

Research Paper

Historical Caravanserai's Interior Design Criteria based on Visual Preference of Travelers

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Abstract

The purpose of this research is to investigate the travelers' visual preference criteria in caravanserai hotels' interior design to enhance human's social, historical and cultural interactions. Using 356 questionnaires and Quantitative Research approach, the travelers' visual preferences of three hotels in Tabriz city are assessed. Photo questionnaires are prepared according to the Information Processing Analysis theory and were examined by SPSS software. The results indicate that preferred caravanserai hotels are mysterically related to physical factors like medium intensity of light, warm and neutral colors, modern and traditional furniture integration, green space and wooden decoration. Interior architects can increase peoples' interest for using Caravanserai Hotels by considering this results and its application in their design methods.

Keywords: Visual preferences, Interior design, Information processing, Cultural interactions, Caravanserai hotels.

1. INTRODUCTION

Conservation of historical buildings plays an important role in the sustainable development of old cities [1]. Heritage sites are now commonly viewed as having characteristics of an important asset, and their conservation should be assessed delicately [2]. One of the elements that gives identity to the heritage sites is historical monuments, which are created using different techniques and materials [3] of construction, as well as cultural and historical features. Considering the formation of culture based on thinking, the ideas of a society are often reflected in its historical monuments, in a certain historical period. The conversion of historical buildings to historical hotels is one of the best options for preserving cultural heritage against destruction. In the field of commissioning and exploitation, any kind of intervention in the historical monument is inevitable [4] and the revival of many historical regions and monuments requires protection and development under the supervision of an expert [5] and authorities.

Throughout history, many restorers and theorists believed the restoration of historical buildings to its original form and architecture is impossible [6], also in

interior design, as an important part of the architecture of the monument, imitation of the intrinsic state, while the basic principles governing the formation of the traditional building and the spirit of all the foregone works which have not been fully understood, is impossible [7]. Unity cannot be achieved by combining fancy styles with the original style [8] and as Pietro Edwards emphasized: "it should later be possible to remove the integrations without damaging [9]". Historical buildings as a cultural heritage, bear the "values and messages of humanity" in addition to their "objectivities" and "antiquity", and their conservation has always mattered [10].

The current research's objective is to identify interior design criteria of historical hotels based on travelers' preference and assessing the results with the restoration theories.

2. ENVIRONMENTAL PERCEPTION

The visual sense is the most important sense that captures and explains the elements of internal architecture and is able to see any images considering the attribute, characteristic, product, values, and ideas [11].

Vision, as the central component of human perception of the surrounding, helps human to understand the world [12]. It is asserted that the visual information dominates

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the culture and environment [13]. Therefore, visual characteristics have more decisive role in users' preferences.

3. APPLICABLE THEORIES

Preference is a result of perceptions that originate from acquiring knowledge, innate interaction, and cognitive processing [14]. Visual preference is defined as an observer's degree of like or dislike in terms of visual factors of a place or space [15]. Various theories [16, 17] have been developed to measure the visual preferences of the audience and can be used in a variety of disciplines (Table 1).

3.1. Information processing theory

One of the most utilized theories for the visual preferences is information processing theory [20] that can be utilized in order to examine visual preferences [21]; Therefore, this theory is an appropriate option for evaluating the preferential physical characteristics of travelers in the interior design of caravanserais and historic hotels. This theory is perceived as a cognitive development study approach and is based on the concept that mind is

responsible for analyzing environment's information; accordingly, humans process the information they receive rather than merely responding to stimuli [22].

It has been suggested that the human's response to the environment can be divided into two basic aspects, namely, the attempt to understand and a tendency to explore [23]. According to this theory, the information, which is received from the environment, can be categorized into inferred and immediate levels [24]; Therefore, if two basic requirements are matched as the requirements of communicating with the internal space with two levels of information reception, four variables will serve as the predictors of the landscape aesthetics in the preferences matrix there [25-27]. The Theory of Information Processing consists of 4 variable which are Legibility, Coherence, Complexity and Mystery which are defined separately in table 2.

According to the thematic literature, the initial roadmap for research is as follows (see figure 1).

Over the past 40 years, a large number of researchers have studied people's visual preferences [28-30] in different fields [31, 32]. Initial studies were conducted on the characteristics of urbanization, which later became a source of research in the fields such as computer [33], interior architecture [34, 35], and architecture [36].

Table 1. Most frequently used Visual Preference theories

No	Theory	Researcher	Variable	Application
1	Cognitive Analysis of Preference for Urban Spaces [16]	Thomas. R. Herzog	spaciousness, refuge, enclosure, coherence, legibility, complexity, mystery, typicality, age	Evaluation of urban spaces
2	Evaluative image [17]	Jack L. Nasar	Naturalness, Upkeep, Openness, Historical Significance, Order	Evaluation of the quality of the visual environment and its impact on people's feelings and inferences
3	Information Processing [18]	Rachel & Stephen Kaplan	Coherence, Legibility, Complexity, Mystery	Evaluation based on the human's need for information and his ability to process information
4	Prospect and Refuge [19]	Jay Appleton	Refuge, Prospect	Evaluation based on the principle of life support

Table 2. Definitions of information processing theory variables [37-39].

Variable	Definition
Legibility	It is clear when I can go in.
	It is easy to get around every part.
	It does not take much time to figure out the way of moving around. I can always figure out where I am.
Coherence	Each component is well related to the others.
	Components work well together.
	Each component seems to hang together. Each component helps the other to provide better comprehension.
Complexity	The scene has too many distractions, making it confusing.
	The scene does not contain enough components to interest me.
	The scene contains a good variety of components that keep me involved. I feel drawn in by the variety of information or components the scene offers.
Mystery	The scene makes me feel there is something interesting to explore.
	As I navigate through the scene, more curiosity inspires me.
	I expect that the scene will provide an interesting thing to quench my curiosity as I explore around. I feel I will find an interesting thing if I navigate more.

3.2. Applied Restoration and Conservation Theories in this Research

Various theories have been presented in relation to the way of dealing with historical buildings (Table 3). terms of lexical semantic concept in the English language,

conservation, restoration and their subcategories may sometimes be perceived contrastively or synonymously. Therefore, their exact translation is not possible, and only with respect to the framework of theorists in different texts could be distinguished.



Fig 1. Initial Research Diagram

Table 3. Most frequently used Restoration and Conservation Theories

No	Researcher	Description
1	Eugene Viollet-Le-Duc, (1814-1879) (Restoration)	To restore a building is not to preserve it, to repair, or rebuild it; it is to reinstate it in a condition of completeness that could have never existed at any given time [40]. Principles: elimination of attached sections to the original structure of the building. Completion of building basis on the original architecture, preserving of ruined buildings [41, 42].
2	Luca Beltrami, (1854-1933) (Restoration)	Accordance to historical evidence about the establishment of its original form. The restoration of the historical building will be exactly the same as following the layouts, which is similar to the shape and composition of the original historical building [43]
3	Camillo boito, (1836-1914) (Restoration)	He was able to substitute attention to the architectural concepts in restoration as a substitute for adherence to the forms - styles in the historical buildings being intercepted. His eight important principles are: 1. difference of style between the new and the old; 2. difference of construction materials; 3. Suppression of profiles or decorations; 4. Exhibition of removed old pieces, installed next to the monument; 5. Incision in each restored [rinnovato] Piece of the date of restoration or of a conventional sign; 6. descriptive epigraph carved on the monument; 7. Description and photographs of the different phases of the work, placed within the building or in a place close to it, or description printed in a publication; 8. Notoriety [44].
4	Cesare Brandi, (1906-1988) (Restoration)	The restoration of aesthetic integrity should be based exclusively on the information found on the artwork or building, not on analogies to other works [10] therefore, any art as a special product of human thinking must be restored to its own unique knowledge [4]
5	John Ruskin, (1818-1900) (Conservation)	His romantic restoration is opposed to the Eugene Viollet-Le-Duc restoration thought and his belief about conservation is very important for distinction between conservation and restoration, and preservation of historical buildings. Any interference in historical buildings' situation even elimination of any attachment (uncoordinated or coordinated), or adding new segments for beauty or strengthening the historical building is ruled out [6].
6	William Morris, (1834-1896) (Conservation)	Founder of SPAB= The Society for the Protection of Ancient Buildings; His principle in conservation is: conservative repair in historical building and its daily care [45].

4. CARAVANSERAIS, AS HISTORICAL HOTELS

Caravanserai were initially rest places for people travelling between cities and their goods and animals, which were often provided by the state [46]. Interior architecture of caravansaries inherently have a lot to say about that era's history, culture and traditional structure. Although in the related studies of caravansaries, many of the historical and structural features are available in various history and travel books, the way of communication with the audience has been less focused on. Travelers' preferences are affected by many factors such as distinct insights of people about interior spaces resulting from their relationship with the space [14, 47] and various demographic variables such as ethnicity, education, and gender [48]. Some other researchers have also suggested that the sense of belonging [49], the symbolic aspect of the environment [50] and cultural differences [51] can affect users' preferences.

Caravanserais are considered a place which have a potential to transform into historical hotels, although they lack sufficient design criterion regarding this purpose. Accordingly, the current research aims to identify these factors.

In the meantime, giving a new use to such historical building faces some challenges that need to be considered; post-occupancy evaluation (POE) is one of them [52]. A seven step POE process has been developed by HEFCE which contains (1) identifying the need for the need for evaluation; (2) deciding on the approach; (3) providing a brief for the POE; (4) planning the POE; (5) applying the POE; (6) preparing for the report; (7) taking action according to the POE results [53].

5. RESEARCH METHOD

Quantitative research approach was used to determine the visual preferences of travelers about historical hotels' interior design factors. This study is based on "systematic

empirical research of social phenomena through the statistical calculation method" [54].

The random sampling method was used to develop photo questionnaires catalog which is considered to be a valid surrogate for the real environment [55]. 200 items were chosen Out of a total of 1500 selected interior photographs from official websites of selected hotels,. A Panel of 15 experts divided 200 selected photographs based on the definitions of information processing variables (legibility, Coherence, complexity and mystery) which are described in table 2. After prioritizing, 8 photographs with the highest score were selected for each group, leaving 32 final photographs.

In presentation of the photo questionnaire booklet, it was carefully considered not to use similar group of variables on a single page and to avoid placing more than eight photographs on each page. Likert Scales' 5-point spectrum has been used with very low, low, moderate, high, and very high choices in order to assess the photos, Additionally a textual questionnaire about general visual preferences was developed in order to determine the most preferred physical factors of historical hotels interior environment.

Shahriar, Gostaresh and Tabriz Hotels located in Tabriz, Iran (fig 2) were chosen for the distribution of questionnaires as there is not any historical hotel within Tabriz city. A total number of travelers over a seven-week period (from 22/9/2017 to 11/11/2017) who stayed in the selected hotels and respondents' numbers from each one is described in table 4. Total sample size which is 356, is calculated through Cochran formula [56].

Table 4. Sample size

Sample Hotels	Average number of travelers (Min-Max)	Respondents' number
Shahriar Hotel	636 - 1354	117
Gostaresh Hotel	805 - 1363	118
Tabriz Hotel	835 - 1393	121
Total	2276-4110	356



Fig 2. Samples Hotels' location

After conducting the pretest, a valid questionnaire was distributed among Iranian travelers aged over 18 [57] and non-artist [58-60] with random sampling method. Data were analyzed using SPSS 22 software. Cronbach's alpha was calculated to test reliability, which turned out to have internal consistency [61]. After analyzing the results, the most and the least preferred information variables were identified (see figure 3).

6. RESULTS

The results showed that the Mystery variable with the highest mean average (3.73), is the most preferred and Complexity with the lowest mean average (3.11) is the least preferred by travelers in the caravanserai Hotels, while there is only a little difference between Legibility (M: 3.62) and Coherence (M: 3.61) (Table 5, figure 4). The results of inventory questionnaire in terms of interior design characteristic are shown in figure 5.

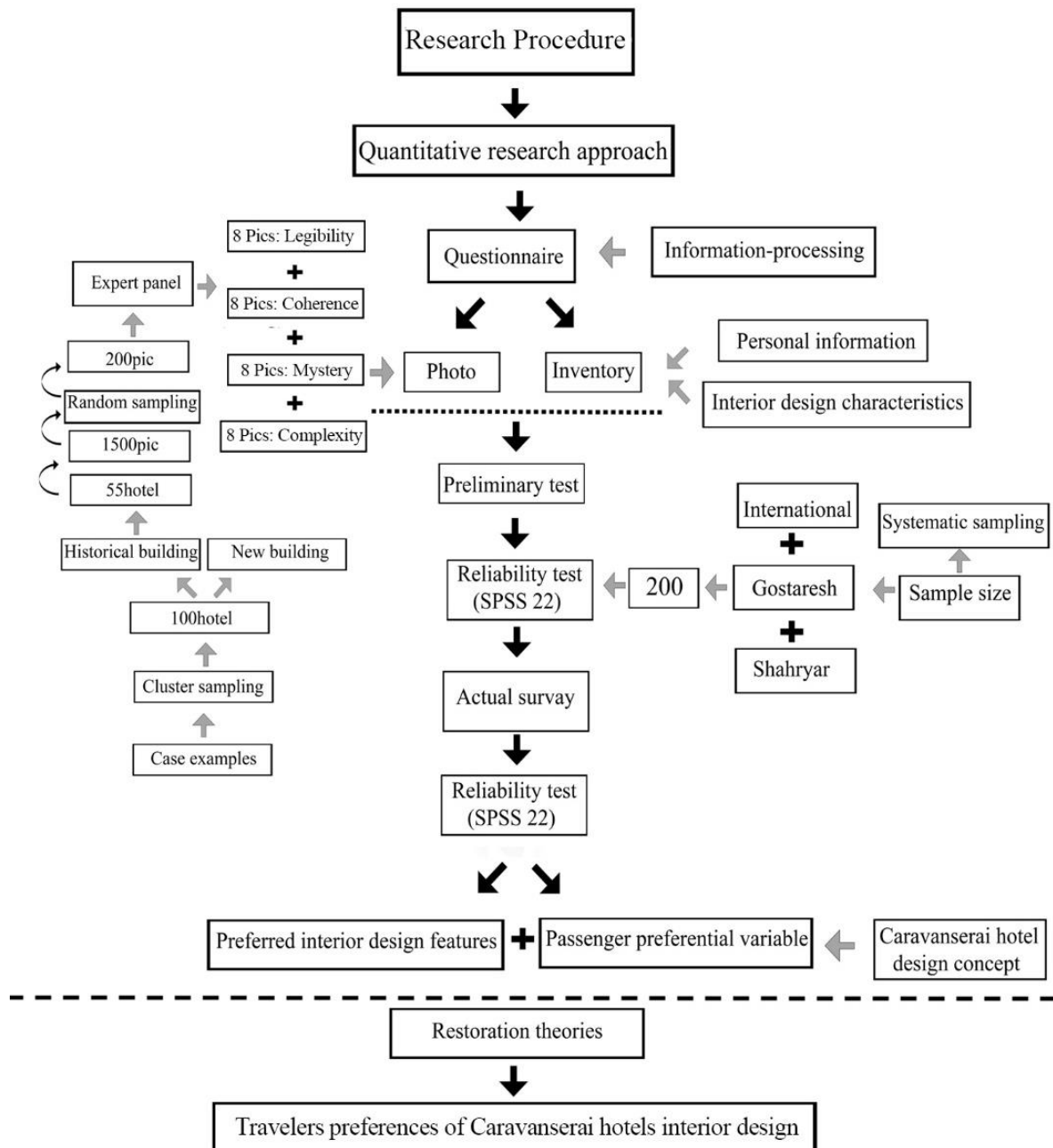


Fig 3. The Research Design



Fig 4. Preferred photographs of mysterious, legibility, coherence and complexity variables with the highest average

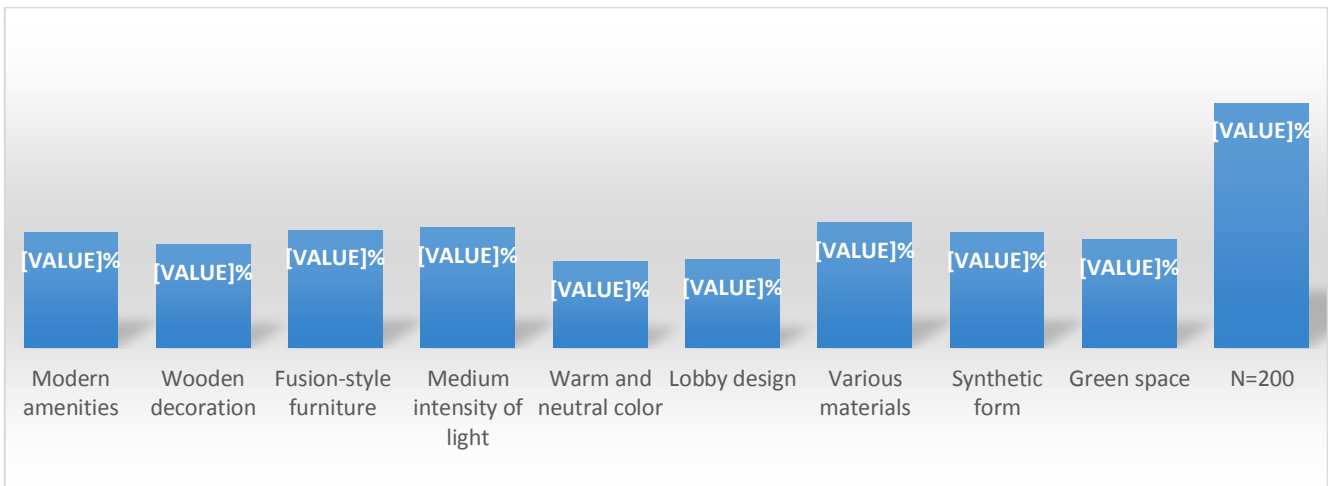


Fig 5. Inventory questionnaire results about preferred physical factors of historical monuments that have turned into hotels

Table 5. The final results of the travelers' visual preferences of interior space in historical hotels.

Rank	Variable	Mean	S.D.	Cronbach's Alpha	Space Configuration in historic hotels spaces
1	Mystery	3.73	1.367	0.691	Several paths, rhythms and vague repetition, stone material, wood, plaster and brick composition, neutral and warm colors, indirect and hot lighting, ambiguity in the mind of the viewer with space separation by lattice panels
2	Legibility	3.62	1.135	0.692	Open and transparent space, rhythm and repetition, stone material, plaster, bright flooring, bright colors, direct lighting
3	Coherence	3.61	1.253	0.738	Open and transparent space, regular rhythm and regularity, stone material, ceramics and glass, bright flooring, bright and proportional colors, direct lighting
4	complexity	3.11	1.478	0.857	Irregular rhythm and repetition, Various materials (stone , glass, ceramics, concrete and plaster), dark flooring, dark, bright and diverse colors, direct and indirect lighting

7. DISCUSSION

According to Wood Cock and Hagerhall [62, 63], the most important variable of visual preferences is the mystery. In many studies of various fields, researchers such as Herzog, Ikemi achieved results consistent with this study [64-66]. Many studies were = conducted about the assessment of visual preferences of travelers [67-69]; A recent paper demonstrated that male guests preferred rooms decorated in masculine colors, while women are equally satisfied with masculine or feminine color schemes; also older travelers show equal satisfaction with contemporary and traditional style hotel rooms which is consistent with the current paper's results [48].

Current survey showed that modern historic hotels with wooden interior decoration, fusion-style furniture (modern + traditional), neutral and warm colors in fusion forms (curve + Linear), moderate intensity diffused lighting, high green space, with a mysterious concept is more preferred by travelers (fig 5). The demand for green space in historical hotels is consistent with previous studies on the positive impact of green space on people's health [70-73]. Considering the different strategies for restoration of the historical buildings, the results of the visual preferences obtained from this study are in alliance with the theories of Viollet-le-Duc, Luca Beltrame, Camillo Boito and Cesare Brandi (see fig 6) to convert the historical buildings into hotels through the restoration of buildings and applying the preferred interior design criteria of travelers, although these results are against the mortality principle of John Ruskin (see table 3) [4, 6, 41, 44, 74].

8. CONCLUSION

To give a chance of re-surviving to a historical building, considering that even a little not-well-considered decision will have irreparable consequences, requires close attention. The results of this research can help protecting historical monuments which are occupying a part of the city space but also could meet the needs of today's society. That is to say, the rejuvenation of caravansaries and historical buildings to preserve them for the next generation is an attention-worthy subject.

The present study analyzed travelers' visual preferences of historical Caravanserais in terms of interior space criteria. According to the results of a photo questionnaire, travelers prefer mysterious historical hotels for their residence, while hotels with confusing details of interior spaces are the least preferred. In addition, the results of inventory questionnaire demonstrated preferred physical factors of historical Caravanserai's such as medium intensity of light, warm and neutral colors, modern and traditional furniture integration, green space and wooden decoration. Converting historical buildings to hotels will prevent them from turning into unsafe ruins in urban environment. In order to preserve the immortality of historical hotels, interior architects and restorers should work together to apply the visual preferences of travelers while restoring the remains of buildings in a reversible way.

Obtained results of the visual preferences of travelers are aligned with the restoration theories of Viollet-le-Duc, Luca Beltrame, Camillo Boito and Cesare Brandi; in this case reversibility and not damaging the original historical buildings are applicable.

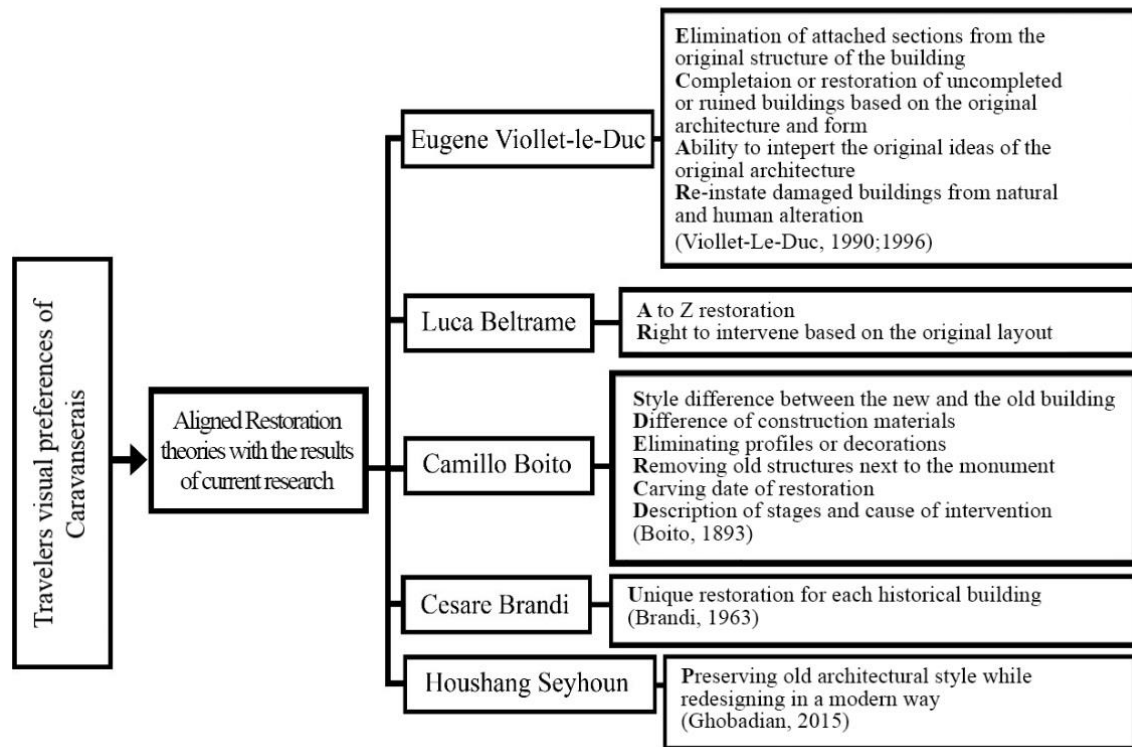


Fig 6. Aligned Restoration theories with results of current research

Limitations

In the current research' photo questionnaire, the pictures of historical hotels were not selected based on their architectural style and this is considered to be a limitation of research.

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