

Analysis of Different Parking Space and Its Comparison

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Abstract— The enhancement of the human's population is having an impact on the expansion of facilities and transportation needs. One of the essential issues is the accessibility of the parking zone. Jaipur is one of the significant urban areas of Rajasthan known for its strict and authentic significance. Transportation is the key framework of a nation. As street transportation gives personal versatility to the person, the vehicle proprietorship rate has expanded at a quick rate. This expansion in the number of vehicles has brought forth the issue of parking. The accessibility of less space in urban territories has expanded interest for parking space, particularly in strip malls, open spots, and office buildings. It likewise affects transportation advancement.

In the "Investigation of various parking spaces and its comparison," it is gathered information from various parking spaces of Gaurav Tower Jaipur. The current parking facilities at the Jagannath University, Jaipur are by and by insufficient and parking request will continue to increment in the coming years. Verifiable investigation of existing conditions by methods for physical vehicle tallies demonstrates that operational effectiveness can be expanded as a technique for lessening the parking deficiency by the Expansion of existing facilities, acquisition of new facilities, Construction of parking structures. The study was carried out in three steps one is a parking facility with PCU at different parking space and the other two were inflow or outflow with an accumulation of traffic.

Keywords— Accumulation, Parking Study, Stretch, Gaurav Tower, Variation.

1. INTRODUCTION

Parking is a significant urban transportation component. It has different long and transient effects on people, networks, and transportation framework. Parking likewise influences the essentialness of networks, business and business focus, travel framework, and air terminals just as the productivity of traffic dissemination in downtown regions. Leaving is one of the serious issues that are made by the expansion of vehicle traffic. Transportation is the key foundation of a nation. As street transportation gives individual versatility

to the individual, the vehicle possession rate has expanded at a quick rate. This expansion in the number of vehicles has brought forth the issue of leaving.

2. EFFECTS OF PARKING

Parking has a few impacts like clog, accident, contamination, check to put out fire's activities, and so forth. Congest Parking takes impressive road space prompting the bringing down of the street limit. Henceforth, speed will be diminished, venture time and postpone will likewise along these lines increment. The operational expense of the vehicle expands prompting extraordinarily affordable misfortune to the network.

Environmental contamination They additionally cause contamination to the environment because parking and the beginning of vehicles while parking and unparking bring about commotion and exhaust. They likewise aced the tasteful excellence of the structures because a vehicle left at each accessible space makes an inclination that building ascends from a plinth of vehicles. Block to firefighting tasks Parked vehicles may deter the development of firefighting vehicles. Here and there they square access to hydrants and access to structures.

A. Research significance

Farzanmanesh, Ghaziasgari, and Abdullah represented a perfect strategy for parking site determination by the utilization of GIS, fluffy rationale and weighting measures to decide appropriate parking locales. An appropriate spot for parking is chosen for one of the high traffic districts of Esfahan city in Iran.

Hingrajia and Pratik D Vagadia studied the maps of Rajkot-the executives arrangement leaving at the urban vehicle issues Learn the author has concentrated the vast majority of the vehicles are left for extremely concise periods during top hours, because of the exchange. The zone is likewise identified with a few significant goals in the shopping centers and shopping so the traffic stream is impeded as a result of the current vehicle leave in the city. The outcomes in misfortune and defer time happening for long excursions.

Jaydipsinh P.Chudasama, Dr.L.B.Zala studied the evaluation of Parking: A contextual analysis of Amul Anand Dairy Road; The creator has worked in the volume of parking and parking strategies, had taken the examination region was the business focus of the city of Anand. Two sorts of studies to check the volume that had been utilized review video recording, the overview of land use and parking study that had been utilized for enlistment recording strategies were led.

Prof. Deepak Tiwari, Dr. Supriti Dubey described the road parking is common all through the area of the study. "One of Bhopal concentrate concerning the clients' fulfillment with the parking spot and the openness of the market" His paper inferred that during ends of the week and open interest for a vehicle leaving surpasses the gracefully, and thus, negatively affects retail deals and that, yet motivations extreme disappointment while shopping.

3. STUDY AREA

Gaurav Tower, now popularly known as "GT" was one of the First Malls of the time. In 1992, Bardiya Group sparked off a trend in an organized retail format where all the basic needs of a family were met under a single roof and at the same time. Located at Malviya Nagar, which was a remote area back in the time, the development of "Gaurav Tower" began in the year 1993 the first phase was completed and launched in 1995. Since then, GT remains to be the most happening mall of Jaipur providing customers an unequalled shopping experience along with entertainment and innumerable food & beverage options.

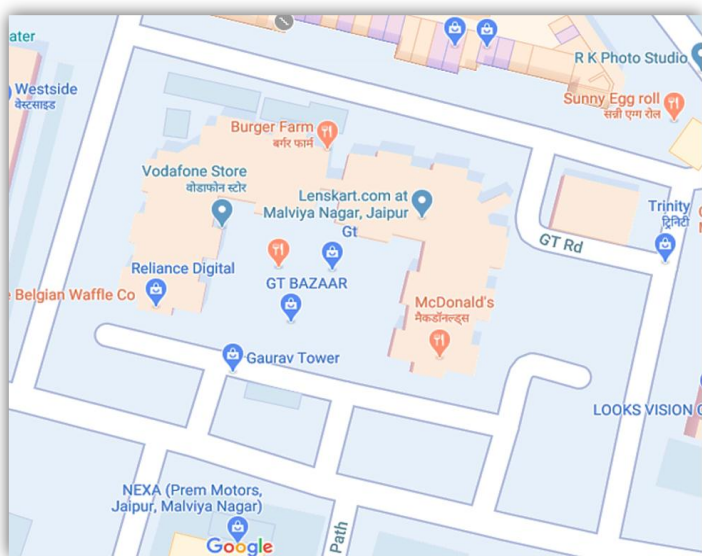


Fig. 1 Study area

B. Stage I

Nearby Gaurav Tower road main road here survey is carried out in Stage I. The person records the data on the balance sheet at every different parking from 1 March 2020 to 8 March 2020. The detailed survey is discussed below.

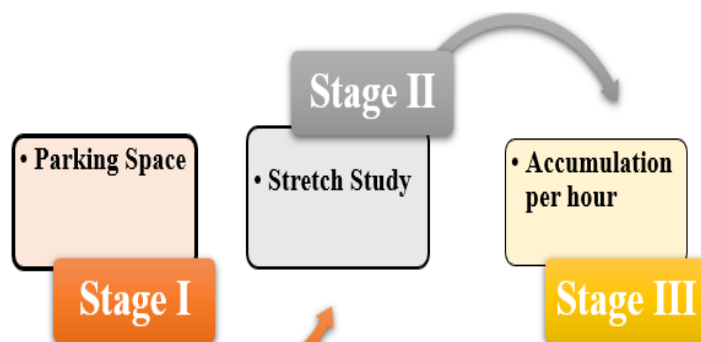


Fig. 2 Stage II

Site selection:

C. Data Analysis and Methodology

Gaurav Tower data:

From all these eight sites the manpower is used to collect the data. After the collection of data, it converts all these vehicles in terms of PCU (Passenger car unit) by multiplying it with its corresponding PCU factor which is described earlier.

D. Results and Discussion

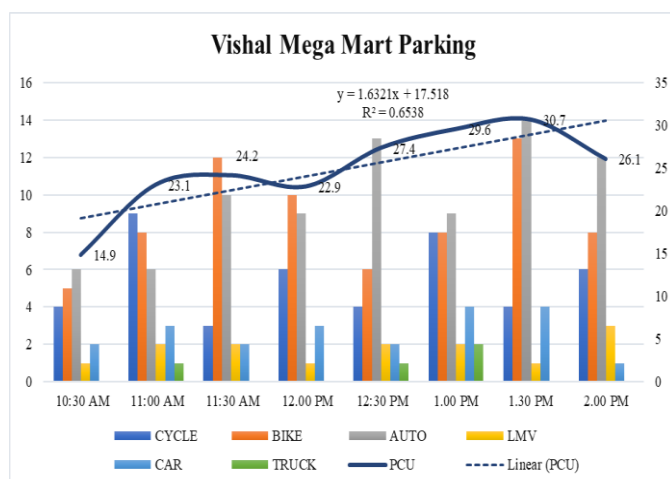


Fig. 3 Vishal Mega Mart Parking Area

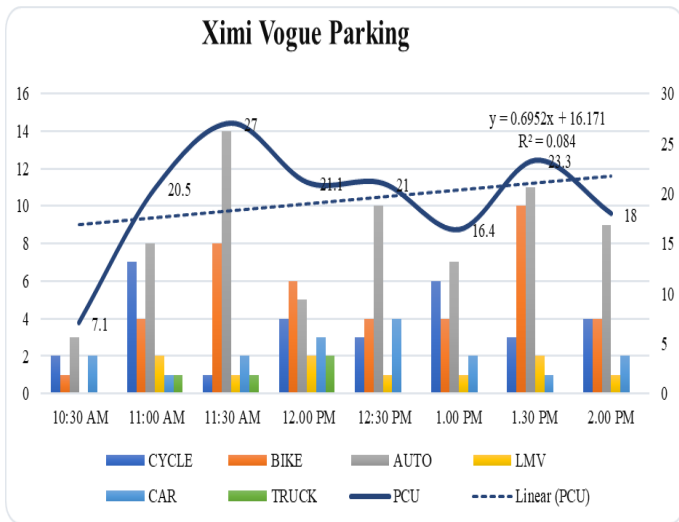


Fig. 4 Ximi Vogue Parking

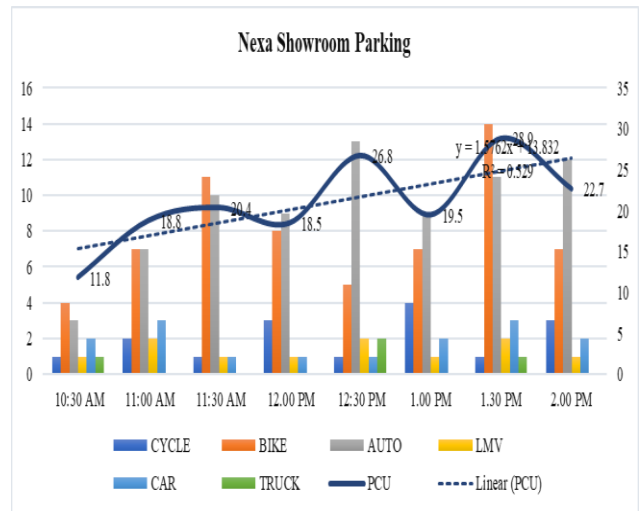


Fig. 7 Nexa Showroom Parking

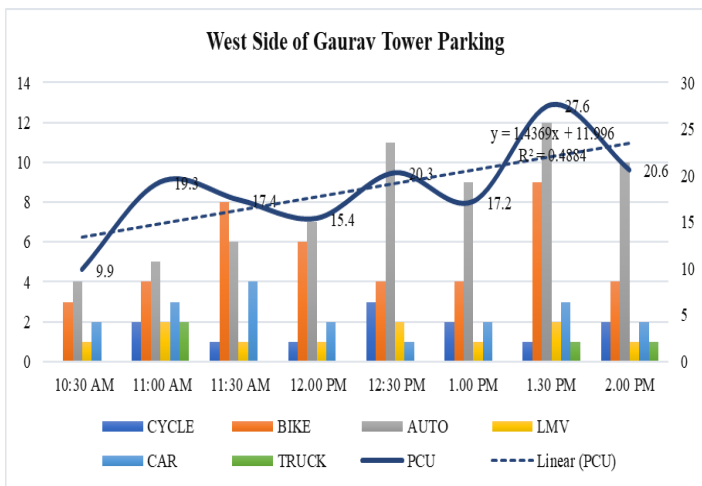


Fig. 5 West Side of Gaurav Tower Parking

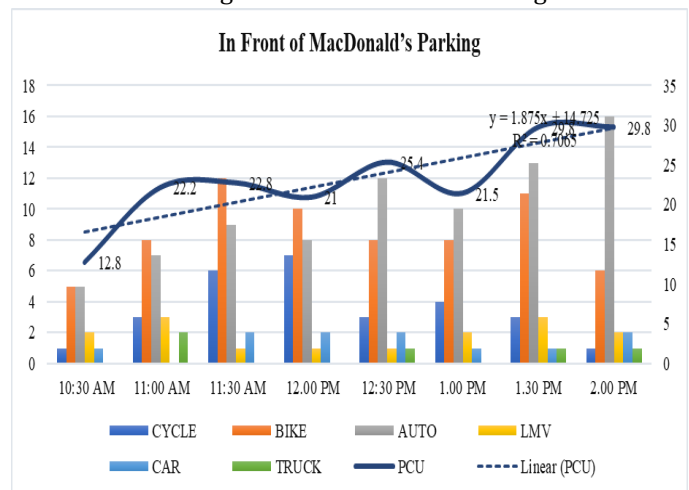


Fig. 8 In Front of MacDonald's Parking

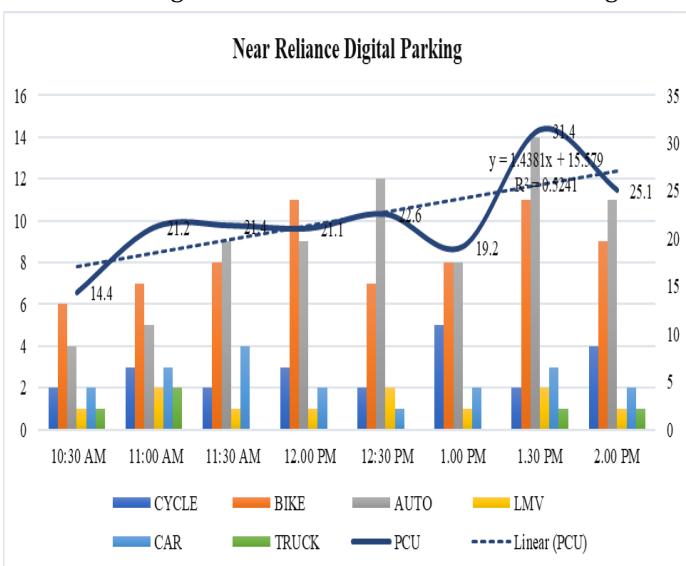


Fig. 6 Near Reliance Digital Parking

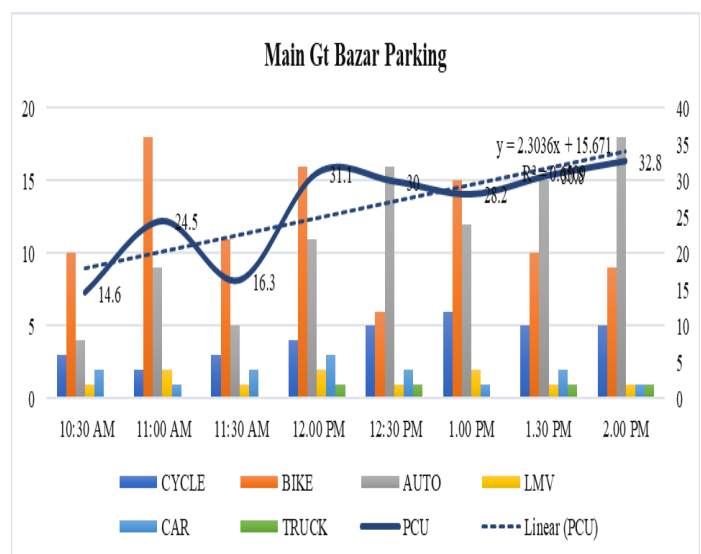


Fig. 9 Main Gt Bazar Parking

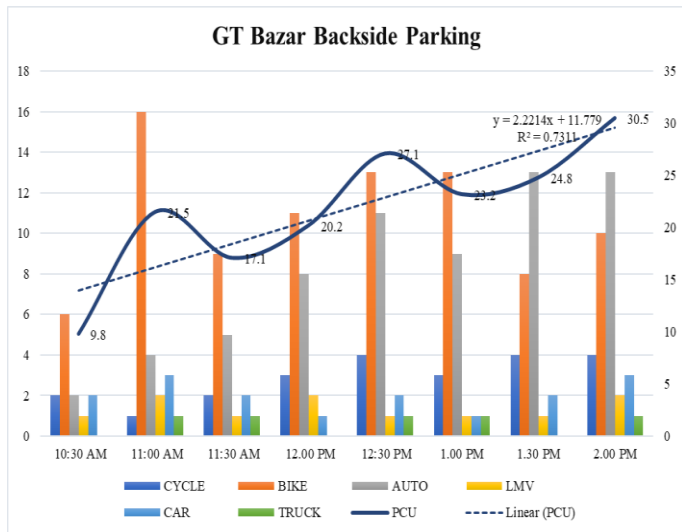


Fig. 10 GT Bazar Backside Parking

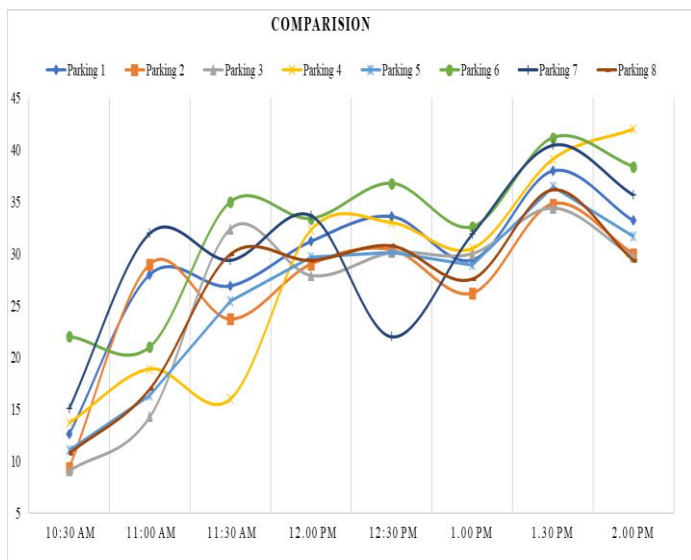


Fig. 11 Comparison

E. Stage II

This survey was carried out on 1Km Side or front road of Gaurav Tower and this road is divided into various parts like Slot A to Slot H as shown in the below figure.

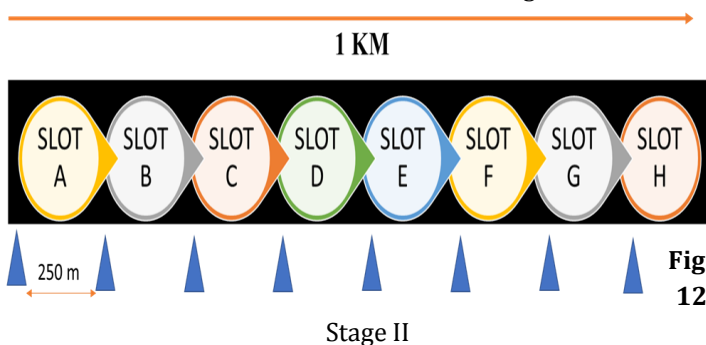


Fig. 12

Each Slot is having a length of 250 meters, our survey duration was of 4 hours. This study was also carried out on the same day of Stage I survey but time was different, which was from 2 .00 PM to 6.00 PM from March 01 to March 04, 2020. This survey was carried out with the help of a two-hour video recording or two-hour manual. In each slot, it gets how many vehicles (4-wheeler, 3-wheeler, 2-wheeler, non-motorized each individually) is crossing here.

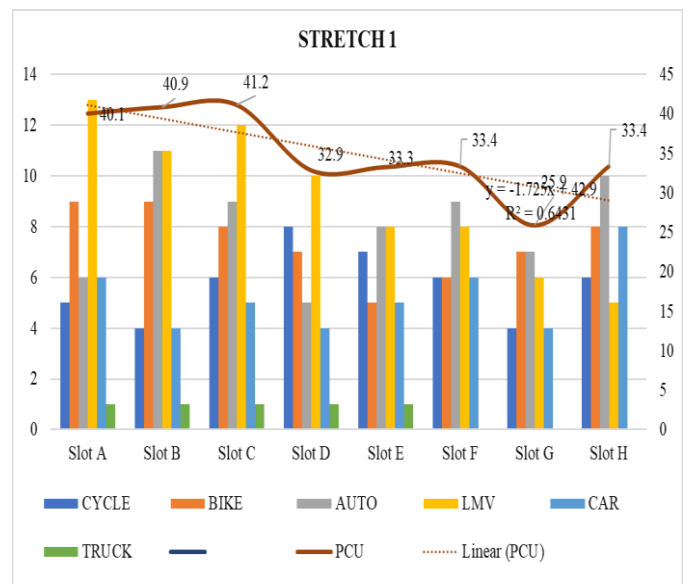


Fig. 13 Stretch 1

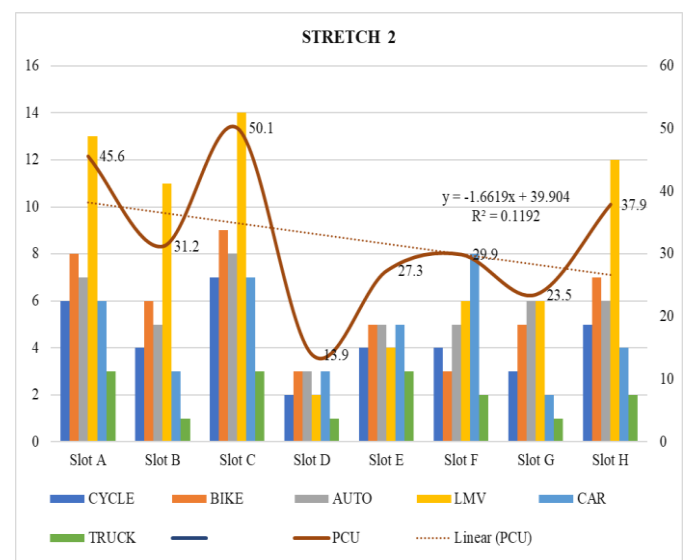


Fig. 14 Stretch 2

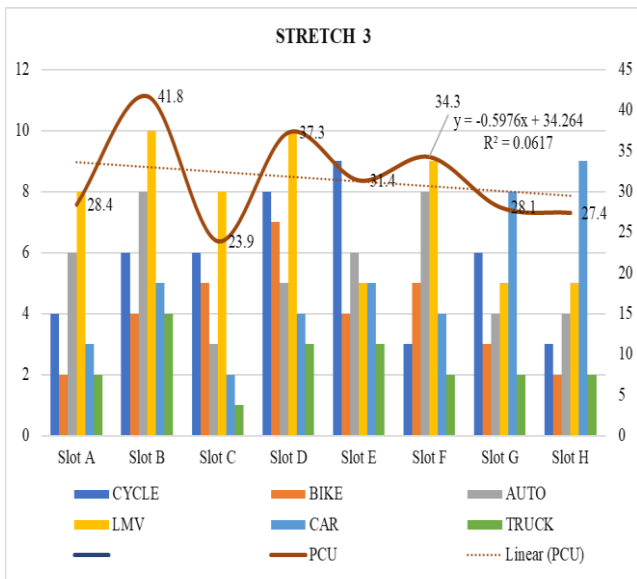


Fig. 15 Stretch 3

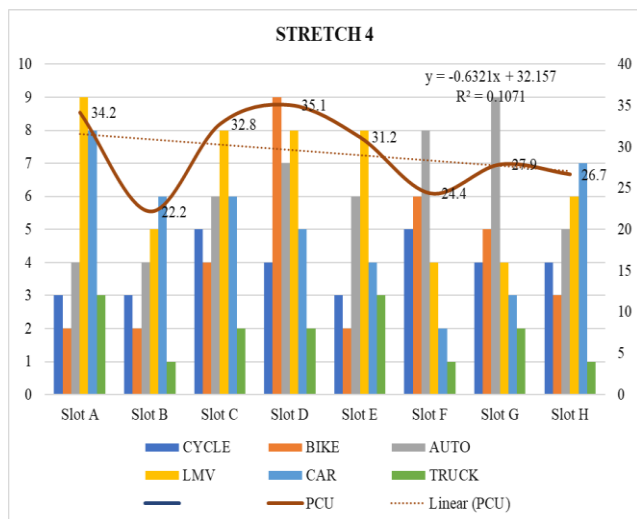


Fig. 16 Stretch 4

Stage III

Accumulation at any time is calculated by subtracting the number of outflow vehicles and adding the number of inflow vehicles to the accumulation numeral for the previous interval, details are tabulated in tables. Each table represents the data from 10.30 am to 2.00 pm interval.

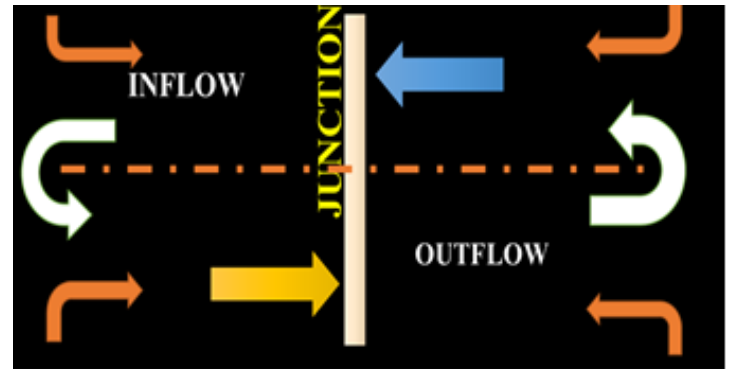


Fig. 17. Stage III

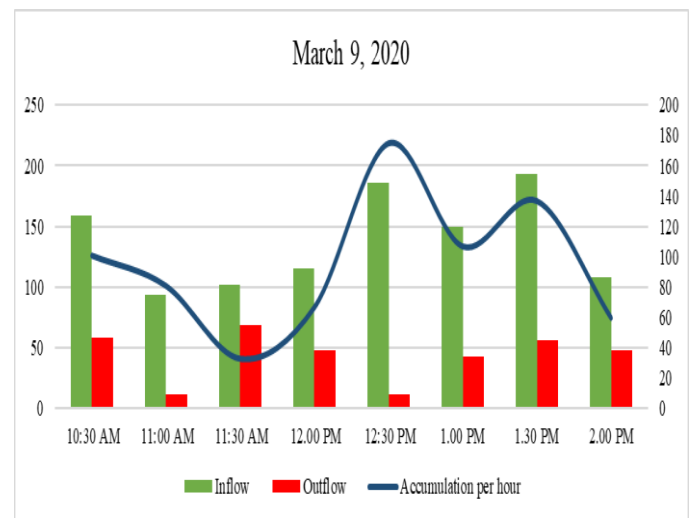


Fig. 18 Accumulation on March 9, 2020

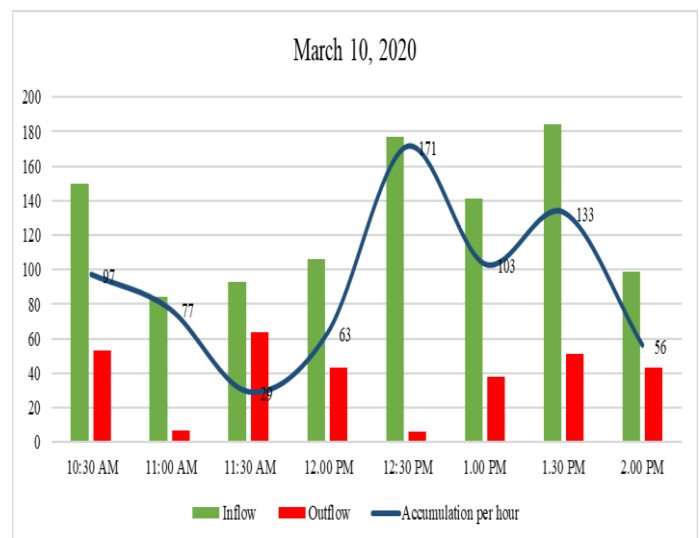


Fig. 19 Accumulation on March 10, 2020

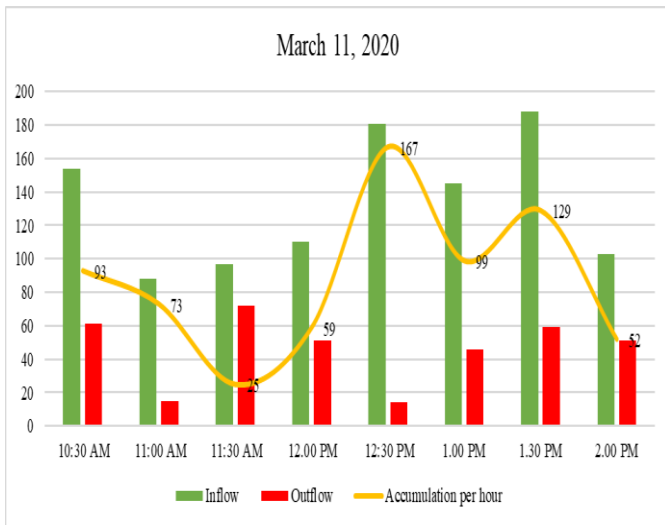


Fig. 20 Accumulation on March 11, 2020

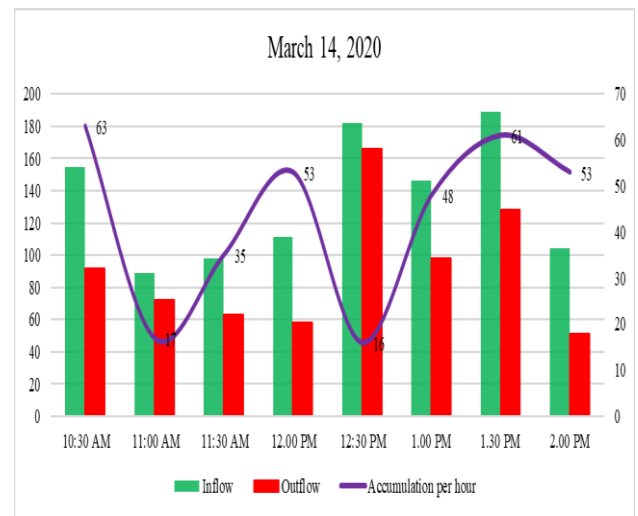


Fig. 23 Accumulation on March 14, 2020

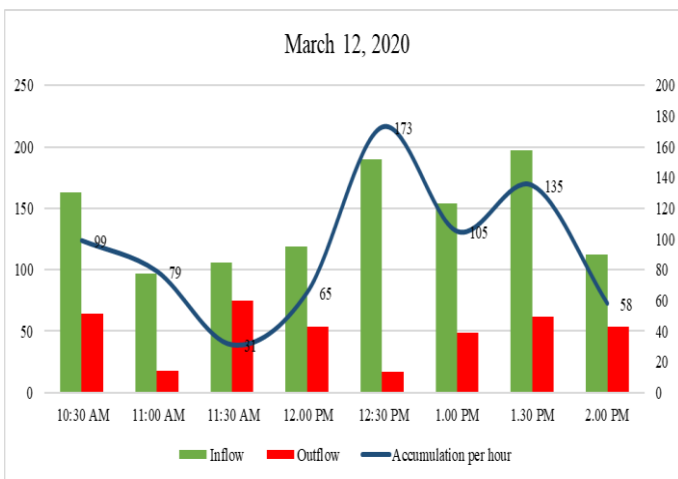


Fig. 21 Accumulation on March 12, 2020

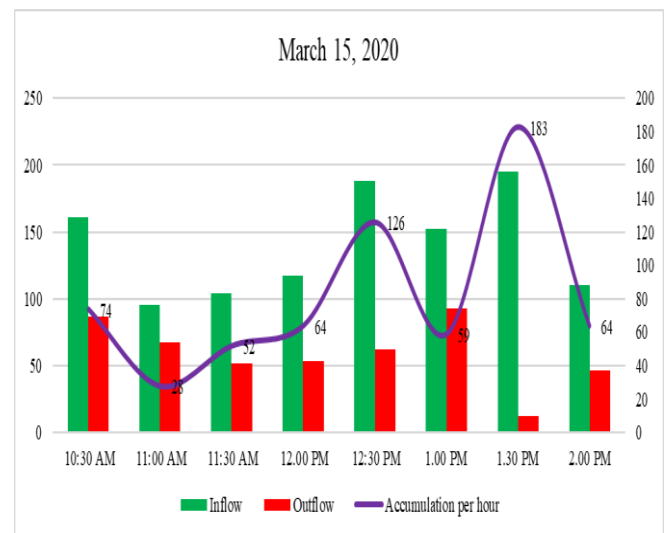


Fig. 24 Accumulation on March 15, 2020

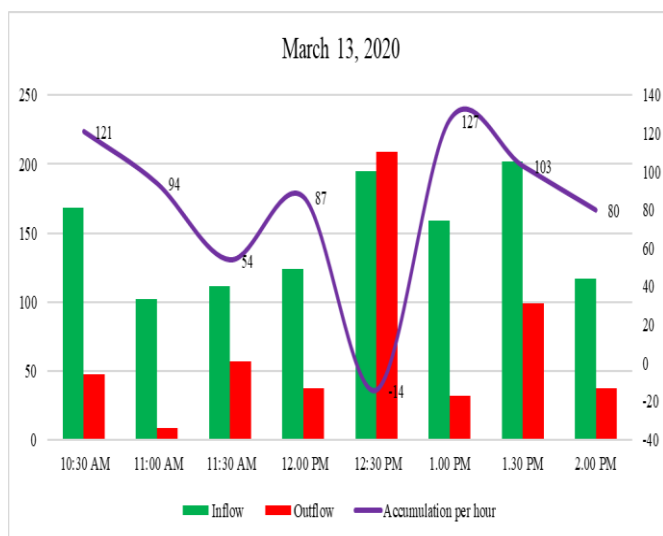


Fig. 22 Accumulation on March 13, 2020

From the above figure, it is observed that maximum and minimum PCU was recorded at 1.30 PM and 10.30 AM respectively at Nexa showroom Parking and Cycle, Two-Wheeler, Four-Wheeler was maxed at 1.00 PM, 1.30 PM and 12.30 PM respectively. The radical change can be seen from 1.00 PM to 1.30 PM in Two-Wheeler and Four-Wheeler.

In the above figure parking from 1 to 8 comparison is carried out and it can be seen that the parking is reserved less at 10.30 AM and at 1.30 PM it can be seen that from graph all parking shows the same accumulation of PCU

4. CONCLUSIONS

- The parking facilities, both on-street as well as off-street, are not properly provided at all the selected sites for the study.
- All the ten parking areas are fully packed to their on-the-road parking capacity and are in-fact overloaded.
- The utilization percentage of on-the-road parking varies from 126 to 309 percent of all the ten areas considered in the study.
- From the various figure, it is observed that maximum and minimum PCU was recorded at 11.30 AM and 10.30 AM respectively at Anurag Path Parking and Cycle, Two-Wheeler, Four-Wheeler was maxing at 11.00 AM, 11.30 AM and 12.30 PM respectively. The drastic change can be seen from 1.30 PM to 2.00 PM in Two-Wheeler
- It can be assumed that the parking from 1 to 9 comparison is carried out and it can be seen that the parking is reserved less at 10.30 AM and at 1.30 PM it can be seen that from graph all parking shows a same accumulation of PCU.
- The study of Stage II indicates the info of stretch one for varied slots A, B, C, D, E, F, G and H for car, three-wheeler, two-wheeler, and NMW. the full stretches area unit showed nearly the same result with PCU. Trendline of each PCU and Total vehicle area unit nearly the same.
- Paid basement parking lots provided at three of the selected sites are found to be sparingly used even during peak parking hours.
- Ground floor paid parking is used more by the drivers than basement paid parking.
- When the purpose of the trip is a recreation like watching a movie in the mall, people are ready to pay the parking charges whereas when the purpose of the trip is shopping/banking/office work of short duration, they try to avoid the paid parking.

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BIOGRAPHIES

Mr. Shubham Bhardwaj is regular student of M.tech. His Area of interest is to short out the cognition of traffic and improve parking feasibility.



Mr. Mukesh Kumar is presently work as assistant professor and He has M.Tech in civil engineering. He has 6 Year experience in teaching. He has worked as tutor in various engineering college and industries.



Professor (Dr.) Bharat Nagar is working as a HOD and M.Tech Coordinator in Civil Engineering Department Jagannath university since last 11 year. He has worked in various engineering colleges and industries in Rajasthan with more than 17 years of total experience. He wrote 4 books and more than 50 research papers in various reputed international and National journals. His area of interest are Environmental Assessment, Concrete application and earthquake engineering.