

An Analysis of the Evolution of Architectural Expression in Iran's World Expo Pavilions

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Detailed abstract

Introduction

National pavilions at World Expos constitute one of the most prominent manifestations of national architecture in the international arena. Beyond their physical and functional roles as exhibition spaces, these temporary structures provide countries with an architectural platform through which cultural meanings, national values, technological capacities, and contemporary aspirations can be communicated to an international audience. The architecture of a pavilion therefore operates not merely as a container for exhibitions, but as an active medium of representation through which a country constructs and communicates a particular image of itself. The architectural expression of national pavilions has consequently been shaped by the ways in which architectural form, historical references, spatial organization, materiality, symbolism, and conceptual ideas are employed to communicate meaning.

Previous studies of World Expo pavilions have addressed a range of subjects, including their historical development, architectural characteristics, symbolism, cultural representation, national identity, and diplomatic functions. However, much of this literature has examined individual pavilions or specific dimensions of representation, while the broader question of how the language of architectural expression in national pavilions changes over time has received comparatively limited systematic attention. This study therefore focuses on the evolution of architectural expression in Iran's World Expo pavilions. Rather than interpreting the historical development of the pavilions as a simple stylistic transition from traditional to contemporary architecture, the study seeks to identify the changing structure and intensity of architectural expression and to determine whether recognizable patterns can be identified across different historical periods.

Accordingly, the research addresses two main questions: (1) What are the analytical dimensions of the language of architectural expression in Iran's World Expo pavilions? and (2) Are there recognizable patterns in the evolution of these dimensions over time?

Materials and Methods

This research adopts a descriptive-analytical and comparative approach and is structured in two main stages. The first stage concerns the development and validation of an analytical framework, while the second applies the framework to Iran's World Expo pavilions.

In the first stage, the relevant theoretical literature on architectural expression, architectural representation, and related approaches to the interpretation of architectural form and meaning was reviewed. Based on the concepts identified in the literature, an initial set of eight analytical dimensions was formulated. These dimensions were designed to capture different aspects of how architectural meaning and expression are constructed, including the manner and intensity of references to architectural sources, the focus of architectural expression, the coherence of the expressive system, and its overall orientation.

Since the objective was not simply to adopt existing categories but to develop a framework specifically applicable to national pavilions, the preliminary dimensions were subsequently evaluated by experts in architecture and World Expo-related fields. Expert assessment was used to examine the relevance, clarity, necessity, and conceptual distinction of the proposed dimensions. Based on this process, overlapping or insufficiently distinct dimensions were revised, integrated, or eliminated. The final framework consisted of five dimensions: mode of reference, richness of references, focus of expression, coherence of expression, and orientation of expression.

In the second stage, the framework was operationalized through a structured scoring system. Each pavilion was evaluated across the five dimensions using a five-point scale, allowing qualitative characteristics of architectural expression to be translated into comparable numerical values. The scoring framework was designed so that higher scores represented a stronger or more developed manifestation of the characteristic associated with each dimension. This procedure enabled comparisons not only between individual pavilions but also among broader historical periods.

The study covers Iran's participation in World Expos from 1873 to 2020. The selected pavilions were examined using available visual, documentary, and descriptive materials. Each pavilion was coded and scored independently across the five dimensions, after which the resulting scores were used to calculate dimension-level averages and identify patterns of change. Comparative tables, trend diagrams, and radar charts were employed to visualize the evolution of the five dimensions and to compare the overall expressive profiles of different historical periods.

Findings

The findings demonstrate that the proposed five-dimensional framework provides a differentiated basis for examining architectural expression across Iran's World Expo pavilions. The five dimensions—mode of reference, richness of references, focus of expression, coherence of expression, and orientation of expression—do not exhibit identical patterns of change. Instead, each dimension follows its own trajectory while contributing to a broader transformation in the language of architectural expression.

At the individual dimension level, all five dimensions demonstrate an overall upward tendency across the historical period under investigation, although the magnitude and pace of change differ. The greatest degree of transformation is observed in mode of reference, focus of expression, and orientation of expression. These dimensions particularly distinguish the earlier pavilions from those of the more recent periods. By contrast, richness of references and coherence of expression show more moderate changes and greater continuity across periods. This finding is important because it demonstrates that the transformation of architectural expression cannot be reduced to a uniform increase in all dimensions.

The comparative analysis also reveals three distinguishable patterns in the historical development of Iran's pavilions. The first is characterized by “Dominance of Reconstruction and Formal Expression.” In this phase, particularly evident in the early history of Iran's participation, pavilion architecture relied heavily on recognizable forms and direct references to Iranian architectural precedents. Elements associated with mosques, palaces, gardens, and traditional architectural motifs were frequently reproduced or reconstructed in forms that remained relatively close to their historical sources. Architectural expression in this phase was therefore strongly dependent on the physical and formal recognizability of its references.

The second phase can be described as “The Emergence of Hybridization and the Search for an Intermediate Language.” In this period, direct reconstruction gradually gave way to more selective combinations of traditional and modern architectural elements. Rather than simply reproducing historical forms, pavilion architecture increasingly experimented with how traditional references could be incorporated into contemporary architectural compositions. The result was a transitional language in which neither historical reproduction nor complete abstraction dominated.

The third phase is characterized by “Conceptual Reinterpretation and Interactive Expression.” In the most recent pavilions, references to Iranian architecture become increasingly abstract and are often expressed through conceptual qualities such as transparency, spatial layering, abstraction, openness, or the reinterpretation of traditional principles. At the same time, the pavilion becomes more responsive to the thematic discourse of the Expo itself and to broader global issues. Architectural expression consequently moves beyond the direct representation of recognizable Iranian architectural forms toward more conceptual and experiential modes of communication.

The radar analysis reinforces these findings by demonstrating that the three historical phases possess different overall expressive profiles. The transformation is therefore not simply a gradual increase along a single linear axis. Instead, changes in the relative configuration of the five dimensions indicate shifts in the center of architectural expression and in the relationship between architectural reference, formal organization, conceptual meaning, and communicative orientation.

Discussion

The findings suggest that the evolution of Iran's World Expo pavilions should not be interpreted merely as a stylistic progression from traditional architecture toward modern or contemporary architecture. Such an interpretation would overlook the more fundamental change occurring in the mode of

architectural expression. The critical transformation concerns not simply *what* architectural elements are used, but *how* architectural references are selected, organized, transformed, and communicated.

In the first historical phase, the pavilion primarily functions through recognizable architectural references. The reproduction of traditional Iranian forms provides an immediate visual mechanism for establishing cultural association. In this context, architectural expression depends strongly on formal resemblance: the closer the pavilion is to recognizable historical architecture, the more directly it communicates its intended reference.

The transitional phase introduces a different logic. Traditional references are no longer necessarily reproduced as complete architectural objects but are selectively combined with contemporary architectural strategies. This produces a more complex expressive structure in which historical continuity and contemporary architectural language coexist. The pavilion consequently moves from reconstruction toward interpretation.

The most recent phase represents a further transformation. Iranian architectural references become increasingly abstract, while conceptual and experiential qualities acquire greater importance. Instead of presenting a recognizable historical building, the pavilion may attempt to communicate an architectural idea derived from Iranian spatial or formal traditions. At the same time, the pavilion increasingly participates in the thematic discourse of the Expo and responds to international concerns. Architectural expression thus becomes less dependent on direct representation and more dependent on interpretation, experience, and conceptual communication.

Importantly, however, the results do not support a completely linear model of development. The five dimensions display different rates and patterns of change, and individual pavilions may depart from the dominant tendency of their period. This variation is analytically significant because it suggests that the evolution of architectural expression is better understood as a process of reconfiguration rather than simple progression. Different expressive strategies emerge, coexist, and sometimes recur as architects negotiate between architectural heritage, contemporary design approaches, the thematic agenda of the Expo, and the expectations of an international audience.

Conclusion

This study developed and applied a five-dimensional framework for analyzing the language of architectural expression in Iran's World Expo pavilions. In response to the first research question, the study identified mode of reference, richness of references, focus of expression, coherence of expression, and orientation of expression as five complementary dimensions through which the architectural language of national pavilions can be examined and compared.

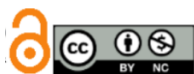
In response to the second research question, the findings demonstrated that recognizable patterns of transformation exist, although they do not follow a simple or uniform linear trajectory. The historical development of Iran's pavilions can be broadly understood through three expressive patterns:

Dominance of Reconstruction and Formal Expression; The Emergence of Hybridization and the Search for an Intermediate Language; and Conceptual Reinterpretation and Interactive Expression.

Overall, the results indicate a long-term shift from the direct and physical representation of Iranian architectural heritage toward conceptual, experiential, and interactive modes of expression. Nevertheless, this transformation has occurred at different rates across the five dimensions. The most pronounced changes concern the mode of reference, focus of expression, and orientation of expression, while richness of references and coherence of expression demonstrate greater continuity.

The main contribution of the research lies in proposing an operational framework through which architectural expression can be systematically compared across historical pavilion examples. The study consequently suggests that the history of Iran's Expo pavilions can be understood not simply as a history of changing architectural forms, but as a history of changing ways of expressing architecture and communicating Iranian architectural meanings in an international context.

Keywords : Architectural Expression, Iranian Pavilion, World Expo, Architectural Representation, Exhibition Architecture



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