

A REVIEW ON FEASIBILITY STUDY ON FACILITIES FOR PEDESTRIANS AT IBLUR JUNCTION

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Abstract – With increase in population in Bangalore the number of vehicles has also increased. The significant effort has been made to study the pedestrian studies of Iblur Junction. The safe and efficient movement of people and vehicle depends on traffic characteristics or the traffic flow. In the absence of effective traffic management of the city, the current road cannot accommodate the traffic capacity which has led to traffic congestion due to development or growth of the city. The vehicle and pedestrian volume has been increased significantly. In this work, pedestrian volume count and pedestrian opinion survey was also carried to know the problems faced by the pedestrian at Iblur junction. After analyzing all the data some of the remedial measures such as subway and skywalk where congestion is more these remedies suggested based on the outcome of the work.

Key Words: Iblur junction¹, pedestrian studies², vehicle³, traffic flow⁴, pedestrian problems⁵, subway⁶.

1. INTRODUCTION

1.1 Background

Bangalore is rated to be one of the fastest growing cities in Asia with a current population of about 12.35 million. During the last couple of decades, the life style of people and their commuting habits have undergone radical changes due to steep hike in the cost of urban land in Bangalore and revolutionary changes in the Automobile, Information Technology and Bio Technology Industries. The word "Pedestrian" refers to the non-motorized movement mainly of person/s travelling on foot. This includes movement by physically challenged, visually impaired, old and very young for different purposes such as work related, recreational, social interaction and shopping activity. Though walking appears less attractive, it is considered as slow means of transport. The pedestrian movement is restricted to short distance travelling and they occur throughout the city complementing the use of public transport. Bangalore population has been growing at a rate of 4.9% per year in the last decade. There has been a phenomenal growth in the population of vehicles as well especially the two and four wheelers in this period due to rising household incomes. The number of motor vehicles registered has already crossed 35 lakhs.

In the absence of adequate public transport system, people are using the personalized modes which is not only leading to congestion on limited road network but also increasing environmental pollution. An average Bangalorean spends more than 240 hours stuck in traffic every year. Increased pace of vehicular movement in all parts of the city including neighborhoods, school areas and main arteries have led to increased accidents and reduced safety to the pedestrians. Pedestrians are exposed to danger due to conflict between the vehicular and pedestrian, and due to the poor pedestrian infrastructure facilities. There is urgent need for bringing about provisions such that the pedestrian and associated facilities get enough attention leading to design, implementation and maintenance effectively.

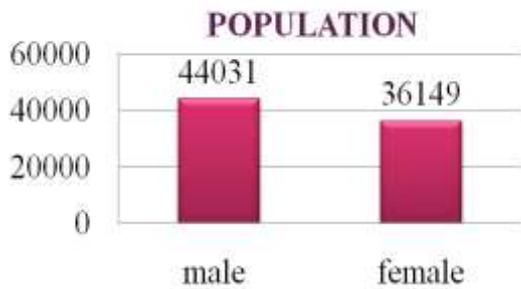
1.2 Study area



Fig 1: location of study area

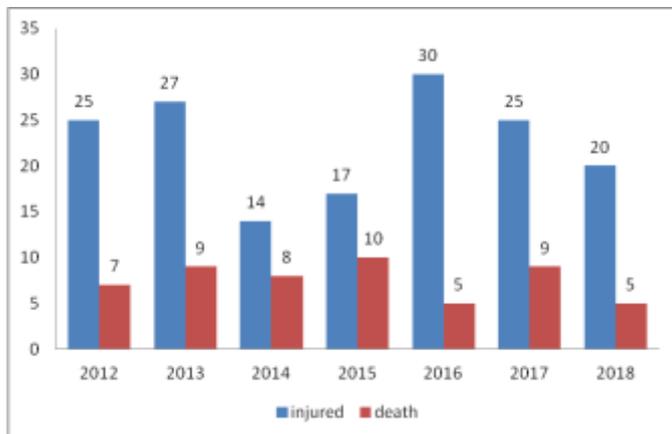
Iblur is a suburban in south east Bangalore, Karnataka, India it is bounded by HSR layout to west, Devarabisanahalli to east, Sarjapur to the south, and Ballandur lake to the north. Initially a rural area, Iblur has recently experienced a sharp rise in population and real estate development as result of Bangalore information technology (IT) boon. All to most of Iblur housing contains modern facilities; the suburb faces challenges such as water shortage, heavy traffic, and the pure drainage which has resulted in severe pollution lake. Iblur is the part of ward number 150 of the BBMP the ward as the total area of 26.37sqkm. Per the 2011 census, the ward had a population of 80,180. Now days the growth of

accident is more at junction. Because of absence of pedestrian facilities.



The following table Accident data at the junction:

year	injured	death
2012	25	7
2013	27	9
2014	14	8
2015	17	10
2016	30	5
2017	25	9
2018	20	5



Graph 1: Accident data

2. LITERATURE REVIEW

T. Subramani (2012) [1] This study states that walking is an important mode of transport since pedestrian are vulnerable to being involved in accidents, it is imperative that adequate consideration should be given to their safety through provision of facilities like guard rails, secured crossing areas, footpath and grade separations. This paper is a case studied in Salem which carries out pedestrians studies and also formulates strategies for better management for pedestrian’s movements.

Sudhir and Sameera kumar (2013) [2] In this paper the author states that there is a tendency to underestimate the pedestrian infrastructures needs when compare to the needs of the motorists. The situation has come to such a state that daily at least one pedestrian is killed on Bangalore roads. In this paper the author has tried to investigate the design-safety-economic and policy issues concerning existing pedestrian infrastructure.

Ashish Verma and Shirin Marry Anthony (July 2014) [3] Given the heterogeneous structure of Indian society and urban areas, street vendors are not only necessary but also inevitable on urban streetscape, as they provide services to all commuters with cheap and easily available goods. Specifically the objectives of the whole study are to explore pedestrian policy guidelines for Bangalore city that considers and integrates provision for street vendors and formulates strategies for study location and develop general footpath design guidelines.

Aishwarya Fadnavis (Sept. 2015) [4] This paper emphasis on the study of pedestrians crossing facilities such as underpass and overpass and aspects involve in this facilities Pedestrians have a superior assertion to roads as vehicles but it should be understood that in future the chaos of the four wheelers and public transport system is going to increase which needs a solution from now.

3. OBJECTIVES

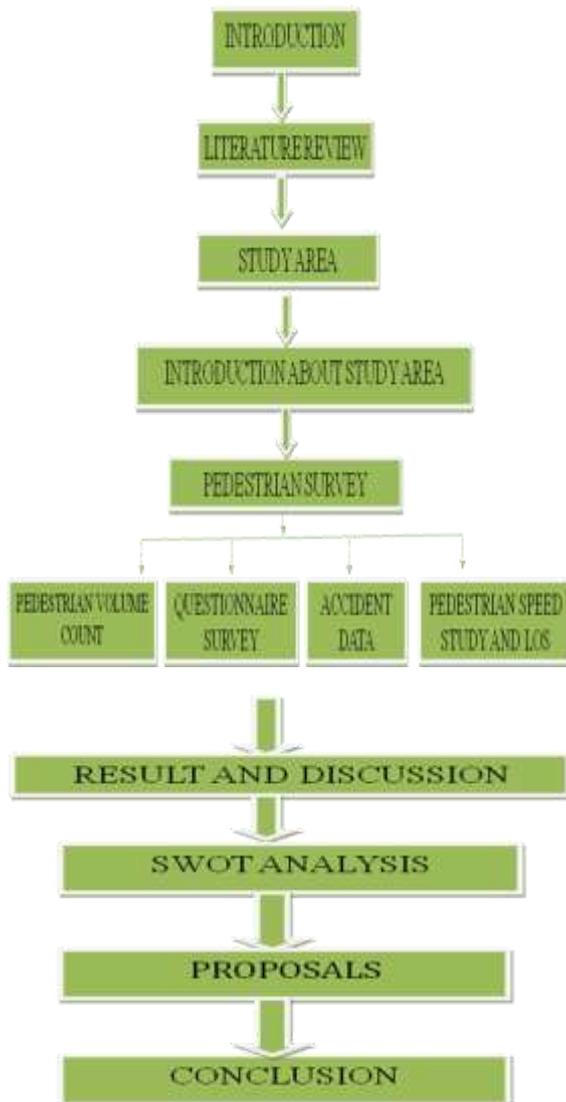
- i. To carry out the pedestrian survey
- ii. To collect opinions of pedestrians through questionnaire survey
- iii. Analysis of accidents through previous year accident data
- iv. To conduct pedestrians speed study and obtain average pedestrian space which is used to find Level of Service for queuing area.
- v. To give out proper conclusion and appropriate recommendation for pedestrian comfort and safety

4. Scope

- I. Finding existing pedestrian hourly volume and delay to pedestrian in high traffic zone.
- II. Comparing the real life situation to the simulated one and suggest for improving pedestrian facility.
- III. Provide design facility based on results obtained through simulation.

5. METEHOLOGY

Study methodology has following steps:



DETAILED METHODOLOGY

1. Pedestrian survey: Pedestrian survey is conducted during morning, noon and evening peak hours. one week were selected to carry out the study.(Sunday, Monday to Saturday). The pedestrian count was collected from 7:00 am to 10:00 am in the morning, 1 pm to 8 pm in noon and evening. This pedestrian counting is tabulated with respect to routes and days. The total duration of the pedestrian from working till evening was divided for every half an hour and is tabulated.

2. Questionnaire survey: Opinion of pedestrian are taken to find out the ease or difficulties that are faced by the pedestrian which gives us the present scenario of the junction. Questionnaire is conducted with general public's or

pedestrian crossing that leg. This questionnaire gives the following details of pedestrian

- i. How frequent they uses the road
- ii. Purpose of walking
- iii. Nature Ease or difficulty in crossing the roads
- iv. Recommendations change to increase the ease of walking

The target pedestrians for the questionnaire survey are students, adults, professionals, aged people.

3. Accidents Data: Since pedestrians are bound to collide with vehicular volume it is evident that many pedestrians accident occur which might cause injury or death. Accidents data were collected from police station for the year 2012 to 2018. This data is analyzed and further tabulated with respect to number of accidents, injuries and death of pedestrians. Further the accidents data is analyzed and tabulated. The number of accident and death are estimated through the accident data. The same data is represented in graphical format also.

4. Pedestrian speed study and LOS: A refugee area is selected upon observation and the waiting times at the refugee area is also taken. This refugee area or queuing area is very much necessary to decide level of service for the queuing area with respect to average pedestrian space. The level of service is categorized from A to F (i.e. LOS A, LOS B, etc.) . To estimate this level of service following parameters are needed.

5. MAIN DEMANDS

- Three median islands at iblur junction.
- Pedestrian facilities like subway or skywalk.
- Pedestrian crossings.
- Currently, the crossing time from the signal to Columbia Asia hospital is only is five seconds. It should increase to 10 seconds.

6. CONCLUSIONS

- From the pedestrian study and survey we observed that there no proper facilities of pedestrian at junction
- We was take in to account the life saving and time saving of pedestrian , comfort, safety and security, which is to be consider at the time of providing the pedestrian facility. There is need of alternative mode of transport for the pedestrian to reduced the congestion and accident.
- So by providing a subway it reduces the congestion and accident near the junction and also reduce the pedestrian delay time and pedestrian can move safely and comfortably.
- The Results and Discussion of the work will be published in Upcoming Journals.

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