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## Analyzing the Role of Constructional Violations in the Failure of Urban Development Plans of the Tehran Metropolis

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### Abstract

Limitations of urban constructions in the form of rules and regulations with the aim of controlling city physical development is the product of city development plans and documents. Actually, construction rules and regulations in a metropolis like Tehran is the tool of performing urban development plans and development process in short-term urban projects and long-term development plans is controlled by means of these rules and regulations. Therefore, how these rules and regulations are performed is a decisive factor in achieving goals and prospects of urban development plans. Quantity and quality of construction regulations in Tehran from the first comprehensive plan approved in 1970 to the strategic-structural plan in 2007 was changed along with the evolution of general urban developments and special development policies in Tehran. Also, necessity of updating rules and regulations of urban development is considered according to lack of full performance or low performance of many of the rules and regulations of previous plans. A major part of challenges about non-implementation of these regulations can be studied in the form of anomalies of constructional violations. This research analyzes and evaluates the way of performing these regulations and status of constructional violations with the goal of analyzing challenges of performing rules and regulations of urban development in Tehran metropolis using descriptive-analytical method. Hence, four time intervals: the interval between performing regulations of first comprehensive plan of Tehran and financial self-sufficiency of municipal, the interval between implementing density sales policy and modifying regulations of Tehran, the interval between performing Amendment of planning regulations of Tehran and announcing the rules of detailed and comprehensive plan of Tehran and after that are evaluated. Also, causes of creation of constructional violations and their consequences in the failure of urban development plans were analyzed and the results demonstrate that the factors such as physical field and limitations and natural tendencies of urban development, underlying society and economy of city, defects of construction rules and regulations and inefficient urban management system are the most important causes of constructional violations in Tehran metropolis.

### Keywords

Urban development plans, Construction rules and regulations, Constructional violations, Tehran metropolis

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## Introduction

The evolution of the intellectual and content system of urban development plans, during the twentieth century, provides a more logical and practical way in planning of cities from the point of traditional comprehensive that its products are final plan and detailed usage profiles and urban densities of structural-strategic plans with the main product of policies and development guidance strategies which provide the ability of adapting with locative and temporal conditions. However, one of the main reasons of lack of implementations in urban projects which is sometimes called new syndrome of planning (Tian, Shen, 2011:11) is not only caused by lack of theory and planning approach, but also it is caused by lack of executive and legal system of urban development plans. Failure in urban development laws specially public and private property laws, ambiguity or contradiction in regulations (Pourahamad, Hataminejad and Hoseini 2006: 175), confronting urban development plans with property rights (Azizi, Shahab 2013:1), constructional violations, ground speculation, property issues and rapid population growth (Mohammadnejad, Lashgari, Soleymani, 2013: 95) were defined one of the causes of lack of implementations in urban development projects in Iran cities from the point of lack of executive and legal system of these plans.

In the most cities of Iran, generally urban rules and regulations are the only document that executive institutes, citizens, and private section try to use it as the urban developers and they are bound to comply. While, in spite of the importance of process of preparing programs and urban plans and their effects on proposed regulations, generally considering evaluations and reviews in urban rules and regulations is remained with the help of evaluation and criticizing the studies and planning methods (Diyargah, 2010: 57-58) and so the way of modifying development rules and regulations with the goals of urban development plans and the way of performing urban construction rules and regulations are considered less than it is possible.

Limitations and constraints of development and construction are actually the most important performance tools of urban development plans and warranty of performing them is provided by means of control system of urban constructions. Tehran, like the most other cities of Iran, is faced with the challenge of lack of accomplishing urban plans and very few percentages of urban planning proposals are achieved. Improvements of content and procedures of urban development plans in Tehran could make the development process more practical and more effective from the first comprehensive plan (approved in 1970) to the third comprehensive plan (approved in 2007), it could provide understandable and more consistent goals and prospects, and it could provide strategies and policies which are flexible and compatible with locative and temporal conditions. However, performance system of urban development plans including responsibility of groups and organizations, financing method, operational projects and urban construction rules and regulations are the only applicable dimensions of urban development plans. Similarly, performing practical constraints determined in urban plans are important such as construction rules and regulations, important and obvious commitment of urban authorities, different groups and organizations such as owners, urban construction investors and citizens to urban plans. Hence, success and implementation of urban development plans can be discussed in the framework of quality of presenting and performing urban development rules and regulations in the meaning of ability of achieving rules and regulations to the goals of urban plans and quantity and quality of performing rules and regulations. Constructional violations can be known as important index in evaluating quality of performing constructional rules and regulations. This research analyzes the way of performing construction regulations and the status of constructional violations in Tehran from the first urban development plan till now with the goal of analyzing challenges of performing rules and regulations of urban development of Tehran. Also,

the reasons of constructional violations are analyzed. Therefore, after reviewing the concepts of urban construction rules and regulations, the concepts and dimensions of constructional violations and their statuses in Tehran are analyzed.

### **Urban development plans and planning regulations**

Development/detailed plans of cities have the duty of guiding city development in order to improve the quality of citizen's life, organizing and readjusting complex relationships of urban land usages, drawing growth and conversion path of the city, guiding physical city development considering social and economic characteristics, comprehensive studies of existed status, predicting future growth and proposing resource mobilization program to implement the proposed development (Nallathiga, 2006: 29). Development plans in order to achieve long-term goals and prospects of the city try to codify constraints for organizing construction of urban road network, buildings and urban activities which are necessary. In another word, "urban development plans are consisting of some kind of law which can provide constraints for property rights by taking into account the social benefits" (Azizi, Shahab, 2013: 1). Therefore, planning regulations are the direct and indirect product of urban development plans which are included in the form of construction regulations in the department of urban management. Generally, these rules in the meaning of law or regulation which are codified with the local government and they are used in their own local territory (Merriam-Webster dictionary 2015), in each city, are included of planning rules resulting from urban development plans (urban regulations) and also general building development regulations (technical and architectural regulations).

Technical and architectural regulations are usually the minimized building standards which are codified to provide minimum health conditions, safety and qualitative depended on the use of the building and they usually consider increased efficiency or

economic efficiency of the building. Technical and architectural regulations are consisted of building strength standards, materials and safety, energy consuming standards, providing light and ventilation of the building. From another point, urban regulations are codified to guarantee equitable distribution of resources at city, structure coordination, relationships and urban usages, provision of facilities, infrastructures, services and access necessary for various urban activities. Current urban regulations are consisted of land separation standards, land usage, maximum allowed density and height, retreating passages, location of the building, provision of parking, green space and private and general outdoors and necessity of providing construction and development license for the building.

Planning regulations or urban standards have four distinct specifications. First, they are normative so they do not describe what there is and they refer to what is desirable. Second, they are consisted of promises and predictions of sanctions and restrictions, either negatively in the form of non-compliance with crimes or positively, incentives to comply with them. Third, these rules and regulation are possible because performance which is demanded can be expected logically from the issues that standards determined about them and for them. And finally, these regulations are defining a relationship between a specific sender and a specific receiver (Arimah, Adeagbo 2000: 283 quoted from Misra, Hardoy&Mabogunje 1978). Hence, not matching with the existed status, pointing to the favorable situation, feasibility, sanctions that formal performance rules are determined for them are the specifications of constructional regulations.

From this point of view, in addition to a group of construction regulations which take into account the interest of owner and builder, most of construction rules can be considered as a limitation for interests of owner or builder. As an example, building more floors, profitable usages, more employment levels in cities with high value lands and buildings can

provide financial interests for the builder. So, it is not desirable to observe standards which limit economic interests of owner and builder. In another word, about observing the rules especially constructional regulations, people are just calculative actors (Van der Heijden, 2006). Therefore, most of specifications of planning regulations are in contrast to financial interests of builder and owner and sometimes beneficiary.

### **Constructional violations: inefficiency of construction regulations**

Generally, non-compliance with urban construction regulations which are codified to guarantee quality of living in city and urban buildings and observing public justice and interests are included in the group of constructional violations. With the help of Aguilar (2008) definition from crime, constructional violation can be defined as a crime or anti-social behavior which can provide unsecured conditions. However, the important difference between constructional violations and most of crimes is just appearance of constructional violations in the building or urban land and the possibility of disconnecting its assignment to the criminal, because more than naming the constructional offender; the building which was violated is referred as a dilemma. On the other hand, due to high proficiency in constructional regulations, most of people do not know the importance of observing constructional regulations and effects of constructional violations. There can be different constructional violations according to the number of urban construction regulations; also time and place of occurrence of constructional violations have effects on the type of building with constructional violation. So that, changing rules can change the definition of illegal buildings and what is called an illegal building today, can be called legal according to some conditions (Kahraman, Saati, Misir, 2006: 517) and vice versa.

There are different reasons for happening constructional violations. Some of researchers believe that constructional violations are the results

of natural developments in cities and changing requirements. For example, Fekade (2000) thinks that illegal occupying of lands and non-compliance with constructional regulations and constructional standards in settlement are the following parts of natural process of development in human settlements, urbanization expansion, changing requirements and necessity of housing and employment. Also, Huchzermeyer (2004), Zegarac (1999) and Few et al (2004) are defining the changes of social and economical requirements of citizens, creation of new group with special and different requirements (through immigration and new generation) and failing to response to the goals, requirements and demands of this group by means of urban standards and development plans, unbalanced policies of urban land improvements, inadequate housing conditions and failing to resolve housing crisis, unbalanced development of the city and unfair distribution of wealth in the city as the causes of creating constructional violations and constructing illegal buildings.

Alnsour and Meaton (2009) are summarizing the effective factors of observing residential standards in underlying society-economic, weakness of executive and administrative occurrences and uncertainty of residential standards.

About underlying society-economic that is effective in constructional violations, urban poverty, inbound and outbound migrations (Fekade, 2000), lack of access to suitable sites for residential developments (Zegarac, 1999) and lack of knowledge of people or builders about existence of rules or the importance of observing the rules are considered.

From another point of view, illegal construction developments around the cities can be the result of weakness of urban management occurrences. Urban management is effective from two points in occurring constructional violations and exacerbating or decreasing them.

Fekade (2000: 145) knows the illegal seizure of land, non-compliance with constructional regulations and constructional standards in settlement as an

answer to incompetence of interventions and public policy guides. Melchert (2007) thinks that the poor environmental methods and structural, economic and social issues are the causes of unstable constructional proceedings. According to him, insanitary environments which are built in developing countries are one of the results of uncoordinated construction industry with urban strategic planning issues (such as health principles, protecting green spaces, public transportation and ...) and inefficient management of land. Zegarac (1999) also introduces political decisions for social housing in cities and towns, inefficiency of city administration, failure of financial policy and supporting the personal housing and neglecting the reconstruction and renovation of housing and private housing and postponing the destruction of unauthorized buildings in the early stages of construction which are duties of urban management, as the causes of illegal constructions. Inadequate and inappropriate construction control and lack of appropriate policies of reforming urban lands are the causes of lack of responding to people requirements and exacerbating issues and problems in relation to illegal constructions. Non-coordination of organizations which are involved in providing and performing urban development regulations and also other problems of organization such as lack of trained personnel, low salaries, obtaining penalties and bribes by constructional control agents and ... are recognized one of the factors of executive formations which are effective in constructional violations (Arimah&Adeagbo, 2000: 286). Kapoor and blanc (2008) think that strict and time consuming procedures in obtaining building permissions and ownership documents are one of the causes of preferring to construct unofficial and illegal buildings. Also, the problem of deficiency in official processes in performing construction standards were designed by Farvacque and MaAuslan (1999) and Dowal (1991) and they expressed unbalanced policy of reforming urban lands and unequal allotment of budget to governmental housing programs and high costs of official processes Huchzermeyer (2004) from

activities of urban management as the factors of non-compliance with construction rules and regulations and constructing illegal buildings.

On the other hand, other causes of lack of access to the goals of urban land management are just legal standards and usage controlling of limited and abolished lands and unmodified seizure contracts. Fekade (2000:131) describes that the existed regulations and formal planning standards proved that they are abolished and unclear for responding to challenges of urbanization expansion. Actually in optimistic mode, constructional violation is an answer to inefficiencies of general land rules and in anyway, a large part of urban population requirements to land, house and employment space are answered. Ogu (1999) believes that planning regulations and constructional standards are important issues in the field of empowerment of housing development and when the reality of low incomes of most of citizens is considered by construction and planning regulations, in that case, these regulations are out of inefficiency. Also, Arimah and Adeagbo (2000), in analyzing constructional violations present that being abolished and exogenous for underlying law of planning regulations and urban developments are the causes of failure of responding rules and regulations to requirements of residents and finally creation of constructional violations.

Therefore, constructional violations are one of the obvious manifestations of low performance in urban construction regulations in the existed underlying city. These violations as mentioned are one of the insoluble and difficult issues in the third world societies, non-compliance with predetermined urban plan and program rules, changing and replacing legal and illegal construction rules by urban management is an issue that in addition to third world societies, it was reported in developed countries as well. As Peter Katz told in his paper named "Olferm" that 99 percent of implemented zoning can be easily avoided. According to limiting nature of construction rules and regulations, profitability of personal desires can be the consequence of construction violations in any

society (Sarkheyli, Rafieian, 2010: 172). However, what makes the phenomenon of construction violations a crisis in an urban society is the lack of proper control system of construction violations, intensifying construction violations and high number of construction violations in some urban areas. As an example, most of researchers are considered the crisis of abnormal housing, phenomenon of poor housing or marginal settlements in some areas of the cities in which accumulation of constructional violations are accompanied with other social and economic harms. While most of constructional violations in decentralized or affluent areas, are ignored. So, negligence on effects of these violations can provide more other violations. Without a doubt, observing construction rules and regulations guarantee quality of living in building and city and lack of observing these rules can impair balance of city system and descend quality of living in city and building. Therefore, Alnsour and Meaton (2009) mention the environmental and social costs caused by constructional violations. In addition, Potssiou and Ioannidas (2006) mentioned discrediting or abolishing plans and documents, lack of trusted information and statistics, existence of unrests, riots and crisis, destroying environment, inadequacy of infrastructures and city basic facilities, decreasing government incomes because of non-payment of the tax, insecurities of seizing land, weakening the land market and negative effects on national economy as the consequences of unofficial and illegal settlement. So this can be said that lack of observing construction regulations will have two results: the first and direct result of it, is just decreasing quality of building for residence and utilization including building safety reduction. Another important result of constructional violations which can be tangible with the prevalence of this phenomenon is just discredit of planning and city development control and finally breakdown of city growth or disjointed norm growth, destroying balance of urban transportation system, urban environment, facilities and infrastructures, perspective, usage and performance, form and

structure and urban society and economy.

In this regard, Beheshti Roy (1993: 36-177) mentions social-cultural effects of construction violations (cultural and social destructions and sediment of disregard thoughts to law between citizens), financial-economic effects of construction violations (destroying funds in construction, destruction and construction of new buildings processes and collapsing economic foundations in city life), structural -physical effects of construction violations (occurrence of transportation problems, accessing to urban equipments and facilities, chaos in central appearance, degradation in quality of activities and procedures in urban spaces, changing desirable directions of city development), functional-organizational effects of construction violations (appearance of negative functional-organizational aspects including spatial organization of performances, activities and connections) and psychological, sanitary, environmental and political effects of constructional violations.

As an example, challenges such as traffic in some passages and urban areas are the results of excessive density of residence or employment centers and finally increasing demands which are more than access network capacity. And so, increasing number of unpredicted population in some urban areas and also increasing capacity of water, electricity resources and other infrastructures can decrease servicing level of the city and finally quality of living. On the other hand, lack of observing the regulations of density and maximum height, positions, materials and other standards of urban design will reduce visual quality, weakening associations and vision corridors and visual disturbances. In addition, non-compliance with land usage regulations can be the cause of putting incompatible usages together, excessive increasing of one usage in one area, destroying capacities of some urban areas for necessary usages, constructing lands allocated to urban green and open spaces. In another word, physical effects of construction violations which are appeared in shape, form and spatial organization of the city ignore

two basic, fundamental and logical principles of discipline and justice in physical organizing which should be considered in all scheduling and planning (Beheshti Roy, 1993:40). In addition, another consequence of construction violations is just increasing cases of crimes and irregularities. In this regard, Bissler (2003) mentioned that irregularities and abnormalities in a society are some kind of incivility and sign of weakness of society norms and warning of more violence, irregularities and crimes. Hence, this can be said that prevalence and normalized constructional violations in a society, in addition to providing the problems of increasing quality of building for settlement and utilization and destroying urban system balance, will create cultural basis for happening more violations and abnormalities in a society.

### **Evolution of urban construction rules and regulations in Tehran metropolis**

Tehran as the biggest metropolis of the country, like all other metropolises of the world, is consisted of advantages and disadvantages. In most of developed countries of the world, metropolis is the symbol of economical, social and cultural benefits and it is the entrance gate of world economy and the origin of entering modern technology to the country, but in developing countries, metropolis is the symbol of problems and damages (Andalib et al, 2014). Therefore, experience of three planning periods was provided for Tehran metropolis with major and detailed changes of planning regulations from the 1961's to the 2011's. During this time, as the results of changing approach and proposed development patterns for urban plans and more than that, as the results of management requirements and unstudied discretion of authorities of planning and managing the Tehran city, planning regulations are also changed. The most important changes in planning rules and regulations of Tehran are as follows: according to comprehensive plan approved in 1970, standards of density, employment level and land usages were announced for different city areas.

Since 1984, with agreement of Ministry of Urban Development Affairs&Housing, proposed densities of detailed and comprehensive plan of Tehran were reconsidered (Diyargah, 2010: 64) and specially standards of permitted constructional density were decreased in most of areas. In late 1981's, with financial independence of municipals (1989) and communication of Supreme Council for Planning and Architecture act in the field of regulations of increasing density and high-rise buildings<sup>1</sup> (1990) and propagating construction activities under the influence of establishing relative stability in the country and changing the manager of Tehran, a new chapter about construction controlling of Tehran was opened. In this period, urban management used the policy of selling density to get the needed incomes of the city in replacing governmental resources.

After forming the first period of city council, Ministry of Housing with the acts 2692 (1998) and 3293 (2001), selling density in Tehran permitted more widely. So, the additional density across Tehran was sold for constructing buildings up to 7 floors (Diyargah, 2011: 69).

In 2002, the mayor of Tehran ordered not to sell additional density in seven areas in north of the city (Ghadami, Lotfi and Khaleghniya, 2014: 91). In 2004, in order to obtain the goals of urban collection plan of Tehran, preventing unbridled development of Tehran and controlling number of population approved in Supreme Council for Planning and Architecture, Amendment of rules of the act 329 was applied by dividing Tehran legal area into four areas (north of Hemmat, from Hemmat to Enghelab-Azadi, from Enghelab-Azadi to Sade road and along Shush and south of Sade road and along Shush). According to this act, surrendering density which is more than 120 % (up to a maximum of 60 %) was applied with considering the land area and adjacent passage width in different areas.

In spite of improving this act, selling density stopped but city council of Tehran unlike legal authorities has violated this act in different levels. In the first level, in 13.1.2004 they permitted selling one additional floor

as an encouragement. In the next step, by excusing the elimination of road joints.

One another floor was permitted for selling. So, practically situation returned to the time of approving the act 32 and giving license to a building with 5 floors in Tehran. In addition to different changes in standards of constructional densities of Tehran, in rules and regulations of giving constructional license, all commercial and mixed usages of detailed plan were omitted and they are replaced with residential usages with the lowest adjacent density. Also, according to the plan of transferring unclean and annoying industries, animal husbandries and aviculture in Tehran and in order to gradual exiting of existed factories and workshops which are annoying, all lands located at industrial usages of detailed and comprehensive plan (except the constructions before 1970) will be changed to public parks (Diyargah, 2011:75). Planning regulations of Tehran according to the documents of third detailed and comprehensive plan of Tehran which is communicated in 2013 were presented in the form of maps and standards of zoning. According to that, eight main areas were defined with two-digit codes in comprehensive plan and three-digit codes in detailed plan. In this way, rules and regulations of each area were presented in the form of presentation of general policies, recommendations in each area of intervention and planning in the form of permitted usages, standards of separation, density, employment level, height and accessing. Also, by defining the limits of urban worn-out areas, intervention and planning areas, urban areas of valuable, inefficient and special, codifying instructions and more detailed rules which are related to different urban areas, can be changed to plans with bigger scales and more accuracies.

Therefore, changes of planning regulations and construction rules in Tehran in some periods can violate urban plans and rules of prior periods, while they are codified without relying on studies and strategic planning or at least pathology. Besides these conditions, constructional violations especially

violation of major planning regulations and rules (density and land usage) have an important role in unstable and abnormal growth of Tehran and spurning urban plans.

### **Constructional violations in Tehran**

The most important changes of planning rules and regulations of Tehran and tendencies to constructional violations can be summarized in four time periods:

#### **1970 to 1989 (performing rules of first comprehensive plan):**

Constructional violations by approving the article 100 of municipal law in 1966, found a legal status and its consideration reference was the commission of the article 100. In this period, by announcing the rules of density, employment level and land usage for different areas of the city according to first detailed and comprehensive plan of Tehran approved in 1970, these rules were considered the basis of development controlling in Tehran and violation of mentioned standards were considered in commission of the article 100 in municipal. By changing government structure (Islamic Revolution), performance of commission considered against religious and duty of considering constructional violations was surrendered to criminal courts. So, large number of these constructional violations were forgiven in criminal courts, based on neglecting and without considering consequences of constructional violations or by getting penalty, their existence was accepted. Negligent look of the first half of the 1981's can be a beginning to prevalence of constructional violations and the culture of ignoring importance of construction rules.

Since 1984, with agreement of Ministry of Urban Development Affairs & Housing, densities of detailed and comprehensive plan of the city were reconsidered and adjusted. In this period, one of the major tendencies of constructional violations is just constructing illegal or without license buildings. Constructing marginal towns with illegal and uncommon construction in this period until 1996 is continued. Also, negligent look at

considering reference of constructional violations (from 1983 to 1988 in criminal courts) about constructional violations due to goals of the Islamic Revolution in protecting the needy and the homeless, in most cases leads to existence of violations and getting penalties and finally, there were more violations. After reactivates of commissions of the article thousand of municipal laws, high volume of violations were still reported and according to the previous procedure, citizens were requesting forgiveness for different reasons. In addition, the violation of changing usages in changing usages of green spaces and gardens (in detailed plan) and constructing commercial units without license in residential places can include violations in this period. So, these violations are the causes of lack of realization in most of approved areas of green spaces and gardens in the first comprehensive plan. While hidden results of violating urban laws such as destructing green spaces and gardens were reduced their importance to citizens and urban officials and considering references of constructional violations and therefore in restituting estates to legal status, there was not much insistence.

the national independence of municipals (1989) and communication of Supreme Council for Planning and Architecture act about regulations of increasing density and high-rise buildings (1990) and propagating construction activities under the effect of establishing relative stability in the country and changing the Manager of Tehran, a new chapter was opened in the field of construction controlling.

### **Implementing the policy of selling density (1989-2001)**

In this period, urban management used the policy of selling density to provide incomes required for the city, in replacing governmental resources. So, with communication of Supreme Council for Planning and Architecture act about regulations of increasing density and high-rise buildings, selling density in Tehran was permitted more than the past. During this period, commission of the article 100 as an

institute which was the submission of municipal, simultaneously by requests of municipal in making money and propagation of selling density as a good which can be purchased and sold, was converted into the leverage of municipal for applicants of more density and profitable usages for agreement with the price of selling density and usage. Thus, it was indirectly converted into the factor of creating constructional violations for getting penalty and obtaining more incomes from urban construction. The acts 269 of Ministry of Housing and 329, continuity of density sale policy and mobile density sale policy, converting license papers of using the space above the estates and buildings into securities which can be purchased and sold in outdoor sales were provided (Diyargah, 2010: 69). In this period, rules were converted into goods which can be sold and commission of the article 100 was converted into leverage for applicants of density and usage and victory of municipal in process of buying rules. Therefore, in this period, by increasing the requests of construction and licensing, large number of constructional violations was reported to the commission of the article 100.

In this period, since 1991 most of violations about illegal constructions in the early years of the revolution are also considered based on the requests of owners to get the certificate of finishing the construction and having no violations in buying and selling. At the same time, constructions without license which are almost 25 years old, were released and constructions with no required performing rules and frameworks which were often predicted for that in the residential-usable comprehensive plan especially marginal region of the area 15 of municipal were continued. So that, constructing buildings without license at the limit of permitted density was in ascending order in the early 1991's. Population growth were the basis of many constructions in most of the towns, atypical residential complex and industrial niches and workshops that people with weak and medium salaries, immigrants and urban colonizers that are not generally able to buy home within legal areas, they are

considered these areas and they ventured constructions without license and standard (Diyargah. 2010). Since 1996, by increasing regularity of processes of licensing and controlling constructions, violations of constructing buildings without license were decreased. In this period, most of violations in permitted additional density, is related to converting pilot and underground into settlement (omitting the space allocated to parking, more than 75 percent) and development at the level of the building (almost 18 percent) and less violations are consisted of constructing new floors. Also, according to the reports from commission of the article 100, in the 1991's, non-compliance with providing appropriate parking for the building according to the license is usually the result of violation in additional density, converting pilot or underground into settlement or changing the usage and during the years 1991 to 2001, its amount was 119993 cases and 340753 unites without parking (Diyargah. 2010).

In 2001, with the order of stopping additional density sales in seven areas in north of the city by the mayor (Ghadami, Lotfi and Khaleghniya, 2013: 91) and in Amendment of criterion rules, a new method of applying rules and considering construction violations

were provided (Fig. 1).

**Performing the Amendment of planning rules (2002-2011)**

In 2003, in order to obtain the goals of urban collection plan of Tehran, preventing unbridled development of Tehran and controlling number of population approved in Supreme Council for Planning and Architecture, Amendment of rules of the act 329 was applied by dividing Tehran legal area into four areas (north of Hemmat, from Hemmat to Enghelab-Azadi, from Enghelab-Azadi to Sade road and along Shush and south of Sade road and along Shush). According to this act, surrendering density which is more than 120 % (up to a maximum of 60 %) was applied with considering the land area and adjacent passage width in different areas. Performing the Amendment of the act 329 was the cause of more transparent and more logical rules and it is the cause of limitation in density according to access type and plaque area.

By modifying this act, density sale was stopped but council of Tehran in different levels tried to break this act, contrary to its legal authority. And for renovating worn-out areas, in 13.1.2004 they permitted selling

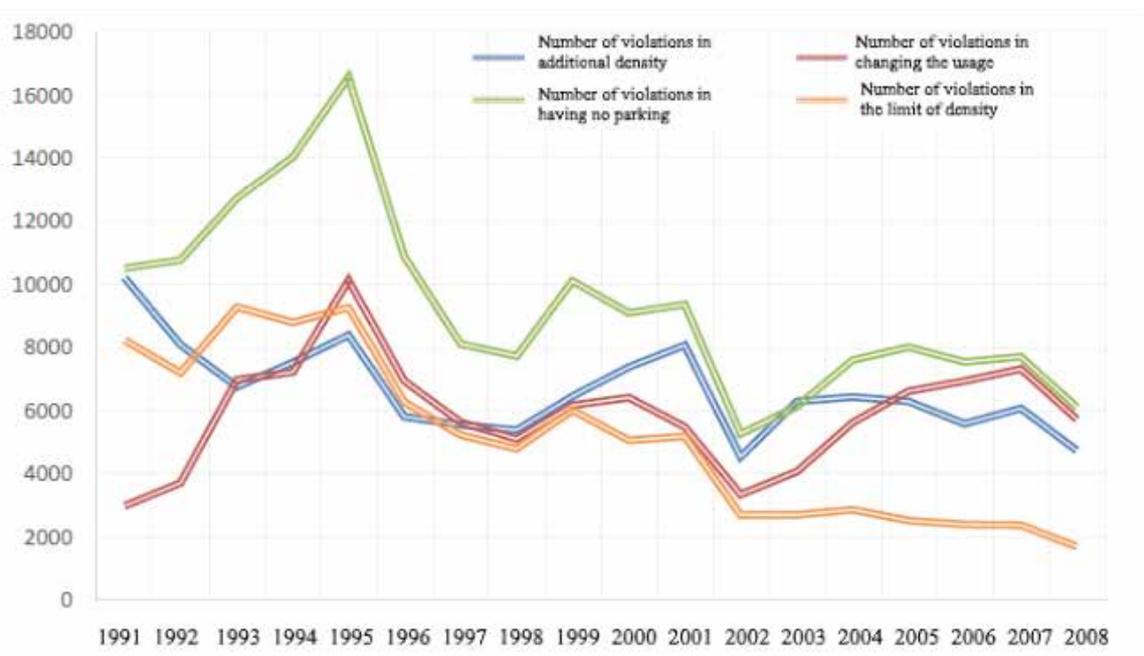


Fig. 1. Number of constructional violations reported to the commission of the article 100 of Tehran municipal. Source: The commission of the article 100 of Tehran municipal.

one additional floor as an encouragement. In the next step, by excusing the elimination of road joints, one another floor was permitted for selling. Also, they permitted selling the additional parking which came from this encouragement. So, practically situation returned to the time of approving the act 32 and giving license to a building with 5 floors in Tehran. So that, percentage average of violations in additional density, changing usages and having no parking in the ratio of constructional licenses granted in this period (2002-2008) to the second half of the previous period (1997-2001) was increased and violation of constructing a building without license was decreased (Fig. 2).

Also, in rules and regulations of giving constructional license, all commercial and mixed usages of detailed plan were omitted and they are replaced with residential usages with the lowest adjacent density. Also, according to the plan of transferring unclean and annoying industries, animal husbandries and aviculture in Tehran and in order to gradual exiting of existed factories and workshops which

are annoying, all lands located at industrial usages of detailed and comprehensive plan (except the constructions before 1970) will be changed to public parks (Diyargah, 2011:75). Significant increases in violations of changing land usage (the violation of the code 6) from 2002 (Figure 1) and violations of constructing additional buildings which are not residential (commercial-administrative-industrial) can be related to these violations. Since 2008, any kind of additional licensing was stratified and any kind of density sale was forbidden.

**Performing the rules of third comprehensive and detailed plan (2012 until now)**

By approving comprehensive plan on Tehran in Supreme Council for Planning and Architecture of Iran (2007), rules and regulations of this plan as desirable development pattern of Tehran, were placed as the basis of codifying rules and regulations of integrated detailed plan of Tehran. The document of rules and regulations of integrated detailed plan of Tehran was provided in February 2009 and after



Fig. 2. Comparing two periods of performing density sale policy and performing the Amendment of the act 329 in the ratio of constructional violations to licensing. Source: The commission of the article 100 of Tehran municipal.

analyzing the mentioned document in municipal of Tehran, department of urban development and architecture and municipal of regions and subsequently, in Islamic council of Tehran and commission of the article five of Tehran, the final document approved by commission of the article five in February 2012 and it was confirmed by Supreme Council for Planning and Architecture of Iran in April 2012 (Pars Boum, 2012). By communicating and performing the rules, documents, maps and rules and regulations of new detailed plan of Tehran, in 2012, significant changes happened in conditions of constructional violations of years after that.

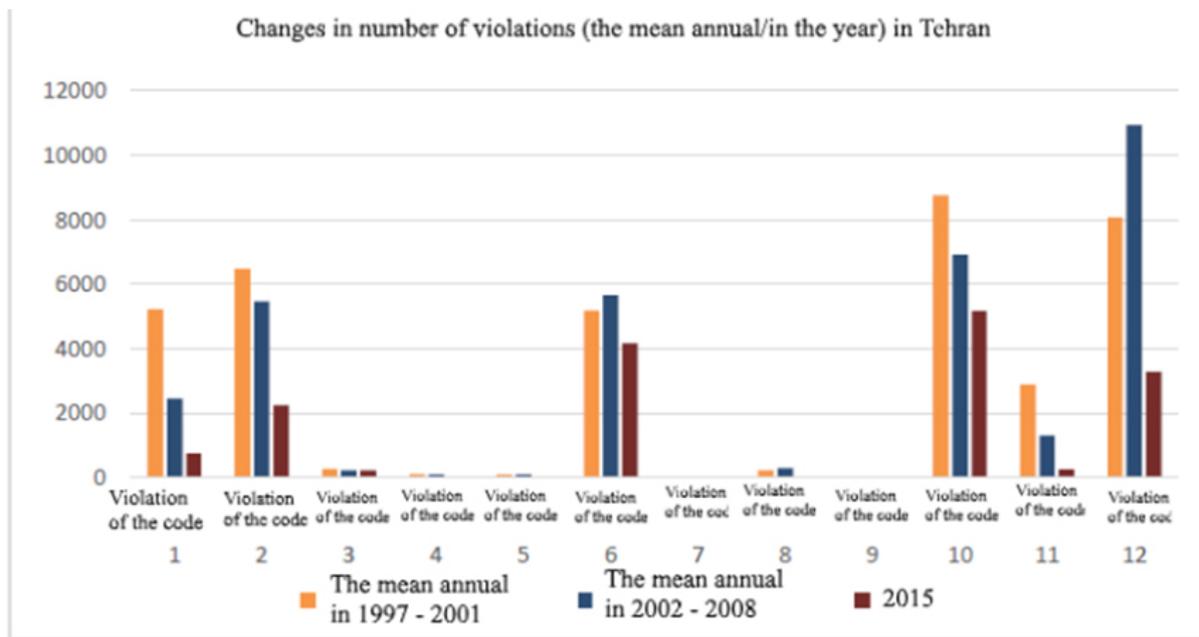
By prolonging the time of communication of new plan rules of Tehran, municipal proceedings during the time of approving the rules of integrated detailed plan of Tehran, caused changes in performance and form of some of urban areas including development of urban reserved lands. (Habib Elahiyan, 2016:4-5) explains that one of the positive points and achievements of comprehensive plan of Tehran is just having innovation to include the subject of stored lands of new seasonal and urban and independent development and renovation named localized and thematic plans. But until the time of communicating rules of integrated detailed plan of Tehran, almost one-third of valuable lands and estates which were stored, were taken out of stored mode and they were used to construct (Habib Elahiyan, 2016: 6).

According to the inaccessibility to total information of this period, mean constructional violation in each code in two previous periods is compared with the number of constructional violation of 2015 as the representation of this period. According to Figure 3, can be seen that number of constructional violations of the code 1 (residential building in the limit of density), the code 2 (residential building with additional density), the code 10 (having no parking) and the code 12 (other development laws) in 2015 to previous periods significantly were decreased. But increasing violations of the code 3 (Non-residential building with additional density) and relatively less decreasing in violations of land usage in 2015 present

the changes in constructional violations. Note that the area of violation in changing usage was reported only in the first ten months of 2016 (1324587 square meters) and after 2001, it has the highest area of violations in changing usage which was reported to the commission of the article 100 of municipal in the past two decades. Note that increasing the area of constructional violations in 2016 in addition to significant increasing in the mean area of violation in changing usage during this year (294 square meters) are compared with the mean 205 square meters in the periods of 1997 to 2001 and the mean 195 square meters in the periods of 2002 to 2008. As the same way, according to the statistics from the commission of the article 100 of Tehran municipal, in spite of decreasing the number and area of constructional violations with additional density in 2015 and the first ten months of 2016, the mean area of constructional violation with additional density in Tehran had an ascending order.

Also, changes in the patterns of constructional violations in Tehran can be presented by comparing the status of constructional violations in different areas of Tehran during three last periods. According to the Figure ... violation of the code 1 (non-residential building in the limit of density) in the northern and southern border regions in the periods of 1997 – 2001, with a lot of difference was reported more than the central regions of Tehran. In the periods of 2002 – 2012, the amount of this violation in most of the regions of Tehran was significantly decreased. In the next period (2015), this violation is almost zero in border regions and except the region 4; it was strongly reduced in other regions.

About violation in residential building with additional density, the pattern of violation shows that in comparing second half of the 1990s and 2000s, constructional violation with additional density was partly decreased in most of the regions and in the regions 1, 7, 8, 20, 21 and 22, it was increased. In 2011s, the violation of constructing residential buildings with additional density was decreased in all regions of the city, but like the violation in the



**The codes of constructional violations**

1. Residential building in the limit of density in its related usage (the building contrary to the limit of density)
2. Residential building with additional density in its related usage (the building contrary to the additional density)
3. Non-residential building with additional density in its related usage (commercial-administrative-industrial)
4. Non-residential building in the limit of density in its related us (in the limit of permitted density)
5. Illegal residential building with changed usage
6. Illegal non-residential building with changed usage (changing usage)
7. The building without license based on usage approved in the city (constructing forbidden building)
8. The building without license with changed usage approved in the city (constructing forbidden building)
9. The building which is almost 25 years old and it is not released
10. Having no parking
11. Improvement and chamfer and plan which are not observed
12. Other cases (non-compliance with other development rules)

Fig. 3. Changes in total number of constructional violations in Tehran. Source: The commission of the article 100 of Tehran municipal.

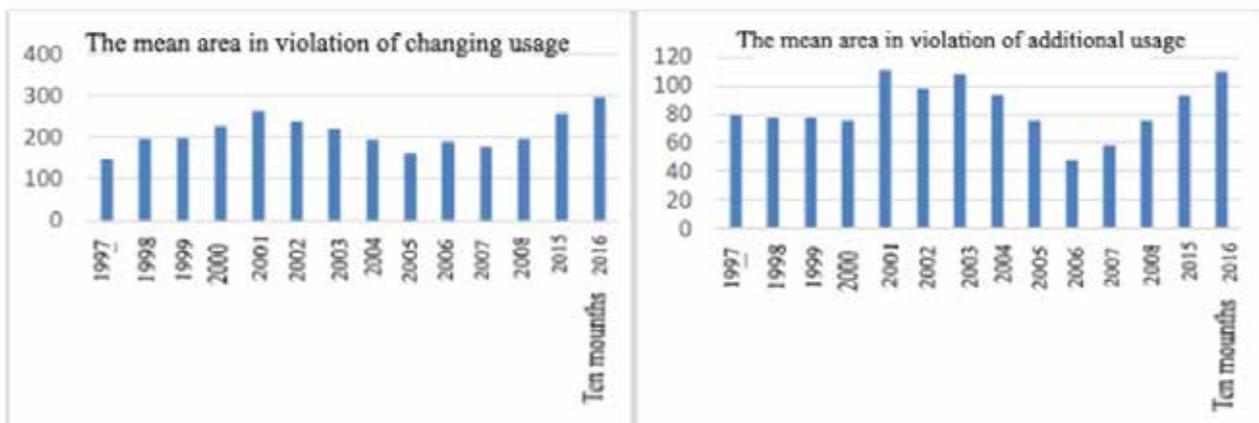


Fig. 4. Changes in the mean area in violations of additional density and changed usage. Source: The commission of the article 100 of Tehran municipal.

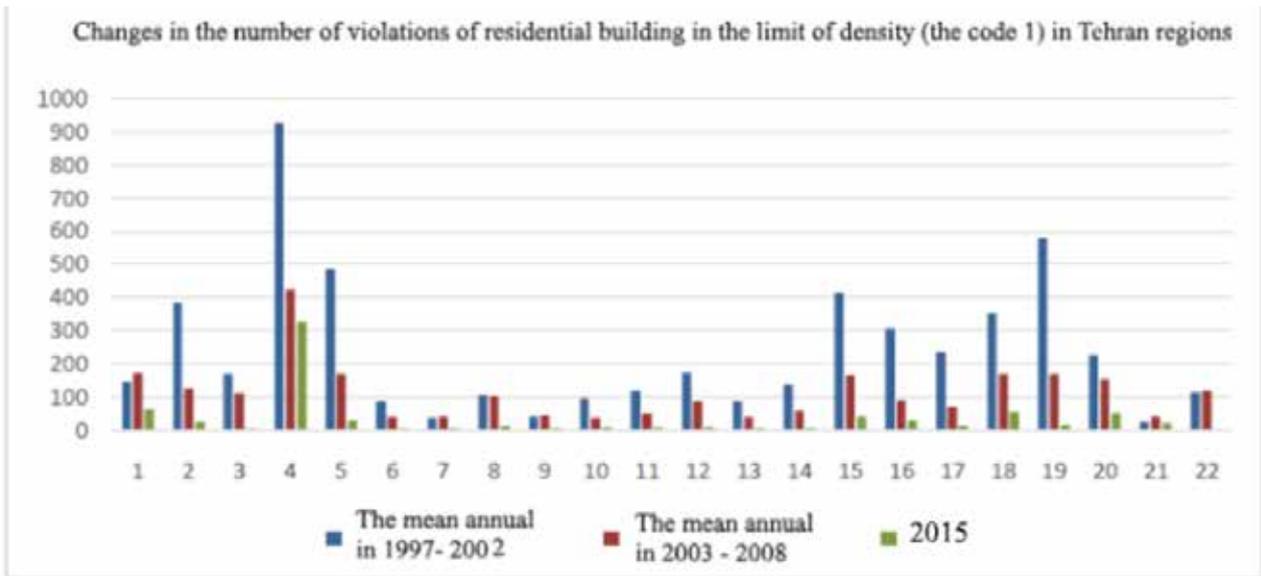


Fig. 5. Changes in the number of violations of residential building in the limit of density (the code 1) in Tehran regions. Source: The commission of the article 100 of Tehran municipal.

code 1, the amount of this violation in the region 4 is extremely more than other regions of Tehran municipal. Also, the severity of reduction of violation with additional density in southern regions of Tehran is considerable.

The non-residential building with additional density (commercial-administrative-industrial) had different process during these three periods. This violation, after relative stability in 1991s and 2001s, was

considerably increased in 2011s in the regions 2, 4, 7, 10, 13 and 16 and in the regions 3, 8, 9, 11, 12, 15, 17 and 18, it was considerably decreased.

The violation of changing usage during these three periods, in the regions one, four, five and ten of the municipal was increased and in other regions, it was decreased. With attention to increasing the mean area of this violation, the high rate of this violation in southern regions and central regions of Tehran

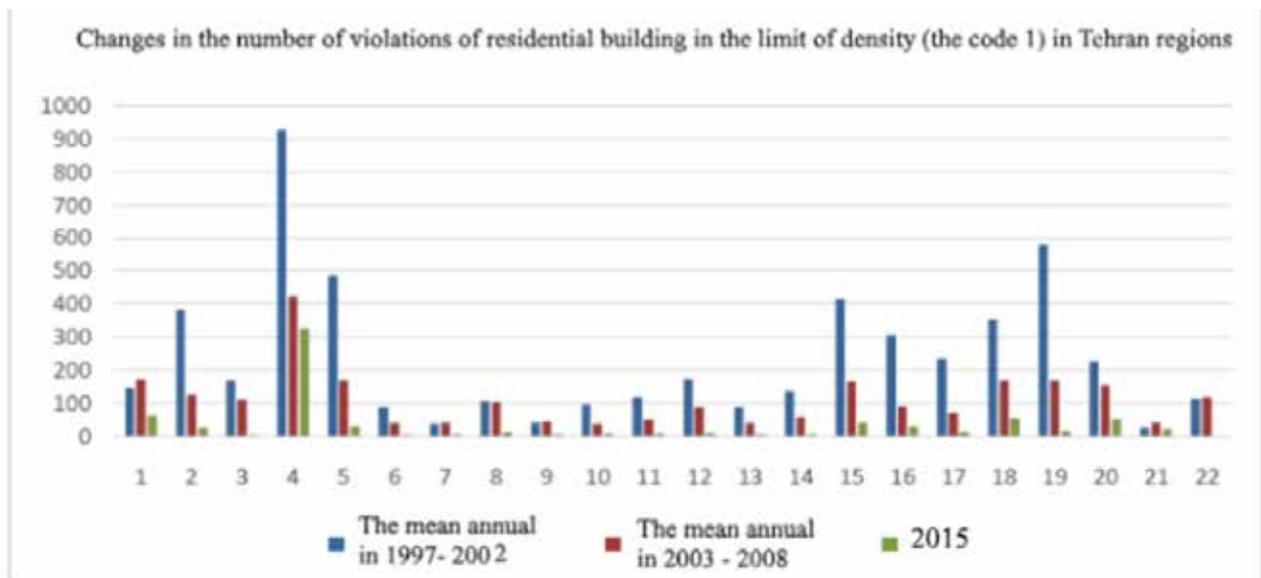


Fig. 6. Changes in the number of violations in residential building with additional density (the code 2) in Tehran regions. Source: The commission of the article 100 of Tehran municipal.

presents the tendencies to constructing in these areas.

**Effective factors in appearance of constructional violations in Tehran**

As it was told, different factors of social-commercial, weakness of management and administrative system and deficiency of urban rules and regulations are effective in appearance of constructional violations. In Tehran, constructional violations are not only the natural results of city growth and population attraction, but also the results of social and commercial conditions of Tehran, weak urban management system and rules and regulations which are incompatible or inappropriate

with physical conditions and social and commercial requirements.

Sarkheyli, Rafeian and Bemaniyan (2012) express the low level of information about construction regulations, commercial tendencies in making money or responding to personal and family requirements about settlement and employment and urban constructions with the help of people who do not have any expertise as the tendencies of constructional violations with additional density. Also, social, commercial, functional and physical structures of Tehran are effective in appearance of constructional violations with additional density (Sarkheyli, Rafeian, 2013: 255). So that, some areas

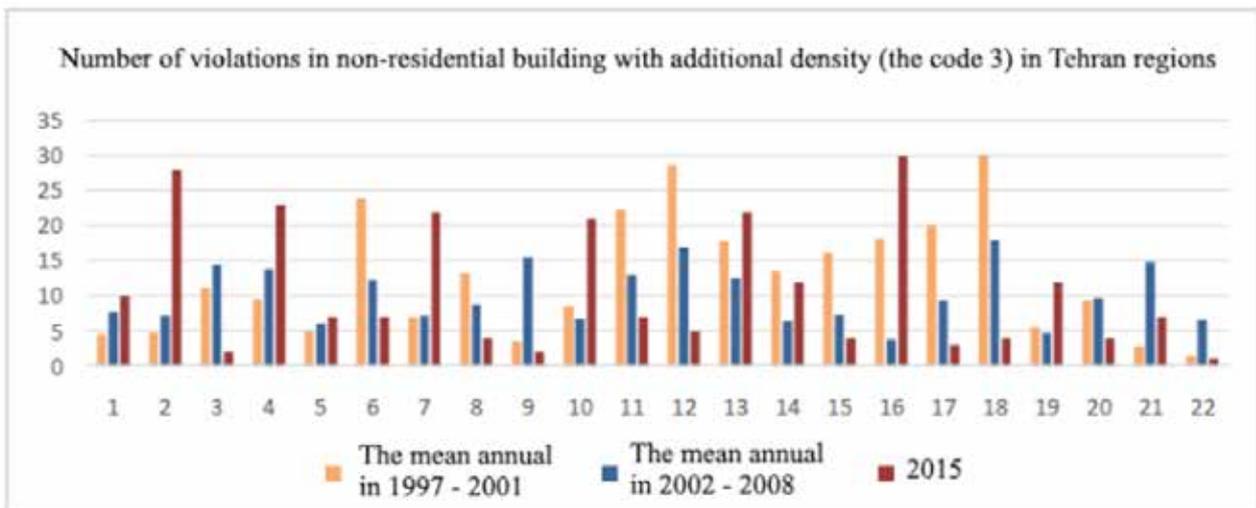


Fig. 7. Number of violations in non-residential building with additional density (the code 3) in Tehran regions. Source: The commission of the article 100 of Tehran municipal.

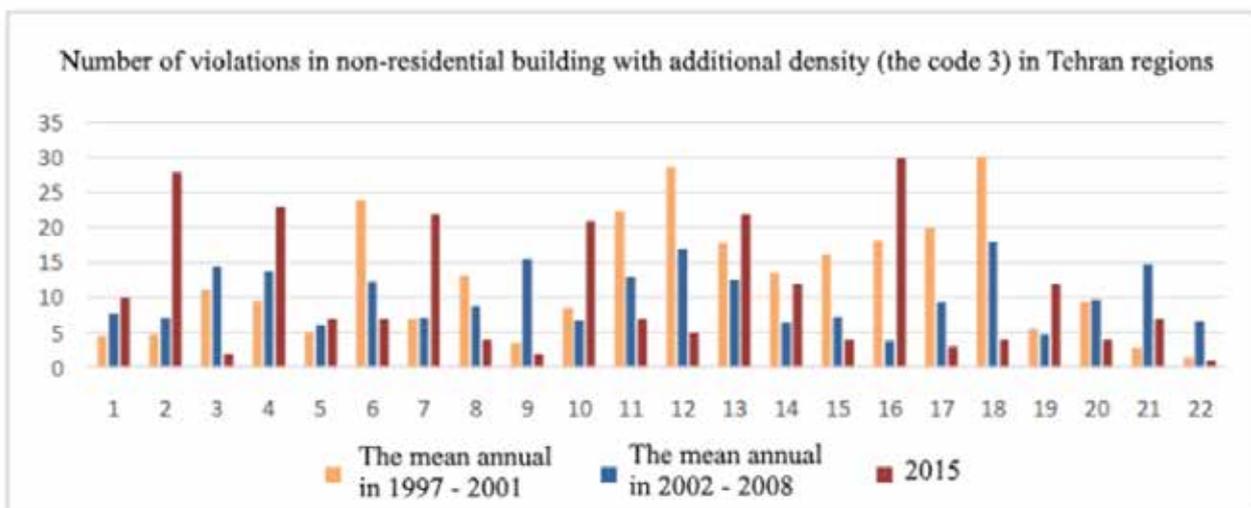


Fig. 8. Changes in the number of violations of changing usage (the code 6) in Tehran regions. Source: The commission of the article 100 of Tehran municipal.

of Tehran provided more opportunities for appearing this violation. In fact, constructional violations are just citizen reactions to incompatible constructions rules and refusing to answer appropriately to housing requests and other urban constructions. In Tehran, most of constructional violations with additional density were happened in urban affluent regions and with high social and commercial levels (valuable lands and higher rental prices, high residential capitation and large residential units). This process can happen under the effects of urban management policies and high profitability of construction in these urban areas. Lack of updating construction rules and using these rules as the tools of making money for the municipal are the basis of these special conditions in Tehran. In addition, low average of building lifetime and high tendencies to constructions in some urban areas and exhaustion of central textures of the city and large number of migrations inside the city from central regions to western, eastern and northern regions of Tehran are the cause of entering large number of citizens who do not have any expertise, to construction industry, lack of attention to the importance of complying with construction rules and finally, low quality of construction in this city (Sarkheyli & Rafieian, 2013: 256-257).

Also, according to the results of studying the spatial structure of Tehran and violations in changing usage, constructional violation of changing the usage in areas will be greater in which the mean area of residential unit in these regions is higher and it consists of high land, building and rental price, higher building density and a good texture, also number of rental units in these areas are less than it is imagined. And finally, aggregation of administrative usage is related to the occurrence of constructional violations of changing the usage and it means that existence of administrative usage is the cause of constructional violation of changing usage to the usages such as residential, commercial and administrative (Sarkheyli, Rafieian & Bemaniyan, 2014: 39).

(Diyargah 2010), in the results of studying constructional violation reasons in Tehran, mentioned

to the different reasons as the reasons of citizens in doing constructional violations. Among them, earning more interests and lack of knowledge about rules and regulations, personal usages are the most important reasons and high cost of licensing and prolonging the process of licensing, lack of continues controlling by the municipal, unimportance of complying with rules are the other reasons of constructional violations. In this study, experts think that receiving benefits from violations (up to 51 percent) and after that, trying to obviate the needs for people settlements and employments (32 percent) are mentioned as the most important reasons and tendencies of citizens in doing constructional violations.

Generally, wasteful migrations, residential requirement, earning requirement, lack of familiarity with construction rules and regulations, low level of people information about planning rules and regulations, lack of enough and appropriate financial supports for housing in addition to increasing housing requests, having a crowded family and having more family members, mistrustful of rules by people and trivializing them are the social-commercial reasons of constructional violations in Tehran. Between administrative and management reasons of constructional violations, the factors such as municipal dependency to incomes of violations, lack of responsibility of municipal officials and sometimes trying not to report violations, prolonging the process of licensing, lack of enough and appropriate controlling, weakness of performing power of urban management in preventing the violation and taking votes provided by the commission of the article thousand, lack of cooperation between sections to solve housing problems, lack of coordination in providing technical identity of the building and lack of effective controlling system were mentioned as the most important reason in trying not to perform national regulations of building. Also, non-compliance with rules and regulations in Tehran as the reasons of constructional violation can be explained as inability of performing or lack of compatibility of rules and regulations with citizen

conditions, uncertainty of planning standards and its extensive changes, high growth rate in some areas and lack of proper controlling on their developments, exogenous of rules, engineering’s attention to rules and regulations when they are being codified and less attentions to social, commercial and cultural aspects.

### Consequences of constructional violations in inefficiency of urban development plans of Tehran

The first experiences of urban planning of Tehran metropolis encountered with the crisis of constructional violations for different reasons. This crisis is the reason and result of many other challenges of this city like significant growth of population, traffic, increasing the environmental

pollution including air pollution, destroying green and open spaces, low quality of accessing to services and infrastructures, unbalanced spatial distribution of services, usages and businesses, exhaustion and instability of urban textures, occurrence of fake jobs, losing capitals and resources especially wasting public and financial resources, destroying or decreasing the quality of buildings and important cultural and historical places, visual disturbances, losing the sense of social cohesion, incompatibility of nearby urban usages and decreasing the quality of living in urban neighborhoods and so on. In Table 1, the most important consequences of constructional violations in each periods of analyzing constructional violations in Tehran are summarized.

Table 1. The most important consequences of constructional violations in Tehran. Source: authors.

Constructional violations	Consequences of constructional violations
Performing the rules of first comprehensive plan (1970-1989)	-Marginal development and horizontal growth of Tehran. - Many violations of changing the usage in changing usages of green spaces and gardens (in detailed plan) and constructing unlicensed commercial unites in residential areas (these violations are the reasons of failing to fulfill large parts of approved green space and garden areas in the first comprehensive plan) -Wasteful constructions in the lands of Abbasabad and the lands in the west of the Kan river, constructions of co-operatives, constructions in Alborz hillside in the limits of 1800 meters, constructions in garrisons and governmental-military lands, constructions in gardens and villas in the form of garden towers and losing valuable historical or architecture textures and cultural heritage (Saeidniya, 2013:19).
Performing the policy of selling density (1989-2001)	-Continuing wasteful constructions until the mid-1991’s and stating to consider the violations of constructing buildings without license which are related to the previous period and in this period, their existences and getting penalties were mostly accepted. -The violation of having no parking (the code 10), other development rules (the code 12), residential building with additional density (the code 2), the building contrary to the limit of permitted density (the code 1) and changing usage (the code 6) are the major violations of this period. -Persuading to construct additional density and existence of constructional violations with additional density according to policies of selling density. - Entering large number of citizens who do not have any expertise to construction industry and constructing unstable, unsafe, without engineering methods and lack of quality buildings. -High volume of violations in residential building with additional density and as a result, unpredicted increasing in population of Tehran areas including the northern areas 2, 4 and 5. Finally increasing the requests of urban facilities such as passages and infrastructures. Increasing the urban traffic which is affected by violation of residential building with additional density and changing usage. -High volume of violations in changing usage in the central areas 12, 13 and 6, and southern industrial areas like 15 and 16. -Improvement and chamfer and plan which are not observed (the code 11) are the major violations of this period and its result is just destroying the opportunities of changing passages, making streets which is proposed in detailed and comprehensive plan of Tehran.

<p>Performing the Amendment of planning rules (2002-2011)</p>	<ul style="list-style-type: none"> <li>-Increasing in the violations of other development rules (the code 12) and the violation of changing usage (the code 6) and also, significant increasing (nearly doubled) in the violation of changing usage in the areas 22, 7, 9 and 3. Considerable number of violations in changing usage in the areas 6 and 12 and finally intensifying the focus of non-residential activities in central regions and intensifying instability of spatial structure of Tehran.</li> <li>-Serious decreasing (more than half) in violation of constructing a building contrary to the limit of permitted density (the code 1) and significant decreasing in this violation in the areas 4, 2, 5, 15, 16, 17, 18 and 19.</li> <li>-Decreasing the violation of residential building with additional density in most of the areas and increasing it in the areas 1, 7, 8, 20 and 22 (considerable increasing in the areas 1 and 22). Consequences of large number of violations in residential building with additional density in the areas 1, 4, 19, 20 and 22 compared to other areas and previous period can be seen in increasing settled population and increasing the requests of facilities and infrastructures and increasing the requests of travelling.</li> </ul>
<p>Performing the rules of third comprehensive plan (2012 until now)</p>	<ul style="list-style-type: none"> <li>-Decreasing the violation of changing usage in central areas and increasing it in northern affluent areas of the city (the areas 2, 4, 5 and 10). Increasing the mean area of violations in changing usage, compared to previous periods. Tendencies to violations of changing coarse-grained usage and finally more consequences of increasing the requests of unpredicted travelling.</li> <li>-Increasing in the violation of non-residential building with additional density in many areas of the city. Significant increasing in non-residential building with additional density in the areas 2, 4, 7, 10, 13 and 16.</li> <li>-Constructing stored urban lands which are proposed by detailed plan before communicating the rules of detailed plan and destroying the opportunities of flexibility in responding to services and facilities needed in different areas.</li> <li>-Decreasing in violation of residential building with additional density in all areas and significant decreasing of this violation in northern and southern areas.</li> <li>-Significant decreasing in violations of having no parking (the code 10), improvement and chamfer (the code 11), other development rules (the code 12) and violation of residential building in the limit of permitted density (the code 1).</li> </ul>

**Conclusions**

Necessity of urban planning with requirement of rules and controlling the limits of development was mentioned in different urban areas and construction rules and regulations became the tools of fulfilling urban plans. Therefore, breaking the rules and regulations of urban construction and outgoing the processes of constructions and developments from limitations of urban planning, will prevent from fulfilling urban plans. In this article, methods and procedures of applying rules and regulations and tendencies of constructional violations of Tehran were analyzed during four periods from first comprehensive plan to third comprehensive plan. By analyzing the results and consequences of constructional violations, the effects of high volume of violations with additional density along with selling density in northern areas of the city and violations of changing the usage in southern industrial areas and the central areas 12 and 6 can be seen in unpredicted increasing in population, unpredicted requests of travelling, decreasing in the servicing level of infrastructures in different areas of Tehran and intensifying the unbalanced spatial structure of distributing usages and activities in this city. On the other hand, high volume of violations in more prosperous areas of Tehran represents more dependencies of constructional violations to tendencies of taking benefits and these violations compared to residential and non-residential violations of areas, with the lower mean incomes and also the violations which are depended on tendencies of responding to the requests of affordable housing, are consisted of more volumes. After communicating the rules of third comprehensive plan of Tehran in 2012, constructional violations were greatly decreased. The reasons of decreasing constructional violations in this period, in addition to urban construction recession and decreasing the requests of constructions are related to increasing the flexibility of zoning rules of the third comprehensive plan which provides the possibility of constructing different densities and usages according to the capacities of urban areas. Considerable decreasing in some violations such as

improvement and chamfer and complying with retreating, violations of other development rules (the code 12) and violation of constructing building without license is also explainable with relative improvement of process of licensing and citizen's knowledge about the necessity of complying with rules and regulations including the knowledge about the necessity of receiving the license of having no violation and the license of finishing the construction for any kind of estate which is bought or sold. However, considerable increasing in violations of changing usage in the areas 2, 4 and 5 and considerable increasing in violations of non-residential building with additional density in the areas 2, 4, 7, 10, 13 and 16 represent the changes of construction tendencies to violations of changing coarse-grained usage in the northern areas of the city and non-residential building with additional density in affluent areas and midtown areas and continuous violation of additional density in the area 4.

According to the goals of urban plans and necessity of complying with construction rules and regulations, what matters about the challenge of constructional violations is just decreasing the negative effects of constructional violations on the city. Hence, in the process of considering constructional violation, it is necessary to consider about giving the final vote and possibility of decreasing the effects of constructional violations according to the way of voting. According to this point that some of the constructional violations are responded by giving penalty and finally, existing the violation and on the other hand, small amount of votes are changed and destroyed, so the effects of constructional violations will be existed in the city and it will even cause more damages and violations. Thus, reporting constructional violation to municipal and commission of the article thousand in Tehran about many constructional violations means the existence of constructional violation without permission of municipal. In this sense, we are encountered by loading more population, increasing the request of travelling, increasing the request of servicing and important usages of the city in urban textures, but the process of considering to constructional violation and voting does not take an action in decreasing the effects of constructional violations that their existence are accepted directly or indirectly. As an example, crimes of constructional violations are not used for providing infrastructures and population services, activities and loading unpredicted structure in one urban area. Also, no policy is done to remove damages of constructional violations from damages of landscape to unbalanced system of urban land usages and services and facilities.

On the other hand, for preventing the occurrence of constructional violations, by recognizing areas which have more opportunities of constructional violations, we can pursue needed policies for proper guiding of investments and investors in poor areas and so, we can prevent from abusing the flexibility of rules of structural-strategic plan of Tehran and integrated detailed plan of Tehran and specially stored urban lands.

## Endnote

1. 14.01.1991 – In this act, municipals with more than 200 thousand population are permitted to increase constructional density up to 25 percent relative to approved comprehensive plan (Ghadami, Lotfi and Khaleghniya, 2014:91)
2. 29.10.1997- According to this act, determining density and constructing up to 7 floors is related to two factors of passage width and land area.
3. 24.01.2001- According to this act, increasing density in passages with the width lower than 6 m is forbidden and increasing number of floors is decreased from 5 to 3 floors according to the land area (Ghadami, Lotfi and Khaleghniya, 2014:91).

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