A Comprehensive review of cultural heritage integration in interior design

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Abstract The preservation and transmission of cultural heritage products are urgent tasks for the global community in the face of the challenges of increasingly rapid modernization and urbanization. Interior design, as a practice capable of shaping spaces, environments and emotions, has the unique potential to preserve and transmit the importance of cultural heritage. However, few review articles have discussed the connections between them and the process of applying cultural heritage to interior design. Therefore, the aim of this review is to analyze the literature from October 2019 to 2023 on interior design related to cultural heritage. Articles from 3 leading databases (WOS, SCOPUS and ScienceDirect) were searched and screened. Forty-two articles that met the criteria were ultimately selected for comprehensive analysis. ATLAS.ti 23 was used as the analysis software to produce quantitative results reflecting trends in cultural heritage and interior design research. Moreover, six themes on the subject were obtained from the qualitative analysis: (1) Reuse of historic buildings; (2) Recycling of waste materials; (3) Heritage Elements for Interior Design; (4) Heritage values; (5) Challenges; and (6) Preservation methods. Finally, the findings are expected to help address the relationship between interior design and cultural heritage and provide insights for future research and practice on the sustainability of cultural heritage in interior design.

Keywords: Interior design, cultural heritage, sustainability, review, ATLAS.ti 23

1. Introduction

Worldwide society has recognized the preservation and transmission of cultural heritage as a crucial task in light of the continuous influence of modernity and the swift progress of urbanization (Barthel-Bouchier, 2016). Interior design serves as a potent catalyst for shaping the physical space and generating an atmosphere that elicits emotions (Caan, 2011). Interior design is renowned for its distinctive capacity to safeguard and convey the profound importance of cultural heritage, serving as a crucial component in the storytelling of our collective past.

During this period of remarkable transformation and worldwide integration, interior design plays a crucial role in shaping physical environments (Austin, 2020). Additionally, it serves as a custodian of cultural narratives, safeguarding the fundamental aspects of many histories and customs (Duara, 1998; Tyler et al., 2018). The complex nature of this relationship necessitates a more detailed examination that goes beyond superficial appearances and digs into the significant influence of cultural history on the emotional and experiential aspects of the planned environment.

As we navigate through the complexity of a constantly evolving world, it is crucial to understand the complex links that combine cultural history and interior design. This investigation aimed to uncover the underlying complexities, revealing the concealed connections ingrained in historical structures, materials, and design aspects (Pearson, 2020). Our goal is to shed light on how cultural legacy may be incorporated into modern design practice, highlighting the ability of interior spaces to preserve and transmit culture.

2. Literature Review

2.1. Design and Interior Design

Furthermore, in addition to architectural terminology and definitions, the term "interior" is employed to denote indoor places in a broad sense (Ching, 2023). The term is occasionally employed as a collective noun to refer to interior furnishings, fittings, and equipment (Jackson, 2013). Architecturally speaking, an internal space formed by a building and delineated by its structure does not qualify as an interior space. An interior space is considered complete and fully furnished only when it has been finished and enhanced with both utilitarian and decorative features. The interior is deliberately formed by the building's structure or through further alterations to the interior space. It is logically organized to serve a certain function, furnished with equipment elements and systems, and planned to fulfill human needs (Habbak, 2021; Nelson & Stolterman, 2014).

Interior design is an intricate procedure that integrates the user's requirements with the attributes of an established or developing area (Kiannu, 2021). The suitability and appropriateness of the design in relation to the building's characteristics are essential prerequisites for this procedure (Mostovshchykova & Stryzhko, 2021). Interior design is a distinct and specialized discipline that sets it apart from other forms of design. Unlike in other design fields, interior design not only focuses on the functional and aesthetic aspects of elements but also takes into account the unique characteristics of a specific location or space (Hu & Matsubara, 2023; Tessa Eka Darmayanti, 2020; Zhu, 2023). The interior of a building is intrinsically linked to its location and is encompassed by the building's construction. Traditionally, it is linked to interior decoration and is seen as a peripheral field of architecture (Konigk, 2011). Interior design refers to the comprehensive scope of interior projects and encompasses many aspects, such as building construction and decoration. Presently, the field can be categorized into three distinct areas of expertise: interior decoration, interior design, and interior architecture (Ching & Binggeli, 2018). Naturally, these various specializations intersect in numerous domains. The primary distinction resides in the extent and comprehensiveness of intervention inside preexisting spaces (Chen et al., 2020).

Interior decoration is the practice of improving the inside of a space by adding a specific style. It primarily encompasses surface patterns, furniture, fabrics, lighting, and the materials employed (Abouelela, 2019; Ahmed Abdulwahid Dhannoon, 2022; Kousa & Pottgiesser, 2019; Ofori et al., 2023). There are few design modifications, and they have minimal impact. An illustrative example of interior decoration is the application of interior design principles to enhance the aesthetics and functionality of a residential dwelling, hotel, or restaurant.

Interior design is a multidisciplinary domain that encompasses the creation of indoor places with a distinct ambiance and personality (Sloane, 2014). This can be achieved by modifying the overall volume of the area and strategically including certain features and finishes (Almurbati, 2020; Naeem et al., 2021; Wijaya et al., 2023). The majority of these projects entail little alteration to the structure. Typically, a recessed interior refers to a place that maintains its structural look (Ching, 2023). Common examples include retail establishments, exhibition venues, and residential indoor spaces.

Interior architecture pertains to the renovation or rejuvenation of preexisting structures or emerging architectural designs. Nonetheless, it pertains to the fundamental concepts of entry into space, its arrangement, and its structure (Ching, 2023). It establishes a connection between interior design and architecture and examines the distinctions, particularly by thoroughly considering structural, technological, environmental, and social aspects (Caan, 2011). This pertains to a wide range of projects, including museums, galleries, high-end office spaces, commercial interiors, and residential interiors. Consequently, they are three separate yet interconnected fields, each possessing its own unique qualities. All of them share a common characteristic: they are intricately connected to particular geographical areas (Stephenson, 2008).

2.2. Cultural heritage

Cultural heritage represents the culmination of historical and civilizational progress (Alobailan & Alawad, 2022; Piñeiro-Naval & Serra, 2019; Yan et al., 2022; Zhang et al., 2023). It serves as a significant emblem of a nation or a community's historical and cultural accomplishments and is a valuable cultural resource. The World Heritage Committee's practice of amending the Operational Guidelines of the 1972 Convention reflects the growing recognition of the dual nature of heritage, which encompasses both tangible and intangible aspects. In 1992, the introduction of the 'related' cultural landscapes category enabled the inclusion of heritage sites based on their significant religious, artistic, or cultural connections with natural aspects rather than relying solely on the presence of tangible cultural artifacts, which may be minimal or absent. According to Vecco (Vecco, 2010), intangible heritage can be more accurately described as a meaning or value that signifies the importance of the intangible parts of legacy rather than being considered a distinct category called 'intangible heritage'. Nevertheless, they also emphasize the differentiation between "tangible" manifestations of legacy, which derive significance from intangible customs, applications, and interpretations, and "intangible" manifestations, which can subsist without any physical embodiment.

A crucial element in any discussion on human rights is the significant impact of cultural heritage in shaping cultural identity at the local, regional, or national level (Blake, 2011). Heritage should be acknowledged as a crucial aspect of human rights, as it contributes to the formation of individual and group identities through its tangible and intangible aspects. From a human rights standpoint, the development of strong identities seems to be inherently beneficial, as it is essential for individuals' and even groups' feelings of dignity (Silverman & Ruggles, 2007). Furthermore, the conservation of cultural identity is frequently essential for fostering a sense of contentment and self-worth that are fundamental to the concept of human dignity. The conservation of cultural identity is considered fundamental to the very essence of human rights (Almurbati, 2020; HANI KHALIL FARRAN, 2021; Piñeiro-Naval & Serra, 2019; Yan et al., 2022; Zhang et al., 2023).

When examining national identity, the modern State is commonly regarded as having a territorial character, where the people and the land are connected by a common geography, history, and memory. However, the actual situation often diverges from this perception. Place names hold significant symbolic significance within various landscapes, whether they are cultural or natural. The symbolic landscape of a nation can be perceived as the embodiment of its cultural history and people

(Ofori et al., 2023). Moreover, a cultural legacy encompassing both tangible and intangible aspects serves as the essential foundation of a community's cultural identity, which in turn forms the basis of national identity (Panzera, 2022).

2.3. Interior Design and Cultural Heritage

Heritage encompasses a wealth of artistic concepts, connections, and practical components. The interior design encompasses several aesthetic and functional components. The designer can select materials and designs that are suitable for a specific location and purpose effectively (Appelgren, 2019; Kousa & Pottgiesser, 2019; Sokienah, 2020) while also considering their appropriateness. The designer must adhere to the established identity and incorporate it into their designs. This involves formulating the language and creative symbols of the product to vividly express cultural and social value. The design should also aim to facilitate cultural communication and the transmission of ideas and meanings. To achieve this goal, designers strive to derive semantic symbols from various cultural heritages, environmental components, and knowledge trends. The ultimate goal is to create a

Interior design draws inspiration from cultural heritage, which serves as a consistent source of ideas and creativity (Abouelela, 2019; Ahmed Abdulwahid Dhannoon, 2022; HANI KHALIL FARRAN, 2021; Mostovshchykova & Stryzhko, 2021; Naeem et al., 2021; Ofori et al., 2023; Tessa Eka Darmayanti, 2020; Zhu, 2023). Furthermore, interior design serves as a reflection of individuals' spiritual attributes and aspirations to some degree (Stokols, 1990) while primarily addressing people's physiological, psychological, and practical environmental requirements through the arrangement of indoor spaces. Interior design encompasses two main elements: first, the design of an indoor space should effectively fulfill its intended purpose while also reflecting the designer's vision in terms of both aesthetics and functionality and aligning with the prevailing psychological preferences of the time; second, interior design should consider people's spiritual aspirations and incorporate elements that reflect their inner characteristics. People's spiritual quest is intricately linked to their values, aesthetics, aesthetic desires, national cultural identity, and cultural heritage. In this regard, there are significant parallels between cultural heritage and interior design concepts (Cox, 2013). These aspects can be synergistically integrated to mutually reinforce and advance one another.

The current trend in environmental architecture and interior design is focused on sustainable green design. This approach aims to minimize pollution and visual distortion while also managing the relationship between buildings and the environment. This approach involves the application of environmental concepts and sciences, such as sustainable design and green architecture, to achieve these goals. Additionally, this approach respects the right of future generations to live a healthy life both functionally and aesthetically, and it emphasizes the optimal use of natural resources to preserve the environment. Additionally, this approach decreases energy usage and depends predominantly on sustainable and environmentally friendly energy sources. Hence, it is imperative to integrate the notion of environmental architecture into the interior design of contemporary buildings (Kousa & Pottgiesser, 2019). This entails honoring the surrounding environment and its unique attributes while also functionally and aesthetically adapting to natural conditions. Achieving this goal requires employing environmentally sustainable practices rooted in ecological principles and leveraging cutting-edge technologies (Sinou et al., 2023).

2.4. Research Aim

The objective of this study is to examine the correlation between cultural heritage and interior design by conducting a comprehensive literature analysis spanning from 2019 to October 2023. The primary focus will be on identifying prevailing trends and their interconnectedness within the realm of interior design, specifically pertaining to cultural heritage elements. The results are anticipated to offer valuable perspectives on the long-term viability of interior design. Furthermore, this study aims to establish the groundwork for future investigations about the correlation between interior design and cultural heritage.

3. Materials and Methods

As suggested by Clarke and Braun, thematic analysis involves the identification of patterns and the construction of themes through a thorough examination of the subject matter. This approach contributes to the understanding of study trends in souvenirs pertaining to cultural heritage. The use of thematic analysis in this work is an appropriate methodology for discerning novel theories and concepts within a relatively nascent subject. One advantage of thematic analysis is its accessibility, flexibility, and value as a research tool. It has the potential to provide a comprehensive and informative description of the data while also offering clear guidelines and procedures for conducting thematic analysis in a theoretically and methodologically sound manner (Braun & Clarke, 2006).

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The objective of this review is to critically examine and interpret the literature on the subject of cultural heritage in relation to interior design. The intersection of interior design and cultural heritage has only recently emerged as a topic of interest, resulting in a scarcity of research on the incorporation of cultural heritage resources into sustainable interior design practices. Consequently, the thematic evaluation was conducted in accordance with the methodology outlined by Zairul, which involves identifying significant data pertaining to the research topic through the identification of themes that reflect recurring patterns or meaningful interpretations within the dataset (Braun & Clarke, 2006; Zairul, 2020). This research endeavors to comprehensively examine and interpret empirical data, with the aim of providing insights and suggestions for the future development of grounded theory in the realm of cultural heritage within the field of interior design. The literature was chosen according to the following criteria: (1) was published between 2019 and 2023, (2) had the phrases "interior design" and "cultural heritage" at minimum, and (3) explored the connection between interiors and cultural heritage. This study employs a systematic methodological framework that encompasses many stages, including formulating the research question; selecting data sources; retrieving and preparing the data; extracting, analyzing, and synthesizing the identified themes; and ultimately visualizing, presenting, interpreting, and discussing the obtained results.

A comprehensive search of the literature was conducted using two prominent databases, namely, the Web of Science 、SCOPUS and ScienceDirect. After applying the predetermined exclusion and inclusion criteria, the initial search yielded a total of 129 articles in the Web of Science database , 116 articles in the SCOPUS database and 42 articles in the ScienceDirect database. However, a total of 48 papers were subjected to downranking as a result of their previous findings or lack of alignment with the designated topic. Among these papers, a portion were found to be incomplete or inaccessible, with fragmented linkages impeding their accessibility. Furthermore, the metadata had a significant number of duplications, namely, eight instances. A total of eleven outcomes were relocated because the literature was restricted only to the English language. The quantity of papers designated for review decreased to 42, and the papers were subsequently posted as master files in ATLAS.ti 23. Subsequently, each article was classified according to the author, volume number, journal, publisher, and year of publication to facilitate subsequent analysis (see Figure 1 and Table 1).

Table 1 Search strings.

Database	Search Strings	Results
Web of Science	All Fields: "interior design" and "cultural heritage" and English (Language) and Articles OR Editorial Materials OR Review Articles (Document Types) Timespan: 2019–2023	129results
SCOPUS	TITLE-ABS-KEY (interior design) AND TITLE–ABS–KEY (cultural AND heritage) AND LANGUAGE (English)) AND PUBYEAR > 2019 AND LIMIT-TO (DOCTYPE, "ar") AND LIMIT-TO (SUBJAREA, "SOCI") OR LIMIT-TO (SUBJAREA, "ARTS")	116results
ScienceDirect	Find articles with these terms："interior design" and "cultural heritage"Review articles or Research articles (Article type) Timespan: 2019–2023	62results

Source: Web of Science、SCOPUS and ScienceDirect Database.

The article underwent assessment utilizing both quantitative and qualitative analysis methodologies. The conclusions of the quantitative analysis were presented using mathematical calculations to obtain the relevant data. Moreover, the qualitative domain employed coding techniques to extract relevant information from the chosen papers, with the aim of identifying overarching themes and constructing a conceptual framework.

4. Results and Discussion

This section presents the noteworthy discoveries derived from the thematic review. The study question was addressed by employing both quantitative and qualitative analysis to evaluate the 42 chosen papers.

4.1. Quantitative Findings

The analysis of word frequency, year of publication, place of study, source of publication, and theme can partially reflect the trend of research on interior design and cultural heritage. First, for the quantitative part, the following word cloud was generated based on the analysis of the source documents (Figure 2). As shown in Figure 2, the word clouds with the highest number of occurrences in the cloud are "heritage", "design", "culture", "interior", and "traditional", indicating that their word frequencies are high. The word cloud shows the key terms in the theme, with the word "heritage" mentioned

1,244 times, followed by "design" 920 times, and "culture", "interior" and "traditional" mentioned 825, 720 and 340 times, respectively.
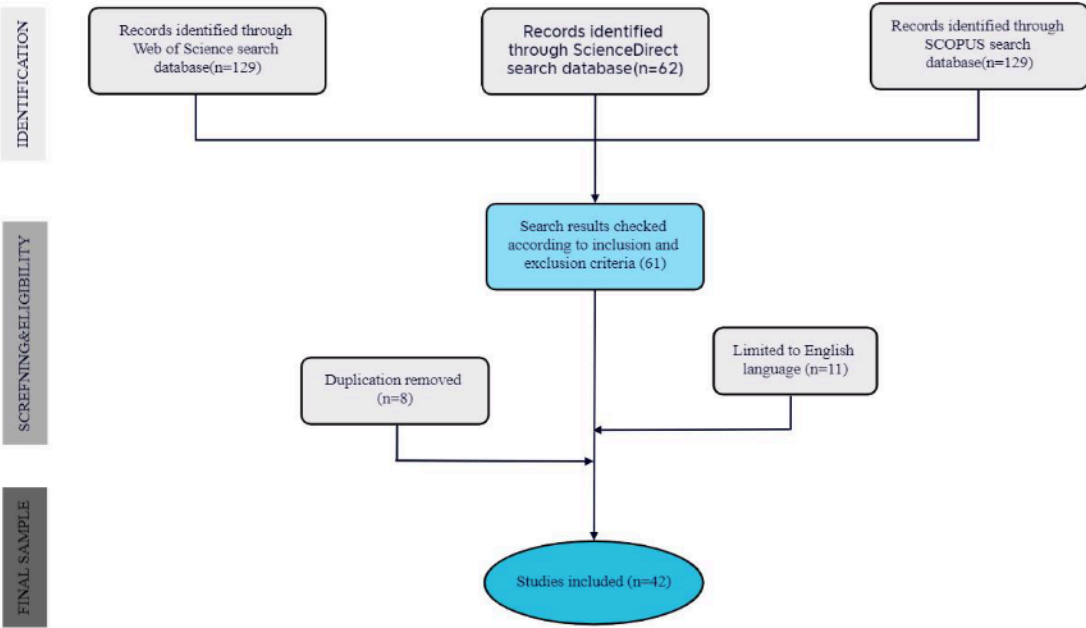

Figure 1 Inclusion and exclusion processes in the thematic review.

Figure 2 Word clouds generated from 42 articles.
Source: Processed Using ATLAS.ti 23

Figure 3 shows the number of publications related to the topic; 9 were published in 2019, 5 in 2020, 6 in 2021, 12 in 2022, and 10 in 2023. The overall trend for this theme is upward, but there is a downward trend from 2020 to 2021. This trend may be due to the impact of the COVID-19 pandemic, as it may lead to a change in research focus.

The findings of the initial examination of the spatial arrangement are presented in Figure 4. The prevalence of papers pertaining to the intersection of interior design and cultural heritage is notably higher in Asia, particularly in China, as seen by the quantity of scholarly publications on this subject matter. In a study conducted by Zhu (Zhu, 2023), the author investigated the influence of incorporating Chinese traditions into contemporary home design. Yan et al. (Yan et al., 2022) investigated the various types and distinguishing features of interior and external decorations in Wu-style architecture. Additionally, the study examined the potential for sustainability in contemporary interior design practices within this architectural style. Liu

(Liu, 2023) has conducted scholarly research on the utilization of virtual reality (VR) technology within museum settings, specifically focusing on its role in the conservation and distribution of cultural material from a social practice standpoint. Furthermore, it is noteworthy that Malaysia and Turkey each made significant contributions to four articles. Saudi Arabia, on the other hand, gave three pieces. Additionally, Italy, Greece, Egypt, and the United Arab Emirates also made noteworthy contributions, with each country providing two articles. In their recent study, Rashdan and Mhatre (Rashdan & Mhatre, 2022) investigated the correlation between vernacular design and current sustainable interior design solutions in the United Arab Emirates. In contrast, Ofori et al. (Ofori et al., 2023) expounded upon the utilization of Ghana's indigenous heritage symbols as a source of inspiration for the development of captivating items intended for incorporation within the realm of interior design. Scholars from several regions, including Malaysia, Indonesia, and the UAE, have conducted comparable investigations. This research primarily concentrates on nations that possess abundant cultural heritage resources, emphasizing the role of interior design in the preservation of such legacies.
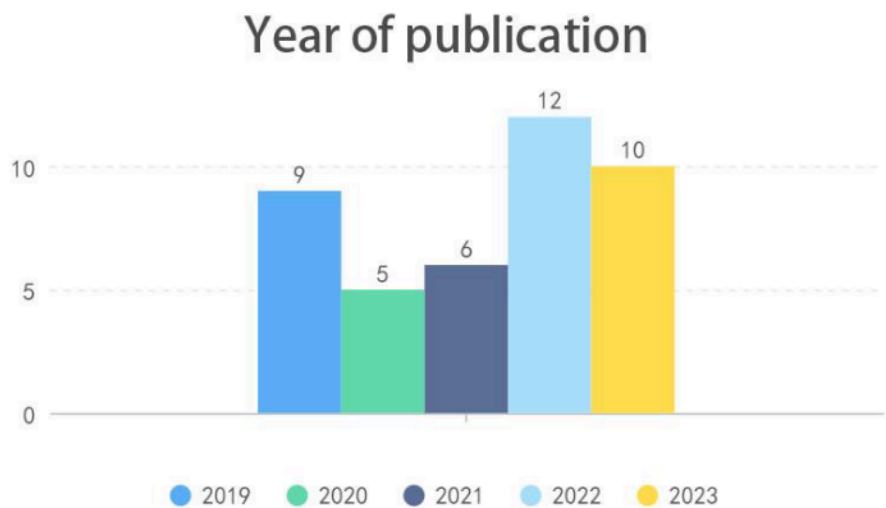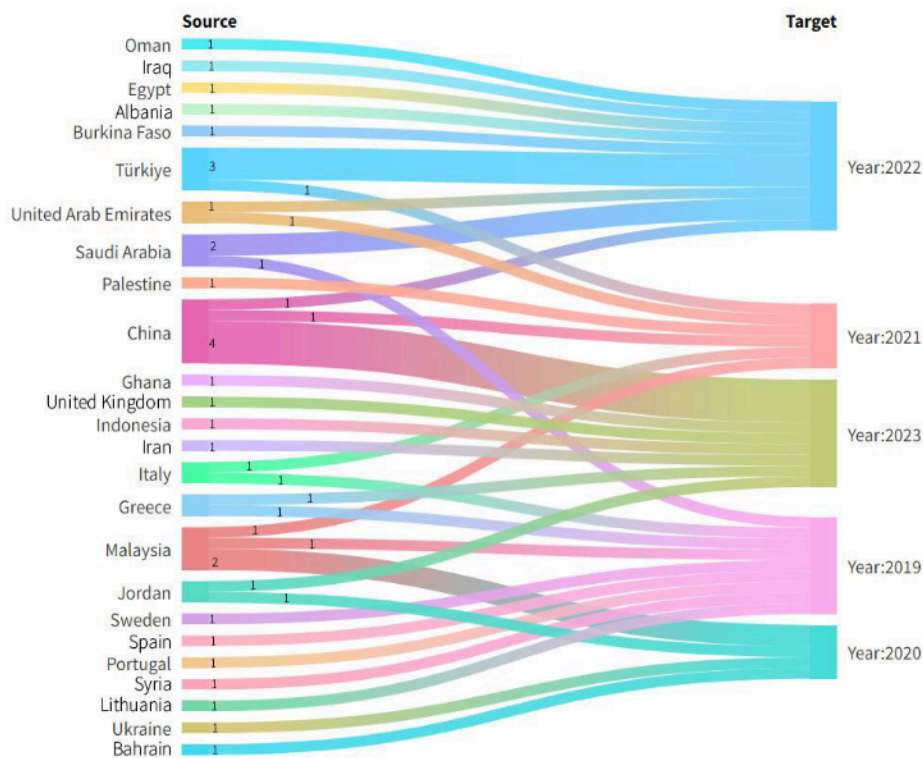

Figure 3 Year of publication.

Figure 4 Country of studies and years of publication with the number of articles.

Table 2 below shows the thematic trends and patterns that were chosen for inclusion in this publication. At the outset, there was a total of 24 encoded attributes. However, subsequent to the process of renaming and merging, the coding outcomes were condensed to encompass six overarching themes. These themes include the reuse of historic buildings, recycling of waste materials, heritage elements for interior design, heritage values, challenges, and preservation methods. A comprehensive analysis of these themes will be presented in a subsequent section. The primary focus of the study conducted in the chosen articles revolves around the examination and analysis of the values and roles associated with heritage. The incorporation of heritage aspects into interior design has emerged as a significant area of interest. Moreover, there has been a noticeable rise in the emphasis on preserving cultural heritage and promoting sustainability within the field of interior design, as evidenced by recent trends over the past two years (Table 3).

Table 2 The theme according to year.

	2019	2020	2021	2022	2023	Totals
Reuse of historic buildings	1	3	2	2	1	9
Recycling of waste materials	2	1	0	1	0	4
Heritage Elements for Interior Design	1	1	4	2	6	14
Heritage value	4	6	3	6	4	24
Challenges	2	0	0	2	1	5
Preservation methods	4	1	1	4	2	12
Totals	14	10	10	17	14	65

Source: Processed Using ATLAS.ti 23.

Table 3 Documents to a theme table.

	Reuse of historic buildings	Recycling of waste materials	Heritage Elements for Interior Design	Heritage value	Challenges	Preservation methods
Alhojaly et al., (2022)(Alhojaly et al., 2022)	√					√
Abdul Kadir et al., (2020)(Abdul Kadir et al., 2020)	√			√		
Nasr and Khalil (2022)(Nasr & Khalil, 2022)	√					√
Crespi (2021)[43]	√					√
Burch et al., (2019)(Crespi, 2021)	√					
Ismailoglu and Sipahi (2021)(İsmailoglu & Sipahi, 2021)	√			√		
Almurbati,(2020)(Almurbati, 2020)	√			√		
Barani and Dastranj (2023)(Barani & Dastranj, 2023)	√			√		
Appelgren (2019)(Appelgren, 2019)		√				√
Kousa and Pottgiesser (2019)(Kousa & Pottgiesser, 2019)		√				√
Sokienah (2020)(Sokienah, 2020)		√				√
Rashdan and Mhatre (2022)(Rashdan & Mhatre, 2022)		√				
Sinou et al., (2023)(Sinou et al., 2023)						√
Tessa Eka Darmayanti (2020)(Tessa Eka Darmayanti, 2020)			√	√		
Hu and Matsubara (2023)(Hu			√			

& Matsubara, 2023)					
Ahmed Abdulwahid Dhannoon (2022)(Ahmed Abdulwahid Dhannoon, 2022)		√			
Zwain and Bahauddin (2021)(Zwain & Bahauddin, 2021)		√	√		
Mostovshchykova and Stryzhko (2021)(Mostovshchykova & Stryzhko, 2021)		√	√		
Ofori et al., (2023)(Ofori et al., 2023)		√	√		
Abukarki et al., (2023)(Abukarki et al., 2023)		√	√		
Hani Khalil Farran (2021)(HANI KHALIL FARRAN, 2021)		√			
Edensor, (2023)(Edensor, 2023)		√		√	
Abouelela (2019)(Abouelela, 2019)		√			√
Süvari et al., (2022)(Süvari et al., 2022)		√	√		
Naeem et al., (2021)(Naeem et al., 2021)		√			
Zhu, (2023)(Zhu, 2023)		√			√
Zhang et al., (2023)(Zhang et al., 2023)			√		
Alobailan and Alawad (2022)(Alobailan & Alawad, 2022)	√		√		
Vyzantiadou and Gkiokas (2019)(Vyzantiadou & Gkiokas, 2019)			√		√
Piñeiro-Naval and Serra (2019)(Piñeiro-Naval & Serra, 2019)			√		
Yan et al., (2022)(Yan et al., 2022)			√		√
Shumka (2022)(Shumka, 2022)			√		
Dayaratne (2019)(Dayaratne, 2019)			√	√	
Baratinskienė (2019)(Baratinskienė, 2019)			√		
Ballice et al., (2022)(Ballice et al., 2022)			√		
Amoruso (2019)(Amoruso, 2019b)				√	
Fewella (2022)(Fewella, 2022)				√	
Lidón De Miguel et al., (2022)(Lidón De Miguel et al., 2022)				√	
Kotlyar et al., (2020)(Kotlyar et al., 2020)			√		√
Yenice and Arart (2022)(Yenice & Ararat, 2022)			√		√
Liu (2023)(Liu, 2023)					√

Source: Processed Using ATLAS.ti 23

　　　An analysis of published sources shows that architectural engineering and cultural journals are favored by interior design and cultural heritage researchers. As shown in Table 4, the Journal of Cultural Heritage Management and Sustainable Development, Sustainability, and the Journal of Asian Architecture and Building Engineering are the three favorite choices for interior design researchers. As mentioned earlier, if one searches for "interior design" as a keyword, the number of articles

found is in the thousands. However, after adding cultural heritage to the search string, the results show a significant decrease. These studies are more focused, proving that the topic is still fresh and can be explored more in the future.

Table 4 Articles reviewed based on journal.

	2019	2020	2021	2022	2023
Journal of Asian Architecture and Building Engineering					2
Buildings				1	
Environment-Behavior Proceedings Journal		1			
Islamic Heritage 2022				1	
Journal of Cultural Heritage Management and Sustainable Development	3		1	3	
International Transaction		1			
Journal of Engineering, Management, & Applied Science & Technologies					
Springer International Publishing			1		
DISEGNARECON	1				
Heritage	1				
Sustainability	1			1	2
International Transaction Journal of Engineering				1	
Journal of Visual Art and Design			1		
Muzeológia a kultúrne dedičstvo		1		1	
Open House International			1		
Cogent Arts & Humanities					1
Journal of Information Science and Engineering			1		
International Journal of Intangible Heritage				1	
GeoHumanities					1
International Journal of Advanced Science and Technology	1				
Civil Engineering and Architecture		1			
Color Research & Application				1	
International Journal of Communication Networks and Information Security					1
E3S Web of Conferences					1
2020 Second International Sustainability and Resilience Conference: Technology and Innovation in Building Designs(51154)		1			
2021 International Conference on Computational Intelligence and Knowledge Economy (ICCIKE)			1		
ISVS e-journal	1				
Street Art and Urban Creativity					1
Art History & Criticism	1				
The International Journal of Visual Design				1	
Applied Mathematics and Nonlinear Sciences					1
A/Z ITU Journal of the Faculty of Architecture				1	

Source: Web of Science、SCOPUS and ScienceDirect Database

In general, this section offers insights into the research patterns in interior design related to cultural heritage. The paper presents quantitative findings that partially indicate the potential for product development, as discussed in the literature. The existing body of research encompasses a diverse array of topics, although a notable disparity exists between contemporary development approaches and conventional preservation methods [74]. Furthermore, limited attention has been given to investigating the explicit connection between interior design and cultural heritage. Like in other design businesses, the cultural heritage interior design sector is currently experiencing intense competition. Consequently, there is a pressing need to examine the correlation between cultural heritage and interior design within this specific framework.

4.2. Qualitative Findings

This part comprises a qualitative analysis that elucidates the themes that have surfaced as a result of addressing the research questions subsequent to a comprehensive examination of the pertinent literature. This study marks the initial attempt to categorize and analyze the various themes and trajectories that emerge at the intersection of cultural heritage and interior design. Following this, the coding process was undertaken to synthesize and condense the data, with the aim of identifying prevalent theories and concepts that have been extensively examined and investigated by scholars. Six themes were ultimately identified: (1) Reuse of historic buildings; (2) Recycling of waste materials; (3) Heritage Elements for Interior Design; (4) Heritage values; (5) Challenges; and (6) Preservation methods. These themes do not stand alone but may overlap between essays, so some essays may use more than one theme at a time. The next sections will discuss each theme in depth, citing results from outside the articles as needed to answer the research questions and develop a conceptual framework for applying cultural heritage to interior design (Figure 5).

RQ: What are the current trends in cultural heritage-related interior design discussed in the literature from 2019 to 2023?
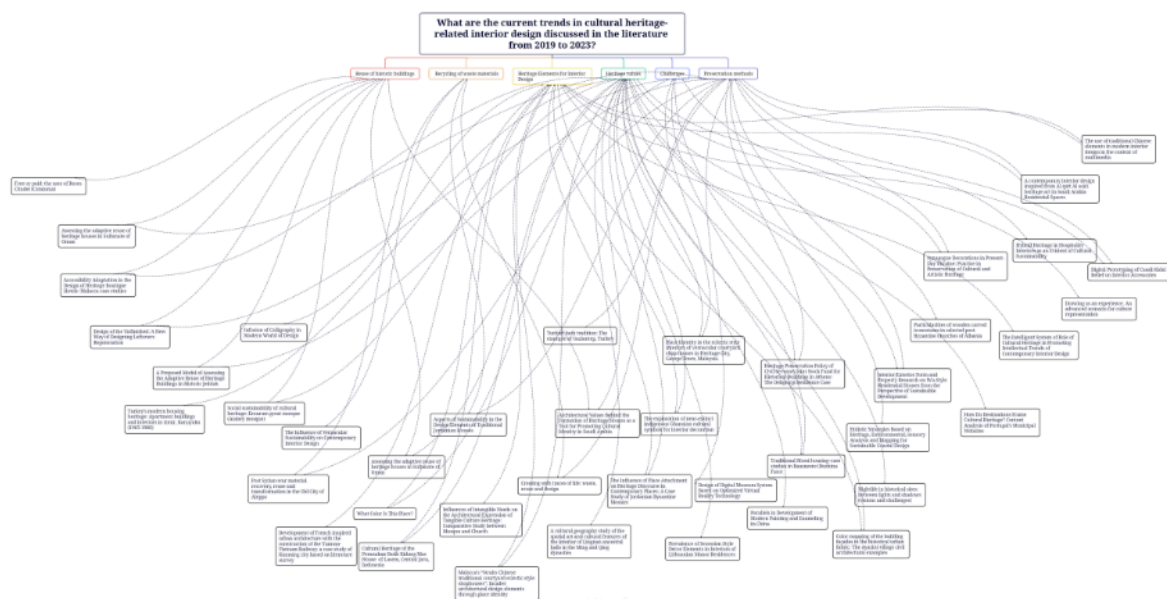

Figure 5 Overall network.

4.2.1. Theme 1: Reuse of historic buildings

The process of reusing historic buildings, also known as adaptive reuse, is a sustainable and culturally enriching approach that entails reworking aged structures for contemporary uses while preserving their historical and architectural value. The research conducted by Alhojaly et al. (2022) provides evidence in favor of the adaptive reuse of historic Arab structures. This study presents a developed reuse model that aims to preserve the authenticity and sustainability of these buildings during the reuse process. The study conducted by (Nasr & Khalil, 2022) on the adaptive reuse of five cultural projects in Oman provides additional evidence that aligns with the findings of Alhojaly et al. The implementation of a comprehensive sustainable management plan for adaptive reuse is crucial for the promotion of the local economy, the enhancement of social values, the preservation of cultural identity, and adaptation to the local environment (Burch et al., 2019; Crespi, 2021; İsmailoglu & Sipahi, 2021). Adaptive reuse offers a sustainable approach that not only enhances a building's capacity while minimizing energy and financial expenditures but also amplifies the emphasis on the building's intrinsic value. The utilization of the participatory design technique in the context of adaptive reuse has demonstrated considerable efficacy in enhancing the efficiency of designers through the active involvement of users at various stages of the

design process (Barani & Dastranj, 2023). The repurposing of historical structures has the potential to invigorate a community by simultaneously safeguarding its distinctive historical resources.

4.2.2. Theme 2: Recycling of waste materials

The earth produces a large amount of waste every day, which is immediately disposed of in landfills (also known as dumpsites), leading to environmental pollution (Yadav & Sinha, 2022). A large amount of land and valuable resources are used for dumping waste. In addition, as final disposal sites for industrial waste are expected to be saturated in the foreseeable future, there is a growing demand for recycling construction waste (Oh et al., 2021). The world population is increasing, and natural resources are becoming increasingly depleted. The recovery of materials and energy from waste materials has received increased attention in recent decades with the aim of finding sustainable solutions to reduce the exploitation of natural resources and the use of landfills. Sustainability is a booming field in this century (Oh et al., 2021; Yadav & Sinha, 2022). The world needs to conserve resources and identify innovative methods of waste recycling to ensure sustainability. Many scholars have studied waste management and recommended the use of waste and recycled materials in building construction (Rashdan & Mhatre, 2022; Sinou et al., 2023; Sokienah, 2020). Appelgren's research explores the transformation of discarded building materials into usable interior designs that not only serve a sustainable purpose (Appelgren, 2019) but also emphasize the sociohistorical value of materials in a circular economy. The restoration of damaged heritage buildings, especially in some postwar countries, through the reuse of materials, thus ensuring the continuity of urban culture, is the most economical and sustainable method (Kousa & Pottgiesser, 2019). Recycling is an important practice for reducing waste and minimizing the environmental impact of consumption. It is a key component of sustainable waste management and contributes to a greener and more resource-efficient future.

4.2.3. Theme 3: Heritage Elements for Interior Design

Incorporating heritage elements into interior design can add a sense of history, culture and uniqueness to a space. Whether traditional motifs, materials or architectural details are considered, these elements can create a connection to the past and contribute to a rich and meaningful design (Ahmed Abdulwahid Dhannoon, 2022; Hu & Matsubara, 2023; Tessa Eka Darmayanti, 2020; Zwain & Bahauddin, 2021). Currently, there is strong interest in the vocabulary of cultural heritage, which is the most crucial point in determining the different trends in the genres of interior design, as they originate from human needs related to customs, traditions, religious cultures and popular art (HANI KHALIL FARRAN, 2021). Cultural heritage is one of the most important determinants of trends in interior design folklore elements and tangible folklore (Abouelela, 2019).

The initial stage in incorporating traditional components into interior design is the extraction of those elements. It is necessary to possess a sufficient understanding of our cultural past to effectively extract local symbols from it. These symbols serve as a source of inspiration for the creation of captivating works of art that can be utilized in the realm of interior design (Ofori et al., 2023). The authors of Suvari et al. and Edensor performed a comprehensive analysis of the impact of traditional colors on contemporary landscapes and architectural interiors (Edensor, 2023; Süvari et al., 2022). Their findings suggest that the implementation of heritage strategies incorporating traditional colors is crucial for safeguarding the preservation of historical elements characterized by distinct color schemes. Significant progress has been achieved by a separate cohort of academics in the investigation of the incorporation of traditional crafts and intangible cultural elements into contemporary furniture and architectural interior design (Moubarak & Qassem, 2018; Naeem et al., 2021; Wijaya et al., 2023). The utilization of physical or intangible cultural heritage in interior design is significant in facilitating the transmission of culture and national identity (Abukarki et al., 2023; Mostovshchykova & Stryzhko, 2021). Achieving a harmonious and practical environment necessitates the careful integration of classic components while maintaining a delicate equilibrium between traditional and contemporary design. Moreover, acquiring knowledge about the cultural and historical importance of the selected elements can enhance the intricacy and genuineness of the design.

4.2.4. Theme 4: Heritage values

Heritage values cover the multifaceted dimensions of significance, value, and cultural importance attributed to various elements of the past, including tangible artifacts, intangible traditions, and natural phenomena. The aforementioned values are of utmost importance in influencing the formation of communal, national, and global identities (Alobailan & Alawad, 2022; Piñeiro-Naval & Serra, 2019; Shumka, 2022). Heritage has a significant role in shaping individuals' identity and sense of belonging. It establishes a connection to one's roots and cultivates a shared cultural identity (Dayaratne, 2019; Ofori et al., 2023; Zwain & Bahauddin, 2021). By linking the past, present, and future, heritage contributes to the continuity of human progress. The statement provided pertains to the cultural-historical significance associated with heritage. Furthermore, it is worth noting that a considerable number of heritage monuments hold significant religious or spiritual value, serving as destinations for worship, pilgrimage, or contemplation (Zhang et al., 2023). Hence, profound and metaphysical convictions are expressed in tangible ceremonial observances. The influence of heritage is significant because of its contribution to the economy. The preservation and promotion of heritage have the potential to significantly impact cultural and creative

industries, encompassing various domains such as arts, crafts, music, and culture. This influence extends to both individuals and communities, as it presents economic prospects. Moreover, heritage serves as a magnet for international tourists, thereby stimulating revenue generation within the local economy (Ballice et al., 2022; Baratinskienė, 2019). A comprehensive comprehension and sincere appreciation of these intrinsic legacy values is necessary for the efficient preservation, safeguarding, and sustainable administration of both cultural and natural heritage.

4.2.5. Theme 5: Challenges

The safeguarding of cultural heritage encounters numerous obstacles (Amoruso, 2019a; Lidón De Miguel et al., 2022), frequently arising from a confluence of social, economic, environmental, and political elements. The preservation, repair, and management of cultural assets typically necessitate substantial financial resources (Burch et al., 2019; Vyzantiadou & Gkiokas, 2019). Insufficient financial resources can pose a significant obstacle to the preservation and sustainable stewardship of cultural heritage sites. In contemporary times, the safeguarding of heritage necessitates addressing a range of difficulties, including but not limited to natural disasters, environmental degradation, insufficient public awareness and education, and political instability. One of the primary challenges is achieving a harmonious equilibrium between the need for development and the safeguarding of cultural heritage values. To effectively address these difficulties, a comprehensive strategy is necessary, encompassing collaboration across governmental entities, local communities, nongovernmental groups, and international organizations (Fewella, 2022). Successful cultural heritage conservation methods encompass several crucial elements, namely, sustainable development practices, active community participation, education, and the utilization of modern conservation techniques.

4.2.6. Theme 6: Preservation methods

Cultural legacy can be understood as the shared recollection of a community residing inside a country, nation, region, city, or society. In a certain context, cultural heritage serves as a representation of the collective ethos and customary practices of a nation. Preserving cultural heritage is a highly significant endeavor. The safeguarding of cultural assets necessitates the integration of legal, technical, and community-oriented strategies.

In contemporary society, the predominant methods employed for safeguarding cultural assets mostly encompass the following approaches. Legislation plays a vital role in safeguarding cultural heritage, as it entails the formulation, enactment, and enforcement of laws aimed at protecting locations, objects, and traditions (Kousa & Pottgiesser, 2019; Sinou et al., 2023). Second, there are international agreements and conventions through which countries can nominate their sites for inclusion in the UNESCO World Heritage List, evoking protection and assistance from the international community (Piñeiro-Naval & Serra, 2019; Vyzantiadou & Gkiokas, 2019). This represents the legal perspective or viewpoint.

In relation to the technological facets of the methodology, the primary components encompass remote sensing techniques and digital preservation. Remote sensing refers to the utilization of satellite imagery and various remote sensing methodologies to observe and evaluate the condition of cultural assets, hence supplying data to inform decisions regarding appropriate intervention strategies. Data preservation can be classified into three main categories: digital archiving, virtual reality (VR), and augmented reality (AR). Digital archiving refers to the process of establishing digital repositories that house cultural artifacts and records, thereby safeguarding them from potential physical harm or loss. This practice mitigates the risks associated with physical preservation and ensures the long-term accessibility and preservation of these valuable resources in a virtual environment. The utilization of virtual reality (VR) and augmented reality (AR) technology enables the creation of immersive experiences, facilitating individuals to digitally engage with cultural heritage (Kotlyar et al., 2020; Liu, 2023). The utilization of data preservation technology facilitates the perpetual preservation of cultural legacy, thereby imbuing it with a sense of immortality.

The strategy pertaining to the community component entails the dissemination of public awareness and the provision of education. The engagement of local communities in the protection of cultural assets cultivates a sense of ownership and accountability (Yenice & Ararat, 2022). The implementation of educational programs, seminars, and cultural events can effectively cultivate an understanding and value for heritage and foster a commitment to its preservation.

The successful implementation of conservation efforts frequently necessitates the integration of multiple strategies tailored to the unique conditions and obstacles encountered by each cultural heritage site or tradition. The establishment of effective collaboration among local communities, governmental bodies, and international organizations is crucial for guaranteeing the long-term preservation of cultural assets for forthcoming generations (Barani & Dastranj, 2023; Nasr & Khalil, 2022; Rashdan & Mhatre, 2022).

4.3. Conceptual framework for integrating cultural heritage into interior design

Through the analysis of papers and the examination of related research, a conceptual framework is developed that offers recommendations for future research. Figure 6 outlines three primary research approaches for using cultural heritage resources in interior design. These directions aid in identifying new research prospects, supporting the strategic

achievements of policy makers, and fostering a pragmatic approach to interior design. The framework delineates the theories and concepts pertaining to cultural heritage, users, and interior design, respectively, while establishing a coherent connection between them and sustainable development. Based on the prevailing research tendencies, the subsequent categories can be employed for prospective research.

Cultural Heritage Preservation – To comprehend the difficulties associated with preserving cultural heritage to ascertain preservation techniques that uphold the significance of cultural heritage.

Traditional elements in interior design -- focusing on the utilization and advancement of cultural heritage components in the field of interior design.

Sustainability—generate novel cultural heritage values within the field of interior design while simultaneously conserving and transmitting cultural heritage through the principles of sustainable design.
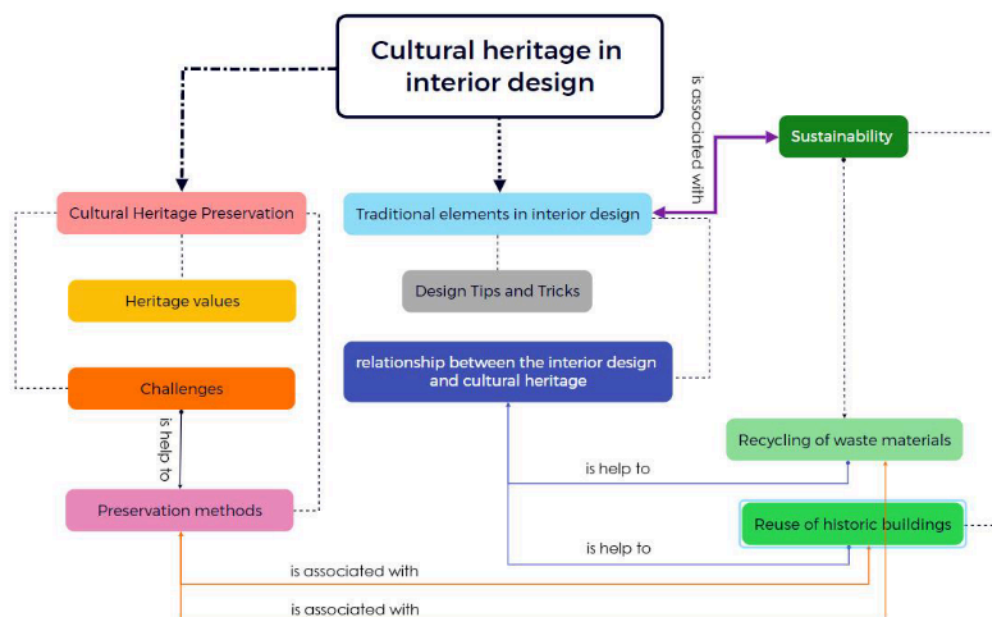

Figure 6 A conceptual framework for integrating cultural heritage into interior design.
Source: Processed Using ATLAS.ti 23

5. Final considerations

This study examines a collection of 42 scholarly documents published between 2019 and October 2023 that specifically explore the field of interior design in relation to cultural heritage. The objective of this paper is to present a comprehensive analysis of the existing research and identify recurring themes and trends in this area of study. To conduct the analysis, the researchers utilized ATLAS.ti 23, a software program designed for qualitative data analysis. The quantitative findings indicate a dearth of literature encompassing both interior design and cultural heritage in the form of review articles, despite the increasing scholarly attention directed toward this subject matter. Furthermore, it is important to establish a connection between the notion of design in the existing body of interior design literature and cultural heritage while also implementing more methodical and standardized terminology. Research in this field has progressed somewhat sluggishly in recent years, primarily due to a lack of recognition among policymakers and practitioners of the significance of theory in shaping the advancement of the profession. The qualitative analysis component of this study focuses on identifying and discussing the significant themes that have emerged from the literature pertaining to the chosen theme. This literature elucidates the correlation between cultural heritage and interior design, as well as the interplay of various aspects that mutually impact one another, allowing for the anticipation of the trajectory of interior design.

Numerous scholarly articles and publications delve into the significance of cultural heritage within the realm of interior design. On the other hand, alternative perspectives have elucidated the interplay of values, interior design, and cultural heritage. Certain studies have focused on the process of converting cultural heritage resources into interior design features that promote sustainability. The primary focus of this study is to critically analyze the existing body of research pertaining to the correlation between interior design and cultural heritage. The practical objective of this study is to offer a novel approach for industry growth and to assist practitioners in designing culturally significant interiors to promote sustainability within the sector.

This study highlights the significance of investigating the correlation between cultural heritage and interior design, underscoring the necessity for research on the development of cultural heritage-related interior design. The objective is to

augment the cultural heritage value of interior design works. The incorporation of cultural heritage into interior design entails prioritizing the reuse of materials, the protection of heritage values and elements, and the utilization of preservation methods and techniques to ensure the overall sustainability of the process.

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