

Research Article

The Impact of Collective Nostalgia on Architectural Characteristics of Shrine Buildings

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Article Info	Abstract
Article History	Nostalgia, in psychology, is an emotional state, while socially and culturally, it embodies a society's collective memory and heritage. In architecture, nostalgia refers to the emotional and cultural bond people have with the past, expressed through built environments that evoke shared memories and meanings. This study aims to define nostalgia within an architectural context and investigate how it influences architectural features, particularly in shrine buildings. The research investigates the influence of collective nostalgia on design characteristics, adopting a five-phase mixed-methods approach. The first phase involves constructing a theoretical framework and identifying indicators of collective nostalgia. In the second phase, expert interviews with specialists in literature, sculpture, psychology, and architecture are used to validate the reliability of these indicators. The third phase consists of a questionnaire survey to refine and prioritize the most relevant indicators. The fourth phase applies the validated model to case study analysis, and the fifth phase performs statistical analysis to identify correlations between variables. The results demonstrate that collective nostalgia has a significant impact on architectural function, resulting in a unique architectural expression characterized by commemorative shrines. Additionally, collective nostalgia shapes symbolic and sculptural elements within architectural forms, reinforcing cultural identity and emotional connection through design.
Received Nov 06, 2024	
Revised Jan 17, 2025	
Accepted Jan 28, 2025	
Keywords	
Collective Nostalgia	
Architectural Characteristic	
Shrine Buildings	
Cultural Heritage	
Symbolism	
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1. Introduction

If nostalgia becomes an explicit element in architectural thinking and design, it raises a critical question: What impact would this have on architectural characteristics? That is one of the fundamental questions architects must address when nostalgia drives the design process. The concept of nostalgia has multiple psychological, philosophical, and sociocultural dimensions. Additionally, researchers have classified nostalgia into two levels: individual, which involves yearning for a personal past, and collective, which involves yearning for a shared past. The importance of this research lies in treating nostalgia as a design approach, particularly in the context of shrine buildings, and investigating how collective nostalgia shapes their architectural characteristics. The study addresses the concept of nostalgia from the perspective of a

community's shared emotional memories, describing it as a collective phenomenon. The objective is to clarify the effect of collective nostalgia indicators and explain how and to what extent this concept affects the primary and secondary variables of architectural characteristics in shrine buildings. Shrine buildings represent a distinctive architectural type that embodies collective nostalgia. These structures, often constructed around the tomb of a revered individual, serve multiple functions, including religious, communal, and residential activities. These architectural forms synthesize religious, cultural, and dynastic influences, often incorporating elements of societal traditions.

The research assumes that collective nostalgia impacts the formation of shrine buildings' functional, compositional, and formal characteristics. As an approach that integrates the concept of nostalgia from psychological discourse into architecture, Saleh and Eldin [1] examined the relationship between nostalgia and Indigenous architectural manifestations in residential buildings. They concluded that Egyptian domestic architecture has long embraced nostalgia, often without utilitarian justification, since the third millennium BCE. According to Quesada and Carretero [2], labor status in social practice strongly influences how architects experience nostalgia. Furthermore, Kitson and McHugh [3] explored how the ethereal and sensory elements of nostalgia fuel its influence on residential living. Their study reveals nostalgia as an emotional current that permeates bodies, objects, and other items.

Ingram [4] examines the utilization of nostalgia in urban redevelopment projects. This study aims to explore the role of historical, architectural, and cultural vernacular in bridging the past and the future. The study concluded that the renovation project, embodying the principles of porous architecture, should represent the narratives and experiences of every stakeholder rather than only evoking inexpensive nostalgia [4]. In another early work, Farrar [5] compared and contrasted two opposing approaches to placemaking, urban sprawl, and historic preservation, and how each relates to memory. In this context, nostalgia offers a fresh perspective on space and time, enabling the potential separation of "local" and "universal" ideas [5]. Mazrui [6] examined the effect of cultural orientation on the built forms of various societies. This study primarily distinguished between nostalgic, presentist, and anticipatory societies. Examples from Africa and elsewhere demonstrate how such cultural orientations influence architectural forms and overall cultural outlooks [6]. Ruskin [7] presented significant elements associated with nostalgia in his seminal work, *The Seven Lamps of Architecture*. These elements include a return to historical values, empathy for historic structures, and recollections of memory through building features. Ruskin emphasized the characteristics of architecture that evoke memory, advocating for "noble" construction forms that reflect human virtues and the spiritual relationship between God and humanity [7]. Previous studies have confirmed the importance of nostalgia in architecture, examining it in various contexts, including residential buildings, preservation efforts, and urban spaces. Most of that studies share a common approach to nostalgia, employing it to incorporate historical architectural patterns and elements in buildings or planning for preservation

and renewal projects. However, there remains a gap in understanding how collective nostalgia specifically influences the formation of architectural characteristics. The goal of this study is to address this gap by defining the mechanisms through which collective nostalgia shapes architectural characteristics in shrine buildings. It aims to establish a clear analytical framework to explain how collective nostalgia and architectural characteristics are interrelated and to develop an approach that bridges the concept of collective nostalgia with architectural design.

Table 1. Review of previous studies (Authors)

Authors	Context of study	Indicators	Methods	Results
Saleh and ElDin [1]	Residential buildings expression	Society culture Classic style	Quantitative and qualitative methods	The most essential architectural elements come from the classic style.
Quesada and Carretero [2]	Architecture	Memory History Past	Descriptive study	Architects have experienced nostalgia for both the past and the future.
Kitson and McHugh [3]	Residential historic preservation	Nostalgic practice Materializing	Qualitative methods	Historic residences evoke nostalgia and sensory ties to historical material.
Ingram [4]	Urban renewal projects	cultural production	Analyzing the design and construction	The need for and the impossibility of comprehensive historical reference in an urban renewal plan.
Farrar [5]	Urban space	place memory	Descriptive study	Nostalgia as resistance to placelessness
Mazrui [6]	Built forms	Cultural nostalgia	Descriptive study	Nostalgia as a tendency of construction buildings.
Ruskin [7]	Memory of building	Return to the historical values	Descriptive study	Nostalgia as a response to national identity Sympathy within the forms of "noble" construction.

2. Conceptual and Theoretical Perspectives on Nostalgia

The term nostalgia originates from the Greek words nostos, meaning "to return home," and algia, referring to a painful condition that evokes a yearning to return home [8]. The Swiss physician Johannes Hofer coined the term in 1688 in a medical study, conceptualizing it as a condition related to homesickness [9]. In the early 20th century, as psychology developed as a field, nostalgia re-emerged as a topic of academic interest [10]. By the late 20th century, nostalgia had undergone two significant shifts: it had become a celebrated aspect of popular culture for reminiscing, and sociology had replaced psychology as the leading discipline investigating sentimentality [11]. Historically, nostalgia was often regarded as a physiological or psychological illness [12]. In contemporary understanding, however, nostalgia is a valuable psychological asset. Researchers in psychology have employed a median split method to categorize individuals' tendencies toward nostalgia, resulting in two distinct groups: central nostalgia and peripheral nostalgia. Central nostalgia includes themes such as "remembering," "the past," "memory-memories," "childhood-youth," "longing-yearning," and "rose-tinted memory." Peripheral nostalgia, on the other hand, encompasses concepts like "comfort-warmth," "homesickness," "wishing-desire," "change," and "regret" [10]. Philosophical

considerations of nostalgia suggest it is rooted in a desire to feel at home everywhere—a sentiment described as "philosophy" itself [13]. Nostalgia originally emerged as a concern related to military well-being rather than a philosophical discourse, which explains why early philosophical discussions of nostalgia lack comprehensiveness and depth [14]. Boym [9] introduced a nuanced perspective, arguing that nostalgia is not only directed at the past but also toward the future. It embodies a paradoxical longing for a transformed, idealized past and a utopian future. Philosophical nostalgia reflects an uncertain sense of one's location in the world and one's connection to existence [15].

By contrast, cultural nostalgia arises from a community's shared memories. However, it does not imply uniform memory retrieval or emotional experience among all group members [16]. Over the past two decades, nostalgia and cultural memory have explored the intersections of politics, culture, art, and history, often emphasizing how a sense of loss intertwines with creative impulses in cultural production and historical writing [17]. For example, in Middle Eastern literature, moments of nostalgic crystallization often emerge when authors define their nation, homeland, or culture concerning others, thereby using literature to reflect and establish cultural identity [18]. Similarly, Western literary texts of the late 20th century prominently featured themes of loss and yearning [19]. The impact of nostalgia on artistic creation is multifaceted. A painter influenced by nostalgic recollections may manipulate their work to transcend memory and affect. This process evokes memories and emotions, inspiring innovative ideas, methods, and techniques [20]. Social research offers a different perspective, emphasizing the contradictions of nostalgia.

Researchers often define nostalgia as a "bittersweet" sensation marked by an internal emotional tension that leads to varied experiences and evaluations [12]. Sensory and sociocultural triggers also play a role in nostalgia. Emotional stimuli such as "loneliness," "self-discontinuity," and "meaninglessness" are known to evoke nostalgic feelings [9]. In the 19th century, medical professionals often interpreted nostalgia spatially, noting its prevalence among individuals displaced during wars and revolutions [20]. Socio-culturally, the rapid industrialization of society heightened people's yearning for the slower rhythms of the past, societal continuity, cohesiveness, and tradition [8].

2.1. The Concept of Nostalgia in Architecture

All cultural forms and manifestations inevitably draw from the past [21]. Human social history inherently links architecture to events, locations, individuals, and principled values, making it a medium through which memory intertwines with time and place. Engagement with an object, place, or event can amplify the depth of an individual's experience and connection [22]. The nostalgic longing for the past, whether for a place or a time, is reflected in distinctive architectural characteristics. When specific spatial experiences or ambiances are absent, a sense of nostalgia may emerge, prompting a yearning for their recreation. Conversely, architecture can evoke spatiotemporal journeys within our minds, disturbing the linear perception

of time and eliciting deep sensory responses. Architectural spaces can root us firmly in the present or obscure our sense of presence, depending on the qualities of the physical environment they create. Moreover, creating architecture often influences the sensation of desire more profoundly than perceiving the resulting structure [2].

2.1.1. Nostalgia Indicators (Past, Emotion, and Memory) and Architectural Characteristics

The history of architecture is a narrative of evolution. Architectural works across all nations and periods have developed from prior attempts and are shaped by a blend of influences that give each region's architecture its unique character [23]. Studying historical architecture allows us to evoke the conditions and character of humanity in past eras [24]. According to Ruskin, architecture is the artistic practice of arranging and embellishing human-made structures to enhance the observer's mental well-being, power, and pleasure [7]. The emotional, intellectual, and cultural values embedded in buildings are expressed through decoration, proportions, materiality, and the composition of architectural elements [25]. Architectural character can evoke emotions, as it reflects the cultural standards that shape our inner emotional landscapes. This interplay of architectural character and emotion enables buildings to achieve a degree of transparency, revealing their cultural and social significance [26]. Regarding memory, Rossi posited that memory has replaced history as the foundation of architecture, suggesting that individual architectural artifacts are best understood through the lens of collective memory [27]. Malpas further highlighted that the sensory aspects of architectural forms—such as their shapes, structures, and materials—carry a memorial quality that resonates with our perception of the past [28].

2.1.2. Nostalgia and Commemorative Architecture

Commemorative architecture originates in ancient Mesopotamian tools for liturgical repetition, monument preservation, and communication [29]. Assyrian sculptures, for example, offer detailed insights into the era's social conditions, military character, and attire. Palace walls were adorned with lengthy inscriptions and pictorial histories depicting battles and sieges of successive monarchs. These sculptures recorded political events and conveyed them in a lasting form. Similarly, the wall paintings and sculptures found in Egyptian temples and tombs evoke a sense of permanence, with their massive and uniform remnants as symbols of eternity [25].

The fifth-century Athenian temples pioneered the integration of sculptural richness into architecture. While Doric temples rarely featured figure sculptures beyond the triangular fields of the pediments and the metopes at their ends, their design embodied a distinct sense of grandeur. In Christian architecture, the basilica interior compensated for the simplicity of its façade with vibrant polychromatic elements. Marble pavements and tesserae displayed intricate geometric patterns, while columns of varied sizes and finishes exuded divine splendor [30]. Early Islamic architecture, in contrast, developed elements to address the

physical, environmental, social, psychological, and religious needs of its communities [31]. Commemorative architecture in this tradition often prioritized symbolic meaning over aesthetic appeal or practical functionality. For instance, the construction of commemorative forms, such as columns and arches, stems from an intrinsic desire to convey messages of significance rather than purely artistic or aesthetic motives [32]. The same instinct that created the commemorative columns and arches shows itself in the grave monuments [30]. Shrines, second only to mosques in prevalence among Islamic religious structures, exemplify the commemorative architectural form [33]. These structures, such as pyramids or temples, attained their symbolic significance through centuries of cultural evolution, with monumental architecture emphasizing its representational value over practical utility [34].

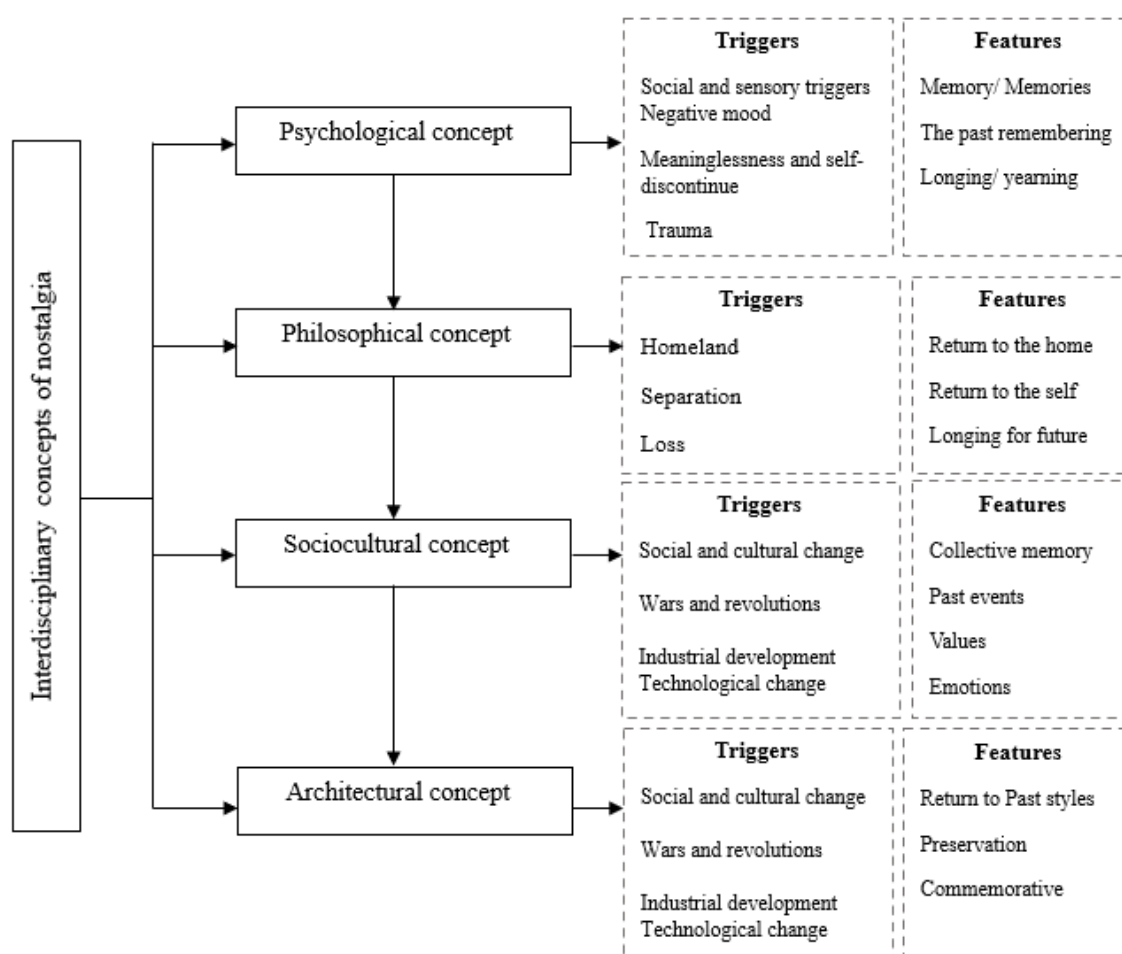


Figure 1. Conceptual framework of nostalgia (by authors)

3. Theoretical Model of the Research

The current study's conceptual framework and theoretical model are guided by the research background and theoretical foundations, as illustrated in Figures 1 and 2. The conceptual framework and model were developed to narrow down the research area and address the problem raised in the paper. This is crucial because the concept of nostalgia varies in its features and triggers, depending on the field that addresses it, as depicted in Figure 1. The research explored nostalgia as a collective sociocultural concept,

with the inductors of collective nostalgia comprising nostalgia roots as the main independent variable, which includes sub-variables such as past events and values, including social, cultural, religious, and historical events and values. Architectural characteristics, categorized into functional, compositional, and formal characteristics, constitute the dependent variable. The interviews and survey confirmed that the functional characteristics signify the type of building. The design principles, which encompass balance, unity, scale, and their corresponding indicators, guide the compositional characteristics. The formal characteristics, derived from the theoretical part, focus on symbolic and sculptural elements and their related variables, including shape source, sculptural motifs, harmony, arrangement, and indicators.

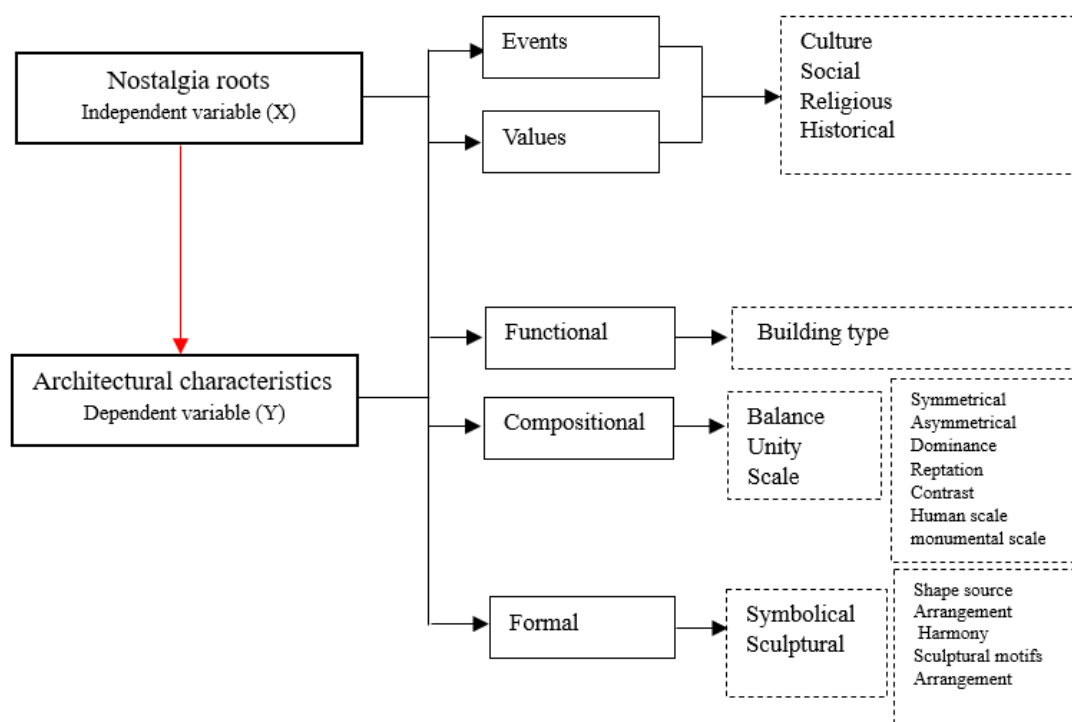


Figure 2. The theoretical model of collective nostalgia in architecture (by authors)

4. Research Hypothesis

The following research hypothesis formulation makes use of the theoretical foundation:

The concept of collective nostalgia influences the design of shrines by emphasizing the roots of nostalgia, specifically the variables of past events and values. This influence manifests in three architectural characteristics: functional, compositional, and formal. To test this hypothesis, the research developed a theoretical model (Figure 2) of collective nostalgia in architecture and employed a combination of questionnaire data and geometrical analysis for the case study.

5. Materials and Methods

The current research utilized a combination of both quantitative and qualitative approaches. Five phases were followed to resolve the study's problem and meet its objective. Building the theoretical framework and determining the indicators of collective nostalgia. Second, we interviewed four specialists in

nostalgia-related domains, including literature, sculpture, psychology, and architecture, to validate and ensure the reliability of the measuring indicators. Third, we used a questionnaire survey to focus on the most relevant indicators. Fourth, geometrical analysis was used to apply the theoretical model of the research. Finally, the fifth stage involved statistical analysis to determine the correlation between the study's variables.

The semantic differential scale, specifically the potency type with five points, was used as one of the quantitative data measurement tools in a questionnaire survey [35]. The questions were designed to capture the concept of collective nostalgia in architecture. Architectural experts assessed collective nostalgia indicators while collaborating on the selection of samples. The survey was distributed to 60 architects, yielding 45 complete responses. The questionnaire was divided into three parts. The first part collected statistical data on the participants, including their age, academic qualifications, and years of experience. The second part addressed the functional characteristics of collective nostalgia in architecture, specifically focusing on the types of buildings that embody this concept, such as shrine buildings. The third part focused on the indicators of formal characteristics, exploring the extent to which these indicators reflect collective nostalgia in architecture. A Likert scale from "always" to "never" was employed. In this scale, "always" denotes a very high degree of variable achievement, "never" indicates a complete absence of the variable, and the range between these two extremes captures varying degrees of indicator achievement.

The geometrical analysis was adopted as a measurement tool in the case study based on the indicators of collective nostalgia. These indicators were derived from the theoretical part and confirmed by the results of expert interviews and a questionnaire survey, as shown in Table 2. The analytical approach to visual analyses starts by observing, for example, the façade of a building. Through a diagram, architects investigate the height and width of the façade, its proportions, geometry, architectural features, and number of openings [36]. The suitable analysis sheet provides a comprehensive overview of the architectural project, highlighting the primary and secondary variables.

Furthermore, AutoCAD drawings and images were utilized to elucidate the indicators. Case studies were employed to collect quantitative data by giving numerical values to each qualitative item of information marked off in the theoretical model table using SPSS. An empty cell was assigned a value of one, while shaded cells were translated as five. IBM SPSS 25 statistics performed the statistical analysis on the data, and logical reasoning and descriptive statistical analysis presented the results. This study employed frequency, percentage, mean, correlation, and regression.

5.1. Operational Definition of Study Variables

To examine the concepts and variables employed in the research, they were first conceptually theorized and then operationally defined [37]. Based on the considerations outlined in the theoretical section of

the article, the operational definitions are as follows:

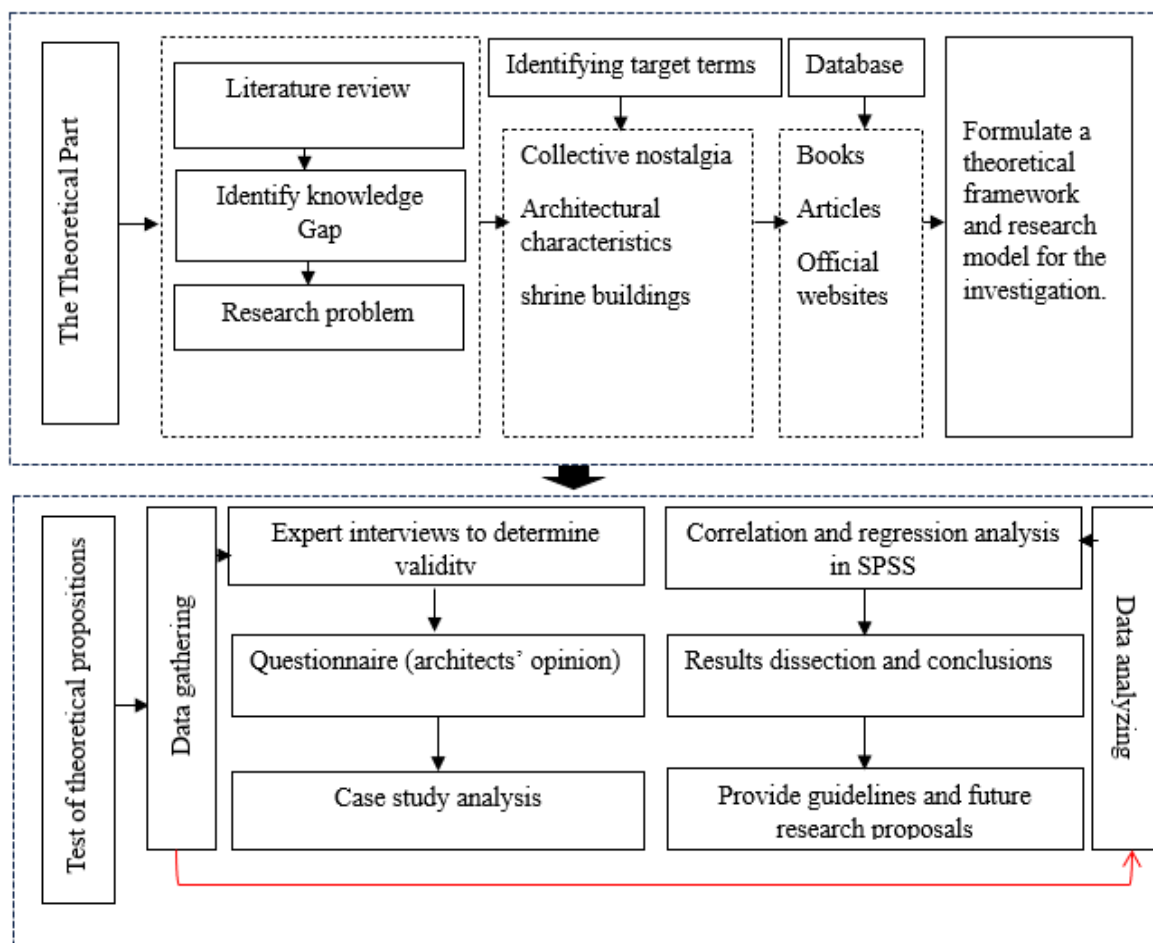


Figure 3. Research methodology diagram (by authors)

The independent variable, collective nostalgia, suggests that a society's collective emotional recollections form the foundation of a sociocultural phenomenon. The study posited that collective nostalgia in architecture embodies a society's collective past. The primary variable expressing collective nostalgia is nostalgia roots, encompassing past events and values. Additional related variables are indicated in Table 2.

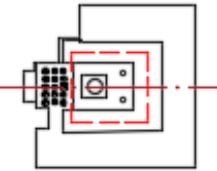
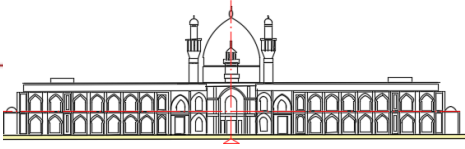
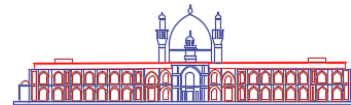
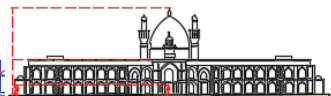
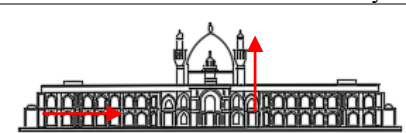
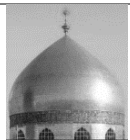
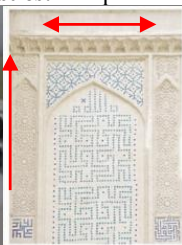
The dependent variable, architectural characteristics, is conceptualized as a compositional system of elements and relationships governed by design principles. These characteristics acquire their unique identity through the factors that influence their formation. As outlined in Figure 2, the current research focuses on three levels of architectural characteristics: functional characteristics, which define the type of building; compositional characteristics, which refer to design relationships and principles; and formal characteristics, which pertain to the elements used to express nostalgia roots, such as symbolic and sculptural characteristics and their associated indicators, as illustrated in Table 2.

5.2. Identification of Case Study

The investigation selected five prominent Iraqi shrine buildings, as illustrated in the Figure 4, and

Table 2. The selection was theoretically supported through expert interviews and questionnaire data. Shrines, as architectural projects, commemorate a person or event and reflect significant social values.

Table 2. Analysis sheet for case studies (Authors)

Case (1)	General information		Main variable	Sub-variable	Indicators of variable	Evaluation
	Architectural work: Imam Ali Holy Shrine		Nostalgia roots	Events	Culture	
	Year: 632 - (2024)				Social	
	Place: Najaf, Iraq.			Religious		
	Architect: Baha al-Din al-Amili			Historical		
	Source: [39]			Culture		
			Values	Social		
				Religious		
				Historical		
				Other		
Functional characteristics: Commemorative. Main components: Mosque, shrine, museum						
Compositional characteristics			Compositional characteristics			
			Balance	Symmetrical	Equal distribution	
				Asymmetrical	Reverse repetition	
			Unity	Dominance	Dominance of element	
				Repetition	Completely	
			Scale	Contrast	Various	
				Human	Contrast shapes	
			Scale	Monumental	Contrast sizes	
					Mass size	
					Element size	
					Mass size	
					Element size	
Unity by the dominance of the center Unite by repetition of the arch						
Formal characteristics: Symbolic characteristic						
			Symbolic	Shape source	Nature	
					Geometric	
			Arrangement	Realistic		
				Horizontal		
			Harmony	Vertical		
				Central		
			Harmony	Cluster		
				Radial		
			Harmony	Symbolical		
				Functional		
Formal characteristics: Sculptural characteristic						
			Sculptural	Sculptural motifs	Tectonic structure	
					sculptural element	
			Arrangement	bas-relief		
				Figures		
			Arrangement	Inscriptions		
				Horizontal		
			Arrangement	Vertical		
				Central		
			Arrangement	Cluster		
				Radial		
Tectonic structure bas- relief, inscriptions sculptural element						
(horizontal, vertical arrangement)						
Conclusion						
The most influential variables include social events, religious and historical values, symmetrical balance, dominance of elements, monumental scale, and geometric shapes. Tectonic structure, horizontal, vertical & central arrangement, bas-relief, inscriptions, and sculptural elements.						
1						
2						
3						
4						
5						
For statistical analysis						

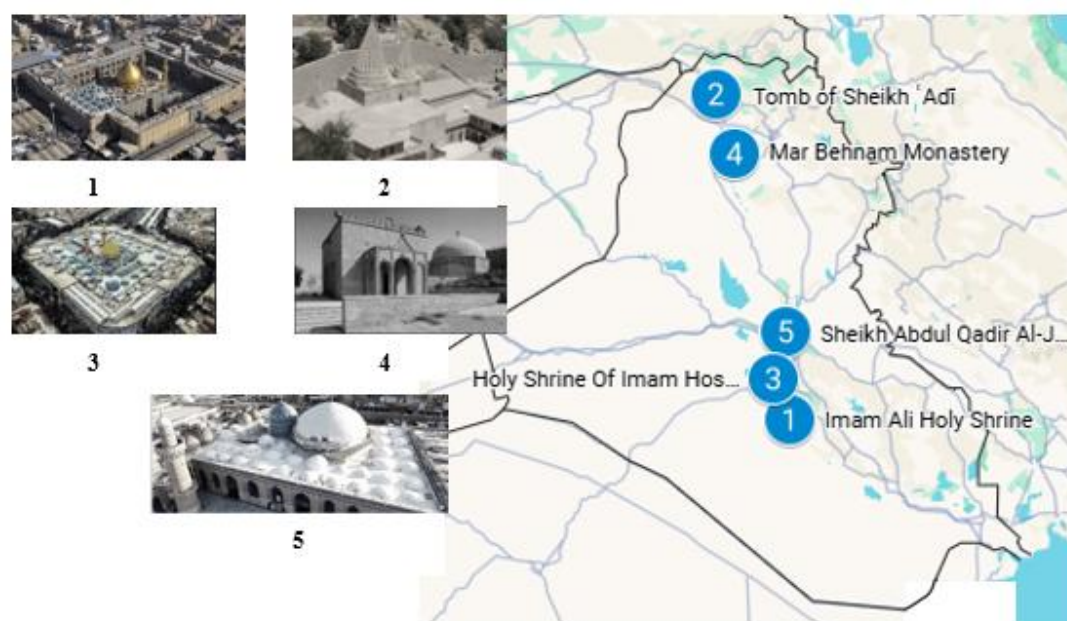


Figure 4. Case studies locations in Iraq (Authors)

6. Results

The specialists' interviews, questionnaires, and geometrical analyses are statistically analyzed, as shown in Tables 3-6.

6.1. The Specialists' Interview Results

According to the specialists' responses, the mean result for shrine buildings, a specific building type that embodies collective nostalgia, is 4.5. This indicates that the buildings under study reflect a high degree of collective nostalgia in architecture. The mean values for the variables related to symbolic and sculptural characteristics are 4.0 and 3.7, respectively, indicating that collective nostalgia has a significant influence on both symbolic and sculptural aspects of architectural characteristics.

Table 3. Mean and standard deviation results of specialists' interview (Authors)

	a	b	c
Mean	4.5000	4.0000	3.7500
Std. Deviation	1.00000	.81650	.95743

a. The result of (the shrine building embodied collective nostalgia in architecture).

b. The result of (the influence of collective nostalgia on the formation of architectural characteristics has a symbolic characteristic)

c. The result of (the influence of collective nostalgia on the formation of architectural characteristics has a sculptural characteristic)

6.2. Questionnaire Survey Results

Tables 4 and 5 present the means, standard deviations, and correlation results derived from the questionnaire.

Table 4. Mean and standard deviation results of questionnaire (Authors)

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13
Mean	3.93	4.21	3.93	2.64	3.93	3.07	3.14	3.50	3.79	3.64	2.79	3.71	3.71
Std. Deviation	1.07	0.80	1.00	1.08	0.92	1.07	1.03	0.94	1.05	1.01	1.25	1.07	0.61

The questionnaire conducts a descriptive analysis of each variable based on the signals of its respective components. The average of all formal indicators, rated on a scale of 1 to 5, falls between 3 and 4, indicating a high standard of quality in the examined buildings. According to the respondents, the mean result for shrine buildings, a specific building type that embodies collective nostalgia, is 3.93. This suggests that the buildings under study express a high degree of collective nostalgia in architecture. The mean values for symbolic and sculptural characteristics are 4.21 and 3.93, respectively, indicating that collective nostalgia has a significant influence on both symbolic and sculptural aspects of architectural characteristics. The monumental scale, with a mean value of 3.93, also reflects a high degree of impact.

The respondents' results for the study's sub-variables suggest that the tectonic structure significantly influences buildings that embody collective nostalgia, with a mean value of 3.79. The arrangement of sculptural motifs and inscriptions scored a mean of 3.71, while bas-relief scored 3.64, all indicating a high degree of impact. The shape source of symbolic elements, with an overall mean of 3.5, demonstrates moderate influence. Within this category, realistic forms scored 3.07, and geometric forms 3.14. Utilizing figures, which scored the lowest means at 2.79, reflects a low degree of impact.

Table 5. Correlation analysis of questionnaire results (Authors)

	Functional characteristics	Symbolic characteristics	Sculptural characteristics
Functional characteristics	1	.414	.622*
Symbolic characteristics	.414	1	.380
Sculptural characteristics	.622*	.380	1

*. Correlation is significant at the 0.05 level (2-tailed).

As shown in Table 5, there is a positive correlation between the main architectural characteristics identified in the questionnaire results. A strong positive correlation exists between functional characteristics (building type) and sculptural characteristics, with a correlation coefficient of 0.622. This is followed by a medium correlation between functional and symbolic characteristics, with a correlation coefficient of 0.414, and between symbolic and sculptural characteristics, with a correlation coefficient of 0.380.

6.3. Geometrical Analysis Results

The geometrical analysis results are presented through correlation and regression analysis. Table 6 indicates both positive and negative correlation coefficients between the variables. A strong relationship exists between independent variable (nostalgia roots) and dependent variable (architectural characteristics). The correlation coefficients for symbolic shape sources, harmony, and the arrangement of the symbolic

elements are 0.646, 0.6, and 0.579, respectively. These values demonstrate a strong link between nostalgia roots and the variables of symbolic characteristics.

In terms of sculptural characteristics, the nostalgia roots variable exhibits a strong positive correlation with the sculptural motif's variable, with a correlation coefficient of 0.552, and a medium negative correlation with the arrangement of sculptural motifs variable, with a correlation coefficient of -0.449. Table 6 presents the correlations between the research variables.

Table 7 presents the regression analysis of the research variables. The symbol (R) represents the multiple correlation between nostalgia root variables and other variables, indicating the numerical strength of the link between the independent and dependent variables. The coefficient of determination (R^2) reflects the proportion of variance in the dependent variable that can be explained by the independent variable [38]. Based on the regression table, the function representing the relationship between values is precisely defined:

$$(Architectural\ characteristics\ Y) = \alpha + B (Nostalgia\ roots)$$

For example: Symmetrical balance = $1.676 + 1.132(Nostalgia\ roots)$

$$Monumental\ scale = 9.676 - 0.868(Nostalgia\ roots)$$

$$Shape\ source\ of\ symbolic\ element = -2.935 + 0.560 (Nostalgia\ roots)$$

The regression coefficient reflects the degree to which the dependent variable changes when the independent variable increases by one unit. A positive coefficient indicates that the dependent variable increases by a specified magnitude as the independent variable rises, while a negative coefficient signifies a decrease in the dependent variable under the same condition. According to these functions, if the influence of the x variable (nostalgia roots) is controlled, the Y-intercept will be 1.676 for symmetrical balance. This indicates that the effect size remains the same as before incorporating the x variable. This process can be similarly applied to other variables. Refer to the constant (α) column in Table 7 for additional details.

If the x variable is included in the analysis and evaluation of the architectural characteristics of the buildings under consideration, the following can be concluded:

There is a 1.132 positive change in effect (symmetrical balance) when the nostalgia roots variable changes positively by one unit. There is a - 0.868 negative change in effect (monumental scale) when the nostalgia roots variable changes positively by one unit. There is a 0.560 positive change in effect (shape source of symbolic element) when the nostalgia roots variable changes positively by one unit. This process can be similarly applied to other variables. Refer to the constant (B) column in Table 7 for additional details.

6.4. Results and Discussions

The results indicate a significant correlation between collective nostalgia and the architectural characteristics of shrine buildings. The influence of collective nostalgia on functional characteristics results in the creation of a specific building type, a commemorative form represented by shrine buildings. One of the

most notable effects of collective nostalgia on compositional characteristics is the emphasis on monumental scale. Additionally, symbolic and sculptural characteristics embody the collective nostalgia effect on formal characteristics. The findings from interviews, questionnaires, and geometrical analysis confirm these observations. At a detailed level, the questionnaire findings reveal varying degrees of collective nostalgia's influence on the variables that shape architectural characteristics.

Table 6. Correlation between research variables (Authors)

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	1	0.579	-0.854	-0.6	-0.191	0.491	0.491	-0.401	0.646	0.559	0.6	0.552	-.449
2	0.579	1	-.913*	-0.408	0.612	-0.408	-0.408	0.515	-.167	0.612	0.408	0.47	-0.56
3	-0.854	-.913	1	0.559	-0.28	0	0	-.128	-.228	-.699	-0.559	-0.573	0.575
4	-0.6	-.408	0.559	1	-0.25	-0.25	-0.25	0.172	-.612	-.875	-.989*	-.992*	-.343
5	-0.191	0.612	-0.28	-0.25	1	-0.875	-0.875	.889*	-0.612	0.375	0.25	0.368	0.086
6	0.491	-.408	0	-0.25	-0.875	1	0.998**	-.975*	.919*	0.063	0.25	0.128	0.086
7	0.491	-.408	0	-0.25	-0.875	0.998**	1	-.975*	.919*	0.062	0.25	0.128	-.408
8	-0.401	0.515	-0.128	0.172	.889*	-.975*	-.975*	1	-0.866	0.1	-0.172	-0.051	0.515
9	0.646	-.167	-0.228	-0.612	-.612	.919*	.919*	-.866	1	0.408	0.612	0.51	-.167
10	0.559	0.612	-0.699	-0.875	0.375	0.063	0.062	0.1	0.408	1	0.875	.888*	0.612
11	0.6	0.408	-0.559	-.989*	0.25	0.25	0.25	-.172	0.612	0.875	1	.992**	0.408
12	0.552	0.47	-0.573	-.992*	0.368	0.128	0.128	-.051	0.51	.888*	.992**	1	0.47
13	-0.449	-0.56	0.575	-0.343	0.086	0.086	0.086	-.157	0.21	0.086	0.343	0.34	1

1. Nostalgia roots, 2. Symmetrical balance 3. Asymmetrical balance 4. Unity by dominance 5. Unity by repetition 6. Unity by Contrast 7. Human scale 8. Monumental scale 9. Symbolic Shape source 10. Arrangement of symbolic elements 11. Harmony of symbolic elements 12. Sculptural motifs 13. Arrangement of Sculptural motifs

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Table 7. Regression between research variables (Authors)

	Indicatorids	Case study	R	R2	Constant α	B	Beta	F	Sig
1	Nostalgia roots & Symmetrical	5 buildings	.607	.368	1.676	1.132	.530	.583	.632
2	Nostalgia roots & Asymmetrical	5 buildings	.857	.735	6.256	-1.626	-.833	2.776	.265
3	Nostalgia roots & Dominance	5 buildings	.935	.874	11.941	-.694	-.795	6.964	.126
4	Nostalgia roots & Reptation	5 buildings	.210	.044	1.461	-.146	-.167	.046	.956
5	Nostalgia roots & Contrast	5 buildings	.561	.315	-.966	.247	.565	.460	.685
6	Nostalgia roots & Human scale	5 buildings	.561	.315	-6.863	.986	.565	.460	.685
7	Nostalgia roots & Monumental scale	5 buildings	.450	.202	9.676	-.868	-.456	.253	.798
8	Nostalgia roots & Shape source	5 buildings	.826	.682	-2.935	.560	.786	2.147	.318
9	Nostalgia roots & arrangement of symbolic	5 buildings	.847	.718	-3.914	.511	.732	2.548	.282
10	Nostalgia roots & Harmony	5 buildings	.935	.874	-3.941	.694	.795	6.964	.126
11	Nostalgia roots & Sculptural motifs	5 buildings	.891	.794	-8.099	.843	.742	3.858	.206
12	Nostalgia roots & arrangement of sculptural	5 buildings	.900	.811	-1.395	-.121	-.237	4.281	.189

At the forefront are variables such as tectonic structure, the arrangement of sculptural motifs, inscriptions, and bas-relief, all of which contribute significantly to sculptural characteristics. Following this, the source of symbolic elements that express symbolic characteristics emerges as a secondary influence. The results also indicate a strong positive correlation between functional and sculptural characteristics, specifically the commemorative type.

According to the geometrical analysis, nostalgia has a positive correlation with symbolic and sculptural characteristics. However, the compositional preferences of the overall building design exhibit non-linear relationships with compositional characteristics, as evidenced by the positive and negative correlations of their variables with nostalgia roots. Across the five case studies, the most commonly used compositional characteristics are monumental scale and balanced design, encompassing symmetrical and asymmetrical forms.

7. Conclusions

Collective nostalgia significantly influences architectural characteristics. Shaped functional characteristics give rise to communicative architecture, as seen in shrine buildings. Sculptural and symbolic characteristics, which embody the essence of collective nostalgia, emerge as primary features, while compositional characteristics serve as relative elements in representing collective nostalgia in architecture. The study proposes a method for shaping nostalgia-influenced architectural characteristics, thereby enhancing the clarity of nostalgic architecture. It provides a comprehensive analytical framework for understanding nostalgic resources, particularly intangible elements such as events and values, and their manifestation in architectural forms. This framework offers a valuable design tool, equipping designers with guidance on integrating intangible sources from the past into architectural practices. It also identifies appropriate architectural characteristics to prioritize, which can be applied in contemporary architectural design to create culturally and emotionally resonant spaces. Since this research did not address the psychological dimension of nostalgia, the study recommends future research to investigate the psychological impact of nostalgic architecture on its recipients.

Data Availability Statement: Data available upon request

Funding: The authors declare that no funding was received for this research.

Declaration of Competing Interest: The authors declare they have no known competing interests.

Research Involving Human/Animal Participants: This study uses a questionnaire survey with human participants. All participants provided informed consent before participation, and the study adhered to the ethical guidelines for research involving human subjects. No animal studies were conducted in this research.

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