Worth of Parking Spaces- A case of Gurgaon

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ABSTRACT - With rapid increase in population, increasing demand for transportation is indispensable. In context of urban India, this demand is majorly fulfilled by private transportation.Conventionally, majority of the researchers and planners focuses on solving issues related to metropolitan region, the problems of the adjacent, nearby satellite cities, remains ineffable. But, in the past few years, the focus has also shifted towards tier-2 cities as they have shown rapid growth in urbanization. As per the Statistical handbook of Haryana (2005-06 to 2014-15), the city of Gurgaon has witnessed 352% increase in cars annual registration and 69% increase in 2 wheeler annual registration between 2006 and 2015, while the same city witnessed 300% decrease in bus annual registration from 2008 to 2015. The current approach of an increased resource allocation towards new infrastructure like underground parking and multi-level parking, fly-overs etc. further ends up adding to the congestion. The major cause of congestion is therefore not the lack of available transit infrastructure, but is the increasing number of vehicles on road. The National Urban Transport Policy (NUTP) has already emphasized the need of allocating equitable road space. The issue of inequity however, shall not only be limited to travelling, but needs to be assessed in the case of parking as well.This can be seen in the amount of tax paid by a public transit user which is not different from that of a similar earning private vehicle user, who certainly gets the luxury of using extra road space while driving as well as for parking. This indeed encourages the use of private transport and thus the rising need for more parking spaces. The present study is an attempt to assess the opportunity cost of land occupied for parking and its worth.

KEY WORDS: Urbanization, Inequity, Parking Prices, Opportunity Cost

1. BACKGROUND :

With rapid increase in population, increasing demand for transportation is indispensable , the population of Gurgaon has increased by 74% from 2001 to 2011 as per the census of India.. As per the Statistical handbook of Haryana (2005-06 to 2014-15), the city of Gurgaon has witnessed 352% increase in cars annual registration and 69% increase in 2 wheeler annual registration between 2006 and 2015. The Comprehensive mobility plan of Gurgaon suggests that the mode share of the city is significantly inclined towards private mode of transport (car, two-wheeler and auto) with 60%, while the mode share of buses is only 11% (Limited, 2010). There are 232 vehicles/1000 population in Gurgaon as compared to Chandigarh (172vehicles/1000 population) and Delhi (120vehicles/1000 population), implying that it has higher per capita vehicle ownership than Chandigarh and Delhi (Group, 2016). The vehicular density of Gurgaon is even four times higher than that of Delhi (Roychowdhury, 2016).The rise in private transportation implies high demand for transit infrastructure and parking spacesare one of the most crucial parts of it.

Currently, except for Bangalore, no other Indian city has 600 buses per million population, as per the standard set by the Indian government.In the case of Gurgaon, the Municipal Corporation of Gurgaon (MCG) spent around 125 crores on multi-level parking alone in 2018. Ironically, as per the Mobility Plan of Gurgaon, the sum of funds allocated to public transit and non-motorized is significantly low with the cyclablity index for the city being 0% and buses per million population at around 217, considerably less than the standard (Dayal, 2019).The parking index of the city if 18% meaning out of the total road infrastructure available 18% of the space can be availed for parking. This adds congestion to the already congested city roads (Limited, 2010).

Presently, parking is one of the lowest priced facility, which a private transport user enjoys. City Municipalities allocate hefty funds on building parking spaces and flyovers rather than spending on improvement of public transit services, which raises an issue of inequity in current transit system of Indian cities. The issue of inequity is also highlighted in the parking charges. As per the data released by Ministry of Urban Development (MoUD),in 2016, the parking charges in the major Indian cities aresignificantlylow when compared to cities abroad.It is almost 5.5 times less than Beijing and 50.7 times less than London. In case of Gurgaon, the daily parking charges near CBDs range from $1 to $1.5 (Khurana, 2013).
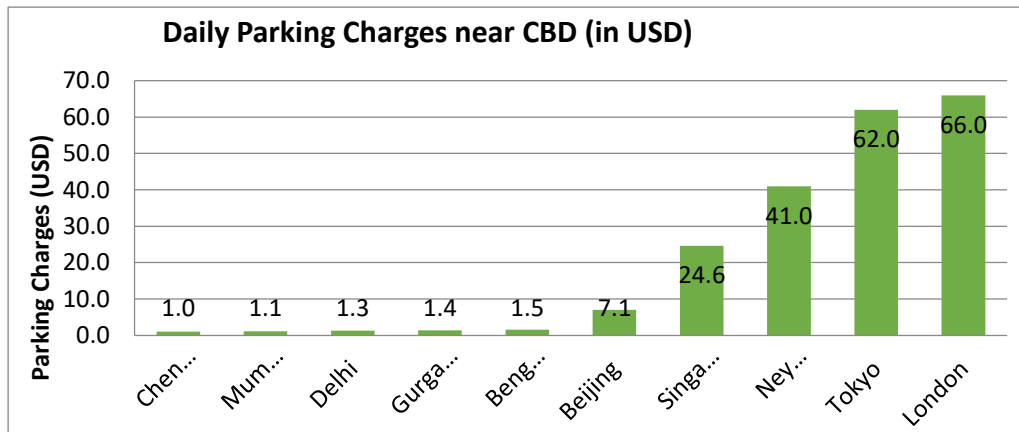
Graph 1, Daily Parking Charges near CBD areas (in USD)
Source- MOUD (Ministry of Urban Development), 2016

1.1 LITERATURE REVIEW:

India is one of the fastest urbanizing nation in the world. The current urban population of India is about 31%, which is predicted to reach 38.6% by 2036 (Ministry of Housing and Urban Affairs, n.d.). With increase in vehicle urban population, the increase in vehicle owner ship is quite evident, which further pushes for more parking requirements. Indian cities use parking minimum requirements to regulate the supply of parking spaces. These parking standards are decided by the National Building Code, Indian Road Congress, and various Development Control Regulations determined by various Development Authorities.The national urban transport policy of India (NUTP) envisages that in a developing economy, the count of personal vehicles is going to achieve an exponential growth in the next few years. The NUTP advocates the equitable allocation of road spaces and suggests to encourage the use of public transport especially for working trips as they account for almost 50% in urban form (Transport, 2014).

The ninth Five-year plan of India suggested to set up the National Urban Transport Development Fundand envisages to focus on parking prices as one of the major sources of funding (Urban Transport in India Challenges and Recommendations, 2015). Majority of the Indian cities are facing issues related to on-street parking. . Parking prices are one of the major problem areas in Indian cities which are often incentivized, either free or priced lower than off-street parking. Majority of cities invest in multilevel car parks in core areas, but does not collect the appropriate parking rate and keep them underpriced which don't even recover the cost of infrastructure (Urban Transport in India Challenges and Recommendations, 2015). Even in the densest Indian cities like Mumbai, Kolkata, Chennai and Delhi, cars (typical spot is 280 sq. ft.) occupy more space than a family of four (range from 85-250 sq. ft. depending on income level) (Gauthier, 2012). Delhi has 14 per cent of road lengths used for on-street parking while Surat has almost 60 per cent of its road lengths blocked by on-street parking(Tom Rye, 2010). The parking charges in Delhi are as low as INR10 for 8 hours during daytime, when it should be at least INR40 per hour (Roychowdhury, Good News & Bad News: Clearing the Air in Indian Cities, 2013). In the case of Gurgaon the parking charges are as low as INR 30 for 8 hours, while the average parking charge reaches upto INR 100 for 8 hours (Khurana N. , 2013). There are numerous benefits associated with efficient parking pricing. Optimum parking pricing can reduce traffic congestion by reducing traffic caused by private vehicles, increase revenue, and induce a shift towards public transportation. While, underpriced parking increases problems such as traffic congestion, housing in affordability, sprawl and pollution (Litman, 2021)

Abundance of Parking spaces works lie a magnet for private vehicles and give rise to motorization rate (Public Parking policy , 2016). The opportunity cost of space in dense urban areas is completely neglected. In India, according to the National Building Code, 2005 one equivalent car space constitutes an area of 23 m2 including the circulation space. This area could be used to build a house for a EWS family of four, an office space for three-four or even a dining space for about fifteen people (Policy, 2015).

1.2 METHODOLOGY

The present study follows a systematic methodology for assessing the opportunity cost of land currently occupied for on-street parking at selected location. The study delves with two hypothetical scenarios, first if the parking space is rented out, second if the parking space is allotted to street hawkers in a planned way.

In the first scenario, the major locations of Gurgaon are been selected using the comprehensive mobility plan of the city and the amount of space occupied by on-street parking is estimated in terms of area (sqft.). From the primary survey, the price of parking for whole month and the average rent (INR/sqft. In monthly terms) in the same or nearby area is noted. After subtracting the amount of money generated from parking to the amount of money generated, if the same land would have been rented is then estimated.

In the Second scenario, the calculations are based on hypothesis that if the land occupied for on-street parking is allotted to street hawkers. The municipal corporation of Gurgaon (MCG) offered 50sqft. carts to street hawkers in 2017 for as a source of their livelihood. As per the study conducted by MCG, the monthly income of hawkers ranges from INR 6000-25000. Calculation were done to estimate number of carts which can be accommodated in within the amount of space occupied for on-street parking. After estimating the number of carts, an average monthly income for street hawkers was assumed and the total amount of money which can be earned from the same pace was calculated.

2. CALCULATION

For assessing the opportunity cost of land, secured for on-street parking at selected areas, following hypothetical scenarios were looked upon:

Scenario 1: Opportunity cost of land under parking if rented out

Assuming a scenario in which an attempt is made to estimate the opportunity cost of parking spaces in CBD areas of Gurgaon,considering the spaces are rented out. Currently, the total area occupied by parking spaces near selected CBDs daily is around 608 PCE (Passenger Car Equivalency), which is equivalent to 3283.2 meter square. As found during stakeholder discussion, average rent price at parking locations are:

Table 1 assessing the opportunity cost of Parking Spaces

Location	Peak PCE	Space Occupied (sqft.)	Average Commercial Rent (per sqft.) INR, monthly	Opportunity cost of land acquired for parking INR	Current parking charges (Monthly) INR	Loss in INR (monthly)
Cyber City	126	7323	120	878760	3000	875760
HUDA Shopping Complex	30	1744	80	139520	1800	139428
Fountain Chowk	54	3138	110	345180	3000	345133
SethiChowk	86	4998	90	449820	2400	449769
Railway Station Road	25	1453	40	58120	3000	58020
Vishwakarma Road	80	4650	35	162750	1500	162686
New Railway Road	26	1511	50	75550	1800	75496
MG Road	181	10520	150	1578000	3000	1577858
Total	**608**	**35337**		**36,87,700**		**36,84,150**

Source- Primary Survey, CMP Gurgaon

It is observed that if the current available parking spaces in selected areas are rented out, the opportunity cost amounts to INR 36, 87,714 daily. Hypothetically, this yields a loss of 36, 84,150per month.

Scenario 2: If the land is provided to street hawkers

A different scenario is considered in which the current parking space is allocated to street vendors/hawkers. The amount of space required by portable carts installed by MCG is around 50 sqft (Model street vendor setup but not everyone's happy, 2017). On calculation, this reveals that around 707 carts can be installed in the place acquired by parking, thus generating a potential employment for about, at least 700 informal workers. As per MCG, a street hawker earns anywhere from INR 6,000-25,000 per month. Assuming an average earning of INR 15,000 per month, from 707 carts a total of tentative sum ofINR 1, 06, 05,000 can hence be earned.

Result

The opportunity cost of the land, currently being occupied for on-street parking in selected areas of Gurgaon was estimated as INR 36,87,700 per monthas per the first scenario (if the land is rented out), while as per the second scenario (If the land is provided to street hawkers) the opportunity cost was calculated as INR 1,06,05,000 per month.

BEST PRACTICES WITH RESPECT TO PARKING MANAGEMENT

This section gives a brief overview of the international case studies of best practices with respect to parking management.

Zurich, Switzerland

The city of Zurich practices a restrictive parking policy for improving the conditions of public transport and non-motorized modes of transport. The aim of the policy is to reduce congestion, and increase the use of public transport in city. The city has two types of regulated on-street parking zones, namely Blue and White. Parking spaces in the blue zone are free of charge, but there is generally a time limit of one hour (except on Sundays and public holidays), while the white zone are managed with parking meters. Residents also have the possibility to obtain a parking permit for 300 CHF (1 CHF = 1.03 USD on 23.03.2016) per year that allows them to park inside the blue zone without a time limit. Prices in parking garages on a workday vary from 0.5 to 4.40 CHF per hour depending on the location (Milos Balac, 2017).

London, United Kingdom

In London the change from minimum to maximum standards first took place in the central area with the Greater London Development Plan in 1976. On the basis of radical and comprehensive scale, London reformed its parking requirements in 2004. Parking maximums replaced parking minimums for developments within metropolitan area(Guo, 2016). With reference to demand and public transport accessibility sensitive parking requirements, controlled parking zones were delineated. The strategies followed in the case of London were based on maximum parking for nearly all land uses, maximum parking for specified uses and maximum parking for specified parts of the city. Five types of change was observed when a comparison was made between the actual supplies under minimum standard prior to the reform against the actual supply under maximum standard.

Type 1: Forced to provide parking as per minimum requirement but supplied zero parking under maximum standard.
Type 2: Forced to provide parking as per minimum requirement but heavily reduced the parking supply under maximum standards.
Type 3: Provided parking beyond minimum requirements but was limited at the maximum allowed level due to reform.
Type 4: Provided parking at the minimum required level but reduced the parking supply under maximum standards.
Type 5: More than minimum required level under both minimum and maximum standards due to exceptions has been provided

The parking supply fell by approximately 40 percent after the 2004 parking reform as compared to the parking supply that would have been provided under the previous minimum parking requirements meaning that during 2004-2010, the newly proposed parking requirements led to a decline of 143,893 spaces(Giuliano Mingardo).

Strasbourg, France

Since 1990, multiple approaches like pedestrianisation of downtown area, increasing bicycle infrastructure, expansion of paid parking and implementation of park and ride facilities at peripheral transport nodes of the city were adopted by the city officials of Strasbourg to reduce car traffic in the city. Implementation of park and ride facilities played a key role in increasing public transit ridership and reducing the number of private vehicle based trips towards the greater Strasbourg area. The cost of parking for twenty four hours at a Park and ride facility was almost as same as two hours of parking in the city Centre. Along with the park and ride facilities, the city has also implemented flexible parking requirements. In centrally located neighborhoods and In those neighborhoods situated less than 500 meters from a public transportation stop (tram, train station, or bus stop), a 50% reduction in parking minimum requirement was enforced for both residential and non-residential developments, By 2010, newly built nonresidential buildings would no longer be required to add parking spaces if nearby facilities had parking facilities (M. Kodransky, 2011).

Pune, India

The public parking policy of Pune, published in 2016, aims at reducing dependence on private transport and promote the use of public transit services. The policy addresses the importance of providing high priority to parking control initiatives to induce a shift towards public transit, non-motorized transit which can further reduce the problems like congestion, air pollution and high accidents rate which the city is currently facing. The policy advocates towards strategic panning approach in providing parking spaces by recognizing the location of such spaces, the car holding capacity and the price at which it is available can contribute in a significant manner in reducing the use of personal vehicles. The objectives set by Pune parking policy were to achieve 80% motorized trips by public transport by year 2031, achieve at least 50% reduction in total vehicle kilometer travelled (VKT) in Pune by year 2031and transform at least 10% on street parking spaces to public open spaces or NMT infrastructure by rationalization of parking spaces. For attaining the objectives, various measures were adopted such as:

1. Base parking rate shall be based on vehicle size and amount of space occupied. If a vehicle depending on its size occupies more than one parking lot, it shall be liable to pay parking charges of the total number of parking lots it occupies.
2. City was divided into three different zones (Zone A- Central business district area (CBD), Zone B- Mobility corridors, Zone C- Rest of the city). Parking charges were proposed to vary in different zones of the city.
3. Short term parking was encouraged for high turnovers, while for long term parking, parking charges increases by 100% every hour.
4. Parking charges also varies on weekdays and weekends as leisure tirps are more during weekends.
5. Management of On-street and Off-street parking in any particular area shall be managed by private operator.

As per the policy, the Pune Municipal Corporation (PMC) is responsible for setting up an 'Urban Transport fund' by utilizing the revenue generated from parking for promoting walkability, cyclability and improve the quality of public transport services (Policy, 2015).

CONCLUSION

In most of the Indian cities parking policies are either non-existent or used to make commutes by private motor vehicles more convenient. The importance of discouraging the use of private transportation is not a novelty, but still we tend to promote it. Providing free or underpriced parking spaces is one of the major motivation for private transport users and correspondingly reduced ridership and demand for public transport. As discussed that private transport adds to congestion, therefore the need of the hour is to device strategies that promote sustainable transportation options like NMT (Non-Motorized Transport), PT (Public Transport) and simultaneously disincentive private transport.Itbecomes paramount to develop a parking policy in India for proper management and for fixing justified parking prices based on the opportunity cost of land. For promoting sustainability, more investments shall made in public transit infrastructure like NMT lanes, cycle lanes and pedestrian facilities among others to promote use of options other private vehicles rather than investing on flyovers, and multipurpose parking spaces.

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BIOGRAPHIES

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