

Pathology and Bringing to Life of Cycling in Tehran

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ABSTRACT

This Paper deal with the challenges of cycling in Tehran. The identified challenges in the pathology process were analyzed and the change in cycling in Tehran from 2017(Start of new actions) to present was evaluated. Although From more than 10 years ago, the issue of developing Active transportation (Especially cycling) in Tehran has been part of Tehran's municipality policies, but the related actions was scattered, and systemic thinking was not dominant. Over the past years, more than 5,000 bikes have been purchased by the municipality of Tehran. About 150 bike rental stations were Lunched and nearly 1400 smart Racks were installed in this city. More than 200 kilometers of Tehran's city streets were allocated to bicycle paths. But before 2017, these efforts made did not result in tangible results. Many bicycles remained in the Municipalities' warehouses. Almost all bike rental stations were closed and smart racks were not active and many bicycle paths faded. In 2017, a new active strategy for development of cycling in the city Tehran in basis of Pathology process was used. This strategy consist of integrating bicycle with public transportation through Intermodal Bicycle-Public Transportation, providing parking space in the vicinity of major Mass transit stations for private bikes, lunching Bike sharing For Different Target group(Employees, students and Children),Also the focus on holding campaigns, conferences and exhibitions Was done to increase the people's desire for cycling. The results of these activities led to an increase in public satisfaction. According to previous and subsequent observations, we saw a 240% increase in cycling in some of the Streets that All of related Activities were done on them.

Keywords: bicycle, cycling, action, Pathology

INTRODUCTION

Between 1996 and 2010, cycling was taken into consideration in Tehran, in that period, some plans were developed and some were performed, but they have not been very well result. At that time, thoughts for the use of bicycles in urban transportation and especially for entertainment purposes were introduced. These ideas presented in the form of plans for the development of cycling in Recreational Area. Also design of bike routes and bicycle rental station was implemented in the street network of district 8 of Tehran.

These actions was not so much successful and nowadays these facilities is not in use. According to Tehran Traffic and Transportation Comprehensive Plan (2007) and demand analysis for cycling in transport network, more than 368 kilometres of cycling routes have been recognized. The following map (figure 1) shows this potential network.



Figure1. Potential Cycling Corridors in Tehran

In the studies that we have carried out recently (2017) has been shown that there is a possibility of more than 500kilometres of dedicated cycling routes in Tehran [1]

PATHOLOGY

In order to understand the cause of cycling failure in the past and familiar with Citizen’s views, it

is necessary to identify physical and mental problems. Questionnaire was used for this purpose. in the table1 the questionnaire was presented.

Table1. The Questionnaire about Major Transportation Problems and cycling issues

| Personal Information | |
|---|--------------------------------|
| First Name: | Last Name: |
| Age More Than 50 <input type="checkbox"/> 40-50 <input type="checkbox"/> 30-40 <input type="checkbox"/> 20-30 <input type="checkbox"/> Under 20 <input type="checkbox"/> | |
| Man <input type="checkbox"/> | Woman <input type="checkbox"/> |
| Employer <input type="checkbox"/> Employee <input type="checkbox"/> Student <input type="checkbox"/> Housewife <input type="checkbox"/> Retired <input type="checkbox"/> Unemployed <input type="checkbox"/> | |
| Questions: | |
| What do you think is the most important problem in the field of transport and urban traffic? Lack of car parking <input type="checkbox"/> Delay Time <input type="checkbox"/> Air Pollution <input type="checkbox"/> Weak Public Transportation <input type="checkbox"/> Traffic Culture <input type="checkbox"/> | |
| What is the most important criterion for a good transport system? Low emission <input type="checkbox"/> Safety <input type="checkbox"/> Travel Time <input type="checkbox"/> Low cost <input type="checkbox"/> | |
| Do you own a bicycle? Yes <input type="checkbox"/> No <input type="checkbox"/> | |
| If the answer of above question is no, What do you think is the cause? High price <input type="checkbox"/> Not applicable for city Places <input type="checkbox"/> The possibility of theft <input type="checkbox"/> | |
| Do you go to Your Desire Destination by bike? Yes <input type="checkbox"/> no <input type="checkbox"/> | |
| If the answer of above question is no, What do you think is the Major cause? Long distance <input type="checkbox"/> slope <input type="checkbox"/> Safety & Security <input type="checkbox"/> air pollution <input type="checkbox"/> bicycle parking <input type="checkbox"/> Weather <input type="checkbox"/> | |
| Do your children go to school by bicycle? Yes <input type="checkbox"/> no <input type="checkbox"/> | |
| If no, state the reason for this: Long distance <input type="checkbox"/> slope <input type="checkbox"/> Safety & Security <input type="checkbox"/> air pollution <input type="checkbox"/> bicycle parking <input type="checkbox"/> Weather <input type="checkbox"/> | |
| Do the elderly in your family go by bicycle to their intended destination? Yes <input type="checkbox"/> No <input type="checkbox"/> | |
| If no, state the reason for this: Long distance <input type="checkbox"/> slope <input type="checkbox"/> Safety & Security <input type="checkbox"/> air pollution <input type="checkbox"/> bicycle parking <input type="checkbox"/> Weather <input type="checkbox"/> | |
| Does anyone in your family use combined transport (bicycle + public transport)? If no, state the reason for this: Lack of combined transport infrastructure <input type="checkbox"/> More favorable options, such as a personal car or an Internet taxi or Motorcycle(In terms of price and time) <input type="checkbox"/> | |

RESULT

We conducted Questioning in 2017 year. In this section we shows the Result of Questioning and basis on we deal with about bicycle challenge in Tehran. Most of the people interviewed were between the age of 30 and 40 years old. 59 percent of persons were male and 41 percent were female. 52% of people were employees and 15% of people were students. The Main problem in the field urban traffic from viewpoints of the interviewees is Delay time. Price and travel time were most important criteria for Utility of Transport system from viewpoints of the interviewees.

Inappropriate conditions is The Most reason for not having a bicycle. Safety and air pollution are Main reason for Disutility of using a bicycle from viewpoints of the interviewees. More favourable mobility devices is Main reason for

Disutility of using combined transport in the following figures the result of this survey were presented.

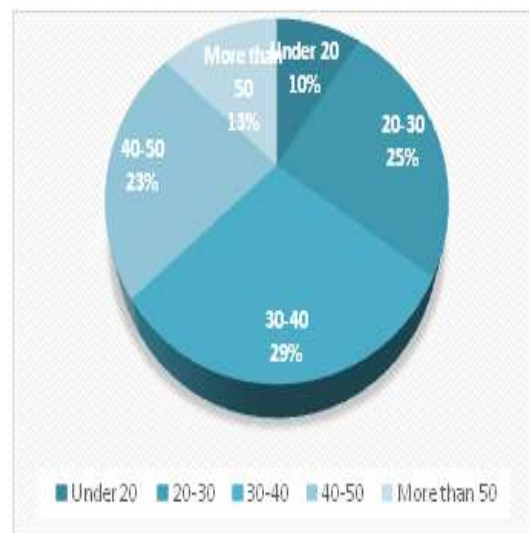


Figure2. Age distribution of the interviewees

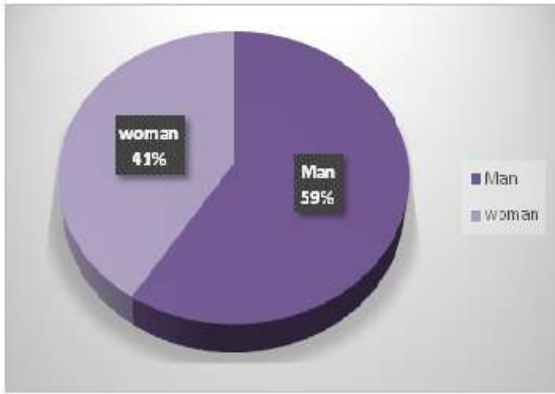


Figure3. Gender distribution of the interviewees

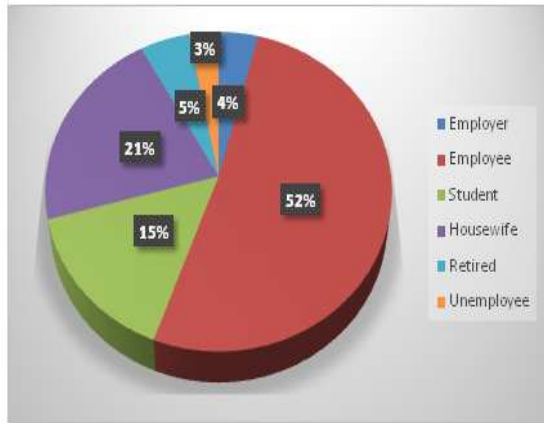


Figure4. Job distribution of the interviewees

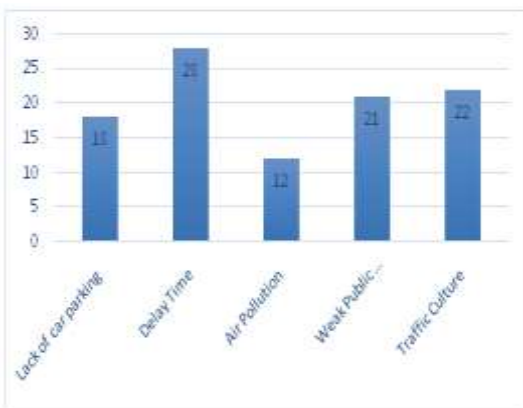


Figure5. Main problems in the field urban traffic from viewpoints of the interviewees

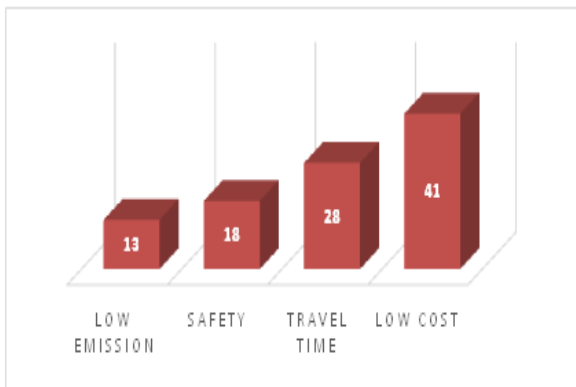


Figure6. Most important criterion for good Transport system from viewpoints of the interviewees

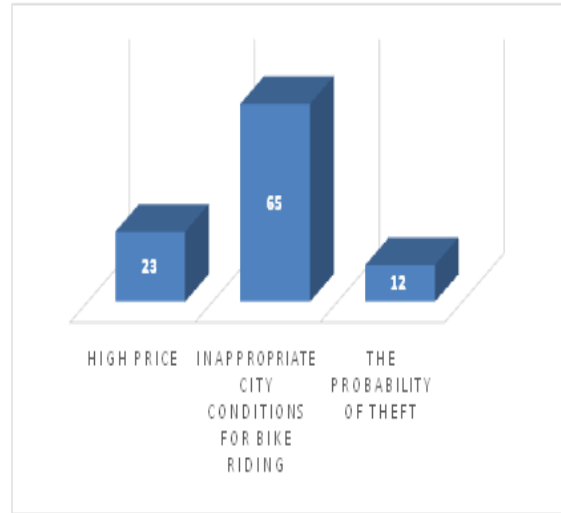


Figure7. The Most reason for not wanting to have a bicycle from viewpoints of the interviewees

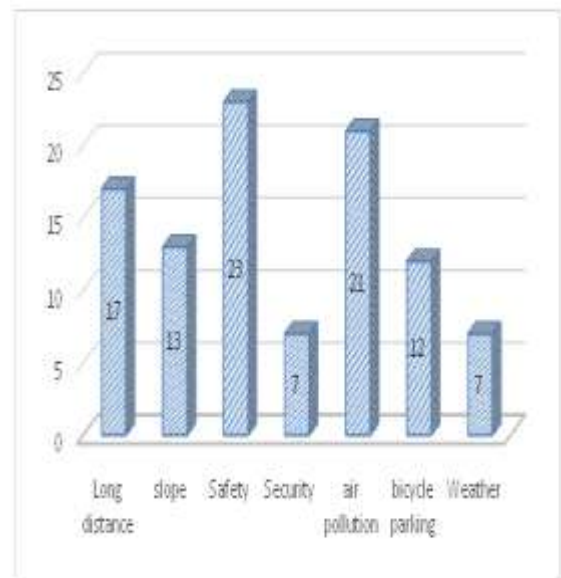


Figure8. Main reason for Disutility of using a bicycle from viewpoints of the interviewees

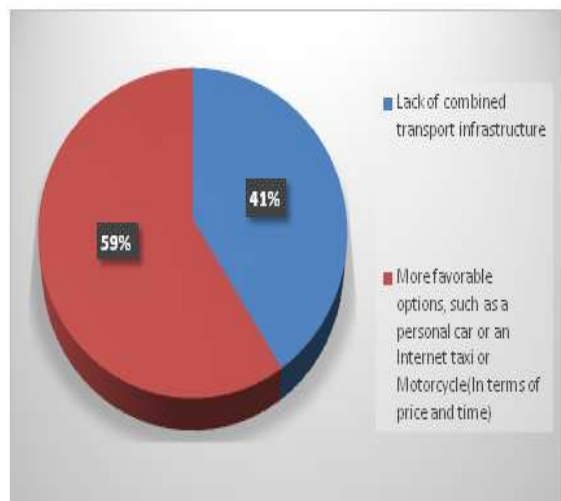


Figure9. Main reason for Disutility of using combined transport (bicycle + public transport) from viewpoints of the interviewees

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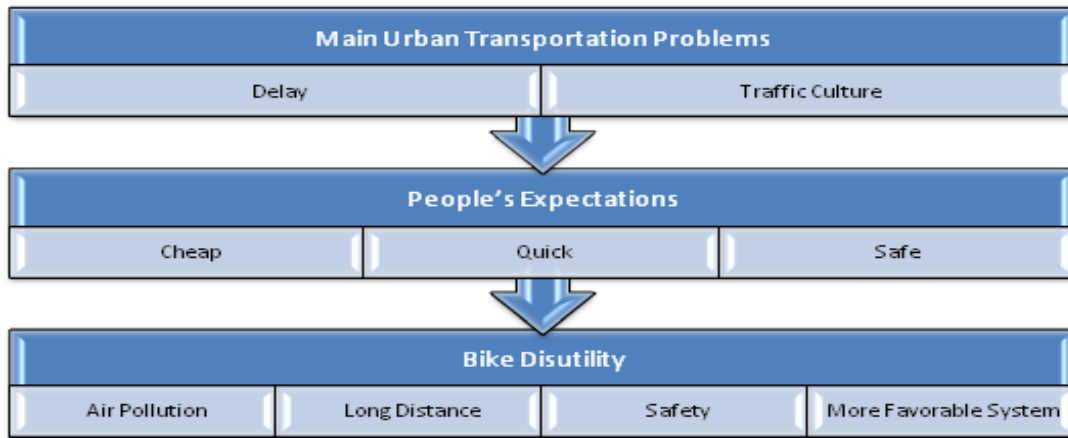


Figure10. Major Factors of Bike Disutility

In basis of above results and learning from developed countries and also the past experience in Tehran, the most challenges facing the cycling mode identified that we deal with in following paragraph:

Past unsuccessful experiences

A project that has been unsuccessful in the past can hardly be reviewed.

Safety

Assuring safety of cyclists/users seems difficult due to existing problems in driving culture and infrastructures. Questioning shows that safety is a major concern for cyclists.

Car orientation

The type of street design and urbanization has increased the tendency to use private cars. The social and cultural structure and characteristics of citizens are such that the type and model of car used is somehow considered a value. Feeling ashamed about cycling among the different classes is another personal and social obstacle to cycling.



Figure11. Bike path blocked by car

Low Fuel Price

One of the important factors in disutility of bike riding in relation to other modes is the low price of the fuel.

High acceptability of the motorcycle

While the average speed of private and public vehicles are low in traffic congestion, motorcycles travel at an acceptable speed without affecting congestion.

Slope

Steep slopes can be an issue to cyclists, especially beginner riders. Downtown area of Tehran is attractive for cyclist because of proper slope situation.

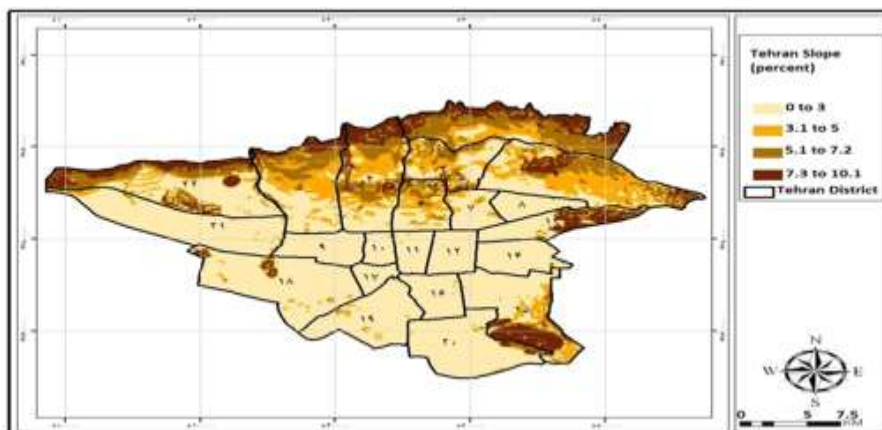


Figure12. The situation of Tehran slope

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Long distance

The horizontal expansion of the city also creates long trips in the city, making it difficult for citizens to travel by bicycle.

Education and income

Who rides bike in Tehran? Although it is not possible to say surely urban cycling is more prevalent among the low- or middle-income or students and retirees but scattered observations confirm this. It seems that these groups culturally are more interested to ride bikes.

EXECUTIVE ACTIONS

Basis of Results, in the following paragraph we mentioned the main challenge in Tehran's cycling and the related treatment.



Figure 13. Main challenge in Tehran's cycling and the related implementations

Some of above actions can be done by Tehran's Municipality (local government). We can

Summaries these executive action in 5 Sectors. In the following picture this action were shown:

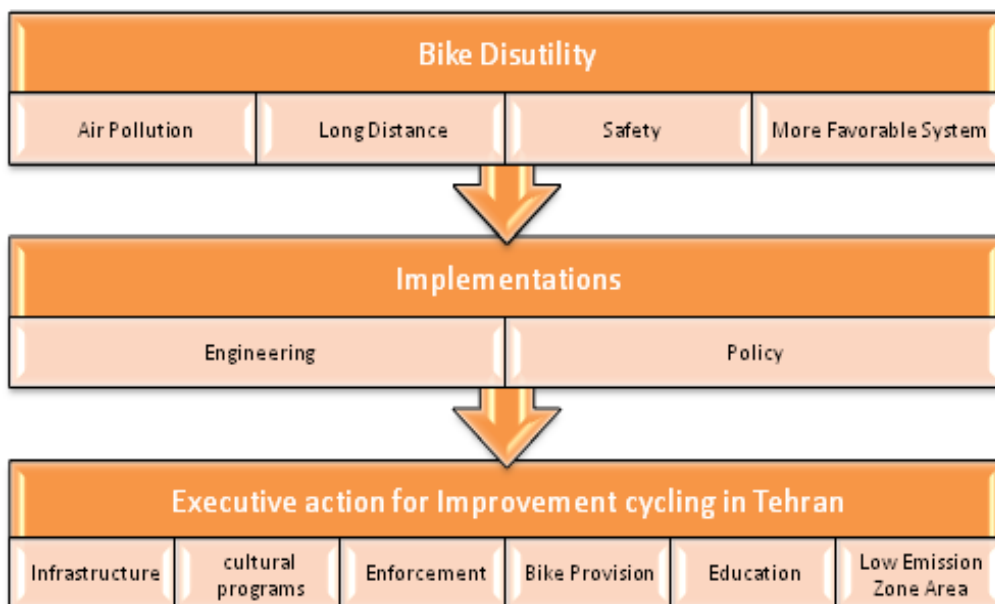


Figure 14. Executive action for Improvement cycling in Tehran

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In The following were presented a list of other action basis of pathologic Methodology:

Infrastructure (For Doing Complete Trip By Bike And Bike & Transit)

In the facilities issues, the Bicycle ramps on the pedestrian bridge for connecting path over the highways was provided. Also Bicycle parking near major mass transit stations were built. For solving the high length of travel, the first mile and last mile strategy was applied. With accompany TSRC¹ and Tehran bus company, it was possible to citizen did combined Trip (Public Transportation & Bike).

To overcome the problem of cyclists unsafety, near 20 Km Safe Bicycle Route with Separator in central part of Tehran provided. Also 30 Bike Parking were installed.

Cultural Programs

Tuesday without car” program

For cultural change program consist of more than 100 Weeks was programmed and held with name “Tuesday without car”. Encouragement students to bicycle riding in many schools and universities was followed.



Figure15. Tuesday without car program

Lunching Bike Courier

When people see that bicycles can also be used to transport loads, bicycles become popular as an urban transport mode

Lunching Cycling police

When people see bicycles being used by police, they are encouraged to use more bicycles. The police are also more aware of the cyclist's problems and are more supportive of this mode.

¹ -Tehran and Suburbs Railway Company

Enforcement

Fining motorcycles and drivers that have been stopped at Bike parking lots and Bike paths was done in cooperation with the police

Bike Provision

Private Bike

Another action was holding bike exhibition to sell low-cost bicycles, especially electric bicycles to citizens with discounts.

Launching office bike sharing

One of the target groups is the employees. The policy of setting up office bike sharing was implemented. There are 34 office bike sharing Unit in Municipalities' Buildings.

Educational Bike Sharing

One of the target groups is the students. The policy of setting up Educational bike sharing was implemented. We launched bike sharing system in four universities.

Dockless bike sharing (with insurance)

Everyone can insure himself for the use of bicycles but The Tehran City Bicycle System (Bdood²) is obliged to insure people at the time of their registration. Dockless bike sharing is an ideal system for public. This system is Active in 5 municipalities' districts of Tehran.

Bike Accessories

Distribution of helmets, gloves, ponchos, handbags among cyclists, which are essential for safe cycling under adverse weather conditions have been taken.

Education (Improvement Cycling Skills)

Cyclists training: For those who are interested in cycling in the city but do not have enough skills, various skills are taught in traffic training parks. In past year about 90 course held.

Low Emission Zone Area (LEZ)

One of the obstacle for cycling in Tehran was Air Pollution. The LEZ Policy help the cyclist. Now In Tehran this policy is running.

The observations before and after above actions in 5 streets (Taleghani, Karimkhan, Gharani, Mofateh, Iranshahr) that were Located in Central Area of Tehran shown that the number of Daily cyclist was increased from 134 to 322(240%)

² -Trade name of the service provider of Bike Sharing System In Tehran

CONCLUSION

In this paper the research method is descriptive-analytical and deduces 350 questionnaires among the citizens. Cultural issues, physical restrictions and lack of bike facilities are some of the challenges that Tehran faces with in cycling promotion. A new active strategy for development of cycling in the city Tehran in basis of Pathology process was used. This strategy consist of integrating bicycle with public transportation through Intermodal Bicycle-Public Transportation, providing parking space in the vicinity of major Mass transit stations for private

cycling, lunching Bike sharing For Different Target group (Employees, students and Public), Also the focus on holding campaigns, conferences and exhibitions Was done to increase the people's desire for cycling. The results of these activities led to an increase in public satisfaction and we believe the use of bicycles as an urban vehicle has become commonplace.

REFERENCES

- [1] Introducing a Method for planning a safe bicycle network, International Journal of Emerging Engineering Research and Technology (IJEERT), Volume6, Issues9, 2018.

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