

The Methodology of Elaborating on The Elements Affecting Contemporization of Modern Architecture in Tehran City

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Abstract

There are a variety of structures in Tehran City neighbourhoods from different historical periods (Qajar and Pahlavi in particular). These structures have lost their primary usage. Historical buildings are like valuable gems that form the stable identity of city texture. Residential usages halt an efficient relationship between historical buildings and the public. One of the main measures of sustainable reviving of historical buildings is the type of new usage assigned to the building throughout the reviving process. The main objective of this paper is to propose a methodology for analysing different economic, social, cultural, physical, and spatial elements and their role in model contemporizing of Tehran City. The key methods used for data gathering are photovoice, field observation, focus group discussion, interview, and questionnaire administration through urban living macro laboratory. In addition, a set of qualitative and quantitative methods are used for data analysis.

Introduction

By a scientific method, we refer to a set of rules and procedures used by researchers for collecting facts and information, which are then analyzed, elaborated, and proven [1]. The choice of the method or a specific technique depends on the condition. The condition refers to the personal abilities of the researcher, facilities and condition of the study, and the limitations. Since every study has its own unique condition, different techniques and tools are used by studies [2]. This study tries to propose methods and techniques for contemporizing modern

architecture. The study answers “which methods can help with the realization of modern architecture?” Different research methodologies have different ideologies, so that none of them are formed in a vacuum. In other words, what is a philosophical answer to “which ways lead to knowledge about facts?” In trying to answer this question, we find ourselves limited to a few methodologies. New approaches cannot perceive the unbreakable borders between different research methods. Figure 1 illustrates the relationship between inductive and comparative strategies of research methodology.

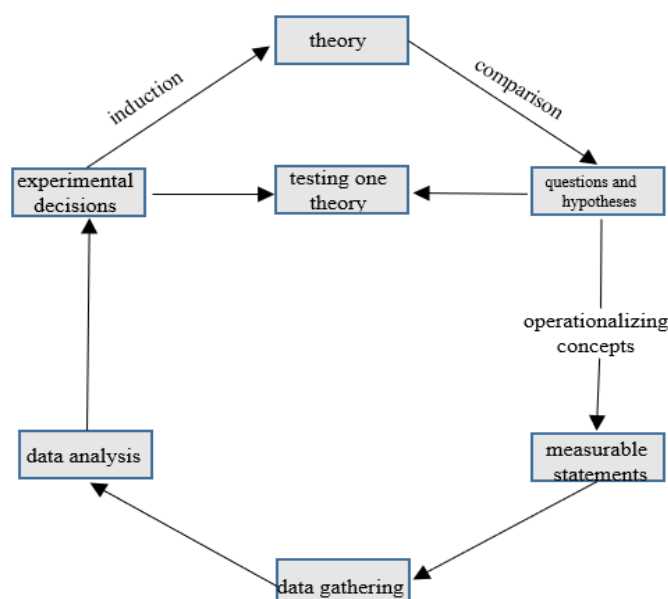


Figure 1- The cycle of constructing and testing a theory (source: Bliki, 2013; 207)

In general, a methodology is based on descriptive-comparative-analytical goals. Theoretical framework and information gathering were based on library-document method. The internal and external experiences were investigated through content analysis and library approaches. The factors and criteria of contemporizing based on a development-based approach were on the basis of changing usage of historical building consistent with the theoretical model.

Data gathering (field observation, library, etc.)

For data gathering, library and document methods will be utilized. Library research methods are comprehensive and also a technical method to enhance other qualitative methods in humanities studies. Using this method, the research collects data about events, incidents, and phenomena pertinent to the study. In this case, the collected data will be about contemporization of base culture and changing the usage of historical structures. This method can equip us with the techniques needed for literature review. Library method means analyzing the documents containing information about the phenomena understudy. The method requires descriptive and comparative research.

Data gathering method

Data gathering tools in this study are the Internet, papers, texts, studies, and other pertinent resources, and interviewing experts and professors. The objectives are to examine and analyze the factors in contemporizing and reviving historical buildings in the modern era of Tehran City based on the semantical-spatial principles and criteria. The findings can help us preserve the historical heritage and develop a questionnaire to examine approaches and public opinions about the way of using historical buildings.

The methods for data gathering and analyzing the information are as follows:

1. Interview, field observation, and photography.
2. Developing and administering questionnaires and open interviews.
3. Data analyzing through photovoice.
4. Content analysis using data outputs and information through urban living laboratory methods.
5. Data analysis through quantitative methods such as ISM, linear regression, and fuzzy logic.

In general, the study is based on combined qualitative and quantitative methods and the study design is pictured in the figure below.

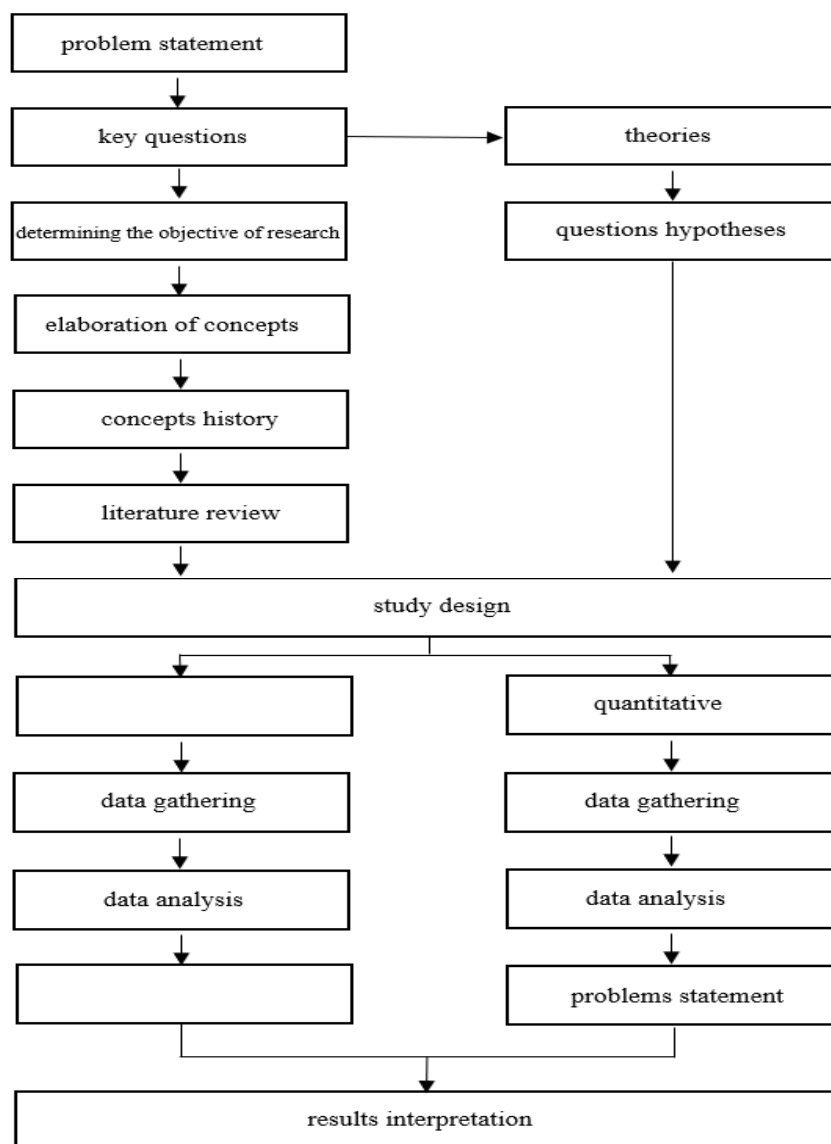


Figure 2- Conceptual model of the study

Photovoice method

Along with interviews, field observation, photography, and so on, photovoice will be used to contemporize modern buildings. Photovoice was first developed by health enhancement researchers. Using a group of selected photos by participation, researchers can discover the reasons, feelings, emotions, and experiences that the selected photos guide. This method is a participatory research work where individuals, usually those who are less empowered, use photos and/or videos to picture their environment and experiences and express their thoughts.

Photovoice methods alleviate the risk of misunderstanding and enhance trust in the residents. In comparison to interviews, photovoice methods create long-term relationships with researchers thanks to its higher participatory nature and attenuation of the risk of misunderstanding. In addition, the photovoice method is more efficient in terms of recognizing physical and social specifications of the environment [3].

The three objectives of photovoice are a- enable people to record and show the advantages and issues of their neighborhood/society; b- promote critical dialogue and knowledge about key issues of society through large/small group discussions about photos; and c- conveying discussions results and outputs to policy makers [4]. Wang (1999) [4] defined five key concepts for this method in his paper titled “research strategy of joint measure.” The concepts are:

- Pictures teach us;
- Photos can affect policies;

- Society members need to take part in creating and defining pictures that form a healthy public approach;
- The process requires negotiations with policy makers, planners, and influential people as audiences;
- The method emphasizes individual and group measures [4].

Through photovoice, people can identify, represent, and enhance their society using a specific photography technique. Photovoice steps are six, which are pictured in Figure 2 [5].

1. Preparations and organization of educational photovoice workshops. The steps of the study, the objectives, photovoice method, and so on are covered in this step.
2. The participants are asked to take photos of their neighborhood regarding the objectives of the study in two weeks and during their normal activities in the neighborhood. The photos will be sent to the researcher.
3. The photos are examined to determine feelings in the photos and analyze them. After printing the photo, an in-depth semi-structured interview is carried out with the participants to examine the changes pictured in the photos and discuss the narration behind each photo.
4. The obtained outputs are encoded by the researcher and the main themes are determined. The findings are analyzed through primary participatory exploration (encoding). The main themes are extracted through combining the codes.
5. The main axes of the study are categorized based on the categories and themes of the district under study.
6. Eventually, another workshop is held about the results to polish the findings.

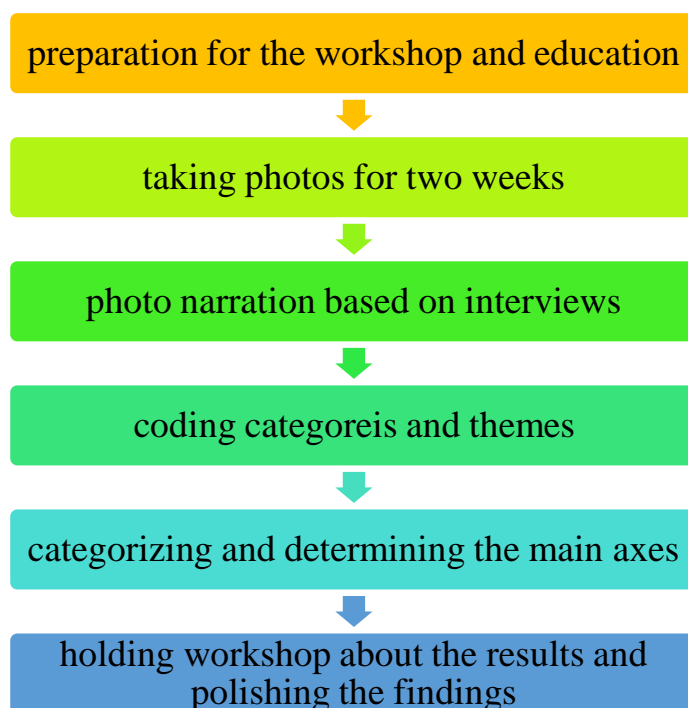


Figure 3- Steps of photovoice

It is notable that the photovoice uses a variety of methods of observation, field visit, group discussion, and interviews. These methods are briefly discussed in the following sections:

Observation and field visit

Observation and field visit are performed to record the details of historical modern structure for contemporizing purposes and examine different economic, social, and physical aspects. The

research site will be studied in three days (weekends and working days (Monday, Thursday, Friday) three times a day.

Focus group discussions and interviews

Given the necessity of identifying and prioritizing the needs and also capabilities of historical buildings under study for contemporizing, focus group discussions will be held with experts, users, and university professors. Different social groups

have different needs, beliefs, and opinions so that a variety of variables are taken into account in holding the meetings. For instance, gender, education, and age variables are some of the variables to be considered. To keep the meeting directed in a harmonized manner, all the discussions will be initiated with the main axes. The most important axis covered in the meetings are as follows:

- Identifying assets, issues, problems, challenges, and opportunities for cooperation in the district of historical buildings.
- Prioritizing positive and negative specifications and the problems and needs by the participants in the meetings.

Questionnaire design and administration

Another method used for contemporizing modern historical buildings is to use questionnaires. The questionnaire will be designed for the users, citizens, and the communities living in the vicinity of the historical modern buildings. The questionnaire is to examine the criteria and indices pertaining to contemporizing modern buildings in Tehran City.

The study population consisted of historical buildings located in the Tehran City neighborhood constructed between 1941 and 1961. The majority of the buildings are part of the core section of the city, mostly near Enghelab, Valiasr, and Karimkhan Zand streets. The selected cases will be categorized based on the available data and field visits of the urban districts. Then, using assessment matrices such as checklist matrix and using the aspects, elements, and factors of contemporizing, the top cases (three to five) will be selected in the city.

Urban living laboratory

Urban living laboratories constitute a basis for using the capacity of citizens' experience and making sure of participation of citizens. It is an efficient method in the process of urban contemporization. The popularity of living laboratories is rooted in active and multi-aspect participation. A participation that has drawn a great deal of attention over the past years in the field of developing social innovation and dealing with contemporary challenges in urban textures. Urban living laboratories "place citizens in the center of contemporizing processes" so that "using the concepts and solutions of information technology and introduce opportunities to meet the specific needs of living grounds and cultures."

Recently, the programs of living laboratories have transferred from a primary and fully technical experimental field which depends on socioeconomics and environmental fields into a wide-ranged management. Management encompasses topics such as creating open data participation, open management, and innovative policies. In light of this, urban living laboratories can be considered as a reliable tool to support land development policies with three assumptions [6].

- As vertical tools for improving research works, development, and user-centered innovation in a specific applied field.

- As a mediator between citizens, states, and other beneficiaries that supervises the whole experience.
- As behavioral guidelines and enhancement for state officials who want to use a mixture of technical, social, and organizational innovations to value local intellectual capital and improve the available knowledge to enhance performance.

Therefore, according to the first approaches and encounters in urban living laboratory, purposeful and specific observation, analysis, and description of the palace are essential. In further steps, a coordination between beneficiaries to move toward social activities is essential with an emphasis on innovative experiences and works concentrated on the citizen and mostly the local residents and users. Clearly, general specifications and a very wide perception of urban living laboratories leads to a variety of interpretations. The concept of living laboratory is negotiable with several meanings, which refer to humanistic, political, and organizational approaches, objectives, and ecosystems. In addition, every living library is developed for a unique and specific field and concentrates on its specific problems. Still, all of them are set to improve the living conditions of people in cities and concentrate on finding sustainable local solutions for solving global problems. Urban living laboratories are a phenomenon of coordinating with modern and advanced technologies of architecture and urban development [7].

Urban living laboratory is a tool to achieve green development and sustainability [8]; facilitate transformational changes [9]; ensure public participation [10]; and provide a space for negotiations about the definition and perception of problems, available resources, ruling ideology, and equipment needed. It can be used to make changes in the structure of local institutions, which may result in structural deep changes and sustainability [11]. From a methodological standpoint, state-of-art technology-based perspective and development of architecture and urban development [12] have profoundly improved popularity of omni-aspect approach to planning and designing.

Urban living laboratories can be used in real life situations and in the sustainable development process. They can also be adopted for realizing participation and evaluation of different steps of participatory creation, including designing, implementing, and management and maintenance. The laboratories have the capacity to create solutions that meet local community needs. In addition, local communities, as everyday users of a specific historical building, can provide valuable knowledge about assessment of the place, the way of using it, and preferences regarding its future. In fact, through an urban living laboratory, local knowledge can improve the design and implementation of a development program. In addition, utilization of implicit and experimental knowledge can create a better perception of the adaptation of a development program to local texture. The following picture represents the specifications of an urban living laboratory.

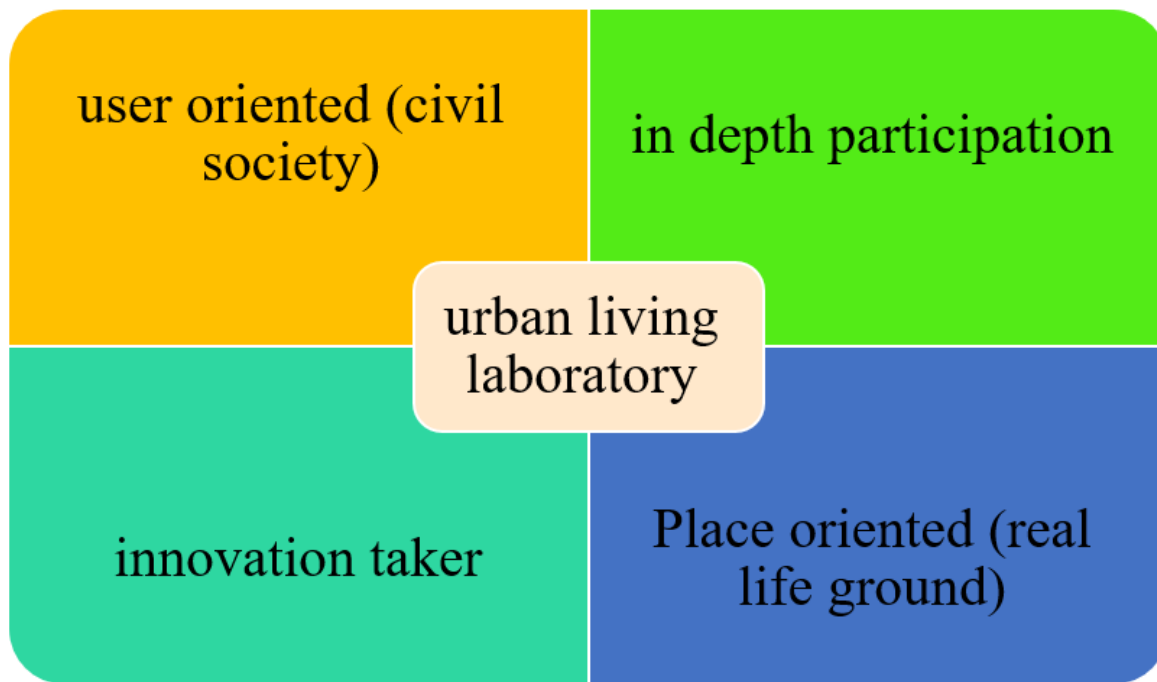


Figure 4- Specifications of urban living laboratory (source: the Author, 2022)

Content analysis method and analysis of qualitative data

To analyze contemporizing historical structure of the modern age, a content analysis method will be used. First, terms, statements, and main items will be represented as a table. Then, the main themes are developed through axial coding. Through combining several codes and categories, a theme is extracted and combining several themes, an axial theme is extracted. The axial theme needs to elaborate on the condition and relationships between itself and other themes in the status quo along with explaining changes in the condition.

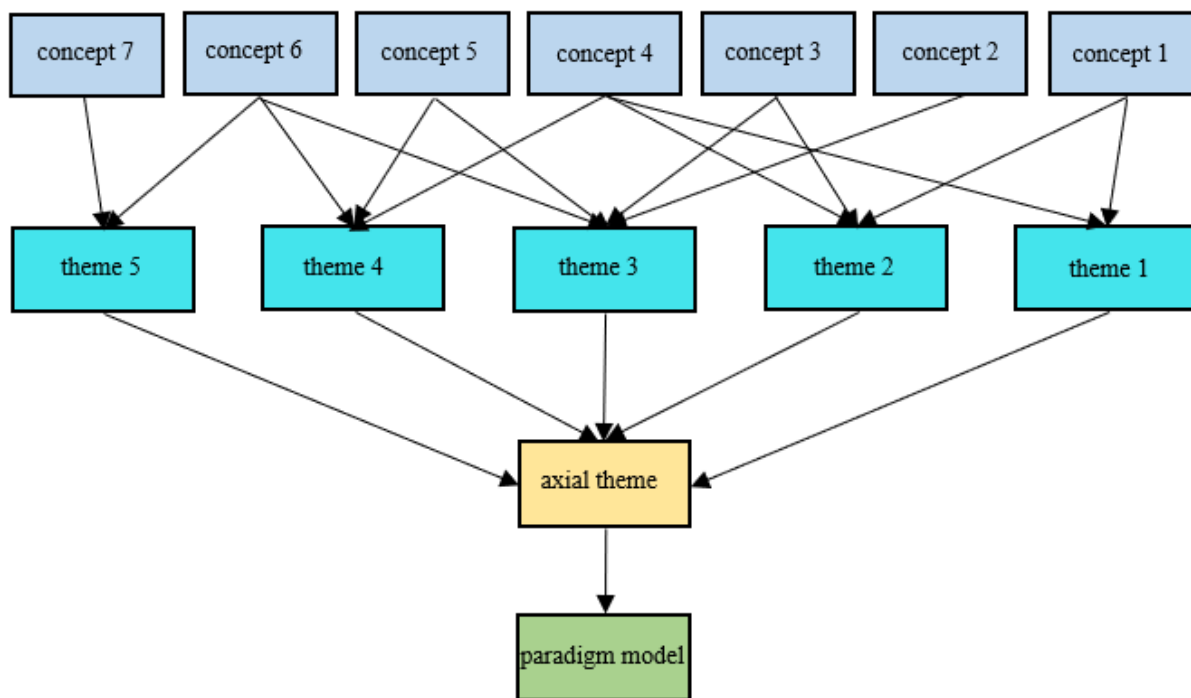


Figure 5: Paradigm model of study (source: the Author 2021)

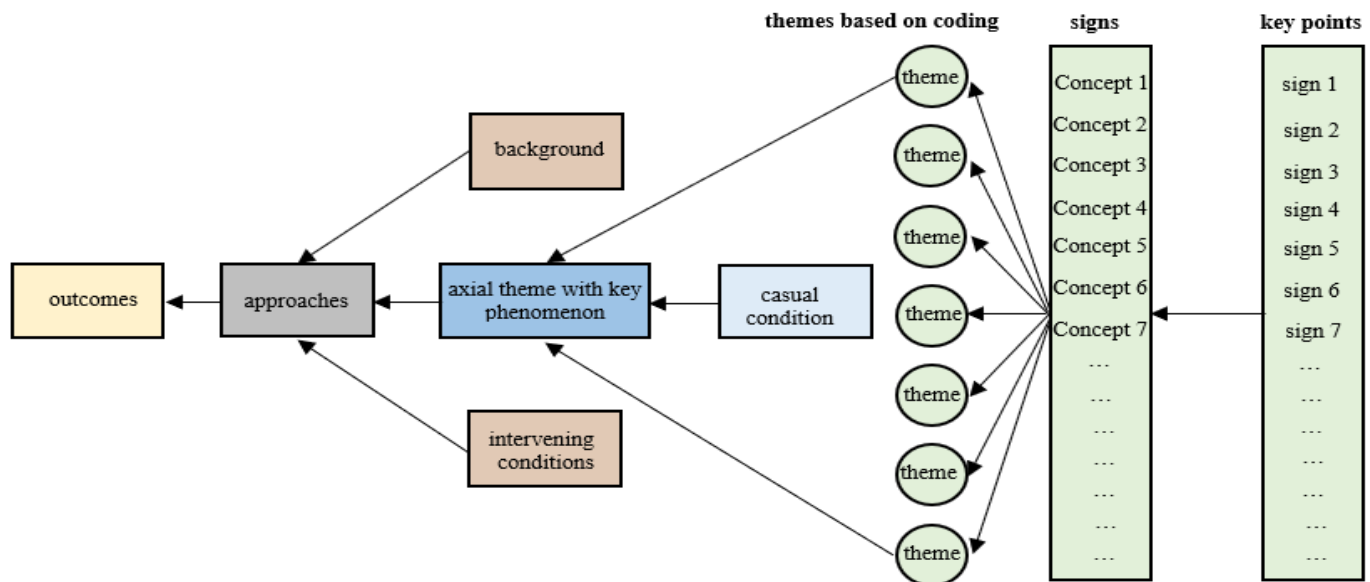
In the coding phase, the researcher relies on the paradigm model and theoretical assumptions to codify the relationships extracted from the paradigm model and develops a new conceptual framework for contemporizing and reviving historical buildings in Tehran.

· **Work, symbol, or term:** The smallest item in a content analysis method based on which a list of works and their frequencies in the text is determined.

· **Concept or subject:** A unit larger than a word, which is usually represented as a simple sentence.

· **Theme:** A general unit used by the author (through combining several concepts), which is widely used for content analysis.

· **Coding in content analysis:** Coding in content analysis is based on the concepts and meanings and operationalizing variables. To this end, the author processes concepts and the relationship between them and carries out content analysis through coding and categorizing the concepts [13].



c- Fuzzy logic: The term fuzzy means ambiguous and unclear. Fuzzy logic offers a flexible and valuable proposal so that a specific level of uncertainty is assigned to each situation. Because of this, fuzzy logic is also called the logic of doubt as its results have intrinsic doubt. To examine different economic,

social, and cultural indices, fuzzy logic is used to score and prioritize variables and determine the relationship between the indices. The following figures picture the process of implementing the study based on the mentioned methods.

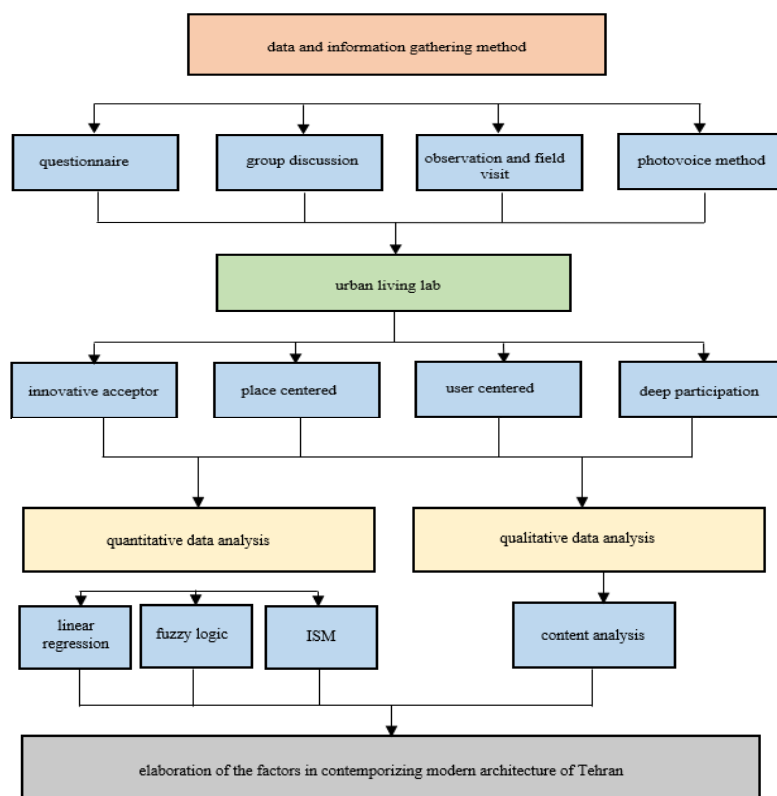


Figure 7- Implementation of model of the study.

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