Identifying the Factors Affecting Vehicles Red-Light Running at Traffic Light Intersections (Case Study: Rasht Metropolis)

Iraj Bargegol[1]   Sobhan Hassanjani[2]

Saeed Fatemi[3]   Seyed Amir Saadatjoo[4]

1. Introduction
Performing each of these daily human activities requires moving and traveling from one place to another, some of which take place inside the city and some outside the city. Vehicle is one of the oldest forms of transportation and routes and is one of the most important components of the intercity transportation system. Today, with the increasing population of cities, despite the growing use of public transportation, a significant portion of intra-city travel is done by vehicle. Intersections are an important component of the intra-city transportation network and crossing intersections is a critical part along this route from origin to destination. Today, in all human societies, traffic has become a pervasive problem. Overcrowding caused by the presence of too many cars causes stress in the community. Intersections in the urban road network are of great importance. Since the capacity of the transportation network is affected by the performance of intersections, any irregularities in these important components will reduce the capacity of the network. Illegal crossing of the crosswalk and violation of the red light by the vehicle is one of the irregular and predisposing factors for accidents, waste of property time and reduced productivity from the negative consequences of crossing the red light at intersections. Due to the effect of red light offenders' behavior on performance, recognizing the behavioral and physical characteristics of drivers is of great importance and can lead to better design of facilities related to red light crossing. Regarding the importance of research, it can be said that Iran has one percent of the world's population, but its global share of traffic accidents is 2 percent. One of the reasons for the accidents is red lights, so we should consider this a national concern. In the this study, the reasons for the violation of the law by drivers while crossing the red light at intersections, as well as strategies to deal with this common phenomenon, were investigated.

2. Method
Data collection method is observational and field statistics. The location of the person was selected for field surveillance in relation to the pedestrian crossing and the width of the passage. The person was placed in the right position to see the details of the behavior and appearance of the vehicles, the type of movement and how the red light was violated. That vehicles do not notice the presence of a person, to avoid a possible effect on the behavior of vehicles, since the details of the behavior and appearance of vehicles are very important in this study. The frequency of passes was counted and manually recorded and then transferred to the software. The process of counting vehicles was done as follows:

- Number of women who crossed the red light,
- Number of gentlemen who crossed the red light,
- Separation of vehicles by age,
- Separation of vehicles by gender and coverage,
- Separation of vehicles by weight.

3. Results
Most 18-to30-year-old people commit red light violations. At the age of 18 to 30, most of the intersections that were violated were the intersection of the Gas Station, which is due to the existence of universities and the passage of students. The second is the intersection of Golsar crosswalk, which has been registered with 11 violations in this age range. Totally, the intersection of Niroo Daryaee has more violations with the number 26. This analysis leads us to the conclusion that the older we get, the more we obey the law. The cameras of traffic monitoring have more effective performance than the police officers. The only intersection in which the women violated was the intersection of Golsar crossroads, which could have been due to the existence of medical centers. And the most violations happen at

[1] Correspond Author, Assistant Professor, Department of Civil Engineering, Faculty of Engineering, University of Guilan, Rasht, Iran. Email: bargegol@guilan.ac.ir

[2] MSc. Student, Highway and Transportation, Department of Civil Engineering, Faculty of Engineering, University of Guilan, Rasht, Iran.

[3] Ph.D. Student, Highway and Transportation, Department of Civil Engineering, Faculty of Engineering, Ferdowsi University of Mashhad, Mashhad, Iran.

[4] Ph.D. Student, Highway and Transportation, School of Civil Engineering, Iran University of Science and Technology, Tehran, Iran.

the of Nirooye Daryaie (the navy) intersection. One of the reasons is the existence of hyperactivity and administrative work, including the public prosecutor's office of Rasht and the military prosecutor's office. Thin people do more offense than other weights and fat people do less offense. In general, fat drivers are calmer and follow the law more than thin people. The intersection that fat people violate red light most is the Holy Square, which can be due to service or entertainment activities because the Moghadas Square intersection near the park and mobile services. Another reason could be to take a suitable parking space on Lakani Street. Women in chadors, like previous analyses, did not comment any violations, and this shows the great respect of this cover to the rules. Regarding age group of people of more than 60, no violations have been registered, which can be concluded that the older you get, the less you violate the red light the more you follow the law. This does not even affect the gender of individuals.

4. Conclusion

The results show that increasing age, the number of violations decrease significantly, so that no violations were observed in the age group of 60, and this has no relationship with gender. Also, the men had the most number of parking violations than the women. There were obvious differences in the four kinds of outfit, so that in the women's group, women having hijab did not commit any violations compared to those having the regular outfit, and in the men's group, those with formal cloth recorded 55 violations and those with regular were 44.