The Reflection of Lifestyle Changes in Housing Architecture of Different Occupational Classes of Iranian Oil-Based Company Towns before the 1970s
(Case Study: Abadan Company Town)

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Abstract

Problem Statement: Following the cultural affectability of Iranians from Europe during the Qajar dynasty, the gradual penetration of new architecture and urbanism also happened. The advent of the oil industry in the southern territory of Iran, besides the presence of foreigners who were the conveyers of the changes, turned that gradual penetration into a hasty movement, which led to the creation of a phenomenon called company towns. In these towns, the new lifestyle was based on occupational and social classifications and individuals' positions in the production system, which demanded a new living receptacle and architectural body.

Research objecive : The study was carried out to demonstrate the lifestyle changes in these town companies, their influence on architecture, and the identification of the resulting modern life pattern that subsequently infiltrated into the heart of our culture.

Research method: Software-assisted scrutiny and qualitative analyses were used in descriptive-historical research. Utilizing AGRAPH software, explanatory graphs obtained from the software were analyzed for the physical identification of sample houses chosen from three different occupational classifications in Abadan company town. Afterward, magazines and bulletins published from 1940 to 1970 were investigated for recognition of lifestyle changes. The lifestyle changes were identified by qualitative analysis, and ultimately, the results were obtained by content-descriptive and comparative analysis methods.

Conclusion: It can be cited that changes in factors of consumption, leisure, culture, and identity have had the highest impact on the lifestyle of residents of Abadan oil company town. The creation of different structures in the plan of houses of various occupational classes, elimination of compounds, spatial changes of a kitchen, and ultimately extroversion, and entirely different structures of bungalows at the managers' level are examples of the reflection of those changes.

Keywords: *Lifestyle, Classified architecture, Oil-based company town, Housing.*

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Introduction

The emitted modernism from western countries, which was inchmeal commenced from the Qajar dynasty and hurriedly spread in the 1st-Pahlavi era, transformed the traditional society of the country. One of the most significant changes was the advent of the oil industry and its related industries which had a tremendous impact on the emergence of modernism and the development of the country. Modernism led to the formation of the first industrial cities in Iran meaning Abadan and Masjed-Solayman. This consequently led to a new culture and lifestyle and novel architecture in the form of housing and other constructions. Some of the results were the arrival of the first type of western house named bungalow and also the construction of the first modern entertaining, educational, and healthcare centers in these cities. About a century ago, the construction of these company towns was an important chapter in the history of modernization and urbanization in Iran (Ehsani, 2008, 29).

In the United States, a company town is a city dedicated to the design, maintenance, and management of a company or private or governmental organization. Two main goals are followed in the construction of such towns. The first goal is obvious which is the housing for and the accommodation for the workforce. The second is the use of carefully-designed urban space for education, surveillance, and control in short term and also for the socialization of the workforce in accordance with the company's will. The architecture of houses in these areas which was previously determined according to the existing social structure based on occupation and position is considered differently. Living in these houses demands a unique style and way. In fact, there is specific coordination between the lifestyle and the house architecture in each occupational (social) class. From a general point of view, the architecture of these areas provided all essential constructions such as houses and educational and service

facilities (gym, entertainment clubs, cinema, etc.) by defining a wide range of typologies for all occupational groups. This led to a place separation of living and gathering between different social and occupational classes. To name, three occupational (social) classes of laborers, clerical employees, and managers were conspicuously recognizable.

The present study was performed to answer the following inquiries:
- How did the lifestyle changes of dwellers living in oil company cities happen and what were the influencing factors?
- What kinds of impact have the changes had on the physical evolution of houses in the classifying system present in those company houses?

Research Background

In his well-known book named Company Towns which is the only available book and source in the field on surveying such areas, John Garner (1984, 22) says that "these company towns appeared between 1830 and 1930". He also calls this period the starting time of the paleotechnic era1. Regarding the ineluctable industrial revolution and the commencement of the modern era across the world, he also considers this age as the beginning of environmental destruction and damage and artificializing nature. The construction of company towns commenced in the late 19th century in the United States. Thereafter, it was popularized in European and Scandinavian countries and later in colonial countries with resources respectively.

In collected research ordered by the Iranian Oil Company – performed by Sirous Bavar and Farrokh Bavar, it was mentioned that "although Iran was not a colony, it was not neglected by the foreigners due to its rich resources such as oil. From 1925 to 1928, some articles were published in Hobbol'Matin newspaper pressed in India under the title of "The black gold or Gold-enriched springs of oil". The articles were published by Mohammad-Javad Pejman and described several activities related to the discovery and exploitation

of this fossil fuel which had been started many years ago in the southwest of Iran. The important point in those articles is the emphasis on the necessity of the creation of the company towns in the southern territory of Iran due to the oil-related operations in the area. Another substantial point is the creation of an industry-related culture that was implemented by foreigners especially Britons in this part of Iran. They created such an industry that was the base and foundation of economic changes in Iran and even across the globe (Bavar & Bavar, 2001, 256). This gathered collection is the only codified document of the general information about Khouzestan's company towns.

In the historical studies of the research, the targeted period is the 1930s which is a key duration for the transition from the development dependent on the pre-capitalist Qajar dynasty to the development based on post-war capitalism which has led to economical and class transformations in the social structure of the country. These changes were produced by an oil-based economy that turned the government into a rentier[2] state (Fooran, 1999, 21). On the other hand, it should be cited that the ancient acquaintance of Iranians with oil has been mentioned in historical documents. "In those days, no one thought the black stinky substance could be the origin of a deep transformation in human life. In the limited quantities and confined range, the oil was utilized for lighting and some medical purposes" (Movahed, 2011, 69).

With all these interpretations, there is no codified research on Iranian company towns, their essence and precise description, and the relations of architecture and urbanism in them due to the existence of oil in those areas and henceforth in the macro level of the country. Merely, the description of the housing architecture of the Masjed-Solayman oil-based company town is discussed in a book by Mehran Dashti. This book, the period is entitled the beginning of comprehensive development and also the commencement of modern housing in Iran (Dashti, 2015, 26).

In Table 1, some of the important available sources related to the topic of the research are mentioned. There are only a few descriptive articles about the Abadan oil company town which are cited in the following table.

Theoretical bases of research
• Lifestyle and culture

In fact, various lifestyles can be considered as the external realization of culture that shows the relationship between individuals and their outer world. Therefore, modern social systems are proper contexts for the emergence of lifestyles, especially of their specific emphasis on "distinction" as a value and also on "rethinking" characteristics and social factors and cultural and identity changes in them (Zokaei, 2012, 37). It can be mentioned that lifestyle is a concept based on consumption and social classes that is probably a more modern concept than culture and is particular to modern society.

Theoreticians: Psychologists and sociologists are pioneers of theorizing about the lifestyle. While Adler as a psychologist emphasizes personality type and character traits in the definition of lifestyle (Adler, 1956), Veblen a sociologist talks about leisure styles and living habits (Veblen, 1988). Weber points to the obvious life differences of stratification groups and mentions expressions like usual lifestyle, materialistic consumption patterns, and habitation style. He implies that lifestyle is the principle of consumption of goods among stratification groups. With a little bit of negligence, it can be said that while social classes are stratified based on their relation with production and access to goods, the stratification groups are classified based on the consumption of goods that are reflected in their specific lifestyles according to their opinions (Weber, 1968).

Simmel - the urban culture and lifestyle theorist, defines the lifestyle as "the relationship between objective and subjective culture" (Simmel, 1987, 458). The theoretical analyses of Weber,

Table 1. Important and influential sources studied in the research process. Source: Authors.

Some of the important sources studied in accordance with the research		Name of source	Considerable points
Sources about the targeted period of the research	Historical books	"The History of Iranian Social Changes" (Fooran, 1999)."Fifty Years of the Iranian Oil" (Fateh, 2005). "100 Years History of Southern Oil-enriched Areas" (Ghasemi, 2007). "The Oral History of Khouzestan Development" Al-Yasin & Mohammadloo, 2016).	In this book, the points related to the historical process and the occurred social changes in the country and region in the targeted period were investigated.
	Story and narrative books	The storybook "Blood and Oil' (Farmanfarmayan & Farmanfarmayan,1998). The storybook "Angalow and Bungalow in Abadan" the 70-year memories of the obedient boy (Valizadeh, 2011), The storybook "the Return to Iran" (Hogan & Farhadi Cheshme Morvari, 2018).	In this book, some stories are narrated about the life of residents in those company towns, spaces of houses and neighborhoods, and the impact of oil on people's life
	Published magazines from 1940 to 1970	The most important magazines are: "Weekly news of Masjed-Solayman" years 1960, 1962, and 1965, "The Mirror, publisher of the opinions of the staff of the oil company" years 1958, 1962, "Letter of the Iranian Oil Industry" 1968, "Daily Note of the Iranian National Oil Company" 968	In these magazines, all daily and everyday news of dwellers in oil-enriched areas has been recorded. They are really valuable for the recognition of the lifestyle of people in those areas.
Sources related to the subject and Statistical population	Oil company towns	"Urbanity & Social Engineering in Khouzestan's Company Cities" (Ehsani, 2008), "The Transformation of Social Identity Resulted from Modern Architecture & Urbanism in Oil-based Cities" (Rostam-Pour , Mosafer Zadeh & Nazif, 2014).	In most of these articles, social architecture and new urbanism are solely studied. Mostly, the articles are descriptive instead of analytical.
	Abadan company town	Article "An Analysis of Design Indicators of British Urban Neighborhoods in Abadan' (Garshasbi & Marzoughpour, 2014). Article "The Design Values of Housing Architecture of Oil Company Town in Abadan (Zavidavianpour, 2016), Article "Recounting Motifs of Iranian Architecture in the Design of Houses of Abadan Oil Company" (zadeh Dezfouli, Babaei Morad, Salari Nasab & Babaei Mord, 2013). Article of "The Analysis and Description of Effects of the Oil Industry on Urban Spatial Structure and City Neighborhoods of Abadan" (Besharati Fard, Ghaderi & Pishgahi Fard, 2017)	Often Presented in conferences, these articles solely described neighborhoods and general spaces of Abadan company town. They did not analyze architectural plans and there is no document about the plan of houses at all.
Studies and research performed by organizations		Report by Arseh consulting engineers "Special Edition for 100 Years of Oil Industry", Report by Tarh & Amayesh consulting Engineers "Studies of Abadan Urban Fabric" 2009	These reports often focus on the urban fabric and statistical data related to neighborhoods.

Veblen, and Simmel pave the road for subsequent theorizing about lifestyle. Other theorists presented numerous definitions for the lifestyle in which each has an independent or related value or component (Hassani, Zokaei, Talebi & Entezar, 2011, 28). Considering the existing items, definitions might be divided into two general categories. The first category is the complex of definitions that reckon the lifestyle as the behavior and put aside values, attitudes, and people's orientations out of the range of this concept. The second approach takes values and attitudes as parts of the lifestyle (Fazeli, 2003, 68). Concluding the definitions and theories in three levels from micro to macro levels, the existing approaches have been categorized based on the influential factors on the lifestyle in table 2.

• **Lifestyle and house**

Regarding the connection between houses and

Table 2. Types of existing approaches to the lifestyle based on the conclusion of definitions and theories. Source: Authors.

Concept	Types of approaches (macro level)		(Middle level)	(Macro level)		Theorists
Lifestyle	Objective or materialist (sociological)	All human behaviors (it is measurable)	Economic	Asset	Age	Weber Simmel Giddens Bourdieu Cheney
					Gender	
					Occupation	
					Leisure	
					Consumption	
			Social		Class	
	Subjective or non-materialist (Psychological)	Mental orientations Values & attitudes (it is not measurable)	Cultural	Culture & identity		Adler Weber Simmel Giddens
				Individuality		

lifestyle, it could be cited that houses and living complexes are the physical expressions of lifestyle. It means the style or way of living makes their essence (Rapaport, 2009). From this point of view, lifestyle is such a compact phrase that covers all human behaviors. Each behavior has a tangible or intangible reflection in the formation of surrounding space. House, neighborhood, and city are spatial production of an individual's lifestyle. From this perspective, it could be described that the most effective factors in shaping the house should be searched in the spatial organization of the house. In other words, lifestyle includes the interaction between individual, family, group, society, and space (Haeri Mazandarani, 2008, 39). According to this, the analysis of house space is also able to describe the dwellers' lifestyle and even their reasons.

Based on what was studied on a theoretical basis, it is now possible to draw the conceptual model or general structure of the research. This general structure is illustrated in Fig. 1. There, two fields of lifestyle and architecture of houses will be identified and expressed in relation together as the variables of the research.

Research Method

Regarding its targeted period, the present research is qualitative with the descriptive-historic method. In fact, descriptive research is specifically carried out for exploring a social-physical phenomenon that investigates how the lifestyle and architecture of occupational class houses change. The changes have happened in a 50-year period. It is worth noting that the gathered data is quantitatively put beside the qualitative data by utilizing AGRAPH software. Ultimately, the analytical method of data will be content-descriptive and comparative analysis.

Moreover, library studies, observation, field collection, simulation, and comparative analogy were used in stages of description and implementation process of the research as the following explanation:

Library: The items related to the research background were gathered based on library studies. The data about the construction of houses and urban areas and changes in lifestyle in Abadan oil company town was specifically investigated by studying magazines and bulletins published from 1940 to 1970 and watching some available documentary movies. It should be mentioned that since the body of houses and identity of residents have changed and the present users have no relation with the oil company, it was not possible to benefit from questionnaires to achieve more precise information.

Field observation and collecting: Based on field studies in sections with the least changes and subsequently visiting the place where the documents of Abadan refinery were archived, five types in three occupational classes were chosen out
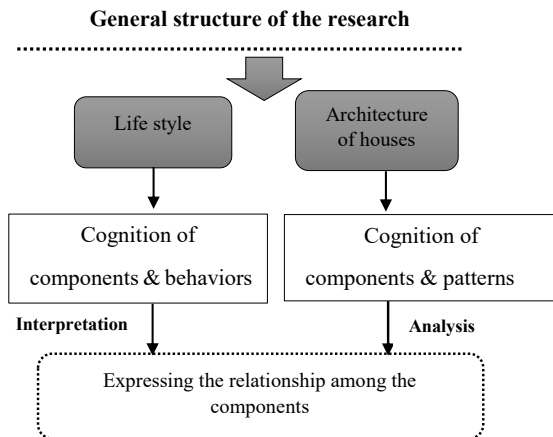
General structure of the research

Fig. 1. General structure of the research. Source: Authors.

of 114 types of plans designed in the oil company town by Iranian-British oil company (Table 3), for the accommodation of staffs based on rational explanations and field observations. The sampling was purposefully based on occupational classes and different architecture of houses. According to the existing hierarchical structure of the company town, the houses were designed and located for three classes of laborers, mid-level employees, and top-level staff (managers). These three occupational (social) structures or classes were placed in separate residential districts with names of Berim and Bavardeh for clerics and managers and Kargar, Bahar, and some other neighborhoods for laborers. Those areas were completely divided without any connection and each had its own separate infrastructural facilities. It is true to think that the refinery plant and oil office buildings and the connection of residential districts to these areas were the only connecting points between the occupational structures.

Discussion and Analysis
• Introducing the analytical software
AGRAPH software was utilized for drawing justified graphs and physical analyses and the formative structure of spatial relations in occupational (social) classified houses. In the first mode, a node was dedicated to each functional space to analyze the plan of houses. Then, each space was connected to its adjacent spaces with a line if there is a direct relation between them. Depending on the form and geometry of the plans, the graphs are usually illustrated in two shapes of a tree or distributed. In tree graphs where series or rows of points increase, the depth of the graph grows which shows that the plan spaces get more private. Low levels or rows in a tree graph demonstrate the shallow depth and more correlation between most spaces. In this condition, it could be concluded that the number of public spaces in the house is more than its private spaces and areas. Thus, a general analysis could be obtained by drawing the graphs and observing them. On the other hand, the software has the ability of quantitative calculations of values like depth, control, and correlation for the spaces. The amounts are put in tables like what is presented in Fig. 2 with abbreviation signs that are introduced in the following. Besides the numerical values, the nodes related to each space are indicated with specific colors from dark blue to red in order to demonstrate the quantitative amount of each value in spaces. The red color shows the minimum numerical amount of value and the dark blue indicates the maximum amount for the related value in any space.

The meaning of abbreviated signs in the calculation table of the software (sample Fig. 2):

TD – Sum of the shortest distance from one space to another

MD – Average depth of one node compared to all other ones

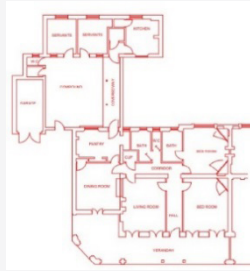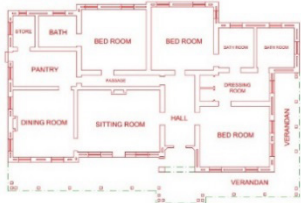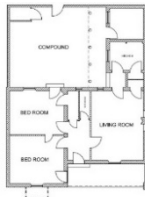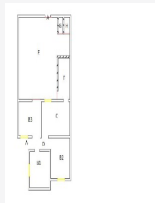RD – Connection with the highest level of correlation

I – Correlation value

CV – Control value

Definitions of analytical values in the software:

Correlation: In the spatial configuration, it means the level of continuity or detachment of space compared to other existing spaces in that configuration. Space has a high level of correlation when it has more integration with other spaces (Peponis, Zimring & Choi, 1990, 75).

Table 3. Introduction of sample houses based on selection reasons. Source: Authors.

	Plan type	Location	Number of construction	Occupational class	The drawn plan based on the original drawing	Physical reasons for the selection	Date of Construction
Samples of selected houses in Abadan oil company town for investigation	12A	Breim	26	Managers		A completed sample in design for High-level	The exact construction date of each type of house is not available. All drawings have been redrawn based on the existing blueprints in the Abadan refinery archive. However, most of the construction had been executed between 1940 and 1970 in this town and the occupational-class separation of houses evolved in this town according to field studies and observation of documentary movies produced about them based on the information of eyewitnesses.
	Senior3 – married Bungalow	Breim	59	Managers		A repeated sample in the category of bungalow	
	X4	Northern Breim	40	Mid-level employees		A repeated sample with a full range of spaces in the mid-level class	
	W1	Southern Bavardeh	52	Mid-level employees		Repeated sample in mid-level class	
	G	Ghods & Bahar neighborhoods	-	Laborers		Only available plan left in the Laborer class	

Depth: A node or space is called deep if there are many steps between that node and other existing nodes. The less the depth of space is, the separation and detachment of that space decrease and consequently, the space is more integrated which demonstrates the value of high merge and accessibility of the space (Haq, 1999).

Control: It is a parameter that indicates the selection degree of a node from other nodes connected to it. In other words, the less a node has a selection degree from a specific nod, the less control level it is. In an architectural plan, a space with lower usage has less control capability. This is one of the characteristics of private space.

		TDn	MDn	RA	i	CV
0	A	26	2.88	0.47	2.11	0.20
1	D	18	2.00	0.25	4.00	4.50
2	C	18	2.00	0.25	4.00	0.70
3	B	26	2.88	0.47	2.11	0.20
4	B	26	2.88	0.47	2.11	0.20
5	H	26	2.88	0.47	2.11	0.20
6	F	20	2.22	0.30	3.27	0.83
7	E	24	2.66	0.41	2.40	2.50
8	I	32	3.55	0.63	1.56	0.33
9	G	32	3.55	0.63	1.56	0.33
	Min	18.00	2.00	0.25	1.56	0.20
	Mean	**24.80**	**2.75**	**0.43**	**2.52**	**1.00**
	Max	32.00	3.55	0.63	4.00	4.50

_summary.html

Fig. 2. A sample of calculation table and spaces with maximum numerical values for the house w1 – mid-level. Source: Authors.

In the beginning, the spaces of the house should be introduced and a name (letters from A to N) should be dedicated to them to use in drawing the graph before the introduction of justified graphs and analytic values. In Table 4, names and descriptions of spaces in houses are cited.

It should be mentioned that the graph related to the depth value is solely presented in the table of graph study or justified graphs. Because, the graphs of depth, control, and correlation values are formatively similar to each other the only difference between them is the node coloring related to each space which meaningfully varies from the red spectrum to the blue depending on the increase or reduction of the numerical amount of each value in each space. They are presented in the table of quantitative amounts in the form of numbers. That is why the graph related to the depth value is used for recognizing the general forms of space relations due to avoidance of caused chaos by similar data (all output graphs from the software). For other

graphs, the numerical result obtained from their study (the maximum numerical amount of value in each space of the plan) is mentioned in the table.

• **Quantitative analyses**

The justified graphs and numerical analyses of the houses' plans are illustrated in Table 5 based on the numerical table of the software. For the clarity and visibility of software items, one of the tables is demonstrated here as a sample. The analysis of spaces is expressed and concluded based on the maximum values of the software available in these tables for each plan of houses.

Considering the justified graphs in table 5 for each house and the numbers of calculation table (sample Fig. 2), it is observed that the number of spaces with maximum amounts of the software analytical values has changed in the plans of each occupational class. The following results are obtained by comparisons and conclusions based on these quantitative values:

Changes in depth value: Based on the comparison graph, the number of spaces with maximum depth value has increased from plan G in the laborers' class to plan 12A in the managers' class. It is only in the Senior plan that the maximum depth value has reduced in sub-spaces of the plan due to fundamental changes in the form of the house and in fact, the creation of a new structure called a Bungalow (an entirely extroverted house) and elimination of the compound. Thus, it can be concluded that with the rise in the number of deep spaces in the plans from laborers' to managers' classes, the spatial hierarchy has been created and the separation of private and public spaces has gradually divided more clearly.

Changes in correlation and control values: based on the comparison graph, the number of spaces with maximum correlation and control value did not change from plan G in the laborers' class to plan 12A in the managers' class. The reason is that these spaces have still followed a single design pattern despite the changes in the number, diversity, and function of spaces (from introverted

Table 4. Study of sub-spaces in the plans on sample houses with names and descriptions based on occupational classes. Source: Authors.

Occupational classes	List of existing sub-spaces in the plans of houses in each class	Descriptions
Laborers	Compound - E Entrance - A Bedroom – B Living room – C Kitchen – F Bathroom & WC – G & H	Except for living rooms, all other spaces are common in laborer's class houses. The living room was available in some houses like the ones that belonged to foremen.
Clerical staff	Compound - E Entrance - A Bedroom – B Living room – C Dining room – L Corridor – M Kitchen – F Bathroom & WC – G & H Servant – K Store – I	The spaces of servant rooms and stores are seen in some houses of mid-level houses. The dining room was not common in most of the plans of this class. Other spaces are available in all houses of this class.
Managers	Compound – E Entrance – A Bedroom – B Main living room – C1 Sitting room – C2 Dining room – L Corridor & passage – M Hall – D Kitchen – F Pantry – J Dressing room – N Bathroom & WC – G & H Servant room – K Store - I	Two types of living rooms are seen in most of the houses in this class in such a way that the main one has a bigger size. There are two types of passageways in plans of this class in such a way that the one named corridor has a dividing door at its end. The pantry is seen in some plans adjacent to the kitchen or far from it independently for serving food. In the plan of some of the houses of this class, the pantry was located in a way that food was brought there after cooking the food by the servants, and then the food was served in the dining room. The dressing room was available adjacent to the bathroom in some plans. Other spaces are common in all plans of houses in this class.

to semi-extroverted). Just in the new structure of Bungalows, the easiness of relations in space configuration decreased due to the reduction of the number of spaces with maximum correlation value. Moreover, the spaces in the plan with less amount of use have increased with the rise of the number of spaces with the maximum control value. These items also reveal the fundamental structural changes in the plan of bungalows compared to other plans. These are also evidence of the growth of privacy in the spaces and the reinforcement of
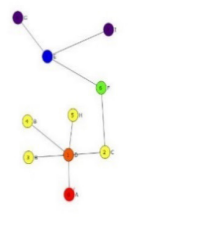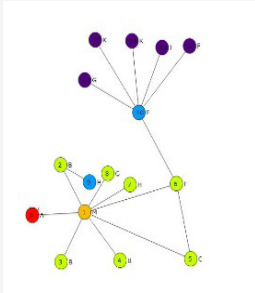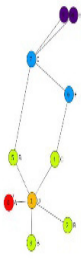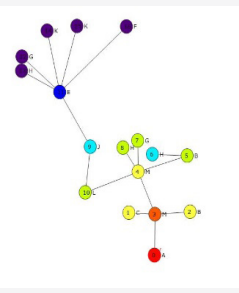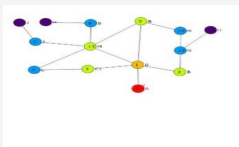
zoning in this new structure. The reason could be the different lifestyle of managers' classes compared to other classes.

• **Qualitative analyses**

- Changes in lifestyle and its reflection on the architecture of houses in the social classes

Undoubtedly, the creation of changes in the body of houses' architecture had been under the influence by the style and way of living of their residents. It can be claimed that these two factors were affected by each other. This was formed in oil company towns

Table 5. Graphs and numerical analyses of the software for plans of all houses of sample size based on occupational classes. Source: Authors.

Occupational class	Plan type	Sample of analytical-physical graphs from the relations of plan sub-spaces (depth based on the entrance)	Spaces with the maximum quantitative amount of mean depth (MD)	Spaces with a quantitative amount of related measure of integration (I)	Spaces with a quantitative amount of control value (CV)
Mid-level staff	W1		I, G Store, bathroom	D, C, F, B Hall, living room, Kitchen, bedroom	D, E Hall, compound
	X4		H, G, F, I, K Bathroom, kitchen, store, servant room	M, C, F, E Living room, kitchen, compound, corridor	M, E Compound, corridor
Laborers	G		H, G, F Bathroom, kitchen	E, B, C, D Compound, bedroom, living room, hall	D, E Hall, compound
Managers	12A		C, B, H, K, F Bedroom, dining room, servant room, bathroom	M, F, E, G, H Compound, kitchen, corridor, WC	M, E Compound, corridor
	SENIOR (Bungalow)		J, H Pantry, bathroom	C, F, B Bedroom, living room, kitchen	N, M, J, D Hall, corridor, dressing room, pantry

with coordination and planning. Deep changes, reinforcement of space zoning, gradual shrinkage of the yard and its elimination in the plan of bungalows, and the creation of this entirely extroverted structure all can be explored in the planned changing lifestyle for the dwellers of these company towns and their influential factors. According to what was presented in the "theoretical bases" section, the influential
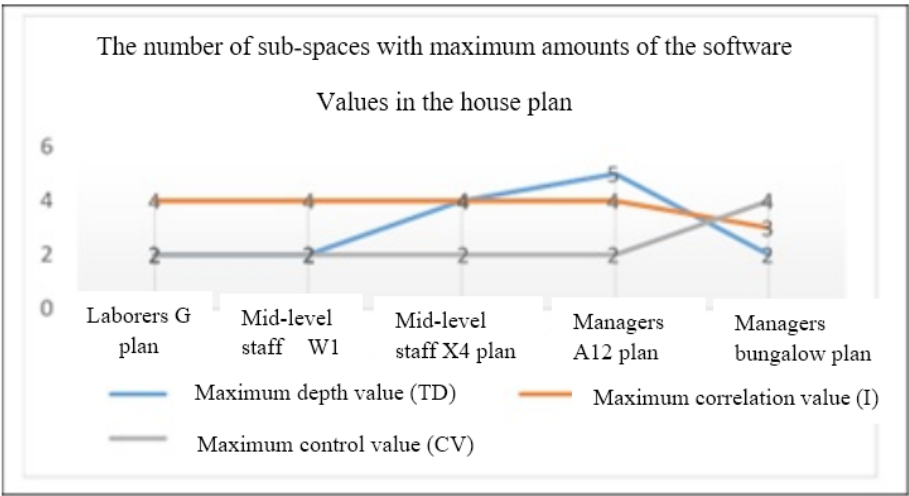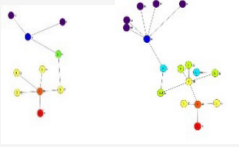
Fig. 3. The obtained conclusion from the analysis of the software graphs and data. Source: Authors.

Table 6. Changes in lifestyle due to the leisure factor and its effects on the architecture of houses. Source: Authors.

factors in the formation of lifestyle are expressed based on the raised theories in Table 2. Thereupon, it was found that the occurred changes in way of living of company town dwellers were mostly based on the changes in the factors of consumption, leisure, culture, and identity (Fig 4). This finding was gained by the study of magazines and bulletins published in the Abadan oil company town and oil company complex from 1941 to 1971. Presently, the related events in the defined period in the research are to

Table 7. Lifestyle changes due to alternation in the consumption factor and its effects on the architecture of houses. Source: Authors.

Lifestyle changes due to alternation in leisure factor		
Lifestyle changes due to alternation in leisure factor	Planned change in behavior and leisure time of the new generation Prevalence of out-of-house entertainment Importance of entertainment and leisure as a characteristic of the modern world Prevalence of luxurious and competitive entertainments (masquerade ceremony[4]) Mere imitation of the entertainments and leisure of the western world	Architectural changes due to alternation in leisure factor and new lifestyle resulted from it	Shrinkage of the compound in the houses from plan G of the laborers' class to plan 12A of the managers' class and ultimately the elimination of the compound in Bungalow plan Creation of new architectural spaces in town such as cinema, halls, and clubs like horse-riding, sailing, or other luxurious urban spaces which have not previously existed in the Iranian urbanism

recognize the way that led to the changes. (Table 6,7,8) In this way, the events and their interaction with the architectural body of social class houses are introduced.

Conclusion

Based on the findings of the research and in response to the first question of the research which was in the search for finding the factors leading to the changes in people's lifestyle in the company town, it can be cited that most changes were dependent to the influencing factors like consumption, leisure, culture, and identity which have happened in the range of economic and cultural changes according to Fig. 4. To answer the second question of research which explores the reflection of those evolutions in the architectural body of houses, it should be

mentioned that since it is not possible to describe architecture divided from the way of living of its residents, the architecture in this company town is dedicated to the habitation of people in different occupational (social) classes of company town simultaneously with the changes in the factors of leisure, consumption, culture, identity, and consequently, the occurred changes in the lifestyle if the dwellers. The study of changes in each factor and of the body of architecture in the quantitative analysis conspicuously demonstrates that the physical changes like the increase in the number of spaces, area of plans, and differences in the shape and structure of plans in each occupational class (Table 5) are in consonance with the changes in the factors of consumption, consumerism, and luxurious tendencies, especially in the managers' class. The

Table 8. Changes of lifestyle due to the alternation in culture and identity factors and their effects on the architecture of houses. Source: Authors.

Lifestyle changes due to the alternation in culture and identity factors	
Changes of the past attitude and values (education and jobs for women) 	**Spatial changes in houses due to the creation of new attitudes and changes in women's position such as eliminating the past privacies and complete extroversion of houses in the structure of Bungalow**
Changes in women's position and their way of living 	**Changes of location and function of the kitchen from plan G of laborers' to Senior plan of managers' class (Kitchen has the maximum depth factor in plans of the laborers' class while in the plans of mid-level and managers' class, the kitchen is one of the spaces with maximum correlation value)**
Changes in family culture relying on induced western culture 	**Imitation from western houses and creation of spaces with new names and functions (car-oriented design and locating the parking space in most houses)**
Changes in women's position on social occasions 	
Changes in women's economic position Creation of new behavioral frameworks Creation of new managing and working frameworks Westernization and evidence of cultural hegemony Changes in working culture and modernization 	
Dependency on oil and oil industries in all aspects of life	

(Left axis: Lifestyle changes due to the alternation in culture and identity factors. Right axis: Architectural changes due to the alternation in the leisure factor and the new lifestyle resulted from it)

transformation of the physical structure from a tree graph to a bush one in the new housing structure of the new Bungalow in the managers' class is another piece of evidence for the changes. Moreover, the shrinkage and elimination of compounds in the plans of houses of social classes from laborers' to the managers' classes and the entirely extroverted Bungalows (the graph in Fig. 3) can be considered as the changes of leisure factor in the lifestyle of the residents. The study of changes in the depth, correlation, and control values in the kitchens can be also taken as the signs of changes in the social
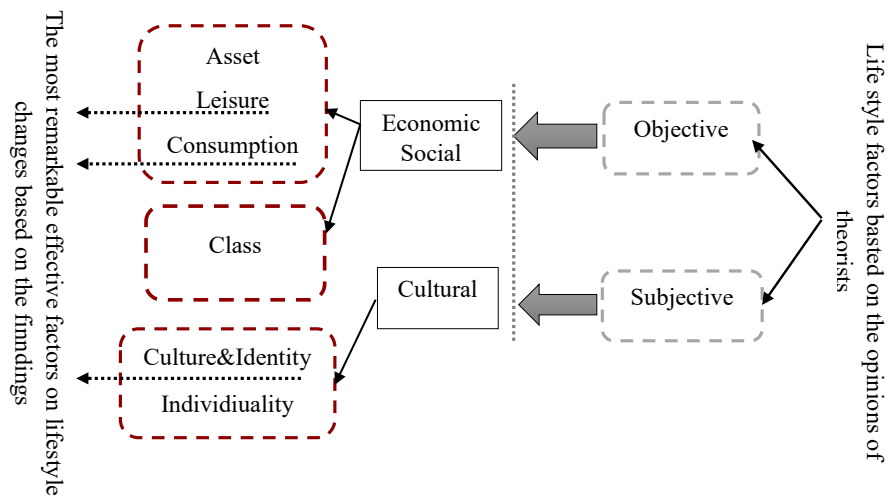
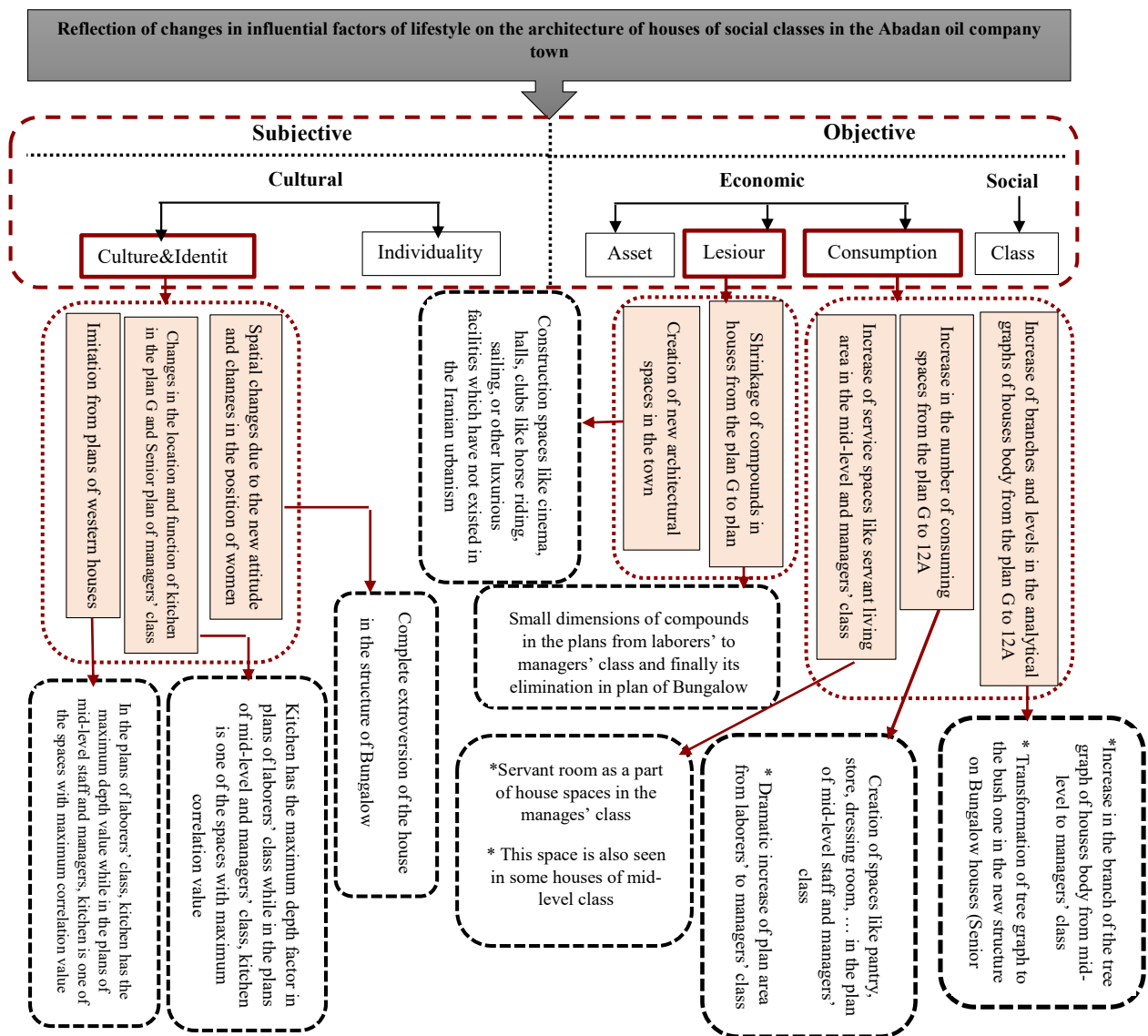Fig. 4. Influential factors on lifestyle based on the findings. Source: Authors.

Fig. 5. Reflection of lifestyle changes on the architecture of houses in the Abadan oil company town. Source: Authors.

position of women and the induced cultural changes in this company town. Finally, the design of the house based on the presence of cars and the dedication of space for parking justify the manifestation of modern life and its car-dependent culture. All studied changes are illustrated in Fig. 5 which is a realization of the reflection of the change in lifestyle on the architectural body of houses in the Abadan oil company town. All the above-mentioned items show the coordination of interrelated changes in lifestyle according to the factors and architectural body of houses as a container for the new way of living which were designed in harmony with each other and formerly based on western thoughts and organizational goals of the Iran and Britain oil company. The realization and reasons for these changes are perfectly demonstrated in quantitative and qualitative analyses in accordance with the purpose of the research.

Endnote

1. Monongahela Valley) The name of the first city company in America (
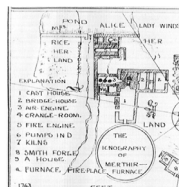
2. The government dependent on the oil economy is called the rentier government.
3. Senior was the highest job class, which included a limited number of educated Iranian employees and English employees.
4. Masquerade ceremony, a ceremony imitating the western culture where each person is dressed in different clothes, to show clothes or with a special purpose, to show clothes and ethnicities.

Reference List

• Adler, A. (1956). *The individual psychology.* NY: HarperCollins.
• Al-Yasin, A. & Mohammadloo, R. (2016). *Oral history of the development of Khuzestan.* Tehran: Organization of Records and National Library of the Islamic Republic of Iran.
• Besharati Fard, S., Ghaderi, I. & Pishgahi Fard, Z. (2017). Analysis and explanation of the effects of the oil industry on the spatial structure of the city. *Hum Geog Res*., (49), 54-62.
• Bavar, S. & Bavar, F. (2001). *Civilization, industry and architecture.* Research Project By order of the Ministry of Petroleum,Tehran.
• Dashti, M. (2015). *Masjed-Solayman, the origin of the first western housing in Iran.* Tehran: Shahr-e Honar.
• Ehsani, K. (2008). Civility and social engineering in Khuzestan company towns. *Goftogou*, (24), 25-32.
• Farmanfarmayan, R. & Farmanfarmayan, M. (1998). *Blood and Oil: Memoirs of an Iranian Prince* (M. Haqighatkhah,Trans.). Tehran: Qaqnos.
• Fateh, M. (2005). *50 years of Iranian oil.* Tehran: Nashr-e Elm.
• Fazeli, M. (2003). *Consumption and lifestyle.* Qom: Sobh-e Sadegh.
• Fooran, J. (1999). *History of Iran's Social Development*s (A. Tadayon, Trans.). Tehran: Rasa.
• Garner,J. (1984). *The model company town.* Amherst: MA.
• Garshasbi, R. & Marzoughpour, V. (2014). *An analysis of the design indicators of English urban neighborhoods in Iran.* 1th national conference on architectural, civil and urban development engineering, Tehran.
• Ghasemi, I. (2007). *Studying the history of one hundred years of oil-rich areas in southern Iran.* Tehran: Humanities and Social Sciences Research Institute.
• Haeri Mazandarani, M. R. (2008). *House, Culture, Nature.* Tehran: Urban Planning and Architecture Study and Research Center.
• Haq, S. (1999). *Space Syntax predict environmental cognition? Proceeding: 2th International Space Syntax symposium*, London.
• Hassani, M. H., Zokaei, M. S., Talebi, A. & Entezar, A. (2016). Conceptualization of cultural lifestyle. *Jame'e Pazuhi-ye Farhangi*, (8), 29-34.
• Hogan, D. & Farhadi Cheshme Morvari, V. (2019). *Return to Iran again.* Tehran: Arshadan authorial training.
• Movahed, A. (2011). Khab-e Ashofte-ye Naft, Az rouzegaran-e Kohan [Naft's troubled sleep, a narrative from ancient times]. *Bokhara*, (88), 65-80.
• Peponis, J., Zimring, C. & Choi, Y. K. (1990). Finding the Building in Way Finding. *International journal of Environmental Behavior*, (22), 75-92.
• Rostampour, K., Safirzadeh, Gh. & Nazif, H. (2014). Evolution of social identity as a result of architecture and modern urbanism in oil cities of Khuzestan. *Bagh-e Nazar,* (29), 32-43.
• Simmel, G. (1978). *The philosophy of Money.* NY: Routledge & Kegan Paul.
• Valizadeh, I. (2011). *Anglo and Bungalow in Abadan: Seventy-year memories of Farmanbar boy.* Tehran: Simia Honar.

• Veblen, Th. (1988). *The Theory of the Leisure Class*. NY: Routledge.

• Weber, M. (1968). *Economy and Society.* Oakland: University of California.

• Zargarzadeh Dezfouli, M., Babaei Morad, M., Salari Nasab, N. & Babaei Morad, B. (2013). *2th national conference on architecture and urban planning over*, Tehran.

• Zavidavianpour, M. R. (2016). *Design parameters of the housing architecture of Shahr Nafti Company in Abadan.* 3th scientific research congress of new horizons in the field of civil engineering, architecture, culture and urban management of Iran. Tehran.

• Zokaei, M. S. (2012). *Leisure, Consumption and Society.* Tehran: Tisa.