	–	–	–	–	–	–	1	–	1 3.4
Turkey	–	–	–	–	–	1	3	1	5 17
UK	–	1	–	–	–	1	–	–	2 6.9
USA	2	–	1	–	–	–	1	–	4 13.8
Total	2	1	1	3	2	3	9	8	2 100

Table 3. Themes vs. Countries/Regions.

	Cultural Resource	Furniture Design Methods	Human-centered Design	Sustainable Development
Brazil	–	1	–	–
Mainland China	6	7	2	2
Greece	1	1	1	–
Indonesia	2	2	–	1
Iran	1	1	–	–
Malaysia	2	1	2	–
Romania	1	1	–	1
Slovenia	1	1	–	–
Taiwan, China	1	1	–	–
Turkey	1	4	2	1
UK	2	2	–	–
USA	2	4	–	1

field (Table 4). It indicates that researchers in culturally oriented furniture design draw heavily from the design and art literature to inform their work.

In addition to design and art journals, researchers have also published their work in journals from various other subject areas, including forestry, multimedia, and computer science. For instance, interdisciplinary journals such as Forest Products Journal, BioResources, and Journal of Sensors, Wireless Communications, and Mobile demonstrate the diverse range of disciplines involved in applied research

Table 4. Publication and years.

	2013	2015	2016	2017	2018	2019	2021	2022
A/Z ITU Journal of the Faculty of Architecture	–	–	–	–	–	–	–	√
Advances in Multimedia	–	–	–	–	–	–	–	√
ANNALES-ANALI ZA ISTRSKE IN MEDITERANSKE STUDIJE-SERIES HISTORIA ET SOCIOLOGIA	–	–	–	–	√	–	–	–
Art-Sanat Dergisi	–	–	–	–	–	–	√	–
BioResources	–	–	–	–	–	–	√	–
Creative Industries Journal	–	–	–	√	–	–	–	–
Design and Culture	–	–	√	–	–	–	–	–
Forest Products Journal	–	–	–	–	–	–	√	–
Forestist	–	–	–	–	–	–	√	–
Heliyon	–	–	–	–	–	–	–	√
International Journal of Architectonic, Spatial, and Environmental Design	–	–	–	–	–	√	–	–
International Journal of Design Management and Professional Practice	–	–	–	–	–	√	–	–
International Journal of Food Design	–	–	–	–	–	–	√	–
Journal of Cultural Heritage	–	–	–	–	–	–	√	–
Journal of Design History	–	√	–	–	–	–	–	–
Journal of History Culture and Art Research	–	–	–	√	–	–	–	–
Journal of Interior Design	√	–	–	–	–	–	–	–
Journal of Sensors	–	–	–	–	–	–	–	√
JOURNAL OF VISUAL ART AND DESIGN	–	–	–	–	–	–	√	√
KSII TRANSACTIONS ON INTERNET AND INFORMATION SYSTEMS	–	–	–	–	–	–	–	√
MARINERS MIRROR	–	–	–	–	–	√	–	–
New Design Ideas	–	–	–	√	–	–	–	–
RES MOBILIS-INTERNATIONAL RESEARCH JOURNAL OF FURNITURE AND DECORATIVE OBJECTS	–	–	–	–	√	–	–	–
Scientific Programming	–	–	–	–	–	–	–	√
Sustainability	–	–	–	–	–	–	√	–
The International Journal of Research into New Media Technologies	–	–	–	–	–	–	√	–
WEST 86TH-A JOURNAL OF DECORATIVE ARTS DESIGN HISTORY AND MATERIAL CULTURE	√	–	–	–	–	–	–	–
Wireless Communications and Mobile Computing	–	–	–	–	–	–	–	√

in culturally oriented furniture design. It indicates that researchers actively incorporate different perspectives and methodologies from various disciplines to explore the intersection of culture and furniture design.

3.2. Qualitative results

The qualitative analysis section aims to discuss each theme in-depth to address the research questions. Building upon the four overarching themes we identified in the previous analysis, we address the following research question:

What are the current trends in publications related to culture-based furniture design from 2013 to 2022?

Based on a comprehensive literature review, the four themes are summarized, providing a deeper understanding of the field. We further divided each theme into 2–3 sub-themes based on the research covered in the existing publications (Figure 5). It is important to note that these four themes are not mutually exclusive and often coexist within the same article. Many articles cover multiple themes, some even incorporating all four themes simultaneously.

3.2.1. Theme 1: Furniture design methods

A literature search reveals various approaches to furniture design, with a predominant focus on structure, materials, and related aspects in global research on furniture design methods. However, it is essential to recognize the significance of culturally oriented approaches in cultural product design. The thematic grouping of 21 articles addresses ‘furniture design methods’. These articles primarily discuss innovative design approaches in culturally led furniture design within the context of globalization. The discussions within these articles revolve around three main areas: ‘design elements,’ ‘design strategies,’ and ‘technology’ (Figure 6).

3.2.1.1. Design elements. This study provides a summary of relevant literature indicating that the critical elements of furniture design that have received research attention in the past 10 years include

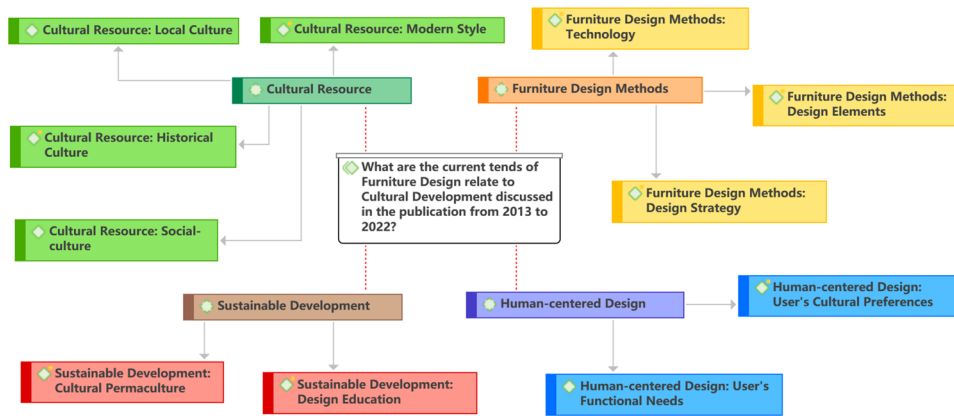


Figure 5. What are the current trends in Culture-based furniture design related publications from 2013 to 2022.

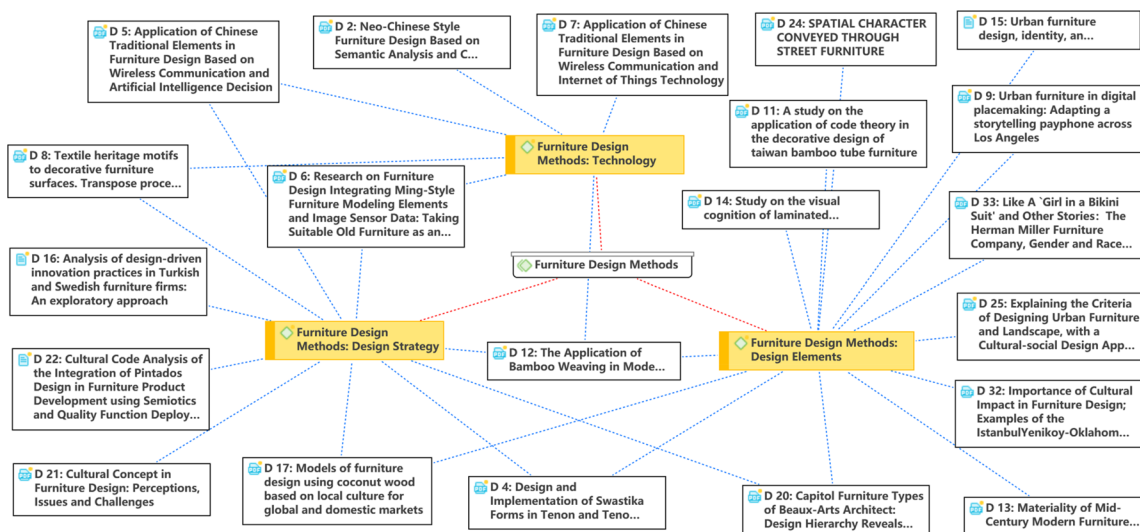


Figure 6. Furniture design methods.

visual form, material process, and function. Given the challenges designers face in achieving all aspects of furniture design, selectively focusing on a specific element or entry point is a typical method designers employ to achieve specific design goals, taking into account the characteristics of the furniture (Seker & Koc, 2021), support this notion by highlighting the relationship between furniture design elements and design goals, emphasizing the significant influence of culture on furniture design and its reflection in these design elements. Their study focuses on wooden tables in Turkish cafes and restaurants, adopting a positivist research paradigm to examine their shape, function, and materials.

In furniture form Liang and Fan (2022), argue that cultural connotations can be expressed through form elements, analyzing the stylistic characteristics and symbolic meanings of Swastika Forms as a form element and comparing them with the traditional Chinese Tenon and Tenon Structure. They explore the possibility of incorporating these two elements into innovative furniture design by leveraging the structural similarities. Scholars have also achieved notable outcomes in the visual aspects of furniture design. For instance Suprobo and Santosa (2017), propose an experiential approach to identify and extract cultural connotations which inspire visual furniture design. They advocate for incorporating local culture by utilizing indigenous materials and expressing local culture through visual design, exemplified by using coconut as a primary material.

While visual aspects are considered significant in furniture design by Wan et al. (2021), they focus on using traditional materials through new technologies to achieve novel visual effects. To validate the new furniture color and texture effects achieved through laminated bamboo technology, they investigate the impact of surface features, such as color and texture, on human visual perception, employing eye-tracking

technology. Their findings suggest that furniture color more significantly influences human perception than texture. Interestingly, in 2021, many Chinese scholars in the field of furniture design made notable progress in applying bamboo materials and techniques (Wan et al., 2021; Wu et al., 2021; Zheng & Zhu, 2021). Furthermore (Tuna Ultav et al., 2021), a Turkish scholar, analyze the materials and craftsmanship of medieval Turkish furniture to illustrate the evolution of materials and manufacturing techniques, emphasizing that furniture is the result of the combination of people, materials, and technology.

Designers must consider the function of furniture as a crucial design element in furniture design. In culturally oriented furniture design, researchers tend to concentrate on the social function of furniture, emphasizing its role and significance in social life. Scholars worldwide are increasingly focusing on the role of public furniture in urban public spaces. For instance Allahdadi (2017), an Iranian scholar, introduced the concept of product ecology, highlighting the positive role of urban furniture in supporting social interaction and citizens' engagement in the public sphere. Allahdadi also proposed urban furniture and landscape design criteria, employing a social design approach.

Building on this Juvancic and Verovsek (2018), Slovenian scholars, underscored the role of urban furniture as a vehicle for culture and space in constructing spatial identity. They advocated for preserving local identity in the face of the generalization and globalization trends in furniture design. Similarly, Brazilian scholars, such as Miranda (2019), recognized the role of urban furniture as a repository of social traditions and memories. They suggested designing urban furniture based on these aspects could revitalize public spaces.

In contrast, scholars in the United States exhibit a more diverse and nuanced perspective. As early as 2013 (Al Shihabi, 2013), acknowledged the social role of furniture in public spaces, analyzing the table hierarchy of the Wisconsin State Capitol and deconstructing not only the materiality of the furniture but also its design, Wilson (2015) examined the gender and racist ideologies expressed in furniture design during the 1940s and 1950s from a socio-historical standpoint, Stokes et al. (2021) focused on the future social functions of digital technologies and affirmed the social potential of urban furniture in creating and sustaining digital places through case studies.

3.2.1.2. Design strategy. Similar to product design, culturally oriented furniture design strategies aim to incorporate cultural connotations into furniture design. Many design method-related research studies focus on integrating cultural elements into modern furniture design strategies. Among the twelve publications on design strategies, eight specifically explore integration design strategies, followed by collaborative design and design innovation.

In infusion design strategies, designers use semiotic theory to integrate cultural elements into modern design as symbolic codes. This approach conveys cultural connotations and preserves culture. As early as 2018 (Juvancic & Verovsek, 2018), introduced the semiotic theory to view the relationship between street furniture's visual features and functions as the relationship between sign and signified (Liang & Fan, 2022; Paete, 2022; Wu et al., 2021). Discuss the six books of the Chinese Han Dynasty, the Pintados tattoo pattern, and the swastika form as examples of their use as symbolic codes in the furniture design process, respectively. The method of identifying the cultural connotations conveyed in the furniture design process is symbolic codes. In addition to applying semiotic theory, as early as 2013, Al Shihabi (2013) discusses integrating modern and historical style elements in furniture design, using the case of furniture in typical American public buildings. In addition, more researchers have focused on analyzing cultural motif shapes with representative visual characteristics and used this as a fundamental element to integrate design strategies into furniture design. For example, Lungu et al. (2021) studied symbolic traditional motifs in Romanian textile garments, and (Sahari & Shanat, 2021) studied traditional motifs in Sarawak, Malaysia (Chen, 2022; Wu, 2022), and other scholars discussed that the traditional Chinese shapes of Ming furniture are all starting points for integrating pattern shapes into furniture design.

In addition to integrated design strategies, researchers have also proposed collaborative design strategies (Lungu et al., 2021), demonstrate the adaptation of traditional motifs in modern furniture through the collaborative interplay of materials and processes. Furthermore Zheng and Zhu (2021) emphasize the significance of coordinating the relationship between users, companies, and producers in furniture design. They propose establishing an interactive design platform to facilitate collaborative design in the furniture industry.

Regarding research on driving design innovation (Ferit Aydin & Erkarslan, 2019), conducted a case study of a furniture design company in Turkey. They explored incremental and radical design-driven innovation approaches for cultural studies, aiming to foster innovation in furniture design.

3.2.1.3. Technology. Exploring and applying new technologies in contemporary furniture design is crucial in achieving design goals. The emergence of intelligent technology and digitally assisted design provides designers with more opportunities to incorporate cultural elements into furniture design (Wu, 2022), proposes using image-sensing technology and artificial intelligence decision-making mechanisms to integrate Ming furniture shapes into appropriate scenarios, catering to the needs of older people and enhancing the brilliant home experience. Similarly, Lungu et al. (2021) utilize digital technology to create a database of traditional elements to promote the authenticity and effectiveness of traditional culture transmission in furniture design.

Furthermore, Ye et al. (2022) employ big data technology to mine and analyze the semantics of traditional furniture, allowing for insightful data-driven analysis. Additionally Zheng and Zhu (2021) explore parametric design techniques to balance traditional craftsmanship and modern design and manufacturing processes.

3.2.2. Theme 2 cultural resources

Cultural resources are the primary material source and foundation for innovation in culturally oriented-furniture design. Twenty of the 29 articles explicitly analyzed address this topic, highlighting the significance of cultural resources in this field. Through coding and analysis of these studies, we identified traditional and contemporary culture as prominent sources of inspiration and material for furniture design (Figure 7).

3.2.2.1. Traditional culture. Traditional cultural resources possess temporal and spatial attributes, representing historical and local cultures. These two aspects are not mutually exclusive but rather intertwined with different emphases. For instance, a specific national culture may emphasize its regional attributes while still encompassing historical attributes. Despite being articulated in temporal and spatial dimensions, their shared objective is effectively utilizing traditional cultural values. By incorporating these values into modern life through furniture design, traditional culture can be better integrated and accepted by a broader audience, leading to cultural preservation.

Chinese scholars have significantly contributed to furniture design research using traditional cultural resources (Liang & Fan, 2022; Wu, 2022; Wu et al., 2021) have studied modern furniture design incorporating cultural elements such as the Six Books of the Han Dynasty and the swastika form. Furthermore,

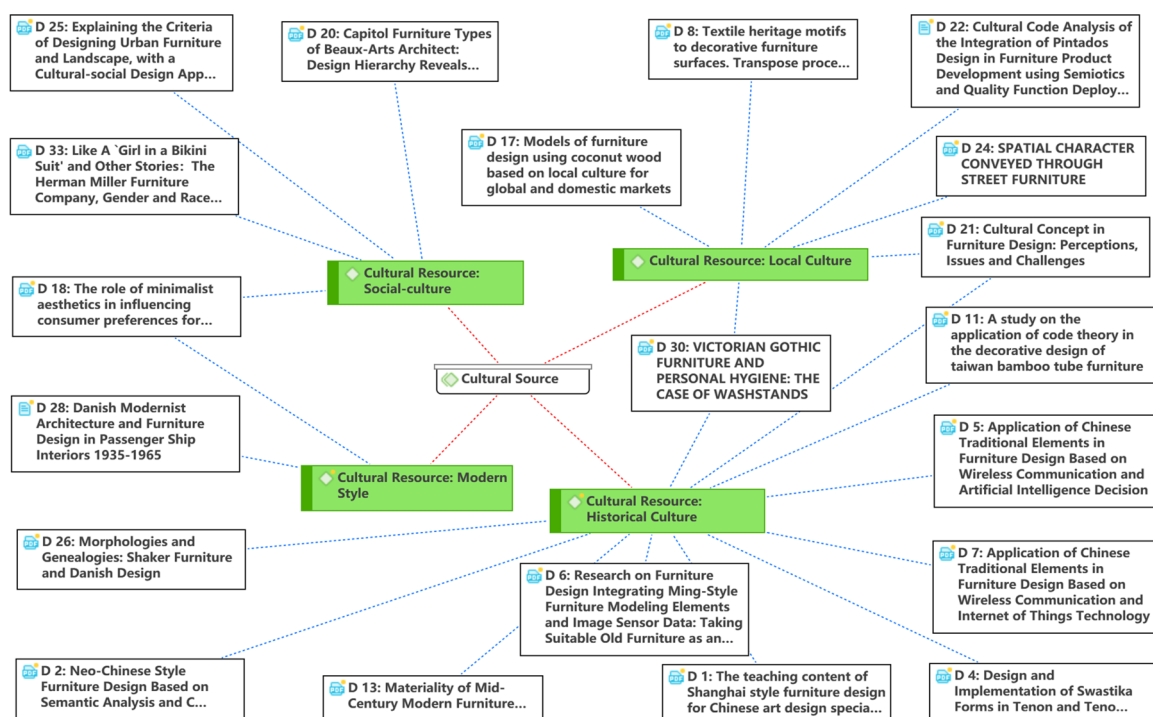


Figure 7. Cultural resource.

Chinese scholars (Chen, 2022; Ye et al., 2022; Zou et al., 2022) have focused on improving modern furniture design by adapting traditional Chinese furniture to meet the needs of contemporary life through the application of modern technology.

Similarly, scholars from other countries with rich cultural heritage have explored traditional cultural resources to enhance modern furniture design (Taft, 2015), a Danish scholar, and (Tuna Ultav et al., 2021), a Turkish researcher, discuss the significance of furniture styles from the Middle Ages in their respective countries for contemporary furniture design (Tsoumas, 2018), a British scholar, explores the importance of Victorian Gothic-style furniture in social life. Slovenian scholars (Juvancic & Verovsek, 2018) investigate the relationship between local culture and street furniture. In Southeast Asia, researchers such as (Suprobo & Santosa, 2017) from Indonesia have identified and utilized local cultural resources in furniture design (Sahari & Shanat, 2021), from Malaysia explore the application of famous visual motifs like 'Pua Kumbu' and 'Orang Ulu' from Sarawak, East Malaysia, in furniture design. Similarly (Paete, 2022), from Indonesia analyzes the cultural code of Pintado's tattoo motifs for furniture design purposes.

3.2.2.2. Modern culture. The study of modern culture in furniture design encompasses the social dimension of contemporary society. Most of the research in this area comes from developed countries and focuses on the early 2010s. Scholars explore various aspects of social life and reveal the cultural and social attributes expressed through furniture design. The earliest publication comes from the American scholar (Al Shihabi, 2013), who, through his study of interior and furniture styles and furnishings in typical American public buildings, reveals the hidden cultural and political hierarchies that the designers were trying to express. His research further demonstrates that furniture is not just a material product with functional attributes but that the cultural and social attributes it expresses in a given social life are even more critical. Guided by this idea (Wilson, 2015), examines the gender and racist ideologies prevalent in American society during the 1940s and 1950s through the furniture products of the Herman Miller company. This research demonstrates the influence of societal factors on furniture design and highlights how design can reflect and perpetuate cultural ideologies (Poon, 2017), analyzes two iconic minimalist chair designs from the Bauhaus movement to explore the social connections between cultural factors and consumer preferences. The study illustrates how cultural influences shape design choices and consumer behavior. Like the previous American scholars, Danish researcher (Peter, 2019) investigates the impact of furniture design on historical events on modern social life. By analyzing furniture design in passenger ship interiors from 1935 to 1965, the study reveals the sociocultural movements underlying the Nordic design style represented by Denmark during that era. In contrast to most studies from developed countries (Allahdadi, 2017), an Iranian scholar from a developing country, focuses on practical applications. He presents criteria for urban furniture design using a social design approach, emphasizing the importance of considering social factors in shaping urban spaces.

3.2.3. Theme 3 human-centered design

As the consumer market shifts towards being user-centered, the concept of human-centered and user-based design has become the mainstream approach in furniture design (Zhu et al., 2022). Due to its close and frequent interaction with people, furniture holds a unique position among other design products such as architecture or souvenirs. Therefore, it is crucial to prioritize the functional and spiritual aspects of human-centered design in furniture design.

In culturally oriented furniture design studies, a significant focus is on incorporating cultural aspects of design thinking. Researchers investigate target users' cultural preferences to guide furniture design that aligns with their cultural background. By understanding and considering cultural connotations, designers can create furniture that not only meets functional needs but also resonates with the cultural identity and values of the users.

This approach ensures the furniture design fulfills its intended purpose and enhances the user's sense of cultural belonging and connection. By combining cultural elements with human-centered functional needs, designers can create furniture that serves its practical function and carries deeper cultural meanings and significance (Figure 8).

The cultural preferences of users were not initially the basis for furniture design, but researchers have discovered and analyzed these preferences. Tsoumas (2018) conducted a case study on the design of Victorian toilets in England to reflect the lifestyle and cultural preferences of the middle and upper classes (Sahari & Shanat, 2021), expanded on Tsoumas' interpretation by emphasizing that consumers

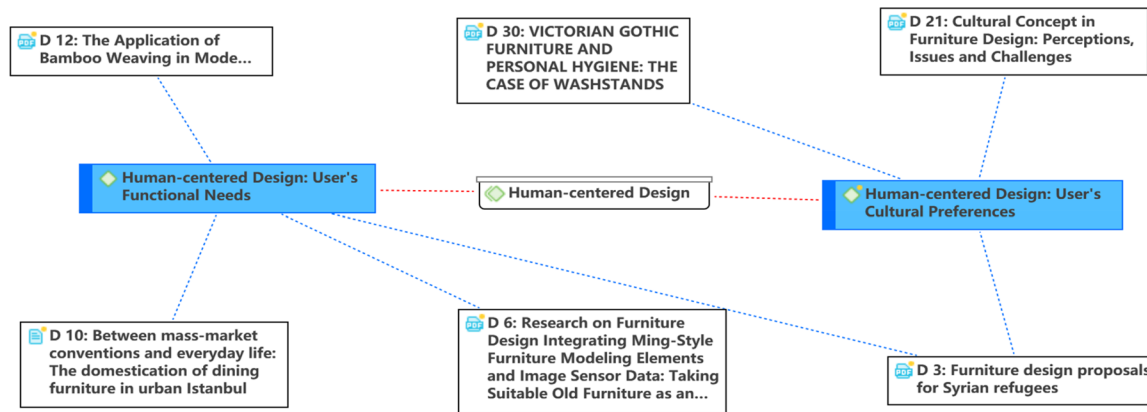


Figure 8. Human-centered design.

have their interpretations of culture in furniture. They stressed the importance of considering cultural preferences in the design and manufacturing of furniture, mainly when catering to regional cultures. Cordan (2022) shared this view and researched designing culturally and behaviorally appropriate furniture for Syrian refugees in Turkey. The author and their students utilized cultural probing techniques and ethnographic methodologies to understand the design needs of the users and incorporated their cultural preferences as a crucial basis for the design. Additionally, the study examined the functional needs of Syrian households, such as eating, sitting, sleeping, and storage, and combined them with cultural preferences to inform furniture design (Nasir, 2021), focused on traditional domestic households in Turkey, similar to Cordan (2022), and explored the cultural preferences in furniture design (Zheng & Zhu, 2021), introduced the interaction design concept, suggesting effective interaction platforms based on user habits and aesthetic needs (Chen, 2022), targeted elderly users as a particular group, guiding furniture design based on a comprehensive understanding of their needs. Scholars worldwide have studied users' cultural preferences and functional needs from various perspectives, including historical examples, globalization, specific scenarios, design interactions, and specific user groups, to provide valuable suggestions for culturally oriented furniture design.

3.2.4. Theme 4 sustainable development

The integration of furniture design and culture holds significant benefits for the sustainable development of both. Sustainable development has gained prominence in various fields, particularly in cultural development. With globalization's evident impact on traditional culture, scholars have shown a growing interest in the sustainable development of culture. Analyzing publications from the past decade, it becomes evident that researchers have concentrated on the sustainable development of furniture design by emphasizing the development of traditional culture and design education (Figure 9).

3.2.4.1. Cultural development. The primary objective of culturally oriented furniture design research is to foster the sustainable development of culture through furniture. As a medium of culture, furniture represents material aspects and encompasses intangible cultural elements, showcasing remarkable artistic accomplishments. Some scholars have examined classic furniture in historical contexts (Al Shihabi, 2013; Raizman, 2013) to unveil the socio-cultural significance of furniture in history (Juvancic & Verovsek, 2018). Building upon this foundation, integrating modern technology into furniture design for the sustainable preservation of culture has emerged as a prominent research focus (Lungu et al., 2021). propose digitizing cultural motifs and symbols, employing databases and modern furniture design to safeguard cultural heritage. While (Zheng & Zhu, 2021) also utilize modern technologies like parametric and interactive design to facilitate the fusion of culture and furniture design, their aim extends beyond preservation to cultural promotion, in contrast to previous studies on cultural preservation and promotion (Wu et al., 2021), argue that culture is dynamic and, by introducing semiotic theory, suggest that the culture of furniture display should embrace new directions and styles while maintaining traditional craftsmanship.

3.2.4.2. Design education. Furniture design education is of great significance to the sustainable development of the furniture industry. Several researchers have integrated furniture design research with

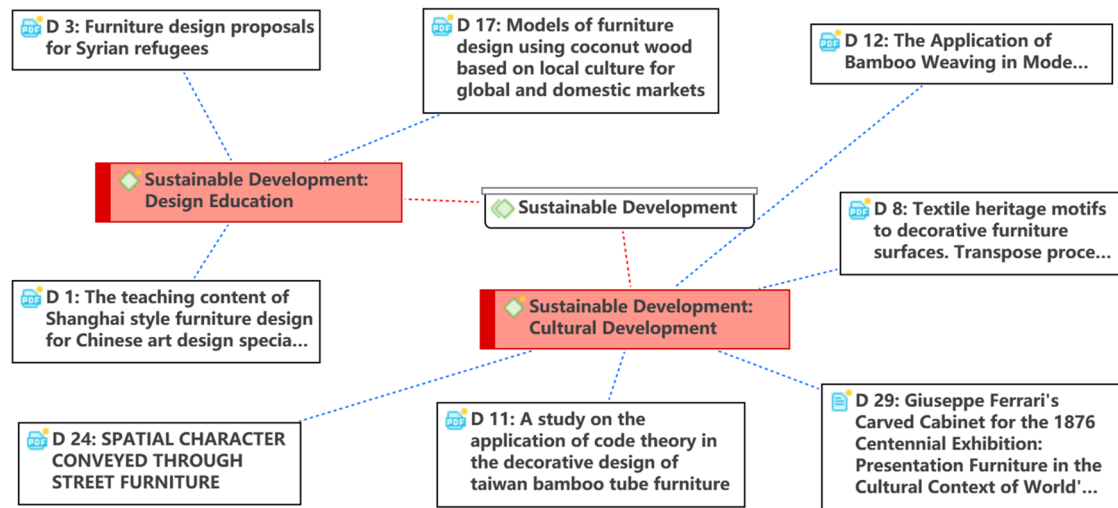


Figure 9. Sustainable development.

design education, resulting in the development of furniture design talent and contributing to the sustainable progress of the field. For instance, Suprobo and Santosa (2017) engaged students in exploring and developing design products that integrate local culture, enhancing their design skills and validating research findings. Similarly, a Turkish scholar, Cordan (2022), employed a similar approach to educating students about design while studying furniture design for Syrian refugees. Students were actively involved in collecting, analyzing, discussing, and creating preliminary designs, improving their practical skills significantly. In contrast, Chinese scholars, such as (Zou et al., 2022), prefer to educate students about furniture design through virtual design practice, enabling them to comprehend and master historical Chinese furniture design styles.

4. A Proposed conceptual framework on furniture design from the perspective of cultural Orientation

The thematic review has generated new research proposals to advance culturally oriented furniture design knowledge. Based on the conceptual framework depicted in Figure 10, we have identified eight mainstream research directions to guide culturally oriented furniture design implementation. These research directions aim to identify new research opportunities, inspire researchers with fresh ideas, foster innovative thinking among designers, and contribute to the successful realization of designers' strategies. Considering the current research landscape and project structure, we can categorize future research into the following areas:

1. *Furniture Design Method* – Current approaches to furniture design within various cultural contexts primarily revolve around designing visual form elements, integrating design strategies, and utilizing new technologies. Designers often begin by focusing on visual form elements, as they serve as a direct means of expressing culture. Consequently, most researchers have concentrated on this aspect (Liang & Fan, 2022; Seker & Koc, 2021; Suprobo & Santosa, 2017; Wan et al., 2021). Additionally, As early as 2018, Juvancic and Verovsek (2018), proposed a semiotic theory, which regarded the relationship between the visual characteristics and functions of street furniture as the relationship between the sign and the signified. Since then, comprehensive design strategies guided by semiotic theory have gradually become the mainstream method of culturally oriented furniture design. Liang and Fan (2022), Paete (2022), and Wu et al. (2021) have discussed their application in furniture Use as symbolic code in the design process. This approach emphasizes the flexible application of cultural elements and is currently a prominent area of research in cultural product design. Furthermore, the exploration of new technologies, such as intelligent furniture technology and big data technology, has been investigated in furniture design. For example, in the field of furniture design Lungu et al. (2021), used digital technology to establish a traditional element database, Wu

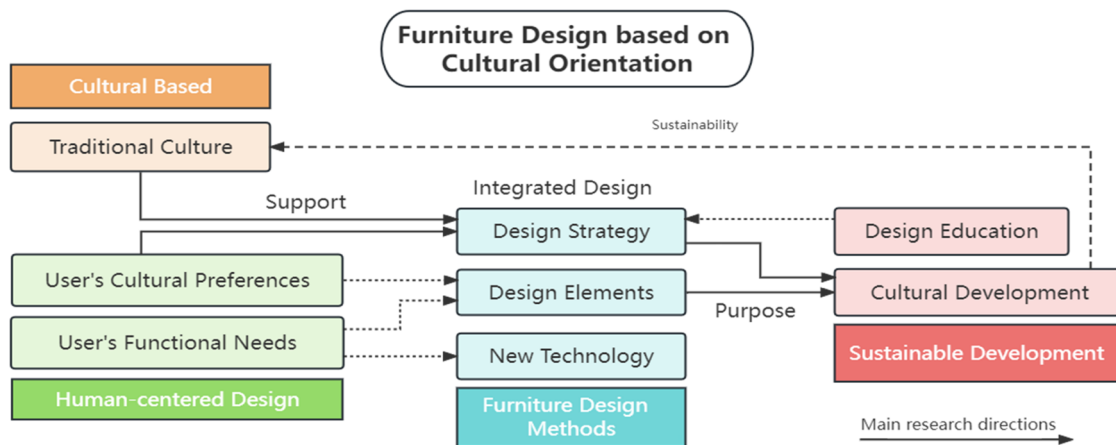


Figure 10. A conceptual framework on furniture design based on cultural orientation.

(2022) proposed to use image sensing technology and artificial intelligence decision-making mechanism, and Ye et al. (2022), used large-scale Data technology mines and analyzes the semantics of traditional furniture, and Zheng and Zhu (2021), use parametric design technology to balance traditional craftsmanship and modern design.

We believe that culturally oriented furniture design in the past largely relied on designers' understanding of culture. They usually gave new furniture cultural significance through visual redesign based on cultural symbols, but this process has a profound impact on design. It places high demands on teachers' cultural understanding and design capabilities. The role of new technologies such as artificial intelligence and big data as auxiliary tools for designers in this field will inevitably greatly reduce designers' burden and design deviations. At present, these technologies have penetrated into various design processes, such as the establishment of a cultural element database (Lungu et al., 2021) to ensure the authenticity of culture, and semantic mining analysis based on the database (Ye et al., 2022) and the combination of traditional craftsmanship and modern design (Zheng & Zhu, 2021). Based on this current situation, we believe that artificial intelligence and big data technology will be explored and applied to other design processes, such as the integration of cultural elements and furniture design (AI). In addition to designing process, artificial intelligence and big data may also be applied to discover cultural preferences or trends that may not be obvious. This may include analyzing consumer behavior, social media trends or market research data to determine cultural direction for furniture design.

2. *Cultural Resources* – Examining culturally oriented furniture design literature reveals a diverse range of cultural contexts in each piece of research. A thematic analysis of these cultural sources highlights the predominant research on traditional culture, including historical and regional cultures. In the past ten years, researchers worldwide have conducted extensive research on traditional culture, which includes but is not limited to Denmark (Taft, 2015), Indonesia (Paete, 2022; Suprobo & Santosa, 2017), the United Kingdom (Tsoumas, 2018), Slovenia (Juvancic & Verovsek, 2018), Turkey (Tuna Ultav et al., 2021), Malaysia (Sahari & Shanat, 2021), while studies on modern culture have predominantly taken place in Europe and the United States during the early 2010s (Al Shihabi, 2013; Wilson, 2015). It is interesting to note that Chinese scholars tend to modernize traditional furniture within this theme (Chen, 2022; Ye et al., 2022; Zou et al., 2022). In contrast, researchers from other developing countries are more inclined to explore and promote distinct local cultures, viewing furniture as a medium for cultural expression (Juvancic & Verovsek, 2018; Suprobo & Santosa, 2017; Taft, 2015; Tsoumas, 2018). This perspective offers broader applicability and potential for further development.
3. *Human-Centred Design* – Furniture design has long been rooted in a human-centered philosophy, distinguishing it from many types of products. Similarly, in culturally oriented furniture design, the concept of human-centered design remains pivotal. It entails designing furniture that fulfills functional requirements for everyday use and considers the user's cultural preferences (Sahari & Shanat, 2021; Tsoumas, 2018). This consideration becomes even more crucial when designing furniture from a specific regional cultural context, encompassing a diverse global user base's aesthetic, religious,

lifestyle, and other cultural preferences, Cordan (2022) and Tuna Ultav et al. (2021) explained the importance of cultural preferences in furniture design through Syrian refugees and Turkish traditional families respectively. The emphasis on the user's cultural preferences reflects the humanistic spirit within furniture design, extending and elevating the concept of human-centered design.

4. *Sustainability* – Sustainability represents the ultimate objective in cultural product design and research. The review highlights that in furniture design, the concept of cultural sustainability has evolved from initial conservation (Lungu et al., 2021) to promotion (Zheng & Zhu, 2021) and further to evolution (Wu et al., 2021). Recognizing the dynamic nature of culture, preserving traditional cultural heritage does not rely solely on preservation through museums but instead on activation and adaptation to contemporary times and society, fostering sustainable cultural development. Furthermore, although the number of studies in furniture design education is limited, researchers are beginning to explore approaches that engage students in the research process. Suprobo and Santosa (2017) incorporate a practical component within the curriculum to validate research ideas. Cordan (2022) goes a step further and integrates research and teaching to improve students' critical thinking skills and develop practical design expertise. Consequently, this interplay between research and education contributes to the sustainable development of the furniture design industry.

5. Conclusions

This paper comprehensively reviews 29 relevant literature pieces about culturally oriented furniture design from 2013 to 2022. A mixed-methods approach, combining quantitative and qualitative methods, was employed using the ATLAS.ti 23 software for thematic analysis. The quantitative analysis section presents the data obtained from ATLAS.ti 23 quantitatively, revealing current research trends in culturally oriented furniture design. Despite the growing interest of scholars in the intersection of culture and furniture design, there is a notable absence of recent thematic review articles specifically dedicated to this subject.

Consequently, there is a need to bridge the gap by synthesizing articles on furniture design and culture and discussing the associated concepts. The qualitative analysis of this study categorizes the identified themes into four key areas: (1) furniture design approaches, (2) cultural resources, (3) human-centered design, and (4) sustainable development. The research trends identified in this paper revolve around exploring convergent design research that aims to promote the sustainable development of traditional culture by addressing users' cultural preferences and needs, emphasizing visual styling as a central aspect of integration. Additionally, a growing focus is on exploring new technologies and collaborative design applications, which are receiving increased attention in the field. Overall, this paper sheds light on the current research landscape and highlights the emerging trends in culturally oriented furniture design, providing valuable insights for scholars, designers, and researchers.

This paper makes several significant contributions to furniture design from a cultural development perspective. Firstly, it explores new trends in furniture design, shedding light on more effective methods and strategies that contribute to sustainable cultural development. It provides valuable insights and guidance for both researchers and furniture designers. The paper also highlights the shifting concept of culture in furniture design, emphasizing a transition from cultural preservation to cultural promotion and evolution. This perspective acknowledges the dynamic nature of culture and emphasizes the importance of actively engaging with and evolving traditional cultural elements.

Furthermore, the paper anticipates the increasing integration of advanced technologies such as artificial intelligence (AI) and big data in furniture design. It recognizes the potential of these technologies to enhance the design process, improve functionality, and provide innovative solutions. Lastly, the paper emphasizes the continued relevance of fusion design based on traditional cultural resources. This approach acknowledges the importance of cultural heritage and encourages incorporating traditional elements in contemporary furniture design. In summary, this paper provides valuable insights into the future direction of culturally oriented furniture design, highlighting the shift towards cultural promotion and evolution, the increasing use of advanced technologies, and the significance of fusion design based on traditional cultural resources. These findings offer researchers and designers new perspectives and ideas to advance the culturally oriented furniture design field further.

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Disclosure statement

This paper is a review of the published literature on furniture design from a cultural based perspective over the last ten years, which helps us to understand current patterns in this topic and provides insights for future research. No potential conflict of interest was reported by the author(s).

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References

- Ahmad, A. (2021). Exploring tourism products for Kampung Sungai Dua Besar, Kuala Pilah, Negeri Sembilan, Malaysia. *Webology*, 2021, 13–22. <https://doi.org/10.14704/WEB/V18SI05/WEB18210>
- Al Shihabi, D. V. (2013). Capitol furniture types of Beaux-arts architect: Design hierarchy reveals meaning. *Journal of Interior Design*, 38(1), 33–51. <https://doi.org/10.1111/joid.12001>
- Allahdadi, M. (2017). Explaining the criteria of designing urban furniture and landscape, with a cultural-social design approach. *Journal of History Culture and Art Research*, 6(4), 165–175. <https://doi.org/10.7596/taksad.v6i4.1034>
- Balermipas, A., & Manola, M. (2020). Souvenirs: Their role in tourism industry, cultural heritage and their utilization in experiential teaching. *Archives of Business Research*, 8(9), 1–10. <https://doi.org/10.14738/abr.89.8970>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Bullen, P. A., & Love, P. E. D. (2011). Adaptive reuse of heritage buildings. *Structural Survey*, 29(5), 411–421. <https://doi.org/10.1108/02630801111182439>
- Chen, J. (2019). *Cultural DNA and Product Innovation: A Guideline of Establishing and Utilizing Cultural DNA Banks* [University of Cincinnati]. <https://www.proquest.com/docview/2269892685?pq-origsite=gscholar&fromopenview=true>
- Chen, W. (2022). Research on furniture design integrating ming-style furniture modeling elements and image sensor data: Taking suitable old furniture as an example. *Journal of Sensors*, 2022, 1–10. <https://doi.org/10.1155/2022/5306491>
- Cordan, Ö. (2022). Furniture design proposals for Syrian refugees. *A/Z ITU Journal of the Faculty of Architecture*, 19(2), 415–427. <https://doi.org/10.5505/ituja.2022.87533>
- Ferit Aydin, M. F., & Erkarlan, O. (2019). Analysis of design-driven innovation practices in Turkish and Swedish furniture firms: An exploratory approach. *The International Journal of Design Management and Professional Practice*, 13(1), 29–56. <https://doi.org/10.18848/2325-162X/CGP/v13i01/29-56>

- Helen, S.-O. (2012). What is culture? A compilation of quotations. *GlobalPAD Core Concepts*. <http://go.warwick.ac.uk/globalpadintercultural>
- Juvancic, M., & Verovsek, S. (2018). Spatial character conveyed through street furniture. *Annales-Anali ZA Istrske in Mediteranske Studije-Series Historia ET Sociologia*, 28(3), 611–620. <https://doi.org/10.19233/ASHS.2018.37>
- Liang, L., & Fan, Y. (2022). Design and implementation of Swastika Forms in Tenon and Tenon structure furniture. *Advances in Multimedia*, 2022, 1–10. <https://doi.org/10.1155/2022/8964898>
- Lin, R.-T. (2007). Transforming Taiwan aboriginal cultural features into modern product design: A case study of a cross-cultural product design model. *International Journal of Design*, 1(2), 45–53.
- Lungu, A., Androne, A., Gurau, L., Racasan, S., & Cosereanu, C. (2021). Textile heritage motifs to decorative furniture surfaces. Transpose process and analysis. *Journal of Cultural Heritage*, 52, 192–201. <https://doi.org/10.1016/j.culher.2021.10.006>
- Miranda, A. E. (2019). Urban furniture design, identity, and collective memory. *International Journal of Architectonic, Spatial, and Environmental Design*, 13(1), 57–68. <https://doi.org/10.18848/2325-1662/CGP/V13I01/57-68>
- Moalosi, R., Popovic, V., & Hickling-Hudson, A. (2010). Culture-orientated product design. *International Journal of Technology and Design Education*, 20(2), 175–190. <https://doi.org/10.1007/s10798-008-9069-1>
- Nasir, E. B. (2021). Between mass-market conventions and everyday life: The domestication of dining furniture in urban Istanbul. *International Journal of Food Design*, 6(1), 103–127. https://doi.org/10.1386/ijfd_00026_1
- Olalere, F. E. (2019). Commoditising indigenous crafts to enhance tourism experience: A case study on Mambong pottery, Malaysia. *African Journal of Hospitality, Tourism and Leisure*, 8(4), 1–11.
- Paete, M. C. (2022). Cultural code analysis of the integration of Pintados design in furniture product development using semiotics and quality function deployment. *Journal of Visual Art and Design* 14(1), 86–105. <https://doi.org/10.5614/j.vad.2021.14.1.7>
- Peter, B. (2019). Danish modernist architecture and furniture design in passenger ship interiors 1935–1965. In *The Mariner's Mirror*, 105(3), 297–317. <https://doi.org/10.1080/00253359.2019.1615778>
- Poon, S. T. F. (2017). The role of minimalist aesthetics in influencing consumer preferences for furniture design. *New Design Ideas*, 1(1), 50–58.
- Qian, Y. (2017). *Research on the Relationship between Regional Culture and Street Furniture Design*. Proceedings of the 3rd Annual International Conference on Social Science and Contemporary Humanity Development (Sschr 2017), In H. Lin (Ed.), (Vol. 90, pp. 62–66). ATLANTIS PRESS. <https://doi.org/10.2991/sschr-17.2017.12>
- Raizman, D. (2013). Giuseppe Ferrari's Carved Cabinet for the 1876 Centennial Exhibition: Presentation furniture in the cultural context of world's fairs. *West 86th-A Journal of Decorative Arts Design History and Material Culture*, 20(1), 62–91. <https://doi.org/10.1086/670976>
- Sahari, F., & Shanat, M. (2021). Cultural concept in furniture design: Perceptions, issues and challenges. *Journal of Visual Art and Design*, 13(2), 95–105. <https://doi.org/10.5614/j.vad.2021.13.2.1>
- Seker, S., & Koc, K. H. (2021). Importance of cultural impact in furniture design; Examples of the Istanbul/Yenikoy-Oklaoma State/Stillwater. *Forestist*, 71(3), 226–237. <https://doi.org/10.5152/forestist.2021.20056>
- Ser, S. (2018). On culture-oriented product design: A study to transform cultural features to design elements. *International Journal of Creative Future and Heritage (TENIAT)*, 6(2), 163–197. <https://doi.org/10.47252/teniat.v6i2.198>
- Stokes, B., Bar, F., Baumann, K., Caldwell, B., & Schrock, A. (2021). Urban furniture in digital placemaking: Adapting a storytelling payphone across Los Angeles. *Convergence: The International Journal of Research into New Media Technologies*, 27(3), 711–726. <https://doi.org/10.1177/1354856521999181>
- Suprobo, F. P., & Santosa, A. (2017). Models of furniture design using coconut wood based on local culture for global and domestic markets. *Creative Industries Journal*, 10(1), 89–99. <https://doi.org/10.1080/17510694.2017.1282304>
- Taft, M. (2015). Morphologies and genealogies: Shaker furniture and Danish design. *Design and Culture*, 7(3), 313–334. <https://doi.org/10.1080/17547075.2015.1105709>
- Tsoumas, J. (2018). Victorian gothic furniture and personal hygiene: The case of washstands. *Res Mobilis*, 7(8), 65–81. <https://doi.org/10.17811/rm.7.8.2018.65-81>
- Tuna Ustav, Z., Hasirci, D., & Atmaca Cetin, H. (2021). Materiality of mid-century modern furniture in Turkey. *Art-Sanat*, 0(15), 347–367. <https://doi.org/10.26650/artsanat.2021.15.0014>
- Wan, Q., Hu, Q., Chen, B., Fang, H., Ke, Q., & Song, S. (2021). Study on the visual cognition of laminated bamboo furniture. *Forest Products Journal*, 71(1), 84–91. <https://doi.org/10.13073/FPJ-D-20-00063>
- Wilson, K. (2015). Like A 'Girl in a Bikini Suit' and other stories: The herman miller furniture company, gender and race at mid-century. *Journal of Design History*, 28(2), 161–181. <https://doi.org/10.1093/jdh/epv006>
- Wu, S. (2022). Application of Chinese traditional elements in furniture design based on wireless communication and artificial intelligence decision. *Wireless Communications and Mobile Computing*, 2022, 1–6. <https://doi.org/10.1155/2022/7113621>
- Wu, S., & Liu, W. (2019). Discussion on the aesthetic concept of Chinese Traditional Culture in modern furniture design. *IOP Conference Series*, 573(1), 012023. <https://doi.org/10.1088/1757-899X/573/1/012023>
- Wu, S.-H., Fan, K.-K., & Sun, C.-J. (2021). A study on the application of code theory in the decorative design of Taiwan Bamboo Tube Furniture. *Sustainability*, 13(7), 3722. <https://doi.org/10.3390/su13073722>
- Xin, X. (2007). Product innovation in a cultural context A method applied to Chinese product development [Doctor of Philosophy in Design]. Carnegie Mellon University.
- Ye, J., Zhang, J., Gao, L., Zhou, Y., Liu, Z., & Han, J. (2022). Neo-Chinese style furniture design based on semantic analysis and connection. *KSII Transactions on Internet and Information Systems*, 16(8), 2704–2719. <https://doi.org/10.3837/tiis.2022.08.013>

- Zairul, M. (2020). A thematic review on student-centred learning in the studio education. *Journal of Critical Reviews*, 7(02), 95. <https://doi.org/10.31838/jcr.07.02.95>
- Zairul, M. (2021). The recent trends on prefabricated buildings with circular economy (CE) approach. *Cleaner Engineering and Technology*, 4, 100239. <https://doi.org/10.1016/j.clet.2021.100239>
- Zairul, M., & Zaremohzzabieh, Z. (2023). Thematic trends in Industry 4.0 Revolution potential towards sustainability in the construction industry. *Sustainability*, 15(9), 7720. <https://doi.org/10.3390/su15097720>
- Zheng, Y., & Zhu, J. (2021). The application of Bamboo Weaving in Modern Furniture. *BioResources*, 16(3), 5024–5035. <https://doi.org/10.15376/biores.16.3.5024-5035>
- Zhou, Q., & Pu, Y. (2022). Impact of cultural heritage rejuvenation experience quality on perceived value, destination affective attachment, and revisiting intention: Evidence from China. *Asia Pacific Journal of Tourism Research*, 27(2), 192–205. <https://doi.org/10.1080/10941665.2022.2046619>
- Zhu, Q., Abdul Rahman, A. R., & Huang, W. (2022). A thematic review on souvenirs from design perspective publications from 2012 to 2022: Analysis of trends for future studies. *Cogent Arts & Humanities*, 9(1), 2100129. <https://doi.org/10.1080/23311983.2022.2100129>
- Zhu, Q., Rahman, R., Alli, H., & Effendi, R. A. A. R. A. (2023). Souvenirs development related to cultural heritage: A thematic review. *Sustainability*, 15(4), 2918. <https://doi.org/10.3390/su15042918>
- Zou, W., Li, Z., & Sun, D. (2022). The teaching content of Shanghai style furniture design for Chinese art design speciality. *Heliyon*, 8(11), e11627. <https://doi.org/10.1016/j.heliyon.2022.e11627>