Comparative Study between Traditional and Contemporary Islamic Mosques Architecture

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ABSTRACT

The fundamental objective of Islamic architecture is creating space to meet Muslims' spiritual and to some extent non-spiritual demands. Actually, mosques are physical places and their existence formed by Muslims' interrelationship with physical environment. According to this points of view mosque plays an important role in Muslims religious community through the link between its physical realities and their beliefs. Presence of the mosque is the most complex, sensitive and controversial issues that its tremendous architectural design is known as symbol of the Islamic architects' design ability. In fact, mosques and their fundamental components leads to individuals going from non-spiritual to spiritual space and they must provide both visual and spiritual aspects. The architectural characteristics of the mosques have involved various transformation from the beginning which has been '*Muhammad Prophet* 'Mosque up to our contemporary world. Through ages, mosques' architecture has resulted in a shift from ancient to new development. The secular aspect of contemporary life created new movement in mosques' architectural form as tool to generate new conceptual design. Although these transformations tries to link the traditional mosque to contemporary ones and mapping their similarities and differences but created gaps by faded away spiritual space in mosque architectural space rather than past. The aim of the research tries to investigate what are the causes of these gaps in the differences between traditional and contemporary mosque architecture. This thesis will focus on the role of Muslims religious beliefs on space spirituality in both traditional and contemporary mosques. The study have been limited to Jameh mosques type in the cities of Tehran, Isfahan, Shiraz and Domghan in Iran and Istanbul and Ankara in Turkey and the totally nine mosques have been

chosen in both periods. According to mosques types analysis in terms of decline and intensity of religious beliefs in reaching spiritual space by considering general characteristic of the mosque architecture, comparison of these characteristic in both traditional and contemporary periods and literature review methodologies based on observation technique findings revels that the basic reasons derive from deviation of Muslims religious beliefs from the past and modern technologies. Consequentially, mosque as a most important factor in city structure becomes faded and its role in the organization of Islamic city space is ignored.

Keywords: traditional and contemporary mosques, mosque architectural characteristics , traditional mosques types, space spirituality, Muslims religious beliefs

ÖZ

İslam Mimarisi'nin temel amacı, müslümanların 'dünyevi' ve 'uhrevi' isteklerini elde etmek için bir atmosfer yaratmaktır. Camiler tüm müslümanlar için, fiziksel çevre ile ilişki kuran fiziki yapılardır. Bu yaklaşıma göre camilerin fiziksel varoluşu, müslümanların dini toplantıları ve onların inançlarında önemli yerleri vardır.

Camiler etkileyici mimarileri ile duyarlı, tartışmalı ve karmaşık rolları yanısıra, İslam Mimarisi'nin yeteneğinin de simgeleridir. Aslında camiler müslümanların dünyevi hayattan ruhaniliğe doğru yol açarak, görsel ve anlamsal olarak her iki boyuta zemin hazırlıyorlar. Camilerin özellikleri müslümanların Peygamberi zamanından bu güne dek değişikliklere tanık olmuştur. Bu değişikliklerin temeli de geleneksel şiveler (yaklaşımların), modern şivelere (yaklaşımlara) dönüşmesidir.

Artan bir şekilde bugünkü yaşam tarzının dünyevi yönü, camilerin mimarisinde yeni hareketlere sebep olmuştur. Bu hareketler her ne kader camilerin eski şekillerinden çağdaş zamana bağlı olarak yeni yaklaşımlarla şekillenmiş olsalar da, bir başka değişle geleneksel ve çağdaş camilerde farklılıklar ve benzerlikler görülse de, en temel farklılık camilerdeki duygusal ve ruhani boşluk olarak karşımıza çıkabilmektedir ve bu mimari forma yansımaktadır.

Bu araştırmanın temel amacı, camilerin eski ve yeni mimari tarzının arasında oluşan söz konusu boşlukların neler olduğu ve nedenlerinin neler olduğunu ortaya koymaktır. Bu nedenle araştırmanın merkezini, müslümanların dini inançlarının eski ve yeni camilerin ruhani atmosferinin üzerindeki etkis oluşturmaktadır. Bu

araştırmada İran'da Tahran, İsfahan, Şiraz, Damğan ve Türkiye'de ise İstanbul ile Ankara ulu camilerinin üzerinde durulmuştur.

Geniş çerçeveden bakılarak, çeşitli geleneksel ve modern camilerin mimari özelliklerini araştırılmış, dini inançların yoğunluk ya da zayıflıklarını göre inceleyerek bu sonuca varılmıştır:

Sözü edilen her iki tür caminin farklılıkları dini inançlardan uzaklaşma ve yeni teknolojilere bağımlılıktan kaynaklandığı var sayılmaktadır.

Aynı zamanda camiler islami şehirlerin en önemli faktörü olması unutulmuş ve onların bu şehirleri şekillendirme rolları ortadan kaybolmuştur.

Anahtar Kelimeler: Geleneksel ve çağdaş cami, cami mimari özellikleri, geleneksel cami tipleri, maneviyat, Müslümanlıkta dini inanç.

DEDICATION

I dedicate my dissertation work to my family and many friends. A special feeling of gratitude to my loving parents, Akbar Abd Alsamadi Esfahani and Mahtab Rostampour whose words of encouragement and push for tenacity ring in my ears. My brother Sam has never left my side and are very special. I also dedicate this dissertation to my supervisor and my special friend who have supported me throughout the process. I will always appreciate all they have done.

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INTRODUCTION

Since the beginning of Islam up to contemporary world mosque has been one of the most important architectural elements that overshadows Muslims' spiritual identity and illustrates the ability and desire of Muslim architects. Actually, the most important responsibility of Islamic architecture is to provide the architectural space from which Muslims adapt themselves with spiritual environment in order to meet their spiritual –(Inner essence of Allah);sense of belonging to Divinity world-demands. On the basis of this perspective mosque plays an important role in Muslims religious community as the reality of Islam through the link between its physical realities and their beliefs. The crucial point in Islam expression is the consistency of Muslims religious beliefs in world of Islam which confronted with various decline and intensity in contemporary era. Increasingly, nowadays religious has a new interpretation and expression which become as inevitable Muslims concerns. This fact obviously can see in the contemporary mosque architecture severely overshadowed by new version of religious. These new trend in religious beliefs varies from country to country and dealing with complexity in architecture. This complexity involves the mosques architecture design as a focal core point of Islamic religious unity.

The mosque rooted in Arabic word as a place of prostration towards God's omnipotence and Mosque architecture is considered as a potent visual symbol of the

Islamic architects' design ability and it is an Islamic building from which identity of religious architecture specially Islamic architecture revealed. In fact, mosque's architectural design with its fundamental components causing Muslims' going from non-spiritual-material world- to spiritual space and it must provide both visual and spiritual aspects.

1.1 Aim of the study

In fact, based on some experienced architects, sociologists and philosophers point of view, there is emotional and spiritual gap between traditional and contemporary periods in mosque architecture in Middle-East.

According to this perspective, Muslims confronted with new version of religious buildings as mosques in contemporary period rather than past. These facts have a great psychological impact on Muslims' beliefs towards Islam and Allah world. Accordingly, the aim of this research tries to investigate what are the causes of these gaps in the differences between traditional and contemporary mosque architecture.

As far as this research going to discusses about users perception from spirituality point of view, it is fact that, the main factor which have the most effective is building itself. Thus it is needed to perceive the process of changes in the mosque form in the way of tradition to contemporary. The author tries to illustrate what are the effective factors and how much form has been effected by each of them. Some highlighted factors such as Muslims beliefs, formal configuration, space quality, functional relation, building material and structure and building elements of the mosque will be analyzed. These factors created a ground for fundamental causes of fading away spirituality in mosque architecture from traditional to contemporary era.

1.2 Problem Statement

The secular aspect of contemporary life to some extent created new movement and thoughts in mosques architecture as tool to generate new conceptual design. Although these changes try to link the contemporary mosque to traditional ones and mapping their similarities and differences in their architectural approaches but it faded away the emotional and spiritual space in mosque especially in the way of performing religious beliefs and general characteristic of mosque architecture. So, the thesis tries to investigate the causes and effects of such problem.

1.3 Methodology

This study is qualitative research and it goes through in-depth understanding of Iranian and Turkish traditional and contemporary architecture in the field of mosque architecture. As qualitative research the thesis investigates why space spirituality faced with various challenges in contemporary era. According to this perspective, the study has been limited to find out the fundamental causes of various challenges in both traditional and contemporary periods in Iranian and Turkish mosques. Predominantly the selection of these countries and their traditional mosques dated back in to their similarities on:

1. Their historical periods.
2. They are non-Arabic countries.
3. Muslim religious beliefs.
4. Prophet mosque as the main source of their designing approaches.

Notably, the selection of contemporary mosques traced back into their new interpretation from their original sources which are traditional mosques. On the other hand since the architecture of mosque as religious building is under the influence of

religious beliefs various theories and principles regarding to Muslims religious belief and spirituality and their manifestation in the architecture have been studied too. As showed in Table.1, to define background theories the thoughts and principles of Iranian Islamic Philosopher “Hussein Nasr” was the main sources as a key to support and explore the effective factor of religious beliefs and spirituality in traditional and contemporary mosques architecture. By applying his thoughts and principles from one side and analyzing and interpreting the architectural features from the other side, this research has been developed. Based on Hussein Nasr principals in qualitative research there is need of large scale samples instead of small ones in city scale as a main source of religion and spirituality. Accordingly, the case studies have been limited to Jameh Islamic mosques type as the main and vital city elements in Isfahan,Dagan,Shiraz, Tehran in Iran and Istanbul,Ankara in Turkey.

Totally nine Islamic mosques have been examined in this study. These samples are the most important Islamic mosques from Illkhanied to Safavid period in Iran and Ottoman period in Turkey and contemporary periods in both countries. The comparison methodology goes through the case studies from different historical periods with regard to their scales and architectural characteristics and also tried to find the similarities and differences between decline and intensity religious beliefs on reaching space spirituality in traditional mosques’ type of Iran and Turkey in one side, and make a Comparison between decline and intensity religious beliefs on reaching space spirituality in Iranian and Turkish contemporary Islamic mosques on the other side, and at last tries to find the differences between space spirituality in traditional and contemporary mosques in both countries in order to find the causes of fading away spirituality by representing visualization. Collecting information for case studies mainly relied on the analysis of these case studies, however observation

by taking photos in the place from the mosques and literature review based on the information existed on articles, journals, books and online resources. Based on analysis process which goes through evaluation of Muslim religious beliefs and their influence on mosque architecture with reference to their general architectural feature such as: formal configuration, functional relationship, space quality , building material and structure and building elements with the support of theoretical background the traditional and contemporary Islamic mosques architectural characteristics have been initiated in order to find the reasons of fading away spirituality.

1.4 Limitation

This study has been limited to traditional and contemporary periods in Islamic mosques architecture in Iran and Turkey, because selected countries have similarities in Seljuk period, Muslim religious beliefs (Monotheism), rooted in Muhammad prophet mosque as the first Islamic mosque type in the world of Islam and they are non-Arabic countries have historical background in Islamic mosque architecture. Cases are limited according to the traditional mosques simplicity, purity, and spirituality in their architectural design with consideration of their histories and types as a Jameh mosques. The contemporary Islamic mosques in both countries selected according to their diversities, contrast and non-spiritual space in general characteristic of the mosques architecture with traditional ones.

Accordingly, eighteen traditional and four contemporary Islamic mosques have been chosen in Iran and based on eighteen traditional mosque in Iran four fundamental Iranian mosque type mentioned and from each type one example has been selected and according to four contemporary mosque one of them have been. Actually, twenty-one traditional and eight contemporary Islamic mosques have been chosen in Turkey and based on twenty-one traditional mosques in turkey three fundamental Turkish mosques type mentioned and from each type one example has been selected and according to eight contemporary mosque one of them have been selected. Generally the case studies chosen because of their general architectural characteristics.

1.5 Structure of the thesis

Table.2, represents the basic structure of the thesis involves introduction part divided in to four parts: aim of the research, problem statement, methodology and limitation.

In theoretical background there are the consideration of three important agendas which are Islam and Muslims religious beliefs (history, origin and core of Islam /Islamic Religious and understanding, laws and rules and order and spirituality/social activities) Overview of Islamic Religious Buildings with emphasizing on Iranian and Turkish Samples (Islamic architecture, Islamic religious beliefs and mosque Islamic architecture/early Islamic mosques/ introducing comparative samples of traditional and contemporary Islamic mosques in Iran and Turkey) and general characteristic of Islamic mosque architecture(formal configuration/ space quality/functional relationship/ material and structure/ elements). Comparative analysis of seven traditional Islamic mosques with two contemporary Islamic mosques case studies initiated with the utilization of theoretical background especially third part. All of the data collection from theoretical background and comparative analysis on Traditional and contemporary Islamic mosques in Iran and Turkey resulted as analysis and last part is the general conclusion of the thesis by having further studies.

Chapter 2

ISLAM RELIGIOUS THOUGHTS AND BELIFS

In fact, in the primary centuries during the edge of darkness and transgression in the entire world with the abstraction of culture and civilization the vital miracle have been took a place which was the Islam and its sacred books and its effective rules and regulations pointed towards God's omnipotence and the pray. Islam affected Muslims through their religious beliefs and providing a way for them to reach Allah world as a spiritual perfection. This circumstance is the prominent features of human cultural civilization and lifestyle. So, increasingly, pray became tremendous and fundamental Islamic worship along with the cultural symbol of Azan called Muslims towards God omnipotence. Accordingly, based on the importance and priority of the pray, Islam considered the focal point in order to unify Islamic religious under comprehensive and integrated roof as a religious buildings. With regarding to these facts there is requirement to seek in Islam in general specifically its history, core points, origin and the way of its communication with Muslims religious beliefs and spirituality.

2.1 Definition and Significance

Comprehensively, Islam is one of the most important religious tradition which has global reputation that goes beyond particular geographical regions and civilization. The etymology of Islam comes from trilateral root which comprehensively refers to S-L-M creating and forming a concept of wholeness and peace. In general, it means the voluntary submission to Allah omnipotence. In this regard the word of Muslim rooted in the same verb form refers to one who submits (Shariati, Ali, 1983).

The emersion of Islam was one of most prominent revolution in new section of history. In 7th century the history of Islam initiated in Arabian Peninsula by confirming Muhammad Prophet as Allah messenger in Hejaz. During emersion of Islam in vast plains and deserts with the existence of any civilization there was huge and vast lands with few number of cities. In southern part of the Peninsula the city of Yemen has the best settlement conditions along with the traces of civilization whereas the lacking of civilization in Hejaz decreased it importance for invaders which leads to the sparking and blooming of Islam and Allah revelation (Davani,A,2007). On the basis of Islamic philosopher statement Islam in comparison with other three wide spread monotheistic religion has the less historical backgrounds whereas has the greatest population in the whole world.

The word of Islam in its religious meaning refers to the submission to the will of Allah and its holy book is Quran. Actually, the most prominent and basic source of Islam is monotheism (Tawhid) which means Allah is the one and only. In Islam it is forbidden for Muslims to see Allah because of his power and uniqueness, he can be seen through certain names, the most popular one is Al-Rahman. Islam believes on

other monotheistic religions and their holy books. The important point is that cultural beliefs which derived from Islamic spiritual resources depend on Islamic ethics and its revelation. Predominantly, with the advent of Islam the individuals' cultural lifestyle and scientific approaches confronted with dramatic changes from low quality to academic levels (Prochazka, A, 1994).

Basically, believe in angels as an Allah messengers is the vital, crucial and fundamental to the faith of Islam. Their responsibilities are considering Muslims actions, Allah worship and taking to Muslims' spirit. In Muslims point of view they are like a source of light trying to make connection between human and Allah world. The other fundamental faiths of Islam are prophets who chosen as a messenger, resurrection and judgment and predestination.

Virtually, Quran as the last revelation and holy books in Arabic language revealed to the Prophet Muhammad who was born in a poor family from wealthy tribe in Mecca. Over time, his theory, comments and advices gathering in the form of book as a Hadith for Muslims community to be consider. It should be pointed out that this is the second resources from which Muslims must follow Islamic rules and regulations.

As a core point believes in Islam among the blessing that Allah gave to the world was humanity among other creatures. The best ability that he gave to human was innate ability and instinct to realize and feel his existence. Actually, Allah in order to reinforced human instinct mentioned general sing to testify his inner essence which known as Kaaba and for giving his revelation to human being and guiding them towards Islamic rules chosen messengers. They tried to learn Muslims how worship Allah. Accordingly, the two prominent duties of Prophets as messengers are teaching

Muslims how to praying Allah and follow his commend by the use of Hadis. They have a responsibility to show them the core points of Islam which are: the oneness of Allah, there is nothing instead of Allah to pray, preserving human welfare, insisting against evil power, purity and spirituality and the fundamental point is worship Allah. Generally, these core points introducing the name of Allah (Shuon, F, 1978).

Early humans praying pious, idols and forces of the nature instead of praying Allah. This is the time when the first point origin of Islam began since Adam chosen as the first prophet to send message of Allah to human being. Afterwards Noah chosen as the prophet to preach message of Islam to his followers and called them to insisting against worshipping idols and forces of nature. He stated that who followed me is known as the followers of Islam. After Noah, Ibrahim as the greatest prophet sent Allah command to people. During his leadership he threatened and rejected by numerous of people, so he sacrificed himself under the order of Allah. Through the passage of time all of the messengers had the same voice to pray Allah and rejection of evil. Throughout all of the prophets Muhammad was last prophet of the Islam he called Muslims towards Allah's omnipotence and uniqueness (Prochazka, A, 1994).

2.2 Diffusion of Islam in different regions

The expansion of Islam is one of most outstanding step in history because of some important factors: the way of expansion, rapid development in whole world, rapid acceptance among peoples who were more advanced in comparison with Arabic people in 7^{th} century, incorporation between different kinds of nations especially in cultural beliefs in order to find their identity according to Islamic cultural framework. For identifying the territory of Islamic world the Arabian Peninsula reveals its identity as a first shaping Islamic country and afterwards Middle East (beginning of

Christianity and Judaism) known as second territory of Islam and then the entire North Africa. Actually, Islam in Asia speared its territory in Iran, Afghanistan, Middle Asia, Mongolia, Caucasus, Turkey, Pakistan, Malaysia, Indonesia, India, China, Taiwan and Philippine. It is necessary to stated that, all of these cultural territories do not play an equal role in the development of social, cultural and political Islamic situation. Virtually, the most important Islamic chains among others are: Arabian, Iranian, Turkish and Indian Muslims. Basically, Muslims around the world reading Quran in Arabic language.

2.3 Muslims Beliefs

Increasingly, Muslims beliefs are one of the most crucial issues in Islam and other monotheistic religions. Muslims believe on the uniqueness and incomparable Allah and his chain of Prophets, who leading the world by his permission and brought his revelations and Verses to the human being. Truly, they believe in the Day of Judgment and the life after death. Increasingly, they aware of Allah omnipotence and authority on their lifestyle and destiny (N, S, 2009).

Predominantly they believe in the five pillars of Islam which tries to make a unification between Muslims all around the world. The first one refers to the declaration of faith which means Allah is the only power deserves worship and Muhammad only his greatest Prophet and messenger. The second pillar refers to the importance of the pray which is one of the most important venerable aspects of Islam defined as seeking and calling towards God's omnipotence and its unique meaning illustrates the difference between human and animal. It has a practical aspects and it separated religious from anything that is look alike for instance: moral sentiments and esthete feeling. If religious is something that required in our practical life so its

responder should be something practical otherwise theoretical responder could not be a good solution. Virtually, pray is not a tool for meeting the requirements but it is symbol of love between God and human and is the highest summit for avoiding darkness and guilt. On the basis of Dr.Motahari statement humans have four important dimensions of existence: science and wisdom, Ethics, enshrine and worship and Beauty. He said that “worship is one of the most ancient and consistent human’s spirit demonstration and is the most delicate and venerable dimensions of the human existence. Actually, human during praying goes from non-spiritual space to spiritual ones in which there is no limitation. For Islam and Quran, worship is the purpose of creation and comes from human’s instinct (Vaezzadeh Asadi, N. R. 2014).

Muslims pray five or four times a day and they focus on the spirituality in Allah world. This performance consist of standing and putting forehead on the seal pray and ground. The important point is that, for praying Muslims there is not any need of specific place. At the beginning of Islam, Muslims come together in a scared place to pray and do their religious ceremony. Actually praying involves three important stages: uprising, bow and prostration (Hillenbrand, R, 2001).

The third one Zakah, Muslims believe that everything belongs to Allah so they are given money to poor levels of society to demonstrate their trust to Allah. In Islam, Zakah known as the obligation duty for all of the Muslims. The forth pillar of Islam which Muslims trusted in is the fast of Ramadan. In Ramadan month Muslims avoiding to eat and doing sin because they believe that it develops spirituality. During this month the voice of reading Quran can be heard from the mosques. This month ends with the Eid-Al-Fitr. The fifth pillar of Islam is Hajj to Mecca refers to

the meaning that Muslims around the world gathering in Mecca and comprehensively serves Allah (Elahi, B, 2007).

2.3.1 Religious and understanding

In fact, religion is the science of Islamic language which is the way of understating faith and Muslims beliefs. Philosophically, it rooted in the rational and spiritual ideology of world of Islam. There are two important religions in Islam which are Shia and Sunni. The Shia religious believe in monotheism-uniqueness of Allah-, prophecy, resurrection- accountability for actions-justice and pontificate whereas the Sunni religion merely believe in monotheism, prophecy and resurrection. The important point is, all of the Muslims either Shia or Sunni believe in Allah and angels, prophets and messengers, sacred texts, life after death and Allah decree. The differences between these two religions is the way of performing pray and ablution process in physical features. Shia religion saying Azan and performing three times a day but Sunni performing five times a day (Witherspoon, R, 1985).

2.3.2 Laws and Rules

Virtually, Islamic Laws directly and originally comes from Quran and Muhammad prophet's Sunnat. During Muhammad period some important rules and regulations have been set up which are direction towards Kaaba and worship settlements in parallel rows facing quibble (Aazam,2007). On the other hand, Islam and its rigid laws is a comprehensive message which opens new vision in Muslims social and cultural lifestyle. On the basis of Muslims tradition either Shia or Sunni respectively the ritual four or five performances are carried out during sun orientation. The focal point in Islamic law is Shariah which is the way in which Muslim obey and fallows Islamic rules and regulations through the virtue of their religious beliefs (Salleh, S ,2014).

The most important fact in Islam is obligation and fundamental vocation which determined by Allah for Islamic community (ummah) to work communally in a group not individually. It is the way of realization of Allah order to be announced to rest of the world. Muslims community model is based on two facts acceptance of Quran, Muhammad prophet and Hadis (Bourke, 2006).

It is vital to pointed out that in Islamic source and Muslim community the delicate characteristic of the Allah is peacefulness because his is pure from all defects. So, the Muslims communities should reflect such praiseworthy character. The source of Islam covers all Muslims problem either individually or socially with regards to physical, mental, emotional and spiritual aspects. Based on philosophers point of view spiritual aspects known as the fundamental objective of Islam.

In Islamic philosophy there are two idea behind spirituality. The first one is the difference between body and soul in human being in which these two words stand against each other. For philosophers body is the material prison for soul thus this fact inevitably caused the creation of spiritual and secular-incompatibility between spirit and social life- space in universe. Islam by considering these two facts introducing two universe; macrocosm and microcosm. The first universe refers to Allah as the creator of universe and the second of apply human physical features. The Figure: 1 represents the towards movement in microcosm and macrocosm (Academy, T, 1999) (Barbour,J,2011).

Figure 1: The Movement Parallel with Microcosm and Macrocosm.
(Author, 2014)

It worth noting that in inducing spirituality in Islamic there is a priority of making compatibility between Allah laws and human behavior, emotion and feeling in going from material-microcosm- space to spiritual space –macrocosm. In this regard the spirituality in Islam seeks for sacred elements in its pure, simple, Non- secular ornamentation in architectural design and structure in Islamic world to creating the sense of unity between Muslims by overlapping divinity spiritual process and Muslims religious believes (Musdah, S, 2007).

2.4 Chapter conclusion

Nevertheless, Islam is the philosophical point of humans' cultural lifestyle penetrated in Muslims' life through the intensity and decline of religious. Pursuant to holy Quran, Mohammad prophet tradition (Sunat), Hadith and Muslims religious beliefs there was a need of religious places for preserving specially core point of Islam and its pillars to introducing Allah name and power which is free from material life with its ultimate spirituality. So, next chapter has been dedicated to introduce religious architecture and mosques as focal point of spirituality in Islamic era in both traditional and contemporary periods.

Chapter 3

OVERVIEW OF ISLAMIC RELIGIOUS ARCHITECTURE AND FOCUS ON IRANIAN AND TURKISH ARCHITECTURE

As a matter of fact, religious architecture is the building architecture designed and constructed according to Islamic thought and ideology. The appliance of such architecture illustrated in the building which have religious user and it divided into pre-Islamic (8000BCE-642AD) and Islamic (642AD-1501) groups. At the age of Islamic religion expansion (Shia and Sunni) in Islam the importance of Islamic architecture adsorbed the center of attention and afterwards it formed as the core point connection between them. Parallel with this perspective mosque is the first religion building constructed by emersion of Islam in Islamic period. Mosque as a gathering place for Muslims through its spiritual space provided conjunction point in Allah world leads to unification in world of Islam.

It should be noted that the architectural space of mosques from tradition up to contemporary era faced with some changes which threaten spiritual space and to some extent created dualities. Based on this perspective there is a need of an overview on early Islamic mosque architecture by emphasizing on Iranian and Turkish Islamic mosques in traditional and contemporary periods.

3.1 Islamic Architecture

The Islamic architecture is a kind of architecture severely overshadowed by Islamic culture and encompass wide range of both spiritual and secular religious building

architecture in traditional and contemporary period. The Figure: 2 reveals that Islamic architecture created the ground for reaching spirituality in Allah world based on three effective factors which are Islam, Muslims religious beliefs and religious building.

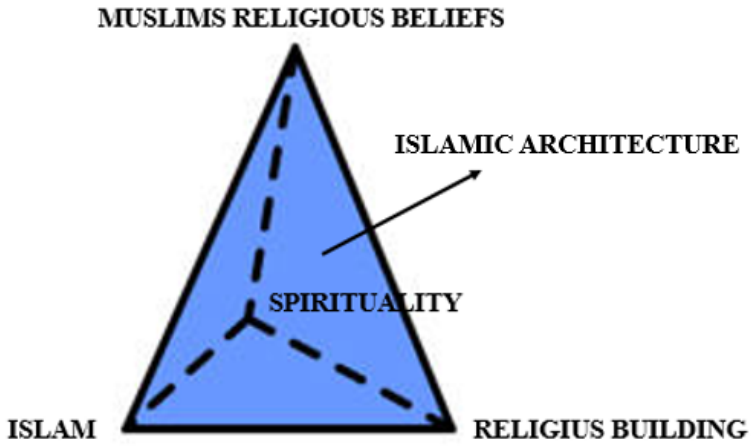

Figure 2: Three effective factors in reaching spirituality in Allah world. (Sharati,A,1970)

At the beginning of 7th century the artistic and political revolution had a great influence on ancient and civilized countries. The Muhammad Prophet united the different countries of Arabian Peninsula which lead to the greatest historical authority that made Arab conquest in countries such as: Iraq, Syria, Egypt and Iran. According to this dramatic political changes and civilization in Asia, North Africa and Europe confronted with basic revolution and the foundation of Islamic architecture affected by the combination of recessive countries architecture such as Sasanian, Byzantium and Gothic in Egypt (Allen and Unwin, 1981).

Basically, Islamic architecture began with advent of Umayyad dynasty in 661. During this period the construction of mosques had tremendous progress affected by the architecture of some countries such as: Palestine and Syria and built according to

their rules and regulations. At the end of Umayyad dynasty Jud Al-Rahman who was the last Umayyad survivor established the western Islamic caliphate in Spain and this country for three years was the greatest and the biggest center of Islamic architecture. In 750, the Abbasids took the authority and the center of caliphate changed from Damascus to Iraq which was the ancient capital of Sasanian in which the complete features of Iranian architecture and the penetration of Sassanid architecture into Abbasid period occurred (Holt-Damant, K).

In 10th, the authority of Fatemiyeh in Egypt was the center of Islamic civilization in which Islamic industry obtains the top priority and one year later in the east of Islam Seljuk made its prejudice authority in which Islamic architecture reaches its peak. In 13th, Moghul tribe attacked to Islamic countries and at the same time one of its leader formed the India and in this duration Iran's culture and architecture penetrated into this country. In 14th, Turks established Ottoman dynasty in Turkey and occupied Mediterranean countries, on the basis of this circumstances the period of Islamic architecture created in Iran neighboring countries. Actually, two years later the Safavid dynasty formed in Iran and in this era Islamic architecture reached its peak. Nevertheless, the Islamic architecture shape according to Islamic culture which involves the huge part world known as world of Islam.

The phrase of understanding Islamic architecture depends on the realization and existence of Allah and in humans' mind on the way of analyzing procedure to find the overlapping criteria between Allah as the creator of entire universe both in macrocosm and microcosm, spiritual space and Islamic sacred geometrical form. In fact, Islamic architecture is a complex and controversial phenomenon similar to the meaning and existing of Allah in humans' mind which has various meaning in

different societies but its main meaning refers to the unity and oneness of invisible spiritual power. Basically, mosque as an element of Islamic architecture and the place for Islamic religiosity tries to fill the gap between human's spiritual need in secular world and Allah in spiritual world through its architectural sacred form (Dehghan,M,2012).

3.2 Philosophical impact of Islamic religious beliefs on mosque architecture

As mentioned before the Islamic religious divided into Shia and Sunni groups in which the Muslims beliefs have similarities and differences. The Shia Muslims believe on two principles of Monotheism and Pontificate. They manifested that we are belonging to Allah and will return to him and in order to reach spirituality there is bridge between material-secular- and spiritual world which known as Pontificate. In their believe Imam is a bridge between these two worlds who take a hand towards Muslims to reach Allah world. This fact is obvious in Shia mosque in which the movement in the space is based on Human-Imam-Allah axis. Accordingly, movement in the space initiates from the main entrance and Muslims entering to the courtyard which is the heart beating and principle of Pontificate in Shia mosque and from this point known as the bridge between Imam and Allah enter to the Ivan as ritual space and finally see themselves in the dome-building and reaching Mihrab which is the infinite spirituality. Based on this point of view, for emphasizing Imam-Allah movement the other spiritual spaces as hypostyle added to the formal configuration of the Iranian Islamic mosques (Rippin, A, 1990) (Karim, P, 1985).

The Sunni Muslims believe on the principles of Monotheism not Pontificate. They manifested that we are belonging to Allah and will return to him without any

connecting point. Such fact is clearly obvious in their mosque design in which the movement of space is based on Human-Allah axis. So the movement in space in Shia mosques is more outstanding and highlighted than Sunni ones. The movement in the space in Sunni mosque initiate form different entrances and entering to the courtyard and at the end see themselves in dome-building reaching Mihrab as the infinite spirituality. Based on this perspective in order to emphasizing Human-Allah axis movement, porch applied in formal configuration of the Sunni mosques. The prominent point in Sunni mosque, due to they built according to Monotheism there is emphasize on the form and structure of the domes (Sobuti, H, 1979) (Witherspoon, R, 1985).

It is necessary to mentioned that, some Muslims believe that there are two difference between Shia and Sunni mosques Islamic architecture; first, in the number of minaret but such difference merely related to the Quran and Ahl-Beyt not their religions so most of the Shia mosques have pair minaret and Sunni mosques have one minaret. Second, they stated that existence of crescent and star on top of the dome and minaret in Sunni mosques related to religious contradiction whereas crescent and star are the symbols of prayer time, determination of Quibble direction and moon observation(Mohaddesi, J, 1991).

3.3 Architecture of mosques in early Islam

Not only mosque is the single unit in Islamic architecture which was built at the early days of Islam but also the most important artistic inspiration of Islamic world's monument focused on it. As stated before Muhammad prophet house was the first mosque in the Islamic world and after that mosques built according to Muhammad house but eliminate the residential part. According to this pattern this kind of mosques known as Courtyard Mosques (Prochazka, A, 1994).

3.3.1 Architecture of Umayyad dynasty period

In (41 AH, 661 BC) the Arab empires with the advent of Umayyad dynasty continued up to (133 AH, 750 BC). According to the changing of caliphate center from Medina to Damascus, Umavieds became familiar with Roman classic architecture in effect of religious and political agents Islamic architecture especially the construction of different kinds of mosque initiated (Sobuti, H, 1979).

- Architecture of Caliphs

Virtually, not only Saudi Arabia during the rise of Islam had no architectural background but also Arabs lived in small and modest cottages. The important point is that Muhammad Prophet immigrate from Macca to Medina and built its own home which afterwards known as the first mosque of Muslims. (Figure: 3) The architectural form of the mosque was square shape with southern Porch and wooden roof. According to the time requirements, the new parts added to the mosque. The mosque has three doors: Bab-Al-Nabi (Eastern), Bab-Al-Rahmat (Western) and southern door (Mohammadi, M, 2012).

During seven years mosque confronted with fundamental changes that were not look like before. In 17 (AH) Omar rebuilt the mosque with stone columns, wooden roof and six doors. In Osman dynasty, the restoration of the mosque continued with the addition of one sanctuary and in Valid-Ibn-Abd-Al-Malek Period the architectural design of the mosque reaches its peak. In this period the courtyard covered with roof, numerous columns add to Hypostyle, the eastern and western sides of mosque involves eleven gates but Northern and southern sides involves fourteen gates, four minarets added to the architectural design of the mosque and in Amro-As dynasty the other sanctuary add to the mosque.

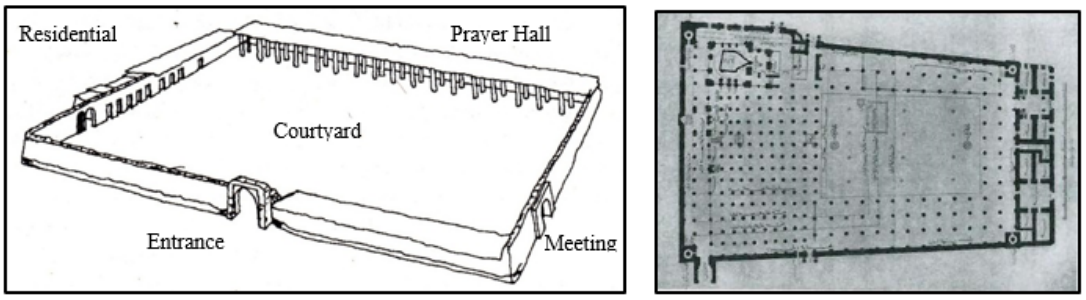

Figure 3: Muhammad prophet house. Mosque first type.
(Helen,B, 2004)

The tremendous point is that in near of the mosque some places were built for Prophet's companion to live as Sofeh such design inspired by other Islamic architecture especially Iranian ones. The existence of porches and Sofehs around central courtyard in Islamic mosques is the continuity of such traditional rules.The new architecture inspired from Turkish style up to contemporary world. Main changes are: two main courtyards and the construction of Muhammad Prophet tomb (Prochazka, A, 1994) & (Mohammadi, M, 2012). The other important architectural design during Caliphs is Kaaba which built in the time of Muhammad Prophet authority. It

has a square shape and was made by stone and wood. In 608, Kaaba reconstructed by Quraysh dynasty. Actually, beforehand Kabba was below the ground level while later built on the ground and its roof constructed on the six colonnades. There were some images of holy prophets, angels, Abraham prophets and holy Mary in Kaaba (Sobuti, H, 1979). The other important mosque architectural designs during this period are: (Figure: 4) the mosque of Ghebat-Al-Sakhrah, (Figure: 5) The great mosque of Damascus and The mosque of Gardopa.

Figure 4: Ghebat -Al-Sakhrah mosque.
(Bazooka ,2015)

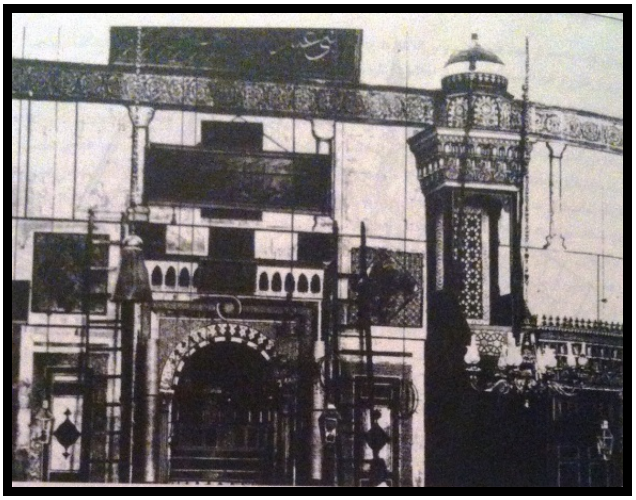

Figure 5: Damascus mosque.
(Bazooka,2015)

3.3.2 Architecture of Abbasid dynasty period

In this period, architects for their designs and constructions implied the plans and materials which existed before Mesopotamia. They reconstructed Iraq urban design which involves four main entrances such as: Kufa (South-West), Basra (South-East), Khorasan (North-West) and Damascus (North-West). The city had two circular walls and one central part in which there were mosques and other parts of the city. On the basis of historians' point of view the important mosques in city are: the (Figure:6) Great mosque of Samarra (Al-Motevakil mosque) and the mosque of (Figure:7) Abu-Dolf (Jafariyeh Mosque).

Figure 6: Great mosque of Samarra

Figure 7: Abu-Dolf mosque

- The Influence of Arabs Dynasties Islamic Architecture on their Conquests

As mentioned before Islamic architecture began with the advent of Umayyad Dynasty in which the construction of the mosque had great progress. After a mean while Abbasid took the authority and Iran, Iraq, Jerusalem and Egypt conquered by Arabs dynasties and their Islamic architecture severely overshadowed by their rules and regulations and their first constructed mosque are: Fahraj and Shush (Figure:8) Jameh Mosque in Iran, (Figure: 9) Kufa Grand Mosque in Iraq, Al-Aqsa Mosque in Jerusalem and Amr-Ibn-Al-Ass in Egypt.

Figure 8: Sush Jameh Mosque.
(Author, 2015)

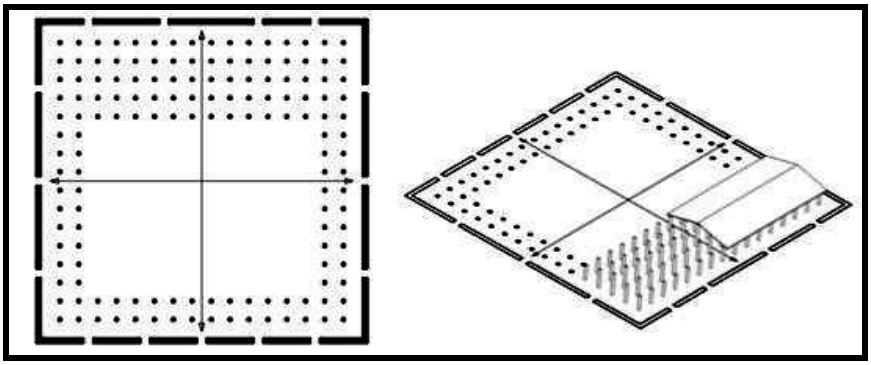

Figure 9: Kufa Grand Mosque.
(Arida,2013)

The Arabs dynasty penetrated to the east of Islam world on that time Seljuk Turks made their authority in 14th century as Ottoman dynasty and occupied Mediterranean countries in Toghrol-Bey dynasty. They immigrated to Iran and affected by Iranian Islamic architecture in Seljuk period. Based on this fact Seljuk period is the conjunction point in Iranian and Turkish mosque Islamic architecture should be considered.

3.4 Mosques of Iran and Turkey

In the traditional and contemporary samples of Iran Islamic mosques there is an overview on the important mosques in each period which created the ground for important information that used in cases studies for the thesis.

- Traditional and contemporary samples of Iran Islamic mosques
    - History of Iran

Iran is one of the most ancient and civilized country with well-known historical backgrounds in the world. Virtually, the first settlers existed in Neolithic period whom habited in the Zagros and Alborz mountains. Archaeological excavations reveal that Aryan peoples migrated to Iran at the beginning of second millennium BC. On the basis of historians point of view, after the victory over Medes and Achaemenids formed their first widespread Iranian Empire in Persepolis and Pasargadae as an ancient monuments in entire world. After a while, Ctesiphon became the main land for their Empire until 224AD. With the victory of Sassanid dynasty on Parthian the new Empire was developed until the mid-seventh century with reference to Islam as an historical and religious building. This circumstance was parallel with the creation of Umayyad and Abbasid dynasty which brought about independence movement in Iran forming foreign nations. The Empires such as

Safavid, Zand, Afsharian and Ghajar were took a place and provided the influence of foreign powers which had a great impact in architectural design methodologies (Masoudkiyanfar, 2011).

At the end of Sassanid dynasty, Iran's political, cultural and religious situation confronted with dramatic changes and dualities in that specific time Islam in Arabian Peninsula empower its dominance through other countries. The first and vital impact between Arabian Muslims and Iranian ones was in the Abu-Bakr (634-631 A.D) dynasty period in which Arabs defeated Iranian Muslims, this duration known as the demolition of Sassanid dynasty. After complete victory over Iran, Iranian Muslims steadily forced to accept Islam and its rules and regulations. After the death of Osman Caliph, foreign elements especially Iranians penetrated into Arabs political and cultural situations and with Abbasside dynasty Iranians defeated Arabs in Baghdad (Mohammad, M, 2012).

The most delicate and fundamental factors which overshadowed Iranian architecture was the five important national and regional governments, known as: Taherid- rooted in Abbasid dynasty, Safarian- form great empire in East of Iran, Samanian, Ghaznawyan- penetration of Turks in military forces- and Alebouyeh- revival of Iranian tradition. Accordingly, the positive situation created for Iranian art and architecture (Ardalan, N, 2004).

3.4.1 Iranian traditional mosques

- Significant periods

In Iran, during the first decades of Islamic revolution tremendous changes occurred in religious beliefs. Most of the hordes of people selected Islam as their basic religious which after a while became the world religion in many countries. On the

basis of this perspective many temples converted to mosques and Iranian tried to make a compatibility with Islamic and religious process as focal point of traditionalism. Practically, the first type of early mosques in Iran involves columned hypostyle architectural form with wooden flat cover. The evident through Seljuk and Sassanid architecture reveals that Iran's mosques' type categorizes into two groups: first group have Arabic plan and architectural space and second ones have Iranian pure style. In the biggest city of Iran Taheri, Samani, Safari and Alebouyeh national and regional governments constructed different mosques in various regions with hypostyle, dome and arches architectural features. Actually, the sense of beauty in Iranian architect leads to appliance of Sassanid and Parthian architectural approaches in mosque architecture, such as: vast hypostyles with huge arches, Ivan and well-designed dome which inspired by palaces architectural trend (Pirniya, M, 1974).

Based on mentioned facts the significant periods in Iranian traditional mosque architecture divided into five important periods which are:

1. Seljuk (1071-1194)

The Seljuk period is the most tremendous period in Islamic architecture that established during Toghrol- Beyg Empire. It was first Turkish dynasty to rule the Muslim world reviving the dying caliphate. The prominent fact is, the Seljuk Turks after immigration to Iran did not have any specific artistic heritage but when they settle in they fallowed Iran's Islamic architecture. On the basis of historical information it was well-known in religious building especially mosque design.

Most of the Islamic philosophers stated that Seljuk period in architectural production accounts for the second major elements of Islamic reviving the mosque architectural design of Umayyad and Abbasid dynasties (Saoud, R, 2003).

2. Illkhanied (1256-1335)

In Iran's Islamic architecture, Illkhanied period known as the period in which mosque architecture passed from Razi style-conversion of mosque hypostyle form to dome and Ivan- to Isfahani ones-appliance the various type of dome and arches. The importance of this era is for conserving the evolution procedure of Iran architecture and created the ground for Isfahani style in Safavid period after Mongol invasion. The architecture of this era had a little difference with previous ones and Illkhanied did not invent any specific style for Iran's Islamic architecture.

3. Timurid (1370-1526):

The other important period in Iran mosque Islamic architecture is Timurid period which its architectural features is the most influential ones because of the wide spread of its territory and new architectural innovation.

4. Safavid (1502-1736):

One of the most magnificent, controversial and tremendous artistic and architectural period after Islam was Safavid dynasty in Iran. Shah-Ismail-Safavi was the founder of this dynasty lived in Tabriz. After some duration Shah-Tahmasb-Safavi tried to design the prominent religious buildings with help of Homayun who was Mongol-Indian king immigrated to Iran. During his dynasty the country center transferred from Tabriz to Ghazvin. With the arrival of Shah-Abbas-Safavi the golden revolution

occurred in Iran’s architecture with influence of European and Indian methods. This focal point was the beginning of the mosque, caravanserai and bazar construction as the three fundamental points of Islamic cities. Accordingly, Isfahan became the city center of Islamic architecture in Iran (Mohamadi, M,2014).

As shown in Table.3, the significant periods in Iranian traditional mosque architecture and their prominent architectural features which started by Seljuk period and its prominent architectural feature are: dome structural approaches in groups which are royal symbolism and brick construction, Ivan new development types in wide dimension which transformed from madrasah to mosque, revolutionized Islamic mosque type, the hypostyle form of traditional mosque confronted with changes, form of the mosque transformed to the rectangular shape and mosques attached to the cultural and social complexes. In Illkhanied periods the prominent architectural features of the mosque refers to; the priority of mosque building in comparison with other religious buildings, following the same structural process, the importance of four Ivan plan and the type and form of domes were similar to Seljuk period (High/Elevated dome) (University of Tabriz,2008). In Timurid period there was an addition of teaching area to mosque architectural space, architectural elements have unity and symmetrical approaches, Ivans link to each other, there were the improvement of structural systems, utilization of double-shell dome with high drums and mosaic ornamentation in both interior and façade of the mosque (Khazaee,m,2013). In the last period which is Safavid the prominent architectural features of the mosques are usage of tiles and calligraphy ornamentation on dome, minaret, arches and forecourt, initiation of Islamic art in mosque architecture, completion of dome structural process, appliance of Isfahani style and four Ivan construction.

- Fahraj Jameh mosque (45AH)

The Fahraj Jameh mosque is the most ancient Islamic mosque which constructed in Yazd. Its construction material is brick and its architectural style dated back to Pre-Islamic era (Parti). The tremendous attribute of this mosque (Figure:10) is its single minaret and hypostyle form of the mosque.

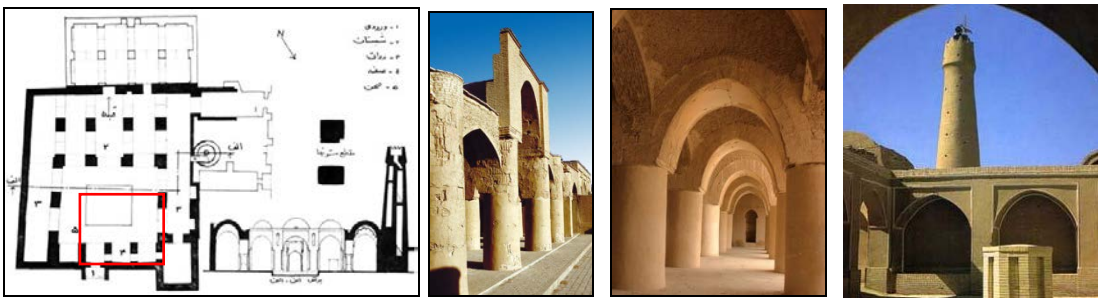

Figure 10: Fahraj Jameh mosque.
(Author, 2015)

- Neyriz Jameh mosque

The Neyriz Mosque (Figure:11) is one of the most ancient religious buildings constructed in first decade of Islamic duration. For philosophers the mosque was temple in pre-Islamic period which deconstructed in Islamic period and the first mosque involved one single Ivan which had a dramatic change (two-Ivan and central courtyard) in Ghajar era.

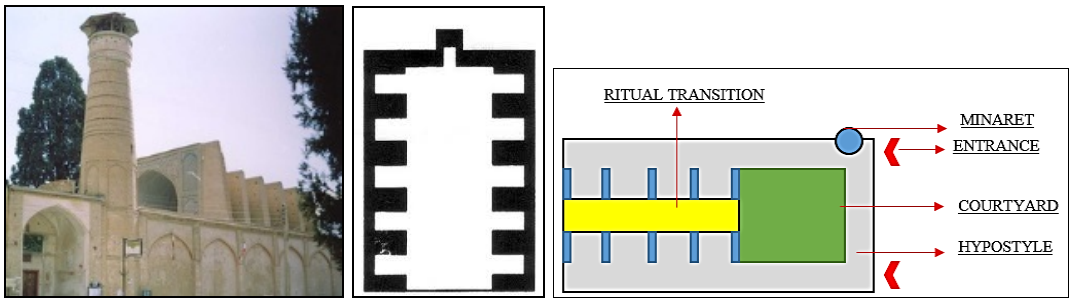

Figure 11: Neyriz Jameh mosque.
(Author 2015)

- Nain Jameh mosque (4th century)

The Nain mosque (Figure:12) was the first mosque which applied sharp arches in its architectural form. It has simple hypostyle form with the amalgamation of Khorasani and Razi styles. The general form of the mosque is square ones with central courtyard. The columns used in this mosque are short with regular arches and the minaret has (28m) height .

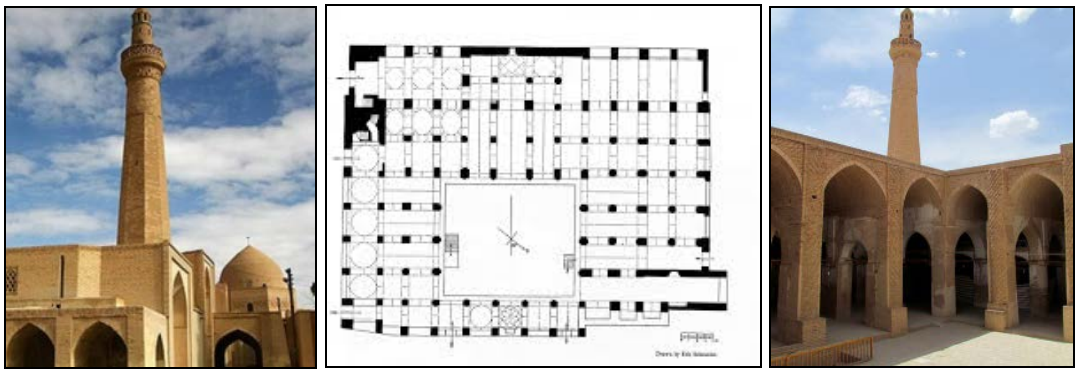

Figure 12: Nain Jameh mosque.
(Author, 2015)

- Ghazvin Jameh mosque (192 AH)

Ghazvin mosque (Figure:13) has been constructed on the Sassanid temple with four-Ivan architectural plan. The four-Ivan reconstructed by Safavid architects and renovated in Ghajar period. The prominent point is dome has single-shell construction with Shengeneh-vertical steel Bar applied for tolerating the weight of shell- on top. Accordingly, for Pirniya, dome had double-shell structure because of the Shengeneh element. The current dome constructed in 500 AH and in Safavid period the Northern, Southern and western Ivan have been constructed.

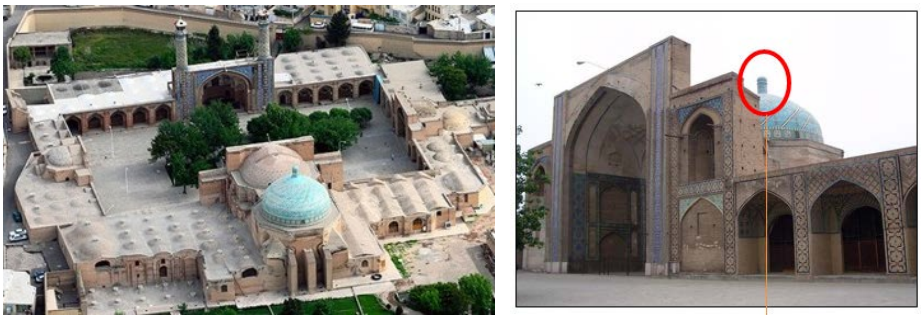

Figure 13: Ghazvin Jameh mosque.
(Author, 2015)

- Zavareh Jameh mosque (5th century)

The mosque has been built in Isfahan the main historical city of Iran (530 AH). (Figure: 14) Zavareh Jameh mosque was merely the ones which inherently built on the basis of four-plan structure and architectural form. Philosophers believe that the mosque constructed on other hypostyle mosque which led to four-Ivan has different kinds of dimensions. The Southern Ivan is longer and wider than Northern ones while Eastern and western Ivan are smaller than Northern ones. The structure of dome is continue-doubled-shell form.

Figure 14: Zavareh Jameh mosque.
(Author, 2015)

- Golpayegan Jameh mosque (5th century)

The first constructed architectural elements in Golpayegan mosque (Figure:15) was dome and its related spaces in Seljuk period. It has a prominent additional parts in Ghajar era which are two main either entrances and Ivan in left and right of dome's

space insisting on longitudinal axis. It was a basic type/pattern for most of the huge Jameh mosques in Islamic world. The Golpayegan mosque has a big courtyard, hypostyle and brick huge dome (Golestani, 2013).

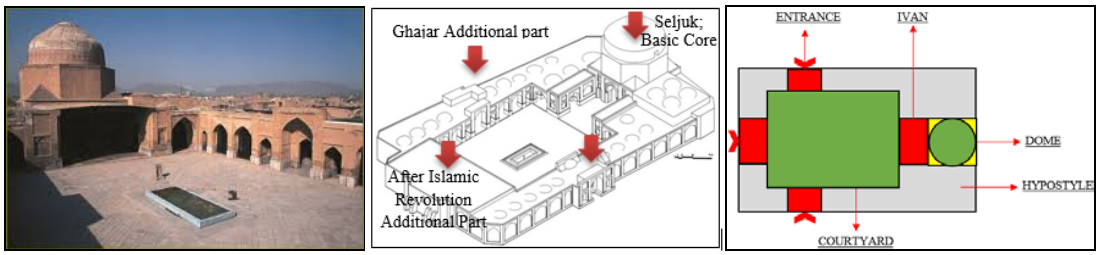

Figure 15: Golpayegan Jameh mosque.
(Author, 2015)

- Varamin Jameh mosque

The mosque (Figure:16) built in Varamin which is near the Tehran in Illkhanied period. Its architectural design includes Four-Ivan structure alongside rectangular plan organization. The dome structure implies double-shell form with brick material. The columned hypostyle is covered by four-arch structure. The Varamin mosque became the main type for next mosques generation. The southern Ivan with 10.55 heights and 4.10 depths is the biggest part of mosque with numerous number of ornamentation rather than other parts (Benzine ,R,2015).

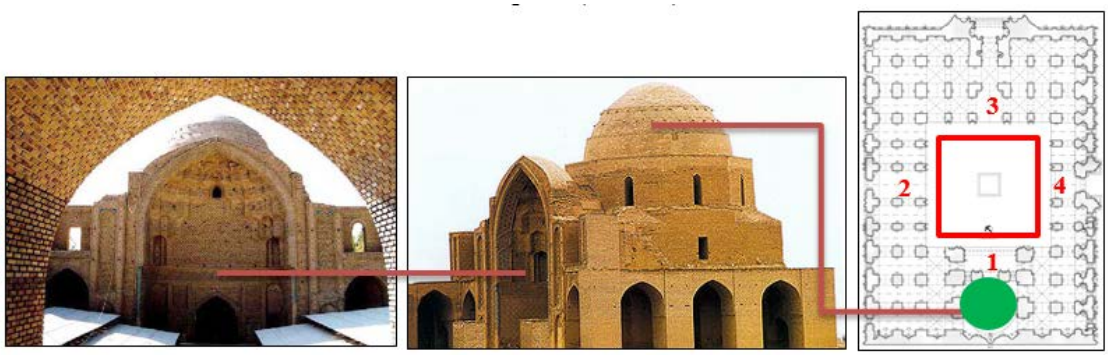

Figure 16: Varamin Jameh mosque.
(Author, 2015)

- Mir-Chakhmakh-Yazd mosque

The mosque (Figure:17) constructed in Yazd during Timurid period in (841 AH). This mosque is the historical masterpiece of Timurid dynasty. In Fath-Ali-Shah kingdom there were tremendous extensions in hypostyle's borders and up to Muhammad-shah Ghajar the mosque applied as the main city entrances in Islamic urban site. At first glance to the mosque's plan the deduction inform that it is four-Ivan plan whereas its three hug arches work as other ritual performances not Ivan itself (Ghafuri Tabar,M, 2014).

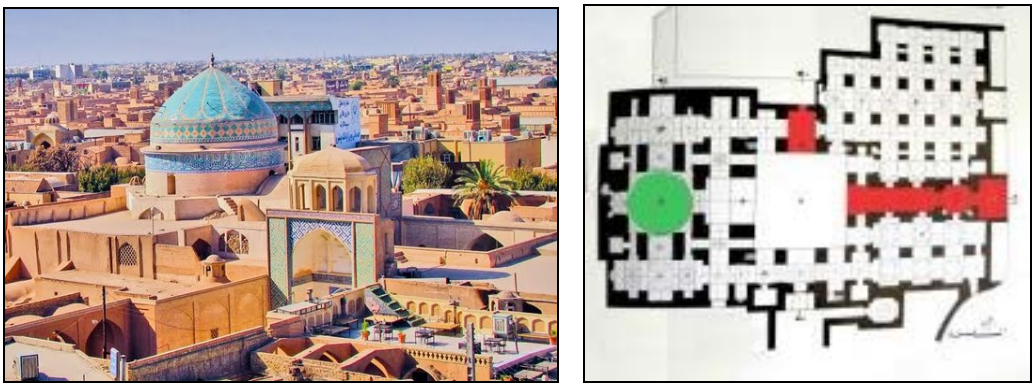

Figure 17: Mir-Chakhmakh-Yazd mosque.
(Author, 2015)

- Kabud-Tabriz mosque

The Kabud/Jahanshah/Mozaffariya mosque (Figure:18) was built in (870 AH-1351AF) during Qarā Qoyunlu dynasty in Tabriz. Actually, the tremendous features of mosque are the amalgamation between extant azure tile works and bricks which brought about the mosque known as turquoise of Islam and make a connection with Timurid contemporary architectural design and Ottoman Empire as well. Kabud mosque had two tiny and tall minarets in both Eastern and Western sides. It architectural design involves entrance, brick dome, semi-dome and the abstraction of

minaret and courtyard. The dome was built in square foundation that gives symmetrical ability to the mosque architectural space (Jérémy Rinaldi).

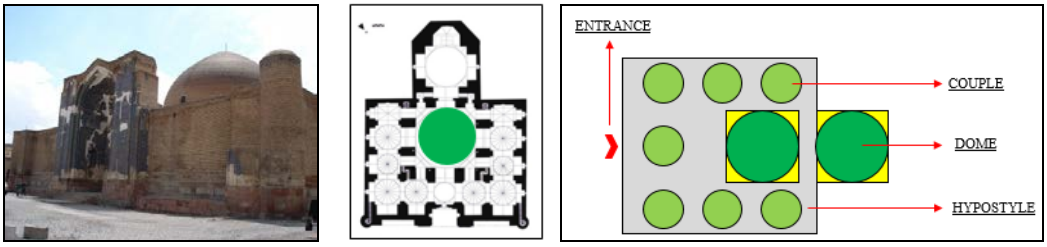

Figure 18: Kabud-Tabriz mosque.
(Author, 2015)

- Isfahan Imam mosque

The mosque (Figure:19) is one of the most beautiful mosques in Iran involves four-Ivan and two attached madrasah with continues-double-shell-dome structure and virtually it has been constructed on Shah-Abbas Empire during Safavid period. The tremendous feature of the mosque is the sound reflection of southern dome on the basis of its hug architectural and structural form and the height of dome is 52m and minaret has 48m ones. It has two huge symmetrical hypostyles and the forecourt has 20 degree deviation from the main direction of quibble (Neyriz,2001).

Figure 19: Isfahan Imam mosque.
(Author, 2015)

- Sheikh-Lotfollah Mosque

Sheikh-Lotfollah (Figure :20) mosque has been situated in Isfahan with its simple, small scale and gigantic architectural design. Its architectural space contains hypostyle under huge scale dome, winter hypostyle, corridor and forecourt with well-designed ornamentations form. It is necessary to stated that, despite of other important mosques types it does not have any courtyard, Ivan and minaret and the renovation of mosque happened during Reza-Shah Empire.

Figure 20: Sheikh-Lotfollah mosque.
(Morteza, Omidi)

- Vakil Mosque

The mosque (Figure:21) has been located in the Shiraz during Zandiyeh dynasty. The architectural elements of the Vakil mosque are sophisticated forecourt, huge hypostyles, porches, central courtyard, small scale yard, two-Ivan and rectangular general form. The main point is the abstraction of minaret and dome in the mosque shape grammar. The evolution process of the mosque involves ornamentations especially tile works in Ghajar period.

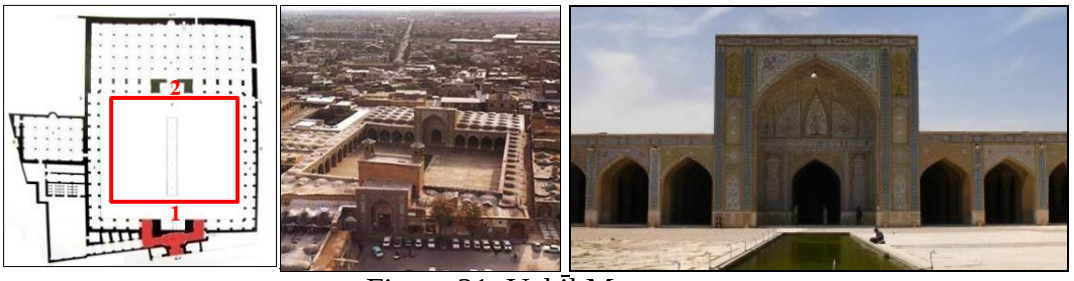

Figure 21: Vakīl Mosque.
(Author, 2015)

As demonstrated in Table.4, there are the generic types of eighteen important Iranian traditional mosques with their date of construction. Types of Iranian traditional mosque determined by their similarities and differences on their sacred elements which are Mihrab, courtyard, minaret, dome, forecourt, Ivan and ablution place and each of the mosque have its own formal configuration which defined the type of that specific mosque. According to this table the fundamental and basic types of Iranian mosques generated which are: four-arch, one-Ivan, two-Ivan, four-Ivan congressional, amalgamation of four-arch and Ivan, Mosque with rectangular plan and dome, domed Ivan, two-Ivans and central courtyard, Ivan without dome, square plan with dome roof coverage, central dome with semi-domed wings, central dome chamber surrounded by three side with dome veranda and Madrasah-Mosque integration (Khazaee, m, 2013).

Table 4: Generic types of traditional Islamic mosque of Iran

			GENERIC FORMS							MOSQUE TYPOLOGY						
			Mihrab	Courtyard	Minaret	Dome	Forecourt	Ivan	Ablution place	Hypostyle	Hypostyle With Dome	Hypostyle With Domical Vaulting	Four-Ivan	Central Dome	Other	Century
No	NAME	LOCATION														
1	FAHRAJ	YAZD	●	●	●	○	●	○	●	●	○	○	○	○	○	1
2	SHUSHTAR	SHUSH	●	●	●	○	●	○	●	●	○	○	○	○	○	1
3	TARIKH KHANEH	DAMGHAN	●	●	●	○	●	○	?	●	○	○	○	○	○	2
4	NEYRIZ	MASHHAD	●	●	●	○	●	1 ●	?	●	○	○	○	○	○	?
5	NAEIN	ISFAHAN	●	●	●	●	●	○	●	○	○	●	○	○	○	4
6	ATHIGH	SHIRAZ	●	●	○	○	●	2 ●	?	●	○	○	○	○	○	?
7	JAMEH	ISFAHAN	●	●	●	●	●	4 ●	●	○	●	○	●	○	○	2
8	ARDESTAN	MASHHAD	●	●	●	●	●	4 ●	●	○	●	○	●	○	○	2
9	GHAZVIN	GHAZVIN	●	●	●	●	●	4 ●	●	○	●	○	●	○	○	2
10	ZAVAREH		●	●	●	●	●	4 ●	?	○	●	○	●	○	○	5
11	BARSIYAN	ISFAHAN	●	●	●	●	●	3 ●	?	○	○	○	○	●	○	?
12	GOL PAYEHGAN	ISFAHAN	●	●	○	●	●	3 ●	●	○	●	○	○	○	○	?
13	VARAMIN	TEHRAN	●	●	○	●	●	4 ●	?	○	●	○	●	○	○	?
14	MIR-CH AGHMAGH	YAZD	●	●	○	●	●	1 ●	●	○	●	○	○	○	○	8
15	KABUD	TABRIZ	●	○	○	○	●	○	?	○	●	●	○	○	○	?
16	IMAM	ISFAHAN	●	●	●	●	●	4 ●	●	○	●	○	●	○	○	?
17	SHEIKH-L OTF-ALLAH	ISFAHAN	●	○	○	●	●	○	?	○	○	○	○	●	○	?
18	VAKIL	SHIRAZ	●	●	○	○	●	2 ●	●	●	○	○	○	○	○	?

Table.5, Represents the four basic types of traditional Islamic mosques of Iran rooted and resulted from generic types mentioned in (table: 4). These basic types are: Hypostyle mosques, Dome-chamber mosques, Ivan without dome mosques and Ivan with dome mosques. Actually, four important traditional mosques include these types are Tarikhane Damghan mosque (hypostyle), Bersiyan Jameh mosque (dome-chamber), Atiq Jameh mosque (Ivan without dome) and Isfahan Jameh mosque (Ivan with dome).Based on the research methodologies mentioned before these mosques chosen as case studies of Iranian traditional mosques.

3.4.2 Iranian contemporary mosques

Before talking about the contemporary mosques of Iran it is necessary to mentioned the contemporary period in mosques architecture in general over view which to some extend applied the same rules and regulations in both countries and then focus on the contemporary mosques samples.

- Contemporary period in Islamic mosques architecture (1945-Present day)

This period connected to the present day and includes the period of mid-20th century coincides with modernity formation of intellectuals. This era involves the progression of scientific and ongoing technological advances especially in structure and material science, for most of the philosophers such advanced technology will may impact on human social life.

One of the most prominent concerns between traditional and contemporary philosophers is the inner difference between traditional and contemporary Islamic mosque architectural design. Most of the traditional architects have an attempt to minimize such a large gap between these two approaches. Mainly, contemporary mosques insisting on the revivalism of traditional mosque in new way but they confronted with obstacles such trend and could not make a clear compatibility between these two beliefs. Actually, the main cause might be the contemporary approaches could not feel the traditional revivalism in its proper meaning and has been created wide gap between Muslims beliefs and mosques architecture. Truly, the existence of tradition when became to the reality confronted with contemporary thoughts in nowadays world leads to the differences between traditional and contemporary periods in mosque architecture. In contemporary world traditions

faced with huge amount of changes and have a great negative impact on each other's due to Muslims' religious deviation from its basic source as divinity (Allah) belief that reflected in contemporary mosque architecture. (Bani Masoud, A, 2009) (Moneo 1978, p. 23) (Ziad, A, 2007).

Most of the contemporary architects in designing contemporary mosque have been manifested that tradition as a hypothetical fact existed to fallow Allah omnipotence and new approaches should represents divines' new characteristic that include human pride as his creatures. For traditionalist experts the tradition and its belongings are the science from which humans' life initiated but contemporary period have been threatened such fact.

The contemporary era tried to revolutionize the mosque architecture by changing the formal configuration and general characteristic of mosques' architecture that fade away its originality towards Allah world in which the Muslims' spirituality fulfill or enrich its physical side as a pattern of life. Most of the traditional philosophers believe that the new era disturbs the nostalgia of the traditional period with the reference to insist against Allah world. Contemporary period tried to make a disconnection between two worlds which are immaterial and material ones-secular- (Nasr, H, 2009).

Based on observations and historical evidences the Islamic contemporary mosque designed and constructed according to various kinds and most of them tried to reflect the past traditional rules and regulations based on new structure and materials. They are small scale mosque with two definitions of: contemporary Islamic mosques constructed by reinforced concert and plastered brick with the imitation of their

traditional approaches and The contemporary Islamic mosques which have contradict hypothesis, identity, concepts, rules and regulations against Allah world but involves and inducing the general meaning of mosque in their architectural design (Bani Masoud, A, 2009) .

- Samples of contemporary Islamic mosques of Iran
    - The Mosque of Tehran University (1966)

The mosque of Tehran University (Figure:22) designed by Abd-Al-Aziz-Farman Farmayan as the in Tehran. Increasingly, the mosque architecture refers to the imitation from traditional architecture combination with new structure and material.

The mosque building involves cubic form in which courtyard and dome-building are in the same axis and connected with each other towards Quibble direction, in the event that in the hierarchy of movement in mosque first should pass through main entrance or porches in three sides of the courtyard and entered to the courtyard and from Northern, Eastern and Southern sides passed the courtyard and then in Quibble direction entered to the dome-building.

The form of the dome-lenticular with diagonal base- applied merely curve surface-in minimum height- without neck (Garive) which gave a new meaning and identity to the dome element with concert material and metal structure with abstraction of creating spiritual space towards macrocosm. The main and fundamental reason of its secular space traced back to the the dome that doesn't have its main part (neck) and its semi-cure form. Truly, by looking precisely at interior side of the dome the deduction confirm that it totally lost the identity and meaning of the dome in comparison with traditional dome form and structure due to the materiality and

human pride which reflects on the new born material. The mosque of Tehran University is the combination of two cubic form with different levels with two stone pair minaret raising from the ground level that never seen before in Iranian traditional mosque architecture.

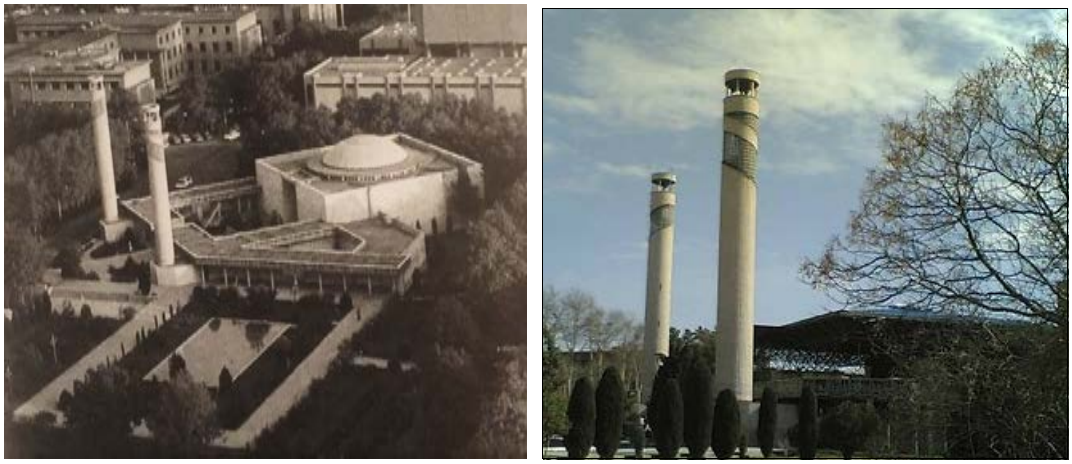

Figure 22: The mosque of Tehran University.
(Author, 2015)

- Shahrak Gharb Jameh Mosque (1991)

The Jameh mosque of Shahrak Gharb (Figure :23) situated in western district of Tehran. According to the observations mosque constructed in complex which involves commercial and cultural sections. The architectural space of the mosque involves different spaces which are hypostyle, congress hall and library.

Shahrak Gharb Jameh mosque tries to make compatibility between traditional Islamic approaches and contemporary architectural design by amalgamating both approaches but based on tradition point of view the architectural characteristic of the mosque could not induce the spiritual space, sense of unity and purity towards divine world.

Although, the architectural elements of the mosque consists of dome, hypostyle, minaret and courtyard but the usage of non-traditional material in construction let to the new design in mosque architectural approaches with secular characteristics.

Figure 23: Shahrak Gharb Jameh mosque.
(Author, 2015)

- Isfahan Musalla Mosque (1995)

Isfahan Musalla mosque is one of the most important contemporary mosque which still under construct. The mosque situated in huge complexes with the area of eighty-four thousand square meters. The mosque is well-known because of its form of the dome and minarets-modular form. The central dome constructed with steel material and stand on steel supportive structure in new design approaches and its courtyard covered by Islamic geometrical shells in modular way. Philosophically, Musalla mosque (Figure:24) has secular architecture especially the abstraction of dome-building tries to make compatibility with traditional approaches in order to making spiritual space in its architectural space. Severely, such overlapping between divinity world and material world goes through modern material that overshadowed and fading away the sense of space in relation with traditional Islamic design and essence of Allah in its general form.

Figure 24: Isfahan Musalla Mosque.
(Author, 2015)

- Traditional and contemporary samples of Turkey Islamic mosques

The architecture of Turkey divided in to four major periods which are; prehistory of Anatolia and Eastern Thrace, Antiquity and Byzantine, the Seljuk and Ottoman Empire, Republic of Turkey. As discussed before, the Seljuk and Ottoman Empire are the periods in which the masterpieces of Islamic architecture especially mosque had been occurred.

- History of Turkey

The history of this country traced back to more than 4000 years. The Turks first settlements was in Asia in 2000 BC. Later they moved around and making and establishing different kinds of independent empires in Asia and Europe which are Great Hun Empire (3rd Century B.C.), Göktürk Empire (740), Uygur Empire (741-840), Avar Empire, Hazar Empire (5-10 Century A.D), Seljuk Empire (Ottoman:1040- 1157).

3.4.3 Turkish traditional mosques

- Ottoman Empire

The wide spread and initiation of the Ottoman period dates back to the duration between the 14th and 15th centuries which is inspired by their predecessors Seljuk's empire. They had developed their independent style which rooted in political and

economic aspects that leads to considerable building dynamism which brought about vast number of monuments that covers Ottoman domain along with unique mosque typology and structural trends as a monumental building (Saoud,R,2003).

The Ottoman Islamic architecture was the prominent period which inevitably had high considerable value for architectural methodologies that occupied Mediterranean and its suburbs. It is necessary to stated that the importance of centralism was a fundamental pattern for mosque architectural design process during that period. The unique architectural feature of the mosque during Ottoman periods was a huge square cubic volume with height columns which preserve the massive form of central dome and semi-domes and high rise pencil minaret as main symbolism. This historical monument had a vernacular material such as: brick, stone and wood (Prochazka, 1994).

- Significant periods and samples of early traditional mosques of Turkey

Predominantly, for Islamic architects and philosophers, inner contemplation and feeling, spatial introversion and centrality are the fundamental aspects of Ottoman Islamic architecture tries to make a delicate and vital harmony between mosque-interior and exterior from - and human scale. According to this rules and regulation the originality of Ottoman mosque architecture revealed from which the Muslims' meet their both physical and spiritual demands (Pirniya, M, 1960).

It is worth noting that the traditional primary Ottoman mosque architecture inspired by Iranian and Arabic mosques and during this period the isolated dome's form as a most basic component of Ottoman mosques was the first process of mosques spatial formation. During that period, the general characteristic of mosques confronted with

diversities such designs was inducing the sense of spirituality according to vernacular martials and environmental compatibility. The Ottoman architecture before (857-1453) initiated with four important mosques which had great influences on Ottoman's mosque architecture with their Chapila, step and T form, the mosques are; Oulu mosque in Burseh (1395/797), Bayezid mosque (1392/794),Yeşil Mosque and Ouch Shrfly mosque (Helen,B, 1994).

The Ottoman designers manifested the important features of Ottoman Islamic mosque architecture is Muslims' religious beliefs, (Hillenbrand, 1994). Generally, Ottoman Mosque Plan consists of: prayer room covered by hug dome supported by Semi-domes and couplettes and be the part of complexes. The architecture of mosques in Ottoman area confronted with changes from traditional design approaches up to contemporary periods in eight critical periods which are:

1. Early Ottoman Period (13^{th}-14^{th}):

Actually, the duration between (1300-1453) known as the first spark of Ottoman Empire with the new and outstanding work regards to traditional mosques' artistic or architectural design progress in either exterior or interior aspects.

Comprehensively, this period applied the three prominent types of mosque; tiered, single-domed and subline-angled mosque. It is necessary to pointed out that, Hacı Özbek mosque (Figure:25) is the first constructed and center of Ottoman mosque art and architecture which was built by Haci Özbek bin Muhammad in (734 A.H). The mosque involves single-unit base design with square hall with emphasizes of central dome [(Height: 8m), (Form: Dodecagonal- Triangle plan)] and columns inspired by Byzantine style. On the basis of historians point of view two porches- portico- added

in 1940 and the last one on 1959. The main point is the mosque free from the minaret element and the construction material of the mosque is brick and rubble stone (Arcnet,2009).

Truly the other important mosque built in early period was Sultan Bayazid I (1391-1395) (Figure:26) in Bursa. The mosque's architectural design comprises a central hall, two unequal domes, semi-domes, Mihrab in the southern side and two minarets.

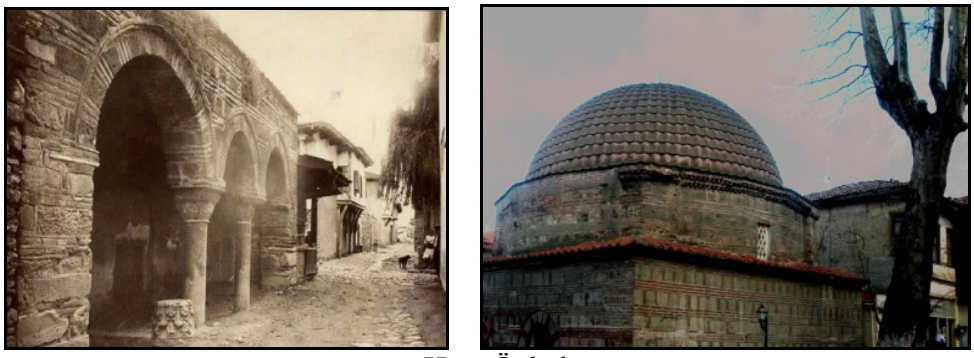

Figure 25: Hacı Özbek mosque.
(Arcnet, 2009)

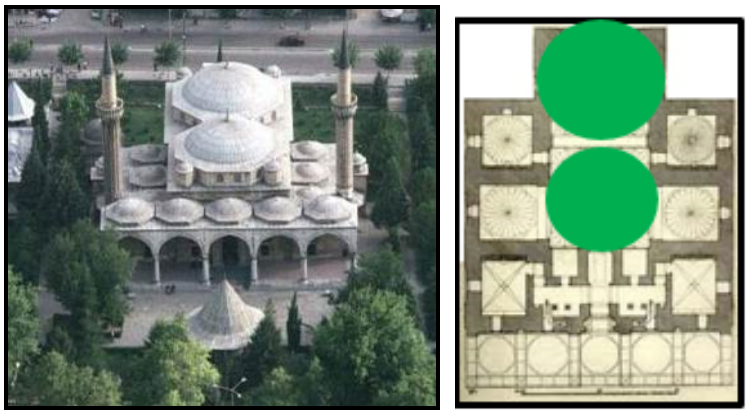

Figure 26: Sultan Bayazid I mosque.
(Arcnet, 2009)

- Yesil mosque

Yesil mosque (Figure:27) is one of the earliest mosques constructed in Ottoman period by Sultan Murad I in (1378-1391; 780-794 A.H) in Iznik. The architectural

features of mosque involves one single dome with e windows (Height: 17m), three porches and single prayer hall.

Figure 27: Yesil mosque.
(Arcnet, 2009)

2. Bursa Period (13th -14th)

In this period the mosques structural process and architectural procedure especially in dome developed dramatically. The Great mosque (Ulu Cami; 1396-1399) (Figure:28) in Bursa as the first Seljuk mosque faced with crucial transformation which was the addition of domed form. The style of the mosque reveals the feature of Seljuk Empire- huge stone square with small scale domes- in the center of the square based plan there is a huge glass-covered opening in order to either emphasis on lighting or central visual attendance (Travel Planer, T, 2015).

Like Bursa, Edirne is the second important and last capital before Istanbul in Turkey during Ottoman Empire that was witness of ultimate architectural progress in traditional mosques design approaches. The important mosques constructed in this period were Bayazid II, Yesil, Fatih and Mahmutpasa mosques.

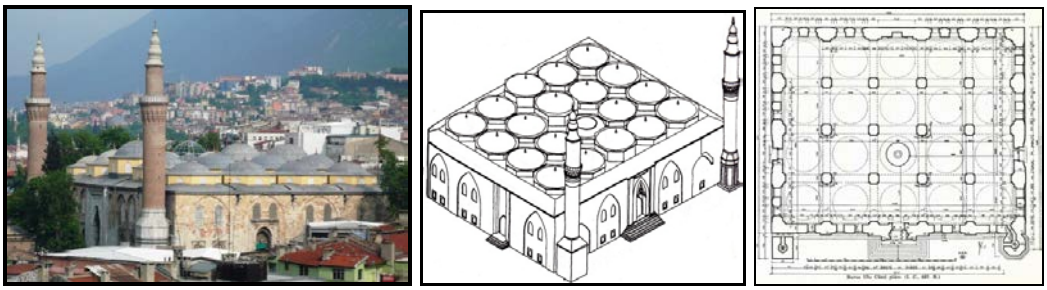

Figure 28: Great mosque (Ulu Cami).

- Bayazid II mosque

The mosque (Figure:29) constructed by Sultan Bayezid II in Ottoman Empire and it situated in his complex in Istanbul. Practically, the architectural style of the mosque compromises the amalgamation of Ottoman and Western technical approaches. The architectural features of the mosque contains mosque cubic base form, single-dome with high height that covers square prayer hall, semi-dome supporters, rectangle courtyard-surrounded with porches in four sides- three Northern gates and two marble minarets (Height:38 m) (Ersoy, I,2001).

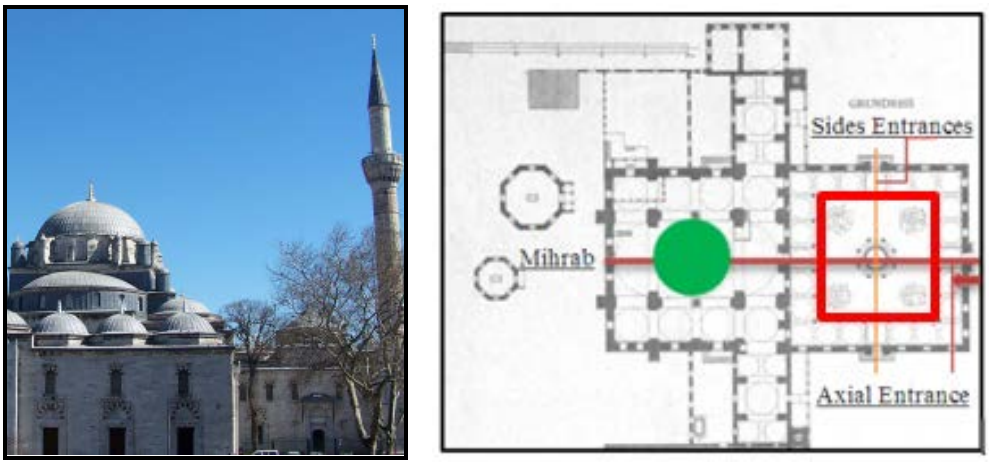

Figure 29: Bayazid II mosque.
(Author, 2015)

3. Classical Period (14th-17th)

The focal point of mosque architectural design in this area was outstanding unification and harmonization that inspired from Byzantine style especially Hagia-Sophia mosque. The vital changes refer to the mosques' plans, interior space and outer and indoor courtyards. One of the most influential architects in classical period in Ottoman Empire was Mimar Sinan (1492-1588). He designed different kinds of mosque by which he the skylines of Istanbul to the most desirable ones. He made a huge transformation in mosque space architectural procedures. He applied dome-based structure, scale and proportional changes, open interior which insisting on lighting and huge windows free from structural system. Mimar Sinan master pieces are Selimiye (1569-1575) and Suleymaniye (1558) mosques (Grupico, 2011). The mosques which are built classical period are:

- Fatih Mosque (1463-1470):

The Fatih mosque (Figure:30) was constructed by Mimar Sinan. The architectural elements of the mosque contain; two large scale domes, Semi-domes as supporters on the Mihrab side, two pencil minaret. The noticeable point is that, the mosque built during ignorance and superstition period which refers to the low level of civilization. Accordingly, Faith mosque was the first symptom of enlightenment during European primitive cultural and social circumstance.

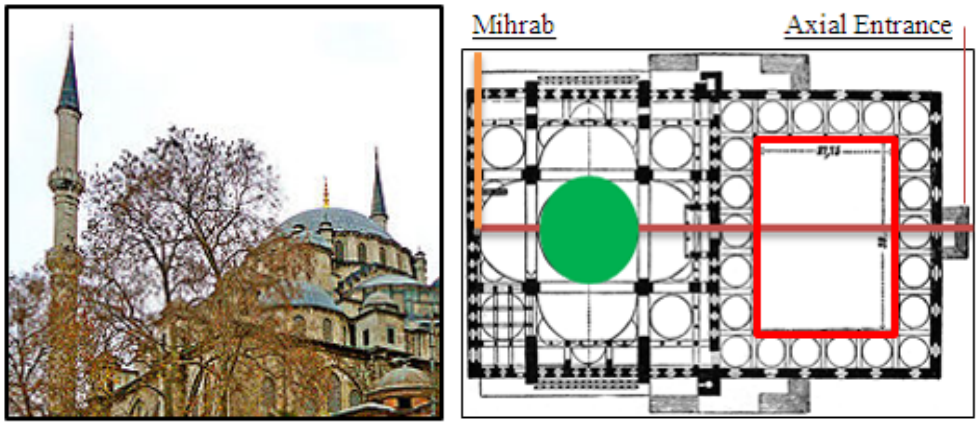

Figure 30: Fatih mosque.
(Arcnet, 2009)

- Haseki Hürrem Sultan mosque (1539-1551)

The mosque (Figure:31) is located on the Hürrem Sultan complex. She was the first Sultan Süleyman wife in Ottoman Empire. Notably, it was one of the Sinan's masterpieces in Istanbul as a chief architects. It has a one huge main dome and second supportive dome and semi-domes (Height: 12m) with base square plan and its architectural design process took some form transformation because of the earth quake (Istanbul, 2012).

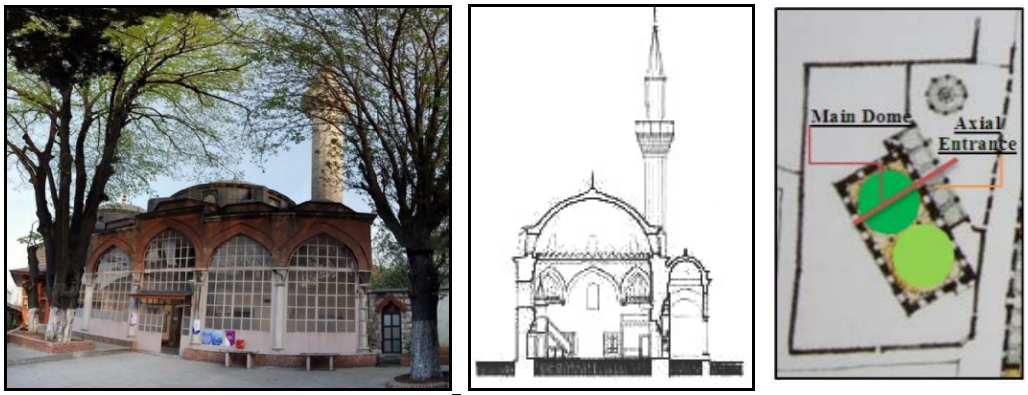

Figure 31: Hürrem Sultan mosque.
(Dedes,Y,2004)

- Şehzade Mehmed mosque (1543-1548)

One of the most prominent and outstanding monuments of Ottoman Empire during classical period is Şehzade Mosque (Figure:32) in Istanbul during Sultan SuleymanI and designed by Mimar Sinan. This mosque is the Symbol of Father's love for his son (Sehzade Mehmed). The mosque is an ancient historical core as a third hill of Istanbul (URL: 76). The most delicate architectural design in this mosque is the existence of inner colonnaded-courtyards that preserves mosque and its belonging as well. The Şehzade mosque has square bas plan covered by central dome (Height: 19m) which reinforced by four semi-domes. Its two minarets represent the geometric aesthetical features applied bas-relief (Whereist Istabul,2013).

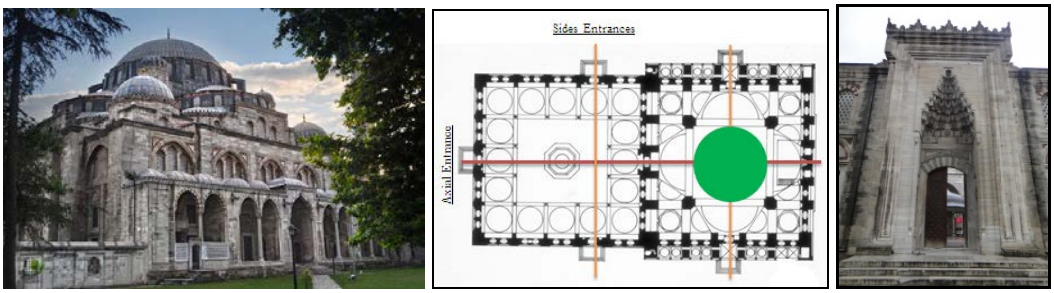

Figure 32: Şehzade Mehmed mosque.

- Cihangir Mosque (1559 Completed)

The Cihangir mosque (Figure:33) is one of the Mimar Sinan's masterpieces which has been built for commemorate Sultan Süleyman son in Istanbul. Originally, mosque was built in wood structure but after it got on fire the architects renovated the mosque by more rigid material. By looking precisely, it is clear that the mosque architectural designs inspired by Byzantine approaches in Baroque style (Coronucopia, 2015) .

Figure 33: Cihangir Mosque.
(Coronucopia,2015)

- Zal Mahmud Pasha mosque (1551-1577)

One of the other works of Mimar Sinan in Ottoman period is Zal Mahmud Pasha mosque (Figure:34) in Istanbul Turkey. The architectural characteristic of this mosque is totally different from others in Ottoman period. Obviously, the pencil minaret makes it as an Ottoman monument like other ones.

Figure 34: Zal Mahmud Pasha Mosque.
(Coronucopia,2015)

- Mihrimah Sultan mosque (1561-1563)

The Mihrimah Sultan mosque (Figure:35) designed by Mimar Sinan for Sultan Suleiman's daughter in Edirne near the Byzantine land walls of Istanbul. For the growing number of people the mosque known as the magnificent land mark of the

Istanbul. Like Rustam pasha mosque it built on the terrace towards main street. There is an existence of large ablution place in the middle of court yard. The architectural features of the compromise minaret, mosque square base plan with huge dome on top and semi-supportive domes.

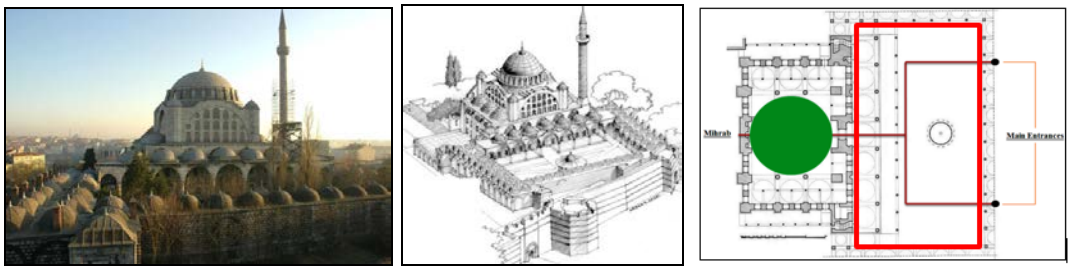

Figure 35: Mihrimah Sultan mosque.

- Selimiye mosque (1568-1574)

The Selimiye mosque (Figure:36) constructed according to Sultan Selim commission by Mimar Sinan in Edirne neighborhood of Faith mosque. It located on the center of Selimiye complex which involves Bazar and Madrasah. The mosque applied four minarets, huge dome in square base plan stands on four supported semi-domes and eight pillars. Its structural system reminds the churches in Istanbul. Generally, it is more illuminating rather than other mosques in ottoman period.

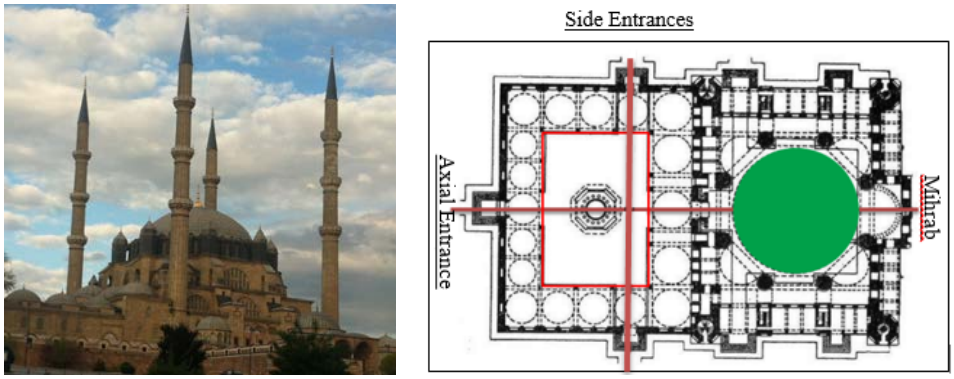

Figure 36: Selimiye mosque.
(Author, 2015)

- Sultan Ahmed mosque (1616 completed)

The mosque has been built in order of Sultan Ahmed (Blue Mosque) (Figure:37) after defeated from War. He decided to construct the huge and imperial mosque in Istanbul as the last Ottoman Empire mosque. On the basis of philosophical point of view, it takes forty years to construct Sultan Ahmed mosque. The mosque situated on the site of the Byzantine palace in front of Hagia-Sophia mosque as significant monuments in Istanbul (Blue Mosque,2003).

The architectural characteristic of the mosque involves the main and central dome alongside eight supportive Semi-domes, six pencil minaret. The prominent point is its architectural design approaches is the combination of Byzantine style and traditional Islamic mosque architecture. The architect took Mimar Sinan's conceptual and structural idea in order to design the mosque.

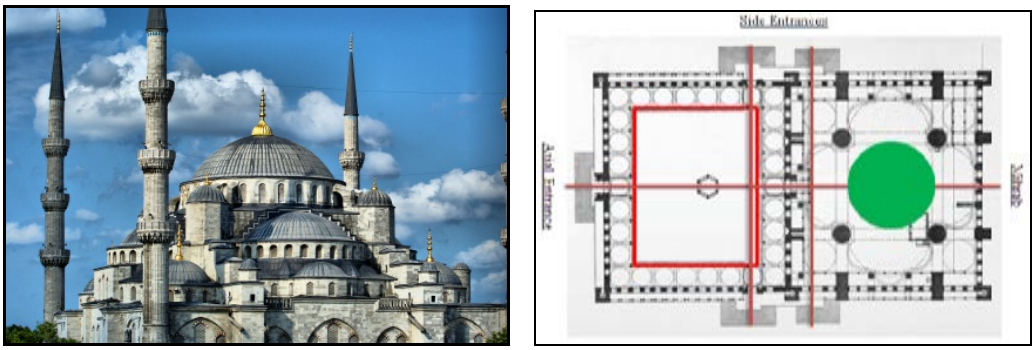

Figure 37: Sultan Ahmed Mosque.
(Dedes,Y,2004)

4. Modernization Period (17^{th})

Historically, the modernization era began with the industrial revolutions which severely had great impact on economical, social and cultural aspects of individuals' life style. It should be pointed out that the Ottoman Empire did not go through such

revolution but affected by its either positive or negative outcome of such revolution. Practically, this period reveals as a result of corporation between Sultan Ahmed dynasty with Europe especially France. Basically, in this period Ottoman's both art and architecture affected by fundamental styles of that period known as Baroque and Rococo ones. The style which came from the amalgamation of Ottoman and Europe named Seljuk-Baroque style which expanded to Italy and became famous among Turks in Ottoman Empire. In modernization period Ottoman traditional mosque architecture preserves other pervious style without any prominent changes (Sonmezer, S, 2012).

5. Tulip Period (1703-1757)

The initiation of open and public areas occurred in this period in Ottoman Empire. In this period, there was an improvement in water side infrastructure as a basic structural and design approaches in traditional and religious buildings especially mosques. For Ottoman architects there was an ignorance of classical approaches in designs. Accordingly, they tried to fallow new approaches in mosque architectural design as Baroque style (Rachel, R, 2013).

6. Baroque Period (1757-1808)

In this era traditional mosque architectural design confronted with the utilization of curve and wavy lines either in exterior or interior spaces. The important mosques of this period are:

- Nurosmaniye Mosque (1749-1755)

The mosque (Figure:38) is one of the most prominent mosques in Ottoman Empire as the first mosque in Baroque style located in Istanbul. One of the crucial distinctions between Nurosmaniye mosque and other Ottoman is the abstraction of water foundation. The prayer hall completely covered with one dome without any supportive semi-domes and its two minarets has two story balconies. The other difference is in the shape of courtyards and their porticos which is semi-circular in Nurosmaniye as a unique characteristic.

Figure 38: Nurosmaniye mosque.
(Author, 2015)

- Laleli Mosque (1760-1783)

The mosque (Figure :39) was constructed by the Sultan Mustafa with its Baroque style in Istanbul. As the details represents, it situated on the high height terrace over the volume of vaulted shops or stories. To some extent, the arrangement of the porches in courtyard created new design approaches rather than other mosques in Ottoman Empire. Notably, the size of courtyard is bigger than prayer hall- proportion changed. The two minarets with one balcony built on the courtyard entrances.

Figure 39: Laleli mosque.
(Arcnet, 2009)

7. Empire Period (1757-1808)

This period had a great progress parallel with westernization process commissioned by Sultan Mahmut in Northern-Western Anatolia. The two important traditional mosques built in the Empire period which are:

- Nusretiye mosque (1808-1876)

The mosque (Figure :40) constructed with the order of Sultan Mahmut in Istanbul. The mosque has a magnificent architectural ornamentation in both Islamic and Baroque styles. Generally, in spite of the amalgamation between these two styles it conserves its Baroque style in its entire form which makes it as unique one in Istanbul. The mosque has a square base plan with huge dome (Height: 33m) on top with two minarets. There are two additional spaces in both sides of the entrance refer to royal residences.

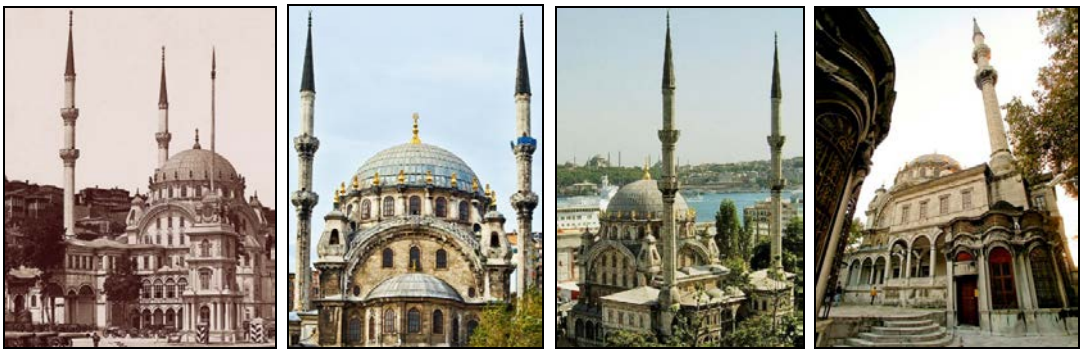

Figure 40: Nusretiye mosque.
(Islamic Art & Architecture, 2015)

- Ortaköy Mosque (1853-1856)

The Ortaköy mosque (Figure :41) is situated near the see side in Istanbul. It constructed according to Ottoman Sultan Abdülmecid during (1853-1856) and its architects were American who designed it in Neo-Baroque style. The prayer hall has nearly rectangle base plan covered by dome on top. Basically, the prayer hall is bigger than courtyard and it has to minarets with one balcony (Islamic Art & Architecture, 2015).

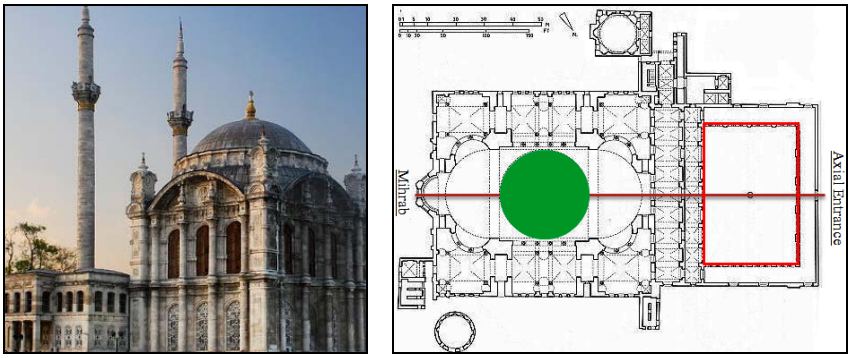

Figure 41: Ortaköy mosque.
(Islamic Art & Architecture, 2015)

8. Late Period (1876-1922)

For historians and Islamic philosophers the late period is the final and last Ottoman's period in architecture. This era known as the first national style of renaissance in

Turkish architecture. The architects had an attempt to revive the Ottoman style with reference to new construction and approaches, structural and design techniques and material which seems to be traditionally in Ottoman style. Practically, late period is the mixture of Ottoman style and contemporary ones with Gothic stylistic approaches. One of the most significant mosques in this period is Pertevniyal Valide Sultan Mosque.

- Pertevniyal Valide Sultan Mosque (1872 Completed)

The mosque constructed in the center of Valide Sultan complex with single-domed, prayer hall square base plan and two minarets with one balcony follows the traditional rules and regulations. The abstraction of the courtyard is the other point of space organization of Pertevniyal Valide Sultan mosque. Truly, the triangular pediments in four sides of façade illustrate the Gothic stylistic approaches. The mosque is of great worth because of its variety of decorations either in Ottoman-Muqarnas and geometric ornamentation; Ottoman classical- and Gothic styles.

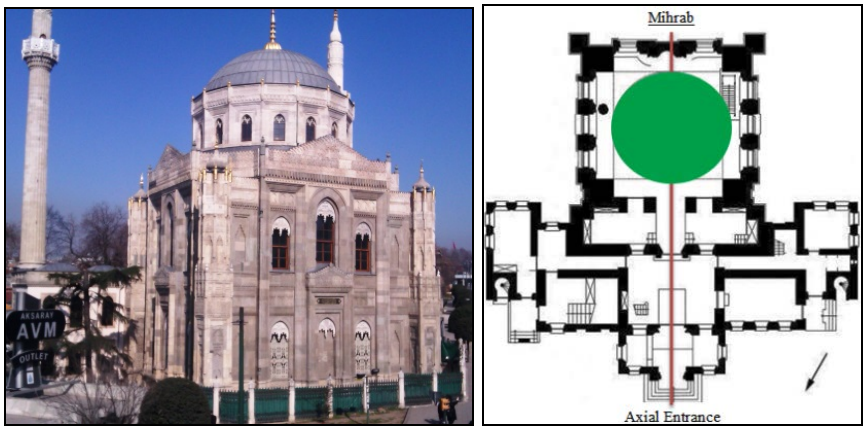

Figure 42: Valide Sultan Mosque.
(Islamic Art & Architecture, 2015)

Table.6, represents the significant periods in Turkish traditional mosque architecture and their prominent architectural features which started by prehistory of Anatolia and eastern Thrace, Antiquity and Byzantine, Ottoman Empire (Seljuk) and Republic of Turkey. The periods in Ottoman Empire are; Early Ottoman and its prominent architectural features are: Tiered and single-domed, sublime-angled mosque, single-unit base design, central hall and semi-domes. Bursa Period and its prominent architectural features are: dome structural process, dome architectural process, addition of domed form and huge Stone Square with small scale domes. Classical period and its prominent architectural features are: inspiration from Byzantine style, changes in interior space, outdoor and indoor courtyard, free structural system and changes in mosques' plans. Modernization period and its prominent architectural features are: Baroque and Rococo styles had an great impact on designs, Ottoman and Seljuk-Baroque styles and preserves other pervious style without any prominent changes. Tulip period and its prominent architectural features are; initiation of open and public areas, water side infrastructure as a basic structural and design approaches in mosque architecture and ignorance of classical approaches in designs. Baroque period and its prominent architectural feature is utilization of curve and wavy lines either in exterior or interior spaces. Empire period and its prominent architectural feature is westernization process and the last era is Late period and its prominent architectural features are; First national style of renaissance, revive of the Ottoman style, modern construction and approaches, structural and design techniques and material seems to be traditionally in Ottoman style and mixture of Ottoman style and contemporary with Gothic stylistic approaches.

Table 6: Significant periods of Turkish traditional Islamic mosques

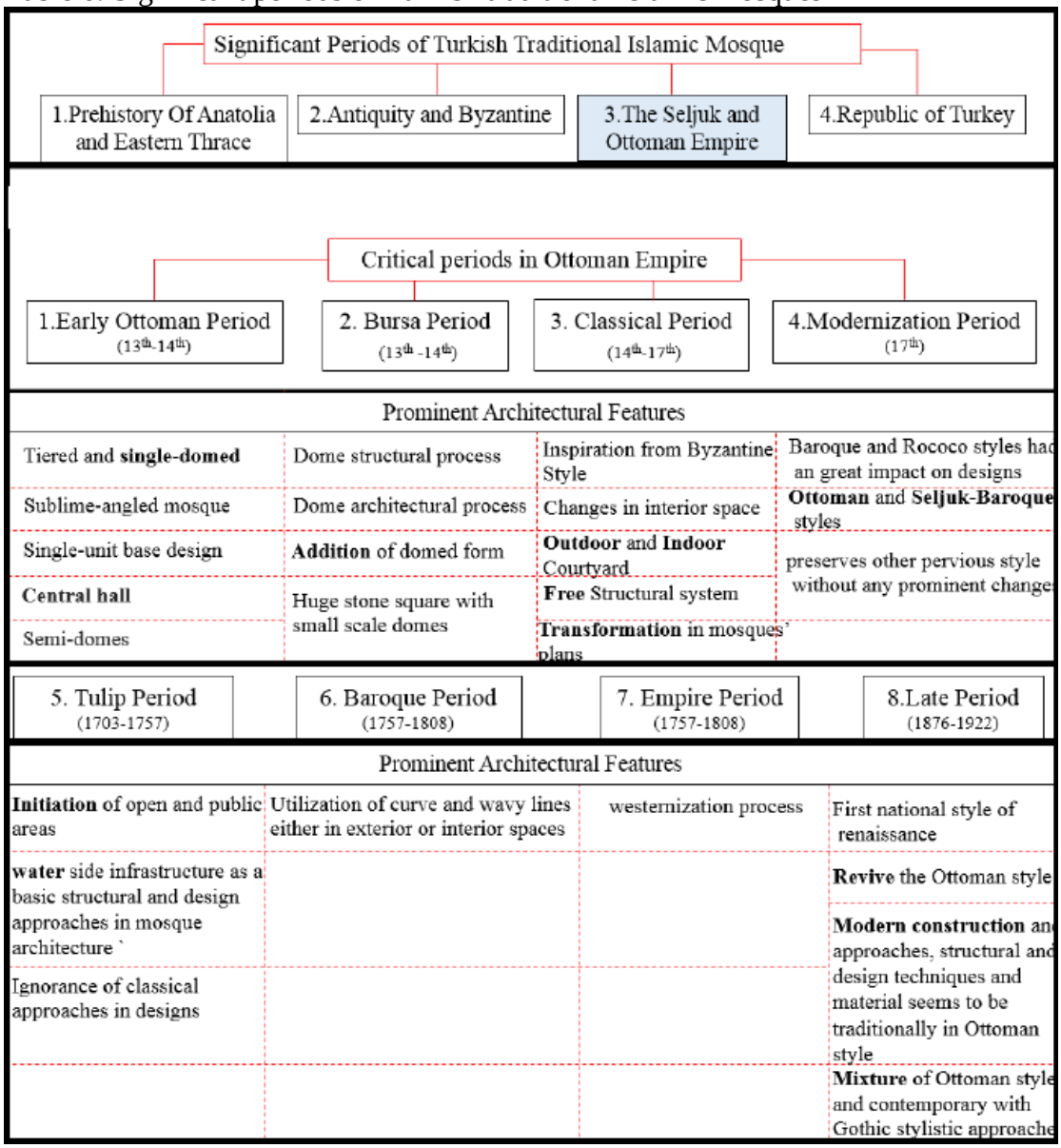

Table.7, represents the generic types of twenty-one important Turkish traditional mosques with their date of construction. Types of Turkish traditional mosque determined by their similarities and differences on their sacred elements which are Mihrab, courtyard, minaret, dome, forecourt, porch and ablution place and each of the mosque have its own formal configuration which defined the type of that specific mosque. According to this table the fundamental and basic type of Turkish mosques generated which is: central dome with semi-domed wings and central dome chamber.

Table 7: Generic types of traditional Islamic mosques of Turkey

			GENERIC FORMS							MOSQUE TYPOLOGY						
			Mihrab	Courtyard	Minaret	Dome	Forecourt	Ivan	Ablution place	Hypostyle	Hypostyle With Dome	Hypostyle With Domical Vaulting	Four-Ivan	Central Dome	Other	Century
No	NAME	LOCATION														
1	HACI OZBAK	IZNIK	●	○	○	●	●	○	●	○	○	○	○	●	○	734
2	YESIL	IZNIK	●	○	●	●	●	○	●	○	○	○	○	●	○	1378-1391
3	SULTAN BAYAZID 1	BURSA	●	○	●	●	●	○	?	○	○	○	○	●	○	1391-1395
4	ULU	BURSA	●	○	●	●	●	○	●	○	○	●	○	○	○	1396-1399
5	FATIH	ISTANBUL	●	●	●	●	●	○	●	○	○	○	○	●	○	1463-1476
6	SULTAN BAYAZID 2	ISTANBUL	●	●	●	●	●	○	●		○	○	○	●	○	1501-1506
7	HUREM SULTAN	ISTANBUL	●	○	●	●	●	○	●	○	○	○	○	●	○	1539-1551
8	SEHZADE	ISTANBUL	●	●	●	●	●	○	●	○	○	○	○	●	○	1535-1558
9	IBRAHIM PASHA	ISTANBUL	●	●	●	●	●	○	●	○	○	○	○	●	○	1551.COM
10	SULEYMANIYE	ISTANBUL	●	●	●	●	●	○	●	○	○	○	○	●	○	1550-1558
11	CIHANGIR	ISTANBUL	●	○	●	●	●	○	●	○	○	○	○	●	○	1559.COM
12	MAHMUD PASHA	ISTANBUL	●	○	●	●	●	○	●	○	○	○	○	●	○	1551-1577
13	RUSTAM PASHA	ISTANBUL	●	○	●	●	●	○	●	○	○	○	○	●	○	1561-1563
14	MIHRIMAH SULTAN	EDIRNE	●	●	●	●	●	○	●	○	○	○	○	●	○	1562-1568
15	SELIMIYEH	EDIRNE	●	●	●	●	●	○	●	○	○	○	○	●	○	1568-1574
16	SULTAN AHMED	ISTANBUL	●	●	●	●	●	○	●	○	○	○	○	●	○	1616.COM
17	NUR OSMANIYE	ISTANBUL	●	●	●	●	●	○	●	○	○	○	○	●	○	1749-1755
18	LALELI	ISTANBUL	●	●	●	●	●	○	●	○	○	○	○	●	○	1760-1783
19	NUSRETIYE	ISTANBUL	●	○	●	●	●	○	●	○	○	○	○	●	○	1808-1876
20	ORTAKOY	ISTANBUL	●	●	●	●	●	○	●	○	○	○	○	●	○	1853-1856
21	VALIDE SULTAN	ISTANBUL	●	○	●	●	●	○	●	○	○	○	○	●	○	1872.COM

Table.8, represents the three basic types of traditional Islamic mosques of Turkey rooted and resulted from generic types mentioned in table 7. These basic types derives from the central dome mosque with semi domes wing in different scales which are: Small scale, Viziral and Imperial. The small scale mosques involves; main prayer hall, central dome, primary and secondary galleries and minaret (thick and tall). The Viziral mosque involves; main prayer hall, central dome, semi-domes, couples, primary gallery and minaret (thin and tall). The imperial mosques involves; main prayer hall, semi-domes with neck, couples, primary and secondary galleries, sides edges, ornamental facades, four up to six pencil minaret and courtyard. Actually, three important traditional mosques include these types are Rostam Pasha mosque (small scale), Hadim Ibrahim Pasha mosque (Viziral) and Suleymaniye mosque (Imperial).Based on the research methodologies mentioned before these mosques chosen as case studies of Turkish traditional mosques.

3.4.4 Turkish contemporary mosques

The architectural features of contemporary mosques of turkey applied imitating from Traditional Islamic Ottoman Mosque and Contradict to traditional architecture methods.

- Samples of contemporary mosques of Turkey
    - Kınalı mosque (1964)

Kinali mosque (Figure:43) built in one of the Istanbul's Island near the ocean. It is small scale mosque with totally modern language by contemporary approaches. The secular architectural design of the mosque related to the form, plan and material severely insisting against the basic identity and meaning of the mosque in traditional method and put behind the spiritual space but instead demonstrates human pride and its work. The form of mosque's minaret (Avant-garde) and its pyramidal roof shape (figure:44) designed in varying heights instead of traditional dome, the material of walls and edges, vertical and horizontal glass windows and reinforced concrete plats creating new developed method as a modernistic structuralism style in mosque architecture (Urey, Z, 2010).

Figure 43: Kınalı mosque.

By looking precisely at Kinali mosque plan deductions reveals both of prayer hall and courtyard applied polygonal shape. Without considering its polygonal shape the only similarities between Kinali mosque and traditional mosque is in the meaning and function of court yard as the gathering public place for performing praying regulations with ablution fountains and small transition space. The plan involves shops, additional spaces and Imam's settlement area. Generally, this mosque and its elements have an attempt to give the image of mosque in progressive method to the individuals and remembering the concept of mosque.

Figure 44: Kınalı mosque.

- Electricity mosque (1988)

In 1988, Electricity mosque (Figure:45) constructed in Ankara with its bulky and secular volume.by the first glance, the mosque consist of two cubic horizontal and vertical forms with inflexible edges. It is necessary to pointed out that it is small scale mosque with non-public characteristic which is contradict to traditional Islamic mosque feature. The Electricity mosque is made of reinforced concrete in white color with octagonal prayer hall and minaret tried to preserve its traditional version involves one gallery on top. There is the usage of vast number of vertical and

horizontal lines begins from ground and goes up to dome form and structure to play a role as a neck of dome.

Truly form of the dome is completely different from the form, identity and structure of traditional Islamic mosques and it has octagon form plan raised up to the pick point with sharp edges and look like isolated modern building which by force added to the mosque building to demonstrate the image of the mosque as a whole. The dome supported by concrete plate instead of semi-domes that used in the structure of traditional Ottoman mosque. Such system designed by triangles in mosque facades.

The similarity between this mosque and traditional ones is the appliance of two pair symmetrical minarets. The abstraction of the courtyard and existence of the canopy is other new technical approaches which used as gathering area in the same axis with main entrance and Mihrab. The form of the transition space confronted with changes which went inside of the mosque's main body. Generally the mosque keep its centrality like traditional types.

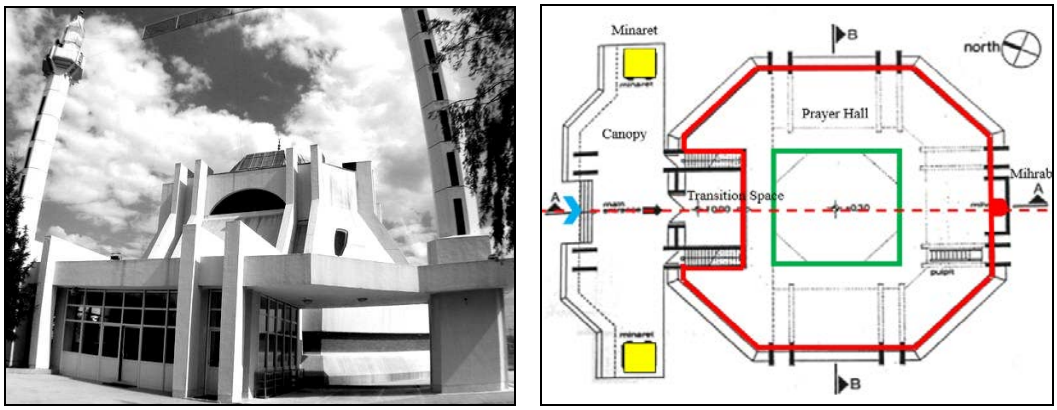

Figure 45: Electricity mosque.

- Buttim mosque (1996)

The mosque constructed for a complex in Bursa in a huge parking lot. In Turkey. The important point is that this secular mosque designed diagonally in the land scape because of the Quibble direction. The mosque (Figure:46) constructed by reinforced concrete and consist of four cubic form with eight columns in different size on top of each other and in overall view the form of the mosque is similar to pyramid with four points on the ground and one on top as geometric connection point. The last cubic form on top with its centrality tries to induce the image of dome by its sharp edges in secular way. The ablution fountain existed in a land scape covered by steel and glasses. Buttim mosque's minaret (Avant-garde) is located in a distance from the mosque building in a green area along with modular square shape in vertical arrangement with loud speakers on top of it. There is abstraction of courtyard as spiritual element in mosque architecture instead there is only the green area surrounded the mosque building induces feeling of the courtyard. The outstanding point caused secularity is the location of mosque in a place which is full of man-made products.

The other basic note in Buttim mosque architectural design is the form of porch in modern way in which the rules of traditional approaches followed in the number of semi-domes in main gallery but in cubic form. The entrance to the prayer hall emphasized by vertical framework consists of modular square fragments.

Figure 46: Buttim mosque.

- Yeşil vadi mosque (2004)

This contemporary mosque (Figure :47) designed by Adnan Kazmaoğlu in Istanbul with reinforced concrete shell structure. It constructed in open space neighborhood with uncompressed context and doesn't apply for public space in urban scale. The mosque applied mezzanine space on its architectural form which is not seen before in mosque architectural design. It worth to note that the mosque situated in landscape which has level differences. Predominantly, secular aspects of the mosque demonstrates on the form formation, elements, material and the abstraction of openings in sides of the mosque. There is abstraction of courtyard in the mosque like other modern mosques. Muslims directly pass through from street to the rectangle form as courtyard to enter the mosque. The entrance in ground level defined in its modest architectural form which disturbs the sense of entrance with its arch shape but the main entrance situated on mezzanine floor in North side. The basic volume of the mosque consist of a cube and nested semi-spheres built as a dome. By looking precisely at form of the dome, the redial lines which comes from the center of circular shape has an attempt to insisting the image of the mosque which preserve its unity but the way of their artificial arrangements make it non-spiritual.

The plan of the mosque has circle shape in order to conserve its centrality and unity. Minaret of the mosque has free standing structure-galvanized sheet- with one balcony.

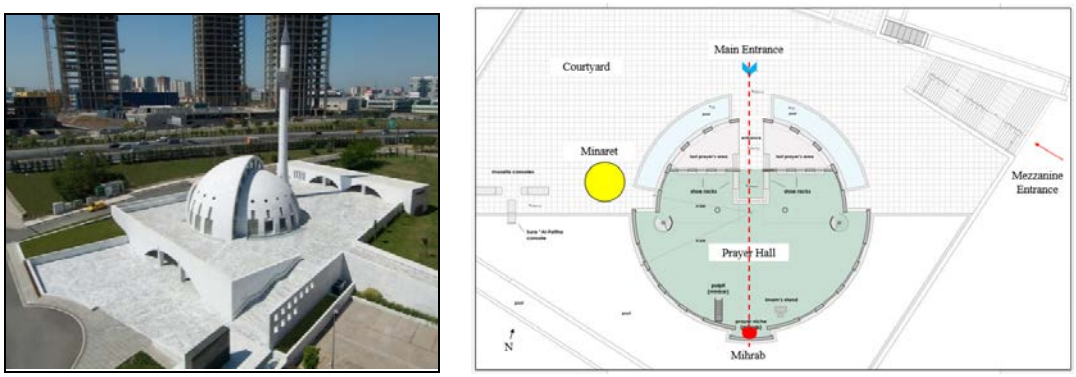

Figure 47: Yeşil vadi mosque.

- Derinkuyu Mosque (1971)

The Derinkuyu Mosque (Figure:48) situated in Nevşehir Province in Turkey. It constructed in a small scale in a green area with rectangle shape. The structural system of the mosque applied reinforced concrete. Derinkuyu Mosque has single and integrated form in which minaret with its curve form in base and sharp edge at peak point situated at the one end.

The prominent point in such mosque architectural design increasing secular aspect is the abstraction of dome and courtyard as the basic elements of spirituality in mosque architecture which is against traditional formal organization. Generally, the mosque has rectangular plan as an uncommon revolutionized method. Main entrance covered by concrete canopy and furnished.

Figure 48: Derinkuyu mosque.

- Sancaklar mosque (2012)

Sancaklar Mosque constructed (Figure:49) in suburb of Istanbul in 2012 by Emre Arolat. Based on observations the fundamental aim of such architectural design approaches is to creating religious space with the reference to the mosque against traditional formal organization based on secularity. Mosque located in the ground with level differences led to the creation of two open and semi-open area as courtyard. Sancaklar Mosque consisted of two boundaries which are outside world and topography. The main mosque building situated under the great canopy extended towards some points emphasizing on the entrance which is down the hill. There is an abstraction of dome as the main architectural spiritual element in mosque design methods (Arcnet, 2009).

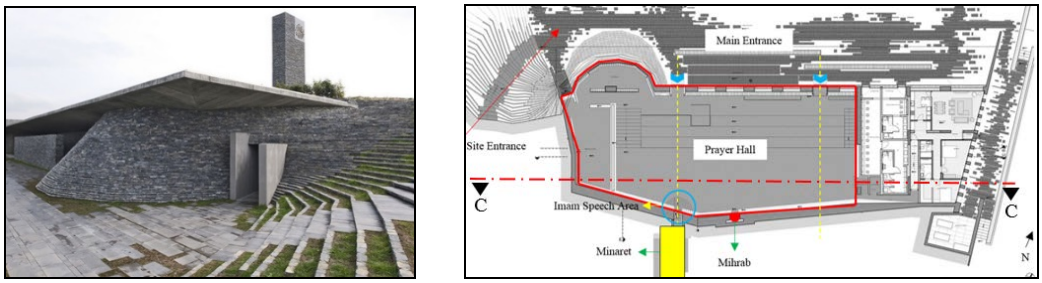

Figure 49: Sancaklar mosque.

There is an existence of stone walls with different heights surrounded the upper open area with visible limitations. Based on the form of the mosque and its position on the ground the main concept inspired by Hara Cave in which Muhammad Prophet became Muslim leader. Generally, the main volume (mass) of the Sancaklar Mosque consist of simple cubic form in different heights diffused on topography. Architect, located vertical surfaces like checkered network creating semi-open court yard.

3.5 Chapter conclusion

Generally, by the overall view and introducing early Islamic mosques as a religious buildings and their propagation and influence on their Islamic countries with emphasizing on Iran and Turkey countries rooted in Muhammad tradition and his mosque, the deduction confirm that core and conjunction point in their significant periods and architectural features is Seljuk period created a ground for making similarities and difference based on their religious beliefs. With the passage of time by the arrival of contemporary period such Islamic mosques confronted with new architectural design in their general characteristics which caused Muslims feel different spirituality in their spaces. Accordingly, next chapter has been dedicated to introduce and evaluate the general characteristic of the Islamic mosques architecture traced back in to traditional approaches.

Chapter 4

GENERAL CHARACTERISTICS OF MOSQUE ARCHITECTURE

Based on Hussein Nasr point of view in order to have spiritually in Islamic mosques there is requirements of compatibility between general characteristic of mosque architecture which are formal configuration, functional relationship, space quality structure and material and elements of the mosque and Muslims religious beliefs. These factors known as the most important agendas in mosques spirituality will evaluated in this chapter.

4.1 Formal configuration

The formal configuration of the mosques refers to the general shape of the mosques building came from the combination of architectural spaces and elements rooted in the general analysis of different types of mosques mentioned in previous chapters. Such architectural spaces and elements involves, dome building, hypostyle, porch, Ivan, courtyard, Mihrab and entrance tried to make integrated composition as whole. Each of Islamic religious has their own mosque formal configuration inspired from Muhammad Prophet mosque. The formal configuration of the mosque defined and designed by the relation between Muslims religious beliefs, spirituality and Allah world. The Triangle below (Figure: 50) illustrated that Allah is the focal point and ultimate power and Muslims are objective to reach his world through their religious beliefs created the formal configuration of the mosques in order to facilitating spirituality as key of Allah world (Soltanzadeh,H,1974).

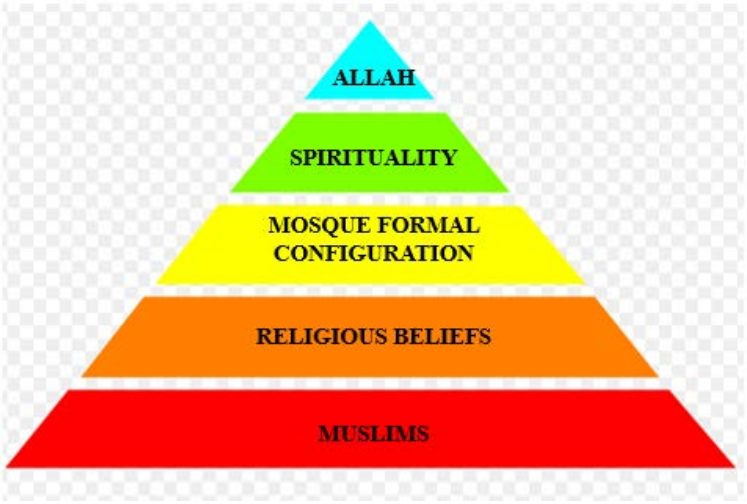

Figure 50: The theory behind formal configuration of Islamic mosques. (Zarrinkub, H, 2006)

In Shia and Sunni religious the formal configuration of the mosque rooted on their beliefs. The Table.9, and Table.10, demonstrate the formal configuration of Shia and Sunni mosques in Iran and Turkey shaped according to Human-Pontificate-Monotheism axis and Human-Monotheism axis.

Table.9, shows Muhammad prophet mosque as a general concept of Islamic mosques formal configuration which its basic principle as introspection penetrated into Iranian mosques and created the courtyard as the vital architectural element in Iranian mosque architecture reveals Human-Pontificate-Allah axis. The final formal configuration of Iranian mosque went through six stages in which there were addition of some important spaces. These stages initiated from the addition of court yard and entrances in separated axes. In the second stage the axis of main entrance and court yard overlapped with each other. In the third stage there is addition of porches and in the fourth there is addition of Mihrab and dome building. In the fifth stage Ivan added as the connection space between courtyard and dome building and in the final ones the formal configuration of Iranian mosque formed by the addition of ritual spaces. Generally, the formal configuration of Iranian Islamic mosque involves, dome-building, hypostyles, ritual spaces, porches, Ivans and courtyard.

The general characteristic of plan formal configuration involves general symmetry, spaces shaped according to main axis and introspection and the general characteristic of section and elevation formal configuration involves modular horizontal and vertical rectangles and symmetry as whole. The mass formal configuration is rhythmic, compress and shaped horizontally (Fathel Khalil, K. 2013).

Table.10, shows Muhammad prophet mosque as a general concept of Islamic mosques formal configuration which its basic principle as introspection penetrated into Turkish (Ottoman period) mosques and created the dome and dome building as the vital architectural element and space in Turkish mosque architecture reveals Human -Allah axis (Kuban,D, 1974).The final formal configuration of Turkish mosque went through five stages in which there were addition of some important spaces and elements. In first stage up to fourth ones there is an existence of simple dome building and the addition of primary galleries in different forms. In the fourth stage there is an emphasizing on dome-building structure and the number of couples increased in the main gallery. In the final stage the structure of dome- building reach its pick with the usage of semi-domes and secondary galleries added to the mosque architectural space in order to creating courtyard. Generally, in the final stage, the formal configuration of Turkish mosque (Ottoman period) involves; Dome-building, Primary gallery, Secondary galleries and Courtyard.

The general characteristic of plan formal configuration involves general symmetry, spaces shaped according to central dome-building and the general characteristic of section formal configuration involves modular horizontal and vertical rectangles and symmetry as whole. The mass formal configuration is rhythmic and shaped vertically.

4.2 Functional relationships

The mosque is a special building has multiple functions known as the main axis of religious and cultural and social activities. The Muslims' religious architecture have a close relation with their daily worships. For having such facts, Muslims went through spaces which have both physical and spiritual functions and proper relationship that severely overshadowed Muslims' mental aspects. This movement begins from the main entrance and end up with dome building.

Figure:51 and Figure:52 in Iran and Turkey Islamic mosques demonstrates, in the first movement Muslims entered to the space before the main entrance as pre-entrance, this space involves the movement from material world into immaterial ones. After wards they pass through the main entrance as the vertical focal point and land mark to stay in neutral space, to perceive their situation and make a decision and unintentional movement towards dome will occur (Kuban,D, 1976). By passing the neutral space they entered to the immense empty space of courtyard which is the beating heart of mosque to sense spirituality and cultural-Imam speeches, praying and reading Quran- and social activities-feast, Friday prayers and Ramadan. Besides this factors courtyard work as central space from which Muslims spread into other mosque's spaces such as hypostyles which are the covered space of the mosque for worship Allah and ablution spaces to free from impurity. From central courtyard they go through porch and Ivan as a common neutral space to prepare themselves for entering into dome-building to obtain and feel ultimate spirituality which is culmination point for touching Allah omnipotence and world (Zarrinkub,H,1999).

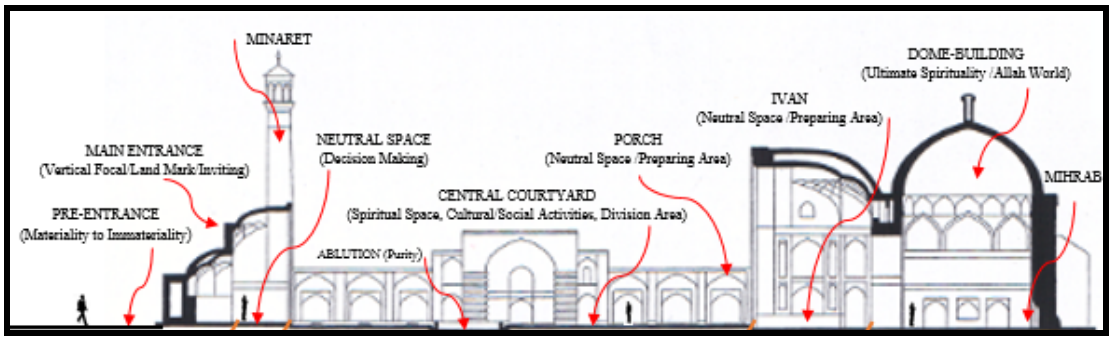

Figure 51: Functional relationship of spaces in Iranian mosques.
(Author, 2015)

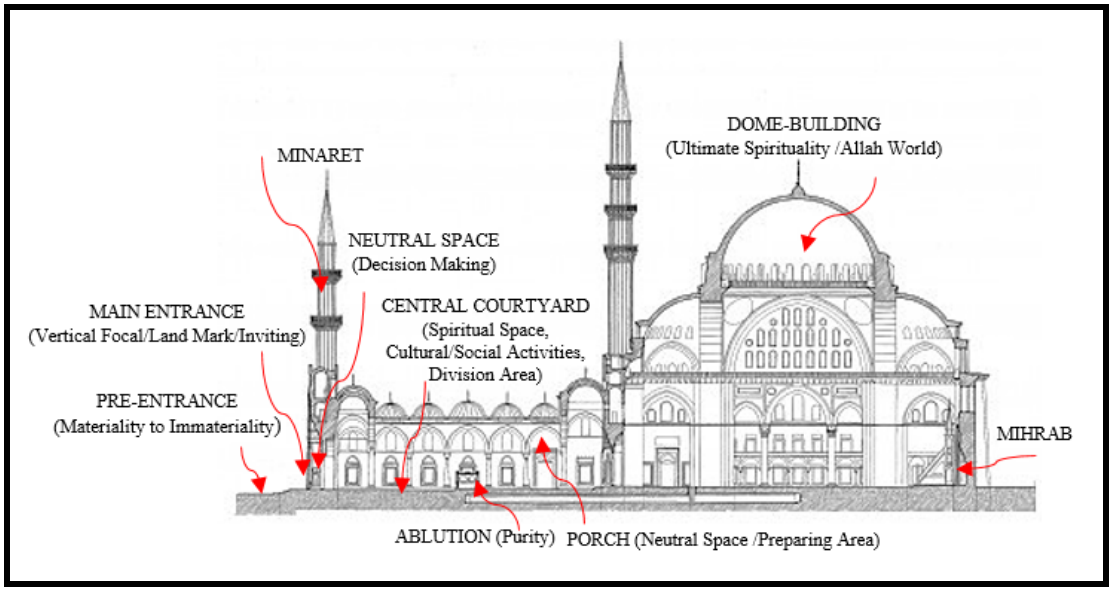

Figure 52: Functional relationship of spaces in Turkish/Ottoman mosques.
(Author, 2015)

4.3 Space quality

The word of space as a general over view conserves everything in the entire world which has been surrounding human as an unlimited senses.Basically, it provides the interaction between humans, objects and environment.The vital point is that, the location of individuals defines the space and on the basis of individuals' viewing zone space can be perceptible.

For philosophers, space as an infinite and accessible source is the fundamental essence and subject for architecture. Mainly, most of the architects believe that space is the most important element of architecture and ultimate goal with its flexible characteristics. Predominantly, most of the philosophers conceive it as a natural fact which designed for specific objective and believe that the thing that makes space as an architectural one is the way of designing not the usage of space. Practically, in response to architectural space it is necessary to make compatibility between human's intuition and space (Suvanajata, R, 2001). It is necessary to stated that the most important fact for Islamic architects in designing mosques is creating architectural space in which Muslims going from material-secular- space in to immaterial-spiritual- ones. In this regard the quality of space play a key role as a bridge between movement from negative space to neutral and then to positive space. The important factors in space quality of the mosques are spirituality, light and openings affected human physical and mental features (Arch daily,2014).

4.3.1 Spirituality

Spirituality defined as ascending form materialism in secular world towards immateriality in divine world. Necessarily, in traditional architecture the focal point of spiritual space is the existence of tradition on the basis of defined rules and regulations which will tremendously and comprehensively overshadowed both human positive and negative physical and mental forces. Virtually, spiritual space tries to make differences between spiritual and non-spiritual spatial boundaries will accelerated on the basis of metaphysical agendas or eliminate by sacred unity. For Richard Kieckhefer, the existence of mosque and its spiritual space as Islamic monument is a metaphor for initiating and entering spiritual relationship. He manifested that mosque sacred space which involves sacred geometric forms can

affect spiritual procedure on the basis of three important factors which are: longitudinal space- emphasizes on sacramental acts, rules and regulations, auditorium space and congregation space- enhance participation in worship (Gokoglu, 2014).

4.3.2 Light

Islamic Architects in building mosques in order to create spiritual space used and connected direct and indirect lights. As showed in (Figure: 53) light is one of the most important elements which has a great influence on mosque's spiritual space by creating depth and vastness in human vision. It led to mosque building became like a source of light which reminds the Allah world. Actually light penetrated into the hardness of the mosque building and made it spiritual. It creating the moveable space in mosque building refers to vertical movement from ground to sky.

Truthfully, the aesthetical features which reveals in mosque architectural design depends on the way of lighting as a main product towards and through the mosque's indented and protuberant form. Primarily, lighting provides two aesthetical features which are apparent and spiritual. Usually, the light in mosque space provided from two main sources which are the direct sun light in hypostyle by the opening and the openings situated on top of the Mihrab in dome. For philosophers, light is a symbol of sacred religious and cosmological facts. In mosque designing process light introduced as a symbol of global system which decomposes into different colors. One of the main characteristic of the light is its immateriality, movement and transformation in to different waves which demonstrates the capability of making space in spiritual and divinity form. In mosque spiritual space light is an influential factor in the spatial relation between Muslims, their religious beliefs and mosque either physical and immaterial space (Antonakaki, N, 2007).

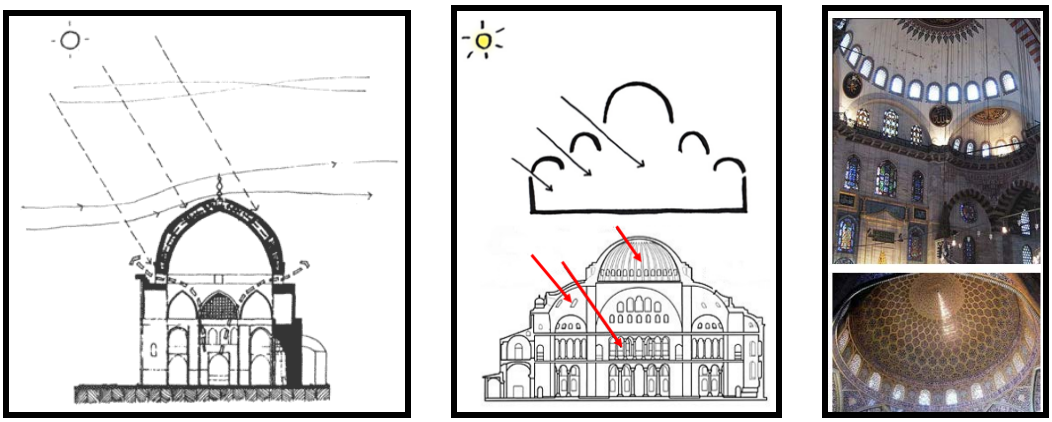

Figure 53: Light and mosque architecture.

4.3.3 Openings

In Islamic mosque architecture there is a usage of light as non-uniform regulation it means that light always adjusted and then entered to the mosque space. The utilization of the light in mosque going through windows (visual seen and entering light), doors (compatibility between indoor and outdoor light), Rozan (photoconductor) and Roshandan (central circle using for entering the light and proper ventilation) considered as openings (Figure: 54) and they often have duty of transmission of light in mosque indoor space and illuminate the surfaces to increase spirituality. The other important duties of openings are they creating both visual and sensory relationship between mosque indoor and adjacent spaces and providing the natural ventilation of the mosque indoor spaces (Bemaniyan, M, 2014).

Figure 54: The Openings of the Mosque.

4.4 Material and structure

Actually, in the past, in Islamic period materials and structures which used for constructing mosques was simple, pure and vernacular so the mosques had thick walls and narrow arches constructed by bricks (used in Ivans, arches ,minarets and domes), Plaster (used for ornamentation in Mihrabs, Ivans and inner surface of the dome) and inscriptions, tiles (used for strengthening the mosque building, covering the dome and minaret, walls and Mihrabs), adobe (total mosque building or some part of it made by adobe or mixed by bricks), stone (used for carpeting the ceiling or for ornamenting the body of mosque, used in foundation and constructing stone inscription), wood (used in doors, windows, columns and beams) and glasses (for lightening and ornamenting doors and frames in dome-building and hypostyles) (Zomoshidi,H,2001).

4.5 Elements

Before talking about mosque elements it is vital to talk about Quibble as the main direction of mosque and its elements. In (Figure : 55) according to Quran manifestation, it is necessary for Muslims praying towards Mecca in which there is a sacred stone as Hajar-Al Asvad in the center of the courtyard which was found by Muhammad Prophet. It is worth noting that, Jerusalem was the first Muslims Quibble in Islamic world which still named as Jews' Quibble but afterwards Muhammad (3AH) changed the direction of Quibble from Jerusalem to Mecca. This performance done after the important pray in Al-Quibblatain mosque in Medina. Basically, the direction towards Quibble plays an important role in mosques and its elements, orientation of the Mihrab and its wall and the performance of the Islamic cities (Prochazka, A, 1994).

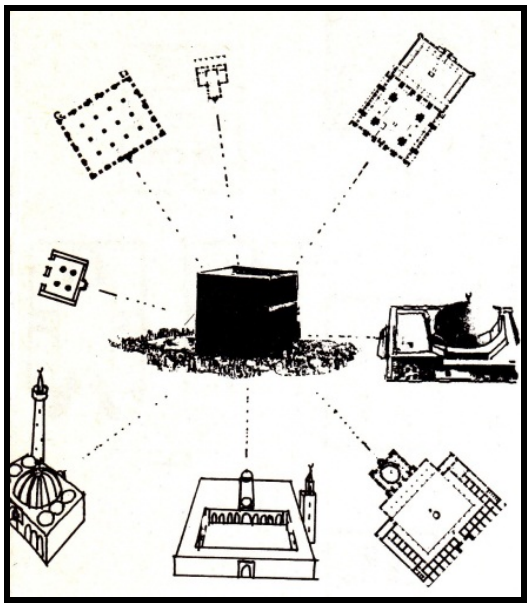

Figure 55: Quibble.
(Prochazka, A, 1994).

- Mihrab (Altar)

Direction towards Mecca which illustrated by Quibble should be determined in constant point, the first solution was a porch and then Harjar-Asvad stone in Mecca but this stone could not be seen by all Muslims so the other architectural element as Mihrab applied instead. In many cases the Mihrab is the indented part of wall. The important point is that, Mihrab in the mosque's space refers to the full spiritual concentration on the mosque's body and the symbol of communication with Mecca. Virtually, for illustrating the importance of the Mihrab architects used different designs and ornaments. The first built Mihrab dates back to (704-667 BC) but in 8th century there were some mosques that they did not have Mihrab and they used curve walls instead. (Figure: 56) The curve structure of the Mihrab stands on two columns which are situated both sides of Mihrab. There is nothing in the Mihrab only the book of Quran and the tremendous point is that the curve shape of Mihrab affects the Acoustical situation of the mosque. Sometimes architects try to design some traditional windows in Mihrab in order to illuminates hypostyle. In many cases the

wall which Mihrab situated in is thick enough as it can be seen in the outer shell of the mosque with ornamentations this situation is one of tremendous characteristic of the mosque (Prochazka, A, 1994) (Hillenbrand, R, 2001).

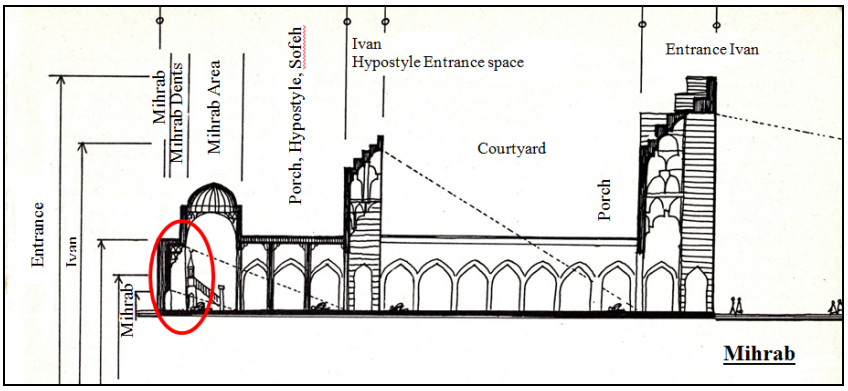

Figure 56: Mihrab.
(Helen,B,2001)

Actually, Mihrab is ornamental elements usually function as a sign in Islamic architecture. (Figure: 57) illustrates there are lots of flat Mihrabs in Iran relatively flat ones in Turkey. The important point is that, some mosques have different kinds of hypostyle such as: summer and winter ones so, on the basis of this fact they have various types of Mihrab. In Turkey, Mihrab situates: in dents before Mihrab or in the bigger ones and in Ivan, According to historians point of view the ancient Mihrabs situated in Islamic civilization (Prochazka, A, 1994).

Figure 57: Iranian and Turkish/Ottoman Mihrab.
(Author, 2015)

- Minbar

Basically, Minbar is one of most delicate and sensitive elements in Islamic architecture especially in Jami mosques and located in wright side of Mihrab but according to historian manifestation in Umayyad period it situated in the Mihrab**.** Although it is not as famous as Mihrab but it has its own importance in Friday prays in order to use Imam's speech. The Friday speech has powerful affects such as: political and legitimacy of the ruling party, according to this perspective architects tried to design Minbar (Hillenbrand, R, 2001). Actually, there is another hypothesis towards the existence of Minbar, through Muhammad Prophet speeches he sat on the wooden bench which has three foots. Afterwards during his period the first sample of Minbar has been built with three steps, so Minibar became an important sign for ruling statement (Prochazka, A, 1994).

The Minbar has ornaments based on geometrical and floral shapes. In addition to wooden Minbars there is a clay one in Tarikhane Damghan mosque in Iran. After 14^{th}, Minbars' new generations built with the addition of tiles especially in Iran and Osmania, Iron, brick and marble in Isfahan in Safavid period. Actually, on the basis of Minbar's solitary characteristic it insists against the mosque's symmetric form.

- Porch

Predominantly, porch refers to the covered columned space which has arches and situated in both sides of courtyard in mosque. The openings of the arches faced to the courtyard and make appropriate connection between mosque's entrances, hypostyle and dome space.

The main structure of porch (Figure:58) dated back to Muhammad Prophet period in order to shelter Muslims. This space did not have specific form it was only like a covered space for meeting and discussions. On the other hand, it functions as an Islamic Madrasah. At the first reconstruction of Muhammad house, porch confronted with some displacement towards courtyard which stands on columns with arches. According to this structure, columns and corridors created checkers shape which accounts for main part of first mosques. According to the displacement of Quibble direction, the porch has been built in front of courtyard and afterwards the four sides of the mosques applied porches. The main point is that the porch which built on Quibble side is deeper than others (Prochazka, A, 1994). In (Figure :59) there are Iranian and Turkish (Ottoman) porches rooted in Muhammad prophet mosque's porch.

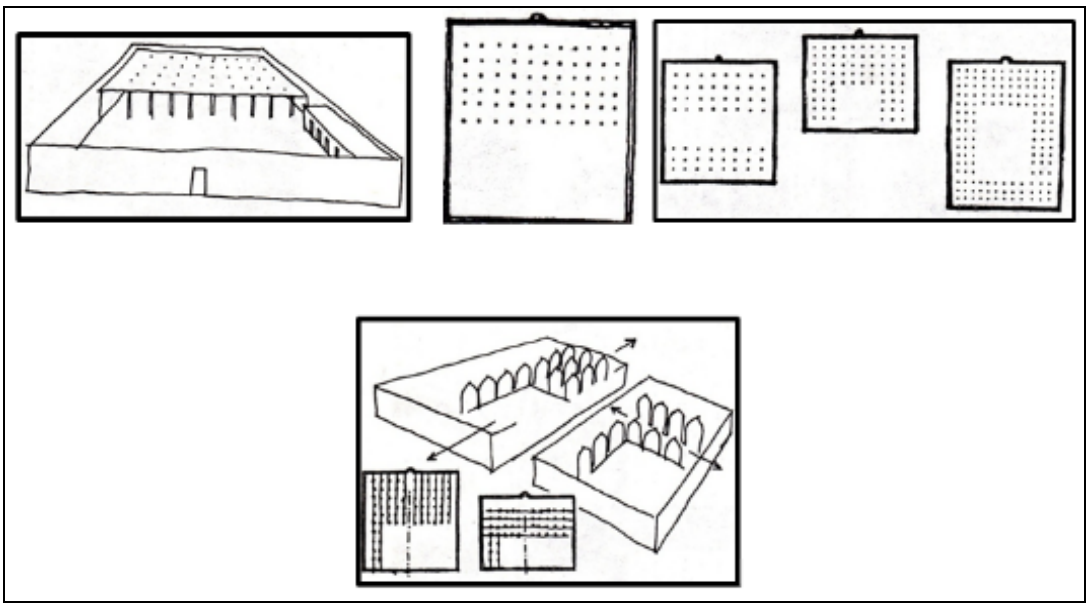

Figure 58: Porch.
(Prochazka, A, 1994).

Figure 59: Iranian and Ottoman porches.
(Author, 2015)

- Minaret

In fact, minaret is one of the most crucial and distinctive elements of the mosque in the history of architecture. Although the word of minaret rooted in Arabic word as a light place or single tower which entered from Turkish language to European ones but the references in Arabic literature are scares. On the other hand minaret is the central elements in mosque architecture which preserve the origin and presents the essence of Islam in visible way, the cultural beliefs of Muslims and became the symbol of victory of Islam (13^{th}) in different periods. Particularly, Ottoman Empire is one of the most tremendous area in which minaret tried to distinguished themselves from others by their immense height. The fact is that, minaret is similar to hands of human kind which rise to God to pointing that "Allah, the one and only" (Rachred Benzine ,2015).

Basically, minaret has different kinds of height and style but generally it is a tower rising from the mosque and traditionally calls for prayer given from the top of the minaret. According to Islamic tradition, Muslims should pray five times in a day which the exact time determines by Azan with the voice of Muezzin (rooted in Azan).

Basically, the minaret has responsibility for Muezzin to call out Azan. It worth noting that, minaret is one of the most tremendous landmarks in urban fabric to demonstrate the way to individuals. When minaret had a square plan (In the past: Syria, East up to contemporary period) they used Monastery word to named it. In the period of Muhammad Prophets in Kabba and Medina, early mosques did not have any minarets in order to call Muslims for pray, so they tried to make special sounds for the praying time or went to the top of the mosque or the city wall to call for Azan ,whereas in contemporary period microphones and speakers have been applied instead in the prayer hall (Gottheil, R. J. (1910).

In Islamic period minaret had three dominant types: square (12^{th} century: Koutoubia mosque), cylindrical (11th century: Seljuk Turks, constructed in Iran and Turkestan) and polygonal-octagonal- (originated in Iran, Samarkand and Cairo). The most desirable and ancient type was square shape with different levels, rooms and windows which rooted in Syria and afterwards has been developed in eastern part of Mediterranean and wide spread in Europe (Spain) by means of Umayyad dynasty. In 12^{th} century, in India the construction of cylindrical types of minaret became unknown and prevalent with inspiration from Iranian and Turkestani styles before prospering in Anatolia (Istanbul's Blue mosque). The most tremendous polygonal minaret is in Delhi.

It is necessary to stated that in the past especially in the Damascus mosque the minaret used as a guiding elements illuminated by huge torches as a light tower. Predominantly, minaret copied from the towers of churches. As the time passed the name and shape of light tower transferred to the minaret in mosque architectural design. The significant point is that, the hypothesis of building minaret reveals in

connection with Medina mosque in Umayyad period in Syria during Abd-Al-Malik caliphate (86-96 A.H) and later became wide spread in Abbasid caliphs. Basically, other mosques such as: Al-Haram, Kufa and Basra did not have any minarets in the same year.

The architects according to definite tradition designed only a simple place for Muezzin and avoiding elevated place. During Muawiyah period one minaret attached to the Basra mosque and mosques have been built in the large scale in comparison with others. He was the first caliphs whom ordered to build *Sawami* for Azan in four sides of the Omar mosque in Egypt (Fosfat). Actually, there is not the exact definition for *Sawami* word to some extent it refers to the sharp and pointed stairway or small square cells in order to Muezzins call for prayer in outside of the mosque but afterwards architects transfer them to inside of the mosque(Richard J. H. Gotthei, 1910, pp135-154). In 8th century, Umayyad dynasty added four *Sawami* to medina mosque and this trend spread into North Africa and Spain. Afterwards by looking precisely at other traditions, Islam introduced and developed Regional minaret in Asian part (Jonathan, M.Bloom, 1926, pp132-154).

In Syria lots of churches converted to the mosque and their towers confronted with reconstruction with the addition of balcony which named as minaret. According to this situation the sample of minaret introduced in western countries of Islamic world. So the construction of new minarets was as resemble as Basra and Damascus church towers. The main access to the top of these minarets provided from outside of the building. The ancient minaret which remains from Syria has square shape with balcony. The minaret of Gheyrovan mosque (Figure:60) (703 BC) introduced new style into the west of Islam which does not affected by other styles such as

Byzantium. It has wide square base with narrow width towards Quibble. The minaret involves ordered huge stones and three levels of intersecting cubes. The tremendous points are: the minaret has 25m height, the spiral staircase with 128 stairs and in the third level the peak of minaret has a cap (Sirus Baradaran, 2010).

In the Asian part of Islam, the different kinds of minaret have been built without any similarities to the tower of the churches which are totally different from Syria and West minarets that known as Maluya. Actually, such difference refers to the use of materials not the architectural design. Basically, Maluya refers to the minaret which constructed with brick and stone spiral staircase with square shaft which supporting the final dome. As the time pasted, octagonal minaret became popular in astern lands of Islam.

Figure 60: Gheyrovan mosque, minaret.
(Helen,B,2001)

So, on the basis of this perspective the deduction illustrate that the in 9th century octagonal form of minaret came from Syria to Egypt for confirming such hypothesis there are examples of two important mosques which their minarets inspired by Ziggurats: Samarra and Ibn-Tulun mosques. In 10th century, the prominent point was

that there was close relation between Iranian and Indian minarets and the thin pencil shape of Ottoman minaret inspired from Iranian ones. Generally, in contemporary period with modern analysis minaret is a slender tower which attached to the mosque without considering the spiritual space (Jonathan, M.Bloom, 1926).

There are important samples of such minaret which are situated in Iraq, Cairo and turkey. So, minaret according to two different meaning in structure and architecture confronted with dualities. Afterwards, architects tried to design and expand narrower, higher, finer and lighter minarets. On the basis of Pro.Ghazi.Rajab manifestation:" the minaret is not the necessary element for mosque but after a while the abstraction of minaret accepts as an impossible fact" (Prochazka, A, 1994).

The minaret is one of the most validate and spiritual building in urban fabric in Islamic world and reveals the spiritual tradition of Islam. On the other hand minaret overshadows the other elements severely and gives them meaning and space spirituality. The important fact is that, in considering the formation process of minaret the illustration reveals that initially the mosque which added to the minaret was the only decisive elements but afterwards the compatibility with urban fabric became more important in order to give more spiritual space to the city structure so according to this circumstance minaret added as a free element to the mosque.

According to historians the early minarets play an important role in combination with hypostyle and they constructed in facing with Mihrab. Their horizontal volume emphasis on spirituality because they situated on longitudinal axis which was consistent on Quibble orientation. In the west, Minarets remained constant on Mihrab wall as pair elements whereas in the East minaret faced with different changes such

as wider arches and the high pressure of arches forces. Predominantly, in order to overcome such pressure architects and engineers constructed pair minarets on the basis of the arches which improves both statistical aspects and visual affects which is resemble to reinforced concert in contemporary period, unfortunately this situation was the starting point of applying non-spiritual material that reduce the space spirituality in mosque architectural design.

The main point is that the pure height of minaret estimated from the base of minaret not from top of the mosque's volume. On the basis of this fact, Although Ottoman's pencil (Figure:61) shape minarets have (96m) but yet there are not accounts for the hierarchy of highest minarets but there is unique sample which known as the highest ones is Kocatepe mosque in Ankara. The tremendous point is, in Turkey during Ottoman period architects according to the symmetry and weight of minarets tried to find the appropriate place for them without considering other buildings but nowadays they build the mosque outside of the urban fabric and minaret have a constant place. (Hillenbrand, R, 2001).

The main feature of Iranian minaret is the spiral staircase existed inside of the minaret's body. According to historians point of in Achaemenid period and after that in Pasargadae there were the construction of towers near the temples. In Ashkanied period in the West of Nur Abad architects found 7m tower with firebox on top of it and in Sassanid area there was a huge tower with 30m height which has spiral stair case and afterwards it known as Sassanid monuments. The important and vital point is that, as the Abbasside dynasty imitated from Firuzabad's city plan in order to construct the Baghdad's urban plan, the Samarra minaret inspired from the Sassanid monument. The source of Iranian's mosque minaret rooted in: the creation of spiral

staircase in the corner of building (2 decades BC in Iran), discovery of hearths in Achaemenid period, tradition of Zoroastrianism in order to pray on fire in open spaces and highlands, temple Dragon in Mamasani, the minaret of Firuzabad and the similarities between minarets and temples. Virtually, after the formation of early mosques in Iran, minaret confirm as elements which added to mosque architecture. The first mosque which has been constructed in Iran is Shushtar mosque (Figure:62) which resemble to Damascus mosque and its minaret was the first one built in Iran. Afterwards, Tarikhaneh mosque in Damghan was the second clay minaret has been built in Iran. In third century, the first and the simple brick minaret constructed in Ghom mosque and at last the Jorjir Minaret in Esfahan has its priority. Generally, the initiation Iranian mosque minaret dated back to: inspiration from Byzantium tower and hearths (Mohammadi, M, 2012).

Figure 61: Selimiyeh mosque minaret.
(Author, 2015)

Figure 62: Shushtar minaret.
(Author, 2015)

- Dome

Basically, dome is the most important and technical element of the mosque in comparison with other geometrical forms involves tremendous potential towards divine world according to its theoretical frame works. The history of dome and arch form formation dated back into pre-historic period in which human seek for a place to make it as a shelter in order to provide its security and tranquility. He found that by putting stone over stone he can make a shelter for himself to live.

The historical formation of the dome and its structural system has been appeared before the advent of arch, there were the existences of flat and beam structural roofs in order to cover the specific spaces. The major concern for architects was the incompatibility of these flat surfaces' materials with other structural approaches. They introduced and tried to design arch shape covers which constructed with brick and clay materials. On the basis of this structural system they applied two types of

arches with open and close angles. For overcoming such burden, architects getting help from high and heavy supporting walls.

The pick point usage of this structure was during of Ashkanian dynasty in which Iranian architects covered large and narrow spaces in their buildings especially religious ones. This system spread into Iraq, Syria, Egypt and Spain. The critical point is the architectural technique of Ashkanid dynasty continued by Sassanid architectural style applied in forecourt, decorative arches and arches which situated above columns. It should be pointed out that, the foundation of constructing dome over cubic structural system has been done in Ashkanid period.

- Dome in Iranian Architecture

Iran is the genesis Land of dome and its different kinds of architectural approaches which caused it became the tremendous ones in constructing and designing the dome in comparison with other countries and their approaches. The needs of constructing dome became necessary for covering large spaces, high heights and massive buildings. For Maryam Sijani, the constructed dome on square foundation innovated by Iranian architects in Parti style. She stated that this architectural design was not common during that period because of the hypostyle mosque type but after a while by creating local tombs the major focus went through domical constructions.

Muhammad Karim Pirniya believes that the construction of the dome (Figure:63) has been done by Iranian architects in 2nd century according to precise mathematical procedure. He manifested that not only this structure excited before Islamic period in Iran but also effected positively the cultural and social circumstances of Iranian people towards spirituality and God omnipotence. He emphasized on the important

aspect of Iranian dome; the conversion of square foundation first to the Octagonal and then to the Sixteen-sided ones in order to creating circle with the help of corners (Pirnia, M, 1973).

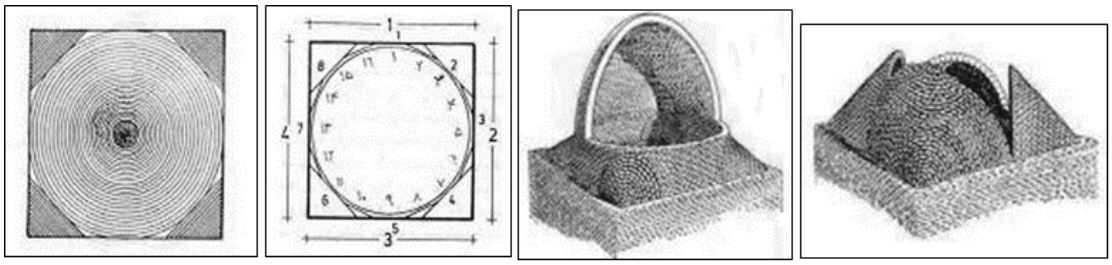

Figure 63: Construction of dome. square foundation .conversion of square to circle. (Pirniya, M, 1973)

Practically, the Iranian dome is more resistance rather than other domes structural system due to the compatibility between the unique geometrical form of the dome and the structural system that they applied for. The prominent and tremendous system that architects used in their design involve double-shell structure in which the dome has two upper and lower shells or cortexes in order to restrain the burden of main shell-the double-shell dome structure includes two forms (Figure:64) which are; fully discrete and fully continued. On the basis of this point of view, Iranian dome-building techniques introduced the procedure of double-shell structure to the world of dome construction.

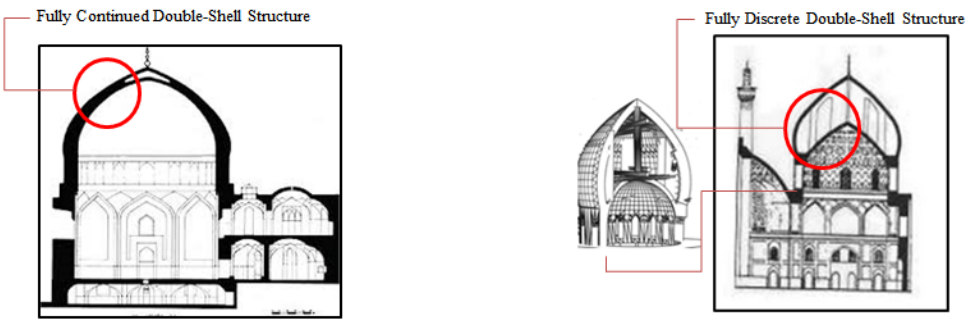

Figure 64: Fully continued and discrete double-shell dome structure. (Amoli, Mohammad Reza, 2011)

Through the Historical periods which has been revealed the form transformation of either location and structure of the dome, there is fulfillment of spiritual space in most of the Iranian cities due to the injection of spirituality by means of dome as a joint element between divinity world-Immaterial- and secular world which reflects the beauty, immensity and uniqueness of God world.

- Dome in Ottoman Architecture

In Ottoman Empire most of the religious building have been improved and built by advanced structural system especially central domes and semi-domes -supporting the main and central dome and arches. During this period the appliance of various types of domes and semi-domes had taken in all architectural designs which found and designed by great Turkish builder Mimar Sinan. Comprehensively, the supportive system of dome varied from square to rectangular surrounding walls. Gungor (1998) classified Ottoman dome structural system (Figure:65) in to three systems which are; square, hexagonal and Octagonal support system.

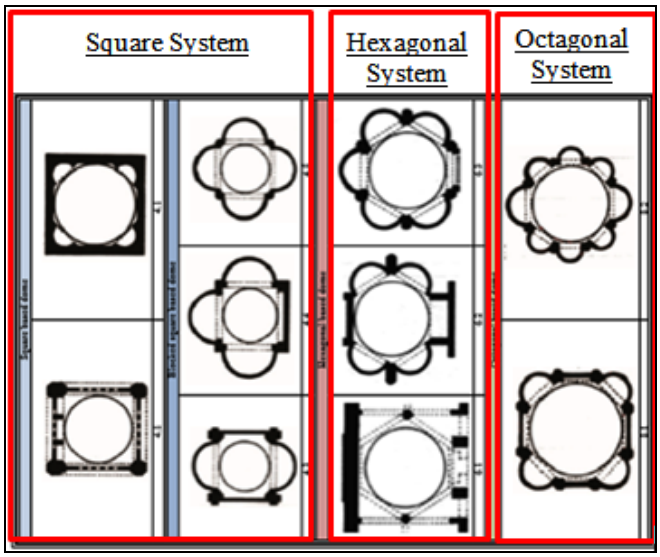

Figure 65: Ottoman dome structural system.
(Amoli, Mohammad Reza, 2011)

The prominent point is the contribution of Persian Islamic architectural procedure on Ottoman architectural style during Seljuk dynasty with the emphasis of central and large dome space. The characteristics of dome in Ottoman period were centrality with delicate openings to facilitate the aesthetical features for either space under central dome and semi-domes or prayer hall and huge scale and proportions. Actually, Sinan used double-boundary system which established the core of all structural improvements. Accordingly, such structural system allows the further and delicate extension of main central space in both functional and aesthetical aspects. The exterior supporting structure introduced and complete dome effects within secondary space and unity and spirituality in central dome space.

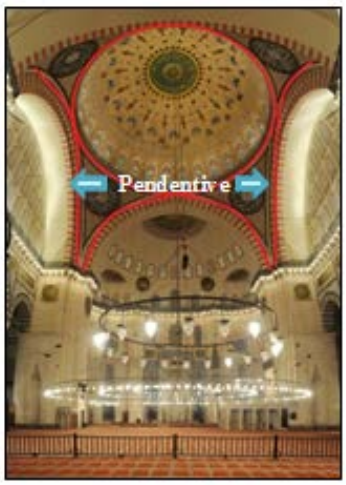

Figure 66: Suleymaniye mosque, pendentive structure.
(Author, 2015)

One of the most important dome structural systems which used in Ottoman Empire was Pendentive structure (Figure:66) that enables dome to situate gracefully in square foundation on columns below to restrain lateral forces and diminish the weight of dome and flow the forces downwards.

- Ivan

Ivan work as a connective space between central courtyard and building interior that dated back to Ashkanid and Sassanid dynasty. Predominantly, this mosque element designed by Iranian architects and introduced to mosque architectural designed which inspired by either Western or Eastern countries. This space designed for preventing severe weather conditions both in winter and summer and creating appropriate lighting for dome and spaces in beneath. Apart from its (Figure:67) architectural space it is a place for meeting Muslims in order to teach or learn Quran. Most of the Iranian mosque applies one up to four Ivan in their mosque architectural design either symmetry or asymmetry and some of the Arabic mosque applied Ivans whereas Ottoman mosque only used Semi-Ivan for entering to the central dome space as a waiting place. Generally, Ivan in its metaphysical meaning related to movement of livable place between court yard as spirit and building as body.

Figure 67: Ivan, Isfahan Jameh mosque.
(Author, 2015)

- Forecourt

Forecourt (Figure :68) is the main entrance of the mosque that known as the initiation of a movement towards inside the mosque. In architecture definition it refers to the vertical space which limited to the ceiling and in horizontal dimension limited by means of points in space. On the basis of philosophers' point of view,

forecourt is spiritual gate which forced Muslims to bow towards Allah powers and separates the immaterial space from material-secular- ones. Sometimes this space reveals as a protruding or indenting volume from mosque's building with different heights, color, ornamentations and balance scale and proportions.

Figure 68: Forecourt of Iranian mosque architecture.
(Author, 2015)

- Hypostyle

Hypostyle -Bedchamber- (Figure : 69) is a part of mosque which created by numerous number of columns covered by roof. It shaped the hug part of mosque and columns situated side by side to each other with small arches. This structural system restrains the burden of arches to prevent from the collapse of roof structure.

Figure 69: Hypostyle, Jameh mosque.
(Author, 2015)

4.6 Chapter conclusion

Nevertheless, the spiritual foundation of the Islamic traditional mosques enriches its perfectionism and obtained the ultimate reality in Allah world through each of the architectural characteristics of Islamic mosques that have an attempt to work as a general composition. Increasingly, their delicate functional relationship, sacred elements, space quality and vernacular material provides a ground for purity, simplicity and spirituality in both Iranian and Turkish (Ottoman) based on their religious beliefs which had a great influence on Islamic mosques formal configuration. In the next chapter we will see how the decline and Intensity of religious beliefs and general characteristic of the mosques architecture affected spirituality in both traditional and contemporary periods in Iranian and Turkish mosques.

Chapter 5

COMPARATIVE ANALYSIS OF MOSQUE ARCHITECTURE IN IRAN AND OTTOMAN/TURKEY

Based on the necessary data which is given in previous chapter about general characteristic of mosque architecture and information gathered in chapter two, three and four, this chapter will go through comparative studies between traditional and contemporary mosques.

5.1 Evaluation of the case studies

Case studies selected form Iran and turkey in both traditional and contemporary periods. Iranian four traditional case studies selected from the center of the cities which are Damghan, Shiraz and Isfahan and the contemporary ones selected from Tehran. Turkish three traditional case studies selected from Istanbul and contemporary ones selected from Ankara.

5.1.1 Case studies of traditional and contemporary mosques of Iran

The case studies of traditional Iranian mosques regulated according to their major types and general characteristic of their architecture and are the origin source for comparison and analysis on the results.

1- Tarikhane Damghan Mosque (134-1384)

- History

The history of Damghan dated back to Seven thousand years ago as the first center of civilization in Iran. For some periods Damghan was the center of Parthian-

Ashkanied- dynasty with its ancient name -Gomsh or Ghoms- in second Sargun inscription, namely the city with ninety nine guards. On the basis of historians' manifestation, city was surrounded by height walls for preserving against intruders. Truly, with the arrival of Islam in Iran the different aspects of humans' social, political and cultural lifestyle confronted with basic changes. The fundamental changes revealed in converting temples to the religious buildings as Islamic mosque.

Most of the Islamic philosophers believed before Arabs invading Iran Traikhane known as ancient temple and afterwards it converted to the mosque (Figure:70). Actually, the construction of the mosque traced back to 2nd AH in Sassanid style. It is one of the most ancient mosques after Fahraj Jameh mosque in Yazd and Naein mosque in Isfahan and reconstructed in 13th century. The mosque of Tarikhane-Tari; God- and Khaneh; House- and its architectural design approaches have the most ancient credibility among other traditional mosques located at South-East part of Damghan historical city in Semnan, Iran (Maryam Kamali 2013).

Virtually, Tarikhane mosque formed according to the city growth and tried to make delicate compatibility with its internal and external edges with Damghan urban fabric as a focal point and land mark of the city. The mosque surrounded by huge numbers of streets and main nodes of the city.

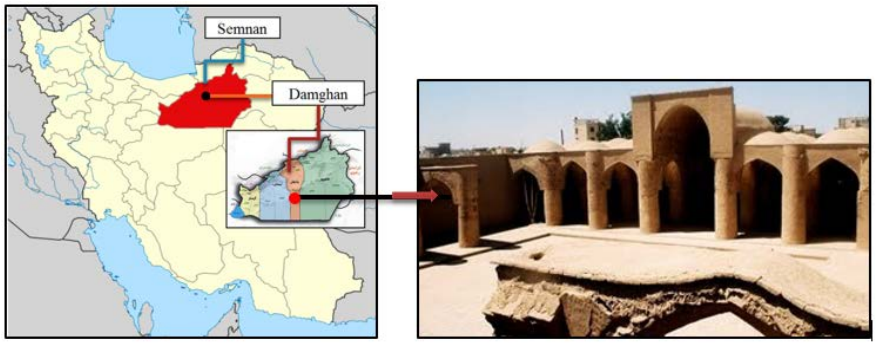

Figure 70: Tarikhane mosque.Semnan.Iran
(Author, 2015)

Based on observation from the place and photos , the general characteristic of the Tarikhane mosque architecture goes through:

- Formal configuration

As shown in Table.11, the formal configuration of the Tarikhane mosques formed according to Iranian Religious beliefs, in order to insisting on Muslim-Imam-Allah axis and increasing spirituality important elements added to form the general composition or mass of the mosque.so, four stages have been considered in its architecture; in the first stage the main core point is centrality and introspection which created the court yard as the heat beating and fundamental elements of the Iranian mosques. In the second stage, hypostyle added as the covered space in southern side of the mosque in order to place Mihrab. In the third stage Mihrab play a key role in creating spirituality point in mosque space and in the fourth stage porches added to the mosque architecture and surrounded courtyard to insisting on the courtyard centrality. The plan of the mosque is symmetry and spaces formed according to the main access and section involves modular horizontal and vertical rectangles which are symmetry.

- Functional relationship

In the first movement (Figure: 71) Muslims entered to simple entrance which involves going from material world into immaterial ones. After wards entered to the central courtyard to sense spirituality, from central courtyard they go through porch as a common neutral space to prepare themselves for entering into hypostyle southern side to worship Allah and obtain ultimate spirituality.

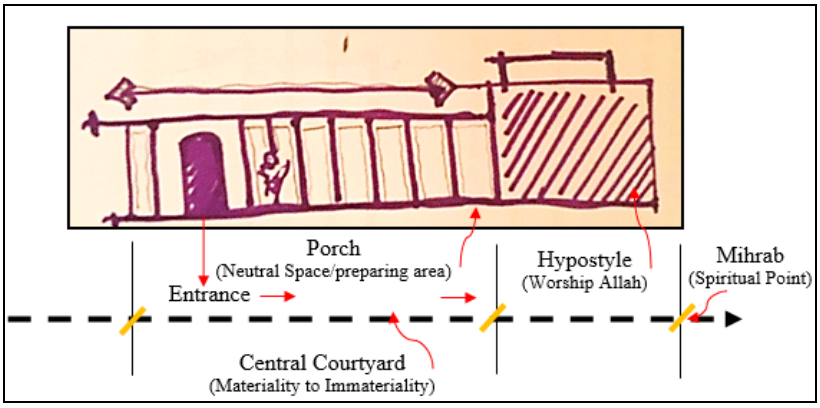

Figure 71: Functional relationship of spaces in Tarikhane mosque.
(Author, 2015)

- Space quality

The mosque preserves its proper space quality by the usage of natural light (Figure:72) penetrates in to the hypostyle by indirect sunlight from central courtyard provides spirituality in the mosque space. It is necessary to state that mosque does not have any openings in its sides. There is pure and delicate amalgamation between mosque building and light penetration which make it as a spiritual space.

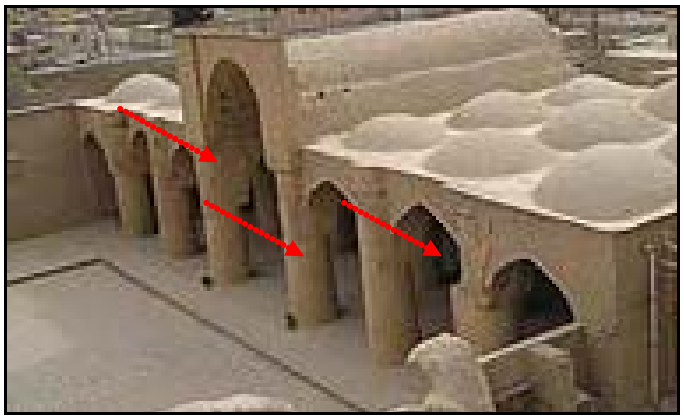

Figure 72: Tarikhane mosque, natural indirect sunlight
(Author, 2015)

- Material and structure

The material and structure used in constructing the Tarikhane mosque is vernacular material as a mixture of adobe , brick, old blocks which is made from hey and mud. They applied in the building sides, columns, arches and roof and have great influence on inducing spirituality due to the appropriate playing of light through protrusion and indent of the vernacular material.

- Elements
  - Entrance

The Tarikhane mosque has one entrance (Figure:73) which situated in Eastern part of mosque building. Precisely, entrance has a simple shape with high vertical lines such form known as primary entrance in evolution path in Iranian Islamic mosque architecture .This kind of entrance merely applied as communication element without any movement in its spatial form. The crucial point is the deviation of entrance axis with 90 degree from Mihrab axis.

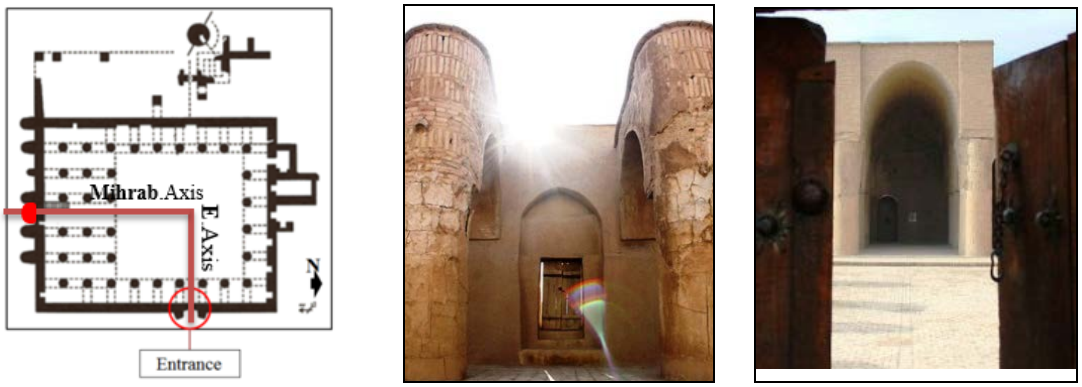

Figure 73: Tarikhane Damghan. entrance.
(Author, 2015)

- Courtyard

In general view, the courtyard (figure:74)of the mosque covered large scale area in comparison with other spaces reveals the prominent role of courtyard in Iranian's Islamic mosque architecture. Notably, the axis of the courtyard does not comply with the axis of main entrance. Accordingly, worshipers entering to a quarter side of courtyard with 90 degree deviation towards Mihrab. The courtyard which existed in Arabic shape mosque's plan -rooted in pre-Islamic era- surrounded by twenty two porches with Mazehdar arches- Elliptical arches. It has square geometric form as a primary and fundamental type for other Islamic mosques that faced with lots of deformation in shape during their form transformation as the time passed.

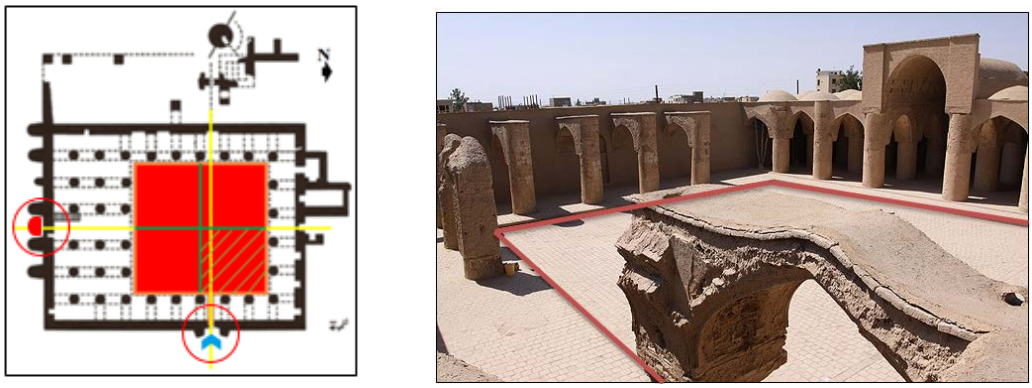

Figure 74: Tarikhane mosque .courtyard.
(Author, 2015)

- Hypostyle

In Southern side the hypostyle (Figure:75) of the mosque constructed by eighteen Sassanid columns covered by arches and the emphasis towards Mihrab illustrated in the middle of the hypostyle like protruding simple vault with clay material which shows the purity and spirituality of the hypostyle geometrical space.

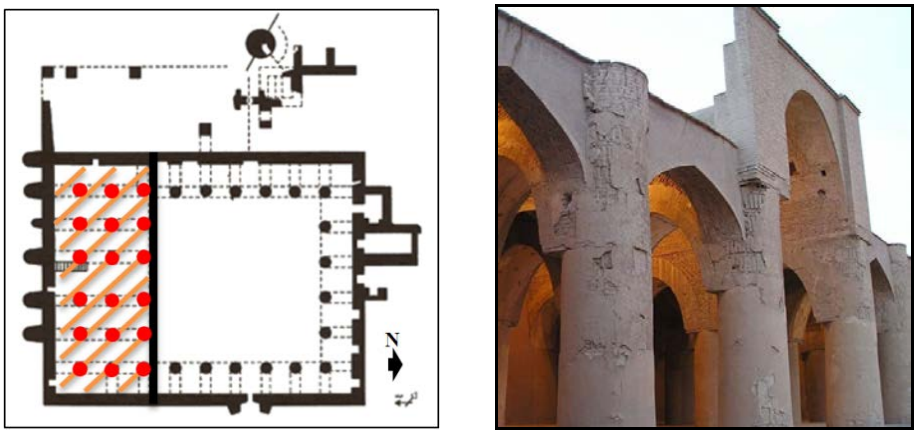

Figure 75: Tarikhane mosque. Hypostyle.
(Author, 2015)

- Porches

The mosque has three raw of porches (Figure:76) in Northern, Western and Eastern part. The porches surrounded the courtyard with their huge arches.

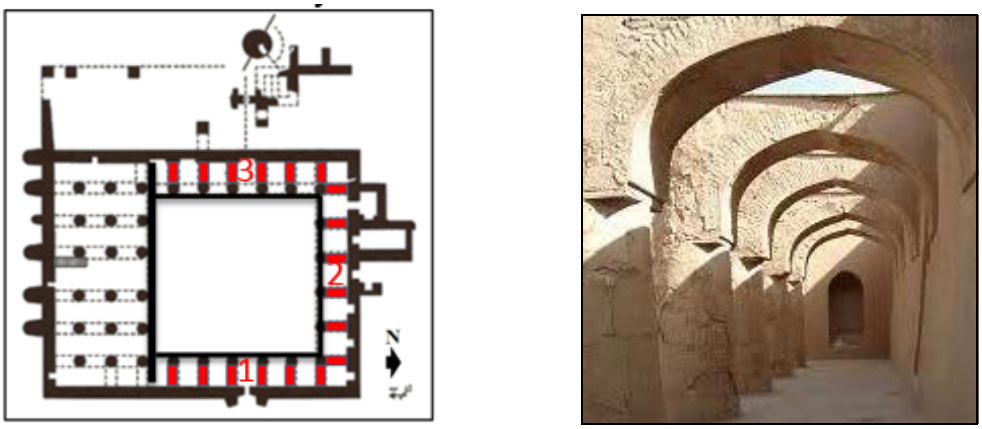

Figure 76: Tarikhane mosque. porches.
(Author, 2015)

- Minaret

The minaret (Figure:77) of the mosque located in Western part in circular form constructed by brick material around 26 m in height and situated outside of the mosque.

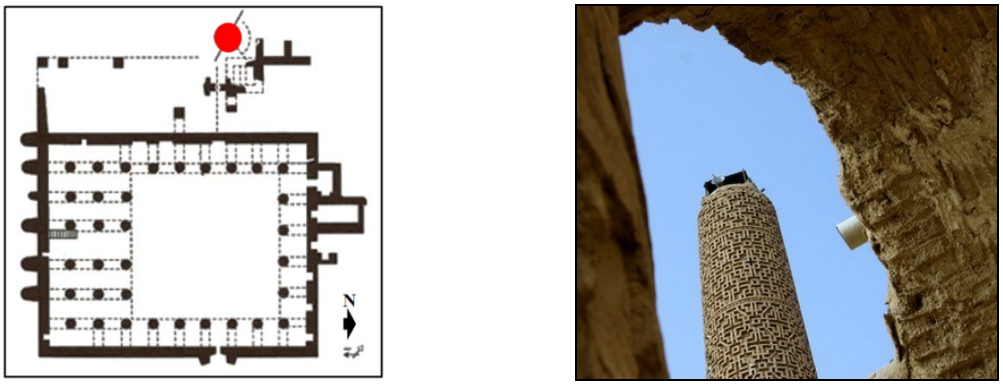

Figure 77: Tarikhane mosque. minaret.
(Author, 2015)

2. Barsiyan Jameh mosque

- History

Historically, Barsiyan mosque constructed in 5th century in East of the Isfahan city. The mosque constructed (Figure:78) in an important path which goes through Zayandeh-Rud as a departure point and reach Naein as destiny ones .On the basis of evidences, it is one of the Iran's national historic and architectural mosque built in Seljuk dynasty. The Barsiyan minaret is one of the most well-known architectural work as a third historical minarets in Iran Islamic architecture. The tremendous point about this mosque is the caravansary which situated besides it led to the mosque became one of the most prominent node of the Bisyun city as an Islamic urban context. Increasingly, because of Arabs invasions to Iran most of the Iranians mosque inspired from Arabic types. The mosque constructed according to dome-

chamber type as an isolated building which involves huge dome and Sassanid Four-arches with abstraction of courtyard in Seljuk period.

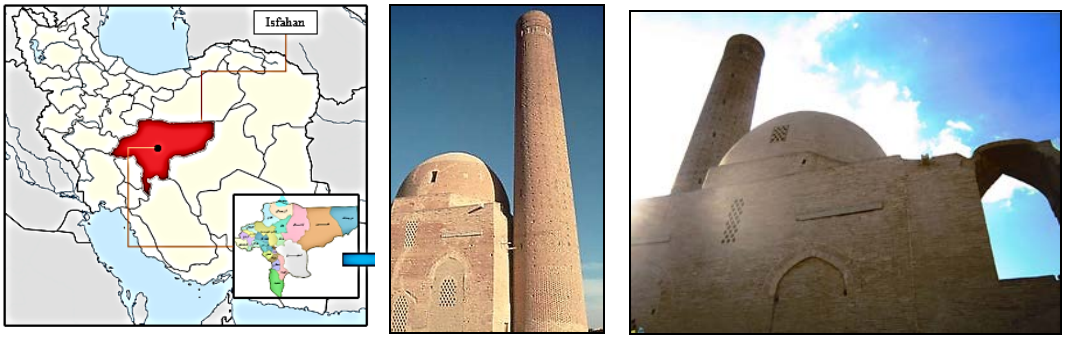

Figure 78: Barsiyan Jameh mosque. Isfahan. Iran.
(Author.2015)

With the reference to historical evidences such as inscriptions, calligraphies and remained architectural parts. The deduction informed some of the general characteristics of Barsiyan mosques architecture developed through ages led to new types in Iran's Islamic mosque architecture.

- Formal configuration

As shown in Table.12, the type of the mosque which known as Domed-Chamber and architecture of the mosque has been involved square base plan, cubic form and central dome. The first stage illustrated that Dome-Building were the first architectural elements of the mosque which constructed on the Sassanied Four-arches. the Dome-Building applies square within a circle inscribed in morphological analysis square is a sing of static and stable form and illustrates materiality whereas the circle doesn't have direction illustrates immateriality (spirituality), creating tranquility in human, centrality and the symbol of divinity world.

In the second stage Mihrab added as the element to demonstrate the direction of the Quibble in North and four sides of dome-building covered by walls. Architects added three doors in Southern, Eastern and western sides and two small doors in Mihrab side of the mosque. In the third stage, one of the most important architectural elements named as minaret added to mosque building and the form of the dome and its structural form inspired from Taj-Al-Molk dome in Isfahan Jameh mosque. In the fourth stage courtyard added to the mosque which created level difference between mosque building and ground level. For overcoming such dualities architects built stairs for reaching the courtyard. In fifth stage, in Safavid period, architects added Southern Ivan in same axis with Mihrab and main Entrance. In Southern, Western and Eastern sides architects covered small opening whereas merely main entrance in Southern side and one opening in Northern side remained constant. The plan of the mosque is symmetry and spaces formed according to the Dome-building, section and elevations involves modular horizontal and vertical rectangles which are symmetry.

- Functional relationship of the spaces

In the first movement as demonstrated in (Figure: 79) Muslims entered to simple arch shape entrance in order to going from material space into spiritual ones. After wards entered to the courtyard surrounded by Sassanid walls to sense spirituality and make decision to go through Ivan as a common neutral space to prepare themselves for entering into dome-building and the obtain ultimate spirituality.

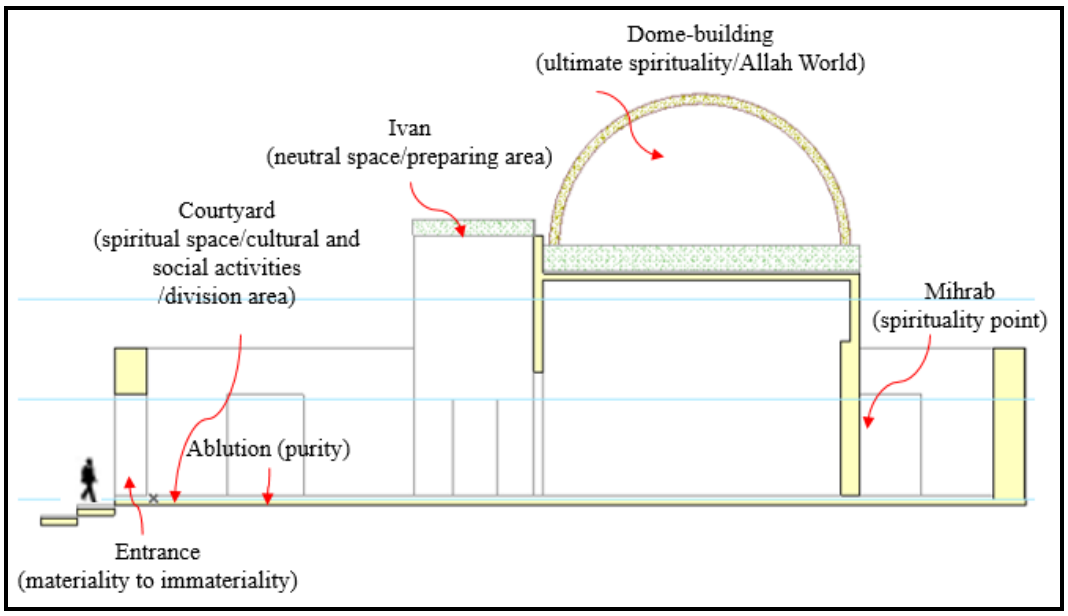

Figure 79: Functional relationship of spaces in Bariyan Jameh mosque. (Author, 2015)

- Space quality

The mosque has its unique space quality because of its Razan windows from which natural light penetrated into mosque indoor space and illuminate the surfaces to increase spirituality. These openings (Figure: 80) situated in sides of the dome-building, dome neck and minaret.

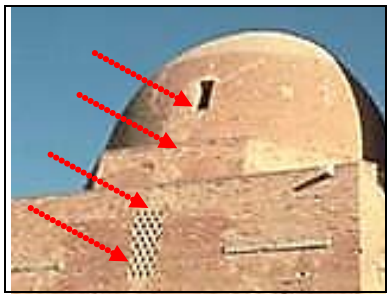

Figure 80: Openings . Bariyan Jameh mosque.
(Author, 2015)

- Material and structure

The material and structure used in constructing the Barsiyan Jameh mosque is vernacular material as a mixture of adobe ,brick and mud the barrel vault used as the structure and they used in the mosque elements. Such material caused that Muslims confronted with space spirituality either indoor or outdoor of the mosque.

- Elements
  - Mihrab

The Mihrab of Barsiyan mosque (Figure: 81) dated back to the art of brick carving and plaster in Seljuk period and the height of the Mihrab went up to the under dome base.

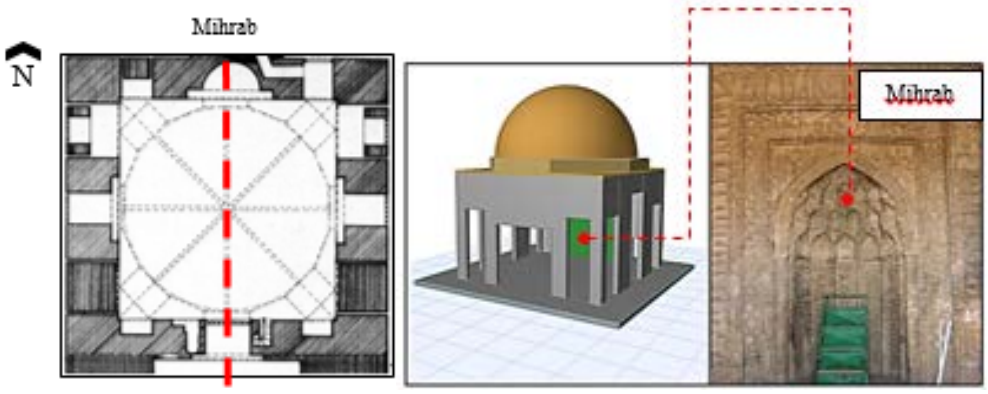

Figure 81: Mihrab . Bariyan Jameh mosque.
(Author, 2015)

- Minaret

The thick minaret (Figure: 82) of this mosque is one of the most ancient and historical minaret among other minaret in Iran. It constructed by the mixture of brick and plaster without any platform and basis and rooted in Seljuk period.

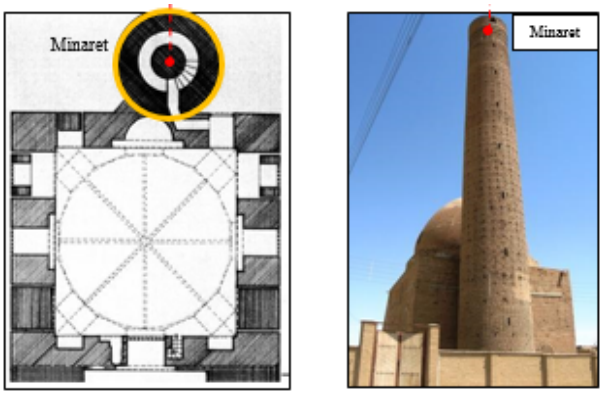

Figure 82: Minaret .Barsiyan Jameh mosque
(Author, 2015)

- Dome

The huge dome (Figure: 83) of this mosque constructed by the brick as a single-shall dome in a hexagon Garive stands on square base. The dome of the Barsiyan is one of the most important domes rather the other mosques' dome and it known as the main land mark of the city. Its spirituality absorbing the Muslims form far distance.

Figure 83: Dome .Barsiyan Jameh mosque.
(Author, 2015)

- Ivan

Barsiyan mosque Ivan (Figure: 84) destroyed in different invading to Iran and it didnot reconstructed again , the only thing remains from the Ivan is its brick sides and tall arch windows.

Figure 84: Ivan .Barsiyan Jameh mosque.
(Author, 2015)

- Courtyard

The courtyard (Figure: 85) of Barsiyan Jameh mosque surrounded by walls with Sassanied arches in oreder to preserve the mosque from different invasion to this region. The courtyard of this mosque introduced new approches in architectural design in Iranian mosque.

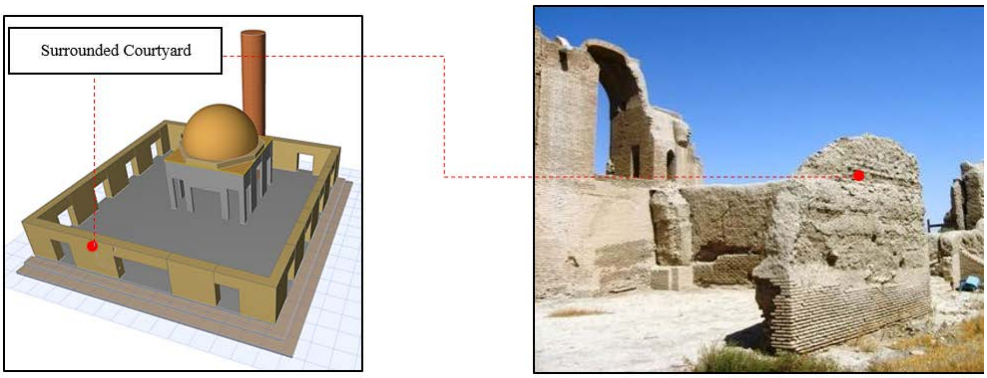

Figure 85: Courtyard .Barsiyan Jameh mosque.
(Author, 2015)

4. Atiq Jameh mosque

- History

Shiraz is the center of Fars Province consists of five regions surrounded by vast number of mountains. The most prominent historical buildings of this city are Persepolis and Atiq Jameh mosque. Actually, Shiraz confronted with different changes in the most important periods which are Achaemenid, Dylaman (Al-Bouyeh), Ata-Bakan, Al-Inju and Al-Mozafar, Safavid, Zandiyeh and Qajar (WRIGHT, E, 2013).

Shiraz Atiq mosque (Figure:86) or Adineh mosque is one of the most ancient mosques situated in Shahcheragh district in Shiraz constructed in the order of Amr-Al-Lays-Safari. The Atiq mosque has the central and axil characteristic in socio-cultural and historical structure of the city. It is the conjunction point of three main regions which are; Lab-Ab, Eshagh Beyg and Margh. The mosque play an important role in overlapping these region's with the basic axis of the city, main Bazar, main Jameh mosque and the entrance of the city.

Basically, the type of the mosque applies two-Ivan without dome as second prominent Iranian's mosque types in its shape grammar. On the basis of historians point of view the mosque was the first and main core of city form formation as a traditional approaches. The mosque confronted with lots of reconstructions in Safavid period the major ones applied in Zandiyeh period along with numerous numbers of hypostyle. The most historical element of this mosque is its Northern entrance known as twelve Imam with ancient and delicate inscription.

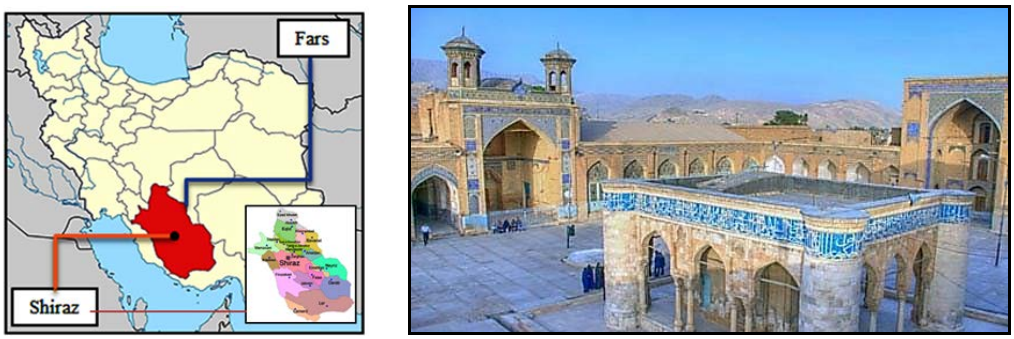

Figure 86: Athigh Jameh mosque.Shiraz.Iran.
(Author, 2015)

Based on observation from the place and photos, the general characteristic of the Atiq mosque architecture goes through:

- Formal configuration

As shown in Table.13, formal configuration of the Atiq Jameh mosque constructed according to Iranian Shia religious beliefs. For insisting on Muslim-Imam-Allah axis and increasing spirituality important elements added to form the general composition or mass of the mosque. So, four stages have been considered in its architecture; in the first stage the main core point is centrality and introspection created the court yard. In the second stage, Mihrab and three hypostyles added in Northern, Southern and South-east. In the third stage new hypostyle in South and forecourt in North as main entrance added and in the fourth stage porches added to the mosque architecture and surrounded courtyard to insisting on the courtyard centrality. The plan of the mosque is symmetry in detail and asymmetry in general and spaces formed according to the main access and section and elevations involve modular horizontal and vertical rectangles which are symmetry.

- Functional relationship

Functional relationship in the Atiq Jameh mosque initiated from the first movement of Muslims (Figure: 87) towards forecourt as a vertical focal point to live material world, then they pass through Northern Ivan as neutral space to make a decision towards Southern Ivan and at the end hypostyles to reach Mihrab. By passing the neutral space they entered to the courtyard huge space to sense spirituality. From central courtyard they go through Western and Eastern porches and Southern Ivan as a common neutral space to prepare themselves for entering into hypostyle to obtain and feel ultimate spirituality and worship Allah.

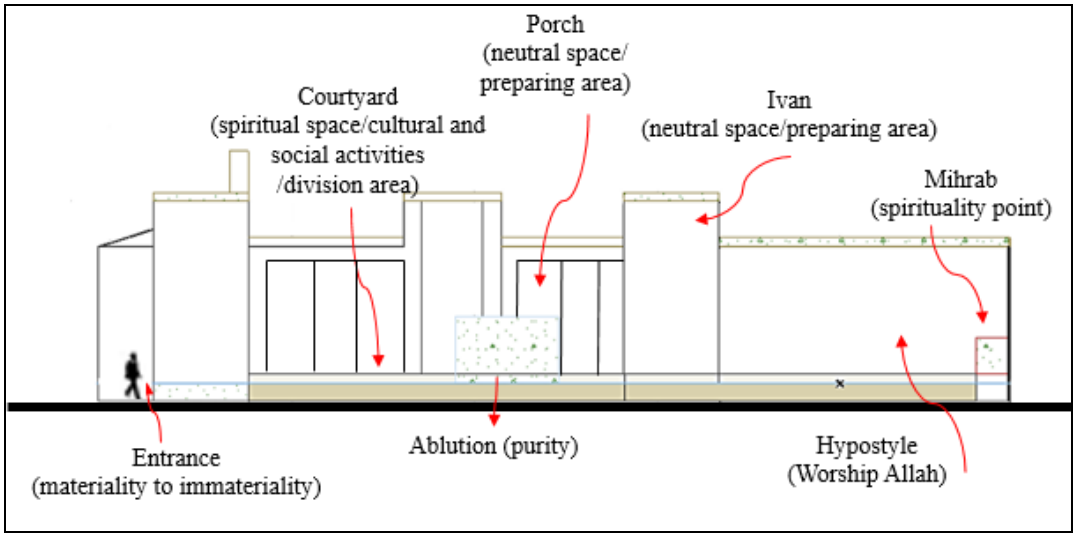

Figure 87: Functional relationship of spaces in Atiq Jameh mosque
(Author, 2015)

- Space quality

The mosque space quality provided by simple openings (Figure:88) from which the natural light penetrated into mosque indoor to illuminate the spaces to induce space spirituality. These openings situated in outer side of the porches and hypostyles towards central court yard. They have three forms as windows with ordinary glasses, doors and brick frameworks.

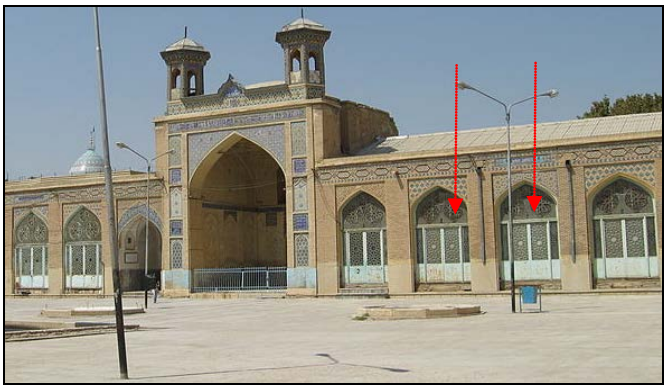

Figure 88: Openings and Light. Atiq Jameh mosque.
(Author, 2015)

- Material and structure

The material and structure used in constructing the Atiq Jameh mosque is adobe and brick and the barrel vault used as the structure. They applied in main entrance, Ivan and arches and such diversity and purity in material and structure created a ground for spirituality to reach Allah world.

- Elements
    - Entrance (Forecourt)

The mosque has six entrances (Figure:89). The two main entrances situated in Northern part, one of them is for Imam entrance and the other one is for worshipers. None of the entrances has same axial language especially with Mihrab. The Imam's entrance has larger scale in comparison with other entrances. Practically, this type of mosque not only gives new meaning to the Iranians Islamic mosques' entrances and revolutionized the point of communication between interior and exterior mosque building but also creating movable space in its spatial form. It is worth to noting that, the space of entrance divided into three levels and its vertical shape grammar inviting worshipers to the mosque interior and faced them with spiritual space of the mosque.

Figure 89: Plan, Entrance axes, Northern and Southern entrances. Atiq mosque. (Author, 2015)

- Courtyard

Generally, the courtyard of the mosque (Figure:90) covered half of the mosque volume with its nearly rectangle form. In this type the courtyard architectural element play a key role in gathering and distributing worshipers through different spaces. The axis of the courtyard comply and overlapping with main entrance in Northern side. The important part of mosque like hypostyles shape around the longitudinal side of the courtyard.

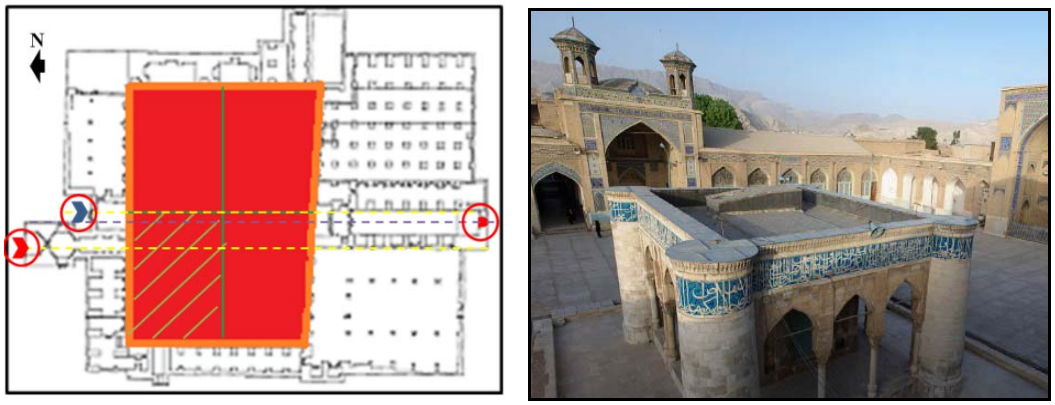

Figure 90: The Plan of courtyard .Atiq Jameh mosque. (Author, 2015)

- Hypostyle

The hypostyles of the Atiq mosque (Figure:91) are situated in South-West (Ancient), South-East (New Development), East-West (Ancient) and North-West (Ancient-

Imam Office) part of mosque. The ancient hypostyle constructed with 12 columns but the new ones designed by 36 columns.

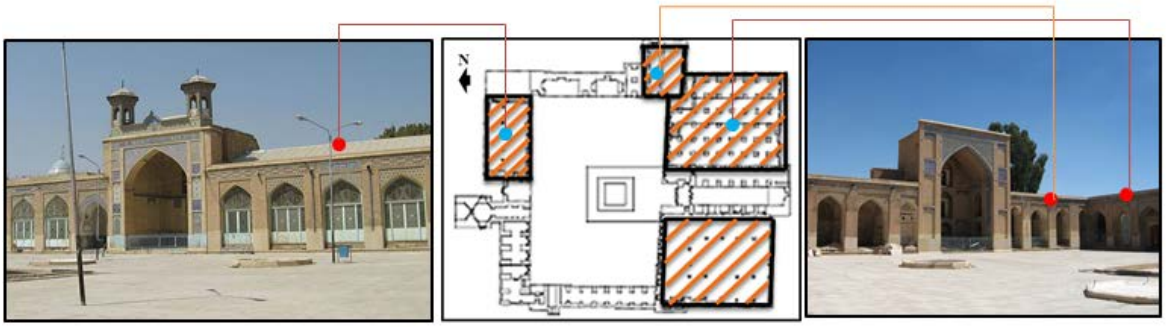

Figure 91: The plan of hypostyle .Atiq Jameh mosque.
(Author, 2015)

- Porch

The porches of the Atiq Jameh mosque (Figure:92) situated in Western and Eastern parts of mosque. The porch of Western side has ten dominical shape arches with two entrances and the porch of Eastern part has three dominical shape arches.

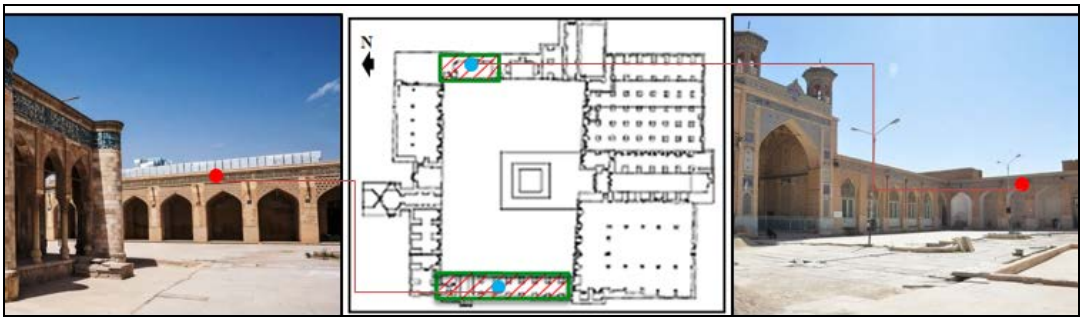

Figure 92: The plan of porches. Atiq Jameh Mosque.
(Author, 2015)

- Ivan

The Atiq mosque has three hug Ivans (Figure:93) in Northern, Eastern and Southern part. The architectural features and ornamentation gives spiritual space to the central courtyard. The height and width of the Iwans are similar to each other whereas they

different geometrical shapes which applied as aesthetical features-Ornamentations- differ from each other.

Figure 93: Northern and Eastern Ivan. Atiq Jameh mosque.
(Author, 2015)

4. Isfahan Jameh Mosque

- History

In the past, the historical name of Isfahan was Jay/Sepahan/Espadana. Isfahan was the military center of Iran in Achaemenian period. In Shah Abbas Empire era, he constructed Naghshe- Jahan Square and gave new meaning to Iran. Such design lead to the arrival of tourists from different countries to Isfahan. Afterwards, in (1384.AH) Isfahan known as the cultural center of world of Islam because of its historical buildings especially religious ones (Isfahan,2013).The traditional form of Isfahan urban fabric and its prominent nodes and edges as Islamic city make it more tremendous and outstanding. The formation of Isfahan Islamic mosques, Madrasah, Bazar and caravan-serai made it more consistent as the main city of Iran in comparison with others. One of the most prominent Islamic mosque in Isfahan is Jameh mosque (Figure:95).

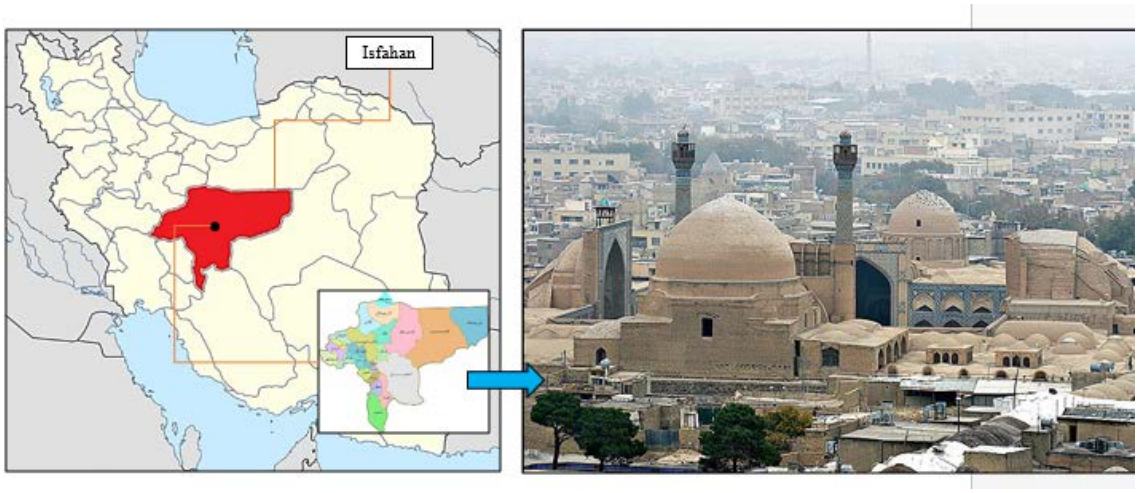

Figure 94: Isfahan Jameh mosque. Isfahan. Iran.
(Author, 2015)

Isfahan Jameh mosque formed and developed according to the form of the Isfahan city. Actually, before Safavid dynasty Isfahan Jameh mosque was the main core of the city from which the form of the city developed towards Southern part and new nodes took a place around Naghshe-Jahan Square. In this formation Bazar play an important role in connecting the Isfahan Jameh mosque to Naghshe-Jahan Square. By looking precisely at (Figure :95) the illustration showed that Isfahan Jameh mosque, Jor-Jir mosque and Shah Mosque shaping a triangle geometric form as three important points in Isfahan urban Fabric.

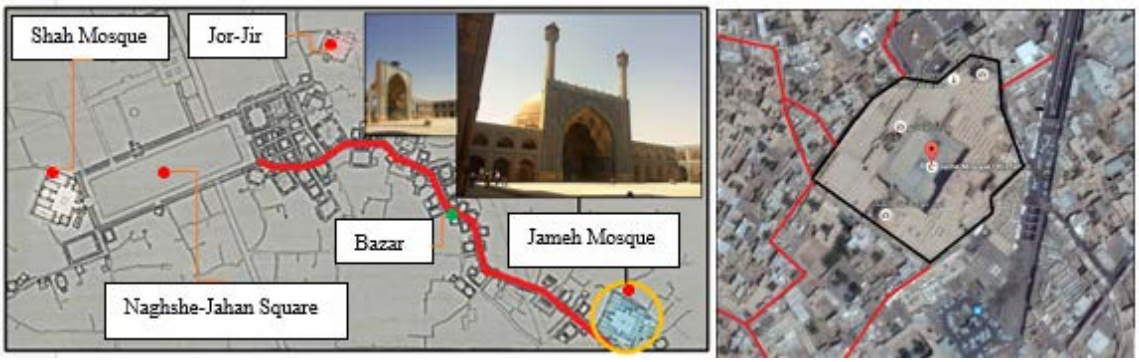

Figure 95: Isfahan Jameh Mosque.
(Author, 2015)

Based on observation from the place and photos, the general characteristic of the Isfahan Jameh mosque architecture goes through:

- Formal configuration

Actually, the architecture of Isfahan Jameh mosque changed during important historical periods. It is necessary to started from these periods to overview their influences on the architecture of Isfahan mosque which lasted from Abbasid to Safavid period. As demonstrated in Table.14, on the basis of historian point of view the general characteristic of the mosque comprehensively changed from Abbasid as Sunni religious to Shia ones up to Safavied periods. So, the evidences reveals that the primary Isfahan mosque involved lots of entries in its sides as the timed passed by the arrival of Shia religious Isfahan mosque formal configuration formed according to Muslim-Imam-Allah axes with two main entrances to insisting on Shia beliefs (Soltanzade, H, 1974).In (132.AH) the last Omayyad Khalifa defeated from Abbasid dynasty and during this time the construction of primary Isfahan Jameh mosque initiated. The primary Isfahan Jameh mosque inspired from Mohammad Prophet mosque as hypostyle type with its pure spiritual space. In the second stage/period (226.AH/770-840.BC) the direction of the Quibble changed, spaces covered in huge scale, imposing additional lines (columns) to courtyard surrounded space and appliance of brick columns. In the third stage/period (471-600.AH/1078-1300.BC) in Seljuk period, Nezam-Al-Molk Belvedere with four side openings in Quibble side and Taj-Al-Molk dome, four Ivan and two domical buildings added to the hypostyle and two entrances opened in both sides of Taj-Al-Molk dome. In the fourth stage/period the Aljayto hypostyle added in North-West which casued one of the entrances in the same side closed and the construction of two level elevation in mosque indoor. In the fifth stage / period (851.AH/1451.BC) in Timurid period Lang the

construction of winter hypostyle revealed in Sout-West and blocked the other entrances. In the sixth stage /period (872-920.AH/1472-1532.BC) at Agh-koyunlular era minarets situated on Southern side of the mosque on top of Neat-Al-Molk Ivan and two entrances added to the both side of the Nezam-Almolk to insisting on the importance of southern Mihrab as the focal core point of Allah world, Shia religious and spirituality. In the last stage/period as Safavid era the Shia religious beliefs reaches its pick point by the construction of huge hypostyle in South-West side of the mosque as Abbasid hypostyle and Addition of Mihrab to Nezam-Al-Molk dome's building.

As shown Table.15, the plan of the Isfahan Jameh mosque to some extent is symmetry general and spaces formed according to the main access and section and elevations involve modular horizontal and vertical rectangles which are symmetry.

- Functional relation

Figure.96, demonstrates, firstly Muslims entered from different axial entrances; the two entrances in Northern side is from hypostyles in two sides of Taj-Al-Molk dome to feel spirituality and preparing themselves for Nezam-Al-Molk dome and two others is from hypostyles situated in two sides of Nezam-Al-Molk to go directly in the main dome. From Northern entries Muslims entered in to hypostyles (worship Allah). After wards then stay in Ivan neutral space, to perceive their situation and unintentional movement towards Nezam-Al-Molk dome will occur. By passing the neutral space they entered to the courtyard as central space from which Muslims spread into other mosque's spaces such as hypostyles which are the covered space of the mosque for worship Allah and ablution spaces to free from impurity. From central courtyard they go through porch and Ivan as a common neutral space to prepare themselves for entering into dome-building to obtain and feel ultimate spirituality which is culmination point for touching Allah omnipotence and world.

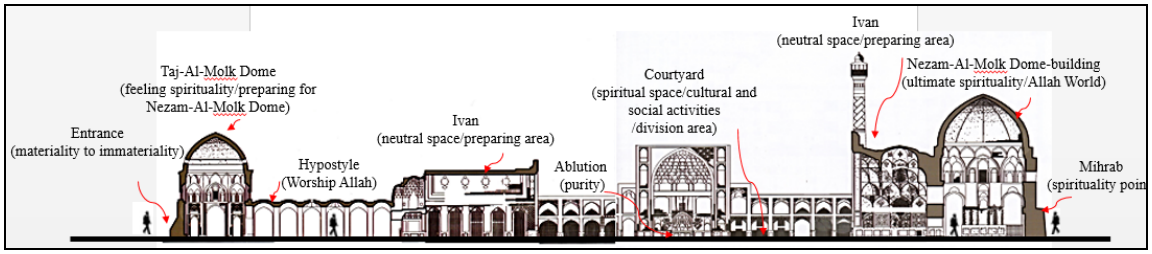

Figure 96: Functional relationship of spaces in Isfahan Jameh mosques
(Author, 2015)

- Space quality

The Isfahan mosque space quality provided by simple openings (Figure:88) from which the natural light penetrated into mosque indoor to illuminate the spaces to induce space spirituality. These openings situated in hypostyles (Figure:97), porches and domes (Figure:98) and entrances. When the Muslims entered to the mosque

either indoor or outdoor spaces their quality make an Allah world for them from which they leave their physical body and goes toward Allah world by the pure spiritual space.

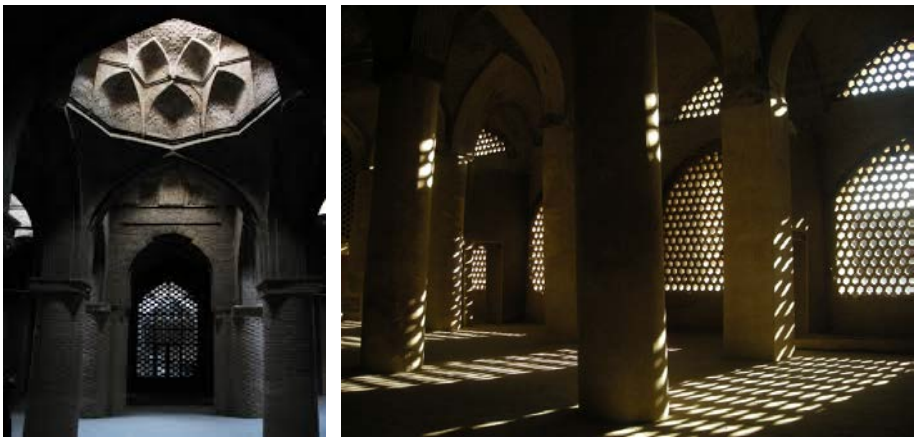

Figure 97: Openings in South-East hypostyle. Isfahan Jameh mosque. (Author, 2015)

Figure 98: Openings of the porches and Nezam-Al-Molk dome. Isfahan mosque. (Author, 2015)

- Material and structure

The material and structure used in constructing the Isfahan Jameh mosque is vernacular material as a mixture of adobe and brick, stone and tiles. The barrel vault and old blocks made by hey and mud used as the structure. These material and structure is unique in comparison with other types caused that Isfahan Jameh mosque architecture obtain the infinite spirituality towards macrocosm which is Allah world.

- Elements
  - Entrance

Isfahan Jameh mosque has nine entrances (Figure:99) but in safavid period by the arrival of Shia religious five entrances existed: two entrances in Northern and Southern sides and one in South-East.

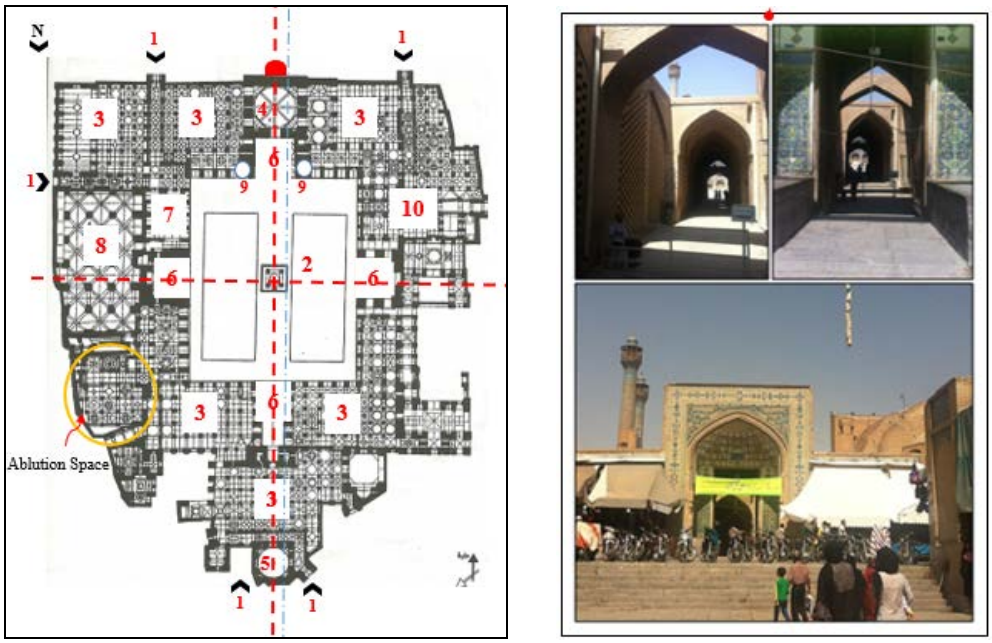

Figure 99: Northern/ Southern / South-East entrances . Isfahan Jameh mosque. (Author, 2015)

  - Courtyard

Central Courtyard in Iranian's Islamic mosques with its spiritual space existed in Parthian era with the pick point of architectural approaches in Sassanid dynasty. The most brilliant aspect of Isfahan Jameh mosque is its blue color illustrates the obvious amalgamation between sky lines. The central courtyard has different performances but the most vital ones is, it act as central connection space in order to link mosque's various spaces. The spiritual rectangle form of the central courtyard tries to connect ground and sky to reach divinity world, especially with its two tanks mirror shape in

center which is full of water. The courtyard has two Mahtabi which are a little bit higher than ground level. The mosque has three courtyard (Figure:100) situated in center (1), East side (2) -Muzaffariyeh Madrasah- and North-West side (3)-Aljayto hypostyle. There are two main entrances directly go towards the central court yard.

The central courtyard surrounded by porches huge arches with doubled stories and four Ivan gave unique architectural meaning to courtyard space organization. For growing number of people this courtyard has the four main aspects of religion, reality, space spirituality and divine world.

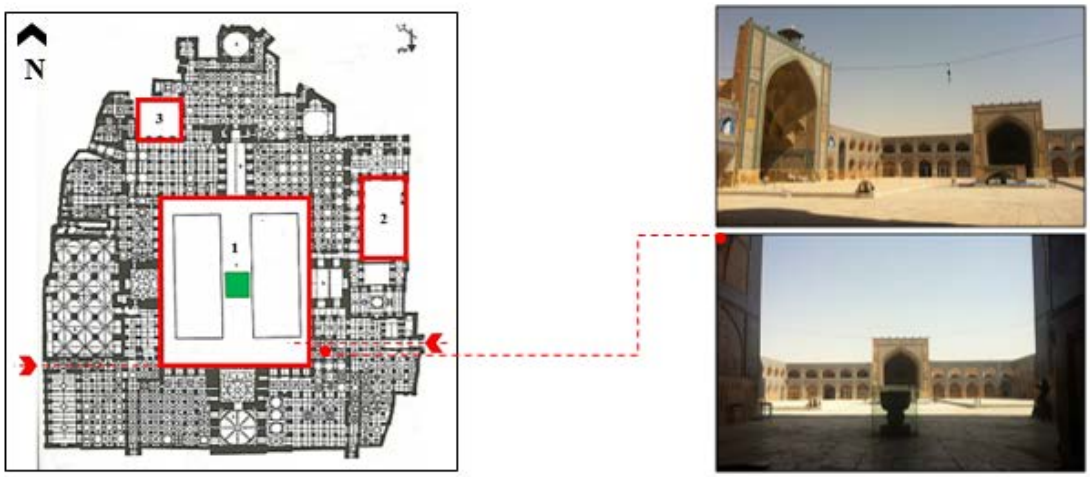

Figure 100: Isfahan Jameh mosque. Courtyards.
(Author, 2015)

- Mihrab

In Safavid period, one Mihrab (Figure:101) with tiling ornamentation added to dome building to illustrate the direction towards Quibble. This Mihrab (Alter) demonstrates the tree of humans' life which means that human created from soil then grew and finally die and go towards divine world.

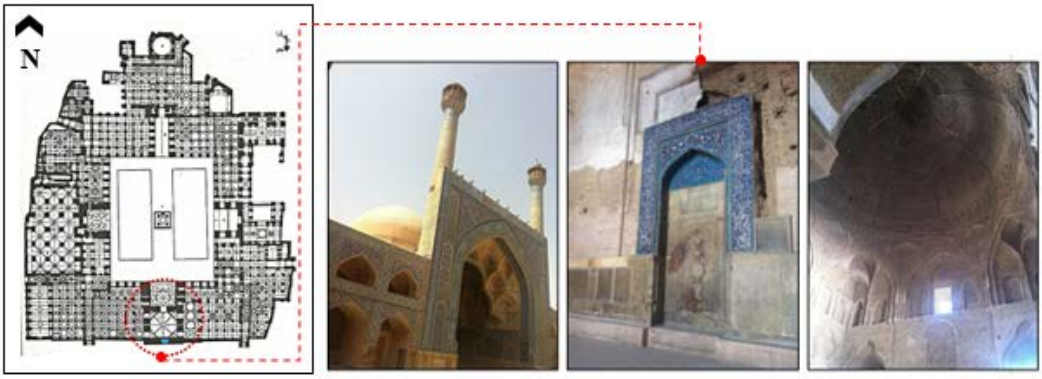

Figure 101: Nezam-Al-Molk Mihrab. Isfahan Jameh mosque.
(Author, 2015)

- Hypostyle

In Isfahan Jameh mosque there are two huge hypostyles situated in Eastern and Western side of Nezam-Al-Molk Dome. These hypostyles preserves the basic typology as hypostyle type. They have circular and square columns with brick arches. These bedchambers (Figure:102) named as: South-East hypostyle of Nezam-Al-Molk dome, South-West hypostyle of Nezam-Al-Molk dome and Shah-Abbasid hypostyle.

Figure 102: South-East hypostyle of Nezam-Al-Molk Dome. Isfahan Jameh mosque.
(Author, 2015)

There are three other hypostyles situated in North, North-East and North-West side of Isfahan Jameh mosque in Taj-Al-Molk dome part. In comparison with other

hypostyle they do not situated in Quibble part and they has their own unique forms. There are two other hypostyles constructed in Western side of the mosque shown by green color that mentioned and discussed before.

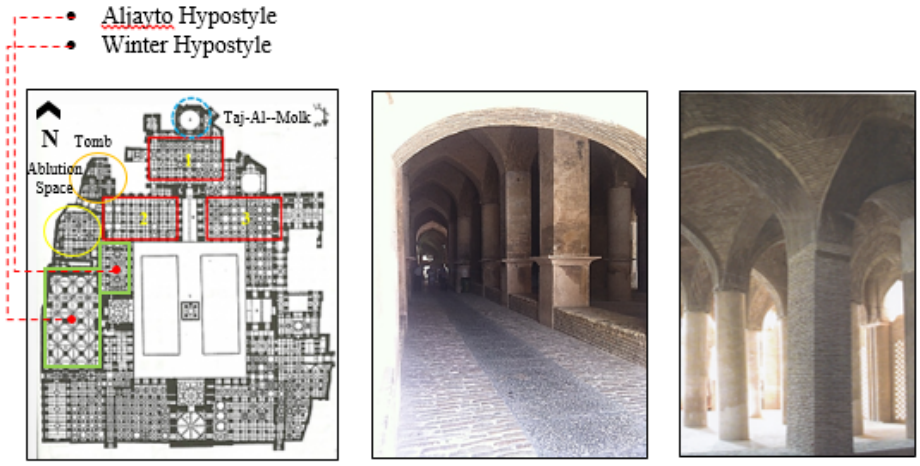

Figure 103: Isfahan Jameh mosque Northern, North-West, North-East .hypostyles. (Author, 2015)

- Minaret

one of the most spiritual elements added to the form formation of Isfahan Jameh mosque known as minaret (Figure:104). The two minarets situated on Southern side of the mosque on top of Neat-Al-Molk Ivan.

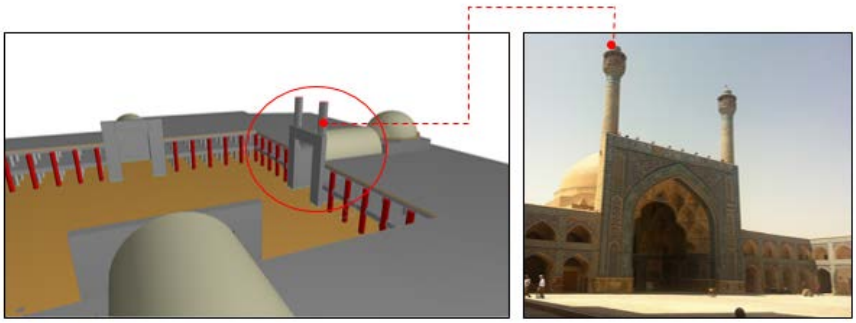

Figure 104: Isfahan Jameh mosque. minarets. (Author, 2015)

- Dome

There are two important domes in Isfahan Jameh mosque remaind from Seljiuk periods which are; Nezam-Al-Molk (471-473.AH) (Figure: 105) and Taj-Al-Molk domes (481.AH) (Figure: 106).

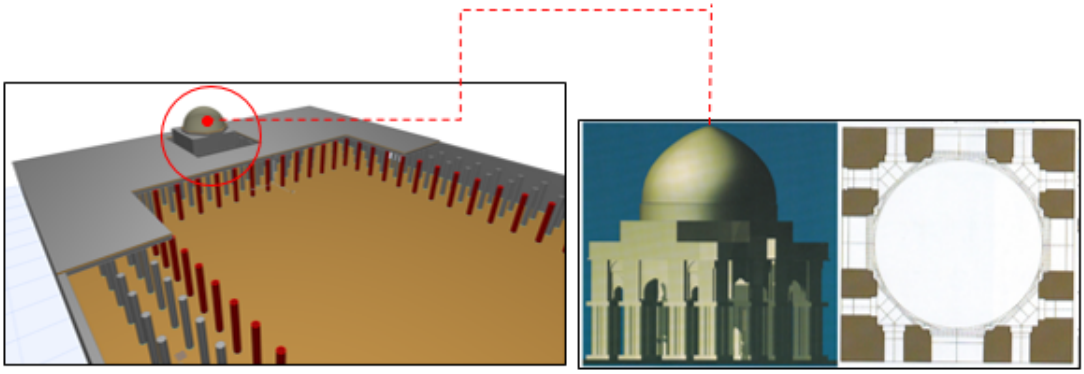

Figure 105: Isfahan Jameh mosque. Nezam-Al-Molk dome
(Author, 2015)

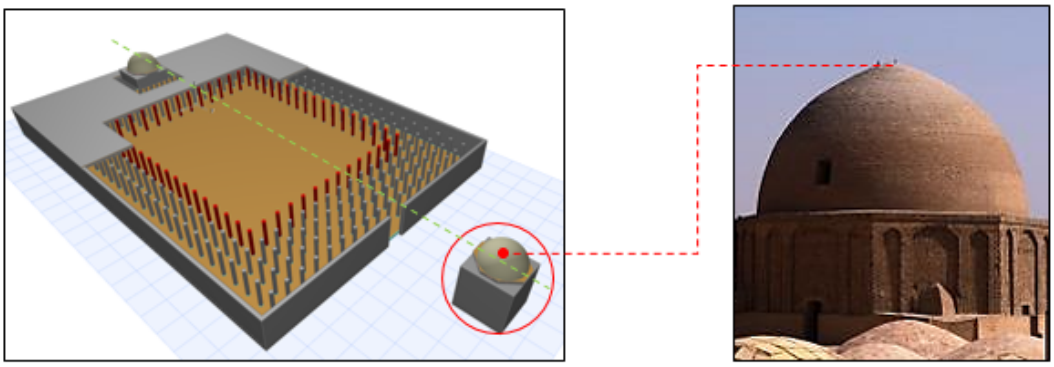

Figure 106: Isfahan Jameh mosque. Taj-Al-Molk dome
(Author, 2015)

- Ivan

Isfahan Jameh Mosque has four Ivan and they managed, regulated and designed by their priority and importance. They classified by unique names refer to the position of different levels of social circumstances which are: Southern Ivan; Quibble side: Soffe Saheb, Northern Ivan: Soffe Darvish, Western Ivan: Soffe Ostad and Eastern Ivan: Soffe Shagerd.

- Southern Ivan (880.AH)

When the form and direction of Quibble's hypostyle changed and the construction of Nezam-Al-Molk dome finished in order to solve the problem of heights between dome and porches architects built Southern Ivan-Soffe Saheb- and fill the gap between dome and porches.

- Northern Ivan

The Northern Ivan constructed directly towards Southern ones. The basic difference between these two Ivan is the Northern Ivan-Soffe Darvish- (Figure:108) opens to the hypostyle which excited between itself and Taj-Al-Molk. The noticeable point is the length of Northern Ivan which has more depth rather than Southern Ivan (Figure:107).

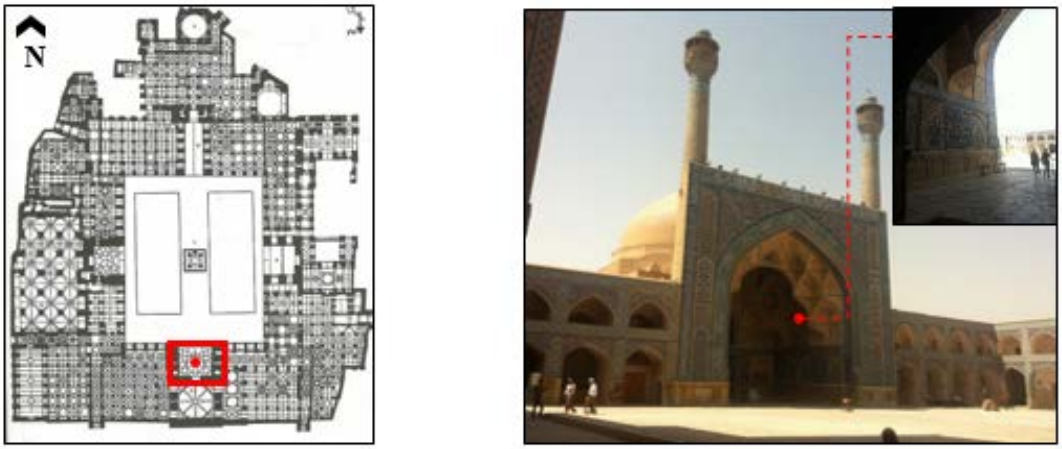

Figure 107: Isfahan Jameh mosque. Southern Ivan. Soffe Saheb.
(Author, 2015)

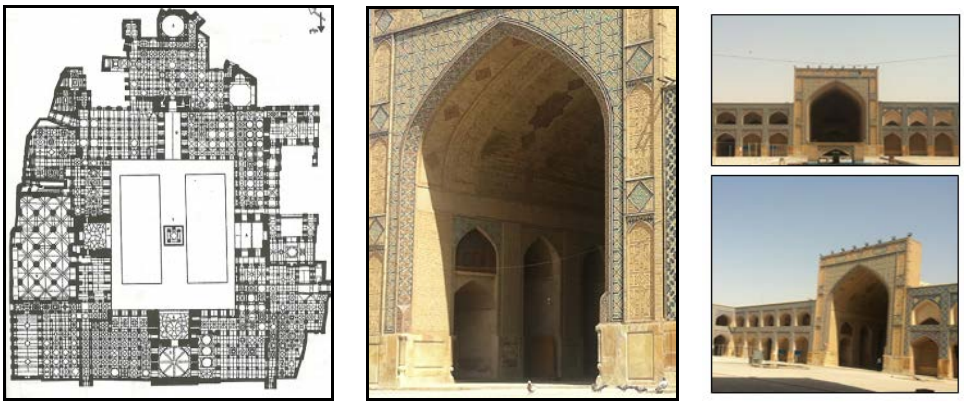

Figure 108: Isfahan Jameh mosque. Northern Ivan. Soffe Darvish.
(Author, 2015)

- Western Ivan

Predominantly, Western Ivan-Soffe Ostad- (Figure:109) has one of the most unique aesthetical features rather than other Islamic mosques' Ivan in Iran during Seljuk dynasty.

It gained its beauty because of its outstanding geometric ornamentation named as Mogharnas which are precisely similar to dome building ornamentation. The width of this Ivan is smaller than Eastern one and it has small cubic iron form on top to demonstrate its priority rather than Eastern Ivan. It is full of calligraphy and tiles mentioned towards Quran verses, Mohammad Prophet in Arabic words.

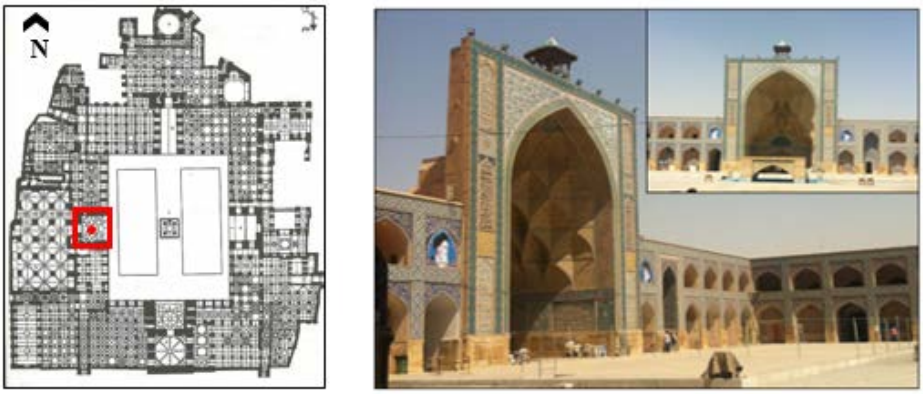

Figure 109: Isfahan Jameh mosque. Western Ivan. Soffe Ostad.
(Author, 2015)

- Eastern Ivan

The Eastern Ivan-Soffe Shagerd- (Figure:110) located in front of Western Ivan-Soffe Ostad.The width of this Ivan is bigger than Western ones and it opens to Muzaffariyeh Madrasah.

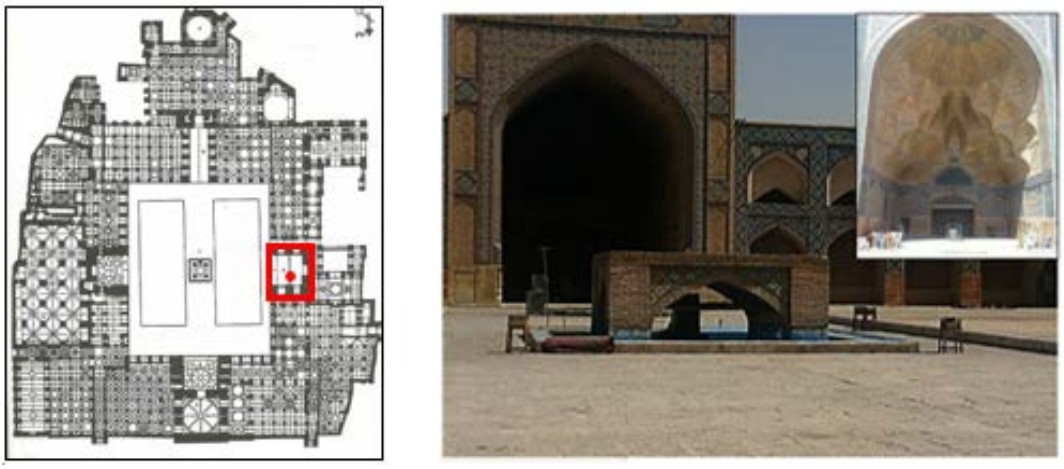

Figure 110: Isfahan Jameh mosque. Eastern Ivan. Soffe Shagerd
(Author, 2015)

The case study of contemporary Iranian mosques reveals the major general characteristic of mosque architecture and make a ground for comparison and analysis on the results.

1. Al-Javad mosque (1964)

- History

The Al-Javad Jameh mosque is the first contemporary mosque has been constructed in Hafe Tir district in Tehran, Iran. Predominantly, Al-Javad mosque has one prayer hall and two story main hall for prominent speeches in specific dates. Virtually, the tremendous point about the architecture of the mosque is it introduce new design as design approaches.

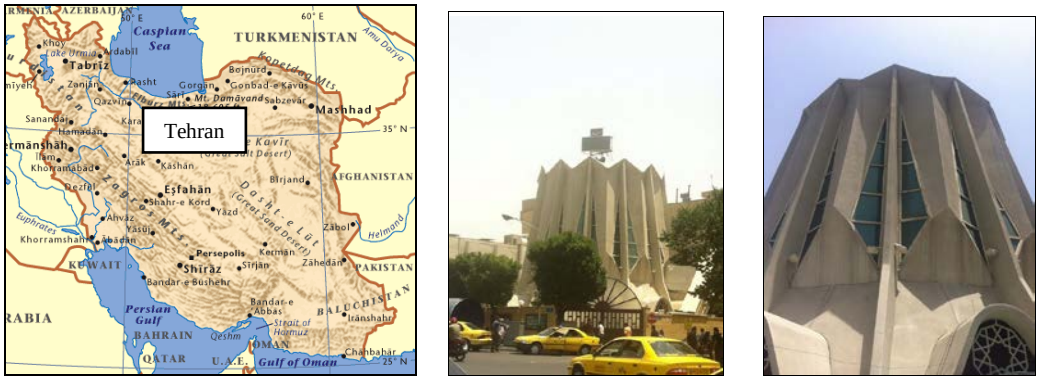

Figure 111: Al-Javad Mosque. Tehran. Iran.
(Author, 2015)

Based on observation from the place and photos, the general characteristic of the Al-Javad mosque architecture goes through:

- Formal configuration

As mentioned in Figure.112, the regulation of religious beliefs confronted with new meaning and based on Figure.113, the symmetric plan of Al-Javad mosque has dodecahedron shape embedded by nearly rectangle shape by continuing the lines from the center point of dodecahedron, triangle geometric shapes reveal in the mosque plan. The homogeneity between these triangles reflected to the whole architecture of the mosque as puzzle to make the integrated mass and such method

reflected to the roof of the mosque. The sides of the mosque covered by four sloping rectangle joining in peak point. The symmetric elevation of the mosque has modular triangle shape and the mass insisting on verticality.

Based on Iranian architects point of view Al-javad mosque is like a belfry because when Muslim entered to the mosque the way of worshiping Allah is similar to churches and it does not look like traditional mosque ones (Tahuri, N, 2014).

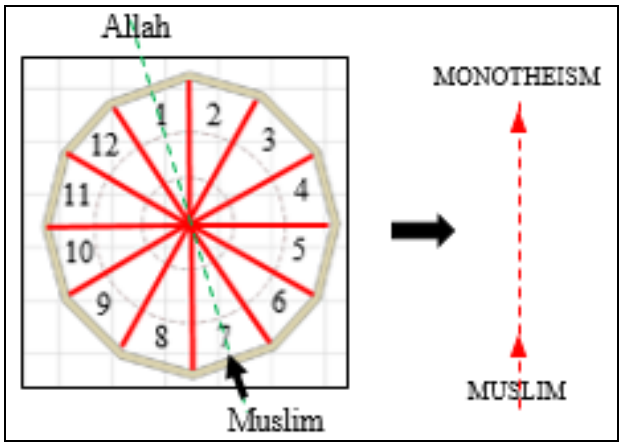

Figure 112: Shia religious beliefs axis. Al-Javad mosque
(Author, 2015)

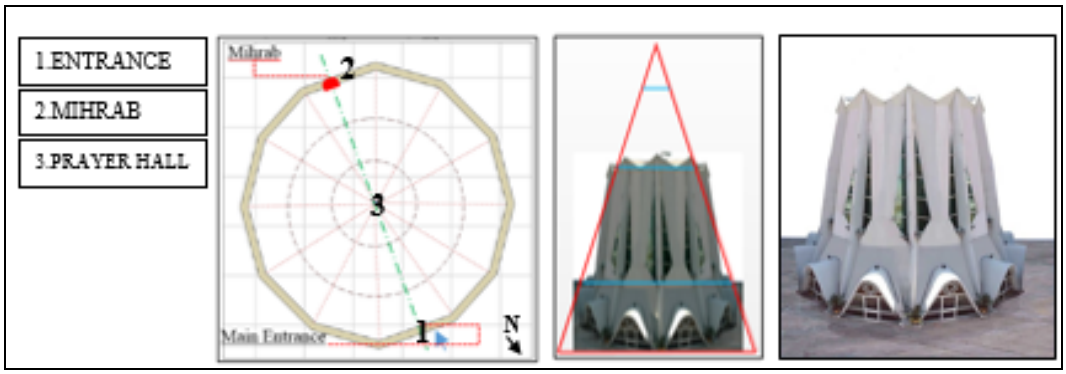

Figure 113: Plan, elevation and mass formal configuration. Al-Javad mosque.
(Author, 2015)

- Functional relationship

Muslims directly entered from simple framework as entrance to prayer hall area to worship Allah without any pre-entrance, neural space, central space (courtyard to make decision and spreading in to different spaces), preparing space and destination (hypostyle and dome) to worship Allah.

- Space quality

As illustrated in Figure.114, the space quality of Al-Javad mosque is very artificial and natural light penetrated in to mosque indoor from flat glass windows which gets stuck to the mosque building. The main causes of such fact is the new born material and structure make it non-spiritual.

Figure 114: Space quality. Al-Javad mosque.
(Author, 2015)

- Material and structure

The structure and material used in Al-javad mosque is reinforced concert, steel frame, and concrete structure. The usage of this material disturbs the space quality

especially in the way of applying openings which have a negative effect on spiritual space of the mosque.

- Elements

There is abstraction of important mosque elements in Al-javad mosque, such as: forecourt, hypostyle, courtyard, minaret, Ivan and porches and the only existent element is Mihrab and prayer area.

5.1.2 Case studies of traditional and contemporary mosques of Turkey

The case studies of traditional Turkish mosques regulated according to their major types and general characteristic of their architecture and as a major and origin source caused comparison and analysis on the results.

1. Rustam Pasha Mosque (1561-1563)

- History

In Ottoman Empire, one of the most important religious buildings built by Mimar Sinan was small scale Rustam Pasha Mosque in Istanbul. The mosque constructed for Rustam Pasha who was Sultan Suleiman Vizir and the husband of Sultan's daughter-Mihrimah Sultan. Rustam Pasha Mosque was damaged and reconstructed many times.(Paul Bourke,2003). Rustam Pasha Mosque formed and developed according to the form of the Istanbul city in Fatih district. Actually, the mosque built on uphill road with compact and congested fabric in Bazar. Bazar play an important role in connecting Rustam Pasha Mosque to both Main Street and sea side.

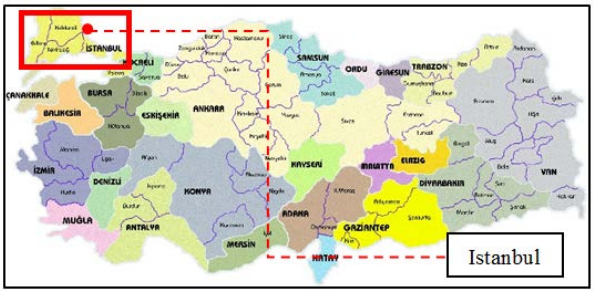

Figure 115: Rustam Pasha mosque .Istanbul, Turkey.
(Author, 2015)

Based on observation from the place and photos, the general characteristic of the Rustam Pasha mosque architecture goes through:

- Formal configuration

As demonstrates in Table.16, Rustam Pasha mosque applies the small scale type as the first types for Ottoman's Islamic traditional mosques. In the first stage the main core of mosque was the dome-building with its high height and huge central dome with rectangle plan shape and cubic form. In the second stage, Minaret added in North-West side of the mosque building. In the third stage, nearly courtyard shape as prominent element imposed to the mosque architecture and dislocation of main entrance from ground level to first level, and one story inside the mosque occurred. In the fourth stage, two lines of porches added to the courtyard with slope roof. The ground level covered by traditional shops existed in Bazar. The plan of the mosque to some extent is symmetry and involves two different rectangles and spaces formed based on dome-building section and elevations involve modular horizontal and vertical rectangles which are symmetry.

- Functional relationship

Functional relationship (Figure:116)in the Rustam Pasha mosque initiated from climbing up from two entrances which has vertical movement from material world to immaterial ones and then Muslims find themselves in the small courtyard to feel the spirituality and then went through ablution area to be pure from dirt and make decision to go other places, afterwards they pass through porches as neutral and preparing space for entering into dome-building to obtain and feel ultimate spirituality and worship Allah.

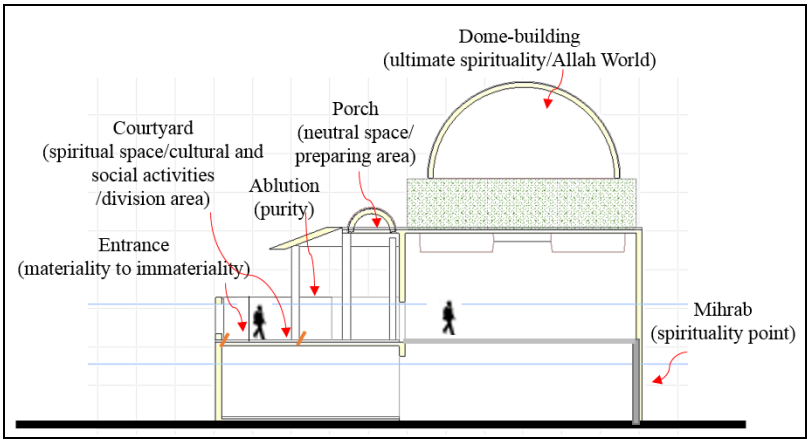

Figure 116: Functional Relationship of spaces in Rustam Pasha mosque. (Author, 2015)

- Space quality

As illustrated in (Figure:117) the space quality of Rustam Pasha mosque provided by curve simple openings situated in dome and its neck (Garive) and in building sides. Natural light penetrated through these openings in to the mosque indoor makes it more spiritual and also these pure and simple openings facilitated appropriate ventilation in the mosque and made visible seen from outdoor to indoor of the mosque.

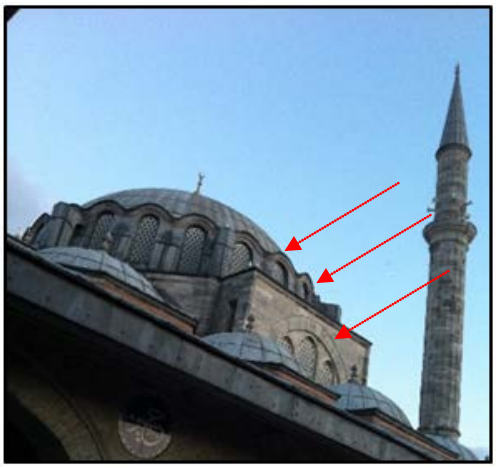

Figure 117: Openings and light penetration. Rustam Pasha mosque.
(Author, 2015)

- Material and structure

Based on observations on the place, the material and structure used in building the Rustam Pasha mosque is stone with barrier walls, finishing with gypsum opening used from blocks, tiles, wood and plaster and such pure material and structure increasing spirituality in mosque architecture.

- Elements
  - Entrance

Rustam Pasha mosque has two main entrances in North-West and North-East. Entrances are very simple for reaching the court yard Muslims should go up from ground level to the first level.

  - Mihrab

Mihrab has simple stone frame work which express itself by its shiny surface with tiling ornamentation to illustrate the direction towards Quibble.

  - Dome

Actually, dome (Figure: 118) has its tremendous architecture by the appliance of semi-supportive domes by which the central huge dome stands firmly. Dome has great radius with approximately high height. Predominantly, the thickness of Ottoman mosque dome-building especially its supporting walls are very outstanding.

Figure 118: Dome-building. Rustam Pasha mosque.
(Author, 2015)

- Porches

The porches (Figure: 119) of the mosque divided in to two shapes; the first on attached to the building of the mosque has five couplets and the second one has slope wooden roof work as a space between courtyard and first porch.

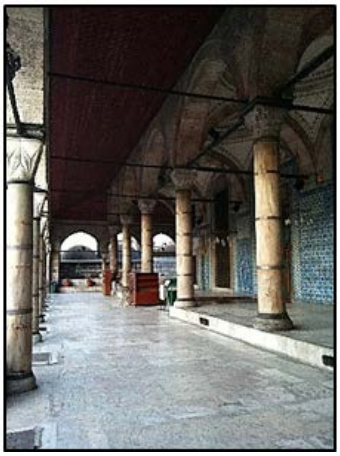

Figure 119: Porches. Rustam Pasha mosque.
(Author, 2015)

- Courtyard

The courtyard (Figure: 120) of Rustam Pasha Mosque has stretched rectangle shape liking two entrances on the same axis with each other. Notably, it separated from the porches by the usage of stair and it limited by the arch walls situated on the North side of the mosque.

Figure 120: Courtyard. Rustam Pasha mosque.
(Author, 2015)

- Minaret

The stone minaret (Figure :121) has pencil shape form with one gallery-Balcony on top and it attaches to the mosque building with cone warhead.

Figure 121: Minaret. Rustam Pasha mosque.
(Author, 2015)

2. Hadim Ibrahim Pasha mosque (1550-1552)

- History

The mosque constructed by Mimar Sinan the well-known architect of Ottoman Empire in Istanbul Turkey. The type of the mosque refers to the Viziral ones with its unique architectural design and built for Ibrahim Pasha as a Vizir of Sultan Suleiman. The Hadim Ibrahim Pasha Mosque (Figure:122) destroyed many times and reconstructed again. Ibrahim Pasha Mosque formed according to the form of the Istanbul city in Fatih district. Actually, the mosque built on nearly uphill road with compact urban fabric and is closed to the main street.

Figure 122: Hadim Ibrahim Pasha mosque. Istanbul, Turkey.
(Author, 2015)

Based on observation from the place and photos, the general characteristic of the Rustam Pasha mosque architecture goes through:

- Formal configuration

Practically, as shown in Table.17, according to observations and findings on the Ibrahim Pasha mosque the deductions confirm, in the first stage, the core of the mosque was dome-building and because of the reconstruction confronted with new architectural design in which the simple square base of the dome converted into hexagonal ones with more powerful structure and second stage involves the addition

of minaret and porches with five hug couplets emphasis on the main entrance. The plan of the Ibrahim Pasha mosque is symmetry and spaces formed according to the dome-building axis and section and elevations involve modular symmetric horizontal and vertical rectangles.

- Functional relationship

Functional relationship (Figure:123) of Hadim Ibrahim Pasha mosque initiated directly from main entrance in which Muslims entered into immaterial space by means of porch as a neutral and preparing area and enter into dome-building to obtain and feel ultimate spirituality and worship Allah.

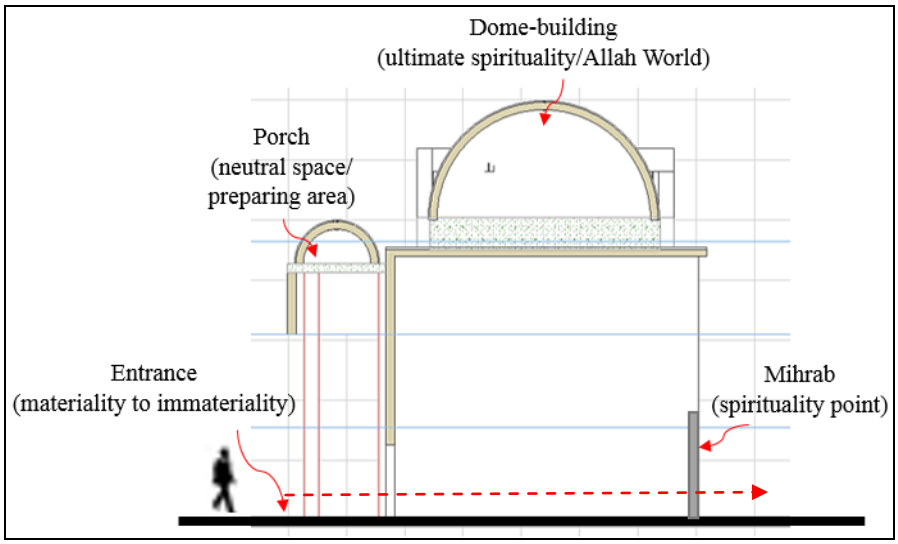

Figure 123: Functional relationship.Hadim Ibrahim Pasha mosque. (Author, 2015)

- Space quality

In Figure.124, it is obvious that space quality of the mosque provided by curve windows situated around the dome and in building sides. Actually, light penetrated by the use of these openings in to the mosque indoor especially dome building and intensifying spirituality.

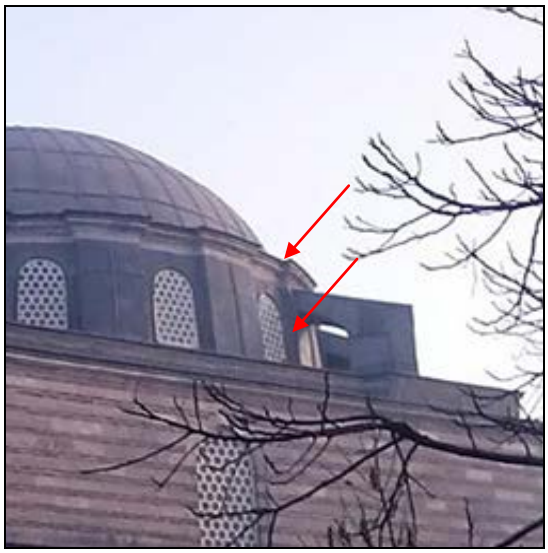

Figure 124: Openings and light penetration.Hadim Ibrahim Pasha mosque.
(Author, 2015)

- Material and structure

Truly, material and structure used in Ibrahim Pasha mosque is vernacular material as a mixture of block stone and steel sheets. These material and structures make appropriate compatibility with the architecture of the mosque and caused ultimate spirituality in it architecture.

- Elements
    - Entrace

Ibrahim Pasha mosque has one main simple entrance (Figure: 125) in south side. It has small indenting from the thickness of the wall and Mogharnast ornamentation. On top of the entrance there is Arabic inscription pointed out the uniqueness of Allah.

Figure 125: Entrance. Ibrahim Pasha mosque.
(Author, 2015)

- Mihrab

The stone Mihrab (Figure: 126) has simple curve framework with a little intending from the wall. It has unique ornamentations as Mogharnast type and its height is considerable.

Figure 126: Mihrab. Ibrahim Pasha mosque.
(Author, 2015)

- Dome

Dome (Figure: 127) has simple architecture without the usage of semi-supportive domes. The central huge dome supported by buttresses and stands firmly. The blue color of the dome and its neck make it as an isolated cover which overshadowed the Muslims sight by means of its pure amalgamation with sky.

Figure 127: Mihrab. Ibrahim Pasha mosque.
(Author, 2015)

- Minaret

The stone minaret (Figure :128) has pencil shape form with one huge gallery-Balcony with thick wall and pointed out towards sky with its cone warhead.

Figure 128: Minaret . Ibrahim Pasha mosque.
(Author, 2015)

- Porch

The porch (Figure: 129) of the mosque has five couplets with huge arches stand on stone columns. Such space which made by the arches and columns make a neutral space for Muslims to be pure from material life and directly went towards immaterial space and find theirs selves in the dome building.

Figure 129: Porch . Ibrahim Pasha mosque.
(Author, 2015)

3. Suleymaniye Mosque (1550-1558)

- History

The Suleymaniye mosque constructed by Mimar Sinan by the order of Sultan Suleiman during ottoman period in Western part of Istanbul. The mosque is very well-known because of it is the largest and ancient mosque in the Istanbul and has the superb sights in the city due to its position on hilltop. The mosque destroyed by a fire in 1660 and reconstructed by Sultan Mehmet. The Suleymaniye mosque involves vast complex especially Madrasah, Caravansary, Hammam and other public spaces. The Mosque is of the most prominent node of the Istanbul which formed and developed. Truly, the mosque built on the third uphill road with congested fabric near the main Bazar of Istanbul.

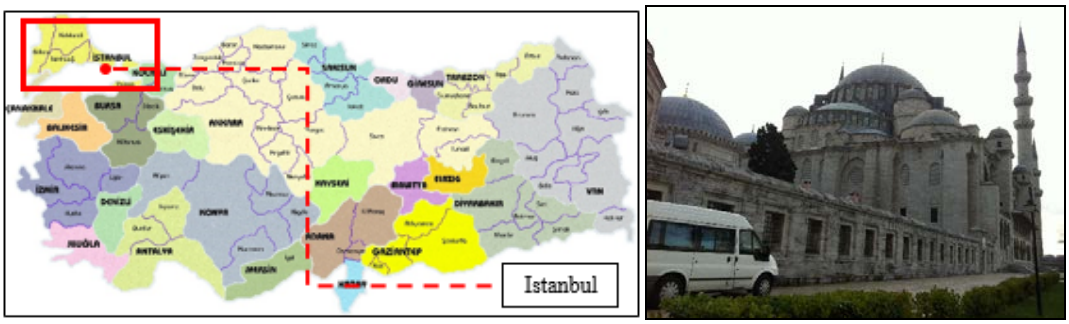

Figure 130: Suleymaniyeh mosque. Istanbul, Turkey.
(Author, 2015)

Based on observation from the place and photos, the general characteristic of the Rustam Pasha mosque architecture goes through:

- Formal Configuration

On the basis of Table.18, in stage one, the primary core of the Suleymaniyeh mosque was the Dome-building. As mentioned before dome is the most important element in Sunni mosques because the beliefs towards Monotheism. The second stage refers to the addition of pair minaret from ground level on the main gallery (main porch) .In the third stage primary symmetrical porch (gallery) attached to the dome-building. In the fourth stage there is a construction of secondary porches (galleries) leading to the creation of courtyard by the same entrance axis with Dome-building entrance and Mihrab and the pair approximately small minarets added to the main façade of the mosque in order to emphasizing on the main entrance. The plan of the mosque is symmetry and involves two overlapped rectangles and spaces formed based on dome-building, section and elevations involve modular horizontal and vertical rectangles which are symmetry. The elevation confronted with huge numbers of ornamentation and outside edges. The mass of the mosque is introverted and extroverted in inside and outside.

- Functional relationship

As mentioned in (Figure:131) in the first movement Muslims entered to the space before the main entrance as pre-entrance and entering to immaterial space. After wards they pass through the main entrance to stay in neutral space, to and make a decision and unintentional movement towards dome will occur. By passing the neutral space they entered to the courtyard to sense spirituality and spread into other mosque's spaces such as hypostyles (prayer area) for worship Allah and ablution spaces to free from impurity . From central courtyard they go through porch as a common neutral space to prepare themselves for entering into dome-building to obtain and feel ultimate spirituality.

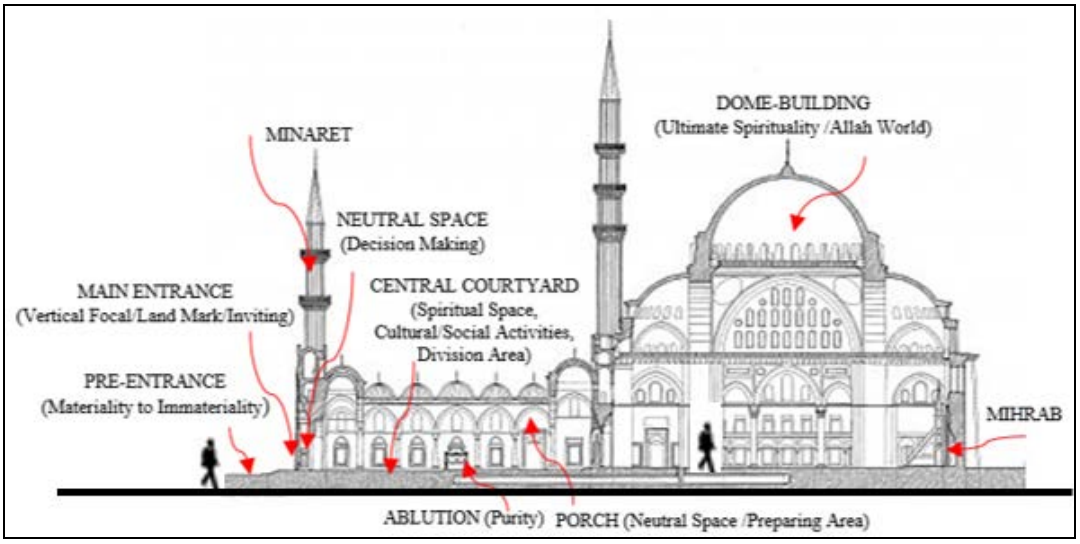

Figure 131: Functional relationship. Suleymaniye mosque.
(Author, 2015)

- Space quality

In (Figure: 132) it is obvious that space quality of the mosque provided by the numerous numbers of openings such as; curve windows with different size which situated around the dome, Semi-domes and building sides, glass doors either for

lightening and ventilation of spaces. Light penetrated by the use of these openings in to the mosque indoor especially dome building and intensifying spirituality.

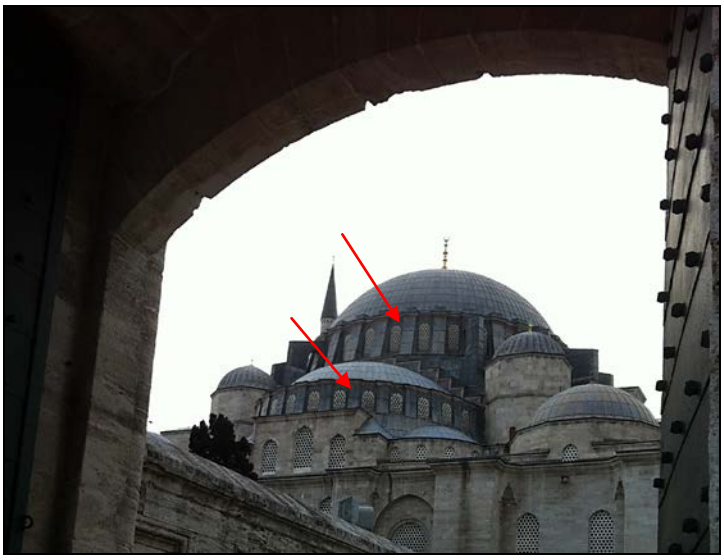

Figure 132: Openings and light penetration.Suleymaniye mosque.
(Author, 2015)

- Material and structure

Truly, material and structure used in Suleymaniye mosque is mixture of block stone and steel sheets. By looking precisely at Sulymaniye mosque material and structure there is pure integration between the openings, material and structure and they absorbed each other and bring about delicate spirituality in the mosque architecture.

- Entrace

The Suleymaniye mosque has five main entrances and only one of is in the same axis with Mihrab and two of them directly open in to Dome-building and the others open into porches (primary and secondary galleries). The entrances emphasized by inscription on top of them.

- Mihrab

The stone Mihrab (Figure: 126) has simple curve framework with a little intending from the wall.

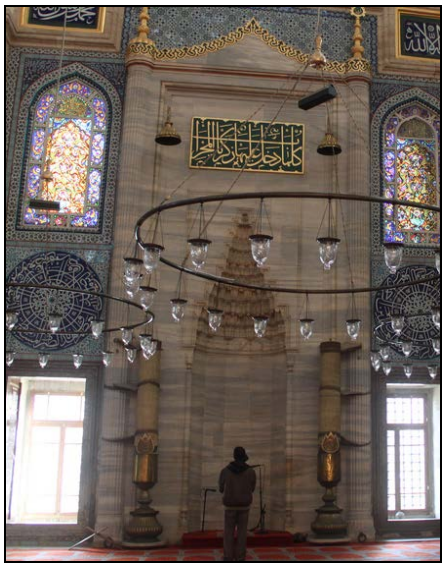

Figure 133: Mihrab .Suleymaniyeh mosque.
(Author, 2015)

- Dome

The central dome (Figure:133) has its unique design with the appliance of numbers of supportive semi-domes. These supporters are vary in arches and heights and they are symmetry. Dome-building in comparison with other Ottoman mosque it is more outstanding because illustrates it imperial existence to the others.

Figure 134: Dome-building .Suleymaniyeh mosque.
(Author, 2015)

- Minaret

Increasingly, such marble minarets (Figure:133) with three balconies became the concept for other imperial mosques in Ottoman period. Basically, in some imperial mosques the numbers of pencil minaret extended to six modules. Two of them attached to the dome-building and main gallery and other attached to main entrance wall.

Figure 135: Minarets .Suleymaniyeh mosque.
(Author, 2015)

- Porch (gallery)

The mosque involves the primary and secondary symmetrical porches (galleries) which make a harmony and compatibility with the additional minarets besides Dome-building. The main gallery (Figure: 135) has nine couplets and secondary (Figure: 136) ones have seven couplets.

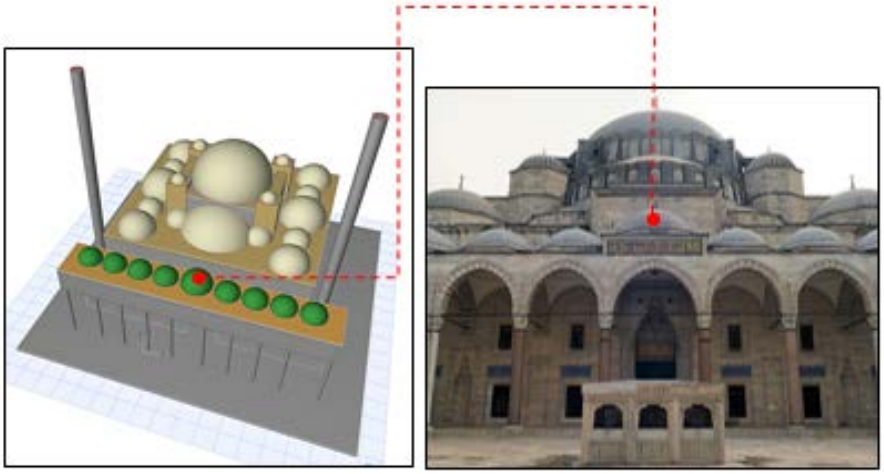

Figure 136: Primary gallery .Suleymaniyeh mosque.
(Author, 2015)

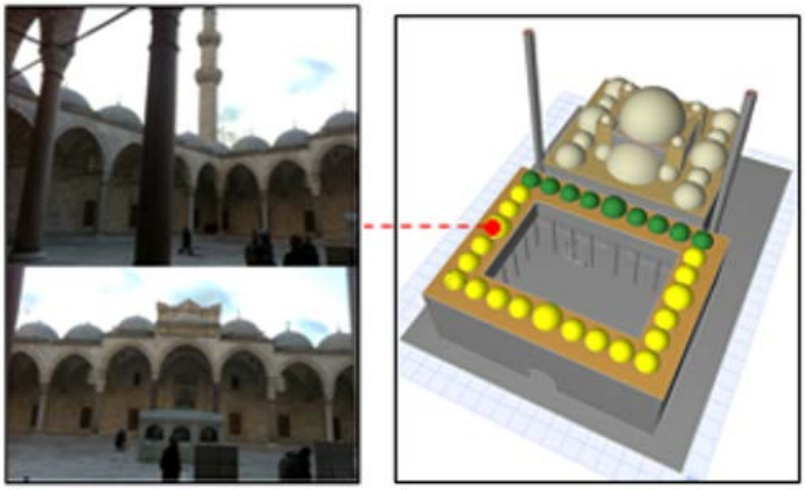

Figure 137: Secondary galleries .Suleymaniyeh mosque.
(Author, 2015)

The case study of contemporary Turkish mosques reveals the major general characteristic of mosque architecture and comparison and analysis on the results.

1. Grand National Assembly Mosque (1989)

- History

The Grand National Assembly Mosque designed by Turkish architect Behruz Cinici in the semi-intensive urban fabric in the zone of the turkey parliament as a political

district. The most prominent point in this design is its architectural design departure from the mosque architecture and created new approaches. The mosque situated in South of the TBMM campus at the end point of pedestrian accessibility (Abd Al Samadi Esfahani, B, pp.6).

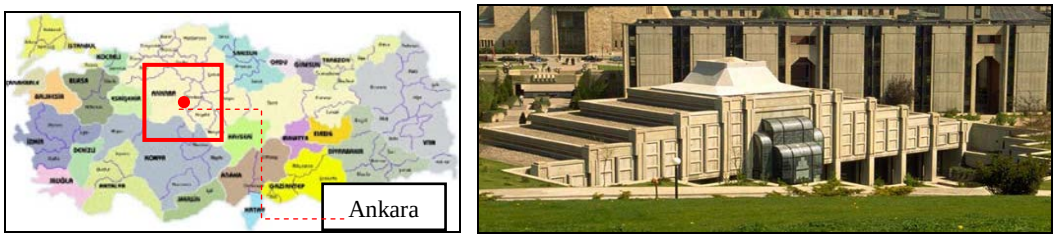

Figure 138: Grand National Assembly Mosque, Ankara, Turkey.
(Author, 2015)

Based on observation from the place and photos, the general characteristic of the Al-Javad mosque architecture goes through:

- Formal configuration

As demonstrated in (Figure: 138) the Sunni religious beliefs do not preserve its main source which is Human/Muslim-Allah axis and based on symmetric plan (Figure:138) of the mosque there are two main entrances opens to the primary and secondary prayer hall. The primary entrance directly opened to the rectangle prayer hall without any ritual transition and then Mihrab situated faced to the main entrance and in front of the Mihrab façade there is greenery area with sharp edges that caused the mass of the mosque disappeared from the Muslims seen.The formal configuration of the Grand National Assembly revolutionized its predecessor and increasingly at first glance it shows merely the image of mosque.

Actually, the volume (Figure: 139) of the mosque is similar to ziggurats and at the peak pint there is an essence of pure pyramidal role as the dome architectural element. and existed topography combined with the well-defined homogeneity in their architectural design and he inspired from the concept of Kulliye in his design by designing courtyard as the main core surrounded with two Northern and Eastern sides which are mosque and library. In traditional point of view, mosque preserves the Ottoman traditional mosque single dome type and elements in secular design especially with the abstraction of Mihrab, dome and secondary galleries.

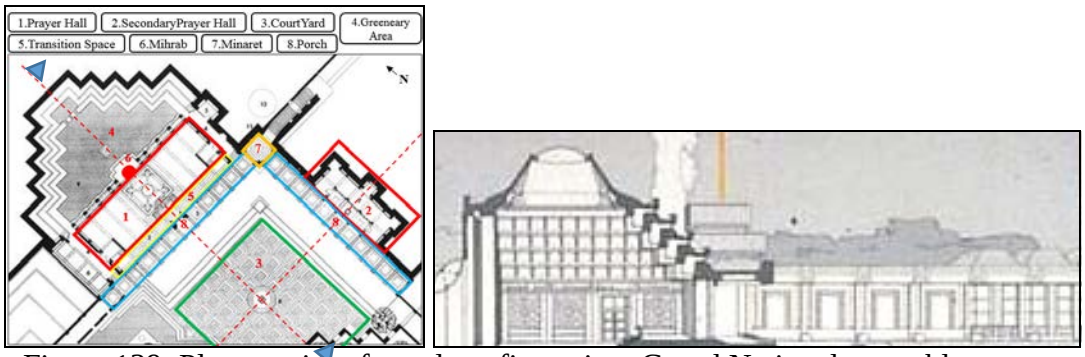

Figure 139: Plan, section, formal configuration. Grand National assembly mosque. (Author, 2015)

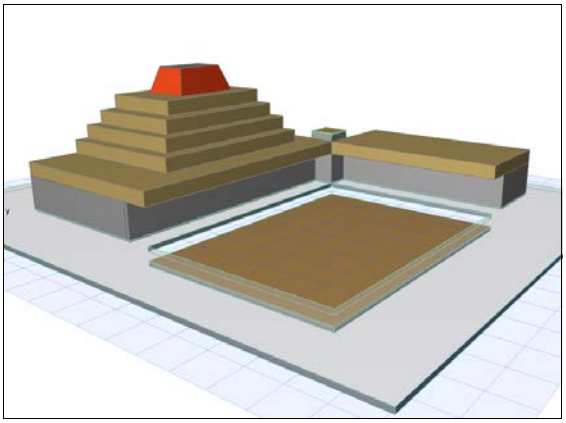
Figure 140: Mass, formal configuration. Grand National assembly mosque. (Author, 2015)

- Functional relationship

Muslims can enter to the mosque courtyard from different directions to make a decision , then by using ablution became pure and go to another spaces by passing through the porches as natural and preparing area they directly entered simple entrance to the primary prayer hall as a focal point of spirituality and then faced towards Mihrab worshiping Allah.

- Space quality

As illustrated in (Figure:140) the space quality of Grand National Assembly mosque is provided from the simple openings divided into the glass doors and vertical windows situated in Mihrab side as Northern part. The natural light only penetrated from Mihrab windows to the mosque indoor and the artificial light facilitated by the lamps and lusters hang up from the roof.

Figure 141: Openings and light penetration.Grand National Assembly mosque (Author, 2015)

- Material and structure

In its structural form background involves the amalgamation among both classicism and Brutalism. There is a usage of steel frames, hewn-stone and rough reinforced

concrete with height vertical strips of glasses demonstrate building elongation parallel Y axis and repeated modular cubic forms in the façade. The usage of these material and structure have a negative impact on spiritual space of the mosque because it seems that they attached to the mosque as frame work or coverage (Holod, R, Uddin Khan H).

- Elements

  - Mihrab

Mihrab (Figure: 141) situated in Northern part of the mosque with its glaze glass. The important point is that, it is similar to transparent box float on the sunken garden which is full of water. This element kwon as the only spiritual element in this mosque.

Figure 142: Mihrab.Grand National Assembly mosque.
(Author, 2015)

  - Minaret

In the conjunction point of Northern and Eastern side there is a vertical cube stone shape element known as the minaret (Figure:142) of the mosque which is severely

insisting against the traditional form of the minaret but it tried to show the balcony of Ottoman traditional minaret with its two-stepped shape.

Figure 143: Minaret.Grand National Assembly mosque.
(Author, 2015)

- Porch

The Grand National Assembly mosque porches merely reminds the name of the porch. As shown in (Figure:143) the architects used some cubic base volume in the ground directly under the outer edge of the mosque to identify the porches.

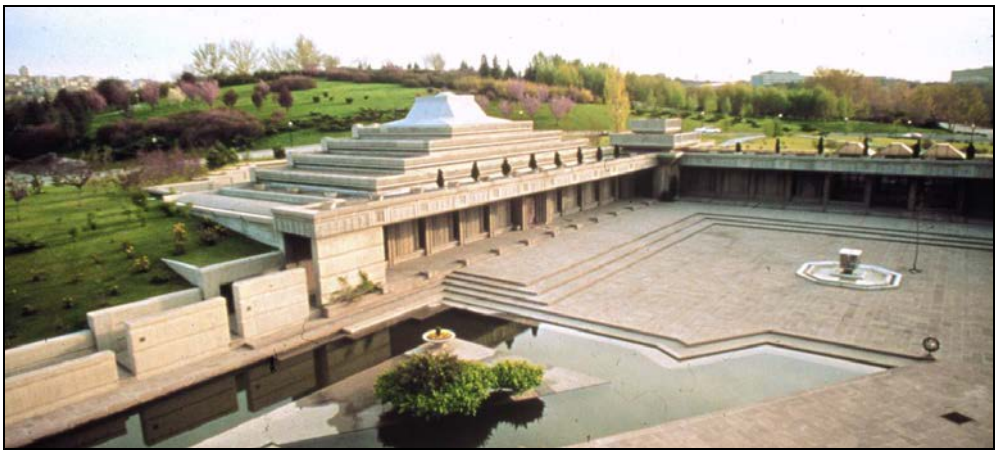

Figure 144: Porches. Grand National Assembly Mosque.
(Bulletin, V, 2014)

- Courtyard

The courtyard of the mosque is something different from mosque courtyard it put a side of the mosque without any limitations. The ablution area play a key role in identifying it as the mosque court yard.

5.2 Comparison of the case studies

Based on the results gathered from selected mosques and information which have been given in previous part, in this section author tries to illustrates the exact outcome from the comparison between traditional mosques in both countries together and the same comparison for the contemporary ones. After this comparison needed information will be ready for the thesis analysis in order to reach the conclusion.

5.2.1Comparison between religious beliefs axes in Iranian and Ottoman/Turkish traditional Ismaic mosques

As shown in Table.19, in left side of the table the Islamic traditional mosques of Iran and their Muslims religious beliefs axis (Muslim-Imam-Allah) have been shown. In overall view the emphasizing on this axis which is focal point is Isfahan Jameh mosque increased tremendously. As mentioned in theoretical backgrounds, the Tarikhane mosque is the first hypostyle type of Iranian mosque tried to be in the direction of (Muslim-Imam-Allah) axis. This process, firstly initiated by forming central courtyard as an element created centrality and axisality (Pontificate foundation) in Iranian mosques and then the addition of hypostyle which is columned and spiritual space in order to worship Allah with outstanding Mihrab in Southern side and in the direction of Quibble and rotation of 90 degree from the main entrance.

Gradually, the columns of hypostyle entered to the central courtyard and created porches. These porches formed according to pointing out the (Muslim-Imam-Allah) and the role of central courtyard in the conjunction point of material and immaterial forces. So, hypostyle needs the comprehensive and unique element to preserve the spiritual space towards Allah world, such element created in Barsiyan Jameh mosque

which is the second Iranian mosque type as dome-building so Mihrab situated under the circular roof with Allah-Axis and for connecting the dome-building (Allah) with central courtyard (Imam) there is need of neutral space for preparing the Muslim by Imam which is Ivan. This element needs the axis with starting and ending point collected the spirituality forces towards Allah world, for this purpose the main entrance put as the first match point with the axis of central courtyard and Mihrab. This fact initiated from Atiq Jameh mosque which is the third type of Islamic mosque and in order to insisting on this axis Western and Eastern Evans added to the mosque architecture. The focal point of such architecture revealed in Isfahan Jameh Mosque as introverted four-Ivan mosque with dome shows the full intensity of Shia axis. In Isfahan Jameh mosque the intensity of Shia religious beliefs clearly showed in architectural characteristic of the mosque. In Isfahan Jameh mosque pure and appropriate amalgamation between its formal configuration, space quality, functional relationship, material and structure and fundamental elements providing the infinite spirituality.

In Isfahan Jameh mosque simple past entrances converted into forecourt, Ablution Fountain insisting on the existence of central courtyard, the one level porches converted in two levels, the flat Mihrab converted into indent ones, the introversion became more important by the addition of columns from hypostyle to courtyard, increasing the number of hypostyles around the dome-building, the usage of bricks, stone, wood and vault arches increasing the quality of space by playing with light penetration through different kinds of openings, plan confronted with more space shaping towards the main axis (Muslim-Imam-Allah) . Nevertheless, the deduction confirm that, the Shia religious beliefs in Iran from the Tarikhane mosque up to

Isfahan Jameh mosque progressively increased and provided the delicate ground for spirituality.

Actually, in the right side of the table the Islamic traditional mosques of Turkey (Ottoman) and their Muslims religious beliefs axis (Muslim- Allah) have been demonstrated. Generally, the emphasizing on this axis which is focal point is Suleymaniye mosque increased tremendously. By the facts that mentioned in previous chapters Rustam Pasha mosque is the first small type of Ottoman mosque and by the forming of first element of Sunni belief axis which is dome (centrality foundation) has been designed. In this mosque Allah is the only core point for design the mosque so for insisting on this point the primarily and secondary porches added to the mosque building and created the neutral space by which Muslims entered directly to the mosque from different directions. Inchmeal, on the basis of Sunni religious beliefs importance, Dome-buildings became as a top priority and their structure became more complex which can obviously see Ibrahim Pasha mosque. At this time, the previous secondary slope porch replaced by simple primary porch with different couplets providing the ground for central courtyard as the conjunction point of material and immaterial points. This fact reveals by the designing of Suleymaniye mosque and its unique dome, central courtyard surrounded by with arches and different entrances.

In Suleymaniye mosque the intensity of Sunni religious beliefs clearly showed in architectural characteristic of the mosque with reference to its pure and appropriate amalgamation between formal configuration, space quality, functional relationship, material and structure and fundamental elements providing the infinite spirituality. In such architecture, because of the prominent existence of the Allah dome designed by

huge width and height and involves huge numbers of semi-domes. Generally, the deduction confirm that, the Sunni religious beliefs in Turkey from the Rustam Pasha mosque up to Suleymaniye mosque progressively increased and facilitated the delicate ground for spirituality.

Consequently, the major difference between religious beliefs axes in traditional Islamic mosque of Iran and Turkey (Ottoman) is in the way of forming their religious belief axes and the absent of some architectural elements in Ottoman mosque which is Ivan, ritual transition and hypostyle (in Ottoman refers to the prayer hall not that much as columned hypostyle). The similarities between their religious beliefs axes which reflected to their mosque architecture is, as the time passed this axis become more powerful than its previous period by the addition of different elements which lead to the creation of different spaces. In general the Religious beliefs axes had up ward growth from one period to another ones; that reflected the Muslims progressive demands towards their religious beliefs in traditional period in both countries. Due to this facts the spiritual space of traditional mosques of Iran and Turkey has its highest level caused that Muslims going from Material space to immaterial ones.

5.2.2 Comparison between religious beliefs axis in Iranian and Turkish contemporary Islamic mosques

With regard to selected contemporary mosques are located in different countries with different beliefs of Muslims there are not mentionable differences generally in architectural way of design.That shows important factors which had direct effect on religious axes and spirituality in traditional mosque architecture is faded away in both countries contemporary mosques. That means mosques are more effected by new technologies than old meaning of sacred spaces now days.

5.3 Analysis of the case studies

By general overview on traditional and contemporary Islamic Mosques of Iran and Turkey the comparison between traditional and contemporary mosques illustrated that in contemporary period the general characteristic of the mosques architecture confronted with dramatic changes which involves the changes in plan, section, elevation and mass rather than traditional ones. Actually, they do not have any specific formal configuration they are only the architectural design with a general concept behind them, most of them imitated from their traditional version and some of them have contradict hypothesis and architectural design from traditional ones.

In contemporary mosques the spaces with the ignorance of Shia and Sunni religious beliefs axes regulated next to each other's and plans have different shapes either symmetric or asymmetry in their formal configuration or they copied from another religious buildings such as churches. The elevations and sections do not fallow the modular rectangle shape and the mass formal configuration is vertical than horizontal. There are the abstraction of important and sacred elements such as; dome, minaret and courtyard. For instance the dome as an important sacred elements for providing spirituality ignored or the height of the dome decreased and its neck eliminated and they have a different scales and its shape diagram involves sharp edges without any centrality, these facts rooted in new born technologies and materials which have a great impact on mosque space quality.

It is necessary to stated that in contemporary mosque of Iran different entrances created with the same valuable architectural design as main entrance. The depth of Ivans diminished and led to fading away spirituality. In most of contemporary

mosques minarets stand free from the mosques volume this facts disturbs the fact that Muslim rises his head and hand towards Allah omnipotence to desiring spirituality and they have two hypothesis to induce the minaret elements which are; height of minaret and verticality. In the most of contemporary design there is abstraction of Ivans in Iranian mosques and porches in Turkish mosques. The other important fact is contemporary mosques become more non-public rather than traditional ones in which introversion and people centered was the main core point of the mosque to creating gathering area for Muslims community.

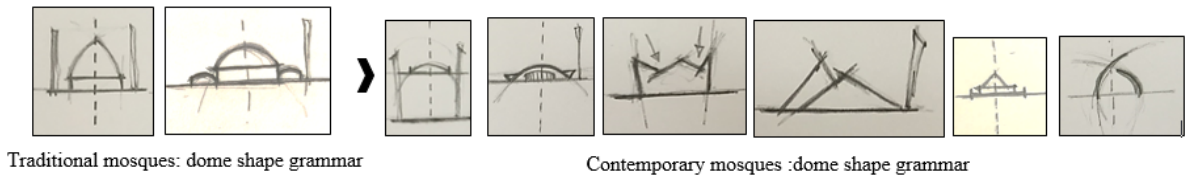

Figure 145: Traditional and contemporary mosque; dome shape diagram (Author, 2015)

In contemporary mosques courtyards have open sides whereas traditional ones has closed central courtyard in four sides. The usage of new born material and structures such as reinforced concrete and steel frames gives the new design approaches to architects to design integrated mass in comparison with traditional mosque with non-integrated ones leads to decreasing space spirituality.

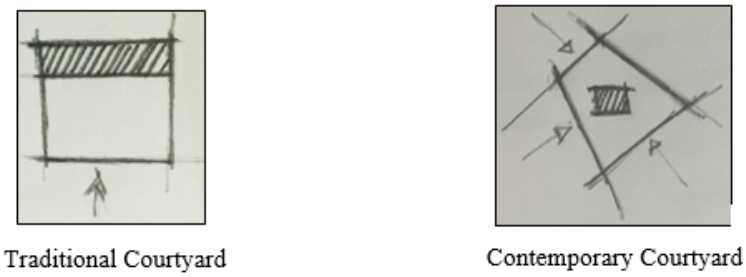

Figure 146: Traditional and contemporary courtyard.Iran and Turkey (Author, 2015)

The huge transition spaces in Iranian contemporary mosque ignored or shift to small ones and there is an abstraction of recessed alter by the material ones. Due to the abstraction of prominent and vital sacred elements there is not and existence of specific functional relationship as the one of the most crucial characteristic of the mosque architecture.

Nevertheless, this analysis comes from the outcomes existed in comparison between contemporary and traditional mosques in this chapter. Accordingly all of the information specified and sum-up in general conclusion.

Chapter 6

CONCLUSION

In fact, in this thesis the Islam and its significance, influence and expansion to other countries have been considered. One of the most important aspect of its influences providing the ground for initiation of Islamic religious beliefs in two groups as Shia and Sunni and the way of performing these religions led to the creation of religious building in order to Muslim worship Allah and meet their demands. For this purpose Islamic mosques designed as an integrating place for Muslim communities to perform their religious beliefs.

Truly, in chapter three thirty nine important Islamic mosques have been chosen from Iran and Turkey countries by emphasizing on four important traditional mosques in Iran and three ones in Turkey because of the similarities and differences in their Muslims' religious beliefs, common historical periods in mosque architecture and their valuable architecture in the field of Islamic mosques. Based on Islamic philosophers' point of view the architectural characteristics of these mosques have involved various changes from the beginning which has been Muhammad Prophet mosque up to our contemporary world as a result in a shift from ancient to new development because of the secular aspect of contemporary life.

Actually, based on theoretical background, comparison methodology based on observation technique although the architectural process from traditional mosques to contemporary ones tried to link and mapping their similarities and differences but it

created gaps fading away emotional and spiritual space in mosque architectural design rather than past. Such fact created a ground for the changes in the sense of both indoor and outdoor space spirituality in mosques architecture. So for this purpose twelve contemporary mosque in both countries have been chosen and from this twelve mosque two case studies selected because of their architectural design.

The information revealed that most of the Iranian and Turkish mosques which have been built in contemporary periods imitating from their traditional rules and regulations or have contradict hypothesis in their architectural design against divinity world but involves and inducing the general image of the mosque without symbol of heaven, paradise and sky in their architectural design. It is vital to stated that, the major causes of these gaps rooted in the diviation of Muslims from the origin of their religious beliefs and the creation of new technologies such as material and structure.

Although, the appliance of new born technology lead to Iranian and Turkish contemporary mosques become structurally lighter and safe but they built something different in comparison with traditional ones. Virtually, such contemporary Islamic mosques with their new developed material and structural system insisting against the traditional mosque rules and regulations. As shown in chapter five, each types of case studies evaluated in terms of their general characteristic and reach the point that new born material and structure severely overshadowed and had the negative influence on their general architectural characteristic involves; formal configuration, functional relationship, space quality and their elements which disturbs and diminish spiritual space in these Islamic mosques.

Tremendously, traditional mosques have their unique and well-defined vernacular material and structure, every part of their architectural elements have a compatibility and homogeneity with other parts. In traditional mosque architecture dome known as the main spiritual element reveals divine world and space spirituality features whereas the abstraction of this element and other spiritual elements like courtyard in contemporary mosques illustrates their non-spiritual aspect.

By looking precisely at case studies in both periods of tradition and contemporary in Iran and Turkey the contemporary architecture ruined the sense of space spirituality and gives merely the visual sense of spirituality with inappropriate compatibility between spiritual space and non-spiritual materials and structure (reinforced concert, block joist, steel frame and sheets). Consequently, mosque as a most important factor in city structure becomes faded and its role in the organization of Islamic city space is ignored.

6.1 Further studies

According to this research in the process of designing traditional mosque up to contemporary periods due to the vital factors as Muslims religious beliefs and general characteristic of mosque architecture refers to formal configuration, functional relationship, space quality, material and structure and elements had a great influence on space spirituality created a infrastructure information for researcher and further studies in order to providing valuable sources that given to future Islamic mosques architects for having positive influence on accelerating sense of spirituality in Future Islamic mosques.

From the view point of mentioned factors and their influence on spirituality, material and structure among others had more psychological impact on the users and conveying the sense of spirituality while there is different perspectives towards this issue, for instance the way of choosing material and structure and their influence on mosque indoor spaces towards its vernacular material or impact of climate on the material and structure in different climatic conditions can be the base for future researches.

When the final structure of this research with the help of complementary further research finalized it can be a plat form for the similar studies on other types of religious buildings in order to compare the sense of spirituality through the passage of time by the consideration of influential religious factors in buildings architecture.

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