CHAPTER IV

RESEARCH METHODOLOGY
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Introduction

Research methodology plays an important role in any research. It includes research design, data collection, analysis and interpretation of results. The term ‘methodology’ comprises this whole process. The final results of a research depend on the methodology that is employed and the methodology depends on the type of data needed to answer the research questions posed in a particular research. Social sciences researches use either quantitative research methods or qualitative research methods or both (triangulation). There is however a controversial argument between social sciences researchers and scientific researchers in regard to the use of the two methods in the social sciences and debates on quantitative and qualitative research methods is still continuing (Kumar, 2010).

However these two approaches help to understand the socio-economic realities of the society. The qualitative approach use non-numeric data and the quantitative approach use numeric data (Henwood and Pidgeon, 1992). Selecting an appropriate methodology for specific research depends on the research objectives and research questions which are
going to be answered through the research. The research methods must lead to comprehensive and clear results at the end of the research.

This chapter outlines the design, structure and the steps followed in the research. The methods used in the collection of data, processing and analyzing data and information used in the research are elaborated on. The description and motivation of the cases, selection of research design, data collection methods as well as the data analysis tools are also discussed in some detail in this chapter.

**The Research Design**

Research design serves as a logical manual to guide a researcher in the course of data collection, analysis and interpretation. Stating clearly each step in the manual can help a researcher collect the right kind of data and analyze them in the right way to address the primary research questions. The research design has been developed in three stages:

1. An extensive review of literature on heritage conservation, citizen participation and public opinion, and sustainable development (a review of literature in Chapter II).
2. A discussion on public (citizen) opinions towards achieving sustainability in the historical part of Isfahan city (see discussion in Chapter V).
3. Interviews with expert people to find a solution for heritage conservation, land use patterns and physical problems of the heritage area (see discussion in Chapter VI).

**Research Questions**

A major research question of the study, as indicated earlier in the first chapter, is: “how could we prepare a plan for the conservation of heritage area in Isfahan city”?

In order to answer the broad question above and also to understand the problems in conservation of a historical city such as Isfahan, the following research questions were also investigated:

- What is the nature and extent of spatial and temporal growth in Isfahan city, through historical periods?
- What are the human resources of Isfahan city and how do we rank them in regard to conservation of urban heritage?
o What are the elements of conservation in the historical urban core of Isfahan?
o What is the role of the bazaar in the sustainability of the historical city in Iran?
o What historical and modern elements have greater impact on the morphology of Iranian city?
o What elements are to be considered and highlighted for sustainability of the historical city?
o What are the ranking of sustainable development in public point of view?

- As urban heritage elements of Isfahan are a given (because they already exist, but they have been deteriorating and it is time to preserve and conserve them for the posterity), and so look at sustaining the urban heritage through conservation.

- What is the plan then suggested for conservation of the heritage areas of Isfahan city?

Table 4.1 shows the primary data collection methods used in the study, in a nutshell. Figure 4.1 on the other hand is the analytical framework

**Sources of Data Collection**

Two types of data could be collected, primary and secondary data. Primary data are recognized as data that are gathered for a specific research in response to a particular problem through interviews, questionnaires or observations. Whereas the secondary data can be obtained from various kinds of documents such as research reports, annual reports, books, and articles. (Schensul, Schensul, and LeCompte, 1999). In this study, both types of data have been used.

A survey is often classified by the kind of instruments used. There are many methods of collecting data such as observations, interviews or questionnaire survey. Saunders and others (2000) note that the greatest use of questionnaires is made by the survey strategy. Questionnaires can therefore be used for descriptive research such as that undertaken
using attitude and opinion questionnaires and questionnaires of organizational practices enable us to identify and describe the variability in different phenomena (Lewis, Saunders, and Thornhill, 2009).

According to Yin (1994) there are six different sources for data collection; documentation, archival records, interviews, direct observations, participant observations and physical artifacts. All of these sources of evidence have both strengths and weaknesses, but none is considered superior to the other. Yin therefore recommends using several of them while a good research should thereby include as many sources as possible (Tellis, 1997).

**Triangulation (Combination of Methods)**

Triangulation is the application and combination of several research methodologies in the study of the same phenomena. It can be employed with quantitative and qualitative studies. At the present, triangulation method is used by most social science researchers to achieve better results from their research projects. By combining multiple theories, empirical materials and research methods, the researchers can overcome the weaknesses or biases that come from a single method. Combination of two methodologies may also increase reliability and present a more accurate picture of the problem.

Creswell (2008) stresses that the concept of triangulation was based on the assumption that any bias inherent in particular data sources, investigators, and methods would be neutralized when used in conjunction with other data sources, investigators, and methods. Creswell further describes a combined method of study is one in which the researcher uses multiple methods of data collection and analysis and also these methods might be drawn from ‘within methods’ approaches, such as different types of quantitative and qualitative data collection strategies.

If the social science researcher did not use qualitative research methods, he may overlook many phenomena that occur within the context of the settings. On the other hand, in the absence of quantitative methods, it is difficult to show the differences between different variables. So there are a number of benefits can be achieve by triangulation quantitative research methods and qualitative research methods.
Field Reconnaissance

Prior to setting up the research design, and deciding on triangulation, a reconnaissance of the historical city of Isfahan was carried out by the scholar, to have his focus on urban heritage conservation anchored in some useful thinking on it. The reconnaissance did indeed make possible some good thinking on the part of the researcher to set down his methodology for the study. Every monument was visited with a view to gaining some relevant information on it, besides careful reading on the history, architecture and aesthetics of each of them.

Initially, of course, a discussion was carried out with the experts at the Government line agencies, academic institutions and other relevant institutions. This was followed by informal interviews with some senior and frontline officials and policy makers in these organizations and institutions. These interviews were of a general nature and aimed at obtaining useful information on the heritage conservation, planning and management policies, and implementation of the policies and difficulties and constraints in urban heritage conservation. Further, a preliminary assessment of what was right and wrong in the conservation of the heritage areas of Isfahan city and the impact of heritage losses if any for the local people and the country. The interviews enabled the scholar to appraise the officials about the objectives of the present study so as to solicit their cooperation for its execution.
Table 4.5: Primary Data Collection Methods

<table>
<thead>
<tr>
<th>Category</th>
<th>Method</th>
<th>Definition</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solicitation of Expert Opinion</td>
<td>Face to face Interviews</td>
<td>Structured or semi-structured face-to-face interviews with individuals</td>
<td>Permits detailed and in-depth question and response, minimizes non-response</td>
<td>Costly, interviewer bias, investigator bias</td>
</tr>
<tr>
<td></td>
<td>Telephone Interviews</td>
<td>Structured or semi-structured telephone interviews with individuals</td>
<td>Convenient, fast, relatively inexpensive, less interviewer bias than personal interview</td>
<td>Non-coverage, limited length and depth of questions and responses</td>
</tr>
<tr>
<td></td>
<td>Self-Administered Questionnaire</td>
<td>Structured interviews received via mail, internet, phone to solicit someone's opinion</td>
<td>Cost effective for large areas, minimizes interviewer bias, promotes accurate answers</td>
<td>Low response rates, unanswered questions, incorrect answers</td>
</tr>
<tr>
<td>Solicitation of Public Opinion</td>
<td>Exit Interviews</td>
<td>Can be face-to-face or in written form</td>
<td>Captures the opinion right at the moment of experience, no recall bias</td>
<td>Can be biased by an incident or other negative experience which has nothing to do with the research question, Hard to extrapolate if not large sample</td>
</tr>
<tr>
<td></td>
<td>Household Surveys</td>
<td>Most people live in households so can allow for almost complete coverage of the population, households provide a convenient place where people can be contacted to be interviewed, a large number of household surveys are collected allowing for cross validation of the results, the Census collects baseline information about households which helps calibrate results</td>
<td>Willingness to provide information, memory of respondents, understanding of the questions and knowledge of the topic</td>
<td></td>
</tr>
</tbody>
</table>
Figure 4.1: An Analysis Framework for the Study of Urban Heritage Conservation

Source: Conceptualized by the research scholar.
Primary Sources of Data

Two primary surveys have been undertaken in the context of the present study. The one that is of great value for the study is the one conducted with the residents of the city of Isfahan, in order to understand their awareness, knowledge and opinions about the sustainable development in the historical city, as they have been living in as natives and immigrants for a considerable period of time in the CBD Isfahan city. The other one, collecting primary information from the experts for the purpose of conservation of heritage areas in Isfahan, where the experts have spoken of the strategies and how of them, in conservation of the historical core of Isfahan.

Sample and Sampling

A total of 190 residents have been selected at random, from the central core (Map 4.1) The scholar has taken adequate caution to see that the samples are picked from four neighborhoods around the Naghsh-E-Jahan square such that the data so collected would be representative of all different kinds of people (rich and poor, educated and not-so educated, the young, the middle-aged and the old). In the case of professionals among the sample, the selection is by purposive random whereas in the case of service personnel, students and other workers/employees, it has largely been random once such areas where they are found in some density has been identified. The sample is approximately 10 percent of total population with 1,711 households, as the study cannot be made with common people but preferably with people who would have some idea of the theme in their professional, service personnel and student life. But this does not mean that we could do away with other people, even those with no schooling, for example, and hence other people have been included in the sample, with some deliberation and design.

The random selection has more or less accomplished this intention, in the 190 people interviewed in the survey. Likewise, the intention was also to have 53:47 of men and women, the sample have older people as well as younger, from 45 years and more is 42 percent, 35 to 45 years is 20 percent, 25 to 34 years is 26 percent with 15-24 years accounting approximately for 12 percent. There are both rich and the poor, from those with less than $125 to over $500 of income per month.
Collecting Primary Data Using Questionnaire

The questionnaire is a measuring tool (Oppenheim, 2000) loosely; a questionnaire consists of a series of questions, checklists, attitude scales and a variety of other approaches in a structured sequence. They are used to provide descriptive and/or analytical information which is suitable for statistical analysis. Questionnaires usually involve large samples and are costly so it is essential to plan the research approach. Who to question, types of question to ask, sample size, inherent biases, and these are amongst the factors that affect questionnaire measurement, specification and procedures. Questionnaires need exploratory work, design and planning before any specification can be established. A certain rigidity of questioning and sampling procedure is needed to maintain the statistical validity which makes them relatively inflexible. Questionnaire assessments of consumption of fuel wood, fodder, and food grains are indirect unless a weighting measurement is included and are dependent on the accuracy of recall by the respondent (Oppenheim, 2000).

The purpose of Part One of the questionnaire (and the survey with 190 people) is to assess people’s opinions and perceptions for achieving sustainability in the historical city in Isfahan; the questionnaire has been custom-designed by the scholar, in consultation with the guide and the field experts. Several rounds of discussions have been gone through by the scholar with the experts before the questionnaire has been finalized, for pilot test. A pilot test has also been done, with 25 respondents, in the Naghsh-E-Jahan neighborhoods, to see how well the questionnaire is received and how well it could be answered. Upon analyzing the pilot survey, certain modifications have been made in the content of the questionnaire. The final questionnaire is given in Appendix 4.1, and the content of the questionnaire is given below in a list.

**Socio-Economics and Demographics**: A sixth of the questions and Section A are on socio-economics and demographics of the respondents, which consist of gender, age, marital status, educational attainment, average income per month and occupation.

**Economic, environment and social aspect of sustainability in historical city in public opinions**: Ten of the questions under this category relate particularly to the
awareness and opinions of the respondents about economic aspects of sustainable development in Isfahan city, profit and benefit of tourism, handicraft, facilities, creation of business activities and awareness about issues of economic sustainability for them. Further, 11 of the 21 questions are related to the social aspects of sustainability. The questionnaire has offered the opinions of the respondents in answers for social sustainability. The next ten questions consist of environmental aspects of sustainability, and all 31 questions/items have been scaled by the respondents using a Likert-type of scaling - a 10-point scaling (4, 3, 2, 1). Although the questionnaire follows a uniform 10-point scaling, the terms of the four scales have been different, depending on the nature of the questions/items and the probable answers we might get for them (not important NI, low importance LI, average A, important I, very important VI, for example).

Figure 5.2: Sampling flowchart

Content of the Custom-Designed Questionnaire (Resident-Respondent Interviews)

1. Socio-Demographic Details of Respondents
   - Gender
   - Age
   - Marital Status
   - Educational attainment
   - Average Income per Month
• Occupation

1. Economic aspects of public opinion in conservation of heritage areas in Isfahan city
   • Separation of historical sites
   • Profit for local residents
   • Remove all small economic activities
   • Benefits of tourism
   • Improvement to urban renewal program
   • Protection of historical buildings
   • Business from heritage conservation
   • Protecting narrow roads
   • Handicrafts improvement
   • Creating suitable facilities for tourists

2. Social aspects of public opinion in conservation of heritage areas in Isfahan city
   • Developing heritage areas
   • Role of public participation
   • Heritage awareness
   • Heritage in social activities
   • Cultural communication
   • Solid waste management
   • Historic zones and skylines
   • Zayandeh-roud River
   • Subway
   • Accessibility for tourists
   • Public transportation

3. Environment aspects of public opinion in conservation of heritage areas in Isfahan city
   • Eco-friendly environment
   • Incorporate design
   • Vernacular material
   • Urban spirit
   • Green building
   • Infrastructure development
   • Air and sound pollution
   • Parking and traffic congestion
   • Renewable energy
   • Improvement in environmental potentials

Source: Questionnaire. See Appendix 4.1.

According to (Saunders, Lewis, and Thornhill, 2007), the greatest use of questionnaires is made by the survey strategy. In this case, the questionnaire for
collecting primary data was prepared by using the literature review and the problems facing to the historical city of Isfahan in Iran. Accordingly, it is obvious that the citizen participation plays an important role in achieving the sustainability of the historical city of Isfahan. Using the statistical procedure for selecting the sample, the number of households living in the historical core area, that is, the city centre and the historically older residential precinct with an area of 842 acres was selected as the step towards identifying residential units within the historical area. Ten percent of the residential units was thus selected using the Cochran formula and this resulted, in terms of sample for study, in the selection of 190 individuals for interviews with the pilot-tested questionnaire (Cochran, 1997): 

\[
n = \frac{Nz^2PQ}{n^2 + z^2PQ}
\]

\[
n = \frac{6607 \times (1.96)^2 \times 0.50 \times 0.50}{6607 \times (0.50)^2 + (1.96)^2 \times 0.50} \approx 175
\]

- \( n \) = sample size
- \( z^2 \) = chi-square for the specified confidence (1.96)
- \( N \) = population size
- \( P \) = population proportion (0.50 in this table)
- \( Q \) = 1-P
- \( d^2 \) = desired margin of error (express as proportion .07 in this case)

The method was based on a checkerboard grid that was used for selection using a 1:10000 scale map and a simple random sampling without replacement method.

**Quantitative Research Methodology**

Quantitative research methods are research methods dealing with numbers and anything that is measurable. Quantitative research methodology called for what is known as hard data in the form of numbers. Quantitative research methodology is about the collection of data in their numerical form. So they can be easily measured or counted. This research methodology is highly prepared by the positive researchers who want to
observe the social reality in terms of quantification and objectivity. By quantitative methods, researchers have come to mean the techniques of randomized experiments, paper and pencil “objective” test, multivariate statistical analysis, sample survey and the like (Reichardt and Cook, 1979) (Cook and Reichardt 1979; Neuman 2000). In social sciences quantitative research methods express different social phenomena in numbers.

The questionnaire used in the present study has five options (index) ranked using 1-5 for the questions raised and the options are as follows:

NI = not important
LI = low importance
A = average
I = important
VI = very important

Selection of Cases

The case study is of the heritage area of Isfahan city that extends over an area of 842 acres of the city core housing 1,171 households (Map 4.1). In order to gain insights on the issues of conservation of the historical city core, interviews were held with 190 city residents using the questionnaire. The items in the questionnaire measure the most important parameters that affect the historical city in Iran, using the case that is a part of the city core of Isfahan. The sample of this survey includes 1,711 residential houses, with approximately 4 members to a household:

• Northeast of Naqsh-E-Jahan square from qeisareieh bazaar to Atigh square and Shekar-Shekan square;
• Northwest of Naqsh-E-Jahan square from qeisareieh bazaar to Takhti crossroad and Imam Hossein Square;
• Southeast of Naqsh-E-Jahan square from junction of Hafez Street to Hassan Abad Street; and
• Southwest of Naqsh-E-Jahan square from Imam Mosque to Hasht Behesht Palace and Khajoo bridge.
Interviews:

Interview is a qualitative research methodology. The flexibility of these methods is that it provides a lot of information about changes over time and space, from various points of view (Patton, 2001). According to Cook and Reichardt and Cook (1979)Reichardt (1979), an interview is a mutual exploration of the issues, without the researcher imposing his or her ideas and in the structured interview; the researcher indeed has a prepared list of topics though still not a set list of questions. Also interviewing in planning is so much more than ‘having a chat’. There are three major forms of interviewing that exist. They are: structured; unstructured and semi-structured (Neuman, 2000). Interview method was one of the main, primary qualitative data collection methods of this research. This was the key component of data collection. Structured
interviews were used to collect data regarding socio-demographic characteristics and opinions of individuals on the theme(s) of research. These were supplemented by interviews from key informants such as the planning and conservation experts and managers and people of the local community to develop an understanding of a whole range of ideas. In the researcher’s opinion, the reliability of this method was beyond his expectations. Whenever misinformation was presented in the interview, he tried to correct it. Within the basic data on historical monuments and their conservation, a special attention was given to collect information on the ground realities of today and on the present and past situations by asking them about whatever they knew of conservation of the historical and heritage sites. Information obtained from interviews was supplemented with interviews with experts and officials and key informants.

**TOPSIS (Technique for Order-Preference by Similarity to Ideal Solution)**

TOPSIS is one of the useful Multi-Attribute Decision Making techniques, which is very simple and easy to implement, so that it is used when the user prefers a simpler weighting approach (Ball and Korukoğlu, 2009). In TOPSIS method, the *chosen alternatives should have the shortest distance from the ideal solution and the farthest from the negative-ideal solution* (Jahanshahloo, Lotfi, and Izadikhah, 2006). It was first proposed by Hwang and Yoon (1981). According to this technique, the best alternative would be the one that is nearest to the positive ideal solution and also the one farthest from the negative ideal solution (Asgharpour, 1999; Benitez, Martin, and Roman, 2007). The positive ideal solution is a solution that maximizes the benefit criteria and minimizes also the cost criteria whereas the negative ideal solution maximizes the cost criteria and minimizes the benefit criteria.

TOPSIS method can be used with both normal numbers and fuzzy numbers. It is a method for ranking the parameters and in this thesis the scholar uses it to rank all the *affective parameters* on the role of public participation on sustainable development, which were about 31 parameters collected from the people who live in the heritage areas of Isfahan city. The method is calculated in the following steps.
Step 1:
- Construct the Normalized Decision Matrix
- To transform the various attribute dimensions into non-dimensional attributes, which allow comparison across the attributes, calculate:

\[ n_{ij} = \frac{r_{ij}}{\sqrt{\sum_{k=1}^{J} (r_{ij})^2}} \]

where

- \( n_{ij} \) stands for the score of each parameter which has been none scaled;
- \( r_{ij} \) is stands for utility of each parameter;
- \( I \) = number of question (1 to 31); and
- \( J \) = rank of question (1 to 5).

Step 2:
- Construct the Weighted Normalized Decision Matrix

\[ V = \begin{bmatrix} V_{11} & V_{12} & \ldots & V_{1j} & \ldots & V_{1n} \\ \vdots & \vdots & \ddots & \vdots & \ddots & \vdots \\ V_{i1} & V_{i2} & \ldots & V_{ij} & \ldots & V_{in} \\ \vdots & \vdots & \ddots & \vdots & \ddots & \vdots \\ V_{m1} & V_{m2} & \ldots & V_{mj} & \ldots & V_{mn} \end{bmatrix} \]

\[ \begin{bmatrix} w_{11} & w_{12} & \ldots & w_{1j} & \ldots & w_{1n} \\ \vdots & \vdots & \ddots & \vdots & \ddots & \vdots \\ w_{n1} & w_{n2} & \ldots & w_{nj} & \ldots & w_{nn} \end{bmatrix} \]

Step 3:
- Determine Ideal and Negative-Ideal Solutions

\[ PIS = A^+ = \{ (\max V_{ij}), (\max V_{ij}, i,j =1,2,..,m) = \{ V_{1+}, V_{2+}, \ldots, V_{n+} \} \]  
\[ NIS = A^- = \{ (\min V_{ij}), (\min V_{ij}, i=1,2,..,m) = \{ V_{1-}, V_{2-}, \ldots, V_{n-} \} \]
Step 4:
- Calculate the Separation Measure:
- Ideal Separation is:

$$D_- = \sqrt{\sum_{j=1}^{n} (v_i - v^-)^2}$$

$$D_+ = \sqrt{\sum_{j=1}^{n} (v_i - v^+)^2}$$

Step 5:
- Calculate the Relative Closeness to the Ideal Solution

$$C_{ri} = \frac{D_r}{D_+ + D_-}$$

Step 6:
- Rank the preference order

A set of alternatives can now be preference-ranked according to the descending order of $c_i$.

Collecting Primary Data Using Questionnaire from experts

In December 2011, for the purpose of conservation of heritage areas in Isfahan city, the scholar sent out questionnaires by mail to 50 experts on a random basis, in order to collect their opinions and perceptions about heritage conservation. All the 50 questionnaires (of Part Two) were returned and the information thus gathered was used in the preparation of ranking for selected heritage monuments of Isfahan city (Appendix 4.2).

Considering that this part of the study aimed at assessing the present status of conservation of heritage areas in Isfahan city, the application was used to describe and analyze the current state of heritage conservation in Isfahan (a) in order to promote the development and improvement of heritage conservation and in the process of analyzing internal and external factors (b) in order to better understand the ways and means to
approach both quantitative and qualitative interviews used in the study as research methods. This part of the study was conducted in the city core of Isfahan city.

All the information collected from people of different walks of life, in fact from various groups, including experts, faculty and staff, civil engineers, architects, urban planners and experts who numbered 50. In the second part of the questionnaire, participants were asked to list the strengths, areas of improvement, opportunities and threats of conservation of heritage areas, towards accomplishing a SWOT analysis of the historical heritage of Isfahan city. After the data obtained were classified on a priority basis, participants were asked to specify their options in terms of impact on the environment with a score. Finally, the second questionnaire (Part Two) for the assessment of internal and external factors was set in the following manner.

After studying the internal factors, the most important factors were listed.
1. Weights were given to each of these factors with a score of 1 to 4. Score of 1 indicates a fundamental strongly disagree; Score 2: disagree; Score 3: agree; and Score 4: strongly agree and a zero was assigned to ‘I don’t know’.

2. The final score for each factor was determined by way of the primary factor being calculated as a sum of multiplied weight of the answer for questionnaire items.

3. Total weighted score of each factor was then calculated by multiplying the weighted factor by rank (Parker, 2002).

The purpose of questionnaire Part Two is to assess the experts such as professionals, academicians, engineers, architects and town planners. A third of the questions are on personal demographics of the respondents, which consist of name, specializations, and service in professional categories (the period of service). Next four questions relate particularly to the awareness and opinions of the experts about heritage conservation, the present conservation policy and major problems faced in conservation of heritage areas in Isfahan city. Next part of the questions are related to the importance of monuments in heritage areas and value of the historical, architectural and cultural monuments and they are divided into 5 categories: palace, mosque, madrasah, bridge and other sites.
The next part of the questionnaire consists of internal factors and external factors of heritage conservation in Isfahan city. All question have been scaled by the respondents using a Likert-type scaling of 10 points each (0, 4, 3, 2, 1). Although the questionnaire follows a uniform 5-point scaling, the terms of the five scales are different: Strongly disagree (1), disagree (2), agree (3), strongly agree (4), I don’t know (0), for example. At the last, the respondents have been asked to make further comments on the proposed extension and any local knowledge that may give us a better understanding of heritage conservation in Isfahan city.

**Content of the Custom-Designed Questionnaire (Resident-Respondents Interview)**

1. **Personal demographics**
   - Name
   - Specialized in
   - Served in the profession since

2. **Awareness and opinion of the experts**
   - Vision about the heritage conservation
   - Vision about present conservation policy
   - List out major problems
   - Suggestions

3. **Importance of monuments in heritage areas (historical, architectural, cultural)**
   - Palace
   - Ali Qapu
   - Chehel Sotun
   - Hasht Behesht
   - Mosque
   - Friday Mosque
   - The Imam Mosque
   - Sheikh Lotfollah
   - Madrasah
   - Madrasah Chaharbagh
   - Mullah Abdollah Madresah
   - Jaddeh Kuchak And Jaddeh Bozorg Madrasah
   - Bridge
   - The Khaju Bridge
   - Allah Verdi Khan Bridge
   - Other Sites
   - Naghsh-E-Jahan Square
   - Chahar Bagh street
The Grand Bazaar

4. Internal Factors
   • Bazaar is a market center
   • Uniquely cultural heritage
   • Concentration of societies in the city core
   • Good quality of buildings
   • Central design structure
   • Tourist destination
   • Concentration of societies
   • Naghsh-e-jahan square
   • Lack of drainage and sewerage
   • Lack of parking
   • Lack of public transport system
   • Immigration
   • Lack of awareness
   • Concentration of major commercial
   • Aging population

5. External factors
   • Tourists attraction
   • Restoration and renovation
   • Subway and road networks
   • Restoration of urban spirit.
   • Urban structure in early era
   • Change of demographic and social structure
   • Distance to historical centre and the surrounding areas
   • Labor migration and increasing unemployment.
   • Emigration.
   • Zayandeh Rood River pollution
   • High growth rate of vehicles
   • Vibration of subways
   • Buffer zone of Naghsh-E-Jahan square

6. Comments and suggestions

Source: Questionnaire. See Appendix 4.2.
SWOT Analysis:
SWOT analysis is an investigation, on one hand, of the Strengths and Weaknesses of the enterprise examined and, on the other hand, of the Opportunities and Threats of its environments.

Therefore, it is considered a general tool, traditionally used in the initial phase of the decision making process, as a forerunner of strategic planning (Houben, Lenie, and Vanhoof, 1999). Actually, this method of analysis helps in changing the mental attitude of the scholars towards the problems, investigating the elements of strengths to exploit, those of weaknesses to eliminate and the elements of threats that can be turned into opportunities (Dyson, 2004). The aim of the second part of the questionnaire was for gathering data and information on those internal and external factors, which could provide a common basis for conservation of heritage areas in Isfahan city.

- **Internal analysis (Strengths and Weaknesses):** The internal analysis should lead to an assessment of internal strengths / weaknesses that could be of competitive advantage / disadvantage.

- **External analysis (Opportunity and Threats):** The external analysis focuses on environmental characteristics that could produce opportunities as well as threats relative to competitive solutions.

SWOTs are defined based on the following criteria (Hay and Castilla, 2006), in the planning and management contexts:

- Strengths are the internal attributes of the organization that are helpful to the achievement of the objective.
- Weaknesses are the internal attributes of the organization that are harmful to the achievement of the objective.
- Opportunities are the external conditions that are helpful to the achievement of the objective.
- Threats are the external conditions that are harmful to the achievement of the objective.
The following diagram shows how SWOT analysis fits into a strategic situation analysis.

```
Situation Analysis
/ \  
Internal Analysis       External Analysis
/ \  /
Strengths   Weaknesses       Opportunities   Threats
|   
SWOT Profile
```

In theory, SWOTs are used as inputs to the creative generation of possible strategies (see Figure 4.2), by asking and answering the following four questions numerous times (Hornecker and Buur, 2006):

- How can we Use each Strength?
- How can we Stop each Weakness?
- How can we Exploit each Opportunity?
- How can we Defend against each Threat?

Figure 4.3 shows a SWOT matrix, which gives us an understanding of how certain combinations of Strengths, Weaknesses, Opportunities and Threats (S-T, S-O, T-W and W-O) could be used in the development of strategies (also see Figure 4.2) in the conservation of heritage areas of the city of Isfahan.
Secondary Sources of Data and Collection of Data

- Related data are searched, collected and analyzed from the following sources:
- Local and overseas publications of books, journals and newspapers;
- Papers, records, archival documents through Government departments, public libraries, archives and so forth;
- Maps, cartographic and pictorial documents from Planning Department and Survey and Mapping Office of Lands Department;
- Local and overseas electronic information through Internet; and
- Telephone and face to face interviews with members of Antiquities Advisory Board, officers from Antiquities and Monuments Office and Planning Department.

Qualitative Research Methodology

Qualitative research methods are widely used in the social sciences. Qualitative methods are concerned with understanding the world by collecting raw data on social experiences. Qualitative research methodology collect soft data in the form of words, sentences, phrases, pictures etc. By using qualitative research methodology, people’s
attitudes, opinions and feelings can be identified. Qualitative methodology is inquiry process of understanding or exploring social or human problem. Qualitative data contain large amount of information and they are difficult to understand and analysis. In order to simplify them researcher has to code them (Cook and Reichardt, 1979; Creswell, 1994; Neuman 2000).

![Figure 4.1: SWOT Matrix](Image)

<table>
<thead>
<tr>
<th>SWOT ANALYSIS</th>
<th>Strengths (Internal)</th>
<th>Weaknesses (Internal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunities</td>
<td>S-O Analysis</td>
<td>W-O Analysis</td>
</tr>
<tr>
<td>(External) Factors</td>
<td>How can strengths be</td>
<td>How can weaknesses be</td>
</tr>
<tr>
<td>that can benefit,</td>
<td>employed to take</td>
<td>overcome to take</td>
</tr>
<tr>
<td>enhance or improve</td>
<td>advantage of</td>
<td>advantage of</td>
</tr>
<tr>
<td>the issue or</td>
<td>development</td>
<td>development</td>
</tr>
<tr>
<td>situation</td>
<td>opportunities?</td>
<td>opportunities?</td>
</tr>
<tr>
<td>Threats</td>
<td>S-T Analysis</td>
<td>W-T Analysis</td>
</tr>
<tr>
<td>(External) Factors</td>
<td>How can strengths be</td>
<td>How can weaknesses be</td>
</tr>
<tr>
<td>that can hinder the</td>
<td>used to counteract</td>
<td>overcome to counteract</td>
</tr>
<tr>
<td>issue or situation</td>
<td>threats that tend to</td>
<td>threats that tend to</td>
</tr>
<tr>
<td></td>
<td>hinder achievement</td>
<td>hinder achievement</td>
</tr>
<tr>
<td></td>
<td>of goals and pursuit</td>
<td>of objectives and</td>
</tr>
<tr>
<td></td>
<td>of opportunities?</td>
<td>pursuit of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>opportunities?</td>
</tr>
</tbody>
</table>


According to Limb and Dwyer (2001) the choice to use qualitative research methods for a research would be shaped by the dimensions of research questions. However, the choice to use qualitative research methods depends on the way of understanding the social reality. They state that the selection of qualitative research methods reflects the researcher’s attitudes and role of responsibilities of the researcher. However, qualitative
methodology is a time consuming method in data collection and also analysis processes, because qualitative data consist of detailed descriptions. Sometimes, it is difficult to choose necessary data from the collected database due to huge quantity of data. Despite these difficulties, most social science researchers employ qualitative methodology because of its validity for the humans and problem solving contexts.

Conclusion:

In this chapter examine the whole study as two major parts: theory and analysis. In the first part, study the conservation planning theory of heritage areas and their significance for conservation and profile of the Isfahan city was discussed in chapter 2 and 3 and that was based on literature review. In second part analogized Citizen Opinions for achieving sustainability in historical city with TOPSIS method in chapter five and physical problems of heritage conservation with SWOT analysis from the expert people and land use pattern and heritage conservation in the historic urban core in chapter six. Regarding to these major part in framework of Iranian cities prepare in chapter seven:

- Guidelines for conservation of heritage areas in Isfahan city,
- Proposed planning strategies and policies for conservation of heritage areas
- promote Isfahan city as a tourism center and Promoting Isfahan city as a tourism center