Transport and Urban Traffic Management in Tehran with Economic View

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Abstract: One of the management issues in the city of Tehran is urban traffic. In the city of Tehran, population increase and limited resources have resulted in confusion and disorganization in dealing with this matter. Identification of difficulties and effective factors on traffic and transport management of Tehran, particularly dealing with urban sectors, meets the need of city management in a relatively short time. Given the importance of this issue, identification of effective factors on traffic and transport management can have significant impacts on solving traffic problems and it can prepare the ground for application of optimal city management. Thus, the purpose of this research is to identify and prioritize effective components on traffic and transport management of Tehran with economic view and application of AHP method. Statistical population includes experts in different fields of servicing, economic, social, and military ones that is estimated about 100 people and 50 of them were selected by purposive quota sampling to for paired comparisons. In this regard, data were collected by questionnaire, and they were examined by AHP technique and Expert Choice software. The results indicated the component of access priority toward movement that results in reducing traffic and consequently costs, is the most important component in urban traffic and transport management in Tehran; therefore, it is recommended that movement at different levels and range of public transport, as major components in policy-making, should be included in the priority of urban plans in order to reduce costs.

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1- Introduction

Urban transport and traffic, like intertwined network, waste millions of hours of citizens' time and capital. Today, traffic language continues to evolve with progress of societies and machine life. Planners of traffic signs and traffic planning engineers try to solve complex issue of traffic. Ignoring the planning principles of transport and traffic in preparing a comprehensive and detailed plan and other physical projects result in urban dysplasia, narrower passageway, and less-developed transport services. Urban transport managers try to monitor, control, and manage complex transportation system in order to be aware of various changes of this dynamic system, identify effective phenomenon on transport system performance, and predict transport system impacts on other urban elements. Different changes in urban transport system are caused by transport projects and non-transport decisions that affect transport system. The changes and impacts are essential features of this system that cannot be removed, but they should be guided and controlled in a correct path. Launching huge transport system without accurate study, land use change without study, creating path without considering environmental conditions are some cases of traffic projects that are planned to improve transport system, but if they are not measured before implementation and their effectiveness is not ensured, they will be a costly and problematic phenomena. Lack of integrated management in urban transport affairs resulted in many damages to cities. Thus, in order to achieve to efficient management of urban transport, we require much attention to it as well as planning for transport system with economic view. Today, more than 85 percent of Tehran population aged more than 6 years olds are associated with, all cities' residents directly and along with others indirectly, transport networks and private and public systems. To answer a range of occupational, educational, purchase, service, visit needs, urban transport is used. Thus, one of the main issues in the city of Tehran is inter-city transport. On average, transport land uses have allocated at least 14 percent of city level to themselves. Comparing to other land uses, they have high severity and duration of use in terms of user population and time. Urban transport problems and issues are the results of at least half-century urban development without farsighted and rational planning. Thus, solving or reducing problems related to urban traffic is not possible in short-term because of need to material resources and many human forces. Managing such issue requires instruments in terms of determining policies and accurate planning. Due to lack of long-term or strategic plans for urban transport planning that directing affairs and solve problems in long term, and order to short-term and at most medium-term planning, using effective factors on transport and traffic management with affirmative view can be a suitable strategy to solve these problems and reduce economic load on society. The policy can provide necessary management tools to prepare comprehensive and holistic long-term plans to solve transport problems. In order to determine research necessity with negative view, it can be said that if Tehran's transport and

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traffic management and its effective components with economic view is not addressed, city managers have been deprived from the power of any appropriate and logical decision-making against problems. Several damages including disorder, confusion in setting priorities, not having estimation, accurate forecast, lack of coherence and synergy in measures will be appeared. Thus, this research, considering the entity of transport and traffic system, tries to study and identify effective components on Tehran traffic management with economic view and prioritize them based on traffic criteria.

This research aims to obtain effective components on Tehran's transport and traffic management with economic view and its subsidiary goal is prioritization of effective components on Tehran's transport and tragic management with economic view.

The main question is to answer what are effective components on Tehran's transport and traffic management with economic view. The secondary question is to answer how is prioritization of effective components on Tehran transport and traffic management with economic view.

2- Literature Review

Guiver (2007) named public transport as unsocial environment that second-class citizens gathered in it without having features of a society.

Stradling et.al., (2007) stated that sadness because of force to a close distance with strangers (passengers) is a major obstacle in using public transport system.

Habibiyan and Kermanshah (2012) in an article identified effective policies on choosing alternative methods of private car in daily trips to workplace. The results indicated that people who changed their cars absorbed to public transport vehicles because of improvement of their features or costs of private cars they travel all or part of their trips with quasi-public methods like taxi. However, they emphasized that two absorbing policies of reducing travel times and improving access to the public system had substantial role in changing individuals' travel means from private cars to other options.

Ziyari et.al. (2013) in a research modeled behavioral models of working trips and services of Tehran residents. In this study, choice model and maximum likelihood method were used to model behavioral models of creating work and travel trips of Tehran residents in order to realize and analyze complexities of these trips based on different effective factors.

They indicated that in addition to main urban land uses, other important variables and factors caused mainly by urban activities and consequently urban land uses are effective on production and absorption of intercity trips of Tehran. Some of these factors are choosing residence area inside or outside of working place and economic costs of travel.

Shahriyari (2004) in an article investigated different problems of Tehran transport, particularly fuel consumption rate. The results indicated that officials of metropolises like Tehran should develop scientific and continuous planning in the

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field of urban transport and take necessary steps in this framework.

Allahverdi (2004) in a research investigated urban transport and traffic management problems in Tehran. The results indicated that the most important issues are weakness in engineering passages, paying less attention to principles of transport and traffic planning in preparing a comprehensive and detailed plan and other physical projects.

It can be concluded from studies in this field that it is required to pay much attention to designing and engineering passages in order to achieve to efficient urban transport management.

3- Theoretical Principles

Transport

There are many models in urban systems that can be divided as follows:

1. Urban economy models 2. Transport and traffic models 3. Geographical models 4. Locating models 5. Coverage models

In addition to the mentioned models, there are other models in the field of urban issues. In this regard and given to research subject about traffic and transport management, transportation and traffic planning models have been addressed in this part.

Transport Planning Models

The models in transport planning are consisted of following issues:

a. Based on purpose: travel to work from home, travel to non-work destinations from home, and travel from non-home ones

b. Based on transport system: public transport system and private transport system

c. Based on time: high-density hours and low-density hours

d. Based on traffic: traffic for study purpose and traffic for non-study purpose

Moreover, transport models have been divided into four main categories and each of these models are briefly explained below (Khatami Firoozabadi, 1994):

1. General models of production and travel distribution: the most common modeling method is regarding travel that is divided into two categories:

a. Those trips that their departure are from home.

b. Those trips that their departure are somewhere except home.

2. Non-deterministic models of production and distribution of travel: these models are based on following equation:

T-PB

In the above equation, T is a square matrix of nxn with tij elements, P is a diagonal matrix of nxn that its elements are production features of area travel, and B is an nxn matrix with possible elements of bij that these elements represent possibility of trip from i-area to j-area.

Production and absorption of trips should be equal in total areas; therefore, it is essential to moderate such models.

3. Models of choosing vehicles: Determining and choosing vehicle should be addressed after determining production and travel absorption rates in each of areas in transport planning of a city. In fact, studies of separating means of travel

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investigate travels based on type of vehicle. By using these models, the percentage of travels that is occurred by one of means of transportation is determined. Passengers generally consider four factors including relative time of travel, relative cost of travel, traveler's economic status, and relative rate of convenience in travel in order to choose type of vehicles.

In addition to mentioned factors, there are other effective factors on the traveler's decision-making to choose type of vehicle. Length of journey, population density and employment density can be mentioned among these factors.

Given to different time that traveler spend at any stages of his/her journey, related costs as well as his/her economic status and convenience rate, he/she may choose his/her intended vehicle by available models.

4. Models of choosing path: These models may determine the percentage of travels that exist between two areas from each path. The main factors that are considered in choosing each path by traveler include: duration of travel, cost of travel, service level (the ratio of the volume of passing traffic to the capacity of the path.

Transport and traffic management

One of the tools used to reduce transport and traffic issues is managerial methods with the ultimate goal of optimal use of existing transport system ability in carrying passengers and goods. Since Tehran's transport and traffic is a consequence and manifestation of set of economic, social, cultural, and technological relations, of course in the context of naturally and geographically specific conditions of the city, some of Tehran's transport and traffic features have been studied:

1. Imbalance of supply and demand in the realm of urban transport: land uses are proposed as a demand for human's travel, carrying loads, set of transport and traffic system, and set of its regulations as urban transports system

2. Building towers, as a symbol of luxury private transport development against constructing tall buildings and complexes, as a symbol of move in the path of public transport: the experience indicated that when constructing tall buildings and complexes is not followed by land speculation and rent-seeking, it connects with public transport and it meets many residential and service needs of citizens, but if it is linked with building towers, it will only meet luxury needs of the rich and inevitably it is accompanied by private car, manufacturers, and importers.

3. Public transport as an access civil tool in increasing threat of private car: when public transport suffers from pressure of increasing private car, practically, healthy public access in city will be a victim of several unhealthy movements. Consequently, a set of shortcomings and deficiencies is launched from transport realm. Gradually and invisibly, it affects economic, social, cultural, mental, and even political arenas of the city. Such condition changes positive competition in social life that is engine of social evolution in the situation of cooperation survival into a negative competition in struggle for survival.

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Main solutions to remove transport issue include:

- Focusing on citizenship-oriented in formulating the solution
- Formulating strategy of sustainable transport of city
- Preparing a comprehensive transport and traffic plan for the city
- Emphasizing on access concept instead of movement
- Organizing transport and traffic management

Firstly, all solutions ignored main issue and its accurate plan and secondly, they presumed expansion of private car at the cost of limiting public transport. Then, they achieved these measures to solve this problem. Therefore, all of them lead to increase fuel consumption, environmental pollution, heavy traffic, violations, accidents, physical and mental illnesses etc. They instigate its complexity rather solving or reducing problem.

Urban Transport and Traffic Problems in Tehran

Generally, the point is that many traffic problems are not due to lack of infrastructure and inappropriate functions and uses of existing equipment intensify them. To improve urban transport system, topical, cross-sectional, and case attitude cannot be worked. Comprehensive attitude should be regarded in traffic decisions. It cannot be achieved only by buying equipment, developing network, and constructing highway. When efficient public transport system is not prepared, private cars and taxies will be appeared in road networks.

One of the most important issues in Tehran's transport and traffic sector is excessive consumption of gasoline, economically and environmentally important issues- about 20 percent of the country's petrol is used in Tehran. Fuel consumption in 2015 was about 20 billion liters petrol valued at $ 4.4 billion and allocated subsidy equal 27000 billion Rials as well as imposing cost of air pollution in cities, creating density, delay in traffic, wasting time, and mental and emotional distress causing old cars as taxi move citizens with poor quality instead of public transport system and enormous damage. Transport planning engineering and approved policies in High Council for Traffic Coordination in the country considered increase in the share of public transport of daily urban trips and prioritizing this passage as a fundamental step to restrict movement for private cars and apply other managerial measures to grant facilities and demand trip, and omitting fuel subsidy after presenting fast, cheap, safe, accessible, and reliable services to citizens to reduce density and delay in urban traffic, improve traffic status in cities, and avoid wasting national capital.

One of the influential solutions to raise the efficiency of the transport system is improvement of public transport status. This is achieved only through designing public transport system. Primarily, the purpose of public transport system is its improvement for current users and secondly, absorbing passengers of private transport.

The problems of public transport system are caused by following factors:

- Lack of transportation fleet (bus, mini-bus, taxi, etc.)

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- Lack of appropriate infrastructure for public transport (metro, BRT, etc.)
- Deterioration and pollution of existing public transport fleet
- Weakness in design and technical and engineering knowledge of traffic transport planning

The most important proposed issues in urban transport and traffic management are:

1. Traffic management and street network traffic pattern
2. Public transports system management
3. Traffic Safety Administration
4. Driving violations management
5. Disaster Management
6. Parking management
7. Transportation demand management
8. Land use management
9. Urban transport planning
10. Urban road network design
11. Urban traffic analysis
12. Balance between supply and demand of urban transportation
13. Implementation of the information system

According to urban transport and traffic management, city's construction and development should be done considering to network design of public places, but towers and buildings were created, then, passages were constructed in the city of Tehran. Looking at urban comprehensive and detailed projects, we may consider that only less than 15 percent of them were allocated to transport and traffic studies while at least 35 percent of urban comprehensive plans were allocated to transport and traffic studies in developed, some of developing countries, and even some African countries that were successful to solve traffic problem. No use of engineering expertise of transport and traffic planning in constructions and urban land uses is one of the other main factors of traffic density.

Urbanization has a close relationship with transport in a way that inappropriate determining of land use, ignoring how much each land use produces and absorbs travel, may create traffic issues or vice versa. Each residential, commercial, office, and service land uses creates specific travel that all of them should be considered completely in comprehensive planning of urbanization. Moreover, it is necessary to use transport and traffic experts' opinions in urbanization issues. Thus, when traffic engineer's view is regarded in land use change in addition to environment expert's technical views and other experts in the field of urbanization, we would face such issues less than before.

One of the important problems is those buildings that have office or commercial land uses. Without considering capacity of areas' passages and providing parking lots for them, commercial or office license have been issued for them in the beginning causing traffic problems. Tall buildings and demographic, educational, sport, cultural, and commercial centers should receive traffic licenses in addition to necessary licenses i.e. those organizations that issue licenses for such buildings should pay much attention to transport and traffic outcomes of the intended neighborhood and area. Theoretically, there should be a mutual, constant, and close relationship between land use management and urban transport management. However, a kind

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of artificial separation has been created between them in planning process for urban problems.

Ignoring land uses and lack of balanced and acceptable distribution of these land uses in city will make urban living condition difficult. Heavy traffic, high demand for travel, transferring citizens during the day from an area to another one, and inadequate distribution of land uses lead to create heavy traffic and waste time, capital, fuel, and citizens' health. If an important part of these land uses are distributed appropriately and we have a proper pattern to produce or absorb trip, many mentioned problems can be solved or reduced by supply management of land uses and their distribution.

The impacts of the traffic problems are:

- The establishment of land uses inconsistent with the passage functions (direct access to land uses in highways and freeways

- Inappropriate distributions of land uses relative to each other causing prolonged trips and change in trip method

- Density of different land uses that they are not fit with the capacity of access passages.

- Determining capacity and designing passage network based on sphere of influence instead of using origins-destination trips that should determine sphere of influence.

- Lack of street network or too much widening of narrow streets and passages

- Incorrect layout of intersections

- Lack of parking lot outside passages (public and private)

- The narrow sidewalks in some crowded areas

- Inattention to future needs of design in urban details that generally pre-planned scheme is not in accordance with traffic volume and features of passages.

- Inattention to needs related to public transport systems and forecasting necessary space, particularly for BRT, stations, and appropriate terminals for city bus

- Inattention to topography and longitudinal and transverse profile of passages and preparing passage only in plans

- Inattention to regulations of urban passages network classification and type of their intersections

4- Literature Review

This research is applied and developmental. Its methodology is mixed. Data were inserted in Expert choice software and they were analyzed by Analytic Hierarchy Process (AHP). Statistical population in this research should have following features:

Familiar with concepts related to transport and traffic management and economy

- Having at least M.Sc. degree

- Having managerial and administrative experience

- Experience in transport and traffic affairs

Given mentioned features and scientific look at existing experts in city, statistical population was 100 experts and 50 of them were selected by purposive quota sampling, a sample that is selected based on researcher's experience or knowledge of the studied population), for pairwise comparisons.

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Table1. Characteristics of statistical population

Sample	Number
Military and security commanders	15
University professors	15
Directors, managers and experts of executive bodies	20
Total	50

Reference: (Researchers' findings)

Data were collected by library and field surveys through library research, internet and a questionnaire. To determine the validity, content validity and multi-stage distribution of questionnaire among experts were used. To determine reliability, Cronbach's alpha was used that it was more than 0.7 indicating proper reliability. Moreover, AHP and paired comparison pattern were used to analyze data.

5- Research Findings

In this research, after collecting information from libraries and field studies, the field of transport and traffic in Tehran was investigated and effective components on transport and traffic management of Tehran with economic view and evaluation indicators of these components were obtained. Then, it was delivered to experts based on questionnaire to be confirmed or rejected. In the first step, the question was whether these components and indicators are effective on transport and traffic management in Tehran or not. In the second step, the question was whether it needs to be reformed or not and they were asked for corrective comments. Finally, 10 effective components and 5 indicators of expert population were obtained. Effective components on transport and traffic management of Tehran have been represented in table2.

Table2. Effective components on transport and traffic management of Tehran

A_1	Priority access to the movement
A_2	Implementation of the information system
A_3	Citizenship-oriented centrality
A_4	Urban planning to identify and estimate needs, equipment, and their productivity
A_5	Priority of public transport range
A_6	Preparing and formulating comprehensive and detailed strategy of sustainable transport
A_7	Organizing urban transport and traffic management
A_8	Improving design and technical knowledge of planning for transport and traffic
A_9	Integrated management in urban transport and traffic
A_{10}	Fighting against urban rent-based management (building towers) and land use management

Reference: (Researchers' findings)

Evaluation indicators of effective factors on transport and traffic management of Tehran

The indicators that considered with citizens' satisfaction and economic view include a set of economical features as represented in the following table.

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Table3. Evaluation indicators of effective factors on transport and traffic management of Tehran

X_1	Relative cost of travel
X_2	Service level (traffic volume)
X_3	Relative convenience rate and discipline in travel
X_4	Access, movement, and path length
X_5	Travel time

Reference: (Researchers' findings)

In the third step, after obtaining the mentioned effective components and indicators, in order to calculate their importance coefficient, paired comparison and AHP were used as follows:

Decision-Making (AHP results)

In this step, we calculate the matrix of paired comparisons for components and indicators, and matrix of paired comparisons with each of indicators by using obtained weights of questionnaire and Expert Choice software.

Table4. Paired comparison for criteria of transport and traffic management of Tehran

	X_1	X_2	X_3	X_4	X_5	Weight
X_1		3.0	1.3	1.5	1.3	0.095
X_2			1.2	1.3	1.6	0.059
X_3				1.3	1.4	0.135
X_4					1.3	2.269
X_5						0.443

Inconsistency = 0.11

Reference: (Researchers' findings)

Table 4 indicates that the order of criteria based on priority in paired comparison for criteria of transport and traffic management of Tehran include access, movement, and path length, relative degree of comfort and order in travel, and service level (traffic volume).

Table5. Paired comparisons of components with potential index of relative cost of travel

X_1	A_1	A_2	A_3	A_4	A_5	A_6	A_7	A_8	A_9	A_{10}	Weight
A_1		8	1.3	1.4	1.5	5	6	7	1.2	4	0.141
A_2			1.3	1	1.6	3	1.3	1.3	1.4	1.3	0.034
A_3				3	1.5	1	2	1	1.3	1.5	0.083
A_4					1.9	1.3	1.2	1	1.4	1.2	0.064
A_5						5	4	5	5	3	0.257
A_6							1	1	1.2	2	0.063
A_7								3	1	1	0.059
A_8									1.2	1.3	0.041
A_9										1.3	0.101
A_{10}											0.104

Inconsistency = 0.20

Reference: (Researchers' findings)

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Table 5 indicates that the component related to priority of public transport range to reduce traffic and costs has the highest priority compared to other components based on obtained weights in paired comparison of each component with potential index of relative cost of travel.

Table6. Paired comparisons of components with potential index of relative convenience and order in travel

X_2	A_1	A_2	A_3	A_4	A_5	A_6	A_7	A_8	A_9	A_{10}	Weight
A_1		9	9	8	7	5	7	8	6	0.5	0.312
A_2			1.3	1.2	1.3	1.6	1	1	2	1.3	0.033
A_3				3	3	1.3	1	3	2	4	0.104
A_4					1.3	1.6	1.36	1	1.2	1	0.033
A_5						1.4	1.2	2	2	¼	0.050
A_6							5	5	6	1	0.163
A_7								2	2	1	0.061
A_8									2	1.3	0.034
A_9										2	0.046
A_{10}											0.108

Inconsistency: 0.13

Reference: (Researchers' findings)

Table 6 indicates that the component of access priority toward movement to reduce traffic load and cost has the highest priority than other components based on obtained weights in paired comparisons of each component with potential index of relative convenience and order in travel.

Table7. Parried comparisons of components with potential index of service level (traffic volume)

X_3	A_1	A_2	A_3	A_4	A_5	A_6	A_7	A_8	A_9	A_{10}	Weight
A_1		7	5	5	9	5	4	6	6	8	0.305
A_2			1.3	3	1.2	1/3	1.5	1	3	1.3	0.056
A_3				3	4	3	1	1	3	5	0.122
A_4					1.2	3	1.2	1.3	4	3	0.058
A_5						3	1.2	1.3	4	3	0.078
A_6							1	1.2	2	1	0.052
A_7								3	1	1	0.094
A_8									1.3	1.3	0.066
A_9										2	0.054
A_{10}											0.057

Inconsistency: 0.15

Reference: (Researchers' findings)

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Table 7 indicates that the component of access priority toward movement to reduce traffic load and cost has the highest priority than other components based on obtained weights in paired comparisons of each component with potential index of service level (traffic volume).

Table8. Parried comparisons of components with potential index of access, movement, and path length

X_4	A_1	A_2	A_3	A_4	A_5	A_6	A_7	A_8	A_9	A_{10}	Weight
A_1		5	7	5	7	1	3	3	3	7	0.240
A_2			1.6	1	1.5	1.3	1.5	5	3	1.3	0.049
A_3				5	3	1	4	6	1	6	0.155
A_4					1	1.3	1	1	1	4	0.057
A_5						1	1	3	1	2	0.082
A_6							1	5	5	3	0.132
A_7								4	1	2	0.082
A_8									1	1	0.039
A_9										5	0.061
A_{10}											0.037

Inconsistency: 0.16

Reference: (Researchers' findings)

Table 8 indicates that the component of access priority toward movement to reduce traffic load and cost has the highest priority than other components based on obtained weights in paired comparisons of each component with potential index of access, movement, and path length.

Table9. Parried comparisons of components with potential index of travel time

X_5	A_1	A_2	A_3	A_4	A_5	A_6	A_7	A_8	A_9	A_{10}	Weight
A_1		7	5	7	8	3	4	5	5	3	0.286
A_2			1.5	1.2	1.3	1.5	1.4	1.2	1.3	1.3	0.022
A_3				3	1.3	1.3	1.3	3	3	1	0.083
A_4					1.2	1.5	1.2	1	1.4	2	0.044
A_5						4	3	4	1	1	0.121
A_6							3	4	1	1	0.112
A_7								1	1.3	1.3	0.075
A_8									1.3	1	0.034
A_9										3	0.099
A_{10}											0.066

Inconsistency: 0.12

Reference: (Researchers' findings)

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Table 9 indicates that the component of access priority toward movement to reduce traffic load and cost has the highest priority than other components based on obtained weights in paired comparisons of each component with potential index of travel time.

After pairwise comparisons for all components with indicators, final score of each component has been calculated as it is presented in table10.

Table10. The weights of components in transport and traffic management of Tehran

Variable	A_1	A_2	A_3	A_4	A_5	A_6	A_7	A_8	A_9	A_{10}
Final score	0.264	0.036	0.109	0.051	0.114	0.108	0.077	0.041	0.080	0.063

Inconsistency: 0.20

Reference: (Researchers' findings)

Given table10, according to experts, the priorities of components in transport and traffic management of Tehran with economic view of obtained weights are respectively 1. Priority of access than movement 2. Priority of public transport range 3. Citizenship-oriented centrality 4. Preparing and formulating comprehensive and detailed strategy of sustainable transport 5. Integrated management in urban transport and traffic affairs 6. Organizing urban transport and traffic management 7. Fighting against urban rent-based management (building towers) and land use management 8. Urban planning to identify and estimate needs, equipment, and their productivity 9. Improving design and technical knowledge of transport planning 10. Implementation of information system

6- Conclusion

In this research, effective components on transport and traffic management of Tehran and its indicators in this field were studied and extracted, and then they were prioritized based on AHP method. After analysis of research findings and field studies, components of transport and traffic management of Tehran to reduce costs and traffic, and citizens' convenience were extracted including priority of public transport range, access priority than movement, implementation of information system, fighting against rent-based urban management (building tower) and land use management, preparing and formulating comprehensive and detailed strategy of sustainable transport, citizenship-oriented centrality, urban planning to identify and estimate needs, equipment, and their productivity, improving design and technical knowledge of transport planning, integrated management in urban transport and traffic affairs, organizing urban traffic and transport management.

These components lead to increase efficiency of journeys with multiple goals, create travel demand with public transport system, and improve traffic and road geometry engineering that may result in mobility in the local economy. However, development based on these components should improve quality of life in communities and neighborhoods. Once the development is combined with

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economic plans, they will create spaces in line with social life. Moreover, attention to these components in line with development is a key plan in reconstructing neighborhood and urban centers and it improves creating new commercial units and occupational opportunities that make societies more secure, and it provides attractiveness and convenience for people, and cost reduction for them and government.

To answer secondary question of the research, effective components were obtained in terms of their priority including respectively:

1. Access priority than movement 2. Priority of public transport range 3. Citizenship-oriented centrality 4. Preparing and formulating comprehensive and detailed strategy of sustainable transport 5. Integrated management in urban transport and traffic affairs 6. Organizing urban transport and traffic management 7. Fighting against urban rent-based management (building towers) and land use management 8. Urban planning to identify and estimate needs, equipment, and their productivity 9. Improving design and technical knowledge of transport planning 10. Implementation of information.

Given the research findings, following suggestions are proposed:

- Considering two concepts of access and movement as key elements of physical hierarchy in texts related to traffic engineering
- Much attention to citizenship-oriented development in the field of urban economy
- Regarding public transport range, formulating integrated strategy and management, and organizing, planning, and improving technical knowledge of this field, following suggestions are proposed:

1. Increase in the share of daily urban trips by using bus and metro
2. Systematizing private and taxi divers
3. Replacement of old taxis
4. Completing urban transit arteries
5. Developing unified management of traffic and transport in city and using private sector in presenting services
6. Encouraging city managers to study and use engineering science of transport and traffic planning to organize and improve traffic
7. Necessity to use consultant engineers of transport and traffic in preparing and planning for development and urban construction projects
8. Accurate implementation of technical regulations approved by Iran's High Council for Traffic Coordination in preparing and launching signs, building passages, and observing technical and standard principles in constructing and repairing passages
9. Organizing, optimizing, and developing public parking lots
10. Serious implementation of laws and regulations including parking meter, park card and traffic wardens
11. Displacement and reform of land uses inappropriate with passage networks of their influence sphere
12. Decentralization of presenting services in city
13. Developing demand management of travel and omitting unnecessary trips and developing facilities and services by using ITC

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14. Continuous information directly and indirectly to increase public awareness of accurate behaviors of traffic in society

7. References

Allahverdizadeh, P. (2004). Challenges of urban transport and traffic management in Tehran, *Journal of strategy*, issue33.

Deputy of municipal traffic transportation. (2009). *Doing researches before and after implementation of traffic projects to determine consumption model.*

Guiver, J. (2007). Modal talk: discourse analysis of how people talk about bus and car travel. *Transportation research, 41*(3), 233-248.

Habibiyan, M., Kermanshah, M. (2012). Studying the share of managerial policies of transport on choosing alternative methods of private cars in daily working trips, *Journal of Transportation Engineering*, 3(3).

Hatami Alamdari, I. (2002). Organizing traffic management, main tool of transport management, in city center, *journal of urban management*, issues 11 and 12.

Khatami Firoozabadi, S.M.A. (1994). Quantitative models in urban planning, *journal of studies of improvement and change management, vol.16.*

Saeidniya, A. (2002). *Urban Transportation*, Green book of municipality, Vol.3, Tehran: Organization of Iran's municipalities.

Shahidi, M.H. (2002). Particular sector of urban transport: urban sustainable transportation; a tool to achieve citizen-oriented cities, *journal of urban management,* 3(11-12).

Shahriyari, S.K. (2004). Urban construction system in Tehran and its consequences on traffic, *journal of strategy*, vol.33.

Stradling, S.G., Carren, M., Rye, T. (2007). Passenger perceptions and the ideal urban journey experience, *Transport policy, 14*(4), 283-292.

Ziyari, K., Eshghabadi, F., Mamdoohi, A., Farhoodi, R. (2013). Modeling behavior patterns of working trips and services of Tehran residents, *Human Geography Researches*, *45*(1), 1-22.

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