

# PEDESTRIAN SATISFACTION WITH AESTHETIC, ATTRACTIVENESS AND PLEASURABILITY: EVALUATING THE WALKABILITY OF CHAHARAGHABBASI STREET IN ISFAHAN, IRAN

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## **ABSTRACT**

*Over the past decade the quality of the walking environment has become a significant factor in transportation planning and design in developed countries. It is argued that the pedestrians' environment has been ignored in favour of automobile. Car dependency has reduced the quality of urban places, threatened their historical identity and changed the character and function of those places. 'ChaharbaghAbbasi Street', built in 1591 in Isfahan (Cultural Capital of the World of Islam in the year 2006), as the first green designed street in the Persian history and one of the pioneer recreational streets in the world, has been chosen in this study. Questionnaire surveys with 121 respondents were conducted to examine the walkability of ChaharbaghAbbasi Street based on identifiable criteria for walkable environment. Descriptive statistics were used to analyse the data. According to the findings, the pedestrians were not satisfied with the walkability of this street in general. However, they showed high positive satisfaction with aesthetics, attractiveness, and pleasurability of the street. The findings will contribute to increasing the quality of the street as public space while maintaining the cultural-historical identity of the city. This can be achieved through operationalizing master plans for cities like Isfahan which will be beneficial both for the governmental and non-governmental organizations.*

**Keywords:** *Walkability, Pedestrian, ChaharbaghAbbasi Street, Isfahan*

## **1 INTRODUCTION**

One of the major goals of urban design is to reduce automobile dependency, in order to address issues of viability and sustainability (Newman, & Kenworthy, 2006). For many years, urban designers have focused on planning the cities based on the existence of automobile, as a result, streets are often over scaled and inhospitable to pedestrians (Southworth and Ben-Joseph, 2004). This type of urban development has been a great threat to the historical identity of old urban fabrics and as a result the character and function of those places have changed and in many cases diminished (Habibi, 1999).

This study examines the walkability of ChaharbaghAbbasi Street which is the first green designed street in the Persian history and one of the pioneer recreational streets in the world. This street was built in 1591 in the era of Shah Abbas I, the first King of Safavid Dynasty (1502-1736) in Isfahan (Cultural Capital of the World of Islam obtained in the year of 2006) in Iran. Its name, literally translated as 'four gardens', refers to a popular garden typology consisting of four plots divided by waterways or paths forming a cruciform plan. The street was primarily built for recreation but later

changed to a main street that links the northern and southern parts of the city. It is still the most important street of the city with many shopping malls and recreational sites as it is a linear park with huge old trees.

As the city of Isfahan, like many other historical and cultural cities of the world, is changing and modernizing very fast in the 21st century, there is an eminent danger that the cultural sites of the city are going to lose their identity and the original goal for which they were made. Therefore, this study aims at finding the level of walkability satisfaction of Iranian pedestrians to prevent any harm to cultural value of this street.

### **1.1 Walkability and walkable environment**

The definition of walkability has been varied according to various disciplines. Southworth (2008) defines a walkable environment from the perspective of the urban design. He believes that the emphasis on health in the discourse of walkability deviates the attention from other types of walkable environments and meanings of walkability. He has suggested five other types of walkable environments beside walkable as being associated with encouraging physical activity type of environment:

- a) Close: A walkable environment that provides a short distance to a destination, particularly where driving is inconvenient or people are without cars. This is the perspective rooted in transportation planning. This definition has a great deal to do with an individual's cost-benefits calculation.
- b) Barrier-free: A walkable environment that is crossable, without major barriers. Walkability can be refined for the ease of children, elderly and disabled people.
- c) Safe: A walkable environment is safe in terms of perceived crime or perceived traffic.
- d) Full of pedestrian infrastructure and destinations: A walkable environment visibly displays full pedestrian infrastructure such as sidewalks or separated trails, marked pedestrian crossings, street furniture and street plantings.

- e) Upscale, leafy or cosmopolitan: A walkable place is somewhere that the pedestrian environment is pleasant for upper middle-class professionals, who have other choices for getting around.

Another definition offered by Southworth (2008) which seems more comprehensive and appropriate to be used in the current study is the extent to which the built environment supports and encourages walking by providing for pedestrian comfort and safety, connecting people with varied destinations within a reasonable amount of time and effort, and offering visual interest in journeys throughout the network. (p. 2)

Walkability can be evaluated at various scales, at site scale, at a street or neighbourhood level and at the community level (Southworth, 2005). Since this study evaluates the walkability of a street, the criteria applicable to evaluate a walkable environment will be assessed at the street scale. However, this paper will only focus on results regarding the aesthetics, attractiveness and pleasureability aspect of ChaharbaghAbbasi Street' environment from the perspective of Iranian pedestrians.

The factors that affect the walkability of urban area are varied and they are influenced by many variables including the aesthetics, attractiveness and pleasurable of the environment. This relates to how much the environment gives joy to the users aesthetically, attracts pedestrians to use the space, and pleases them with opportunities offered (Owen et al, 2004; Shay et al, 2003). Previous literature suggests how to evaluate an environment based on its ability to accommodate these qualities. Pleasant atmosphere, attractive architecture and streetscape on well-lit public areas, outdoor seating in residential and commercial areas were mentioned by Shay et al. (2003) and Shriver (1997) as variables affecting walkability. Others have also noted the presence of historical buildings, well-maintaining, and keeping the environment clear of garbage, litter, broken glass or graffiti (Southworth, 2008; Hoehner et al, 2004).

### 1.2 Statement of the Problem

In the United States, great emphasis has been placed on planning for smart growth, bicycle, and pedestrian in the 90's, while in Northern Europe, the decline of modernist planning and automobile dependent transportation system occurred somewhat earlier with the energy crises of the 70's. Unfortunately in many Asian countries despite having great history in architecture and urban planning, the modernist planning era and automobile dependency continue to flourish and even grow very fast in recent years (Hutabarat-Lo, 2009).

Iran as a developing country is also struggling with the impacts of auto-dependence urban design. Many historical cities of Iran have been affected by this trend. According to the local officials of the city of Isfahan, the city suffers from traffic and air pollution and while this is a growing trend in the city, the issue has not been seriously addressed (Majidi & Teimouri, 2011). One of the ICOMOS (International Council on Monuments and Sites) members stated that cultural-historical fabric of Isfahan is in danger because of the development of the Isfahan city (Shirazi, 2006).

Sidewalk in Isfahan does not have meaning. In the mind of citizens of this city, sidewalk is a messy path where you will encounter many problems walking there, from bike passing, bumping into other people, shops which locate their stuffs in the walkways and occupy the space, and much of these problems also occur in ChaharbaghAbbasi Street which once was a famous one in its type (Ghodratipour, 2009, p. 8).

Based on the master plan of Isfahan, the ChaharbaghAbbasi Street should be transformed into a pedestrian street (Shirazi, 2006). However, there is no attempt yet from governors to pedestrianize this street as planned. As a result, the stated problems persist. Therefore there is an urgent need to examine how the urban development affects the historical identity of the street as a world heritage site, while taking into consideration the functional characteristics of ChaharbaghAbbasi Street as a significant urban area for the residents of the Isfahan. In pursuit of this goal the following research questions were formulated:

1. Are people generally satisfied with this street's walkability?
2. Are people satisfied with aesthetic, attractiveness and pleasurability of this street?

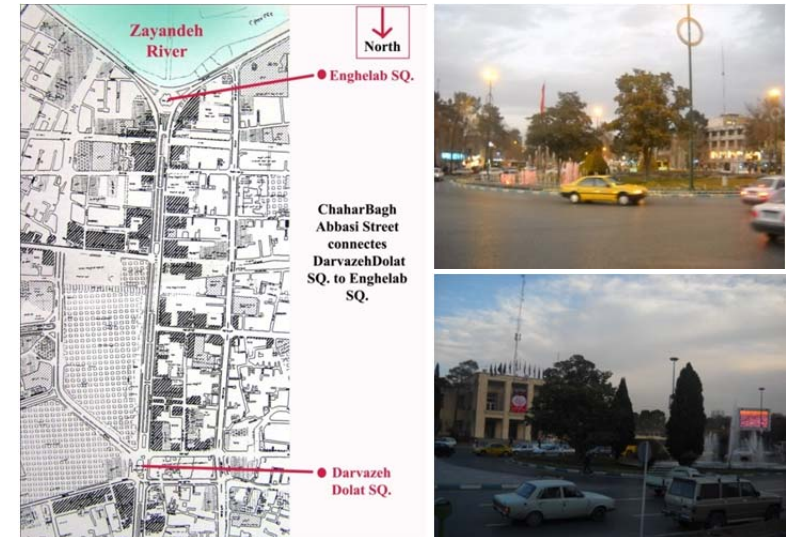


Figure 1: The layout of ChaharbaghAbbasi Street (up left), Enghelab SQ. (up right), Darvazeh Dolat SQ. (down right)

## 2 RESEARCH METHODOLOGY

The method of the study is a questionnaire survey.

### 2.1 2.1. Participants

The participants of this study were 121 pedestrians who were selected based on convenient sampling.

### 2.2 2.2. Instrument

Walkability of ChaharbaghAbbasi Street Questionnaire (WOCASQ) was devised by the researcher to assess the walkability of ChaharbaghAbbasi

Street from the perspective of Iranian pedestrians. The questionnaire has 61 items and five factors including path and roads (18 items), facilities (16 items), culture (3 items), safety and security (8 items), and aesthetics, attractiveness and pleurability (16 items).

Respondents were asked to evaluate the walkability of ChaharbaghAbbasi Street on a 7-point Likert scale, ranging from 1 (strongly disagree) to 7

(strongly agree). 121 pedestrians of ChaharbaghAbbasi Street were randomly selected from those who walked in the street at the time of the survey participated as respondents for the study.

The reliability coefficient of the scale and its components were estimated through internal consistency method. The Cronbach's alphas are reported in Table 1.

Table 1. Reliability coefficients of WOCASQ Scale

Variables	Cronbach's alpha
Path and Road	0.78
Facilities	0.75
Culture	0.70
Safety and Security	0.82
Aesthetics and Attractiveness	0.85
WOCS	0.91

It should be noted that in the current study the only factor that was considered was aesthetics, attractiveness and pleurability. This factor includes the architectural style of buildings, street and building facades, the height of the buildings, landscape, water spring and fountains and neatness of the space.

### 2.3 Procedure

A thorough review of local and international literature was done to extract the factors that influence walkability. Based on the found factors a pool of items was made. Then the first version of the questionnaire was piloted and its reliability index was estimated. Based on the findings of the pilot study some items were removed and replaced and ultimately the researcher came up with a 61-item questionnaire.

The rush-hours of Chahrbagh's street were taken from the Municipality of Isfahan. Based on this report, the street is mostly crowded around 2 hours in the morning (from 11 A.M to 1 P.M) and 4 hours in the afternoon (5 P.M to

9 P.M). The researcher attended the street during these hours and collected the data from volunteer pedestrians.

### 2.4 Data Analysis

Descriptive statistics were used to analyse the gathered data.

## 3 RESULTS

Descriptive statistics of WOCASQ and its factors are reported in Table 2. In order to answer research question number 1, the mean and standard deviation of the total scale WOCASQ were considered. As table 2 shows the average score in WOCASQ is 3.66 (SD=.64) while each item was measured by a 7-Likert scale, implying that pedestrians were not satisfied with the walkability of this street in general. In order to answer research question number two and to find people's satisfaction with aesthetic, attractiveness and pleurability of this street, descriptive statistics was used. As Table 2 shows, the pedestrians were mostly satisfied with the aesthetic aspect of ChaharbaghAbbasi Street (mean=4.29, SD=.9).

Table 2. Respondents' satisfaction of WOCASQ (N=121)

Scale	Number of items	Mean per item	SD
Path and Roads	18	3.74	0.8
Facilities	16	3.24	0.7
Culture	3	2.89	1.54
Safety and security	8	3.09	1.14
Aesthetics	16	4.29	0.9
WOCASQ	61	3.66	0.64

Further, Table 3 illustrates the mean values and standard deviation of each item of the factor aesthetic, attractiveness and pleasurability. The result revealed that respondents were highly satisfied with item 11 (trees and landscape along the street are beautifully planted and designed) and 13 (sidewalks are clear of litter and leaves) while they were less satisfied with the items 4 (the architectural style of buildings along this street is attractive), 5 (the street facades are beautiful), 6 (building facades have continuity) and 12 (there is adequate amount of water spring and fountains along the boulevard contributing to the attractiveness of the street).

The respondents were also highly satisfied with the rest of the items including item 1 (I like to walk/bike in this street), 2 (this street is attractive to walk), 3 (this street is pleasant to walk), 7 (the height of the buildings is appropriate), 8 (historical buildings along this street are visible), 10 (there is a building or other special memorable feature existed in this street.), 14 (during the winter sidewalks are kept clear of snow), 15 (there are many interesting sights while walking) and 16 (attractive views and landscape elements).

Table 3: Pedestrian satisfaction of aesthetic, attractiveness and pleasurability of ChaharbaghAbbasi Street

Components	Mean	SD
1. I like to walk/bike in this street.	4.88	1.93
2. This street is attractive to walk.	4.56	1.75
3. This street is pleasant to walk.	4.38	1.78
4. The architectural style of buildings along this street is attractive.	3.26	1.76
5. The street facades are beautiful.	3.95	2.04
6. Building facades have continuity.	3.59	1.89
7. The height of the buildings is appropriate.	4.02	1.70
8. Historical buildings along this street are visible.	4.18	1.89
9. I can feel the historical identity (image) of the street.	4.02	1.90
10. There is a building or other special memorable feature existed in this street.	4.72	1.27
11. Trees and landscape along the street are beautifully planted and designed.	5.09	1.49
12. There is adequate amount of water spring and fountains that make the street attractive	3.70	1.85
13. Sidewalks are clear of litter and leaves.	5.08	1.55
14. During the winter sidewalks are kept clear of snow.	4.78	1.51
15. There are many interesting sights while walking.	4.08	1.57
16. Attractive views and landscape elements	4.33	1.60

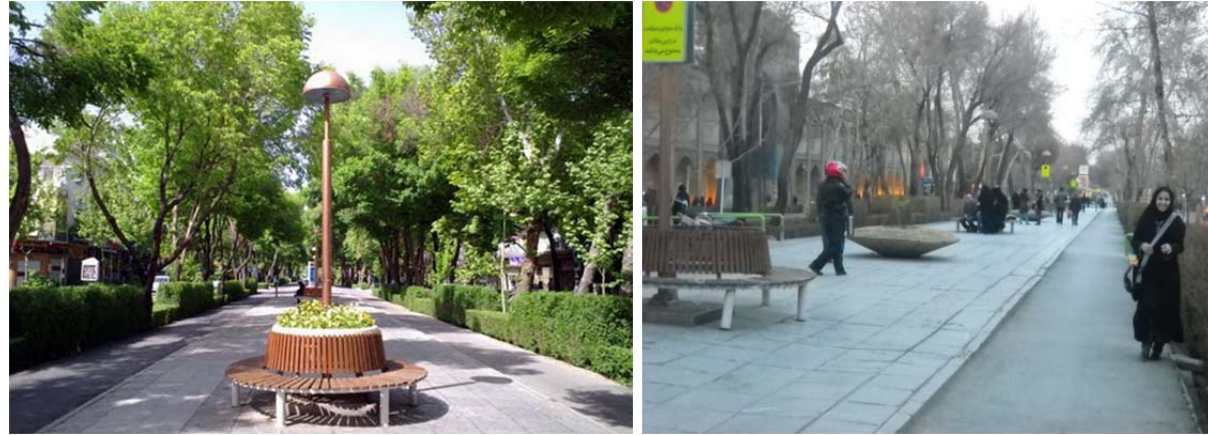


Figure 2: ChaharbaghAbbasi Street, the landscaped boulevard provides a linear urban park (in spring (left), in autumn (right))

#### 4 DISCUSSION

The greenery and the beautiful landscape and trees of ChaharbaghAbbasiStreet were mentioned by the Italian traveller, Pietro della Valle, who visited Isfahan in 1616 and Sir John Chardon, the famous French philosopher and traveller who had travelled to Iran during Safavid Era. This street is one of the most beautiful streets of the Middle East and Persian history. The street was primarily built to function as a recreational site; however it is an important social gathering place of Isfahan. Being inattentive to the function of this street in people's life, the street has been recently reduced to a commercial centre, while its cultural heritage value is in danger.

The findings of this study showed that Iranian pedestrians are not generally satisfied with walkability of ChaharbaghAbbasi Street. This low satisfaction can be related to the modified features and elements of this street that have been done in the last few years. This shows that local people are interested in keeping the urban fabric of this cultural city intact or improved in a way that the identity of their city would not be lost in

modernization. As the street's function from a recreational site has been changed into a commercial center and a main transportation link, the cultural attraction has been influenced. Therefore, people show their dissatisfaction with the city's change of function.

The high level of satisfaction toward the item 11 indicates that this quality remains as one of the significant characteristics of ChaharbaghAbbasi Street that attracts pedestrians and pleases those who walk along it. Furthermore, the historical identity reflected in the richness of the street is preserved. The high level of satisfaction toward item 13 shows that the sidewalks are kept clear with no litter or leaves, and it is supported by similar response for item 14 which indicates that the cleanliness of the sidewalks is not affected by the changing seasons and the sidewalks are kept clear throughout the year. The argument over preserving this cultural site has been heard repeatedly in recent years and governmental and non-governmental agencies are paying more attention to the issue (Majidi&Teimouri, 2011). However, more attention should be given to maintaining the street's cultural elements.



Figure 3: View of a typical sidewalk of ChaharbaghAbbasi Street (commercial side of the Street (left), historical side of the street (right))

The low level of satisfaction for items 4, 5, and 6 was somehow predictable due to the disorganised street facade. In order to make the street facade visually more harmonious and enjoyable to be seen by the pedestrian, the municipality is needed to set some rules to maintain the condition of the shops and shopping malls facing the ChaharbaghAbbasi Street.

Item 12 refers to the presence of water springs and fountains gained a low level of satisfaction by respondents and it is due to the absence of water in the street. Historically, there had been a water channel running along the middle part of the street however it has been removed. It is suggested that the municipality look into the idea of reviving the channel or adding some fountains or shallow pools that will contribute to the aesthetic quality as well as providing visual and physical comfort. Thus, it will increase the walkability of this street.

The rest of items have an acceptable level of satisfaction however it should be noted that the result for item 9 indicates that people could fairly sense the

historical identity of the street. In this regards, the scholar believes that, due to the significance of the place to the Iranian culture and history, the architectural and historical identities should have gained significant higher level of satisfaction. That may have been influenced by the concerns about the loss of historical identity of this street through time and it becomes a real issue that should concern the government.

In summary, the study demonstrates that the features of ChaharbaghAbbasi Street which is still alive and active in attracting pedestrians are the greenery and landscape design elements which provide an attractive and pleasant place to walk, while cleanness of the sidewalks supports the walkability of the street. It is suggested that the architectural features to be improved and preserved as to ensure the sustainability of the ChaharbaghAbbasi Street's cultural and historical identities and Isfahan city.





Figure 3: The historical monuments alongside the street: 1-Madar-e- shah School (left top) 2- Hasht Behesht Garden (left down) 3- Allahverdi Khan Bridge (centre top) 4- Bazaar Honar (centre dawn)

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