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156. Evaluating Site Suitability for Intercity Bus Terminal at Hyderabad Sindh, Pakistan

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Abstract

Transportation division contributes heavily on the commercial development and deficiency eradication in the nation through numerous methods. A well-organized transport structure is dynamic in associate with economic growth and improvement of the superiority of life of the inhabitants. Infrastructures are the strength for the conveyance subdivision in the country. They are vital for the movement of individuals and properties and play a significant role in incorporating the country, expediting financial development, and eventually dropping deficiency. Road transference in Hyderabad is most leading mode of transport, carrying 80% of customer and goods traffic and attending as a true backbone supportive the district's economy and 20-30% of people travel in buses and coaches. The local transport system already had increased a traffic jam in the city but the additional coaches and buses ply to Hyderabad from other cities of Pakistan had created havoc in the city, all buses destined for National Highway and Super Highway passes through the busy and congested areas and picking and dropping passengers on their way therefore bus stations or terminals need to be provided out side in order to avoid traffic congestion The data has been collected from the respondent of Hyderabad city to gather the required information through questionnaire survey to examine the demand of bus terminal and to observe existing conditions of location and data of land availability is collected from the experts of Hyderabad development authorities. Descriptive statistics and correlation method can be used to summaries the figures. The standard sample size of 480 questionnaires was occupied from people Hyderabad city. This study will help in highlighting issues created by improper location as well as inappropriate area of Bus terminal and to identify proper and equitable location of Bus terminal in Hyderabad city.

Keywords: *"Bus terminals; Site suitability analysis ;Bus stops; land use"*

1. Introduction

Transportation is one of the most important requirements for communication from one place to another, for visiting purpose or for tourism [1]. Road transport has constantly play a major part in the production originality and it can be expected to show an even superior quantity in future [2]. The road structure is deteriorating quickly due to congestion of vehicles produces traffic harms and there are unacceptable numbers of accidents attributed to heavy weight vehicles [3].There is a severe lack of transport terminals in Hyderabad. Due to this condition, transport vehicles of intercity or intra city routes, park on road side. As a result, it reduces the effective road width and causes congestion; on the other hand commuters suffer due to lack of facilities.

The transport system in Hyderabad City consist of Coaches, small bus, taxi cab etc. Although of these foremost populace journeys by bus which originate to the core of the town, from the out-of-town zones [4].The population of Hyderabad city in 2010 is 4.5 million and about 20-30 % of total population travel in local transportation [5] but the whole facilities available for transference in Hyderabad to be inadequate supervision. Current Bus Terminals of Hyderabad are in congested zones. Entirely bus intended for National Highway and Super Highway, but permits over the hectic and congest zones, such as Risala Road, Qasim Chowk and Station Road. Pick up and drop travellers on their way and this create traffic jam. In Hyderabad, the inter city transportation is provided by buses, vans, and air conditioned coaches.

Main intercity bus stands in Hyderabad are Bus Stands of Hali Road (Badin Stop), Daewoo bus stands (Latifabad # 7), Bakra Mandi (Hallanaka) & Qasim Chowk. Not any of these have an appropriate area and coaches are park on street beside the dwellings, these provide growth to the blocking, noise problem at town. Such terminal observably does not have suitable amenities for the travellers are well as the operatives [6].This study is to carry out a site suitability analysis and to identify suitable site for bus terminal. The aim of the research is to investigate existing problems of intercity Bus terminals and to suggest proper and appropriate Bus terminals at suitable location with all required facility in Hyderabad city. The outcome of the research lead in reduction of traffic congestion Thus the benefits enjoyed by the people living in Hyderabad as well as by the tourist who are traveling out and from Hyderabad [5].

2. Literature Review

In current periods, particular analyses have been custom to regulate bus facility and stability by means of different techniques like relocation of bus stations, methods of on time routine, development or association among coaches, bus operation periods or operation time variation, and overload to come moment. The aspects creating facility constancy have also been broadly secured. The practice of local transport has failed extremely. For improving and managing transport quality. Transit Oriented Development (TOD) theory handling metropolitan growth in transfer strips [7].This review goals to operating problems, kind, and examine spatial data including features of land use (LU), transference, and surroundings.

Site selection or appropriateness is the strategic to a sophisticated projects, possible places used in appropriateness of study can include the position of a fresh projects, supply or conservatory among other development [8].Master Plan or land use plan developed by concerned authorities includes Land Use monitoring and adjustment of natural atmosphere or wasteland into constructed environment [9].Location can be considered after the current condition of Hyderabad city and availability of land in the city. A method of classifying the suitability of the specific region is the location of cluster evaluation was from the point of view of suitability for use is definite [10].Inter City Bus Stations might be set up on 5 to 10 acres of plot (dependent on convenience) and improvement must be at suitable location nearby the entrance / departure area of the Intercity highway, e.g. Super Highway or National Highway at Hyderabad and the land will be deal out to the Municipal Managements and to all the Regional Administrations to deliver property and other essential substructure such as other services like water, gas, electricity, etc. [11].

This research also help the concerned authorities to control these worst congestion and traffic problem that may be related with local transportation.

3. Research Methodology

3.1 Data Collection

This study attempt to find out the perceptions of traveller of Hyderabad regarding the need, problems, facilities and services. The data required for the study collected from the traveller to analyse the problem of buses and there location and the survey through questionnaires conducted from respondent of Hyderabad city and the data of land availability is collected from the experts of Hyderabad development authorities. This analysis is to offer appropriate Bus terminals which prepared with all required facility, better bus stop spacing in the Hyderabad city [12].

The reconnaissance survey is used to study the entire area of Hyderabad that used for routes and sites. As Hyderabad is well connected too many other locations in Sindh, either through directly or through intermediate locations, so the optimum location must be directly at highway. The highway network linking Hyderabad to various parts of the country through motor highway. Investigator regarding land availability went through authorities and experts to ask about site suitability, and obtain surveyed land use map of Hyderabad. The selected sample size in this research is 480 and about 240 surveys are taken from the traveller at bus stops and 240 surveys are taken from other automobiles traveller. The questionnaires were filled from respondent of Hyderabad city study area.

3.2 Method of Data Analysis

Collected data examined by using SPSS software. To analyse the existing condition of transportation, reason for traffic congestion in CBD areas, accessibility and site suitability, Descriptive statistics and correlation method used to summaries the figures. The data is definite, the frequencies or correlation procedures was used and data is on scales

level, reviews or descriptive method used.

4. Results and Discussions

4.1Suitable Sites for Bus Terminals

Land availability examine through authorities and expert's suggestion. When the interviews is taken from experts they suggest some sites in Hyderabad As all of these sites are directly toward to National High way and Highway .

- Toward Main forest (Ayub Restaurant)
- Toward Toll plaza
- Toward Kohsar (Gulshan-e-Sarmast)
- Towards Zeal Park

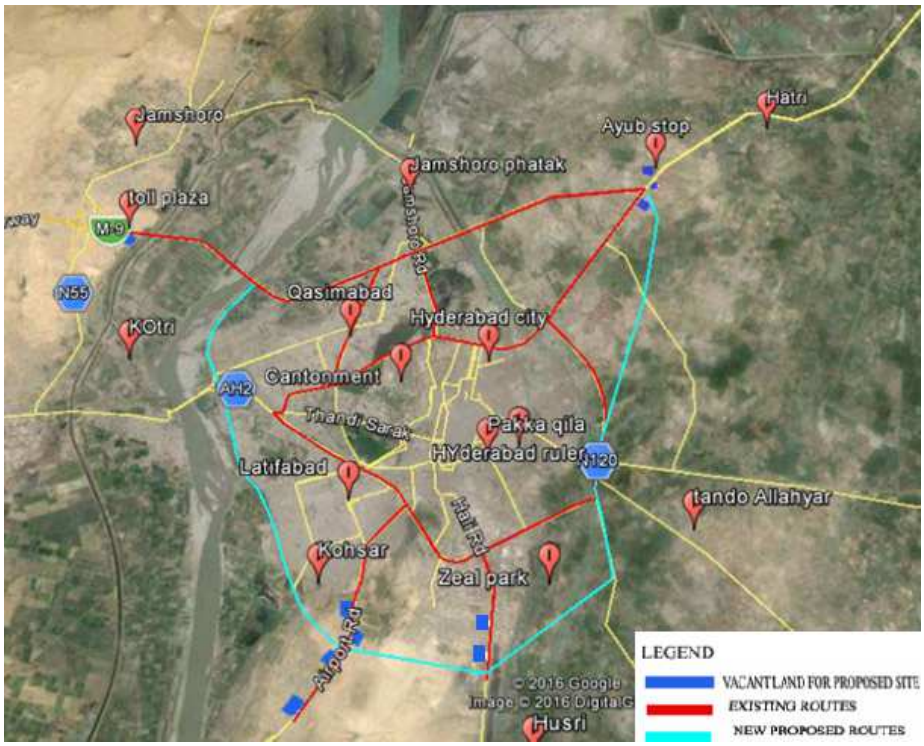


Fig. 1. Proposed Sites and their Linked roads

Often bus route follow main route and these sites are on the main route that connecting with different cities of Pakistan. As the large number of vehicles arriving and departing, it was necessary to provide off-road bus terminal facilities for the convenience of passengers and to reduce traffic congestion.

4.2 DESCRIPTIVE ANALYSIS

Descriptive analysis was applied in demand to observe respondent remark, the frequency distribution is summarizing in frequency table.

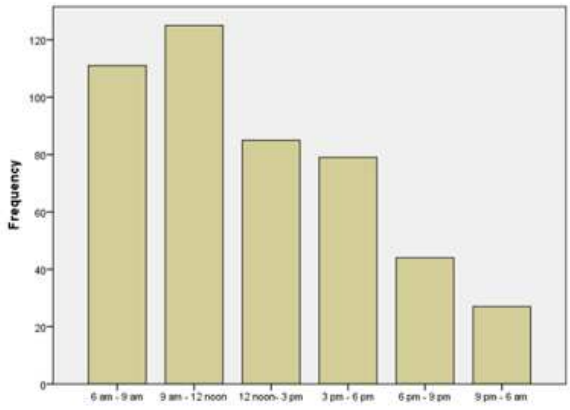


Fig. 2. Traveling Timing

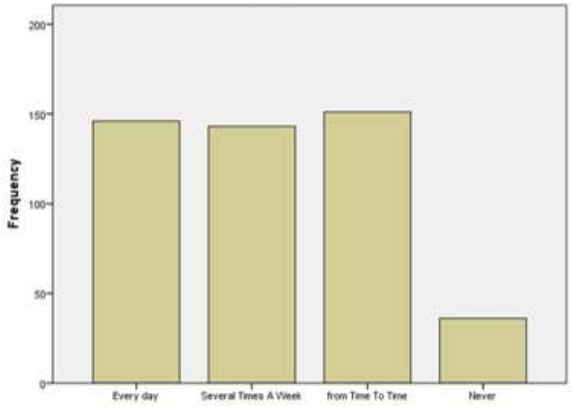


Fig. 3. Frequency of Using buses service

Respondent use this mode from time to time and 30.4% of total population uses this mode every day. Most of the respondent travel at 9am to 12 noon as this considered as the peak hour, circulation is high at that time congestion of transportations is at maximum.

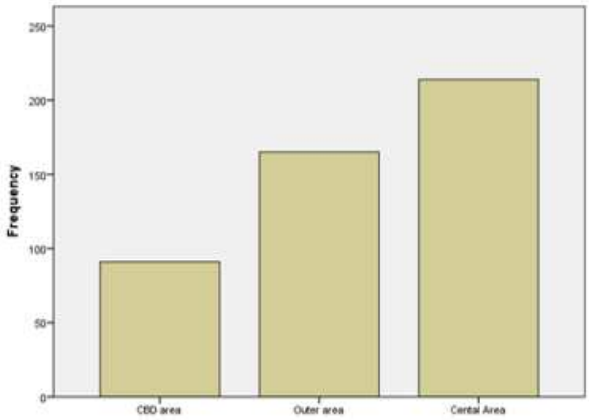


Fig. 4. Plying Area of Bus

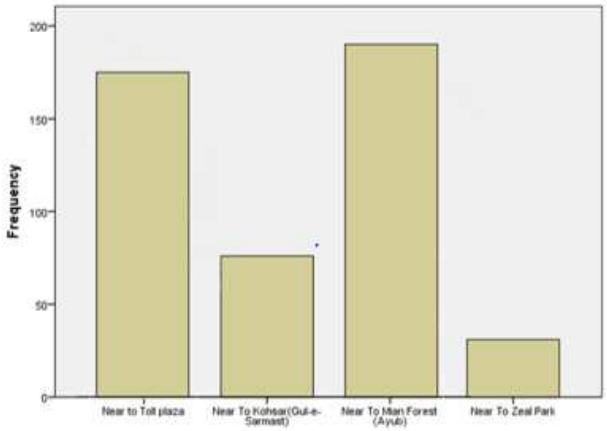


Fig. 5. Suitable Site

In most urban areas, *buses* will normally pick up and set down passengers at busy areas, where already heavy traffic and heavy vehicles are plying from that area. More of the respondent want to relocate the existing bus stop/bus terminals to Near to Mian Forest (Ayub)where local transport are easily available for travel to station and this site is directly connect to the highway or Super Highway.

Table 1. Cross tabulation of Area of Living x Site suitability

		Site suitability				Total
		Near to Toll plaza	Near To Kohsar(Gul-e-Sarmast)	Near To Mian Forest(Ayub)	Near To Zeal Park	
place	0	3	8	34	2	47
	Hyderabad Rural	52	16	28	8	104
	Hyderabad Urban	52	12	38	3	105
	Latifabad	34	23	41	11	109
	Qasimabad	32	16	49	7	104
Total		173	75	190	31	469

This table showing cross tabulation of the location where respondent living and where they suggested to relocate the BT. In this table you can see 52 of the people who living in Hyderabad rural and urban suggested Near to Mian Forest and people who living in Latifabad suggested Near to Toll Plaza and also the residence of Qasimabad suggested Toll Plaza.

Table 2. correlation between place and Accessibility

		place	Accessibility
place	Pearson Correlation		-.374**
	Sig. (2-tailed)		.007
	N	479	478
Accessibility	Pearson Correlation	-.374**	
	Sig. (2-tailed)	.000	
	N	478	479

Table shows correlation between variables is negative and this shows that the place where people lives and accessibility towards existing bus stations or terminals is not in easy approach.

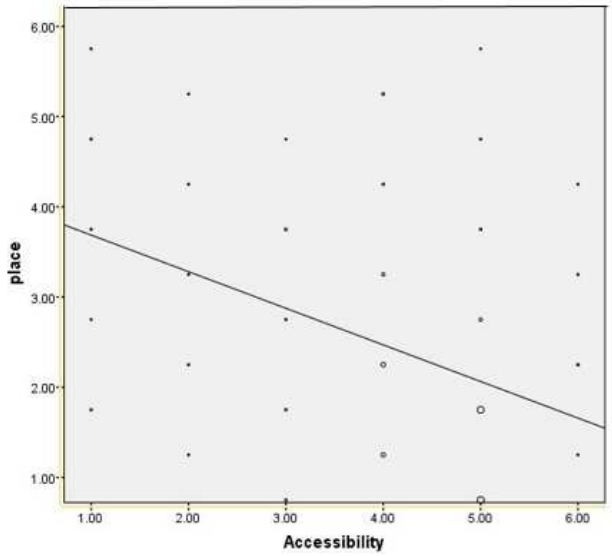
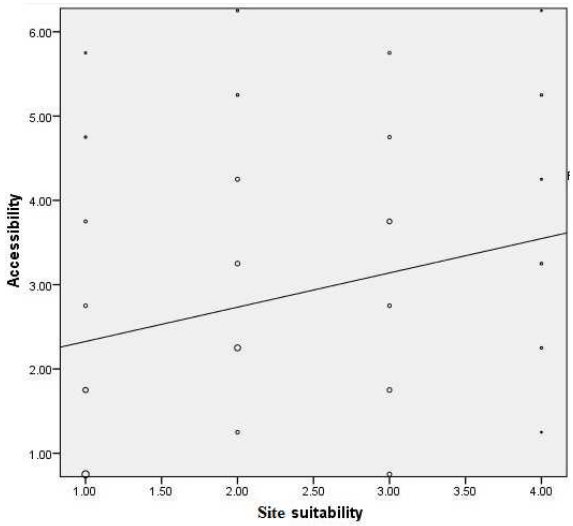


Table 3. Correlation between place and proposed site

		place	site suitability
place	Pearson Correlation		.256**
	Sig. (2-tailed)		.000
	N	471	469
site suitability	Pearson Correlation	.256**	
	Sig. (2-tailed)	.000	
	N	469	476

This is moderate positive correlation between place where population of Hyderabad living and proposed sites for bus terminals which is statistically significant for travellers.



5. Conclusion

Through the all above details and discussion we came to know that Hyderabad is facing great issues and problems in all areas. In general, the transfer of passengers needs a specific change and it is beneficial to find out suitable site for Bus Terminals. After the research analysis the most suitable site is near to Mian forest (Ayub) as it is directly connected to high way and national highway and this site is very accessible from the city and local transport are available there every time. The profits are not only appreciated by civilization, but also by the bus operatives and the customers. Finally, the application when performed on a real case has managed to optimize the existing system and improve the public transport service by using more resources.

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