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LOCATION FOR INTERCITY BUS STAND

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SUMMARY

In the late 50's congestion started growing in almost all major cities due to rapid urbanization. At that time, among other factors, the most important reason was considered to be the location of terminal facility of intercity public transport inside the city centres. Hence it was decided as a general principle that the intercity bus stands should be shifted to the out-skirts of the city. No recognition was given to the fact that since ultimate destination of majority of the intercity passengers, is either the Central Business Districts or Government Offices, such practice would instead increase the central city congestion due to transfer of passenger from high capacity bus to smaller vehicles such as Motorcycles, Suzuki-Pickups, Taxis, Rickshaws, Tongas and Private cars. Beside, it would create greater difficulties for the travelling public in terms of time, money and convenience to reach their destination. Nevertheless the policy continued to be followed, because of the fact that no scientific evaluation of the measures were carried out. This decision was also implemented in Rawalpindi, which resulted in shifting of Bus Stand from Liaquat Bagh to Pirvadhai. The main objective of the study is to evaluate whether or not the goals of the move have been achieved.

The Liaquat Bagh Bus Stand was located on the Murree Road which is one of the main commercial arteries of the city. The stand was also very close to Raja Bazar and city-Saddar Road Shopping districts. The area of the bus-stand Liaquat Bagh was very small as compared to the number of buses, which resulted in parking of the approach roads to the bus stand, thus creating lot of congestion. To overcome this problem, a site was earmarked by the authorities in the Master Plan prepared in 1970 for a new Intercity Bus-Stand in the sub-urban locality of Rawalpindi at Pirvadhai.

For the purpose of study, the area was limited to census boundaries of Rawalpindi and Islamabad Districts and was divided into 57 zones including three external zones. To quantify the passengers movement by various modes of transport, to and fro the city, an 8-hours survey was carried out in September 1990 for 18 days, involving a total 5107 number of passengers of the buses, wagons and flying coaches at six different cordan points.

There are a total of 22 intercity road transport passenger stands in the twin cities of Rawalpindi-Islamabad, from which 3,998 vehicles trip are operated daily through a fleet of 1,999 (994 Buses and Mini Buses, 860 Wagons and 145 Flying Coaches), offering 134,352 passenger seats. 74.3% passengers travel by Buses, 20.1% by Wagons and 5.6% by the Flying Coaches.

Whereas all other vehicles use one stand designated for the particular vehicle type, buses have two main separate stands i.e. one for the Government owned Punjab Road Transport Corporation buses in Rawalpindi Saddar and the other for Private and GTS Peshawar buses at Pir-Vadhai. This study however primarily concerns with the operation of buses at Pirvadhai Bus Stand.

A total of 3470 bus passengers were interviewed. The major findings of the study are as follow:-

1. While 3 out of 4 (74.5%) passengers interviewed had embarked from the Pirvadhai Bus Stand, the proportion for disembarking passengers was less than half (49.3%).
2. The single most important reason given for greater embarkation than disembarkation from the stand was the assurance of seat availability.
3. The reasons commonly forwarded for greater disembarkation at places along the route were:-
 - a. Nearer to the Residence / Business / Shopping-16.4%.
 - b. Availability of Public Transport to reach final destination -14.4%.
 - c. Ease of connection for travel to other cities-3.3 %.
4. When compared with other locations namely Liaqat Bagh etc it was revealed that greater number of passengers, incoming as well as outgoing from Rawalpindi, would use Pirvadhai than Liaqat Bagh due to lesser distance travelled between places of Origin/Destination and the Stand i.e 18.6% for outgoing passengers and 9.0% for incoming passengers. This was due to the fact that Pirvadhai happened to be located in a zone which generated maximum amount of traffic.

Conclusion

1. The study shows that the General Bus Stand at Pirvadhai is quite well located being nearer to the origin and destination of majority of outgoing and incoming traffic. The main reason is the fact that it is situated between the two cities i.e. Rawalpindi on one side and Islamabad on the other.
2. It however could not be ascertained whether the decision to locate the Bus Stand at Pirvadhai as far back as 1970, which turned out to be the right one, was by design and not a mere chance.
3. It also does not necessarily means that all similar actions to shift the Bus Stands to the outskirts of the other cities in the country were correct, unless it could be established through a proper study.
4. Since a definitive answer could not be obtained, due to very peculiar location of Pirvadhai Bus Stand (between two large metropolises), similar study must be carried out for Badami Bagh Bus Stand at Lahore and Lala Zar Bus Stand at Peshawar which were shifted for the same reason and are actually lying on the outskirts of the city to arrive at a proper conclusion.

CHAPTER - I

INTRODUCTION

Intercity passenger travel demand is related to the socio-economic characteristics of the city pairs and is directly proportional to the sizes of the cities and inversely proportional to the square of distance between them.

The Intercity travel is normally undertaken for work, business, recreation and social purposes. Work trip relates to commuting from the adjoining towns, while business travel includes commercial activities, government dealing and courts appearances etc. Recreation travel is usually related to the traveller's vacation although it could also be intended for other specific recreation activities such as sports events or political and religious rallies. The most common purpose under social travel is visiting friends and relatives. Hence the majority of social journeys made by people are related to their family's needs and leisure. Most of their journeys begin or end at home.

1.1 BUS STAND (4)

Since many services radiate from the town centre, bus stands may be so located that both local & long distance travellers could reach the town centre (s) with minimum degree of intra city travel. Ideally all the transport terminal (bus stand, railway station) should be located near to one another & within or close to the centre area & should have easy access of the distributed route streams. Buses should be able to enter & leave the Bus Stand without delaying or endangering other traffic.

1.2 BACKGROUND

Beginning late 50's the Bus Stands have been shifted from the centre of most of major urban areas to the outskirts under the belief that this would alleviate the congestion on the busy roads/streets in the centre of the cities. Although it did not have the desired effects on the traffic movement in the centre of the city, it created greater difficulties for the travelling public in terms of time, money and convenience to reach their destination. Nevertheless the policy continued to be followed, because of the fact that no scientific evaluation of the measure was carried out.

It may be noted that in terms of road congestion, one bus is equivalent to 3 passenger car unit (PCU) and it carries average of 50 passengers. On arrival in the city these passengers use different modes of transport to reach at their final destination. The modes normally chosen are car, taxi, rickshaws and tongas. The net result is that the congestion value of the bus increases many times. In addition a passenger also pays considerably more for intra city travel for reaching his final destination.

1.3 OBJECTIVES

This research study would attempt to clarify some of the basic assumptions in shifting the bus stands to the outskirts of the city and quantify the socio-economic impact on inter-city traveller. The objectives of the study would be as under:-

1. To precisely establish the underlying assumptions which led to the decision to shift the Bus Stand from city centre to the outskirts.
2. To clearly bring out the objectives which were to be achieved by shifting the Bus Terminal to outside the city.
3. To evaluate whether the objectives were achieved.
4. To compare the old (city centre) and new (sub urban) location of the Bus Terminal in terms of their effect on city street congestion.
5. To establish guide-lines for proper location of Bus Terminals.
6. To disseminate the study findings to all metropolitan development authorities.

1.4 SCOPE OF THE STUDY

The study has been limited to interview the bus passengers at the bus stand and also at the cordan points of the twin-cities of Rawalpindi-Islamabad.

1.5 BASIC ASSUMPTIONS IN SHIFTING THE BUS STANDS IN RAWALPINDI

A major volume of the intercity passenger traffic to and from the Rawalpindi city is by bus. According to a study carried out in 1967 to determine the daily passenger in flow into Rawalpindi through various modes of traffic 92.5% of the total in flow is through bus service. Bus being an important mode of transport maximum number of people travel in a better way. The present accommodation of the buses both at the General Bus Stand, Liaquat Bagh and at other scattered places all around the central shopping area of the city is most unsatisfactory and there has been a strong need to have an efficient bus stand.

The scattered bus stands all over the city were undersirable and creates a lot of problems. Therefore a site of 50 acres had been reserved along Shah Allah Ditta Road in the Master Plan for greater Rawalpindi in 1970 which is now called as General Bus Stand (Pirvadhai). This site had been recommended because of the following advantages (5):-

1. It is not very far from the Central Shopping Centre.
2. The buses will use Shah-rah-Islamabad and Khayban-e-Sir Syed to get the proposed bus stand so that the city will be completely clear of buses.

3. The whole sale markets of vegetable, fruits etc being located in Sector I-11 of Islamabad. The relationship with the bus Stand will be ideal.
4. It will be close to the transportation Sector I-8/2 of Islamabad.

The joint Bus Stand with Islamabad in Sector I-8/2 was disfavoured because it becomes at one end of Urban Rawalpindi and would increase the hardships for the Pindites. In the proposed arrangement the I-8/2 sector can have the big transportation complex the buses can start from either stand and pick up the passengers from the other before proceeding to the ultimate destination.

1.6 METHODOLOGY

The following methodology has been used to execute the study:-

1. The residential area of the twin-cities of Rawalpindi/Islamabad were divided into 54 zones excluding 3 external zones (i.e. 55,56 & 57) as shown in annexure-II.
2. The cordan count was taken on the "6" routes from where the intercity transport is leaving/entering the twin-cities as shown in annexure-III.
3. Information was obtained regarding the origin and destination of the passengers travelling by the buses, wagons and coaches.
4. Out-going passengers were asked about the mode of transport between their point of origin and boarding of the bus.
5. Incoming passengers were asked as to which mode of transport will they use to reach their final destination.
6. Passengers were asked as to how much money they will pay or have paid between bus terminal and point of origin/destination and inter city part of the journey.
7. Information regarding various places within the twin cities from which the passengers boarded or disembarked from the bus was also collected.
8. General observation/opinion regarding present, previous or other preferred locations for the Bus Stand was also recorded.
9. Information regarding travel time for inter-city and intra-city journey was obtained.

10. Information of all bus stands, wagon stands and flying Coach stands in Rawalpindi and in Islamabad was collected.
11. Information about total number of buses, wagons and flying coaches leaves/enters into the city within 24 hours was collected.
12. Information about seating capacity of the buses, wagons and flying coaches was also collected.

1.7 FIELD SURVEY

To carry out the survey the study area was divided into 57 zones including three external zones (i.e. No.55,56 and 57). A detailed zone list is shown in the Annexure I. In addition to zoning six cordan points around Rawalpindi and Islamabad (study area) were selected.

Before carrying out the actual field survey a pilot field survey for three days at three different cordan points (i.e. Chattar, Rawat and Ternol) and also at Pirvadhai Bus stand was carried out to iron-out any procedural bottlenecks. During the field survey it was discovered that there are other bus stands in the city from where the buses run for intercity and passes through three other cordan points (i.e. Jhang Saidan, Kagh and Fauji Cereal Factory Moar). Hence in actual field survey these three cordan points were included in the list of cordan points.

The actual survey was carried out in September, 1990 for 8 hours a day, for eighteen days, without any break, at various locations mentioned in article 3.1.

During the field survey the survey staff boarded the buses at cordan points and recorded the requisite information by interviewing the passengers.

1.8 EXPLANATORY/JUSTIFICATIONARY NOTES OF THE QUESTIONNAIRE.

The self explanatory note of the questionnaire and a copy of the Questionnaire is annexed at annexure IV.

CHAPTER - II

LITERATURE REVIEW

2.1 INTERCITY PASSENGER TRAVEL DEMAND (3)

Similar to the intra-city passenger travel demand, intercity passenger travel demand is aimed at relating intercity traffic to the socio-economic characteristics of the travellers and to the technical and level hand of service characteristics of the transportation system. The motivation for this stems mainly from the need to perform feasibility analysis of transportation projects. Unlike urban transportation planning, the design of transportation facilities is not as closely related to the results of demand analysis, because except in some special cases, intercity transportation system are normally non capacity contrived. The crucial question in intercity transportation planning is often the feasibility of transportation system links, rather than their specific capacity and design characteristics.

The fundamental of intercity transportation demand analysis rest on the observation of regularities in the spatial distribution of socio-economic activities, as indicated by the location of cities.

Distance or generalized transportation cost enters into almost all intercity transportation models. It is not only stands for the cost of travel in the conventional sense required by demand theory but also stands as a proxy for many other qualitative aspects of the interaction among cities of different sizes. In a nut shell, the stratification of intercity transportation analysis by distance is desirable and in many cases essential.

2.2 CHARACTERISTICS OF INTERCITY TRAVEL DEMAND (3)

2.2.1 Trip Purpose

Intercity travel is normally undertaken for the same trip purpose common in urban travel. The most common trip purpose in intercity travel are business, recreation and personal business. Business travel has a purpose usually related to the travellers work, but it is not work travel, in the sense known in urban areas. Recreation travel is usually related to the traveller's vacation, although it could also be intended for other specific recreational activities such as sports events or political and religious rallies. The most common purpose under personal business travel is visiting friends and relatives.

2.2.2 Trip Length

The demands for intercity travel over different trip lengths exhibit fundamentally different characteristics. They have different elasticities. To their various determinants and follow different temporal patterns. Consequently, the stratification by trip length is an essential disaggregation in intercity demand analysis. In most intercity Transportation demand analysis, it is customary to distinguish between two types of travel, long-haul and short-haul.

2.3 INTERCITY TRAVEL BEHAVIOUR

Disaggregate studies of individual intercity trip makers are expensive and difficult to conduct. Consequently not many such studies have been conducted, and intercity travel behaviour remain not nearly as well understood as urban travel behaviour.

2.4 APPROACHES TO INTERCITY DEMAND ANALYSIS (3)

Two approaches have evolved for the analysis of intercity transport demand. One approach is multimodal in nature and recognizes that the demands for travel by different modes are related and should be analysed simultaneously. The other is a mode-specific approach that is based on the Proposition that the demands for travel by different modes are independent, or can be so assured and therefore analysed separately.

2.5 INTERCITY BUS STAND (1)

An intercity bus stand is a place where buses terminate or start for commercial operation on different intercity routes, it is also called as bus terminal, (like in U.S.A). An ideal intercity bus-stand is combined with a Bus depot. Although it need not necessarily be so.

2.6 LOCATION AND OTHER QUALITIES OF AN INTERCITY BUS-STAND

Since a bus-stand is used by the public, it should be located in city centre. But it is hard to obtain a Central Site except at prohibitive cost (unless inherited from a far sighted previous management). Therefore, there is a growing tendency to locate away from congested areas of old towns. Care, however, should be taken that the principal routes of the city bus service do serve the selected place. It is therefore, advisable to look out for a Central site with an eye on the intersection whenever an area or a satellite town is under construction. However, the following points may be kept in view when selecting a location for bus-stand.

2.6.1 Accessibility

The site should be easily accessible by good wide roads, free of congestion and nearby intersection, so that buses are not unduly held up. Preferably it should have a two-street frontage.

2.6.2 Area Requirement

This is determined by the number of buses to be parked at any one time. Four hundred square feet of floor area per bus will allow easy movement of vehicles in and out if parked in fish bone style. The covered area will be required for offices, servicing, routine repairs and major overhaul shops, tyres batteries etc. In any case the area should be large enough to accomodate at least 10 years future expansion plan.

2.6.3 Reservations and Enquiry Office

At bus stands where passenger traffic is heavy; it is necessary to institute a streamlined Reservation and Enquiry Office whose function are detailed below:

1. To answer all enquiries from the public about the timing fare and other matters.
2. To accept advance booking of seats in timed bus services.
3. To arrange booking of buses on private hire, excursion and Tour. The purpose of issuing tickets in advance is to ensure the passenger that he will get a seat. This is an essential amenity which must be provided at the Bus Stand

2.6.4 Miscellaneous Requirement

2.6.4.1 Cleanliness

Cleanliness attracts passengers. The premises must be kept clean. Waste paper baskets and open refuse drums should be kept at convenient points.

2.6.4.2 Public Address System

At bus stands a public address system should be installed. Arrivals, departures and other relevant information like delays, lost and found must be announced, light background music will be absorbing for the waiting passengers.

2.6.4.3. Loading/Unloading Bays and Ramp
 Bus stand having large space and handling large number of bus departures and arrivals should be provided with saperate bays for different routes this will relieve congestion in the yard and also eliminate the possibility of the passengers getting into the wrong bus.

2.6.4.4 Cloak Room
 At bus stands where there is lot of inter-change traffic passengers have to wait for quite some time for the connecting bus service. It is therefore, desirable that where there is demand a separate room should be earmarked for left luggage.

2.6.4.5 Clock

Every booking office must be provided with a clock which should be installed at a prominent place visible to the passengers.

2.6.4.6 Fire Points

Fire breakout is not an uncommon thing. Precautions must be kept against fire breakout. The most important precaution is vigilance. An adequate number of fire point to cover the installation must be established in the bus stands. Telephone number Fire brigade must be exhibited at important places.

2.6.4.7 Lost Property

All lost property articles must be handed over to the Officer concerned. After entries are made in the lost property register, they should be kept under safe custody.

2.7 BUS STOPS, CONGESTION AND CONGESTED BUS-STOPS

The two main components in road traffic in both developed & developing countries are buses and cars. They normally interact with each other & this interaction may result in problems of different nature and emphasis. The proportions in which each of these vehicles types appear on most urban roads depends on the local conditions e.g. it is common to find a relatively low number of buses in most cities in the industrial world. This number is higher in CBDs and the traffic behaviours of their buses may affect in an important way to the overall efficiency of the transport network there.

In contrast, buses often appear in fairly high numbers in most developing countries, constituting more than 50% of the vehicles on some corridors. A high number of buses say 120 or more an hour can be combined with different level of car traffic, say up to and above 600 cars per hour per lane.

The type of problems generated in each of these typical situation will, of course, be different, the best solution to these will have to be specific to local conditions. Delay at the intersections is now attributable as much to buses as it to cars. Furthermore a good deal of delay to bus passengers takes place at bus stops & seem to be carried by interference among buses rather than with other vehicles. These phenomenon become increasingly complex & require solution of increased sophistications.

CHAPTER - III

DATA ANALYSIS

3.1 INTRODUCTION

To identify a suitable location for the Bus Stand of intercity public transport, a survey was conducted for eighteen days between 08:00 Hrs to 16:00 Hrs daily at six designated cordon points from where the intercity traffic enters into/leaves the twin cities of Rawalpindi and Islamabad with other parts of the country. Details of the survey duration are as under:-

S.No.	Cordon Point	Duration	S.No.	Cordon Point	Duration
1.	Chattar	Five Days	2.	Jhang Saydan	One Day
3.	Kagh	One Day	4.	Rawat	Five Days
5.	Fauji C.F.Moar.	One Day	6.	Ternol	Five Days

3.2 PASSENGERS INTERVIEWED AT CORDAN POINTS BY TYPES OF MODE

It was clear from the pilot survey that intercity travel is done by Bus, Wagon, Flying Coach, Taxi and Private Car. But mostly the intercity public transport which are available for the public are buses, wagons and coaches. Hence in actual field survey the passengers of Buses, Wagons and Coaches were interviewed.

A total 5107 number of passengers travelling through different cordon points were interviewed. Out of total passengers the maximum 68.0% (3470) were of buses followed by wagons 28.5% (1457) and coaches 3.5% (180). The highest (33.4%) passengers were interviewed at Rawat cordon point followed by 32.7% at Ternol (because a higher number of intercity Public Transport passes through these cordon points), 20.5% at Chattar, 5.9% at Kagh, 5.6% at Jhang Saydan and 1.9% at Fauji Cereals Factory Moar cordon points as shown in the Table No.3.1.

Table No.3.1 (Figures in Percentage)

Types of Mode	Bus	Wagon	Coach	Total
Chattar.	13.1	7.4	-	20.5
Jhang Saydan.	4.8	0.8	-	5.6
Kagh.	4.3	1.6	-	5.9
Rawat.	20.0	10.3	3.1	33.4
Fauji Cereals Fac.Moar	0.3	1.6	-	1.9
Tarnol.	25.5	6.8	0.4	32.7
Total:-	68.0	28.5	3.5	100.0

3.3 PASSENGERS PASSING (GOING/COMING) THROUGH VARIOUS CORDAN POINTS BY TYPES OF MODE.

Out of total 5107 passengers (3616) 70.8% were interviewed while leaving the city (going) and the remaining (1491) 29.2% passengers were interviewed while entering into the city (coming) at all six cordan points. Out of total Bus passengers (2286) 65.9% were interviewed while leaving the city (going) and (1184) 34.1% were interviewed while entering into the city (coming) as shown in the Table No.3.2.

Table No.3.2 (Figures in Percentage)

Mode of Transport	BUS		
	Coming	Going	Total
Function			
Cordan Point			
Chattar.	7.9	11.4	19.3
Jhang Saydan.	4.1	2.9	7.0
Kagh.	5.1	1.2	6.3
Rawat.	8.3	21.2	29.5
Fauji Cereals F.Moar	0.3	0.1	0.4
Ternol.	8.4	29.1	37.5
Total:-	34.1	65.9	100.0

3.4 PASSENGERS PASSING (COMING/GOING) THROUGH VARIOUS CORDAN POINTS TO/FROM DIFFERENT BUS STANDS.

It is evident from the Table No.3.3 that bus passengers were coming/going from/at six Bus stands i.e. Pirvadhahi Bus stand (95.6%), Station Road Bus Stand (2.3%), 22 No. Chungi Bus stand (0.4%), Chah Sultan Bus stand (1.5%), Raja Bazar Bus stand (0.2%). Out of total 3470 bus passengers 7.4% came to Pirvadhahi Bus Stand from chattar cordan point, 3.3% from Jhang Saydan cordan point, 4.1% from Kagh cordan point, 8.3% from Rawat cordan point and 8.4% from Ternol cordan point. Whereas the passengers went back from Pirvadhahi Bus stand and passed through Jhang Saydan cordan point were 1.9%, 0.7% passed through Kagh cordan point, 21.1% passed through Rawat cordan point and 29.0% passed through Ternol cordan point.

The bus passengers came to Station Road Bus Stand 0.5% from Chatter cordan point and 0.9% from Kagh cordan point. Whereas the passengers went back from the Station Road Bus Stand and passed through Jhang Saydan cordan point were 0.3%, 0.5% passed through Kagh cordan point and 0.1% passed through Rawat cordan point.

The bus passengers came to 22 No. Chungi Stand from Fauji Cereals Factory Moar cordan point were 0.3%. Only 0.1% passengers went back from 22 Number Chungi Bus stand and passed through Fauji Cereals Factory Moar cordan point.

The bus passengers came to Chah Sultan Bus Stand from Jhang Saydan cordan point were 0.8% and 0.1% from Kagh cordan point . Whereas 0.6% passengers went back from Chah Sultan Bus Stand and passed through Jhang Saydan cordan point.

The bus passengers went back from Raja Bazar Bus Stand and passed through Jhang Saydan cordan point were only 0.1% and only 0.1% were passed through Ternol cordan point as shown in the Table No.3.3. below:-

Table No.3.3 (Figures in Percentage)

Cordan Point	Bus Stand	P-V	St.Rd.	22 No.	Ch. Sn.	R-B	Total
Chattar	Coming	7.4	0.5	-	-	-	7.9
	Going	11.4	-	-	-	-	11.4
	Total:-	18.8	0.5	-	-	-	19.3
Jhang Saydan	Coming	3.3	-	-	0.8	-	4.1
	Going	1.9	0.3	-	0.6	0.1	2.9
	Total:-	5.2	0.3	-	1.4	0.1	7.0
Kagh	Coming	4.1	0.9	-	0.1	-	5.1
	Going	0.7	-	-	-	-	1.2
	Total:-	4.8	1.4	-	0.1	-	6.3
Rawat	Coming	8.3	-	-	-	-	8.3
	Going	21.1	0.1	-	-	-	21.2
	Total:-	29.4	0.1	-	-	-	29.5
F.C.F.M.	Coming	-	-	0.3	-	-	0.3
	Going	-	-	0.1	-	-	0.1
	Total:-	-	-	0.4	-	-	0.4
Ternol	Coming	8.4	-	-	-	-	8.4
	Going	29.0	-	-	-	0.1	29.1
	Total:-	37.4	-	-	-	0.1	37.5
Grand Total:-	Coming	31.5	1.4	0.3	0.9	-	34.1
	Going	64.1	0.9	0.1	0.6	0.2	65.9
Grand Total:-		95.6	2.3	0.4	1.5	0.2	100.0

Note:- F.C.F.M = Fauji Cereals Factory Moar, P-V = Pirvadhai,
St. Rd. = Station Road, 22 No = 22 No.Chungi, Ch.Sn = Chah Sultan
and R-B = Raja Bazar.

3.5 EMBARKATION/DISEMBARKATION FROM/AT THE BUS STANDS/STOPS

It was observed and recorded during the field survey that the passengers embark/disembark from/at various places along the route as well as at the bus stand. It is evident from the results given in the table No.3.4. that the (2286) 65.9% embarking passengers and (1184) 34.1% disembarking passengers were interviewed. Out of total embarking passengers 74.5% were embarking from the Bus Stands and maximum 46.3% passengers were embarking from Pirvadhai Bus Stand followed by 9.7% from Faizabad Bus Stop, 1.8% from Saddar Bus Stop etc. Where as out of total disembarking passengers 49.3% were disembarking at the Bus Stands and maximum 13.3% were disembarking at Pirvadhai Bus Stand followed by 8.1% at Faizabad Bus Stop, 2.4% at Saddar Bus Stop etc.

Table No.3.4

(Figures in %)

S.No.	NAME OF STOP	BUS PASSENGERS (3470)		
		EMBARKING	DISEMBARKING	TOTAL
1.	Ternol	-	-	-
2.	Coca Cola Factory	-	-	-
3.	Modern Flour Mills	-	-	-
4.	Kohinoor Mills	0.4	0.7	1.1
5.	Fazal Abad	-	-	-
6.	Chatter	-	0.1	0.1
7.	Bahara Kao	0.1	0.7	0.8
8.	Malpur	-	-	-
9.	Dhokri	0.6	0.4	1.0
10.	Rawal Dam	0.1	0.1	0.2
11.	Rawat	-	-	-
12.	Air Port	0.1	0.2	0.3
13.	Lehtrar Bridge	0.1	0.2	0.3
14.	Faizabad	9.7	8.1	17.8
15.	Pindora Chungi	1.2	1.5	2.7
16.	C.D.A. Colony	0.4	0.4	0.8
17.	Pir-Vadhai More	2.6	2.0	4.6
18.	Pir-Vadhai	46.3	13.3	59.6
19.	22 Number Chungi	0.1	0.3	0.4
20.	Katcheri	0.1	0.6	0.7
21.	Saddar	1.8	2.4	4.2
22.	Raja Bazar	0.2	0.1	0.3
23.	Mareer Hasan	0.4	0.7	1.1
24.	Moti Mahal	0.3	0.3	0.6
25.	Chah Sultan	0.7	0.7	1.4
26.	Shangrilla Hotel	-	-	-
27.	Committee Chowk	-	-	-
28.	Central Hospital	0.1	0.1	0.2
29.	Sixth Road	-	0.1	0.1
30.	Highway Bridge	0.6	1.0	1.7
31.	Attock Oil Company	-	-	-
Total:-		65.9	34.1	100.0

Note:- At Sr.No. 18,19,21,22 and 25 are Bus Stands; and At Sr.No.1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,20,23,24,26,27,28,29,30 and 31 are Bus Stops.

3.6 REASONS FOR EMBARKING/DISEMBARKING FROM/AT THE BUS STOPS

Passengers were also asked about the reasons for embarking and disembarking at the particular bus-stop or bus-stand. The highest 35.0% passengers answered that this bus stop/stand is the nearest stop/stand from their place of residence/business and shopping. 28.3% passengers answered that it is because of the availability of seat and public transport from the origin, 18.5% answered that it is due to the availability of public transport to reach final destination, 5.6% replied that it is due to time saving/comfortable journey, 7.4% passengers said that at this place the interchange facility for Bus/Wagon/Coach is available and in the last 5.2% said to save intracity fare as shown in Table No.3.5 below:-

(Figures in Percentage)

Table No.3.5

REASONS GIVEN BY BUS PASSENGERS	FUNCTION	EMBARKING	DISEMBARKING	TOTAL
a. Availability of Seat and Transport from the Origin		24.7	3.6	28.3
b. Availability of Public Transport to reach final destination		7.7	10.8	18.5
c. Time Saving/Comfort. Journey.		5.0	0.6	5.6
d. Nearest Bus Stand from residents/place of business/shopping		18.6	16.4	35.0
e. Interchange facility for Bus/Wagon/Coach		5.4	2.0	7.4
f. Intracity fare saving		4.5	0.7	5.2
Total:-		65.9	34.1	100.0

3.7 ORIGIN (INTERNAL ZONE) -DESTINATION (BUS STAND) OF OUT GOING BUS PASSENGERS

To know the movement of passengers from origin to a particular stand or from a particular stand to their final destination, we had divided the residential areas of Rawalpindi and Islamabad into 54 Internal zones (Annexure-I) and then recorded the number of passengers going into and going from these zones according to the Bus stands.

It is evident from the table No.3.6 that the highest 97.3% bus passengers were coming to Pirwadhai Stand and going outside the city followed by Station Road 1.4%, Chah Sultan 0.7%, 22 Number Chungi 0.4% and Raja Bazar 0.2%.

The origin of most of the bus passenger 28.7% was Zone No.38 (Pirwadhai) followed by Zone No.41 (Raja Bazar) 12.2%, Zone No.43 (Saddar) 8.1% etc. It means that about half of the total bus passengers going out from the city, start their journey from the three above mentioned zones.

Table No.3.6 Passengers Going to External Zones (55/56/57)
(Figures in Percentage)

Destination Origin	BUS STANDS (2286)					Total
	38	43	48	02	41	
1.	0.6	-	-	-	-	0.6
2.	2.2	-	0.5	-	-	2.7
3.	0.1	-	-	-	-	0.1
4.	-	-	-	-	-	-
5.	1.8	0.1	-	-	-	1.9
6.	0.1	-	-	-	-	0.1
7.	1.8	-	-	-	-	1.8
8.	0.6	-	-	-	-	0.6
9.	0.5	-	-	-	-	0.5
10.	1.1	-	0.1	0.1	-	1.3
11.	0.5	-	-	-	-	0.5
12.	1.0	-	-	-	0.1	1.1
13.	1.3	-	-	-	-	1.3
14.	0.3	-	-	-	-	0.3
15.	0.2	-	-	-	-	0.2
16.	-	-	-	-	-	-
17.	0.2	-	-	-	-	0.2
18.	1.0	-	-	-	-	1.0
19.	0.7	-	-	-	-	0.7
20.	0.7	-	-	-	-	0.7
21.	0.3	-	-	-	-	0.3
22.	0.3	-	-	-	-	0.3
23.	2.0	-	-	-	-	2.0
24.	2.5	-	-	-	-	2.5
25.	1.4	-	-	-	-	1.4
26.	2.7	-	-	-	-	2.7
27.	0.9	-	-	-	-	0.9
28.	0.5	-	-	-	-	0.5
29.	-	-	-	-	-	-
30.	0.2	-	-	-	-	0.2
31.	0.5	-	-	-	-	0.5
32.	0.3	-	-	-	-	0.3
33.	2.1	-	-	-	-	2.1
34.	1.7	-	-	-	-	1.7
35.	0.4	-	-	-	-	0.4
36.	1.0	-	-	-	-	1.0
37.	0.2	-	-	-	-	0.2
38.	28.5	0.1	-	0.1	-	28.7
39.	0.5	-	-	-	-	0.5
40.	0.1	-	-	-	-	0.1

Cont.....P/2

		BUS STANDS (2286)					
Destination	Origin	38	43	48	02	41	Total
41.		12.1	-	-	-	0.1	12.2
42.		0.7	-	-	-	-	0.7
43.		7.5	0.6	-	-	-	8.1
44.		2.9	0.2	-	0.1	-	3.2
45.		4.7	0.1	-	-	-	4.8
46.		4.7	-	-	0.1	-	4.8
47.		0.4	-	-	-	-	0.4
48.		0.6	0.1	-	-	-	0.7
49.		0.7	0.1	0.1	-	-	0.9
50.		1.1	-	-	-	-	1.1
51.		0.7	0.1	-	-	-	0.8
52.		0.1	-	-	-	-	0.1
53.		0.1	-	-	-	-	0.1
54.		0.2	-	-	-	-	0.2
Total:-		97.3	1.4	0.7	0.4	0.2	100.0

Note: 02 = Chah Sultan, 38 = Pir- Vadhai, 41 = Raja Bazar,
43 = Station Road, 48 = 22 No. Chungi

3.8. ORIGIN (BUS STAND) - DESTINATION (INTERNAL ZONE) OF INCOMING BUS PASSENGERS.

It is evident from the table No.3.7 that out of total 1184 incoming Bus passengers the highest 92.4% were coming to the Pirvadhai bus stand followed by 4.1% to station road, 0.9% to 22 Number Chungi and 2.6% to Chah Sultan and going to various zones. No passenger was found coming to Raja Bazar bus stand.

The final destination of most of the passengers (18.7%) was zone No. 38 (Pirvadhai) followed by Zone No.41 (Raja Bazar) 11.6%, zone No.43 (Saddar) 10.3%, Zone No.45 (Satellite Town) 6.8%, Zone No.46 (Shamsabad) 6.0% etc. It means that more than half of the bus passengers interviewed were coming to the above mentioned five zones.

Table No.3.7 PASSENGERS COMING FROM EXTERNAL ZONES (55/56/57) (Figures: in %)

		BUS COMING (1184)													
Destination	Origin	01	02	03	04	05	06	07	08	09	10	11	12	13	14
(Bus Stand)															
P-V= (38)		0.8	2.4	0.6	0.1	1.1	0.1	0.4	0.8	1.0	2.5	0.3	0.7	1.5	0.2
St. Rd.= (43)		-	-	-	-	-	-	-	-	-	0.2	-	0.2	0.1	-
22 No.C= (48)		-	-	-	-	-	-	-	-	-	0.1	0.1	-	-	-
C-S= (02)		-	0.6	0.1	-	0.2	-	-	-	-	-	-	-	0.1	-
R-B= (41)		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total:-		0.8	3.0	0.7	0.1	1.3	0.1	0.4	0.8	1.0	2.8	0.4	0.9	1.7	0.2

		BUS COMING (1184)													
Destination	Origin	15	16	17	18	19	20	21	22	23	24	25	26	27	28
(Bus Stand)															
P-V= (38)		0.1	0.2	0.6	1.6	0.4	0.5	0.2	0.2	2.1	1.8	1.7	2.3	1.1	-
St. Rd.= (43)		-	-	0.1	-	-	-	-	0.1	-	-	-	-	-	-
22 No.C= (48)		-	-	-	-	-	-	-	-	-	-	-	-	-	-
C-S= (02)		0.1	-	-	-	-	-	-	-	-	-	-	-	-	-
R-B= (41)		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total:-		0.2	0.2	0.7	1.6	0.4	0.5	0.2	0.3	2.1	1.8	1.7	2.3	1.1	-

		BUS COMING (1184)													
Destination	Origin	29	30	31	32	33	34	35	36	37	38	39	40	41	42
(Bus Stand)															
P-V= (38)		-	0.2	0.1	0.3	1.2	1.7	1.8	0.9	0.3	18.6	0.3	0.2	9.9	0.3
St. Rd.= (43)		-	-	-	-	-	-	-	-	-	0.1	-	-	0.8	-
22 No.C= (48)		-	-	-	-	-	-	-	-	-	-	-	-	0.2	-
C-S= (02)		0.1	-	-	-	-	-	-	-	-	-	-	-	0.7	-
R-B= (41)		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total:-		0.1	0.2	0.1	0.3	1.2	1.7	1.8	0.9	0.3	18.7	0.3	0.2	11.6	0.3

		BUS COMING (1184)													
Destination	Origin	43	44	45	46	47	48	49	50	51	52	53	54	TOTAL	
(Bus Stand)															
P-V= (38)		7.5	3.9	6.8	6.7	0.1	1.3	1.9	2.3	0.5	0.1	0.2	-	92.4	
St. Rd.= (43)		2.3	0.1	-	-	-	0.1	-	-	-	-	-	-	4.1	
22 No.C= (48)		0.3	-	-	-	-	-	0.2	-	-	-	-	-	0.9	
C-S= (02)		0.2	0.1	-	-	0.1	-	0.3	-	-	-	-	-	2.6	
R-B= (41)		-	-	-	-	-	-	-	-	-	-	-	-	-	
Total:-		10.3	4.1	6.8	6.7	0.2	1.4	2.4	2.3	0.5	0.1	0.2	-	100.0	

3.9 OUT GOING BUS PASSENGERS ORIGIN (INTERNAL ZONES) - DESTINATION (EXTERNAL ZONES)

To record the movement of passengers from outside the city, the external part of the study area was divided into three external zones. The zone No.55 includes the area/cities beyond Chatter, Jhang saydan and Kagh Cordan points, Zone No.56 includes the area/cities beyond Rewat and Fauji Cereals Factory More Cordan points and Zone No.57 consists of the area/cities beyond Ternol cordan point.

It has been observed during the survey that the highest number of bus passengers (44.4%) were going to zone No.57 followed by 32.5% to Zone No.56 and 23.1% to zone No.55. The highest 28.7% of bus passenger were going to their external zones from the internal zone No.38 Pirvadhai followed by 12.2% from the zone No.41 Raja Bazar etc. as shown in the Table No.3.8 below:-

Table No.3.8 BUS PASSENGERS (2286) "GOING" (Figures in %age)

Dest. !	55 !	56 !	57 !	Total !	Dest. !	55 !	56 !	57 !	Total !
Orig. !	!	!	!	!	Orig. !	!	!	!	!
1.	0.3	0.2	0.1	0.6	!29.	-	-	-	-
2.	1.1	0.6	1.0	2.7	!30.	-	0.1	0.1	0.2
3.	-	-	0.1	0.1	!31.	0.1	0.1	0.3	0.5
4.	-	-	-	-	!32.	0.1	0.2	-	0.3
5.	0.3	0.4	1.2	1.9	!33.	-	0.9	1.2	2.1
6.	-	-	0.1	0.1	!34.	0.3	0.4	1.0	1.7
7.	0.5	0.4	0.9	1.8	!35.	0.1	0.1	0.2	0.4
8.	0.1	0.3	0.2	0.6	!36.	0.3	0.3	0.4	1.0
9.	0.1	0.2	0.2	0.5	!37.	0.1	-	0.1	0.2
10.	0.3	0.4	0.4	1.1	!38.	5.7	11.9	11.1	28.7
11.	-	0.2	0.3	0.5	!39.	0.1	0.2	0.2	0.5
12.	0.2	0.3	0.6	1.1	!40.	0.1	-	-	0.1
13.	0.4	0.2	0.7	1.3	!41.	3.0	2.6	6.6	12.2
14.	-	0.2	0.1	0.3	!42.	0.1	0.1	0.5	0.7
15.	-	0.1	0.1	0.2	!43.	2.1	2.6	3.4	8.1
16.	-	-	-	-	!44.	1.1	0.7	1.4	3.2
17.	-	0.1	0.1	0.2	!45.	1.2	0.8	2.8	4.8
18.	0.3	0.5	0.2	1.0	!46.	1.7	1.7	1.4	4.8
19.	0.1	0.4	0.2	0.7	!47.	0.1	0.1	0.2	0.4
20.	-	0.2	0.5	0.7	!48.	0.1	0.4	0.2	0.7
21.	0.1	0.2	-	0.3	!49.	0.5	0.2	0.2	0.9
22.	0.1	-	0.2	0.3	!50.	0.3	0.2	0.6	1.1
23.	0.5	0.7	0.8	2.0	!51.	0.2	-	0.6	0.8
24.	0.7	0.8	1.0	2.5	!52.	-	0.2	-	0.2
25.	0.2	0.5	0.7	1.4	!53.	0.2	-	-	0.2
26.	0.3	1.1	1.3	2.7	!54.	-	-	-	0.2
27.	0.1	0.5	0.3	0.9	!	-	-	0.2	0.2
28.	-	0.3	0.2	0.5	!	-	-	-	-
!TOTAL:-					23.2	32.6	44.2	100.0	

3.10 INCOMING BUS PASSENGERS ORIGIN (EXTERNAL ZONE) - DESTINATION
(INTERNAL ZONE)

Out of total 1184 incoming bus passengers 50.3% came from Zone No.55, followed by 29.4% from Zone No.57 and 24.8% came from the Zone No.57 at different five bus stands to go to the total 54 internal zones.

The maximum (18.7%) of bus passengers responded that their final destination will be zone No.38 (Pirvadhai) followed by 11.6% to Zone No.41 (Raja Bazar), 10.3% to Zone No.43 (Saddar) etc. as shown in Table No.3.9 below:-

Table No.3:9 BUS PASSENGERS ORIGIN (EXTERNAL ZONES) - DESTINATION (INTERNAL ZONES)
(Figures in Percentage)

		BUS COMING (1184)													
Destination !		Origin.													
		01	02	03	04	05	06	07	08	09	10	11	12	13	14
BUS. (1184)	55	0.1	2.5	0.4	-	0.7	0.1	0.2	0.3	0.5	2.0	0.1	0.7	1.1	0.1
	56	0.6	0.2	0.2	0.1	0.3	-	0.2	0.4	0.3	0.2	0.1	-	0.4	-
	57	0.1	0.3	0.1	-	0.3	-	-	0.1	0.2	0.6	0.2	0.2	0.2	0.1
Total:-		0.8	3.0	0.7	0.1	1.3	0.1	0.4	0.8	1.0	2.8	0.4	0.9	1.7	0.2

		BUS COMING (1184)													
Destination !		Origin.													
		15	16	17	18	19	20	21	22	23	24	25	26	27	28
BUS. (1184)	55	0.2	-	0.5	0.5	0.2	0.2	-	0.1	0.5	0.7	0.7	0.5	0.3	-
	56	-	0.1	0.1	0.9	0.1	0.2	0.1	0.2	1.3	0.9	0.5	0.9	0.4	-
	57	-	0.1	0.1	0.2	0.1	0.1	0.1	-	0.3	0.2	0.5	0.9	0.4	-
Total:-		0.2	0.2	0.7	1.6	0.4	0.5	0.2	0.3	2.1	1.8	1.7	2.3	1.1	-

		BUS COMING (1184)													
Destination !		Origin.													
		29	30	31	32	33	34	35	36	37	38	39	40	41	42
BUS. (1184)	55	0.1	0.1	-	0.2	0.4	0.4	0.5	0.7	0.1	8.8	0.2	0.2	6.4	0.1
	56	-	0.1	-	0.1	0.2	0.5	0.1	-	0.1	5.4	-	-	1.7	-
	57	-	-	0.1	-	0.6	0.8	1.2	0.2	0.1	4.5	0.1	-	3.5	0.2
Total:-		0.1	0.2	0.1	0.3	1.2	1.7	1.8	0.9	0.3	18.7	0.3	0.2	11.6	0.3

		BUS COMING (1184)												TOTAL
Destination !		Origin.												
		43	44	45	46	47	48	49	50	51	52	53	54	
BUS. (1184)	55	5.1	2.5	2.0	3.8	0.2	0.7	2.1	2.2	0.2	0.1	-	-	50.3
	56	2.2	0.8	2.5	1.8	-	0.3	0.3	-	0.1	-	-	-	24.9
	57	3.0	0.8	2.3	1.1	-	0.4	-	0.1	0.2	-	0.2	-	24.8
Total:-		10.3	4.1	6.8	6.7	0.2	1.4	2.4	2.3	0.5	0.1	0.2	-	100.0

3.11 PASSENGER-KILOMETERAGE FOR THE BUS STAND.

It is evident from the table No.3.10 that out of 3470 interviewed bus passengers, 2286 (65.9%) passengers were out going and 1184 (34.1%) were incoming. Out of total out going passengers maximum 46.3% were embarking from Pirvadhahi Bus Stand and out of total in coming passengers 13.3% were disembarking at Pirvadhahi Bus Stand. Hence more than 54.0% passengers were embarking from various bus stops in the bus and more than 85.0% were disembarking at various Bus Stops along the route.

Table No.3.10 shows that out of 2286 out going passengers (2228) 97.3% were coming at Pirvadhahi Bus stand and only (58) 2.7% were coming at other bus stands. Table No.3.11 shows that the out going passengers were coming to Pirvadhahi bus stand from all 54 zones and covering a distance of 8034 passengers-kilometer. If this bus stand had to be at Liaquat Bagh then the passengers had to cover a distance of 9875 passengers-kilometer which is 18.6% more passenger-kilometerage than for Pirvadhahi bus stand as shown in table No.3.12.

Table No.3.13 shows that out of 1184 incoming passengers (1094) 92.4% were disembarking at Pirvadhahi Bus Stand and only (90) 7.6% were disembarking at other bus stands and reaching to their final destination in the internal zones by covering a distance of 4704 passenger-kilometers and if the bus stand had to be at Liaquat Bagh then they had to cover a distance of 5167 passenger-kilometers which is 9.0% more passenger-kilometerage than for Pirvadhahi Bus Stand as shown in Table Nos. 3.14 and 3.15 respectively.

3.12 TIME AND FARE FOR INTRACITY TRAVEL

It is evident from the result shown at Annexure-IV that the passengers reached at the Bus stands by walk, by Bicycle, by Motorcycle, by Car, by Rickshaw, by Wagon, by Suzuki Pick-up and also by Tonga from their origin (Internal Zones). The same modes are used to go back to their destination (Internal Zones) from the bus stand. Because passengers come from different internal 54 zones and go back to different internal 54 zones so each mode of transport takes different time from different internal 54 zones and also from Bus stands to different internal 54 zones. It has also been observed that some times they use two or three modes of transport to reach the Bus stands from their origins (i.e. internal 54 zones) and vice versa.

Table No.3.10 Passengers Going to External Zones (55/56/57)
(Figures in Numbers)

Destination Origin	BUS STANDS (2286)					Total
	38	43	48	02	41	
1.	14	-	-	-	-	14
2.	50	-	11	-	-	61
3.	2	-	-	-	-	2
4.	-	-	-	-	-	-
5.	41	2	-	-	-	43
6.	2	-	-	-	-	2
7.	41	-	-	-	-	41
8.	14	-	-	-	-	14
9.	11	-	-	-	-	11
10.	25	-	2	2	-	29
11.	11	-	-	-	-	11
12.	23	-	-	-	2	25
13.	30	-	-	-	-	30
14.	7	-	-	-	-	7
15.	5	-	-	-	-	5
16.	-	-	-	-	-	-
17.	5	-	-	-	-	5
18.	23	-	-	-	-	23
19.	16	-	-	-	-	16
20.	16	-	-	-	-	16
21.	7	-	-	-	-	7
22.	7	-	-	-	-	7
23.	46	-	-	-	-	46
24.	57	-	-	-	-	57
25.	32	-	-	-	-	32
26.	62	-	-	-	-	62
27.	21	-	-	-	-	21
28.	11	-	-	-	-	11
29.	-	-	-	-	-	-
30.	5	-	-	-	-	5
31.	11	-	-	-	-	11
32.	8	-	-	-	-	8
33.	48	-	-	-	-	48
34.	39	-	-	-	-	39
35.	9	-	-	-	-	9
36.	23	-	-	-	-	23
37.	5	-	-	-	-	5
38.	652	2	-	2	-	656
39.	11	-	-	-	-	11
40.	2	-	-	-	-	2

Cont.....P/2

		BUS STANDS (2286)					
Destination	Origin	38	43	48	02	41	Total
41.	277	-	-	-	-	2	279
42.	16	-	-	-	-	-	16
43.	172	14	-	-	-	-	186
44.	66	5	-	-	2	-	73
45.	108	2	-	-	-	-	110
46.	108	-	-	-	2	-	110
47.	9	-	-	-	-	-	9
48.	14	2	-	-	-	-	16
49.	16	2	2	-	-	-	20
50.	25	-	-	-	-	-	25
51.	16	2	-	-	-	-	18
52.	2	-	-	-	-	-	2
53.	2	-	-	-	-	-	2
54.	5	-	-	-	-	-	5
Total:-	2228	31	15	8	4		2286

Note: 02 = Chah Sultan, 38 = Pir- Vadhai, 41 = Raja Bazar,
43 = Station Road, 48 = 22 No. Chungi

Table No.3.11.

PASSENGER KILOMETERAGE FROM ORIGIN ZONES TO THE PIRVADHAI BUS STAND

!PIRVADHAI BUS STAND ZONE NO.38!				!PIRVADHAI BUS STAND ZONE NO.38!			
No.of!	Number of!	Distance!	Passenger!	No.of!	Number of!	Distance!	Passenger!
Zones!	Passengers!	in Km.	Kilometer!	Zones!	Passengers!	in Km.	Kilometer!
1.	14	6.5	91	28	11	10.2	112
2.	50	3.5	175	29	-	7.5	-
3.	02	8.5	17	30	05	6.1	30
4.	-	5.4	-	31	11	4.6	51
5.	41	1.7	70	32	08	5.1	41
6.	02	2.6	5	33	48	3.4	163
7.	41	6.8	279	34	39	2.1	82
8.	14	12.5	175	35	09	5.5	49
9.	11	4.7	52	36	23	7.0	161
10.	25	5.2	130	37	05	14.7	73
11.	11	6.2	68	38	652	0.3	196
12.	23	1.4	32	39	11	4.1	45
13.	30	3.9	117	40	02	4.3	9
14.	07	11.2	78	41	277	2.5	692
15.	05	10.8	54	42	16	1.3	21
16.	-	10.5	-	43	172	3.7	636
17.	05	13.3	66	44	66	4.7	310
18.	23	11.9	274	45	108	2.7	292
19.	16	10.1	162	46	108	4.9	529
20.	16	8.6	138	47	09	6.9	62
21.	07	7.6	53	48	14	4.8	67
22.	07	12.8	90	49	16	9.1	145
23.	46	10.4	478	50	25	11.0	275
24.	57	8.9	507	51	16	5.1	82
25.	32	7.5	240	52	02	15.5	31
26.	62	6.4	397	53	02	2.2	4
27.	21	5.9	124	54	05	0.9	4
				Total:-	2228	-	8034

Table No.3.12. PASSENGER KILOMETERAGE FROM ORIGIN ZONES TO THE LIAQAT BAGH BUS STAND

LIAQAT BAGH BUS STAND ZONE.41				LIAQAT BAGH BUS STAND ZONE.41			
No.of Zones	Number of Passengers	Distance in Km.	Passenger Kilometer	No.of Zones	Number of Passengers	Distance in Km.	Passenger Kilometer
1.	14	4.3	61	28	11	13.3	146
2.	50	2.1	106	29	-	4.4	
3.	02	5.4	11	30	05	7.9	40
4.	-	8.5	-	31	11	7.2	79
5.	41	2.2	90	32	08	6.4	52
6.	02	5.5	11	33	48	5.4	263
7.	41	3.6	150	34	39	5.0	198
8.	14	12.1	170	35	09	7.8	70
9.	11	6.3	69	36	23	4.7	108
10.	25	2.1	53	37	05	15.8	79
11.	11	4.7	53	38	652	3.4	2229
12.	23	3.9	91	39	11	2.5	27
13.	30	1.2	36	40	02	4.8	10
14.	07	13.6	95	41	277	1.0	210
15.	05	13.4	67	42	16	2.4	39
16.	-	13.3	-	43	172	1.4	248
17.	05	14.8	74	44	66	3.8	256
18.	23	13.8	318	45	108	3.8	410
19.	16	12.2	196	46	108	5.3	572
20.	16	11.2	179	47	09	7.1	64
21.	07	10.7	75	48	14	5.0	57
22.	07	14.0	98	49	16	8.0	128
23.	46	12.0	552	50	25	10.2	256
24.	57	10.8	619	51	16	2.1	34
25.	32	9.9	318	52	02	16.6	33
26.	62	9.1	565	53	02	3.1	6
27.	21	8.8	186	54	05	3.6	18
				Total:-			
				2228			9875

Table No.3.13 NUMBER OF PASSENGERS GOING TO INTERNAL ZONES FROM THE BUS STANDS

		BUS COMING (1184)													
Destination	Origin	01	02	03	04	05	06	07	08	09	10	11	12	13	14
<u>(Bus Stand)</u>															
P-V= (38)		09	28	07	01	13	01	05	09	12	31	04	08	18	02
St. Rd.= (43)		-	-	-	-	-	-	-	-	-	02	-	02	01	-
22 No.C= (48)		-	-	-	-	-	-	-	-	-	01	01	-	-	+
C-S= (02)		-	07	01	-	02	-	-	-	-	-	-	-	01	-
R-B= (41)		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total:-		09	35	08	01	15	01	05	09	12	34	05	10	20	02

		BUS COMING (1184)													
Destination	Origin	15	16	17	18	19	20	21	22	23	24	25	26	27	28
<u>(Bus Stand)</u>															
P-V= (38)		01	02	07	19	05	06	02	02	26	21	20	37	13	-
St. Rd.= (43)		-	-	01	-	-	-	-	01	-	-	-	-	-	-
22 No.C= (48)		-	-	-	-	-	-	-	-	-	-	-	-	-	+
C-S= (02)		01	-	-	-	-	-	-	-	-	-	-	-	-	-
R-B= (41)		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total:-		02	02	08	19	05	06	02	03	26	21	20	37	13	-

		BUS COMING (1184)													
Destination	Origin	29	30	31	32	33	34	35	36	37	38	39	40	41	42
<u>(Bus Stand)</u>															
P-V= (38)		-	02	01	04	14	20	21	11	04	220	04	02	117	04
St. Rd.= (43)		-	-	-	-	-	-	-	-	-	01	-	-	10	-
22 No.C= (48)		-	-	-	-	-	-	-	-	-	-	-	-	02	+
C-S= (02)		01	-	-	-	-	-	-	-	-	-	-	-	09	-
R-B= (41)		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total:-		01	02	01	04	14	20	21	11	04	221	04	02	138	04

		BUS COMING (1184)													
Destination	Origin	43	44	45	46	47	48	49	50	51	52	53	54	TOTAL	
<u>(Bus Stand)</u>															
P-V= (38)		89	46	81	79	01	15	23	28	06	01	02	-	1094	
St. Rd.= (43)		28	01	-	-	-	01	-	-	-	-	-	-	48	
22 No.C= (48)		05	-	-	-	-	-	02	-	-	-	-	-	11	
C-S= (02)		02	01	-	-	01	-	05	-	-	-	-	-	31	
R-B= (41)		-	-	-	-	-	-	-	-	-	-	-	-	-	
Total:-		124	48	81	79	02	16	30	28	06	01	02	-	1184	

Table No.3.14
PASSENGER KILOMETERAGE FROM PIRVADHAI BUS STAND TO DESTINATION ZONES

!PIRVADHAI BUS STAND ZONE NO.38!				!PIRVADHAI BUS STAND ZONE NO.38!			
No.of!	!No.of!			No.of!	!No.of!		
Zones!	Number of!	Distance!	Passenger!	Zones!	Number of!	Distance!	Passenger!
	Passengers!	in Km.	Kilometer!		Passengers!	in Km.	Kilometer!
1.	09	06.5	59	28	-	10.2	-
2.	28	03.5	98	29	-	07.5	-
3.	07	08.5	60	30	02	06.1	12
4.	01	05.4	05	31	01	04.6	05
5.	13	01.7	22	32	04	05.1	20
6.	01	02.6	03	33	14	03.4	48
7.	05	06.8	34	34	20	02.1	42
8.	09	12.5	113	35	21	05.5	116
9.	12	04.7	56	36	11	07.0	77
10.	31	05.2	161	37	04	14.7	59
11.	04	06.2	25	38	220	00.3	66
12.	08	01.4	11	39	04	04.1	16
13.	18	03.9	70	40	02	04.3	09
14.	02	11.2	22	41	117	02.5	293
15.	01	10.8	11	42	04	01.3	52
16.	02	10.5	21	43	89	03.7	329
17.	07	13.3	93	44	46	04.7	216
18.	19	11.9	226	45	81	02.7	219
19.	05	10.1	51	46	79	04.9	387
20.	06	08.6	52	47	01	06.9	07
21.	02	07.6	15	48	15	04.8	72
22.	02	12.8	26	49	23	09.1	209
23.	26	10.4	270	50	285	11.0	308
24.	21	08.9	187	51	06	05.1	31
25.	20	07.5	150	52	01	15.5	16
26.	27	06.4	173	53	02	02.2	04
27.	13	05.9	77	54	-	00.9	-
!Total:-					1094	-	4704

Table No.3.15

PASSENGER KILOMETERAGE FROM LIAQAT BAGH BUS STAND TO DESTINATION ZONES

No. of Zones	LQT. BAGH BUS STAND ZONE NO.41			LQT. BAGH BUS STAND ZONE NO.41		
	Number of Passengers	Distance in Km.	Passenger Kilometer	Number of Passengers	Distance in Km.	Passenger Kilometer
1.	09	04.3	39	28	-	13.3
2.	28	02.1	59	29	-	04.4
3.	07	05.4	39	30	02	07.9
4.	01	08.5	09	31	01	07.2
5.	13	02.2	29	32	04	06.4
6.	01	05.5	06	33	14	05.4
7.	05	03.6	18	34	20	05.0
8.	09	12.1	109	35	21	07.8
9.	12	06.3	76	36	11	04.7
10.	31	02.1	65	37	04	15.8
11.	04	04.7	19	38	220	03.4
12.	08	03.9	31	39	04	02.5
13.	18	01.2	22	40	02	04.8
14.	02	13.6	27	41	117	01.0
15.	01	13.4	13	42	04	02.4
16.	02	13.3	27	43	89	01.4
17.	07	14.8	104	44	46	03.8
18.	19	13.8	262	45	81	03.8
19.	05	12.2	61	46	79	05.3
20.	06	01.2	67	47	01	07.1
21.	02	10.7	21	48	15	05.0
22.	02	14.0	28	49	23	08.0
23.	26	12.0	312	50	28	10.2
24.	21	10.8	227	51	06	02.1
25.	20	09.9	198	52	01	16.6
26.	27	09.1	246	53	02	03.1
27.	13	08.8	114	54	-	03.6
				!Total:- 1094		
				! 5167		

3.13 OPERATION OF BUSES, WAGONS AND FLYING COACHES FROM THE STANDS.

It is evident from the tables 3.16, 3.17 and 3.18 that there are 22 Bus, Wagon and Flying Coach stands for intercity road transport in Rawalpindi and Islamabad. In 24 hours from these stands a total of 1999 buses, wagons and flying coaches are operated and their total seating capacity is 134,352 passengers. Whereas 74.3% passengers travel by Buses, 20.1% by wagons and 5.6% by the flying coaches on different intercity routes.

Table No.3.16

TOTAL NUMBER OF INTERCITY (BUS/WAGON/FLYING COACH) STANDS

Types of Vehicle	Rawalpindi	Islamabad	Total
Bus	06	01	07
Wagon	08	01	09
Flying Coach	06	-	06
Total:-	20	02	22

Table No.3.17

TOTAL NUMBER OF VEHICLES ENTER/LEAVE RAWALPINDI-ISLAMABAD (BUS, WAGON AND FLYING COACH) STAND IN 24 HOURS.

Types of Vehicles	Enter	Leave	Total
Buses	994	994	1988
Wagons	860	860	1720
Flying Coaches	145	145	290
Total:-	1999	1999	3998

Table No.3.18

TOTAL SEATING CAPACITY IN THE BUSES, WAGONS AND FLYING, COACHES IN 24 HOURS.

Mode	Enter	Leave	Total
By Bus	49904	49904	99808
By Wagon	13535	13535	27070
By Flying Coach	3737	3737	7474
Total:-	67176	67176	134352

CHAPTER - IV

BUS AND CONGESTION

4.1 INTRODUCTION

Cities or any human settlements always grow around some nucleus (i.e. some point of attraction). This point of attraction may be anything which the people find advantageous to them. For example the ancient cities were developed along river banks. The rate of development at any such nucleus depends upon the degree of socio-economic and physical importance that new nucleus exhibits. And keeping in view this degree of importance the future potential must be fore-sited and proper future planning must be done (Master Plan) mentioning the lines of development, and failure in doing so would result in the creation of complicated social and physical problems. Mostly people travel for intercity by bus and bus needs a suitable parking place in CBD from which it could carry maximum passengers and leave in the centre of the other cities.

4.2 BUS USER

The people generally using the bus service can broadly be categorized into following groups:-

1. Those who don't have their own transport arrangements like cars, jeeps etc.
2. Those who cannot afford other luxury modes of transport like aeroplane, upper class of railways.
3. Those living in such areas or going to such areas for which only mode of transport available is bus.

If we consider the above three classes then it is evident that the sieve through which they are passing is of lower middle class. So it is justified to say that bus service is generally utilized by lower middle class.

Uptill now the following points have been cleared:-

- a. Who is using this bus service.
- b. Where the user is living.
- c. Where the bus stand should be located.

4.3 IDEAL LOCATION OF BUS STAND

Before discussing the ideal location of a bus stand one should be very clear about the following points:-

1. What role bus plays in the society's overall transportation system.
2. Which class of the society is utilizing the bus service at maximum.
3. In which areas, this "bus using category" of the society is generally living.

According to a general rule of the society the development is used to be in a style of concentric rings in every city or urban centre. The inner most ring i.e. CBD area comprises of the lower and middle classes of the society those are living in old deteriorating houses, in slums or like wise. Going away from the central ring the standard of living also increases i.e. the rich and richer classes and elites.

As it is mentioned earlier that those who are using bus facility at maximum belong to lower middle class. According to a Socio-Economic Survey conducted by Housing and Physical Planning Rawalpindi, 60-70% of these lower middle classes are living around Murree Road, Saddar Bazar, Raja Bazar, Tench Bhata, 22 Number Chungi, Lalkurti, Dheri Hassan Abad i.e. almost the heart of Rawalpindi city. So where a bus stand should ideally be located. Is there any justification to provide a service at a place where the users are coming after covering a considerable distance and spending much time. Irony of fate is, that, some time the passengers have to pay more fare in reaching the bus stand than to reach the final destination and vice versa.

Once being clear about the class of society, utilizing the bus service, the ideal location for a bus stand can be proposed easily.

4.4 SHIFTING OF BUS STAND

At present, in technical terms, it is a problem area and solution does not lie in merely shifting a bus stand to somewhere else, but it is suggested that some other remedy should be adopted which would work without large expenditure.

In late 60's it came under consideration that the intercity Bus Stand from Liaquat Bagh had to be shifted elsewhere; For this purpose adequate land was earmarked, in the urban periphery, at Shah Allah Ditta Road (Pirvadhai) in the Master Plan of Rawalpindi. Then after some time the Bus Stand was shifted to the new site. Once it was shifted they took it that the problem had been solved. So neither any Master Plan was prepared nor any development control was applied at the new Bus Stand. So what happened was obvious, the area developed rapidly and haphazardly. The roads and terminals were not built with consideration to future influx of additional vehicles, this is one of the reasons of present day congestion.

4.5 CONGESTION BY BUSES

In the third world countries rather under developed countries the bus is regarded as the back bone of over all transportation system particularly when being operated on short inter-city routes. If threshold cost benefit analysis is worked out for buses, they some time even exceeds in return than the largest mass transit media i.e. railways, as a huge part of funds has to be spent on non-rail obligation. There has been a prejudices that buses create congestion on the roads. Infact, the congestion is not created by the buses but by the drivers who operate them. A bus usually carries 50 passengers and technically the maximum PCU value for bus is '3' while that of car is 1. To accommodate all the passengers travelling by bus (for intercity travelling) 12 cars, (4 passengers per Car) or 25 rickshaws (2 passengers per rickshaws) are required for intra-city travelling. So a single bus will be equal to about 12 cars in a traffic lane; and consequently they would create more congestion than a single bus.

There are many reasons for congestion like encroachment, haphazard development, improper parking, other loading and unloading violations etc. But the root cause of congestion is the bus driver behaviour and lack of management including enforcement what they use to do is keep on taking passengers at every place by stoping the bus at the road and disturbing the whole traffic system.

The justification which the authorities give in this connection is, the "Bus creates congestion". But the latest research and the surveys which have been carried out denies this old false assumption. Hence the buses do not create congestion.

CHAPTER -V

CONCLUSIONS

The intercity bus stand was shifted from Liaqat Bagh, Murree Road to Shah Allah Ditta Road (Pirvadhai) in the beginning of 1980's with the reason that the buses were creating congestions on the roads surrounding to the Liaqat Bagh and the parking space for parking the buses inside the bus stand was limited. Although these problems were solved upto certain extent by this shifting. But another problem of intra-city travelling of the passengers has aggravated. Due to shifting of bus stand, the commercial activities of CBD were also shifted near to the new bus stand and due to population growth in Rawalpindi and Islamabad. Some areas of Rawalpindi and some sectors of Islamabad have also developed and the General Bus Stand have become centriod of the twin cities (Rawalpindi and Islamabad).

On the basis of observations and the survey results of this study, it is concluded that now the Rawalpindi General Bus Stand at Shah Allah Ditta Road (Pirvadhai) is ideally located because of a unique situation on one side that is Rawalpindi and on the other is Islamabad. Because it is nearer to the origin and destination of majority of the out going and incoming traffic. However, the full answer of the objectives about shifting of bus stand in the out skirts of the city could not be achieved by this study.

The objectives of the research could be achieved if the new research is carried out for those bus stands which are really located to the out skirts of the big cities e.g. Lahore, Peshawar and Quetta.

In addition to the ideal location of the Pirvadhai Bus Stand its operation can be optimum, if it should be renovated and equiped with better facilities based on the lines provided in the chapter No.II. Hence the problems which are being faced there may be mitigated through the following recommendations:-

1. The Public should be educated with the held of public media to cooperate with law enforcing agencies in embarking and disembarking operations of passengers from the buses by the bus drivers.
2. The Bus drivers should be restricted, through law enforcing agencies that they would take passengers only at the terminal reserved for it. Once starting from the Bus Terminal they will not in any case stop before crossing the cantonment limits, except in case of some sudden technical fault or other real emergency.
3. Same standard should be setforth for the in-coming buses, once entred in the cantonment limits they would stop at the authorised Bus terminal only.

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4. Adjacent to the Bus Stand there should be a sub Bus Stand for intra city Public Transport, connecting all residential and commercial zones of twincity. Adequate number of buses, wagons and pick-ups should be allowed to operate there. The route permits should be given in Public as well as in Private sectors.

5. All on-site and off-site encroachment immediately be removed.

6. Strict development control should be exercised for the entire area.

7. The physical condition of all approaching roads should be improved immediately.

8. Master Plan for future growth of the locality should also be prepared.

REFERENCES

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2. Mr. Tom Rallis, Intercity Transport Engineering and Planning, "Intercity Transport Capacity".
3. Mr. Adib Kanafani, Transportation Demand Analysis, "Intercity Passenger Travel Demand".
4. H.M.S.O, Department of the Environment Scottish Development Department the Welsh Office, Roads in Urban Areas, "Bus and Coach services".
5. Rawalpindi Municipal Corporation, Master Plan, 1970

ZONE LIST WITH SUB-ZONES FOR THE STUDY

- 01 AIRPORT.
 a. Al-Noor Colony
 b. ADA Office
 c. Dhok Hukmdad
 d. Dhok Gangal
 e. Dhok Ghulam Rabbani
 f. Dhok Abdullah
 g. Dhok Tilihal
 h. Khurram Colony
 i. Nai Abadi
- 02 AMARPURA.
 a. Chak Sultan
 b. Glass Factory
 c. Naz Cinema
 d. RWP Gen.Hospital
- 03 ATTOCK OIL COMPANY
 a. Cambridge Barracks
 b. Dhok Bharian
 c. Kotha Kalan
 d. Labour Colony
 e. Nai Abadi Morgah
- 04 BADIA MAIRA
 a. Ziarat Sakhi Zinda Pir
 b. Badia Qadir Bakhsh
 c. Maira Qadir
- 05 BANNI
 a. Banni
 b. Dhok Dalalan
 c. Kohati Bazar
 d. Asghar Mall
- 06 CARRIAGE FACTORY
 a. Ban Mohra
 b. Nai Abadi
 c. Surain.
 d. Ziarat Muhammad Shah
07. CHAKLALA
 a. Chaklala (Nai Abadi)
 b. Dhok Munshi
 c. Dhok Kalu
 d. Gharibabad
 e. Shah Khalid Colony
- 08 CHAK SHAHZAD.
 a. Chak Shahzad
 b. Gawala Colony
 c. Dhok Ashraf
 d. Dhok Shaikhan
 e. Dhok Waris
 f. Health Colony
- 09 CHUHAR HARPAL
 a. Chuhar Camp
 b. Allahabad
 c. Dhok Naian
 d. Alpine Club
 e. Mehrabad
 f. Siham
 g. Dhok Gajran
 h. National Colony
- 10 CIVIL LINES
 a. Dhok Chiraghuddin
 b. Mareer Hasan
 c. Jhanda Chichi
 d. President House
 e. Civil Courts
 f. Central Jail
- 11 DHAMIAL CAMP
 a. Dhok Jallaluddin
 b. Kamalabad
 c. Mullani Mohallah
 d. Tahli Mohri
- 12 DHOK HASSU
 a. Chak Madad Khan
 b. Railway Colony

Contd.../Annexure - I

13. DHOK KHABBA
 a. Teli Mohallah
 b. Gulistan Cinema
 c. Dhok Elahi Bakhsh
 d. Dhok Farman Ali
 e. Mohallah Pir Tagir
14. E - 7
15. E - 8
16. E - 9
17. F - 5
18. F - 6
19. F - 7
20. F - 8
21. F - 10
22. G - 5
23. G - 6
24. G - 7
25. G - 8
26. G - 9
27. G - 10
28. GOLRA
 a. Ziarat Pir Mehr Ali
 b. Bhaikar Akku
 c. Hillian
 d. Dhok Saidan
 e. F - 11
29. GULISTAN COLONY
 a. Glass Factory
 b. Golf Course
30. H - 8
31. H - 9
32. I - 8
33. I - 9
34. I - 10
35. KOHI-NUR COLONY
 a. Surain Railway Station
 b. Northern Indus. Ltd.
 c. Modern Flour Mills Ltd.
 d. RWP. Flour & Gen M. Ltd
 e. Bombay Plywood Indus.
 f. Chishtiabad
 g. Microwave Stateion
 h. Nasirabad
 i. Rajabad
 j. Dhok Qasimabad
 k. High Court Bench
 l. Fazalabad
 m. Dhok Mustaqim
36. LAL-KURTI BAZAR
 a. C.M.H
 b. Sabzazar Colony
 c. Tali Mohri
 d. Dheri Hasanabad
 e. Lalazar Colony
37. NURPUR SHAHAN
 a. Ziarut Bari Latif Shah
38. PIRVADHAI
 a. General Bus Stand Rwp.

Contd.....

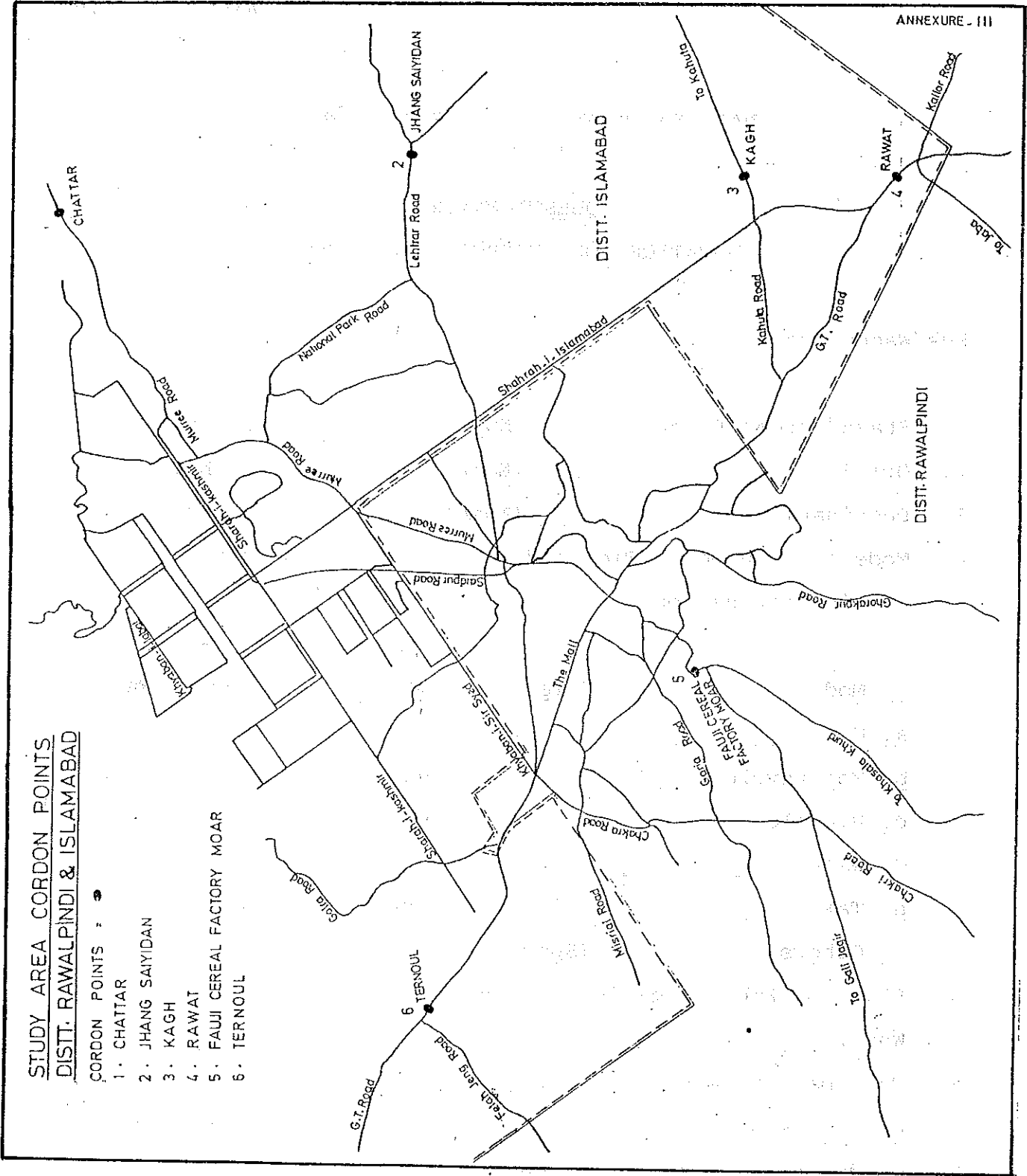
Contd.../Annexure - I

39. R. A. BAZAR
 a. T & T Colony
 b. Weslian Church
 c. Rawalpindi
 d. Huts
 e. Inds.Development Bank
40. RADIO PAKISTAN
 a. D.D.M.L & C.S.Office
 b. Baluchistan House
 c. Gommon House
 d. Misrial
 e. Dhok Dohman Pahariam
 f. Millat Colony
41. RAJA BAZAR
 a. Saïd Pura
 b. Chan Chiragh
 c. Bhabra Bazar
 d. Old Fort
 e. Sarafa Bazar
 f. DHQ. Hospital
 g. Mohan-Pura
 h. Nanak-Pura
42. RATTA AMRAL
 a. St.Marys Church
 b. Loco Shed
 c. Station Work Shop
 d. Al.Qamar Flour Mills
 e. Dhok Mangtei
43. SADDAR BAZAR
 a. Graeen
44. SADIQ ABAD
 a. Malikabad
 b. Femdi Colony
 c. Block-A
 d. Dhok Ali Akbar
 e. Dhok Piracha
 f. Dhok Kashmirian
45. SATELLITE-TOWN
 a. Block-D
 b. Rahaman Abad
 c. Hunzatentile Mills
 d. Block-B
 e. National Market
 f. Block-F
 g. Agriculture Form
46. SHAMSABAD
 a. Ojhri Camp
 b. Gulistan-i-Dadon Khan
 c. Dhok Kala Khan
47. SOHAN.
 a. Tali Mohri
 b. Mochi Mohra
 c. Botanical Garden
 d. Dhok Rahim Bakhsh
 e. Dhok Mohra Malal
48. TANCH BHATTA
 a. Mughalabad
 b. Adra
 c. People Colony
 d. Zeeshan Colony
 e. Dhok Chaudhrian
 f. Afshan Colony
 g. Dhok Saiyidair

Contd.....

Contd.../Annexure - I

49. TARLAI KALAN
 b. Ghagriot
 c. Dhok Manga
 d. Gumrah Kas
 e. Pandori Khurd
 f. Ziarat
 g. Pona Faqiran
 h. Ziarat Baba Dilbar
 i. Malik Poultry Farm
 j. Jasbba Tal
 k. Dhok Hayat
 l. Dunyal Poultry Farm
 m. Dhok Ali Muhammad
 n. Tarai Khura
 o. Dhok Gangal
 p. Khanna Dak
50. TATHI MAIRA
 a. Malpur
 b. Narala
 c. Shahraha-i-Kashmir
 d. Garden Hotel
 e. Zero-Point
 f. East View-Point
 g. Sector H-6
 h. Sector H-7
 i. West View Point
 j. Shakar Parian
 k. Dhok Nur-Kshan
 l. Fruit Farm (CDA)
51. TIPU SULTAN ROAD
 a. Ghazi Colony
 b. Officer Colony
 c. Dhok Kashmirian
 d. Chaklala Cantonment
 e. Rahimabad
 f. Chamanzar Colony
52. UNIVERSITY COLONY
 a. Quaid-i-Azam Unv.
 b. Shah Latif Mazar
53. WEASTRIDGE
 a. St. Mary Church
 b. Sindh House
 c. Halird
54. ZIA-UL-HAQ COLONY
 a. Dhok Baja Khan
 b. Dhok No.1
 c. Madina Colony
55. CHATTAR ONWARD
 a. Murree
 b. Muzaffarabad
 c. Mirpur, etc.
56. RAWAT ONWARD
 a. Chakwal
 b. Faisalabad
 c. Lahore
 d. Sialkot, etc.
57. TERNOL
 a. Attock
 b. Hasanabdal
 c. Mansehra etc.



NATIONAL TRANSPORT RESEARCH CENTRE

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QUESTIONNAIRE

Form No. _____

LOCATION FOR INTERCITY BUS STAND

Bus/Wagon/Coach

Date:-

-
1. Stand/Cordan Point _____ (Name) _____ No. _____
 2. Origin _____ (Name) _____ No. _____
 3. Destination _____ (Name) _____ No. _____
 4. Mode of Transport, Time and Fare between Bus Stand and Origin/Destination
-

Mode	!	Time !	Mode	!	Time !	Fare
a. Car	!		g. Rickshaw	!		!
b. Motorcycle	!		h. Bus	!		!
c. Bicycle	!		i. Wagon	!		!
d. Walk	!		j. Suzuki	!		!
e. Taxi	!		k. Tonga	!		!
f. Others		(Specify)				

5. Place of Embarking/Disembarking _____ (Name) _____
Why ? _____
6. Fare paid between Place of Embarking (City) and Disembarkation (City) Rs. _____
7. Cordan Point/Stand _____ (Name) _____ No. _____

Contd....

Contd....

EXPLANATORY NOTE

- Q No.1 & 7. Were about the identification of the cordan point and bus-stands at which the passengers were interviewed and had boarded/disenbarked.
- Q.No.2. Was asked to know about the Origin or the place from where the passengers had started their journey. This quention has helped us to identify the zone (s) from where most of the passengers are coming to various bus/wagon coach stands.
- Q.No.3. Was about the destination or the place to which the passenger will go at the end of their journey. This question alongwith Q.No.2 has helped us to know movement of the passengers which were interviewed and hence in making an O-D Table.
- Q.No.4. Consists of three information which were collected from the passengers. First the mode of Transport the passengers have used to reach the bus/wagon coach stand from their origin or will likely to use to reach their final destination from bus/wagon/coach stand. Second, the time taken by the passengers to reach the bus/wagon/coach stand from their origin or will likely to take to reach their final destination from bus/wagon/coach stand. Third the fare paid by the passenger to reach the bus/wagon/coach stands from their origin or will likely to pay to reach their final destination from bus/wagon/coach stand.
- Q.No.5. Was asked to know about the place of boarding and disembarking (bus stops) of the passengers. This question has helped us to know that from any bus-stop how much and how many passengers are boarding or disembarking and for what reason.
- Q.No.6 Was asked to know about the intercity fare i.e. between city to city.

PIR-VADHAI BUS STAND

Annexure-V

(GOING)

Mode of Transport	10111-20121-30131-40141-50151-60161-90191-above!	1-51	6-10111-15116-20121-25126-30131-35136-40141-45146-50151-above!	Total	Time in Minutes	Fare in Rs.							
Taxi.	2.0	2.3	0.3	5.4	0.3	0.5	1.7	1.2	0.4	8.7			
Rickshaw.	-	0.3	-	0.3	-	-	-	-	-	0.4			
Bus.	5.8	5.8	1.7	18.1	0.7	2.8	0.8	0.4	-	0.4			
Wagon.	3.0	6.3	2.3	14.2	1.0	0.8	0.3	0.8	-	0.4			
Suzuki.	4.6	6.6	6.1	21.1	1.3	1.5	1.0	0.8	-	29.6			
Tonga.	0.3	0.5	1.5	2.6	0.3	-	-	1.2	-	23.1			
Car.	0.5	0.5	1.5	2.5	-	-	-	0.4	-	34.1			
Motorcycle.	-	-	0.3	0.3	-	-	-	-	-	4.1			
Bicycle.	-	-	-	-	-	-	-	-	-	-			
Walk.	27.7	3.0	3.3	35.5	0.8	0.7	-	-	-	-			
Total:-	43.9	25.3	17.0	100.0	2.1	4.0	5.6	2.1	6.1	1.7	1.2	0.4	100.0

(COMING)

Types of Vehicle	10111-20121-30131-40141-50151-60161-90191-above!	1-51	6-10111-15116-20121-25126-30131-35136-40141-45146-50151-above!	Total	Time in Minutes	Fare in Rs.							
Taxi.	1.6	3.1	0.4	5.5	0.4	-	4.7	1.5	3.9	0.8	10.9		
Rickshaw.	-	-	-	-	-	-	-	-	-	-	-		
Bus.	1.6	3.5	4.7	13.2	1.1	1.9	-	-	-	-	-		
Wagon.	2.3	5.5	3.5	15.6	2.3	0.4	1.2	0.4	-	-	-		
Suzuki.	3.1	5.1	4.3	15.3	0.8	-	1.2	0.8	-	-	-		
Tonga.	-	-	0.4	0.4	-	-	-	-	-	-	-		
Car.	-	-	-	0.4	-	-	-	-	-	-	-		
Motorcycle.	-	-	-	-	-	-	-	-	-	-	-		
Bicycle.	0.4	-	-	0.4	-	-	-	-	-	-	-		
Walk.	46.1	3.1	0.4	49.6	0.4	-	-	-	-	-	-		
Total:-	55.1	20.3	13.7	100.0	3.5	1.9	4.3	1.2	4.7	1.5	3.9	0.8	100.0

Contd....

STATION ROAD BUS STAND

		(GOING)		(Cordan Point Chatter.)	
Types of Vehicle	Time in Minutes.	Fare in Rs.		Fare in Rs.	
up-10!11-20!21-30!31-40!41-50!51-60!61-90!91-above! Total	1-5! 6-10!11-15!16-20!21-25!26-30!31-35!36-40!41-45!46-50!51-above! Total				
Taxi.	-	-	-	-	-
Rickshaw.	-	-	-	-	-
Bus.	16.7	60.0	-	-	60.0
Wagon.	5.6	20.0	-	-	20.0
Suzuki.	-	-	-	-	-
Tonga.	5.6	20.0	-	-	20.0
Car.	-	-	-	-	-
Motorcycle.	-	-	-	-	-
Bicycle.	-	-	-	-	-
Walk.	44.4	72.1	-	-	-
Total:-	66.7	33.3	100.0	100.0	100.0

		(COMING)		(Cordan Point. Chatter.)	
Types of Vehicle	Time in Minutes.	Fare in Rs.		Fare in Rs.	
up-10!11-20!21-30!31-40!41-50!51-60!61-90!91-above! Total	1-5! 6-10!11-15!16-20!21-25!26-30!31-35!36-40!41-45!46-50!51-above! Total				
Taxi.	-	-	-	-	-
Rickshaw.	-	-	-	-	-
Bus.	-	-	-	-	-
Wagon.	-	-	-	-	-
Suzuki.	-NIL-	-NIL-	-	-	-NIL-
Tonga.	-	-	-	-	-
Car.	-	-	-	-	-
Motorcycle.	-	-	-	-	-
Bicycle.	-	-	-	-	-
Walk.	-	-	-	-	-
Total:-	-NIL-	-NIL-	-NIL-	-NIL-	-NIL-

PIR-VADHAI BUS STAND

		(GOING)		(Cordan Point Jhang S.)	
Types of Vehicle	Time in Minutes.		Fare in Rs.		
up-10!11-20!21-30!31-40!41-50!51-60!61-90!91-above! Total	1-5!	6-10!11-15!16-20!21-25!26-30!31-35!36-40!41-45!46-50!51-above! Total	1-5!	2.8	2.8
Taxi.	-	-	1.5	-	-
Rickshaw.	-	-	-	2.8	-
Bus.	1.5	9.2	4.6	1.5	-
Wagon.	-	10.8	-	16.8	31.4
Suzuki.	3.1	12.3	4.6	10.8	20.0
Tonga.	-	1.6	-	23.1	42.9
Car.	-	1.6	-	1.6	2.9
Motorcycle.	-	-	-	-	-
Bicycle.	-	-	-	-	-
Walk.	30.8	15.4	-	46.2	-
Total:-	35.4	47.7	12.3	1.5	1.6
				100.0	97.2
				2.8	100.0

50

		(COMING)		(Cordan Point. Jhang S.)	
Types of Vehicle	Time in Minutes.		Fare in Rs.		
up-10!11-20!21-30!31-40!41-50!51-60!61-90!91-above! Total	1-5!	6-10!11-15!16-20!21-25!26-30!31-35!36-40!41-45!46-50!51-above! Total	1-5!	7.3	7.3
Taxi.	-	-	3.4	-	-
Rickshaw.	-	-	-	4.3	-
Bus.	3.4	3.4	0.9	13.8	23.5
Wagon.	-	6.9	8.6	15.5	26.5
Suzuki.	8.6	9.5	2.6	0.9	41.2
Tonga.	-	-	-	0.9	1.5
Car.	-	-	-	-	-
Motorcycle.	-	-	-	-	-
Bicycle.	-	-	-	-	-
Walk.	24.1	17.2	-	41.3	-
Total:-	36.1	37.0	15.5	6.1	2.6
				100.0	92.7
				7.3	100.0

Contd...

STATION ROAD BUS STAND

(Gordan Point Jhang S.)

(GOING)

Types of Vehicle	Time in Minutes.		Fare in Rs.	
	up-10	11-20	21-30	31-40
Taxi.	8.3	-	-	-
Rickshaw.	-	-	-	-
Bus.	16.7	-	-	-
Wagon.	16.7	-	-	-
Suzuki.	8.3	8.3	-	-
Tonga.	-	-	-	-
Car.	8.4	-	-	-
Motorcycle.	-	-	-	-
Bicycle.	-	-	-	-
Walk.	33.3	-	-	-
Total:-	66.7	16.7	8.3	8.3

(Gordan Point, Jhang S.)

(COMING)

Types of Vehicle	Time in Minutes.		Fare in Rs.	
	up-10	11-20	21-30	31-40
Taxi.	-	-	-	-
Rickshaw.	-	-	-	-
Bus.	-	-	-	-
Wagon.	-	-	-	-
Suzuki.	-	100.0	-	-
Tonga.	-	-	-	-
Car.	-	-	-	-
Motorcycle.	-	-	-	-
Bicycle.	-	-	-	-
Walk.	-	-	-	-
Total:-	-	100.0	100.0	100.0

RAJA BAZAR BUS STAND

Annexure-V

(GOING)		(Cordan Point Jhang S.)	
Types of Vehicle	Time in Minutes		Fare in Rs.
up-10:11-20:21-30:31-40:41-50:51-60:61-90:91-above!	Total	1-51-6-10:11-15:16-20:21-25:26-30:31-35:36-40:41-45:46-50:51-above!	Total
Taxi:	-	-	-
Rickshaw:	-	-	-
Bus:	-	-	-
Wagon:	-	-	-
Suzuki:	-	-	-
Tonga:	-	-	-NIL-
Car:	-	-	-
Motorcycle:	-	-	-
Bicycle:	-	-	-
Walk:	100.0	-	-
Total:-	100.0	-	-NIL-

(COMING)		(Cordan Point, Jhang S.)	
Types of Vehicle	Time in Minutes		Fare in Rs.
up-10:11-20:21-30:31-40:41-50:51-60:61-90:91-above!	Total	1-51-6-10:11-15:16-20:21-25:26-30:31-35:36-40:41-45:46-50:51-above!	Total
Taxi:	-	-	-
Rickshaw:	-	-	-
Bus:	-	-	-
Wagon:	-	-	-
Suzuki:	-	-	-
Tonga:	-NIL-	-	-NIL-
Car:	-	-	-
Motorcycle:	-	-	-
Bicycle:	-	-	-
Walk:	-	-	-
Total:-	-NIL-	-	-NIL-

Contd...

CHAH SULTAN BUS STAND

(GOING) (Cordan Point Jhang S.)

Types of Vehicle	Time in Minutes.		Fare in Rs.	
	1-5	6-10	11-15	16-20
Taxi.	4.7	9.1	-	-
Rickshaw.	9.6	27.3	-	-
Bus.	14.3	27.3	-	-
Wagon.	14.3	27.2	-	-
Suzuki.	4.8	9.1	-	-
Tonga.	-	-	-	-
Car.	-	-	-	-
Motorcycle.	-	-	-	-
Bicycle.	-	-	-	-
Walk.	47.6	-	-	-
Total:-	76.2	19.0	4.8	100.0

(COMING) (Cordan Point, Jhang S.)

Types of Vehicle	Time in Minutes.		Fare in Rs.	
	1-5	6-10	11-15	16-20
Taxi.	3.7	7.1	-	-
Rickshaw.	7.4	21.4	-	-
Bus.	14.8	28.6	-	-
Wagon.	7.4	42.9	-	-
Suzuki.	11.2	-	-	-
Tonga.	-	-	-	-
Car.	-	-	-	-
Motorcycle.	-	-	-	-
Bicycle.	-	-	-	-
Walk.	48.1	-	-	-
Total:-	66.6	22.2	11.2	100.0

Contd....

PIR-VADHAI BUS STAND

Annexure-V

		(GOING)		(Cordan Point. Kagh)	
Types of	Time in Minutes.		Fare in Rs.		
Vehicle	1-5 6-10 11-15 16-20 21-25 26-30 31-35 36-40 41-45 46-50 51-above Total	1-5 6-10 11-15 16-20 21-25 26-30 31-35 36-40 41-45 46-50 51-above Total			
Taxi.	-	-	-	-	-
Rickshaw.	-	-	-	-	-
Bus.	3.9 11.7 3.9	-	-	-	-
Wagon.	-	3.9	19.5	41.7	41.7
Suzuki.	7.8 3.9 3.9	3.9	7.8	17.6	17.6
Tonga.	-	-	19.6	41.7	41.7
Car.	-	-	-	-	-
Motorcycle.	-	-	-	-	-
Bicycle.	-	-	-	-	-
Walk.	53.2	-	-	-	-
Total:-	64.9 15.6 7.8 3.9 3.9	3.9	100.01	100.0	100.0

		(COMING)	
Types of	Time in Minutes.		Fare in Rs.
Vehicle	1-5 6-10 11-15 16-20 21-25 26-30 31-35 36-40 41-45 46-50 51-above Total	1-5 6-10 11-15 16-20 21-25 26-30 31-35 36-40 41-45 46-50 51-above Total	
Taxi.	2.7 4.2	6.9	9.7
Rickshaw.	0.7 0.7	1.4	3.2
Bus.	2.7 1.4 1.4	7.6	16.1
Wagon.	2.1 2.1 4.2	10.5	24.2
Suzuki.	2.7 4.2 7.0	15.3	33.9
Tonga.	1.4 1.4	2.8	6.5
Car.	-	-	-
Motorcycle.	-	-	-
Bicycle.	-	-	-
Walk.	40.1 14.0	54.1	-
Total:-	51.0 28.0 14.0	6.3	100.0
		80.7	9.7
		6.4	1.10
		1.6	100.0

Contd....

STATION ROAD BUS STAND

		(GOING)		(Cordan Point- Kagh)	
Types of Vehicle	Time in Minutes.	Fare in Rs.		Fare in Rs.	
	1-5: 6-10:11-15:16-20:21-25:26-30:31-35:36-40:41-45:46-50:51-above!	Total	100.0	66.7	33.3
Taxi.	-	-	-	-	-
Rickshaw.	6.7	-	6.7	-	-
Bus.	-	-	-	33.3	-
Wagon.	6.7	6.7	13.4	66.7	-
Suzuki.	-	-	-	-	-
Tonga.	-	-	-	-	-
Car.	-	-	-	-	-
Motorcycle.	-	-	-	-	-
Bicycle.	-	-	-	-	-
Walk.	80.0	-	80.0	-	-
Total:-	86.7	6.7	100.0	66.7	33.3

		(COMING)	
Types of Vehicle	Time in Minutes.	Fare in Rs.	
	1-5: 6-10:11-15:16-20:21-25:26-30:31-35:36-40:41-45:46-50:51-above!	Total	100.0
Taxi.	-	-	-
Rickshaw.	-	-	-
Bus.	6.1	6.1	19.0
Wagon.	3.4	15.4	21.5
Suzuki.	6.1	3.4	12.6
Tonga.	3.4	-	9.5
Car.	-	-	-
Motorcycle.	-	-	-
Bicycle.	-	-	-
Walk.	37.4	-	37.4
Total:-	53.0	18.7	100.0

CHAH SULTAN BUS STAND

(Cordan Point. Kagh)

(GOING)

Types of Vehicle	Time in Minutes.	Fare in Rs.
Taxi.	-	-
Rickshaw.	-	-
Bus.	-	-
Wagon.	-	-
Suzuki.	-	-
Tonga.	-	-
Car.	-	-
Motorcycle.	-	-
Bicycle.	-	-
Walk.	100.0	-
Total:-	100.0	-

(COMING)

Types of Vehicle	Time in Minutes.	Fare in Rs.
Taxi.	-	-
Rickshaw.	-	-
Bus.	-	-
Wagon.	-	-
Suzuki.	-	-
Tonga.	-	-
Car.	-	-
Motorcycle.	-	-
Bicycle.	-	-
Walk.	100.0	-
Total:-	100.0	-