

GOVERNMENT OF PAKISTAN
PLANNING COMMISSION
NATIONAL TRANSPORT RESEARCH CENTRE
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TAXI SURVEY

QUETTA

NTRC- 119

DR. MUHAMMAD TAHIR MASOOD
CONSULTANT

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Table of ContentsPage

	List of Tables	(iv)
	List of Figures	(vi)
	Summary	(viii)
1.	Chapter - 1 : INTRODUCTION	1
1.1	Background	1
1.2	Study Objectives	1
1.3	Study Methodology	2
2.	Chapter - 2 : INDUSTRIAL STRUCTURE AT NATIONAL LEVEL.	9
2.1	Size of Industry	9
2.2	Trends in Industry	17
2.3	Legal and Administrative Framework	19
3.	Chapter - 3 : INDUSTRY STRUCTURE FOR CITY OF KARACHI.	24
3.1	Introduction	24
3.2	Coding and Analysis of Data	25
3.3	Manpower	28
3.3.1	Introduction	28
3.3.2	Quetta City	29
3.3.2.1	Owners	29
3.3.2.2	Taxi Operation	32
3.3.2.3	Operating Problems	38
3.4	Vehicles and Fares	40
3.4.1	Introduction	40
3.4.2	Vehicle Fleet	42
3.4.2.1	Size	42

	<u>Table of Contents (Contd.)</u>	<u>Page</u>
3.4.2.2	Taxi Models	43
3.4.2.3	Income and Profit	43
4.	Chapter - 4 : COSTS	48
4.1	Introduction	48
4.2	Market Value	48
4.3	Purchase Price	60
4.4	Operating Costs	69
4.4.1	Fixed Costs	71
4.4.2	Semi-fixed costs	79
4.4.3	Variable Costs	82
5.	Chapter - 5 : PASSENGERS	98
5.1	Introduction	98
5.2	The number and distribution of taxi journeys.	98
5.3	Passenger Type	100
5.4	Vehicle Occupancy	104
5.5	Trip Length	104
5.6	Fares	108
5.7	Level-of-Service and Passenger Attitudes	112
5.7.1	Physical access to taxi services	114
5.7.2	Waiting Time	118
5.7.3	Attitude to fares	119
5.7.4	Attitudes to vehicle quality	121
5.7.5	Mode Preferences	123
5.7.6	Willingness to pay higher fares	128

	<u>Table of Contents (Contd.)</u>	<u>Page</u>
6.	Chapter - 6 : FINDINGS	134
6.1	National trends	134
6.2	City of	135
6.3	Conclusions and recommendations	152
	Concluding Comments	159
	B I B L I O G R A P H Y	160

	<u>List of Tables</u>	<u>Page</u>
2.1	Vehicle Ownership Rates - Main Cities of Pakistan.	12
2.2	Combined Taxi and Other Vehicle Modes	13
2.3	Number of Vehicles of different classes in operation in 1981.	15
3.1	Main Problems facing taxi owner	41
3.2	Age of Vehicle	45
3.3	Average Fare by trip length of all vehicles	45
3.4	Profit/Loss, all owners	46
4.1	Average Market Value (all models)	48
4.2	Price by year of purchase	61
4.3	First time renovation cost (at the time of purchase).	62
4.4	Average Annual Cost (Other fixed costs)	73
4.5	Total average annual fixed costs	74
4.6	Total annual cost of renovation	80
4.7	Total average annual semi-fixed costs	81
4.8	Average annual maintenance (repairs costs)	84
4.9	Prices for auto parts from dealers in Quetta	85
4.10	Parameters used in the derivation of annual fuel cost.	87
4.11	Derivation of Annual Fuel Costs	88
4.12	Annual variable costs per vehicle	91
4.13	Total annual operating costs	92
4.14	Operating cost per km	93
4.15	Estimated average annual revenue per vehicle	94
4.16	Annual vehicle revenue minus vehicle costs	95
4.17	Owner drivers - annual net surplus after deduction of driver wages.	96

	<u>List of Tables (Contd.)</u>	<u>Page</u>
4.18	Owner drivers - monthly earnings	96
4.19	Other owner - monthly earnings	96
4.20	Average income per year - Taxi operation (Outright purchase).	97
5.1	Distribution of rickshaw journies by time of day	99
5.2	Frequency of taxi use	103
5.3	Passenger type by frequency of use	105
5.4	Passenger type by frequency of use (cross tabulation).	106
5.5	Distribution of vehicle occupancy	107
5.6	Use of taxi meter	111
5.7	Fares paid for journies of the average trip length.	112
5.8	Average fares by trip length	113
5.9	Distribution of distances walked to each taxi stand.	116
5.10	Distribution of passengers waiting time by time of day.	120
5.11	Willingness to pay higher fare	132
6.1	Summary Statistics of Operation	136
6.2	Summary Statistics on Passenger use of taxis	138
6.3	Summary Statistics - Taxi fares.	139
6.4	Consolidated Summary Statistics (Peshawar, Lahore, Karachi & Quetta)	148
6.5	Consolidated Summary Statistics on Passenger use of Taxis (Peshawar, Lahore, Karachi & Quetta).	150

<u>List of Figures</u>		<u>Page</u>
1.1	Passenger survey form	4
2.1	No. of taxi vehicles in Karachi (on road) 1974 - 1987.	10
3.1	Map of Zones - Karachi	26
3.1-a	Location of taxi stands - Karachi	27
3.2	Distribution of No. of vehicle owned.	30
3.3	Distribution of period as vehicle owner	32
3.4	Percentage of owner/other-owner wishing to leave the industry as a function of length of time in business.	33
3.5	Contract Agreements	36
3.6	Hours worked per day	37-a
3.7	Days worked per week	39
3.8	Years of manufacturing	44
3.9	Other sources of income	47
4.1	Detailed Survey Form	49
4.2	Mode of purchase	63
4.3	Ease of repayments	64
4.4	Finance Agent	65
4.5	Monthly Instalment	67
4.6	Initial deposit	68
4.7	Capital source	70
5.1	Passenger Type	72
5.2	Frequency of Use	102
5.3	Trip length	109
5.4	Distribution of journey length	110
5.5	Opinion on fare by passenger type	122
5.6	Opinion on vehicle by frequency of use	124

List of Figures (Contd.)

		<u>Page</u>
5.7	Opinion on vehicle by passenger type	126
5.8	Other mode	129
5.9	Passenger to travel by other mode	133

SUMMARY

Taxis serve an important part of transport demand in urban areas. These are generally used by middle and higher income group and some time by the lower income strata for the conveyance of the sick, old and infirm. Unfortunately, not only the number of taxis in some of the main cities has declined in years but in the country as a whole taxi industry is faced with serious problem. As a result the quality of service has deteriorated over the years. This has attracted the attention of the highest authorities.

Being in the private hands, much information concerning demand, supply, cost, earning, level-of-service was not available. It was, therefore, unanimously decided by the federal authorities in June 1984 to entrust the task of surveying all big cities of Pakistan to NTRC.

The survey of Quetta was conducted by NTRC team in 1988. The major findings of this study are as follows:

1. National Trends: Nationally, during the ten years period (1974-83) the taxi fleet increased by a factor of 2.14 which is in line with other passenger modes such as private cars, buses. In absolute terms the number of taxicabs increased from 12,608 to 26,813. In terms of per capita availability (vehicle for 100 people) the taxis have doubled over the ten years period and stands at 3.17 vehicles per 1000 people which is considerably higher than that found in most developed countries with higher rate of personal automobiles.

2. Structure of Industry in Quetta: At the time of survey, 3,563 rickshaws were operating within the city. About 47 per cent of rickshaws are 12 years old and 18 percent 5 years old. Ownership structure of the industry is fairly equally divided between owner-drivers and others. Normally ownership has one vehicle and maximum fleet size recorded is five. Fixed cost of rickshaw account for more than 1.35% of operating cost per km which is Rs. 0.905 for all owners (contractor and owner-driver). On the average a rickshaw runs for 143 km per day. On the whole the wages are low, working conditions poor and in many cases no profit is made at all. The driver of rickshaw makes monthly Rs. 750 to 850 by working 8.0 to 12.30 hours per day. On the average, all owners are not happy with the business. Majority of them are probably in this business because of lack of other employment and business opportunities.

Rickshaw is economical and useful for narrow streets/roads of Quetta but it is un-comfortable and unsafe. Meters are mostly not installed and the passengers prefer to bargain the fare according to the length of the trip. Rickshaw drivers and owners claim to face quite a few problems, predominantly at the hands of the police who un-necessarily harrasses them and demand gratification.

The taxi operators have no access to any institutionalized credit. Vehicles are generally secured on hire-purchase with very high interest charges i.e. excess of 3% per month. Failure to pay the instalment in time usually results in loss of the vehicle.

The concept of cooperatives never existed and no study has ever been done to explore its suitability or otherwise. Rickshaw is normally not comprehensively ensured and the official increase in the fare rate is normally not compatible with the increase in the price of fuel, tyres and parts, etc.

There are 22 recognized stands in the city which were surveyed. The stands are without adequate/requisite facilities like proper covered parking, bath room, waiting room and telephone booth, etc.

3. Level-of-Service: On the average Quetta rickshaw system carries some 149,147 passengers a day, with an average occupancy of two passengers per vehicle. The average journey length for rickshaw is 4.14 Kms and daily output is 118.22 Km. Daily Kms travelled per rickshaw is 143 and total annual Kms/vehicle is 48,334. On aggregate, the rickshaw system performs some 172 million Kms per annum. The rickshaw account for as much as 26% of the total passenger Kms carried by private transport sector including tongas, etc.

In the city of Quetta, no rickshaw journey is charged on the meter. Average rickshaw fare paid is in the region of Rs. 1.71 per Km i.e. 14.5% lesser than the authorized tariff (Rs. 2.00). Majority of users (80%) are satisfied with the fare level and over 30.75% are prepared to pay 25% more for a better service.

4. Role of Government: Unfortunately, Government does not have a clear-cut policy regarding the taxi industry. System-wide improvements are only feasible with a substantive change in taxi policy, regulation and administrative structure. In the short term, only limited improvements can be envisaged:

- (1) Four important areas are : (a) physical feasibility - enough drivers/vehicles; (b) operational feasibility - integration with other modes of transport; (c) institutional feasibility - constraints and/or barriers; (d) financial feasibility - potential costs to the City/Provincial Federal Governments.

- (2) In Quetta in its present state rickshaw industry is sick and is hardly profitable. Quetta may have adequate number of rickshaws but taxicabs are missing. The city certainly needs an industry with newer vehicles (rickshaws) run and managed under better regulations and yielding adequate profit to the drivers/owners. As the trips are short, taxicabs may not be a successful venture if introduced.
- (3) Steps need to be taken to cope with the mal-practices in law enforcing agencies and regulate the operation of other transport modes like mini-buses and Rent-a-Car and formulate policy to provide a fair competition among the various modes.
- (4) Credit/loan facilities should be provided by the Government at low rates/attractive terms. The rickshaw operators and the drivers should be given the benefits allowed to the workers in other industry.
- (5) The rickshaw operators should be encouraged and guided to form companies and cooperatives for which comprehensive regulations should be formulated
- (6) For those investors, who want to use Pakistan-assembled rickshaws should be given loan on soft terms to buy them. Also, purchase on instalments should be allowed but the rate of interest should be reasonable.
- (7) Properly designed taxi stands should be constructed at suitable places in the city. Each stand should have telephone, bath-room, waiting room for drivers and passengers, and shade for parking with controlled entry and exist.

Chapter - 1

INTRODUCTION

1.1 Background

Survey of Taxi Industry in Quetta was conducted in 1988. Funded by the National Transport Research Centre (NTRC), Planning Commission, this survey was directed towards the taxi operators, taxi owner-drivers, taxi drivers, passengers and government agencies in the city. They were asked to respond to a series of questions contained in a proforma regarding services provided, the cost, revenues, fare structure and operating characteristics of taxi services. This study is a part of surveys of major cities of the country - Islamabad/Rawalpindi, Peshawar, Lahore, Quetta and Karachi.

Taxis serve an important part of transport demand in urban areas. These are generally used by middle and higher income group and some time by the lower income strat for the conveyance of the sick, old and infirm. Unfortunately, not only the number of taxis in some of the main cities has declined in years but in the country as a whole taxi industry is faced with serious problems. As a result, the quality of service has deteriorated over the years. This has attracted the attention of the highest authorities.

1.2 Study Objectives

As a result of decision reached in the meetings of the Research Coordination Committee (RCC) of NTRC, it was agreed with Cabinet Division's approval that, since there was

a total absence of reliable information or data on which to evaluate any proposals concerning the taxi industry in Pakistan, NTRC should undertake a more thorough investigation of taxi operations, covering such important aspects as ownership characteristics, revenues, operating cost, fare structure, level of service and other related issues.

1.3 Study Methodology

To achieve the above mentioned objectives, it was estimated that information and data needs to be collected on the following:-

- (a) Vehicle ownership
- (b) Changes in vehicle provision rate
- (c) Changes in vehicle composition
- (d) Number of vehicle classes in operation
- (e) Operating data for taxicabs and rickshaws
- (f) Average market values of taxicab and rickshaw models in operation
- (g) Age distribution of taxis
- (h) Taxicab and rickshaw purchase prices, interest rates on hiring/purchase loan of taxicabs and rickshaws
- (i) Growth rate in the number of registered vehicles in major cities of Pakistan
- (j) Location of taxi stands in the city
- (k) Profitability of taxi operation
- (l) Manpower involved in the taxi operation
- (m) Distribution of taxi journeys and frequency of taxi use.

- (n) Information on passengers and distribution of vehicle occupancies
- (o) Average fare by trip length
- (p) Average annual operation cost
- (q) Miscellaneous information.

The team of eight Economic Investigators was divided into four groups of two each to interview rickshaw-owner, rickshaw-owner-cum-driver, passengers, rickshaw union office office bearers, official of Regional Transport Authority, Police Officials and others.

The study area in Quetta was divided into a number of zones and the rickshaw stands were marked on the city map. Proforma given at Figure 1.1 was used to ask questions and collect the required data.

Due to problem of illiteracy and lack of habit of responding to surveys, we could not resort to interviews through letters, etc — a practice common in advanced countries. So, it was decided to interview the passengers at the time of getting-in and getting-out of the taxis. Similarly drivers were interviewed at the taxi stands. For practical reasons these interviews could not be longer than 2 to 3 minutes at a time. Interview of the union leaders and RTA officials did not pose serious problems as these were arranged for longer duration and mostly they were very cooperative. Due to shortage of field staff the team worked in two shifts every

Passenger Survey Form

Form 1

GOVERNMENT OF PAKISTAN
PLANNING AND DEVELOPMENT DIVISION
NATIONAL TRANSPORT RESEARCH CENTRE

NATIONAL SURVEY OF TAXI SERVICES

PART I. SURVEY WITH PASSENGER.

1. Ask for the address at which the passenger started this journey.
 1-3
2. How long have you had to wait before getting this taxi? 4-5
3. How far have you had to walk to get this taxi? 6-8
4. If you had the choice would you have preferred to use another type of public transport rather than the taxi? YES NO 9
 IF YES: What would have been your first preference?
 BUS.....
 MINI BUS.....
 WAGON.....
 SUZUKI..... 10
5. What is the destination of your present journey?
 11-13
6. Ask the passenger if a fare has already been agreed. YES NO 14
 IF YES: ask the passenger "How much will you pay?" and enter value.....
 IF NO: ask the driver "How much will you charge?" and enter value.....
 If fare will be charged according to meter, indicate here..... METER 15
 FARE 16-18
7. To which of the following categories do you belong?
 PERMANENTLY RESIDENT IN THIS CITY
 TEMPORARILY RESIDENT IN THIS CITY
 VISITORS.....
 19

PART I CONTINUED

8. How often do you use taxis?

- DAILY
- ONCE A WEEK,
- ONCE A MONTH
- OTHERS

20

9. Ask for the passenger's opinion about taxi fares in general

CHEAP	REASONABLE	EXPENSIVE

21

10. Ask for the passenger's opinion on the general standard of vehicles used as taxis.

GOOD	SATISFACTORY	UNSATISFACTORY

22

11. If better vehicles operating under radio control are introduced, will you pay more fare?

IF No. 23

IF YES: Establish how much more. (CONSULT TABLE OF FOR ACTUAL VALUES)

- 25% MORE YES NO 24
- 50% MORE YES NO 25
- 100% MORE YES NO 26

PART II SURVEY WITH DRIVER

12. How is the vehicle operated?

VEHICLE IS OWNED EXCLUSIVELY BY DRIVER, (\$)

DRIVER HAS HIRED VEHICLE FROM OWNER(S)

DRIVER IS EMPLOYEE OF VEHICLE OWNER(S) 27

13. Has the vehicle been hired previously today? YES NO 28

IF YES: Ask for the address or location where the last passenger was set down.

29-31

14. How long have you been waiting before picking up this passenger? 32-34

15. How many times was the vehicle hired on your last working day? 35,36

16. What is the vehicle model (year)? 37,38

PART III - TO BE COMPLETED AT END OF INTERVIEW

1. Vehicle Registration Number 39-45

2. Vehicle Make _____ 46

3. Number of Passengers 47

4. Location of Interview 48-50

5. Time 51-54

6. Date 55-58

(For office use only)

Interviewer _____ Date _____ Pass Rel. Pass Rel.

Checked _____

Coding _____ Pass Rel.

Checked _____

Data Entry _____

1) Why are you using the Taxi rather than other mode?

Emergency

Luggage

Time Saving

Regular Use

2) Can you tell what is distance of your present destination?

day. It was a problem to interview the concerned police officials because most of them were not easily accessible. The forms used to conduct the interview proved quite simple and logical in their lay-out, thus facilitating the interview procedures. After the interviews the team came back to the office, the data was coded and "SNAP", survey analysis package for Apricot micro-computer was used to analyse the data and use the information to prepare relevant tables and figures.

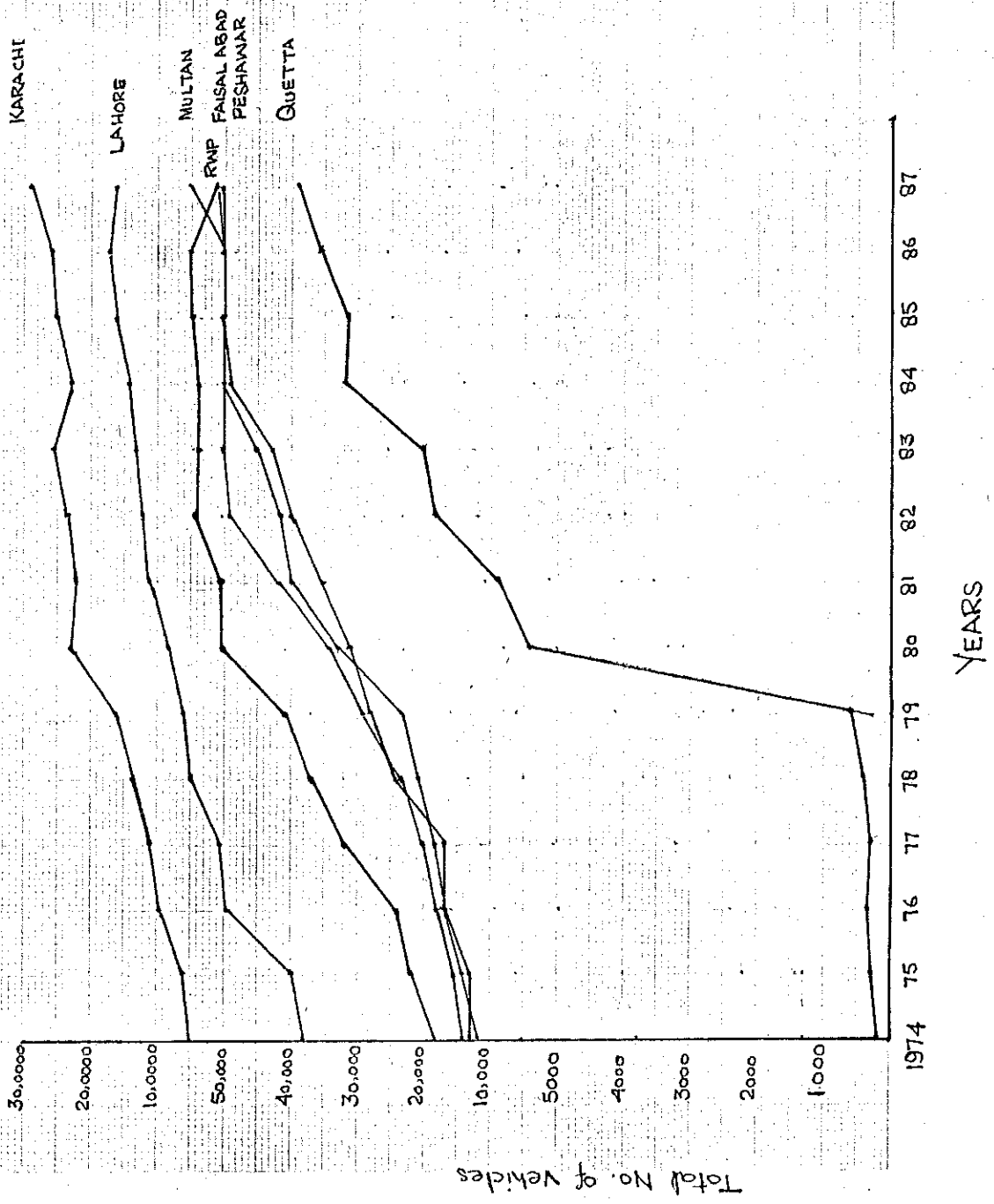
In the previous surveys like Peshawar and Lahore, we come across a problem that ladies passengers were not cooperative with this mode interviewers. Therefore, for the survey of Quetta and Karachi, a Lady Economic Investigator was also included in the team.

Chapter - 2

INDUSTRIAL STRUCTURE AT NATIONAL LEVEL2.1 Size of Industry

The taxi service as a transport mode forms an important part of transport system of major cities of Pakistan. The number of taxis per 1,000 population appears to be a function of the level of private vehicle ownership and of the level-of-service provided by stage-carriage public transport services. These rates vary from country to country depending on country's economic development and the size of the cities in question. Rates of more than 9 taxis per 1,000 have been reported for some Indian cities while these rates range from .5 to 2 for some developed countries. Analysis has been made to restraint in provision rate for largest cities of Pakistan based on vehicle registration data for the year 1974-86. Figure 2.1 shows the number of taxicab and rickshaw registered during 1974-87. Population data was based on 1981 Census and population for other years was interpolated. The smallest area for which vehicles registration districts are available is that of the administrative district. Since the taxis operate mostly in the urban areas the rates based on district level population do not reflect the true pictures for the cities within this district. To overcome this problem a second provision rate was calculated using the population figures for the urban areas only which provides a better estimates of actual provision rates. Provision rates have been calculated for two years:

Fig. 2.1: Growth in number of registered vehicle (On road) 1974-87



1974 & 1981 (Table 2.1) that the 1974 population estimates interpolated on the basis of constant average annual growth rate over the inter-census period 1972-81.

Combining the two private modes (motor-cycle and motor car) and the two taxi modes (taxicab and rickshaw) for the urban population gives the set of relationships in Table 2.2.

Looking first at the 1974 combined taxi provision rates (Table 2.2) we see that apart from those for Lahore there is reasonable homogeneity, varying from 1.26 to 5.24 vehicles per 1000 population with an average of 1.58 for all the urban areas included. Seven years later we see a virtual doubling of the rate in all cities to show a 1981 average of 3.17 vehicles per 1000 population. By 1986 the average rate declined from 3.17 to 3.12. Taxis have increased during 1981-86 period in Lahore, Multan, Rawalpindi, and Hyderabad but decreased in other three cities (Faisalabad, Karachi and Peshawar). In the same period, private vehicle ownership rates more than doubled (from 20.78 to 44.09), indicating that there has been a phenomenal increase in urban mobility over this period (even assuming that the use of vehicles has been constant) but the number of declined to 42.96 in 1986 from 44.09 in 1981.

One further feature requiring comment is the mix of vehicles used in the taxi sector. Here we see a great deal of heterogeneity in the data; both in the terms of the proportional

Table 2.1

VEHICLE OWNERSHIP RATES - MAIN CITIES OF PAKISTAN

a) 1974

(vehicles per 1000 population)

	M. CYCLE		CAR		BUS		RICKSHAW		TAXICAB	
	DIST.	URBAN	DIST.	URBAN	DIST.	URBAN	DIST.	URBAN	DIST.	URBAN
PESHAWAR	1.02	5.70	2.00	11.18	0.71	4.00	0.77	4.33	0.16	0.91
LAHORE	6.22	7.43	4.01	1.79	0.45	0.54	1.23	1.47	0.22	0.26
FAISALABAD	1.94	9.61	0.30	1.50	0.30	1.51	0.25	1.25	0.003	0.01
RAWALPINDI	3.54	9.88	3.59	10.03	0.70	1.95	-	-	0.47	1.32
MULTAN	2.35	13.53	0.54	3.13	0.20	1.16	0.21	1.24	0.02	0.11
HYDERABAD	2.82	7.44	0.82	2.16	0.99	2.62	0.62	1.64	0.20	0.54
KARACHI	7.89	8.14	5.27	5.44	0.40	0.41	1.48	1.52	1.09	1.13

b) 1981

(vehicles per 1000 population)

	M. CYCLE		CAR		BUS		RICKSHAW		TAXICAB	
	DIST.	URBAN	DIST.	URBAN	DIST.	URBAN	DIST.	URBAN	DIST.	URBAN
PESHAWAR	2.97	12.04	3.82	15.46	1.13	4.57	1.73	7.01	0.72	2.19
LAHORE	17.03	20.47	6.19	7.41	0.65	0.78	2.76	3.31	0.21	0.26
FAISALABAD	5.05	21.57	0.83	3.55	0.36	1.54	0.52	2.25	0.007	0.03
RAWALPINDI	11.66	30.73	7.95	20.95	1.08	2.85	0.12	0.32	0.84	2.23
MULTAN	4.87	27.17	1.35	7.57	0.23	1.29	0.29	1.64	0.10	0.58
HYDERABAD	9.21	24.11	1.02	2.67	0.97	2.53	1.47	2.85	0.41	1.07
KARACHI	17.11	17.95	15.78	16.55	1.09	1.15	1.84	1.94	1.49	1.56

Table 2.2
Combined Taxi and Other Vehicle Modes

	(Vehicles per 1000 population)							
	TAXI VEHICLES				OTHER VEHICLES			
	1974	1981	1986	1987	1974	1981	1986	1987
Faisalabad	1.26	3.28	1.28	1.60	14.85	36.13	50.40	62.25
Lahore	1.73	3.56	4.04	4.81	14.36	34.48	45.64	56.06
Multan	1.35	2.22	2.40	2.75	21.47	53.39	61.45	70.77
Rawalpindi	1.32	2.55	2.57	3.12	22.33	59.58	70.41	81.43
Hyderabad	2.18	4.92	5.68	6.84	19.90	45.50	52.38	59.26
Karachi	1.65	3.5	2.67	3.56	17.01	40.55	41.50	42.45
Peshawar	5.24	9.2	7.61	7.50	35.52	39.02	78.92	90.38

share of taxicabs and rickshaws in each city and in the way the provision rates of each vehicle type have changed the period in question.

In 1981 the Federal Bureau of Statistics (FBS) carried out a survey of the transport industry in all the major urban areas (Federal Bureau of Statistics 1983). According to this source the number of vehicles of different types at the time of their survey is given in Table 2.3 where we can see, for example, that Quetta there were 1,500 rickshaws (as against nearly 2,505 according to ETO) and 15 taxicabs. Using FBS figures the overall provision rate for Quetta in 1981 would be in the region of 19.02 vehicles per thousand population; rather more plausible figure. In 1987 the ETO record showed 2,505 rickshaws and exactly 2,505 were on road.

Distance covered annually ranged from 48,510 Kms for rickshaws in Quetta. Total operating costs ranged from Rs. 0.90 to 0.91 per Km for rickshaws. Costs were put at approximately 50% of revenue for rickshaws and at about 60% for taxicabs.

Table 2.3

NUMBER OF VEHICLES OF DIFFERENT CLASSES IN OPERATION IN 1981

TYPE OF VEHICLES	LAHORE	RAWALPINDI	PESHAWAR	QUETTA	KARACHI
BUSES	2,920	965	1,195	190	1,375
MINI BUSES	1,745	980	1,355	86	2,890
TRUCKS	1,435	3,555	5,365	1,405	5,545
MFI TRUCKS	1,430	-	-	125	2,960
TAXIS	340	3,085	-	15	4,740
RICKSHAW	7,555	320	3,000	1,500	9,360

Source:
Federal Bureau of Statistics 1983

In Pakistan an informal sector is known to operate, but there is no reliable knowledge as to how extensive the scale of operation is. For example in Karachi there are two ways in which this sector operates. The first is through the medium of hire-cars, which may or may not be licensed as such, and which operate from the airport and the better class hotels. Hire-cars may also be found in other central city locations where they seem to be used primarily for longer-distance journeys. The second mode of operation is that of the 'pirate' taxi; the private car owner who seeks to supplement his income by picking up fares at places like the airport and other such locations where control is lax. Although both these practices are known to exist from the research carried out in this study, it has not proved possible to quantify them. We can conclude however that they appear to be conducted only on a relatively minor scale in Rawalpindi/Islamabad, but would appear to be more prevalent in cities such as Peshawar and Lahore where the number of taxicabs in the licensed sector is very small in relation to the size of the city.

2.2 Trends in Industry

Nationally, during the ten years period (1974-83) the taxi fleet increased by a factor of 2.14 which is in line with other passenger modes such as private cars, buses. In absolute terms the number of taxicabs increased from 12,608 to 26,913. In terms of per capita availability (vehicle for 1000 people) the taxis have doubled over the ten years period and stands at 3.17 vehicles per 1000 people which is considerably higher than that found in most developed countries with higher rate of personal automobiles.

There are many reasons why taxi operating characteristics are a public policy concern. Privately owned and operating, the taxi industry is an important but vulnerable segment of the urban transportation sector. The number of passengers it carries is comparable to the public transit industry. It also provides a variety of other regular and emergency services at all hours and in many communities too small to support bus service. Because it is located in the private sector, the taxicab industry is vulnerable to adverse economic conditions brought on by rising costs and governmental subsidies to its competitors. As a result, it is widely reported that the industry is declining in size and attempting to cut costs by switching from employee drivers to owner and lease-drivers.

These trends, if true, are a matter of interest to policy makers concerned with urban transportation. A decline of the

industry means that many smaller cities and towns are likely to be left with no taxi service and taxi-dependent persons will suffer. As real fares rise, many of these same persons are likely to be unable to afford exclusive-ride taxi service if it is available.

How policy makers respond to these changes is uncertain and will no doubt vary from place to place. Some of the cities/provinces may respond by changing local taxi ordinances in significant ways. Others may take steps like encouraging public agencies to contract with taxi operators rather than to set up services which compete with them. Still other city and provincial governments perhaps uncertain of how to respond — do nothing and watch as the industry changes.

There has been a trend in certain cities for the rickshaws to gain ascendancy over the taxicab. It is estimated that the net annual operating revenue for the two types of vehicle is about the same (except in Karachi), but operating costs for rickshaw are only 1/2 to 2/3 for that of the taxicab. Since the authorised fare for rickshaw are also lower which could be the cause for this trend.

The reduction in the number of taxicabs in Peshawar and Quetta could be as a result of competition with the rickshaws. The number of taxicabs has also decreased in Lahore and would have decreased in Islamabad-Rawalpindi if it had not been for the policy to restraint the number

of rickshaws and prohibit them all together from operation in Islamabad. But in Karachi the number of taxicabs is greater than the number of rickshaws which is a different trend. Karachi has a big population and larger trip length in the bigger city area. Therefore, the taxicab is more useful than rickshaw. In Quetta there are no taxicabs. ETO reported having issued route permits to 10 taxis (not cabs) cars.

2.3 Legal and Administrative Framework

Government regulation of the transport sector is common, but the reasons for it are not always well defined and they may, at times, be contradictory. Regulatory measures may be intended to achieve a wide range of objectives:

- To contain monopoly power, such as that of railways not faced with any effective truck competition.
- To control "excessive" competition, particularly in road transport.
- To ensure the financial viability of public or parastatal transport enterprises.
- To assist groups considered to be meritorious or needy.
- To integrate transport more closely with broader policies such as land use or industrial development.
- To reflect real economic costs in transport when the market mechanism fails to do so.
- To improve transport coordination among a multiplicity of independent investors or suppliers.
- To protect highways, bridges, and other public infrastructure from overloading or abuse.
- To ensure safety in transport
- To protect the environment.

The regulatory instruments used in support of these multiple ends include restricting certain activities to a limited number of enfranchised operators, fixing passenger fares and freight rates, requiring certain services to be provided even though they are not financially viable, and establishing standards for safety, noise levels, and exhaust emissions. There is no realistic alternate to regulation for purposes of safety, health, protection of the environment, and protection of public facilities. But attention must be given to how cost-effective, how practical, and how enforceable the regulations are. Given the difficulties of devising regulations that will have the desired effects, and implementing and enforcing them, they should be used sparingly and with great care.

Regulating the conditions of doing business in the private sector is, however, a different matter. In general, where competitive markets exist, or would exist in the absence of regulation, efficient operations and sound investment decisions have been achieved best by allowing the supply of transport services to be matched to demand through the price mechanism. When governments restrict entry of competitors into an activity and set prices for services, they interfere with the normal adjustment mechanism, usually without having a valid economic or statistical basis for ensuring a better result. These arguments apply with particular force to the regulation of road transport. It is sometimes contended that because entry into the industry

is easy (enterprises owning one or a few trucks), buses, or taxis are common) free competition would be ruinous to operators and make service less reliable; the industry, therefore, needs to be controlled as protection against itself. Experience does not support this contention. When road transport operations have been left to the marketplace, consumers have benefited from the lower prices induced by competition, capacity has adapted to demand, and the industry has generally thrived.

It is normal practice, virtually the world over, for governments to regulate the workings of the taxi industry in some way. Governments may grant monopolies to individual operators, or to groups of operators, they may impose restrictions on territories to be covered, they may impose controls governing vehicle types and standards (quality controls), controls on the maximum number of vehicles allowed to operate (quantity controls). They may also regulate fares.

The Government of Pakistan has reserved to itself similar power. The legal basis upon which the industry in Pakistan is founded is determined by a body of legislation based on the Motor Vehicle Act of 1939, the West Pakistan Motor Vehicle Rules (1969) and Provincial Motor Vehicle Ordinance (XIX of 1965) and subsequent ordinances and regulations largely concerned with amendments to the financial provisions contained within the original legislation.

The legislation admits two types of vehicle for use as taxis:

- The motor taxicab which may carry upto 5 passengers.
- The motorcab rickshaw; a three wheeled vehicles which should not exceed 900 lbs weight and be designed to carry not more than two passengers.

The taxi is classified as a Public Service Vehicle (PSV) and as such the owner and driver have to satisfy certain conditions before being allowed to operate for hire.

- a) The driver must have a PSV driving license. To drive a taxicab he must have held a motor car driving licence for atleast one year. The driver need to satisfy the examiner as to his character and absence of criminal antecedents. He must also pass a Traffic Police test on the geography of the city in which he intends to operate. The legislation is not clear on this point, but it is generally assumed that the rickshaw driver should have a licence valid to drive a motor cycle.

Every PSV driver is required to be issued with a driver's badge and registration number by the Regional Transport Authority (RTA), an agency of the Provincial Government.

- b) The owner of a taxi must obtain a route permit from the Regional Transport Authority. To qualify for such a permit the owner must for each vehicle, complete an application form, pay the appropriate fee and produce a certificate of fitness issued by the Motor Vehicle Examiner (MVE) and an insurance certificate.
 - The RTA may limit the number of permits to be issued in any one area (Rules 58) and refuse to grant a permit if that maximum number has been reached.
 - The RTA may impose a condition, limiting the validity of the permit to a particular urban area.
 - The permit has to be renewed periodically. In the case of Rawalpindi/Islamabad, the RTA requires renewal at three yearly intervals; the maximum interval permissable.

- c) A motor vehicle fitness test is required every six months. The purpose of this test is to ensure that the vehicle complies with the provisions of the motor vehicle fitness rules and it is conducted by a Police Officer who is designated as Motor Vehicle Examiner. Taxis must be fitted with a taxi meter and the legislation specifically requires the meter to be tested and sealed by the MVE.

The determination of taxi tariffs is the responsibility of the Provincial Government, and in the case of the Punjab, different rates are specified for taxicabs and rickshaws.

Chapter - 3

INDUSTRY STRUCTURE FOR CITY OF QUETTA3.1 Introduction

No previous study or reliable statistics about the taxi industry in Quetta is available. In recent years, the growth in taxis and hire cars in Quetta has been in remarkable contrast with other sectors of local passenger transport, particularly with the buses owned and operated by the Government and private organizations characteristics of the bus industry. Very little, however, is known about the economics of these sectors which are not adequately regulated and therefore, even the overall scale of activity is much doubt.

The present survey on the taxi industry in Quetta could form the basis for the planners and the policy makers to stream-line the working of this industry. We are concerned with several related issues. A few taxi trades even in the developed world lack in quantity control over the entry or exit of taxis, producing a uniform special vehicle, and on the drivers. London's Taxi trade may be an exception where the industry is much better organized qualitatively and quantitatively. The Londons' industry requires from drivers high standard of previous conduct and specialised knowledge of London.

A number of factors have combined to create noticeable changes within the taxi industry in the world in recent years. Many of these factors are external to the industry. Increases

in operating and capital cost, particularly cost of fuel, insurance, replacement parts, and new vehicles, have greatly distorted the industry cost structure. New public transit policies and programmes have altered the market served by taxi operators. And in several instances, the regulatory environment of the industry has been changed, with changes in fare schedule and operator entry in the city. In response to this and perhaps other facts, the taxi industry has also undergone what appeared to be substantial internal changes in the way, the taxi industry is organized and operates in this city. There are no traditional taxi companies in this city. Some taxi owners employed drivers on commission basis but practices like lease-driver and owner-driver are on the increase.

3.2 Coding and Analysis of Data

The study team collected the data on taxi industry in the city of Quetta as per methodology and procedure mentioned in Chapter-1. For the purpose of this study the study area was divided into 143 zones (Figure 3.1).

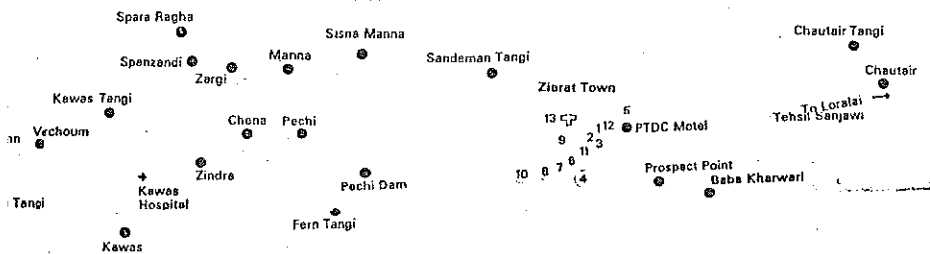
The questionnaire data, collected as a result of interviews, was transferred to the coding sheets, analysed using "SNAP" package and was used to tabulate the vehicle operating cost. The location of official taxi stands in the Quetta city is shown in Figure 3.1(a).

and Pakistan Tours Limited,
Muslim Hotel, Jinnah Road, Tel. 79519, 71587 E-9

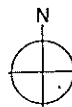
Index to Ziarat Fig. 3.1

Pakistan International Airlines	
30. PIA Reservation and City Terminal, Jinnah Road, Tel. 70163	H-5
Local Administration	
31. Deputy Commissioner, Quetta, Court building, Shar-e-Iqbal, Tel. 75070	G-6
Police Registration	
32. Foreign Registration Office, Court Road	G-6
Railway Offices	
33. Divisional Superintendent of Railways, Zerghun Road, Tel. 70171	D-8
Places of Interest & Recreation	
34. Archaeological Museum of Baluchistan, off Jinnah Road, Tel. 75142	G-7
35. Geological Museum, Sariab Road, Tel. 72748	B-12
36. Command & Staff College Museum, Staff College Road	L-3
37. Chiltan Handicraft Shop, Jinnah Road, Tel. 71139	G-6
38. Baluchistan Public Library, Jinnah Road, Tel. 71024	G-7
39. Liaquat Park off Jinnah Road	G-6
40. Hazar Ganji National Park, Mastung Road, (25 km.), Tel. 72029	A-13
41. City Centre	H-7
42. Inndad Cinema, Jinnah Road	E-9
43. Ayub Stadium	C-4
44. Sadq Park	I-8
45. Jinnah Road	G-7
46. Suraj Gang Bazar	H-6
47. Shar-e-Liaquat	H-8
48. Quetta Club	L-4
49. View Point	A-8
50. Recreational Park, Sariab Road, Opp. University of Baluchistan	B-13

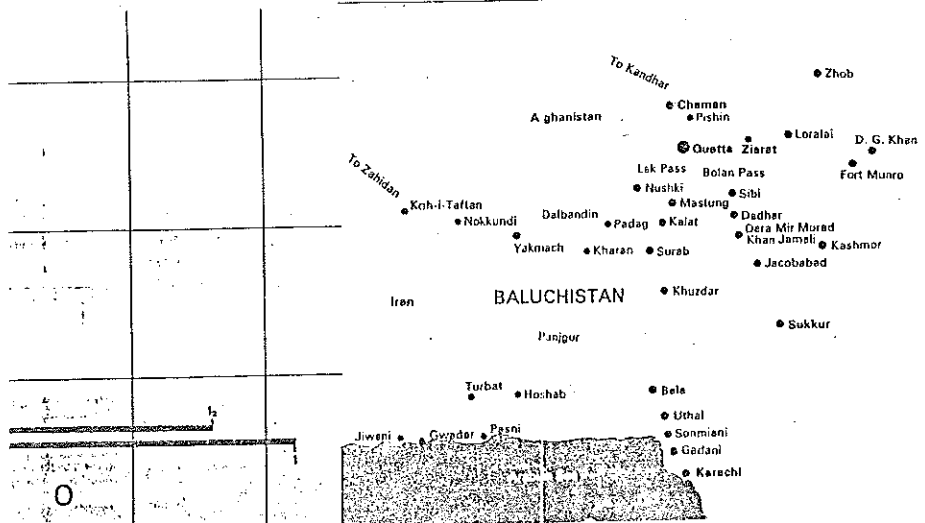
Hotels	
1. Grand Hotel Tel: 17	
2. Ziarat Hotel Tel: 68	
3. Senobar Hotel	
4. PTDC Motel, Tel: 15	
Banks	
6. United Bank Ltd. Tel: 61	
7. Muslim Commercial Bank Ltd. Tel: 13	
8. National Bank of Pakistan Tel: 32	
Police Station	
9. Police Station Tel: 18	
Telephone & Telegraph Office	
10. Telephone & Telegraph Office Tel: 5	
Post Office	
11. Post Office Tel: 2	
Bus Stand	
12. Bus Stand	
Hospital	
13. Hospital Tel: 24	



Distances from Ziarat			
To Baba Kharwari	8 km. (5 Miles)	To Kawas	10 km. (11 Miles)
To Pechi Dam	6 km. (4 Miles)	To Vorchum	24 km. (15 Miles)
To Sandeman Tangi	5 km. (3 Miles)	To Kahan	26 km. (16 Miles)
To Pechi	8 km. (5 Miles)	To Wana	32 km. (20 Miles)
To Chena	11 km. (7 Miles)	To Kachi Police Station	53 km. (33 Miles)
To Zarand	14 km. (9 Miles)	To Chulair Valley	23 km. (14 Miles)

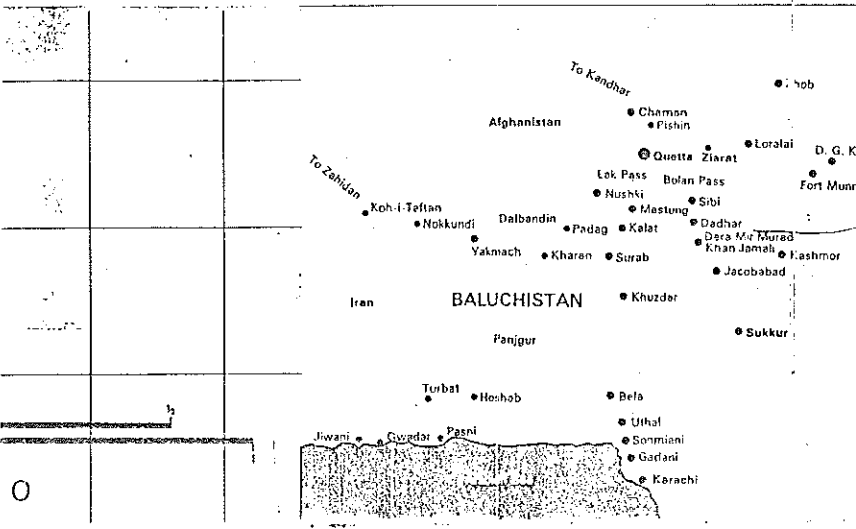
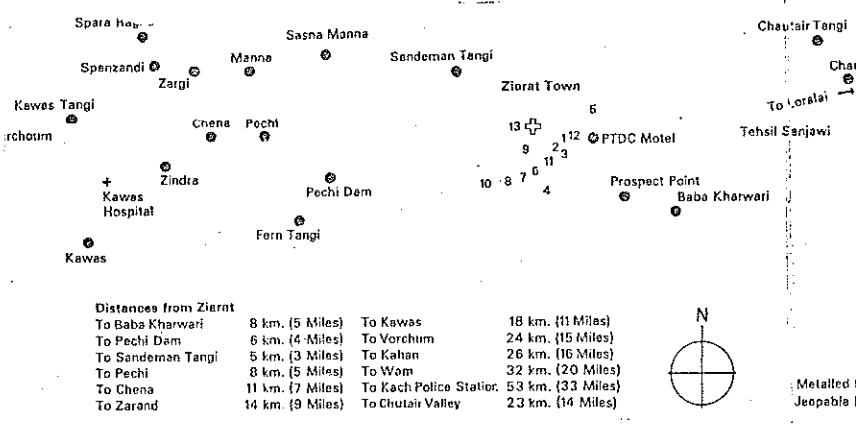


Metalled Road
Jeepable Road



G-4	30. PIA Reservation and City Terminal, Jinnah Road, Tel. 70163	H-6
H-6	Local Administration	
H-6	31. Deputy Commissioner, Quetta, Court building, Shar-e-Iqbal, Tel. 75070	G-6
H-5	Police Registration	
F-7	32. Foreign Registration Office, Court Road	G-6
E-9	Railway Offices	
G-8	33. Divisional Superintendent of Railways, Zarghun Road, Tel. 70171	D-8
G-8	Places of Interest & Recreation	
E-9	34. Archaeological Museum of Baluchistan, off Jinnah Road, Tel. 75142	G-7
G-0	35. Geological Museum, Sariab Road, Tel. 72748	D-12
H-7	36. Command & Staff College Museum, Staff College Road	L-3
G-6	37. Chiltan Handicraft Shop, Jinnah Road, Tel. 71139	G-6
F-6	38. Baluchistan Public Library, Jinnah Road, Tel. 71094	G-7
H-6	39. Liaquat Park, off Jinnah Road	G-6
E-12	40. Hazar Ganji National Park, Mastung Road, (25 km.), Tel. 72029	A-13
G-5	41. City Centre	H-7
D-9	42. Imdad Cinema, Jinnah Road	E-9
F-6	43. Ayub Stadium	C-4
H-5	44. Sarfag Park	I-8
G-6	45. Jinnah Road	G-7
G-6	46. Saraj Gang Bazar	H-6
H-5	47. Shar-e-Liaquat	H-8
G-6	48. Quetta Club	L-4
H-5	49. View Point	A-8
G-6	50. Recreational Park, Sariab Road, Opp. University of Baluchistan	B-13

Hotels	1. Grand Hotel Tel: 17
	2. Ziarat Hotel Tel: 08
	3. Saooat Hotel
	4. PTDC Motel, Tel: 15
Banks	
	6. United Bank Ltd. Tel: 61
	7. Muslim Commercial Bank Ltd. Tel: 13
	8. National Bank of Pakistan Tel: 32
Police Station	
	9. Police Station Tel: 10
Telephone & Telegraph Office	
	10. Telephone & Telegraph Office Tel: 5
Post Office	
	11. Post Office Tel: 2
Bus Stand	
	12. Bus Stand
Hospital	
	13. Hospital Tel: 24



3.3 Manpower

3.3.1 Introduction

The taxi industry in USA obviously depends upon its drivers: 86.6% of the workers are drivers. Among these drivers, 41.9% are employees, and 58.1% are independent contractors. In USA, taxi industry presents a major employment opportunity for minority workers. In all, 35.9% of operators lease to at least some of their drivers. Leasing is proportionately more prevalent in larger cities — 64.3% lease drivers and 35.7% commission.[8]

In USA, while only 8.9% of the taxi organizations are unionized, the percentage of the work force which is unionized is 34.1 per cent. managerial, office and maintenance workers are slightly less unionized (31.0%) than are drivers (34.3%). Among commission drivers, 51.% are unionized while for hourly lease, and owner-drivers the unionization rates are 12.4%, 28.3% and 19.4% respectively. [8].

The amount of driver turnover can be measured by the length of time that drivers have worked for the organizations for which they are now employed. In USA, drivers show a fairly uniform distribution of longevity: 30.0% have worked for their organization for one year or less; 20.8% for between one and two years; and 26.1 percent for over four years. The mean length of time with the organization is 46.7 months, and the median is 24.4 months. In USA, the taxi industry uses marketing advisors or consultants to a very minor degree; only 5.9% of the organizations report using these outside

specialists. Among the drivers who are paid a commission of total revenues, there is relatively little variation in the commission rates paid to new drivers. In fact, 46% of the operators who have commission drivers start their new drivers at 40% commission. The mean commission rate is 41.1%. Only 16.6% of the organizations employing commission drivers increase their commission rates with a driver's seniority.[8]

3.3.2 Quetta City:

3.3.2.1 Owners: In addition to the rickshaws other means of transport in the city are wagons, suzukis and buses. Our survey covered the organizations and ownerships structure of the taxi industry - number of vehicles owned by operators, owner's view on profitability of the business, the nature of contracts between owners and drivers, and working conditions (practices and problems) of the work force. In Quetta, there are only two modes of operation of any significance - the owner-driver, and the other owner i.e. contractor (who leases his vehicle(s) or employs a driver on commission. Figure 3.2 shows that 100% owner-drivers own just one rickshaw while about 94% contractor-owners own just one vehicle, 4% own two vehicles and 2% other owner have 5 rickshaws. Figure 3.3 shows the time period of the two categories of owners of rickshaw (i.e. owner-driver and the contractor have been in this business. From Figure 3.3 we observe that to start with 0% of rickshaw owner-drivers stay in business for less than a year, 0% for one year, 0% for two

Fig. 3.2
DISTRIBUTION OF NO. OF VEHICLES OWNED BY
OWNERSHIP GROUP.

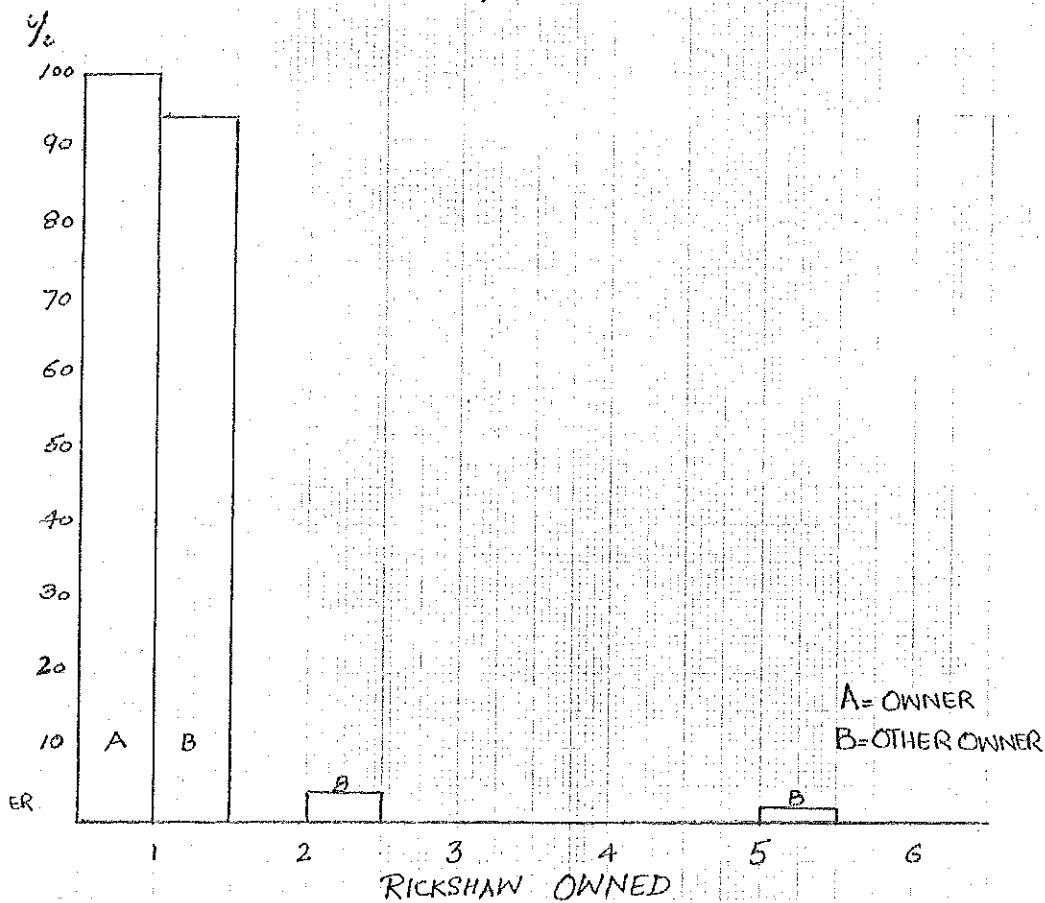
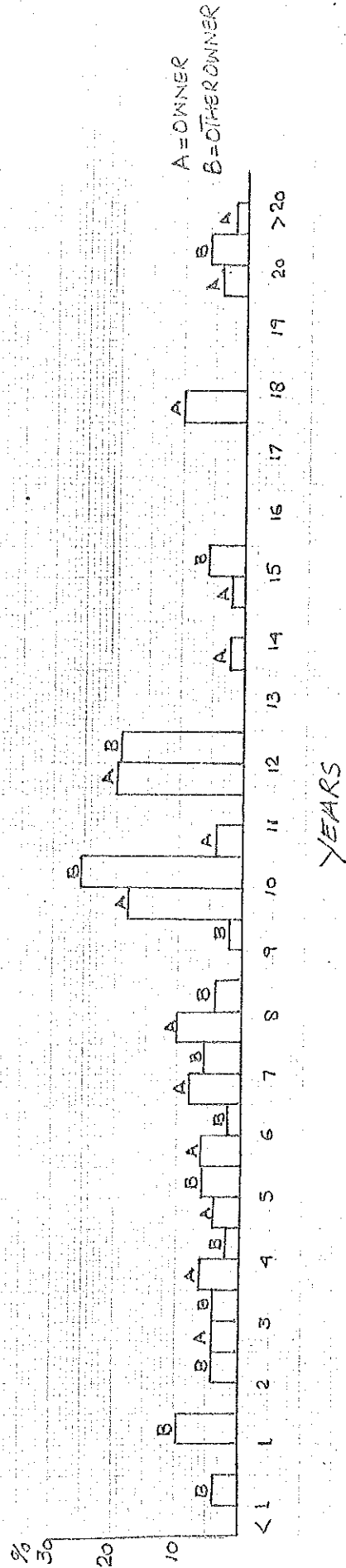


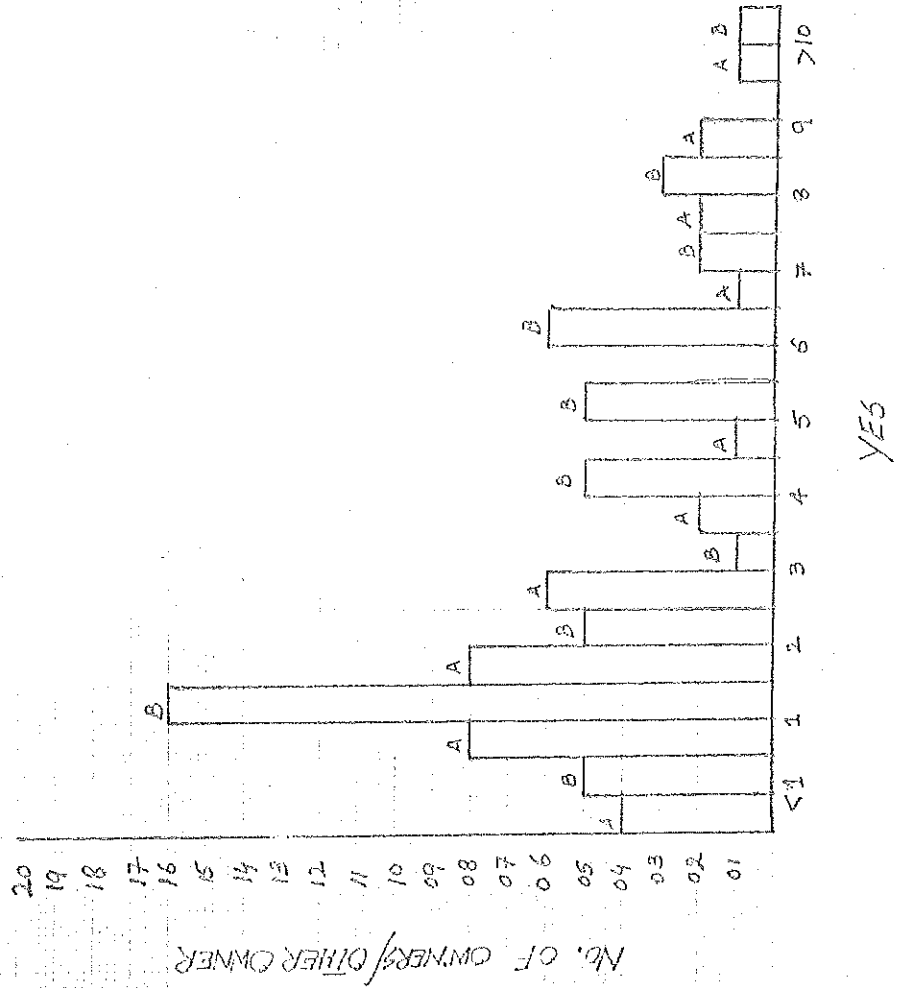
Fig. 3.3: DISTRIBUTION OF PERIOD AS TAXIOWNER.
(OWNER SHIP DURATION).



years, 4% for three years, 6% for four years, 4% for five years and so on. In case of rickshaw contractors these figures are 0% for less than one year, 4% for two years, 4% for three years, 2% for four years, 6% for five years, etc. Figure 3.4 shows the percentage of owners wishing to leave the industry as a function of the length of time in business. Maximum number of owner-drivers (8%) want to quit after 2 years in business. Other owners (16%) want to quit after 1 year.

3.3.2.2 Taxi Operation: The general practice is for rickshaws to operate from stands, although in the busier parts of Quetta a certain amount of cruising is seen and fares are picked up by vehicles returning to a stand. The term 'stand' is used here in a pragmatic rather than legal sense since there are only a mere handful of authorised taxi stands in the area. An authorised stand is one where the local authority (Municipal Corporation, and Cantonment Board) stipulate that a parking fee shall be charged, and where revenue collection has been let out to a contractor. There are such stands in Quetta with daily fees at Rs. 2.00. Elsewhere taxis use the public highway, parking lots of public and commercial buildings and vacant ground as their stands. The definition of stand adopted for this study was any location where two or more taxis habitually wait for the purposes of picking up passengers. Some 22 such locations covering the whole of the urbanized area of Quetta, were covered in the survey.

Fig-3.4: PERCENTAGE OF OWNER/OTHER OWNER WISING TO LEAVE THE INDUSTRY AS A FUNCTION OF LENGTH OF TIME IN BUSINESS. CATEGORY OWNERSHIP.



Owner Drives :- A
Other Owner :- B

YES

In the survey with passengers, a number of ancillary questions were put to the taxi drivers. Two of those related to the identity of the vehicle owner and to how the taxi was operated. Four categories of operation were specified:-

- a vehicle owned exclusively by the driver (owner driver)
- a vehicle owned by the driver and someone else (joint owner)
- a vehicle being driven by a regular driver who receives a regular monthly salary from the owner (employee)
- the driver is someone who has hired or contracted the vehicle from the owner, for either a fixed fee or on a commission basis.

The distribution of the number of operators falling within each of these four categories showed that two categories are in practice. For the total vehicles covered in the survey, it can be seen that there is a fairly even divide between owner drivers on one hand and all other categories combined on the other. The owners employ drivers to operate their vehicles under the following arrangements/practices:-

- 1) The vehicle is contracted or hired out at Rs.70-100 daily.
- 2) The vehicle is contracted or hired out at Rs.1500-2800 monthly.
- 3) If the driver is a regular employee at Rs.50-60 daily.
- 4) If the driver is a regular employee at Rs. 500-1500 monthly.

The most common practice is that of contract hire arrangements which covers over 90% of all cases. Under this agreement the driver gets a nominal monthly wage but retains the balance amount after paying a fixed daily amount to the

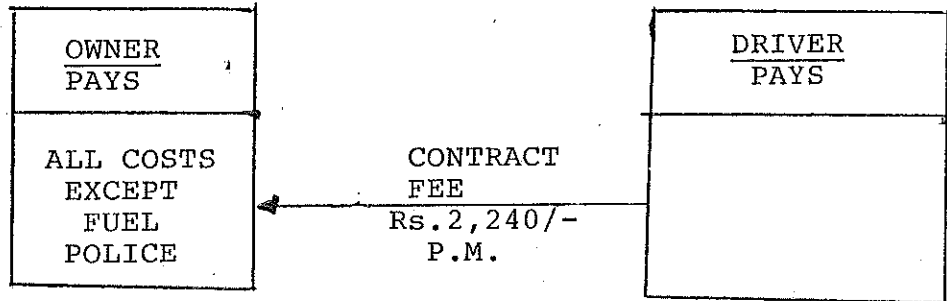
owner of the rickshaw. More than 10% of the contract prices for rickshaws fall within the range of Rs. 1500 to 1900 per month while more than 20% fall within Rs. 1500 to 2200 and 36% fall within 2000 to 2500 range. This shows that there is a big variation in the practice of agreed contract prices. There are no hard and fast rules/practices governing the contractual arrangements. In some arrangements the driver may be asked to meet some of the operating cost of the rickshaw. Various form of contractual arrangements is shown diagrammatically (Figure 3.5). Similarly driver's monthly wages also show a wide variation ranging from a meagre Rs. 500 to 1200 per month. If the contract price is more, the driver is likely to get a bigger basic pay. Some owner-drivers supplement their income through other sources. Tabulation shows the income from rickshaw operation as percentage of the total income of drivers. Other professions in addition to driving the rickshaw are book seller, mechanic, small garrage owner, serving and retired government servants, etc.

We can obtain a fairly idea of the scale of the financial problems as they affect the contracting driver from the figures given below:-

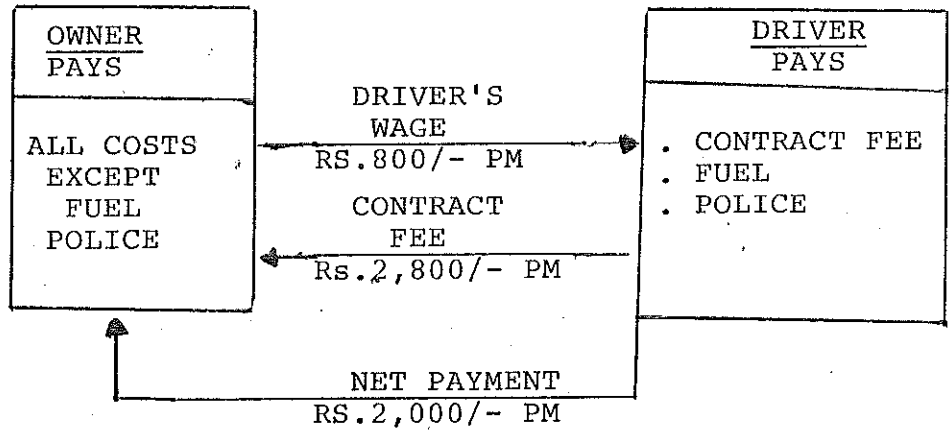
1)	Contract (net value)	Rs. 2,240
2)	Fuel	Rs. 1,200
3)	Police	Rs. 6
4)	Finances	Rs. 30

Fig. 3.5: CONTRACT ARRANGEMENTS

RICKSHAW: CONTRACTOR



JOINT CONTRACTOR/
EMPLOYEE



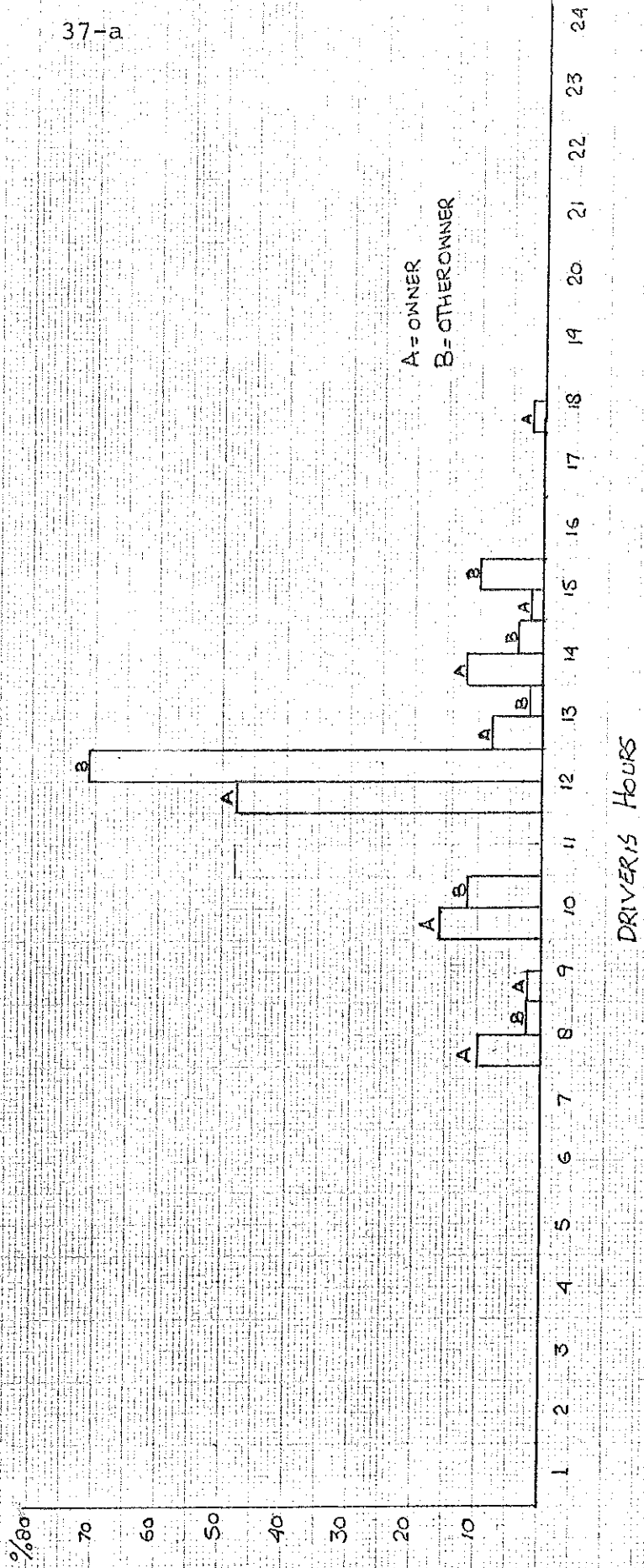
Adding to this small items such as puncture repairs, gives a monthly total in the region of Rs. 3,550. On average the expected fare revenue to be earned is not a great ideal more than this — as a rough approximation we can take Rs. 2.00 per kilometre multiplied by a monthly revenue kilometrage of 1680 kms providing the driver with an income of less than Rs. 1,200 per month.

One of the major problems faced by this class of drivers is insecurity. Since taxi operation is essentially a random affair, there will be days when revenue is insufficient to pay the contract fee which is normally charged on a daily basis. This can lead to discriminations; a severing of the relationship between owner and driver, and possibly the loss of employment. This problem can be serious when the vehicle is not kept in good repair and keeps breaking down, leading to a loss of revenue earning potential, and on those days when the activities of the police have been more pronounced.

When a vehicle is off the road - for repairs or for servicing - there is no contract for the driver, and there are of course no provisions in the industry for such benefits as sickenss pay, paid holidays, or retirement or disability pensions.

The working time of the driver is relatively arduous. Figure 3.6 shows that the greater portion of the rickshaw contract drivers are on duty for about 12 hours per day, but with some working upto 15 or 18 hours per day. Owner drivers

FIG. 3.6: HOURS WORKED PER DAY.



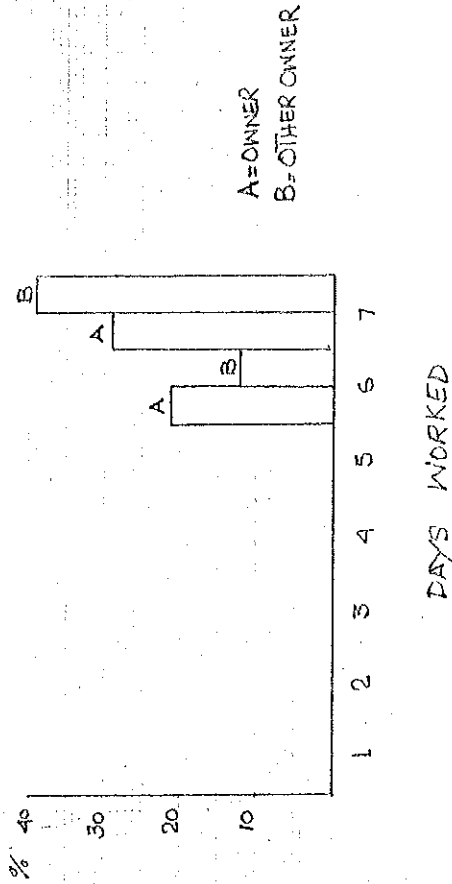
appear to work marginally shorter hours. However, it should be remembered that only about 25% of the time is spent in actually driving. For taxi, there are 12 or 13 hours per day but some working 15 to 18 hours per day.

The majority work (Figure 3.7) 7 days a week, but some work for 6 days, so that over the year we estimate that the drivers are working some 320-338 days, including periods deducted for sickness, enforced days off due to the vehicle being off the road etc.

One final analysis with respect to the drivers, is the length of time they have spent in the taxi industry. Here we find that there is a greater length of service than was found for the owners. For example 23% owner-drivers and 19% of contractor/employees have been driving for less than 5 years, whereas only 77% of those owners who contract out their vehicles and 81% of those who use employee/contractor drivers have been in business for 5 years or longer.

3.3.2.3 Operating Problems: During the course of the interviews each taxi owner was asked what he considered to be the main problems encountered in the day to day operation of his vehicle. This was left as an open ended question, allowing the respondent total freedom of choice to cite whatever came to his/her mind. The interviewers were instructed not to prompt or lead the respondent by suggesting possibilities.

Fig. 3.7: DAYS WORKED PER WEEK.



In the analysis of the responses (Table 3.2) the problems which was cited first was taken to be the most important, (problem 1) the one came second on the list to be the second most serious (problem 2) and so on. The responses were subsequently coded into 9 groups of related subjects. Of the 300 owners in the sample, 167 (54%) admitted to having problems. Of those 44% rickshaw drivers admitted having problems with passengers; 20% rickshaw drivers identified the spare parts, and 24% rickshaw drivers termed drivers as their main problem (Table 3.2). 6 percent rickshaw driver termed police as a main problem.

The major problem identified is the predatory role that the passengers who do not have a pleasant behaviour with the driver. This a practice widespread throughout Pakistan and applied to all transport operators in the private sector. Other abuses of power were witnessed; the most prevalent being the practice of police officers appropriating vehicles for their own use without payment thereby adding to the operator's costs and depriving him of the opportunity of earning revenue.

3.4 Vehicles and Fares

3.4.1 Introduction

Our survey in Quetta dealt with the institutional and organizational aspects of rickshaw operations covering important factors like ownerships structure of the industry and vehicle

Table 3.1
Main Problem Facing Taxi Owner

<u>Problem</u>	<u>%</u>
Passenger	44
Drivers	24
Spare Parts	20
Roads	6
Police	6

characteristics. The dominating feature of the taxi industry is absence of any organized operations by the public or the private sector. In most cities of the advanced countries like U.K. and USA there are operating companies - both at a small and bigger scale but in Quetta the fragmented nature of the taxi industry is very conspicuous.

3.4.2 Vehicle Fleet

3.4.2.1 Size: Like any other city in the country Quetta has an Excise and Taxation Office (ETO) which is the licensing authority, and the Regional Transport Authority (RTA) which grants route permits to operate a taxi. The route permit is renewed every three years. Drivers and union representatives gave their own estimates as to the number of rickshaws operating in Quetta City and Cantonment which were a little different than the record of RTA/ETO. In 1987, 3,563 vehicle route permits were issued for rickshaws and 10 for taxicabs but 2,505 rickshaws and 54 taxicabs were on road as per ETO record. But actually taxicabs are not operating in Quetta City. These taxis are hire cars. Motor Vehicle Examiner from Police Department inspects the rickshaw before route permit is issued.

There is no annual inspection of vehicle and there is no way to find the taxi which has gone out of operation since route permit was issued last.

3.4.2.2 Taxi Models: A few years ago all the rickshaws were imported. Vespa Chasis from Italy was very popular and proved a good economical machine. Now the rickshaws are manufactured by small scale industries, principally centred in Lahore.

The age distribution of rickshaws is shown in Figure 3.8. No rickshaw is newer than 1987 model and older than 1968 year. Most of the numbers covered in our survey were of 1979 model 20% followed by 1978 (18%) and 1980 (16%) and 1976 (14%). The age distribution shows that majority of rickshaws in the city must have covered a lot of mileage by now.

ETO record showed that the oldest rickshaw was manufactured in 1968 and the latest one in 1981. Thus, the median year of manufacture of rickshaw is 1977 and the average age comes out to be 10.54 years. Most of the rickshaws in Quetta were maintained and carried with good appearance. Table 3.3 shows the average age, median year of manufacture oldest and newest would in use by the driver-owners and other owners.

3.4.2.3 Income and Profit: Fares collected from passengers is the major source of revenue. Fare fixed by the RTA is Rs. 2.00 per km for rickshaw and every driver is supposed to charge the fare as per meter reading but practically no one turns the meter on. Most of the vehicles do not have the meters. The fare is charged arbitrarily. Average fares by trip length is shown in Table 3.4. The average fare per km actually charged

Fig. 3.8: YEARS OF MANUFACTURING.

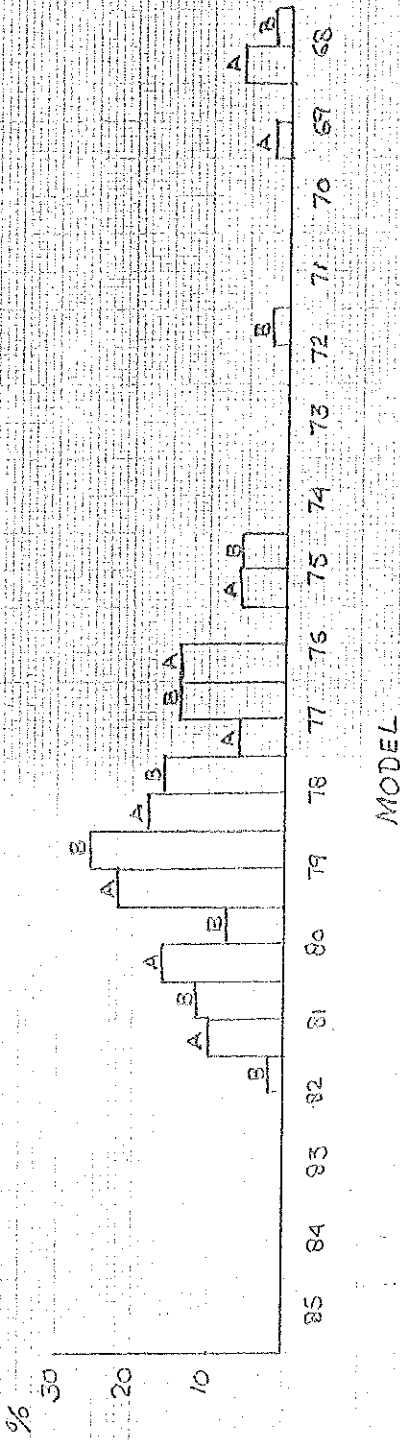


Table 3.2
Age of Vehicle

1. Average Age (Years)	10.54
2. Median Year of Manufacturing	1977
3. Oldes Manufacturing Year	1967
4. Year of Manufacturing of Newest Vehicle.	1981

Table 3.3
Average Fares by Trip Length

<u>Journey Length (KM)</u>	<u>Average Fare</u>	<u>Average Fare/Km</u>
< 1.5	8.45	5.63
1.5 - 2.4	5.65	2.91
2.5 - 3.4	5.59	1.90
3.5 - 4.4	6.54	1.66
4.5 - 5.4	8.00	1.62
5.5 - 6.4	8.17	1.37
6.5 - 7.4	8.29	1.19
7.5 - 8.4	8.73	1.10
8.5 - 9.4	10.31	1.15
9.5 - 10.4	13.00	1.31
10.5 - 11.4	13.00	1.19
11.5 - 12.4	14.00	1.17
> 12.5	15.83	1.27

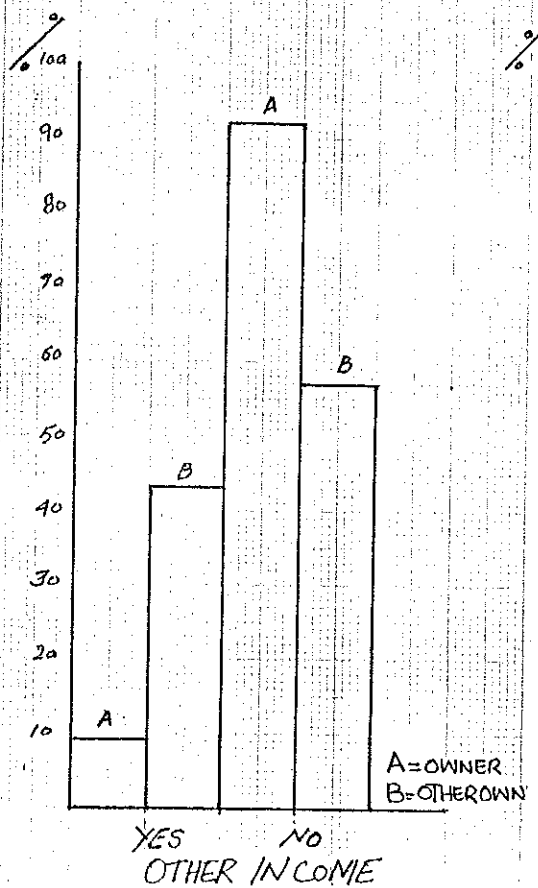
is close to the official rate when the trip is approximately 3 Km or more. Smaller the trip length more is the fare per km. Majority of the passengers have got used to paying fare without the meter. A small percentage of revenue is raised by using taxi for transporting cargo. Table 3.5 shows the profit/loss of owner-drivers and other owners. No one confessed a large loss and small loss. Most of the owners indicated marginal profit (86% and 96.1%).

Table 3.4
Profit/Loss - All Ownes

	<u>Owner</u>	<u>Other-owner</u>	<u>All-owner</u>
Large Profit	-	-	-
Small profit	14.0	3.9	8.95
Marginal	86.0	96.1	91.05
Small Loss	-	-	-
Large Loss	-	-	-

To the question on other sources of income (Figure 3.9) 9% of owner-drivers and 43% of other owners said 'Yes' while 92% and 57% said 'No'. This shows that most of owner-drivers have no other source of income except the taxi fare while others earned equal amount from sources other than taxi fare.

Fig.3.9:- OTHER SOURCE OF INCOME.



Chapter - 4

COSTS4.1 Introduction

Fare structure is the major source of revenue for the taxi industry while operating costs are the capital value of the vehicle, its depreciation, spare parts cost, driver's pay, vehicle maintenance and repair cost and miscellaneous expenditure. It is relatively simpler for a taxi operator to reckon his revenue i.e. the total of fares collected from the passengers but the proper determination of costs is not so simple. We interviewed large number of taxi owners and drivers using a detailed form (Figure 4.1) and found out that most of them never kept a written record of operating costs. So, most of the answers by those interviewed were from their memories or guess estimates.

4.2 Market Value

There are no organized second hand rickshaw dealers. So, the average market value has been determined by asking questions from the owners and drivers. The assessed market values are shown in Table 4.1. The market value of rickshaw given by the owner-driver (Rs. 71,450) was lesser than other owners (Rs. 72,402). Thus the average market value of rickshaw came out to be Rs. 71,926.

Table 4.1
Average Market Value

Owner Driver	=	Rs. 71,450.00
Other owner	=	Rs. 72,401.96
All Owner	=	Rs. 71,925.98

Fig. 4.1: Detailed Survey Form

GOVERNMENT OF PAKISTAN
 PLANNING AND DEVELOPMENT DIVISION
 NATIONAL TRANSPORT RESEARCH CENTRE

NATIONAL SURVEY OF TAXI SERVICES

OWNER/OPERATOR SURVEY

VEHICLE DATA

1. Make _____ 2. Model.....
3. Registration No. 4. Cubic capacity _____
5. How is the vehicle operated ?
- a) Vehicle is owned exclusively by driver.....
 - b) Vehicle is owned by driver and one or more others...
 - c) Driver is hiring or renting vehicle from owner.....
 - d) Driver is a regular employee of vehicle owner.....

INFORMATION FROM VEHICLE DRIVER

6. On average, how many hours each day are you working with this vehicle ?.....
7. Is this vehicle also used regularly by other drivers ?..... YES NO
8. IF YES: For how many hours each day does the other driver(s) work?
9. How many days do you work each week driving this vehicle ?.....
10. For how long have you been working in the taxi industry ?
- _____ Years _____ Months

IF DRIVER IS ALSO THE OWNER GO TO Q. 14

11. If the vehicle is contracted or hired out, what is the fee ?

Rs. _____ (Month) (Week) (Day)

12. If the driver is a regular employee, what is his wage ?

Basic Pay Rs. _____ (Month) (Week) (Day)

Allowances Rs. _____ (Month) (Week) (Day)

13. Who pays for
- a) Petrol..... Driver Owner
 - b) Servicing/Oil..... Driver Owner
 - c) Minor repairs..... Driver Owner
 - d) Tyres/innertubes..... Driver Owner
 - e) Accident repairs..... Driver Owner
 - f) Gratification/fines..... Driver Owner

14. What is the Name and Address of the owner of this vehicle ?

INFORMATION FROM VEHICLE OWNER

15. What relationship does the REGISTERED OWNER have with the taxi industry and how many vehicles are owned ?

Taxi Rick-shaw

- a) He is the sole owner who takes full profits and losses of the operation of the vehicle(s).....
- b) He is a joint owner who takes part share of profits and losses.
- c) He provides hire purchase or other finance for the sale of the vehicle but is not involved in its operation.....

16. For how long have you been in the taxi business ?

_____ years _____ months

17. Have you been operating with this vehicle in some other town before operating in Islamabad/Rawalpindi ?.....YES NO

IF YES: COMPLETE Qs. 18,19,20.

IF NO : GO TO Q 21.

18. Where were you operating before ?.....

19. When did you move to Islamabad/Rawalpindi ?
_____ year _____ month

20. Why did you move ?

21. Do you have any other business interests or income ?.....YES NO

IF YES: What percentage of your total income is derived from taxi ownership ?.....

22. What is your experience with regard to the profitability of taxi ownership ?

HIGHLY PROFITABLE	REASONABLY PROFITABLE	JUST BRAKS EVEN	MAKES SMALL LOSS	MAKES LARGE LOSS

23. Do you intend to remain in the taxi business?.....YES NO

24. What do you consider to be the main problems confronting a taxi owner ?

25. Is anyone other than the owner of the vehicle employed in connection with the operation of the taxi business ? YES NO

IF YES: COMPLETE THE INFORMATION OF FORM 2.1 AND ATTATCH TO THIS FORM

26. Are there any premises being used in connection with the taxi business ?.....YES NO

IF YES: COMPLETE THE INFORMATION ON FORM 2.2 AND ATTATCH TO THIS FORM

AQUISITION DETAILS FOR VEHICLE

27. When was the vehicle aquired ? _____ year _____ month

28. Was it already registered as a taxi when aquired ? YES NO

29. How was the vehicle purchased ?
a) outright.....
b) by instalments.....

IF OUTRIGHT PURCHASE: COMPLETE Qs. 30,31 AND THEN GO TO Q. 38.

IF PURCHASED ON INSTALMENTS: GO TO Q. 32.

30. What was total amount paid ?.....Rs. _____

31. How was money raised for outright purchase ?
a) The purchaser contributed from own resources.....
b) Loan from family.....
c) Loan from friends.....
d) Loan from bank.....
e) Gift of money
f) Loan from agent/money lender.....
g) Other sources.....

IN THE CASE THAT THE PREVIOUS OWNER WAS NOT PAID OUTRIGHT IN ONE LUMP SUM: COMPLETE Qs. 32 THROUGH TO 37.

32. What was the lump sum value of the vehicle?.....Rs. _____

33. What was the initial deposit?.....Rs. _____

34. What was the value of each instalment? (monthly).....Rs. _____

35. What number of instalments? (monthly).....

36. How easy is it to meet the loan repayments?
 easy difficult very difficult

37. To whom are/were the repayments to be made?
- a) Bank or financial institution.....
 - b) Relative.....
 - c) Friend.....
 - d) Sell vehicle.....
 - e) Friend/money lender.....
 - f) Other.....

38. What is the market value of the vehicle now?.....Rs. _____

INSURANCE

39. What type of insurance does the vehicle have?
- a) None.....
 - b) Franchise Certificate (Owner takes first Rs. 10,000 of risk).....
 - c) Third party (Act).....
 - d) Third party (Risk).....
 - e) Third party + Additions (eg fire, theft, personal accident).....
 - f) Comprehensive (Compensation is given for loss of vehicle in accident).....
 - g) Other (state), _____

40. What is the annual premium?.....Rs. _____

--	--	--	--

OPERATING EXPENSES

41. What general expenses have been incurred over the last 12 months in connection with operating this vehicle?

COMPLETE CHECK LIST 1 AND ATTATCH TO THE FORM.

42. What major items of work have been carried out on the vehicle in last 12 months?

COMPLETE CHECK LIST 2 AND ATTATCH TO THE FORM.

43. What minor repairs and replacement of parts has been carried out over the last 12 months?

COMPLETE CHECK LIST 3 AND ATTATCH TO THE FORM.

44. What is the estimated fuel consumption? _____

--	--

45. How often is the vehicle serviced?..... _____

--	--

46. How often is the engine oil changed?... _____

--	--

47. How often is the gear oil changed?..... _____

--	--

48. How many days has the vehicle been off the road over the last 12 months due to:

a) Accidents.....

--	--	--

b) Breakdowns/Repair.....

--	--	--

c) Illness.....

--	--	--

d) Other reasons.....

--	--	--

(For office use only)

	Date	Pass.	Rej.	Pass.	Rej.
Interviewer _____	_____				
Checked _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coding _____	_____				
Checked _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Data Entry _____	_____				

NATIONAL TRANSPORT RESEARCH CENTRE

NATIONAL SURVEY OF TAXI SERVICES

OWNER/OPERATOR SURVEY

CHECK LIST 3

	REPLACEMENTS		REPAIRS	AMOUNT
	NEW	SECOND HAND		
ALTERNATOR (COIL)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
GENERATOR (DYNAMO)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
LIGHTS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
DISTRIBUTOR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
SPARK PLUGS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
BATTERY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
DIRECTION INDICATORS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
OTHER ELECTRICAL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
TYRES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
INNERTUBES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
STEERING	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
BRAKES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
WHEEL ALIGNMENT/BALANCING	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
CLUTCH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
GEARS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
DIFFERENTIAL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
BEARINGS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
SHOCK ABSORBERS/SUSPENSION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>

OWNER/OPERATOR SURVEY

CHECK LIST 3 (CONTD)

	REPLACEMENTS		REPAIRS	COST
	NEW	SECOND HAND		
CARBURETTOR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
FUEL PUMP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
EXHAUST/SILENCER	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
RADIATOR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
HOSES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
FAN BELT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<hr/>				
UPHOLSTERY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
SEATS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
WINDOWS/DOORS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<hr/>				
OTHERS (PLEASE SPECIFY)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

4.3 Purchase Price

The purchase price varies by model and year of purchase. Table 4.2 shows that the highest purchase price Rs. 100,000 of rickshaw model 1980 which was purchased in 1981 and lowest purchase price Rs. 63,605 of rickshaw model 1977 which was purchased in 1978. Purchase price here means the price paid to the seller plus the amount spent by the buyer on first-time repair/renovation on the vehicle before bringing it on to the road.

The survey results of first-time renovation cost is given in Table 4.3. Owner-driver of rickshaw gave the cost as Rs. 5,966 and other owners as Rs. 4,998 resulting in an average cost of Rs. 5,482. Rickshaws were either purchased outright or on instalments. This indicates (Figure 4.2) that 93% of owner-drivers purchased by making outright payment while 90% of other owners purchased outrightly. 7% owner-drivers and 10% of other users purchased rickshaws on instalments. Figure 4.3 shows the answers to the question on ease of instalment payment. For rickshaw 0% of owner-driver and 20% of other owners termed the payment as easy while 25% of owner-drivers and 40% of other drivers called it difficult. 75% rickshaw driver-owners and 40% other owners termed the payment as very difficult.

With so many of the finance agreements (Figure 4.4) being directly between purchaser and seller (owner-driver, and other owners, 50% for rickshaws) there is a great deal of instability and insecurity for both parties involved in the

Table 4.2

Price by Year of Purchase

	1981	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979	1978	1977	1976	1975
1980	25.0	25.0	12.5	25.0	16.7	-	-	-	100	-	-	-	-	-	-
1979	25.0	25.0	37.5	12.5	33.3	-	100	-	-	-	-	-	-	-	-
1978	25.0	25.0	25.0	12.5	16.7	-	-	-	-	-	-	50.0	-	-	-
1977	-	-	-	12.5	-	-	-	-	-	-	50.0	-	-	-	-
1976	25.0	25.0	12.5	12.5	-	50.0	-	-	-	-	-	-	-	-	-
1975	-	-	12.5	-	16.7	-	-	-	-	-	-	-	-	-	-
1974	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1973	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1972	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1971	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1970	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1969	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1968	-	-	-	-	-	50.0	-	-	-	-	-	-	-	-	-
1967	-	-	-	-	-	-	-	100	-	-	-	-	-	-	-

Average Purchase Price :

Owner = 63,605
 Other-Owner = 68,415
 All Owner = 66,010

Table 4.3

First Time Renovation Cost
(All the time of Purchase)

Owner = 5,966

Other Owner = 4,998

All Owner = 5,482

Fig. 4.2: MODE OF PURCHASE

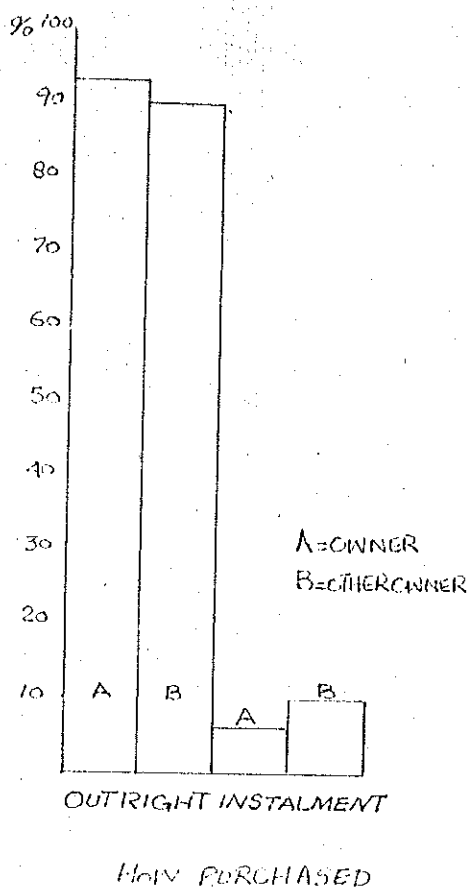


Fig. 4.3: EASE OF REPAYMENT

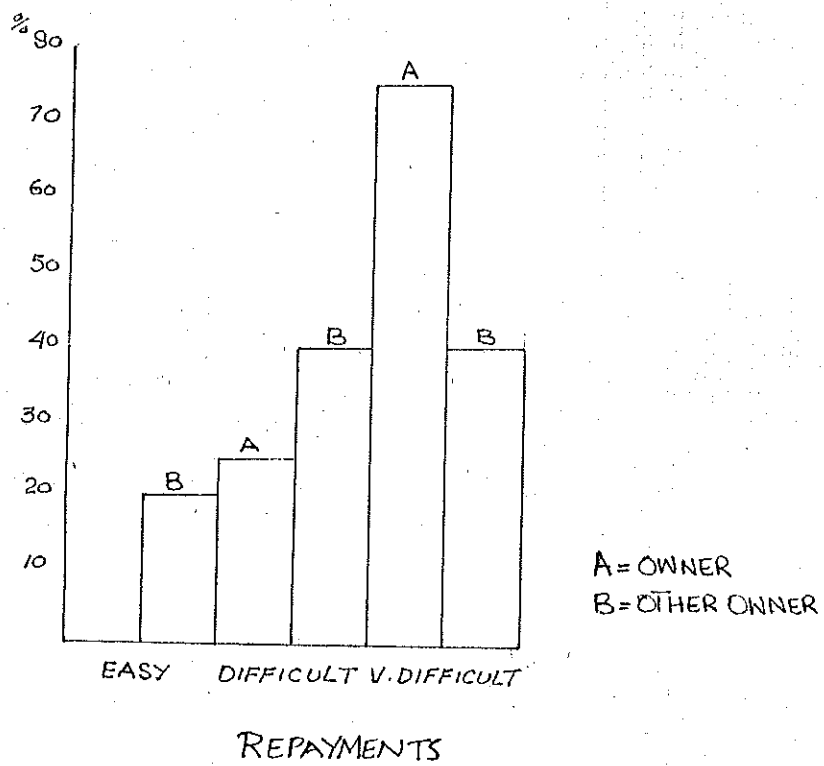
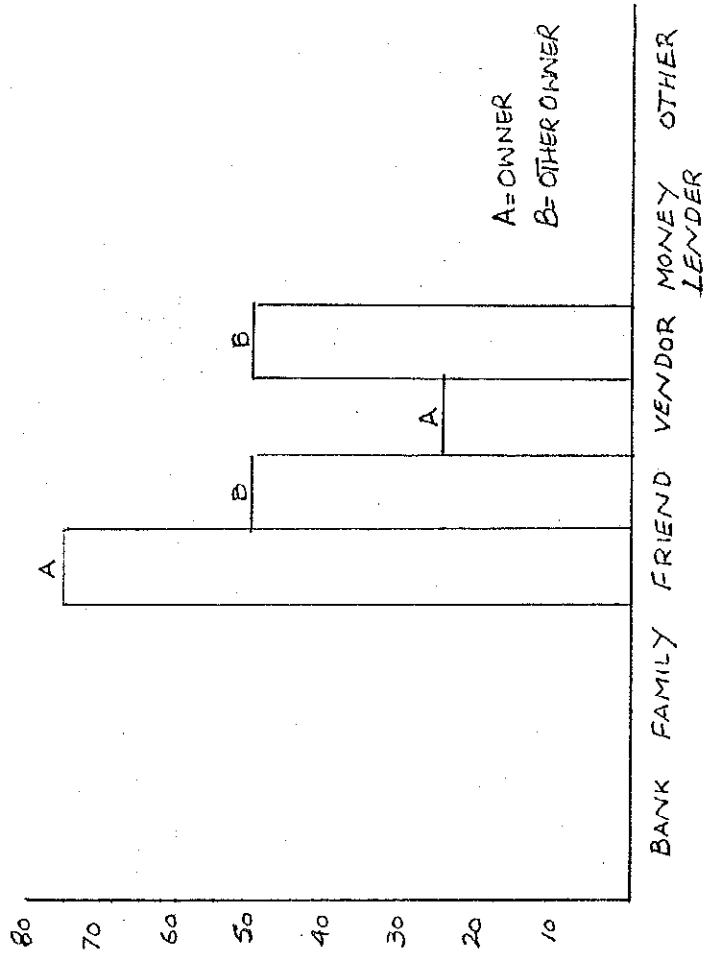


FIGURE 4.4

Fig. 4.4: FINANCE AGENT.



transactions, especially as vehicles are not insured. There were many stories recounted to the interviewers of cases of forcible repossession of vehicles, of the hardships encountered when vehicles break down, resulting in an incapacity to earn revenue to either pay for repairs or keep up with repayments, and of cases where vehicles seriously damaged in accidents are simply returned to the seller with the purchaser unilaterally rescinding the agreement.

Average repayment periods were in the region of 30-35 months. For loans on rickshaw (Figure 4.5) the monthly instalment is typically Rs. 800 to 2200 (for 75%). This level of monthly repayment is particularly onerous for the taxi owner who is in effect trying to put together the capital for the purchase of the vehicle out of his current earnings. Whilst we in this study are concerned with the economics of taxi ownership and operation and hence are not really concerned with the cash flow aspects of the business, or when and how the capital for vehicle acquisition was obtained, the data on net earnings shown later in this study show that on average it is not a feasible proposition to 'save' large sums out of net earnings in order to buy a vehicle.

Amount of initial deposit (Figure 4.6) varies from anything less than Rs. 10,000 to Rs. 35,000. In most cases initial deposit is Rs. 20,000 - 25,000 (50% of transaction).

Fig. 4.5: MONTHLY INSTALMENT.

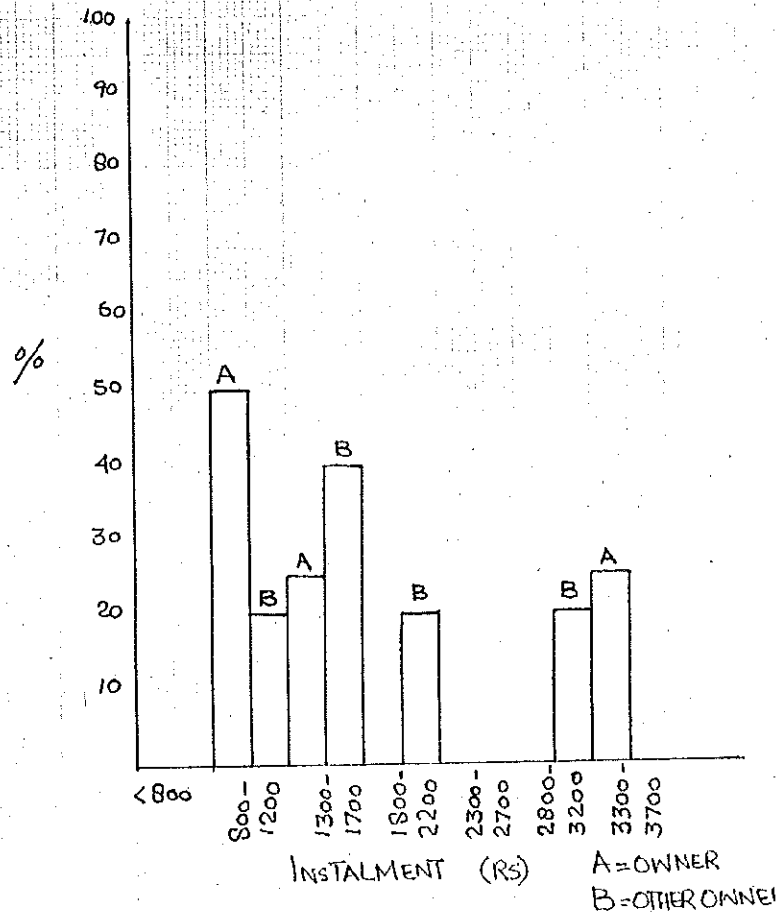


Fig. 4.6: INITIAL DEPOSIT.

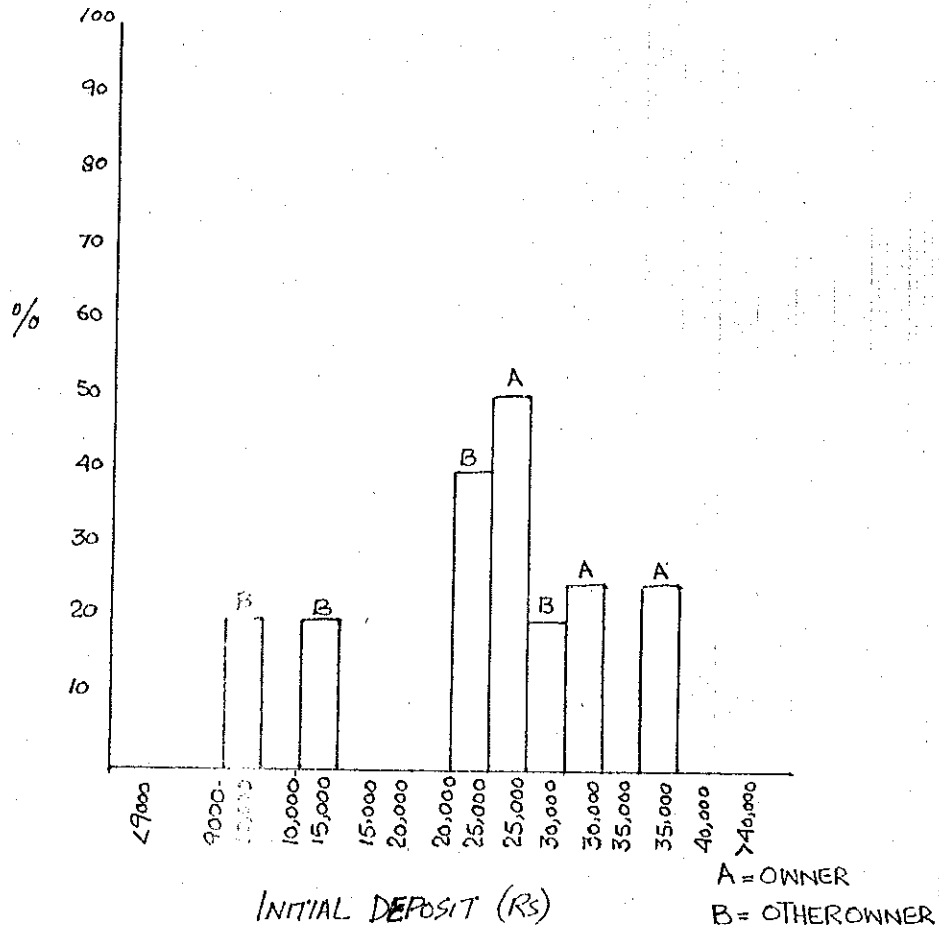


Figure 4.7 shows that the majority of owner purchase rickshaw by own resources (72 to 83%) and balance purchase by family loan and from friends. It is also seen that no body takes the loan from bank, gift and money lender.

4.4 Operating Costs

To consider the vehicle operating costs it is convenient to classify the cost items into fixed and variable costs (variable costs are those which alter as a direct ratio of the distance covered by the vehicle) and to convert the sum of the total operating costs into a unit cost, i.e. as a cost per unit distance or time. Certain cost items have been aggregated in a way which corresponds closer to the peculiarities of the structure of the industry in Pakistan.

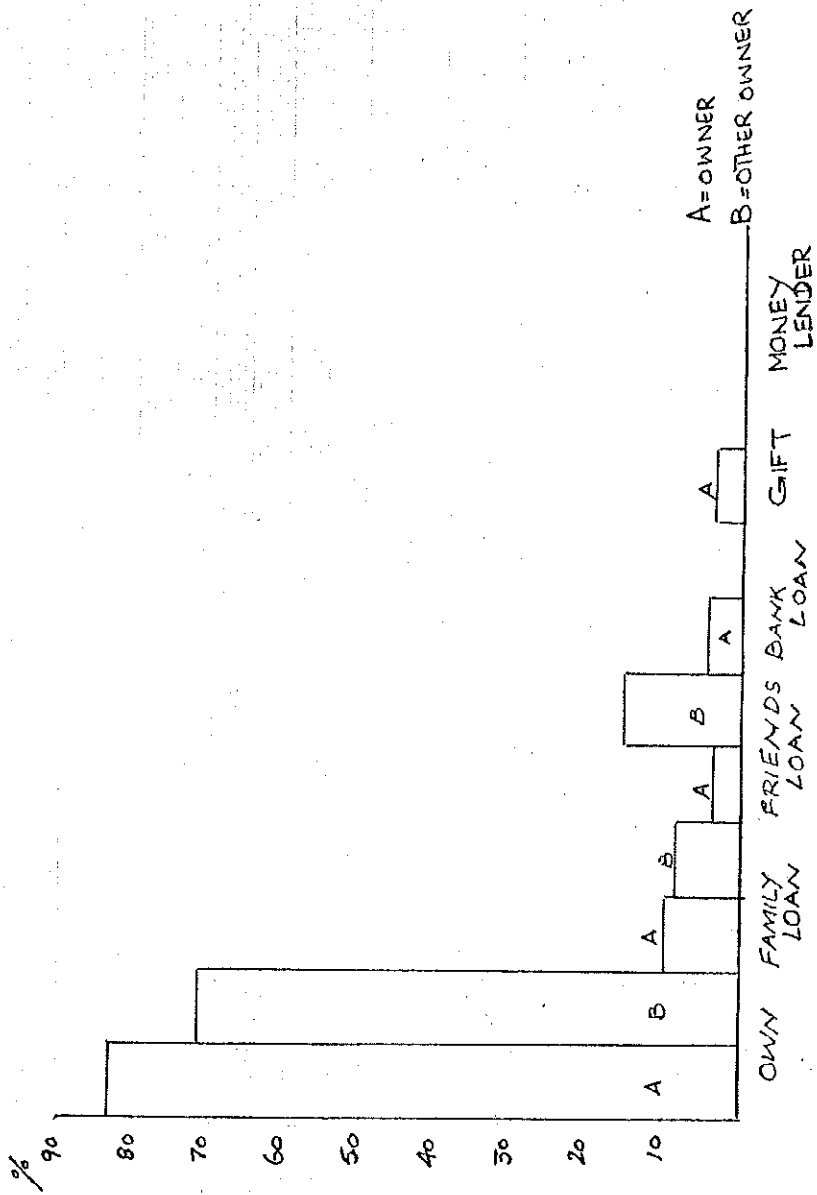
- 1) Fixed Costs: Fixed costs are largely those associated with the capital invested in the enterprises. They are termed fixed because they should be independent of variations in output. In other words, they are costs which are necessarily incurred irrespective of whether the vehicle covers 10 kms or 100,000 kms in a year's operation.

Included under this heading we have:

- The capital value of the vehicle, treated in terms of the opportunity costs of that capital.
- Depreciation of the capital assets represented by the vehicles owned.
- Depreciation of any capital assets represented by premises; offices, workshops and equipment, and garaging employed in the carrying out of the taxi enterprise.

FIGURE 4.7

Fig. 4.7: CAPITAL SOURCE.



- Vehicle registration, licensing, and costs associated with conforming to statutory and administrative requirements. In Pakistan this includes items such as fitness testing, route permits and token tax.
- Insurance.

2) Semi-fixed Costs: This is a category of costs intermediate between the other two. Although they may vary as a function of output, the relationship is not as obvious as in the case of the variable costs. Items included are:-

- Labour costs,
- Accident costs, and
- Major repairs and renovation of the vehicles, which are more a function of the age of the vehicle than the number of kilometres run in the short term.

3) Variable Costs: Sometimes referred to as the direct operating costs, in most cases these can be linearly related to the output of the vehicle. They include:-

- Fuel
- Oil and lubricants,
- Tyres and innertubes, and
- Replacement and repair of mechanical and electrical components.

4.4.1 Fixed Costs:

1) Capital Value: The appropriate factor for consideration in the calculation of the capital costs is the market value of the vehicle at the beginning of the accounting period. The cost to be calculated is the investment income foregone by retaining the vehicle and operating it as a taxi, rather

than investing the equivalent amount in an alternative enterprise or depositing the money in a bank to secure a lower but more assured return on the investment. From the survey data we calculated the average purchase price of rickshaws which included the repair/renovation cost incurred by the driver initially to make his vehicle road worthy.

Investments in the low risk government bonds and saving schemes of return give 12% for public investment. We finally adopted a short - median term investment given an annual return of 15% as our bench mark in the calculation of income of drivers and owners.

2) Other fixed costs: The great majority of owners posses just a single vehicle and in none of the cases covered in the survey were there any premises being used in connection with the operation of the taxi business. Taxis appear to be parked overnight on the public highway, at the owners home or on vacant ground. Hence in the present context we can ignore premises and equipment as a cost item.

Information concerning remaining items of fixed costs were gathered using a check list attached to the questionnaire. Average annual fixed costs are given in Table 4.4 and total average annual fixed costs in Table 4.5.

Table 4.4

Average Annual Fixed Cost (Other Fixed Cost)

	<u>Owner</u>	<u>Contractor (Other Owner)</u>
Vehicle Registration		
Fitness Test	136.2	130.0
Route Permit	80.7	78.0
Token Tax	336.92	336.08
Legal Expenses	-	-
Other professional fee	0.3	10.0
Fines	509.0	281.0
Compensation Payments	37.0	169.6
Gratification Police	112.0	60.0
Gratification Others	4.0	21.0
Union fee	79.2	64.8
Others	-	20.8
Total :	1,295.32	1,179.28

Table 4.5
Total Average Annual Fixed Costs

Owner Driver	=	1,295.32
Other Owner	=	1,179.28
All Owner	=	1,237.30

- (a) Token Tax: This tax is levied on all motor vehicles and collected by the Excise and Taxation Office of the Provincial Government. The prescribed rate at the time of the survey was Rs. 336/- per year for rickshaw. As many as 21% of rickshaw other owners are evading payment.
- (b) Registration: A fee of Rs. 450/- is payable to the Licencing Authority for the registration of new rickshaws, in the case of a change of ownership address for a previously licensed vehicle, and in the case of registering a change of category from private car to that of Public Service Vehicle.
- (c) Union Fees: There is a union for rickshaw drivers in Quetta. The annual membership fee quoted is Rs. 60.00 per annum for rickshaw. It is known that the participation rate is very low but even so membership seems to be largely confined to owner-drivers.
- (d) Insurance: The premium for an insurance policy to cover statutory third party liabilities is Rs. 25/- per year, and there is a clear legal obligation for all motor vehicle to be covered for at least these risks.

The relevant statute is the Motor Vehicle Act 1939. Section 95.2(b) which defines the maximum liability for which insurance cover is required for taxis at Rs. 4,000 per passenger (with a maximum of Rs.20,000 with respect to passengers) and a maximum of Rs.20,000 in respect of other persons (non-passengers).

The survey showed that 55% of rickshaw owners carried no insurance cover whatsoever, while only a

small minority (less than 2%) actually had any valid insurance cover. The remainder satisfied the legal requirement of being able to produce a certificate of insurance by the adoption of one of two practices:

- (i) The purchase from a non-tariff company of a certificate of insurance which is stamped 'Franchise certificate'. In this arrangement, the insured is liable to pay the first Rs. 10,000 of any claim. The franchise certificate should only be issued if the company is appraised of the insured's financial background and is satisfied that the insured could in practice meet the liabilities at risk. However, we are informed that the provisions of this safeguard are not adhered to.
 - (ii) The other more widely adopted option is to purchase a certificate of insurance purporting to provide 'Third Party Act' cover. It is reported however that the possession of such a certificate does not guarantee that there is in fact any real insurance cover involved. In effect, the certificate is issued merely for the purpose of satisfying the legal requirement that the vehicle owner should be able to produce a certificate of insurance. The price paid is a fee solely for the issuance of the certificate and does not constitute the payment of any premium or the writing of an insurance policy.
- (e) Route Permit: The route permit issued by the RTA, Quetta has a validity of three years. The authorised fee is Rs. 80/- and hence the average annual cost should be one third of the above fee (Rs. 66.66).

In practice however the actual average costs are four times higher than they should be. This is most probably attributable to the frequently reported necessity of having to employ agents or make ex-gratia payments in order to 'expedite' the release of permits from the RTA Office.

- (f) Fitness Test: Each taxi is required to undergo a vehicle fitness test every six months. The test is carried out by a vehicle examiner under the responsibility of the Deputy Superintendent of the Traffic Police (DSP) in Quetta. The authorized fee is Rs. 133/- for the first examination and Rs. 25/- for each subsequent examination. In cases where vehicle are presented for examination after the expiry of the previous certificate, a late fee of Rs. 20/- is charged. Average costs per vehicle are given in Table 4.4. On the assumption that it is unlikely that every vehicle is always charged a late fee, the reported costs are well in excess of the authorized fees; this time by a factor of five.
- (g) Compensation Payments: Given that so many vehicles are effectively uninsured, and the fact that those that are only covered against third party personal injuries, there arises the possibility that owners would have to pay compensation to third parties, either for personal injuries or for vehicle damage arising from involvement in accidents. However, it transpired that this element does not figure largely as a component of operating costs since the prevailing practice in the event of an accident is for each party to pay for each repairs to his own vehicle, irrespective of who is to blame for the accident.
- (h) Gratifications to Traffic Police: A marked feature of the operating environment for all public transport operators in Pakistan is the necessity of having to make periodic payments to the traffic police. This practice is now so deep-rooted and widespread that it has assumed some significance as a component of operating costs. During the survey, not all owners would admit to this practice, but others assured us that all taxi operators had to make payments in some measure. Hence the costs

reported in Table 4.4, averaged across the whole industry, are most probably an underestimate of the total sums involved.

- (i) Fines: Closely associated with the expenses incurred in payment to the Police are costs incurred in payment of fines. It has not been possible within the time constraints of this study to examine court records and analyse the nature of the offences committed, but the general impression is that the majority of challans (summons) are issued in connection with irregularities in vehicle documentation and hence are related to the standing charges or fixed costs of vehicle ownership. One observation warranted on the figures quoted in Table 4.4, is that the costs given here would not tally with an assessment made from court records, since only a small portion of the sums paid over by the taxi owners and drivers at the courts find their way into the public exchequer.
- (j) Miscellaneous Costs: There are occasions when the vehicle owner incurs additional expenses in connection with the ownership, registration, licensing, etc of the vehicle. It was discovered during the course of the survey that some owners use the services of an agent to look after the bureaucratic aspects of ownership, and an inclusive fee is paid to cover costs of obtaining permits and paying taxes. In many of these cases the owner was not able to say how much of the fee paid to the agent went to cover gratuities, the official charges and fees, or the agents fee. To some extent portions of such agent's fees and the necessary gratuities will be already included in the figures for such items as route permits etc quoted earlier. The residue of these costs are enumerated in table 4.4. The low average figures given are attributable to the small number of respondents reporting any expenditure under this heading.

4.4.2 Semi-Fixed Costs:

(1) Vehicle Renovation: As explained in the introduction of this chapter in view of the age composition of the vehicle fleet, there are certain major items of expenditure which are periodically incurred in order to keep the vehicle on the road and for the older vehicles in particular, these costs can be viewed as being incurred partly in lieu of depreciation. It was thought that they should be differentiated from routine maintenance costs and the most convenient way to handle them was to categorize them separately. Not every vehicle will necessarily incur a particular item of major expenditure every year, but our sample is large enough so that the within group averages it will approximate to the average annual cost for a single vehicle.

Four major items were included:

- Engine
- Bodywork
- Chassis
- Gearbox

The costs recorded for each of these items are shown in Table 4.6 and the total for all items in Table 4.7.

Table 4.6
Average Annual Cost of Renovationn
 (Semi Fixed Cost)

	<u>Owner</u>	<u>Contractor(Other Owners)</u>
Recondition Engine	-	-
New Engine	-	-
Overhaul of Engine	3,452	4,136
Repairs to Chasis	164	200
Major repair to body work	807.2	632
Respary	256	56
Accesspries Fitted	24	36
Total :	4,703.2	5,060

Table 4.7
Total Average Annual Semi Fixed Costs

Owner Driver = 4,703.2

Other Owner = 14,660

All Owner = 9,682

Note: Cost against other owners include the wages of the driver while for owner-driver no wages are included.

(2) Labour Costs: Details of the vehicle hire contracts and wages prevailing in the Quetta taxi industry have been recorded. Here we need to indicate how those costs should be accounted.

The simplest case is that of the owner driver, where in all but the exceptional cases there are no labour costs accruing to the operation labour is recompensed out as profits. For the remainder, we shall eventually need to elucidate where responsibilities for different cost components lie with the contractor or with the owner and how the revenues are split between the two parties, but at this stage of the analysis the assignment of costs is not particularly material. The relevant annual costs are not proved feasible to carry out a full categorization of labour costs by individual vehicle type. The large majority of contracts in the taxicab sector are of the simple contract hire form, and hence these two types are typical for the industry as a whole.

The total average annual semi-fixed costs are given in Table 4.7. Since owner drivers as a rule do not have any direct labour costs it would in this case be misleading to give an average figure for both ownership categories.

4.4.3 Variable Costs:

(1) Vehicle Maintenance & Repairs: Conventional cost models distinguish between labour and part replacement in accounting for maintenance costs. In this case it was not possible

to do this since due to the informal and small scale nature of the motor repair industry owners where in many cases unable to distinguish between the part and labour components of the cost of replacement of a worn out part or a repair.

Expenditure on part replacement and repairs in vehicle maintenance were tackled in the interview by following a fairly comprehensive pre-prepared check list dealing item by item with most eventualities. The average annual maintenance and repair costs are given in Table 4.8 with items grouped into four categories; electrical, mechanical, tyres and innertubes, and bodywork. Tyres and innertubes account for approximately 27% of the total costs. Whilst battery replacement, viewed as a major cost item in previous vehicle operating cost studies in Pakistan, accounts for only about 8% of part replacement and repair costs.

In order to check on the consistency of the reported data, a survey of spare part prices was conducted with several dealers in Quetta the results of which are shown in Table 4.9.

Table 4.8
Average Annual Maintenance and Repair Cost

	<u>Owner</u>	<u>Contractor (Other Owner)</u>
A) <u>Electrical</u>		
Alternator (Coil)	95.7	90.6
Lights	106.9	103.8
Distributor	17.6	7.0
Spark Plugs	197.84	194.44
Battery	304.2	172.4
Direction Indicators	85.0	66.6
Other Electrical	8.0	1.5
B) <u>Tyres and Tubes</u>	1,144.8	1,088.0
C) <u>Mechanical</u>		
Steering	232.4	83.6
Brakes	281.8	200.68
Clutch	123.5	97.12
Gears	295.62	199.0
Differential	43.8	10.98
Bearings	92.0	32.0
Shock Absorbers	211.1	94.5
Carborator	108.1	57.9
Silencer	298.54	147.8
Hoses	76.2	44.22
D) <u>Body Work</u>		
Upholstery	372.8	308.0
Seats	129.8	101.0
Window/Doors	226.4	132.0
Others	16.0	10.0
Total :-	4,468.10	3,152.54

Table 4.9
Prices for Auto parts from Dealers in Quetta
 (Rickshaw)

S.No.	Item	Rate(Rs.)	Origin	Remarks
1.	Alternator/Coil	50/- 1	Pak	1 used
2.	Head Light	225/- 1	Foreign	1 used
3.	Comb bush/ Distributor	35/- 1	Foreign	1 used
4.	Battery	-	-	No need for light for horn second hand used.
5.	Spark Plugs	80/- 4	Pak	Set changed every four months.
6.	Indicators	55/- (Front) 1 75/- (Back) 1	Pak	-
7.	Tyres and Tubes	450/- 1 275/- 1	China Pak	3 used & runs for 8 to 10 months.
8.	Steering Rod used.	900/-	Foreign	One Rod used.
9.	Brakes	1,750/-	Foreign	Complete Set
10.	Clutch Assembly	1,150/-	Foreign	Usually Clutch Plate used Rs. 75/-.
11.	Gear Box	1,500/-	Foreign	For all pieces.
12.	Differential	600/-	Italy	Usually Rs.260/- or Rs.100/- used.
13.	a) Bearings(Wheel)	90+60 = 1,500 with cone	Japan	Two bearings used in one wheel, 6 used for the three wheels.
	b) Bearings(Engine)	140/- 250/-	Japan Japan	6 Bearings used in Engine.
14.	Shock Absorbers	365/-	Foreign	One used.
15.	Carboretter	725/-	Foreign	One used.
16.	Silencer	100/- 150/-	Pak Pak	One used usually welding repairs.
17.	Hoses	25/-	Pak	-
18.	a) Complete Engine overhauling.	1,725/-	Pak	Including Labour charges Rs. 125/-
	b) Half overhauling	1,150/-	Pak	Including labour charges Rs.70/-
19.	a) Painting complete respray auter with (inside and outside) bodies repairs (denting)painting.	2,500/-	Pak	-
	b) Outer Respray with denting.	1,550/-		

(2) Lubrication and routine servicing: The most common practice within the industry is for vehicles to receive a routine servicing and oil change at regular intervals of time, rather than as function of distance covered- this practice no doubt is in some measure due to the high incidence of defective odometers. Information on the cost of servicing and oils was obtained by asking how frequently (at what interval) these were carried out. Prices of lubrication were researched at several service stations; the cost of oil changes being calculated as a function of the volume of oil required by each type of vehicle. For rickshaws, the cost of two-stroke mixing oil was added to the cost of fuel. Thus the average annual costs have been calculated on the basis of the reported periodicity of servicing and oil changes, which have been factored to give annual rates to which have been applied appropriate market rates each vehicle type for service and oil costs. This cost for all owners came out to be Rs.1256/-.

(3) Fuel Costs: Although fuel costs are a major element in the cost of taxi operation, we were not able to carry out independent tests of fuel consumption in the typical driving environment of the study area, and instead have had to rely on the owners estimates of the average fuel consumption of his vehicle. Parameters used in calculating the annual fuel cost are given in Table 4.10 and derivation of annual fuel costs in Table 4.11.

Table 4.10

Parameters used in the Derivation of Annual Fuel Cost

	<u>Owner</u>	<u>Other Owner</u>	<u>All Owner</u>
Average Fuel Consumption, Km/Litre	11.31	11.49	11.4
Days worked/annuam	337	339	338
Average Passenger Trip Length (Kms)	5.25	5.03	5.14
Average Distance Empty/Trip Length.	1.10	1.10	1.10
Average Distance covered/trip (Kms)	6.35	6.13	6.24

Table 4.11
Derivation of Annual Fuel Costs

	<u>Owner</u>	<u>Other-owner</u>	<u>All owner</u>
Daily Hours worked	11.72	12.02	11.9
Daily No. of Trips/Vehicle	24	22	23
Daily Kms Travelled/Vehicle (Kms)	152.4	134.86	143.52
Daily Revenue Kms/Vehicle	126	110.66	118.22
Annual Revenue Kms/Vehicle (Kms)	42,462	37,513.74	39,958.34
Total Annual Kms/Vehicle	51,358.8	45,717.54	48,509.76
Annual Fuel Consumption/ Vehicle (Litre)	3,811.47	3,895.11	3,853.2
Fuel Cost/Vehicle @ 7.15 per litre	27,252.0	27,850.0	27,550.38

Fuel consumption varies as a function of the average speed of the vehicle, and since driving conditions and average speeds in the study area vary quite widely, there will be wide variations in fuel consumption, even for the same vehicle type. Average speeds in the bazar area of Quetta are low, due to the high density of non-motorized traffic and of pedestrians and the many obstructions encountered.

The procedure adopted for the calculation of the annual cost of fuel was to :

- a. Calculate the average fuel consumption (kms/litre) for all vehicles of the same type
- b. determine the number of days worked per annum
- c. determine the daily kms operated
- d. calculate the annual consumption in litres $b\left(\frac{c}{a}\right)$
- e. multiply the resultant by the cost per litre.

The most complex part of the calculation involved the estimation of the daily kms performed by each vehicle. This was arrived at from data obtained during the first survey, where drivers were asked where they had dropped their last fare, and how long they had been waiting between dropping the last fare and picking up the next. By calculating the average distance travelled empty, and the average hired trip distance we found the average trip cycle time (the time elapsed between the start of the subsequent journey). Having asked the number of hours worked per day, this enabled us to calculate the average number of journies per day.

We need to emphasise the rather precarious basis on which these estimates have been derived i.e. on estimates of fuel consumption provided by the drivers and owners. Individual estimates vary widely even for the same type of vehicle, and the overall average figures used in our calculations should be considered as a guide only. This particularly unfortunate since fuel costs obviously form a considerable proportion of the total operating costs. Deviations from the average fuel consumption for individual vehicles could result in costs as much as plus or minus 30% of the figures quoted here.

Annual variable costs per vehicle are given in table 4.12. Total annual operating cost and vehicle operating cost per km from the survey data is given in Table 4.13 and 4.14.

Table 4.15 shows estimated average annual revenue per vehicle and table 4.16 indicates the annual vehicle revenue minus total vehicle costs. Table 4.17 gives us the annual net revenue surplus after deducting the driver wages of owner-driver category. We divided the net surplus by 12 to get the monthly income of the owner-driver (Table 4.18 and 4.19 shows the monthly earnings of other owner this income does not take into account the depreciation or the project on the purchase price of the vehicle i.e. the profit on the investment if the owner-driver had not bought the taxi and instead had invested the money somewhere else, it is not a realistic approach. So this aspect has been taken into account in Table 4.20. This shows that the average monthly income of all owners is meagre.

Table 4.12
Annual Variable Costs Per Vehicle

A) <u>Owner Driver</u>	(Rs.)
Maintenance and Repairs	4,468.10
Lubrication and servicing	1,248
Fuel	27,252
Total :	<u>32,968.10</u>
B) <u>Other Owner</u>	
Maintenance and Repairs	3,152.54
Lubrication and servicing	1,264
Fuel	27,850
Total :	<u>32,267.54</u>
C) <u>All Owner</u>	
Maintenance and Repairs	3,810.32
Lubrication and servicing	1,256
Fuel	27,550.38
Total :	<u>32,617.70</u>

Table 4.13
Total Annual Operating Costs

A) Owner Driver

	<u>Outright purchase</u>	1,175.32
Fixed Cost	Instalments	1,415.32
Semi Fixed Costs		4,703.2
Variable Costs		32,968
Total	<u>Outright</u> Instalments	38,846.52
		39,086.52

B) Other Owners

	<u>Outright purchase</u>	1,200.28
Fixed Costs	Instalments	1,158.28
Semi Fixed Costs		14,660
Variable Costs		32,267
Total	<u>Outright purchase</u> Instalments	48,127
		48,085

C) All Owner

	<u>Outright purchase</u>	43,487
	Instalments	43,586

Table 4.14
Vehicle Operating Cost Per Km

	(Rs. per Km)
A) <u>Owner Driver</u>	
Outright purchase	0.75
Instalment	0.76
B) <u>Other Owner</u>	
Outright Purchase	1.05
Instalment	1.05

Table 4.15
Estimated Average Annual Revenue Per Vehicle

Owner Drivers	72,610
Other Owners	64,148
All Owners	68,379

e.g: Daily travel (Kms) x Fare/Km x No. of days = 126 x 1.71 x 337
= 72,610

Table 4.16
Annual Vehicle Revenue Minus Vehicle Costs

Owner Driver	<u>Outright purchase</u>	<u>33,763</u>
	Instalments	33,523
Other Owner	<u>Outright purchase</u>	<u>16,021</u>
	Instalments	16,063
All Owner	<u>Outright purchase</u>	<u>24,892</u>
	Instalments	24,793

e.g. : Estimated Average Annual Revenue/Vehicle — Total Annual Operating
 Costs (Table 4.13 and Table 4.15)

$$= 72,610 - 38,847 = \underline{33,763}$$

Table 4.17

Owner Drivers — Annual Net Surplus after Deduction of Drivers Wage

Outright purchase	=	24,163
Instalments	=	23,923

Note: Annual Driver Wages Rs. 9,600

e.g: From Table 4.16

Annual Vehicle Revenue Minus Vehicle Cost	=	33,763
		<u>- 9,600</u>
		<u>24,163</u>

Table 4.18

Owner Drivers — Monthly Earnings
(including his wages but excluding depreciation of purchase price)

Outright purchase	=	2,813
Instalments	=	2,793

e.g: From table 4.16,

Outright purchase	=	$\frac{33,763}{12}$	=	2,813
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Table 4.19

Other Owner — Monthly Earnings

Outright purchase	=	1,335
Instalments	=	1,339

e.g: From table 4.16,

Outright purchase	=	$\frac{16,021}{12}$	=	1,335
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Table 4.20
Average Income Per Year — Taxi Operation (Outright purchase)

	Owner Driver	Other Owner
- Average Purchase Price*	63,605	68,415
- Investment Return (@ 15% for 1 year)	9,541	10,262
- Fixed Costs	1,295	1,779
- Semi-fixed Cost**	4,703	14,660
- Variable Cost	32,968	32,267
Total Costs	48,507	58,968
Total Revenue	72,610	64,148
Revenue Surpluse (Income)	24,103	5,180

Income All Owners = $(24,103 + 5,180)/2 = 14,641$ per annum

If profit @ 15% is not included : Income = 24,892

* Purchase price includes the first time renovation cost.

** Semi-fixed costs for owner-drivers do not include the wages of the driver while these are included in costs for other owners, i.e. other owner pays monthly wages to a driver.

Chapter - 5

PASSENGERS5.1 Introduction

In this chapter we present the results of the interview survey carried out with the taxi passengers. The purpose of this section of the study was to find out the use of taxis, the categories of passengers using the facility and their attitude towards the level of service.

From the data obtained it has been possible to build up a picture of essential parameters such as the average trip length, the distribution of journey lengths, fares paid, how often people use taxis and the origin-destination pattern of the journeys being made.

5.2 The number and distribution of taxi journeys

An analysis of the variation in the number of journeys over the day is given in Table 5.1. Here we see a distribution typical for trip making in urban areas, with demand building up rapidly in the morning, remaining fairly constant during much of the working day but with some peaking and then fading away more gradually into the late evening. In Quetta the highest demand, with 50% of daily journeys, occurs between 10:00 and 13:00 pm, with another peak occurring between 14:00 and 1800 pm.

Table 5.1

Distribution of Rickshaw Journeys by the time of day

<u>Time</u>	<u>Journies</u>
08 - 09	4.08
09 - 10	3.95
10 - 11	3.66
11 - 12	4.04
12 - 13	4.35
13 - 14	3.96
14 - 15	4.44
15 - 16	4.31
16 - 17	4.01
17 - 18	3.94

5.3 Passenger Type

Whilst it would have been interesting and perhaps illuminating to have undertaken a comprehensive investigation of the socio-economic characteristics of taxi users, practical considerations limited the nature and extent of the information which could be sought during this survey. The principal constraint was that of the time taken to conduct the interview with the passengers and for this reason it was considered inadvisable even to attempt to obtain socio-economic indicators and consequently the scope of the investigation of passenger attributes was perforce of a very limited nature.

Two questions were asked, designed to give some knowledge as to the type of person using taxis and the extent to which they did so. Both questions had to be formulated in a manner which was easily comprehensible for the respondent and structured so as to provide unambiguous answers. The first, asked the passenger to signify to which of five categories he belonged. These were defined as :

- Permanent residents of the study area
- Temporary residents
- Visitors on business

- Visitors for recreation

This category include tourists who are traditionally regarded as being highly dependent on taxis.

- Visitors for other purposes

The second question was designed to establish how frequently the respondents used taxi services. Here, four categories were employed:

- At least once a day
- At least once a week, but not necessarily every day.
- More than once in the last month, but not every week.
- Infrequent use - defined as less than once a month over the last six months.

The responses to these questions (Figure 5.1 and 5.2) show that of the 813 persons interviewed, 527 were permanent residents, 212 temporary residents, whilst the remaining 61 of taxi trips were accounted for by visitors. It is pertinent to point out that only 13 taxi trips were made by tourists. Also, somewhat surprisingly it was revealed that nearly one quarter (813) 172 of passengers interviewed used taxis at least once a day, with a further 311 reporting use at least once a week. The results are summarized in Table 5.2.

Both the high proportion of residents' use, and the high frequency of use overall suggest that the taxi service provides an essential part of the regular public transport service in the urban area rather than functioning more as a premium quality adjunct to it. This hypothesis is strengthened by other findings referred to in this study.

Figure 5.1
HISTOGRAM ANALYSIS (PASSENGER TYPE)

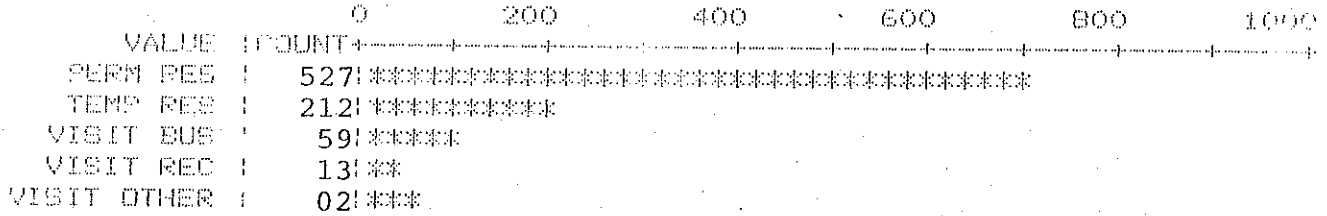


Figure 5.2
HISTOGRAM ANALYSIS (FREQUENCY OF USE)

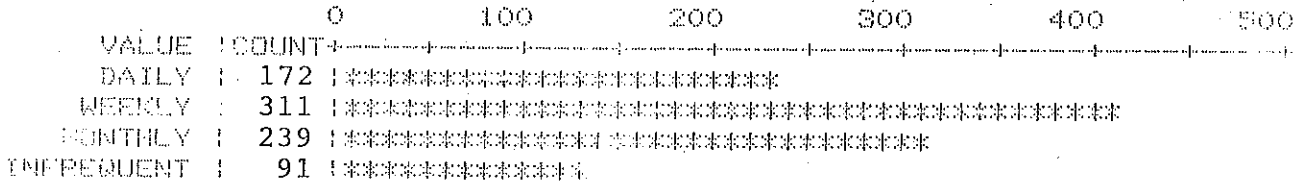


Table 5.2
Frequency of Taxi Use

a) Absolute Value

<u>Frequency of Use</u>	<u>No. of Passengers</u>
Daily	172
Weekly	311
Monthly	239
Infrequent	91
Total:	<u>813</u>

b) Column Percentage

<u>Frequency of Use</u>	<u>%</u>
Daily	21.2
Weekly	38.3
Monthly	29.4
Infrequent	11.2

Table 5.3 records the categorization 813 passengers interviewed. Cross-tabulating frequency of use with passenger type (Table 5.4) shows that for the study area as a whole Permanent Residents are the most habitual taxi users; 64.8% of those using taxis do so at least once a week, compared with 26.1 for temporary residents and 9.1% for all others.

5.4 Vehicle Occupancy:

At the same time as the interviews were being conducted the interviewer noted how many passengers were travelling in each taxi. Very young children being carried by an adult were not counted as separate passengers. Table 5.5 shows the distribution of vehicle occupancies observed.

5.5 Trip Length:

One important parameter of system performance is the distance over which journeys are being made. This is essential for computing industry costs, establishing fare rates as well as providing a description of the transport service or output being performed by the industry. At a more technical level, trip length distributions are used by transport planners for modelling travel behaviour and forecasting future travel demand.

In this study, data on journey length has had to be derived from other data collected in the survey, since we could not expect a passenger to know the exact distance of the journey he was making nor could we use the vehicle odometers, since the majority were not in a working condition.

Table 5.3
Passenger Type By Frequency of Use
(Cross Tabulation)

a) Absolute Value

<u>Type of Pass.</u>	<u>Daily</u>	<u>Weekly</u>	<u>Monthly</u>	<u>Infrequent</u>	<u>Total</u>
Perm. Residence	134	193	153	47	527
Temp. Residence	27	81	65	39	212
Visit Business	9	31	15	4	59
Visit Recreation	2	5	6	-	13
Visit Others	-	1	-	1	2
Total :	172	311	239	91	813

b) Column %

<u>Type of Pass.</u>	<u>Daily</u>	<u>Weekly</u>	<u>Monthly</u>	<u>Infrequent</u>	<u>Total</u>
Perm. Residence	77.9	62.1	64.0	51.6	64.8
Temp. Residence	15.7	26.0	27.2	42.9	26.1
Visit Business	5.2	10.0	6.3	4.4	7.3
Visit Recreation	1.2	1.6	2.5	-	1.6
Visit Others	-	0.3	-	1.1	0.2
Total:	172	311	239	91	813

Table 5.4
Passenger Type by Frequency of Use

a) Absolute Value

<u>Passenger Type</u>	<u>No. of Passengers</u>
Permanent Residence	527
Temperary Residence	212
Visit Business	59
Visit Recreation	13
Visit Others	2
Total :	<u>813</u>

b) Column Percentage

<u>Passenger Type</u>	<u>% of Passenger</u>
Permanent Residence	64.8
Temperary Residence	26.1
Visit Business	7.3
Visit Recreation	1.6
Visit Others	0.2

Table 5.5
Distribution of Vehicle Occupancies

<u>No. of Passengers</u>	<u>%</u>
1	39.4
2	39.8
3	20.1
4	0.6
> 5	0.1

Average vehicle occupancy = 1.82

The procedure adopted was to divide the study area into 143 zones and having asked the passenger for the destination of this current journey the origins and destinations were subsequently coded with the corresponding zone number. A table of interzonal distances (skim tree) was prepared using shortest distance minimum paths over the highway network between each taxi stand and the centre (zone centroid) of each destination zone.

The highway network, showing link lengths from which the interzonal distances were calculated is shown in Figure 5.3. The distribution of journey lengths (in Kms) determined for all taxi journeys is shown in Figure 5.4. The form of the distribution corresponds well with that generally found for urban travel; an asymmetric distribution skewed in favour of the shorter distances. The mean trip length of 4,14 kms is comparatively short given the extent of the study area.

The number of trips in each category of trip length shows that over 60% of all journeys are over distances of under 5.4 kms, and that over 94% of journeys are less than 8.4 kms in length.

5.6 Fares

One of the important factors which determines the use mode of any transport system is the fare structure and the level of fares charged in relation to the disposable income of the potential users of the system. Fare revenue is also obviously of vital concern to the operator and to the regulatory agency whose responsibility it is to set fare levels.

Figure 5.3

HISTOGRAM ANALYSIS
(TRIP LENGTH)

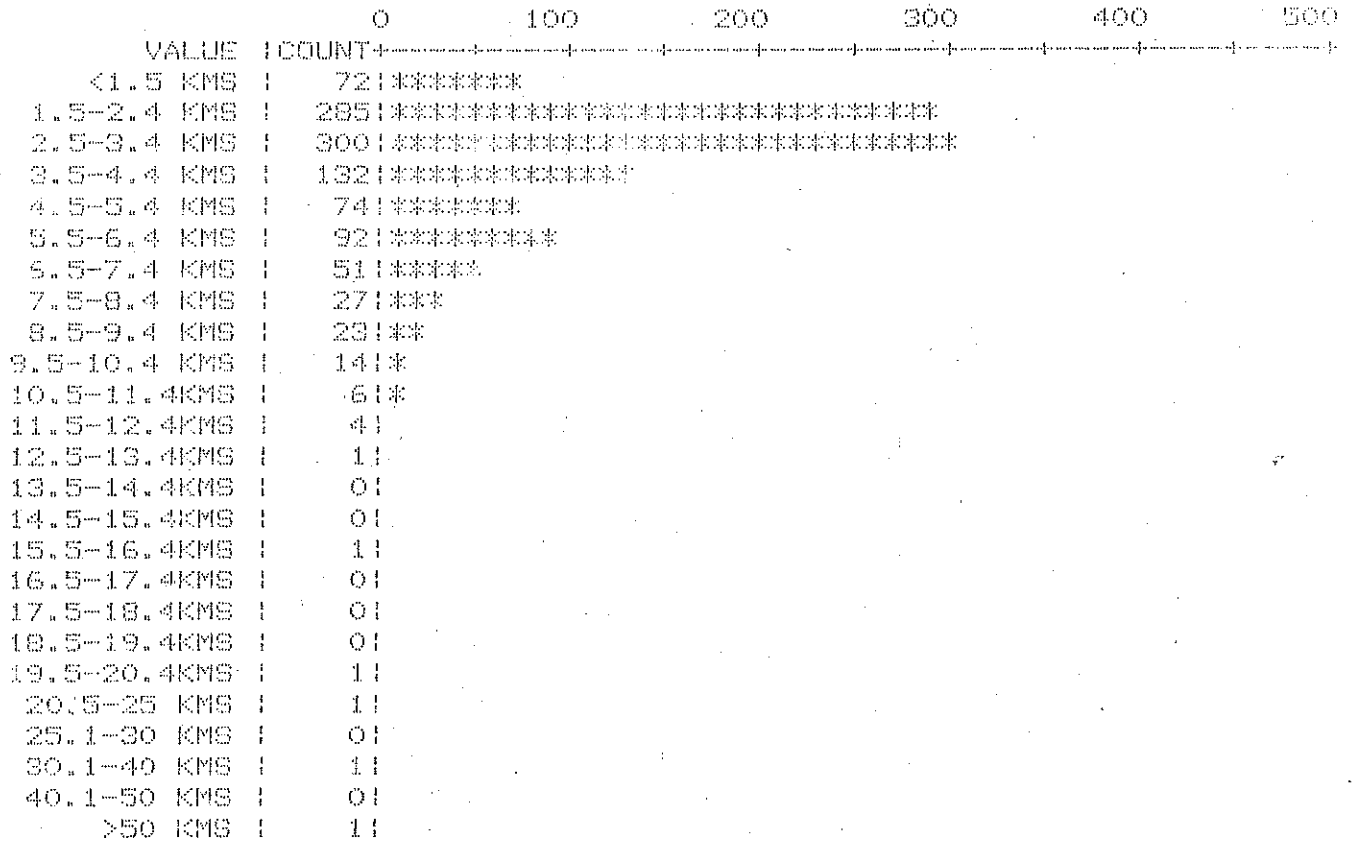
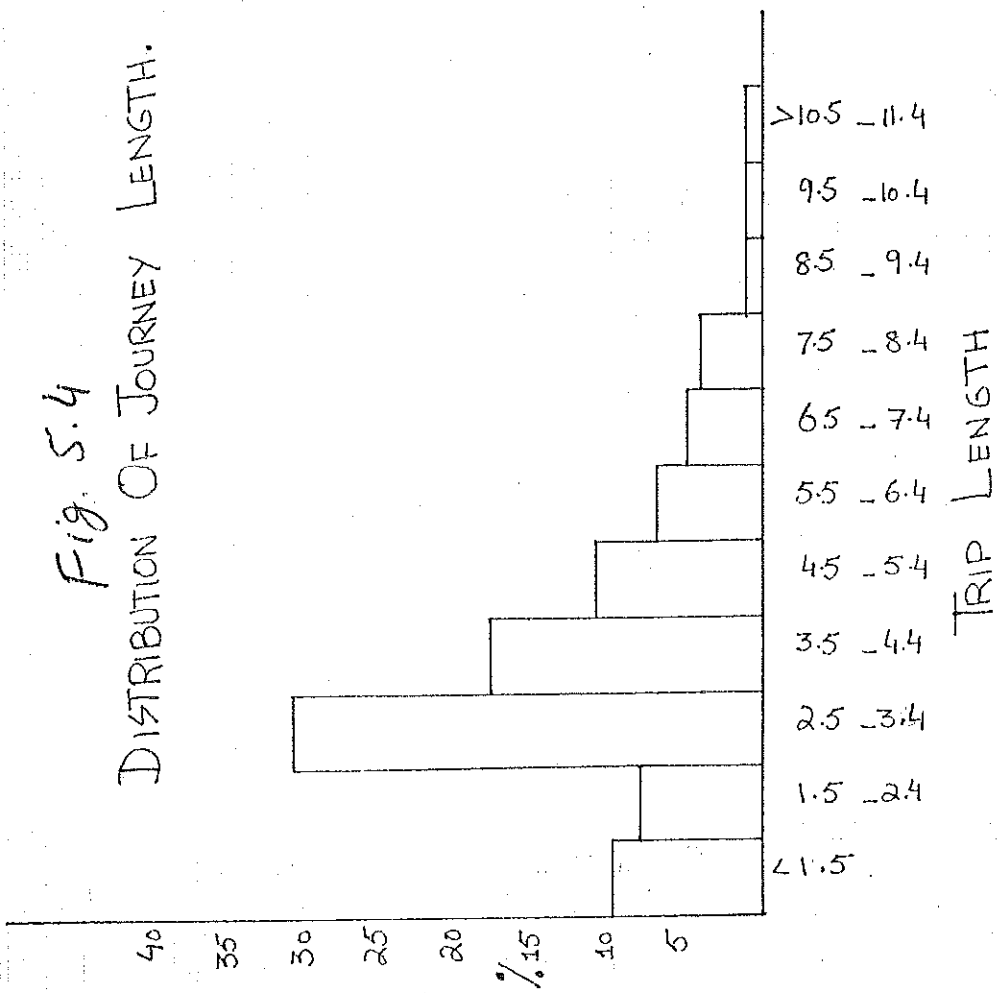


Fig. 5.4
DISTRIBUTION OF JOURNEY LENGTH.



At the time that the passenger survey was conducted 1988, the authorized fare had remained unchanged for several years at Rs. 2.00 per km for rickshaws . However, preliminary investigations revealed that the predominant practice was for the fare to be bargained between passenger and driver before the taxi was hired. Taxi meters, when fitted, were by and large either distrusted by the passenger or simply did not work.

Thus in order to determine real fare rates (those actually paid rather than those authorized by the Regional Transport Authority) it was necessary to ask the passenger what fare he had agreed to pay the driver. In the few cases where the passenger had not previously agreed a fare, then the driver was asked what fare he would charge. If the response to this was that the fare would be charged accordingly to the meter, then the appropriate fare for the journey was subsequently calculated using the authorized rates over the distance for that journey.

The first result of note is that only 0% (Table 5.6) of passengers made journeys using the taxi meter and the meter was not used by any vehicles plying for hire.

Table 5.6

USE OF TAXI METER

Vehicle using Meter = 0

No. of Vehicle = 813

Table 5.7

Fares Paid for Journeys of the Average Trip Length

Average Trip Length (KM)	Average Fare (Rs.)	Average Fare/ KM (Rs./KM)	Average Fare Per Passenger/Kms, (Rs/KM)
4.14	7.10	1.71	0.94

Overall, the average fare paid for the average journey was found to be Rs. 7.10. The data in Table 5.7 above illustrate fares paid for journeys made over the average journey length. However, a certain amount of caution must be exercised in exercised in extrapolating these findings.. Two factors serve to complicate the analysis. The first is that there is in effect a minimum fare, which is charged irrespective of journey length. This is generally Rs. 5.00 for rickshaws. The second factor is that, as has already been observed, the distribution of journey lengths is highly skewed in favour of shorter journeys. If we analyse the average fare paid for each category of journey distance a rather different picture emerges (Table 5.8).

For very short journeys the fare per km is very much higher than that for the longer journeys, and indeed for the shortest journeys actual fare rates are over two and half times the authorized rate.

5.7. Level of Service and Passenger Attitudes

To some extent the demand for taxi services is conditioned by certain attributes of the supply. The more convenient and comfortable the service, the more people will use it. In particular, it is the ability of the taxi to provide a convenient service where journeys can be accomplished in a short time that gives the taxi its competitive edge over conventional stage-carriageway services. Important in this respect is the role of access time

Table 5.8
Average Fare by Trip Length of Vehicle

Distance (KM)	Rs.	< 5	6-10	11-15	16-20	21-25	26-30	31-35
< 1.5		27	40	13	2	-	-	1
1.5 - 2.4		64	1	2	2	-	-	-
2.5 - 3.4		211	40	-	-	-	-	-
3.5 - 4.4		71	75	-	-	-	-	-
4.5 - 5.4		5	83	3	-	-	-	-
5.5 - 6.4		2	48	3	-	-	-	-
6.5 - 7.4		1	37	3	-	-	-	-
7.5 - 8.4		1	31	4	1	-	-	-
8.5 - 9.4		-	7	6	-	-	-	-
9.5 - 10.4		-	-	14	-	-	-	-
10.5 - 11.4		-	-	4	-	-	-	-
11.5 - 12.4		-	-	4	1	-	-	-
12.5 - 13.4		1	-	1	1	-	-	-
13.5 - 14.4		-	-	-	-	-	-	-
14.5 - 15.4		-	-	1	-	2	-	-

i.e. the time spent walking to the nearest point where there is a reasonable expectation of encountering a taxi and the time spent waiting for a unengaged taxi to appear.

The shorter these access times are, relative to those of other public transport modes, the greater is the competitive advantage of the taxi. Access time, in its turn is determined by the number of vehicles in operation in relation to the size of the market, the proportion of time for which each vehicle is available for hire, and the geographical distribution of the unengaged vehicles.

In this respect it is relevant to note that in western countries the increasing adoption of despatched services using two-way radio, and the near universal availability of the telephone means that access time can be reduced to near zero with, in the majority of cases, a taxi waiting at the door at the time that it is required.

5.7.1 Physical access to taxi services:

We have already commented on the fact that there are a large number of unofficial taxi stands spread throughout the urban area. Over the years the taxi operators have identified where the concentrations of passenger demand are to be found, and have responded to the requirements of the market by themselves establishing stands in those locations.

This practice has benefitted both operator and user alike. Operating from a stand rather than cruising reduces the

Operator's costs by reducing the dead or empty kilometres involved. Provided that the stands are conveniently located and the supply of rickshaws matches the demand, the intending passenger is benefited by the elimination of the random waiting time inherent when cabs are cruising. There is also a further benefit to the public at large, in that the greater the proportion of empty rickshaws waiting at stands, the less there are cruising and the less the taxi contributes to problems of traffic congestion.

One major deficiency however is the virtual absence of any facilities enabling contact to be made with a rickshaw operator by telephone. It is understood that current regulations covering radio communications preclude the possibility of fitting mobile two way radio communication systems in civilian vehicles.

In order to assess the distances actually covered on foot by taxi users, passengers were asked how far they had to walk to get to the taxi they were sitting in at the time of the interview. Tabulation shows that, overall 89% of all taxi users had to walk less than 100 meters in order to find a taxi and only 11% had to walk more than 100 meters.

Table 5.9 shows the percentage distribution of distance covered in walking to each of the taxi stands in Quetta. Bearing

Table 5.9
Distribution of Distances Walked to Each Taxi Stands

Distance (KM)	Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10	Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18
< 50	-	-	-	-	-	-	-	-	-	90.2	60.8	-	96.6	48.6	52.9	76.9	55.2	53.1
51 - 100	-	-	-	-	-	-	-	-	-	9.8	13.7	-	3.4	40.0	35.3	23.1	24.1	43.8
101 - 200	-	-	-	-	-	-	-	-	-	-	21.6	-	-	11.4	11.8	-	20.7	3.1
201 - 400	-	-	-	-	-	-	-	-	-	-	3.9	-	-	-	-	-	-	-
401 - 600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
601 - 800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
801 - 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
> 1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total:	-	-	-	-	-	-	-	-	-	41	51	-	29	35	17	26	29	32

Table 5.9 (Contd.)
Distribution of Distances Walked to Each Taxi Stands

Distance (RM)	Q 19	Q 20	Q 21	Q 22	Q 23	Q 24	Q 25	Q 26	Q 27	Q 28	Q 29	Q 30
< 50	84.6	70.8	44.8	-	-	-	-	-	-	-	-	-
51 - 100	15.4	25.0	55.2	-	-	-	-	-	-	-	-	-
101 - 200	-	4.2	-	-	-	-	-	-	-	-	-	-
201 - 400	-	-	-	-	-	-	-	-	-	-	-	-
401 - 600	-	-	-	-	-	-	-	-	-	-	-	-
601 - 800	-	-	-	-	-	-	-	-	-	-	-	-
801 - 1000	-	-	-	-	-	-	-	-	-	-	-	-
> 1000	-	-	-	-	-	-	-	-	-	-	-	-
Total:	26	24	29	-	-	-	-	-	-	-	-	-

One good indication of level-of-service is to check for any variation in the availability of taxis over the day. If at times of peak demand, demand should begin to outstrip supply we would expect both waiting times and walking times to increase.

5.7.2 Waiting Time:

Paralleling the quality of service offered to the user in terms of physical access, we also find an extremely high level-of-service in terms of passenger time spent waiting at the taxi stand. Of over 813 passengers interviewed only 69% reported that they had to wait within 5 minutes for a rickshaw and over 16% of all passengers were able to engage a taxi within one minutes of arriving at the nearest taxi stand.

The mean waiting time reported is computed at just 5.91 minutes which indicates that in all but a few exceptional cases, there must always have been be at least one taxi at the stand when an intending passenger arrived.

An analysis of how availability of taxis varied over the day (Table 5.10) reveals consistently short waiting times (upto 10 minutes) at all times for majority of passenger. For most of the day the number of passengers waiting more than one ninutes rarely exceeded 82% of the total.

Hence, both from the point of view of walking distance to the nearest taxi stand and waiting time, the service would seem to be particularly good and it would be difficult to improve on the current level-of-service except by introducing innovations in the organization of the industry such as the use of modern communication systems.

5.7.3 Attitude to fares:

One of the objectives of this study is to examine the possibility of making changes in the system, we felt it important to guage the users attitudes to the existing level of service and in particular to fare levels and vehicle quality.

Passengers were asked for their opinion on these two attributes by way of questions constructed using a five point semantic scale. In the case of the question of fare levels the respondent was asked to indicate which of five categories most closely corresponded with his opinion. The options given were:

- Very Expensive
- Quite Expensive
- Reasonable
- Quite Cheap
- Very Cheap

Table 5.10
Distribution of Passenger Waiting Time by Time of day

Waiting Time (Min.)	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22
< 1	-	5.9	-	9.5	-	-	6.7	5.6	-	-	-	-	-	-
1 - 5	50.0	35.3	25.0	19.0	29.4	43.8	26.7	16.7	25.0	-	-	-	-	-
6 - 10	50.0	23.5	40.0	28.6	58.8	25.8	53.3	33.3	75.0	-	-	-	-	-
11 - 15	-	5.9	-	4.8	-	6.3	-	16.7	-	-	-	-	-	-
16 - 20	-	5.9	15.0	9.5	5.9	-	-	16.7	-	-	-	-	-	-
21 - 25	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26 - 30	-	11.8	10.0	4.8	-	6.3	-	5.6	-	-	-	-	-	-
31 - 60	-	5.9	5.0	19.0	5.9	18.8	6.7	5.6	-	-	-	-	-	-
> 60	-	5.9	5.0	4.8	-	-	6.7	-	-	-	-	-	-	-
Total :	4	17	20	21	17	16	15	18	4	-	-	-	-	-

Figure 5.5 shows the attitude expressed by passengers in rickshaws and taxicabs categorised by persons type. Interestingly, it is the tourist who expresses least satisfaction with the level of rickshaw fares more than 75% indicating that fares are reasonable but otherwise the data shows little variation from the aggregate findings reported earlier.

5.7.4 Attitudes to vehicle quality:

An important observation to be made is concerned with the passenger's attitude themselves. We should expect a great deal of variability in response, according to differences in the passenger's past experience and personal standards. For example, someone who rarely travels in a taxi, who does not have his own car, whose sole experience of travelling in a motor car is obtained from the average taxi will assume that that vehicle is the norm. On the other hand, expectations should be far higher from someone who has his own car, or who has travelled in Europe or North America, where taxi standards tend to be much higher.

Ideally in an in depth attitudinal study we would attempt to reduce some of this variability by adopting the strategy of market segmentation, but due to the data collection constraints of this study, we have insufficient socio-economic data to do this and can at best hope to give but a general indication of opinions.

Fig. 5.5: OPINION ON FARE BY PASSENGER TYPE.

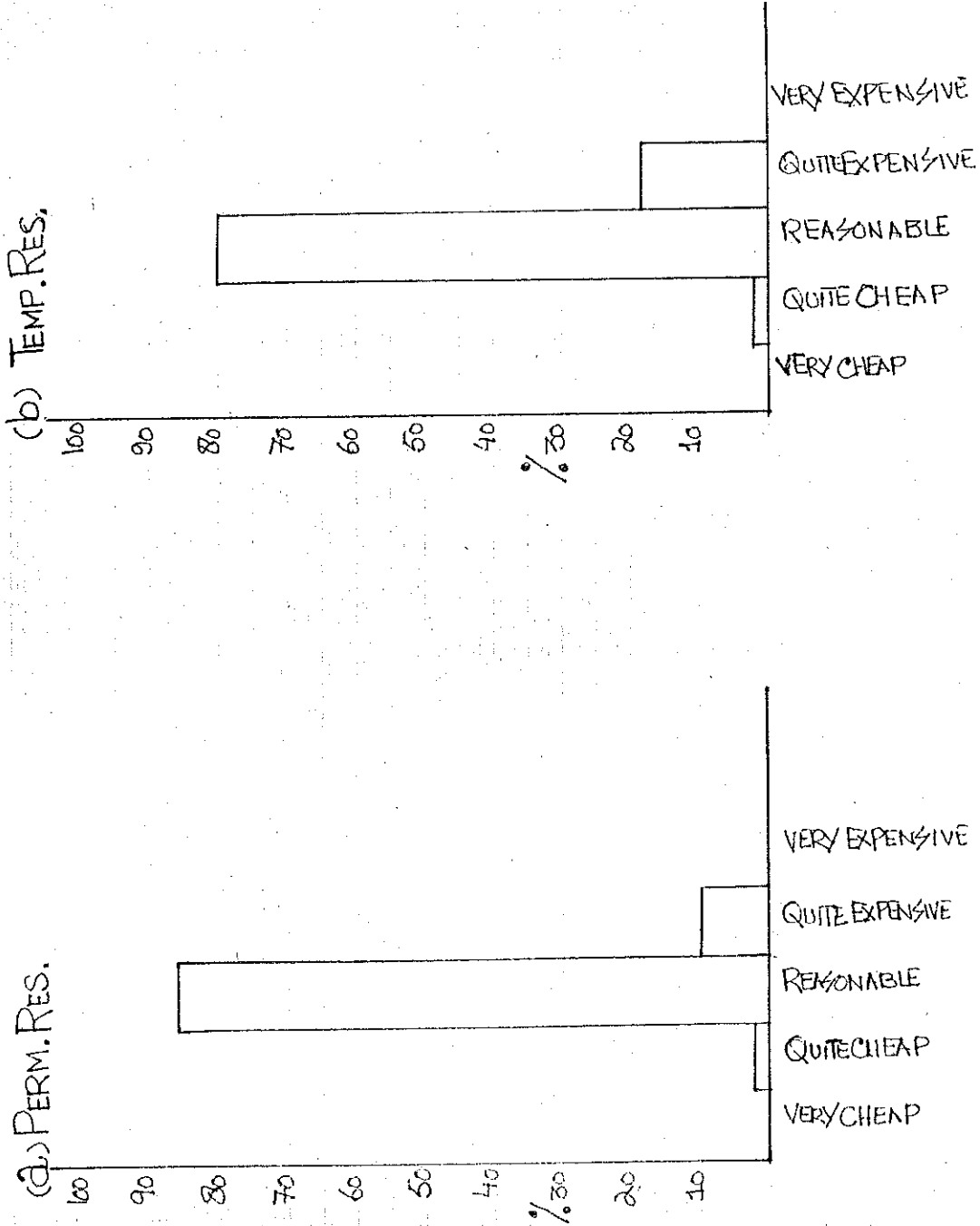
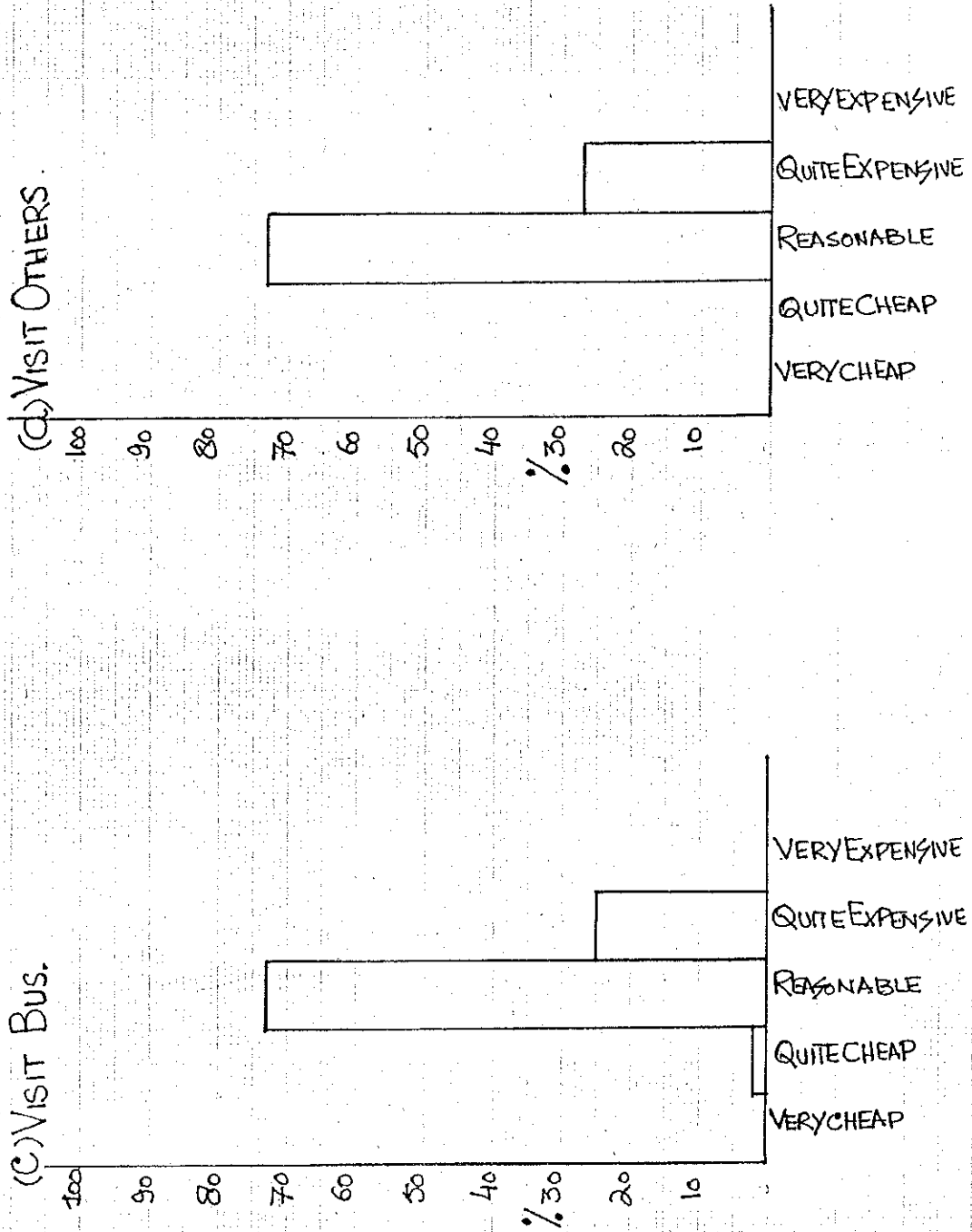


Fig. 5.5 (Contd): OPINION ON FARE BY PASSENGER TYPE.

122-a



As with the question on fares, a five point semantic scale was used to ask for opinions on vehicle quality. The categories defined were:

- Very Good
- Quite good
- Satisfactory
- Unsatisfactory
- Very unsatisfactory

Figure 5.6 shows a small but consistent trend; 82% of daily users are satisfied, more than 75% of weekly & 81% monthly users, and 71% of infrequent users express some measure of satisfaction with vehicle quality.

Analysing responses by passenger type (Figure 5.7) shows that recreational visitors are less satisfied 62% whilst other temporary visitors are most satisfied 81%.

5.7.5. Mode Preferences:

As a corollary to the questions on opinions on fares and vehicle quality, and because preliminary investigations in designing the survey had revealed that in some cases passengers claimed that they were using taxis because there was no reasonable alternative open to them, two questions were included designed to identify user's preferences in this respect. This first question asked if the passenger would have preferred to use some form of public transport instead of the taxi for the journey he was about

Fig. 5.6 OPINION ON VEHICLE BY FREQUENCY OF USE.

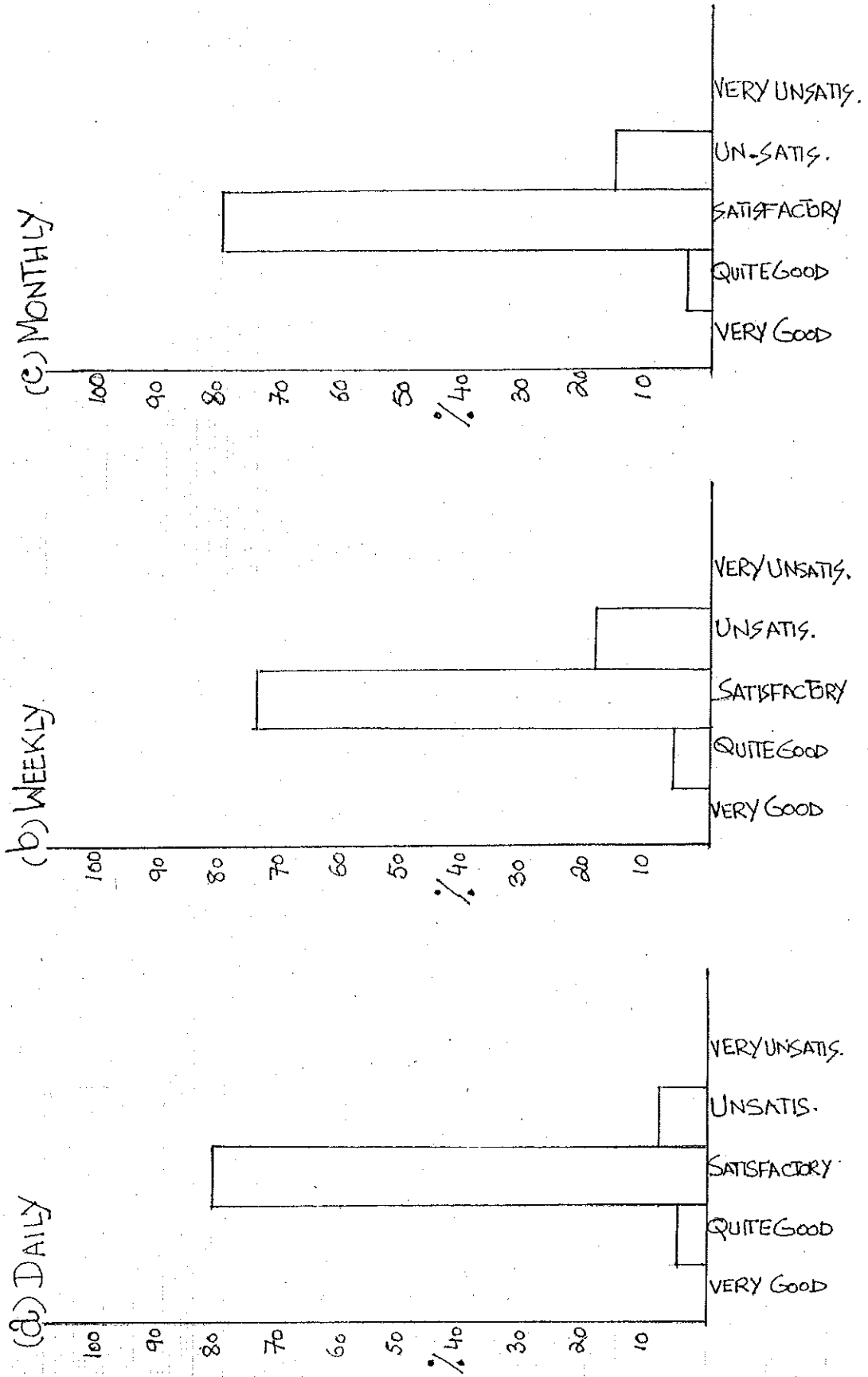


Fig. 5.6 (Contd.)
OPINION ON VEHICLE
By FREQUENCY OF USE.
(c) INFREQUENT.

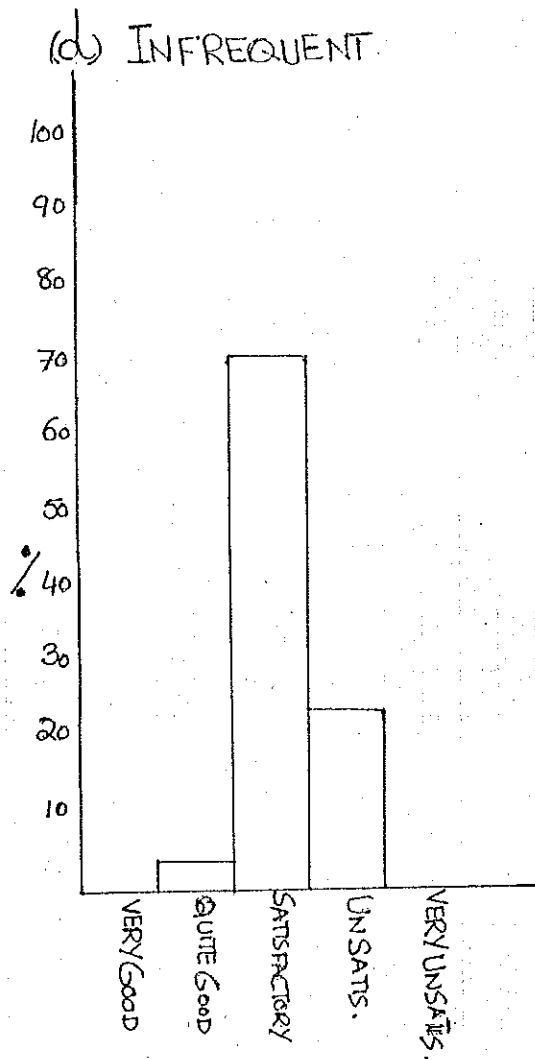


Fig. S-7: OPINION ON VEHICLE BY PASSENGER TYPE.

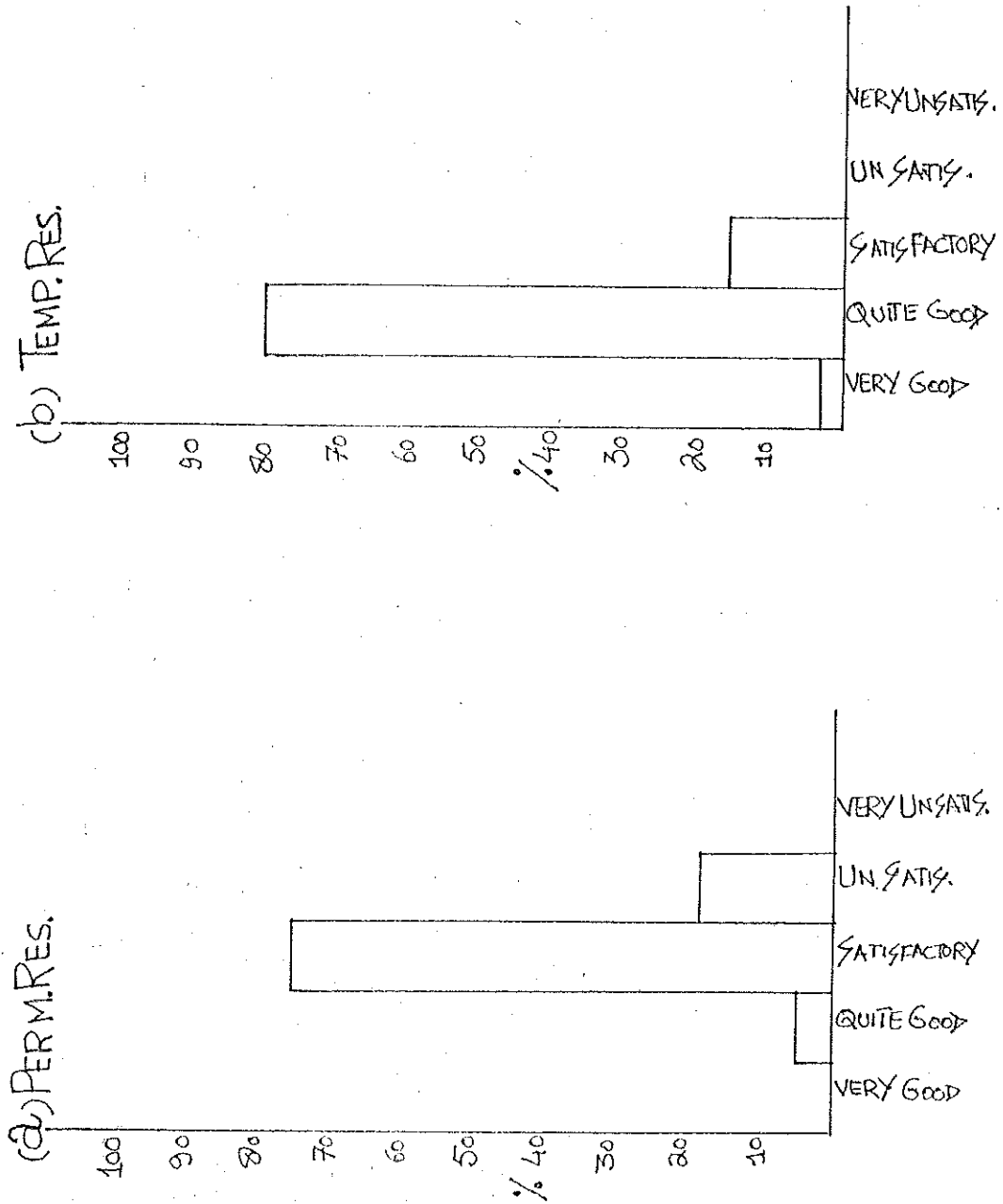
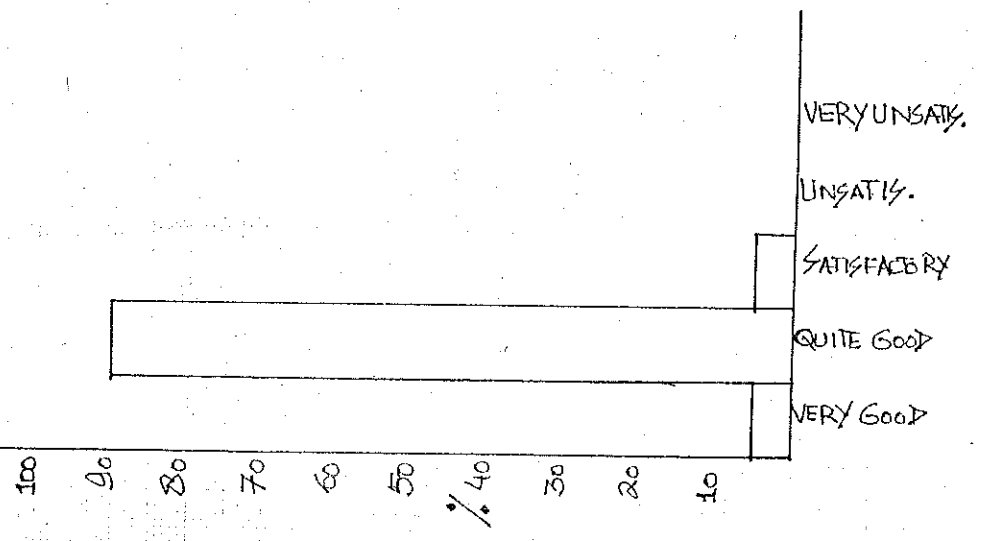


Fig S-7 (contd): OPINION ON VEHICLE BY PASSENGER TYPE.

(c) VISIT BUS.



(c) VISIT REC.

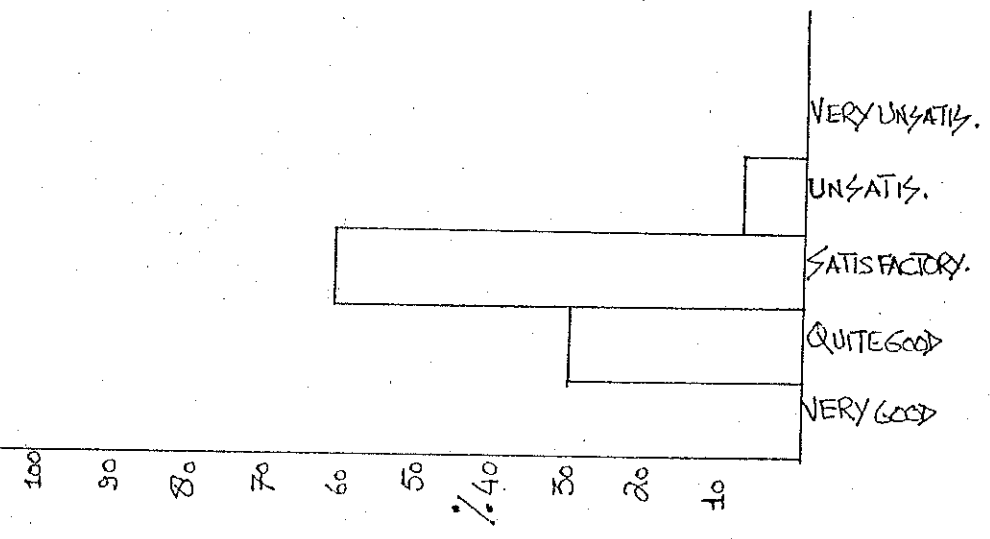
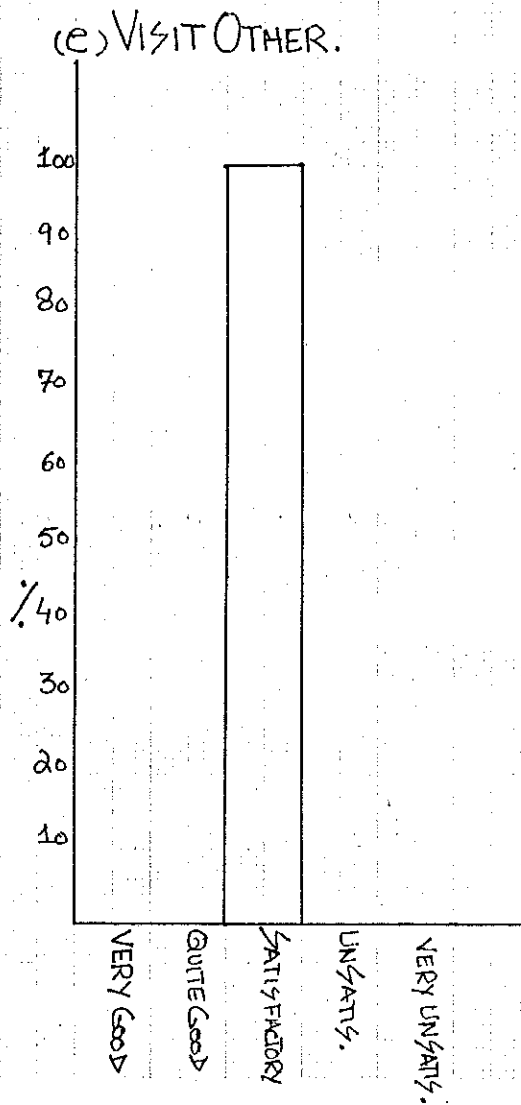


Fig. 5-7 (Contd.)
OPINION ON VEHICLE BY
PASSENGER TYPE.



to undertake. Those responding in the affirmative were then asked to signify which of the four options would have been their first choice:

- Bus
- Mini-bus
- Wagon
- Suzuki

Over the study area as a whole, preferences as to which mode would have been chosen were 24.4% of bus as a first preference & 38.30% of wagon as a first preference. The Suzuki obtained only 6.90% of first preference votes (Figure 5.8).

Following through our analysis, differentiation by passenger type (Figure 5.9) reveals little apparent variation attributable to differences between categories of passenger when asked about the taxi as being the preferred mode, whilst preferences for alternative modes (Figure 5.9) disaggregated by passenger type indicate that for all categories, the wagon is the most popular preference.

5.7.6 Willingness to pay higher fares:

The results obtained in the survey were at least internally consistent in terms of the general trend of the behavioural intent revealed, although there was a greater than expected proportional of users expressing a willingness to pay more than would have been expected considering the distribution of responses with respect to opinion of fares.

Figure 5.8

HISTOGRAM ANALYSIS

(OTHER MODE)

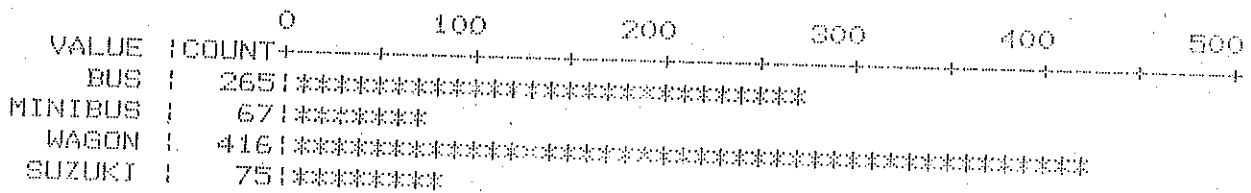


Fig. 5.9: PREFERENCE TO TRAVEL BY OTHER MODE. (PASSENGER TYPE).

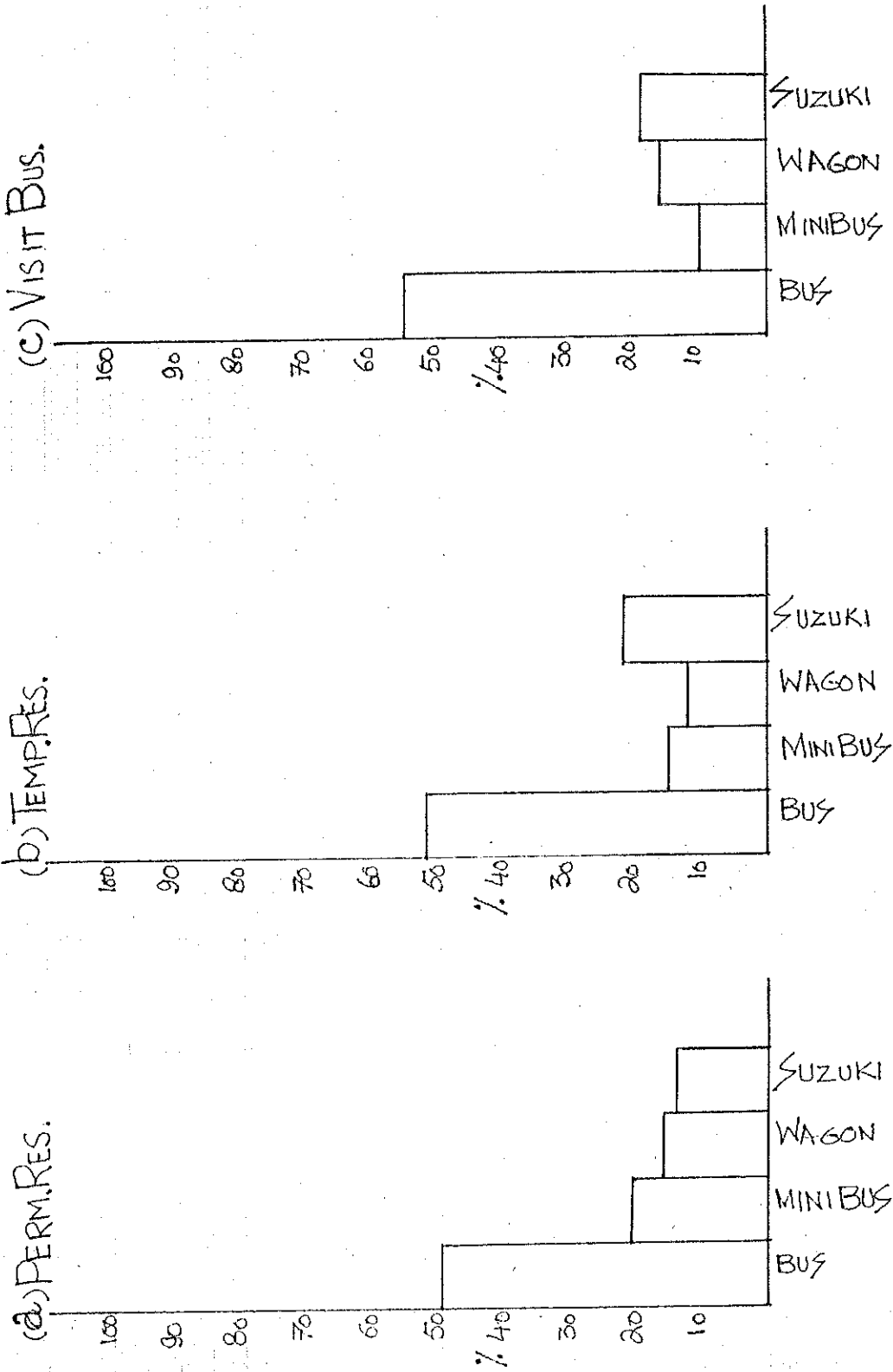
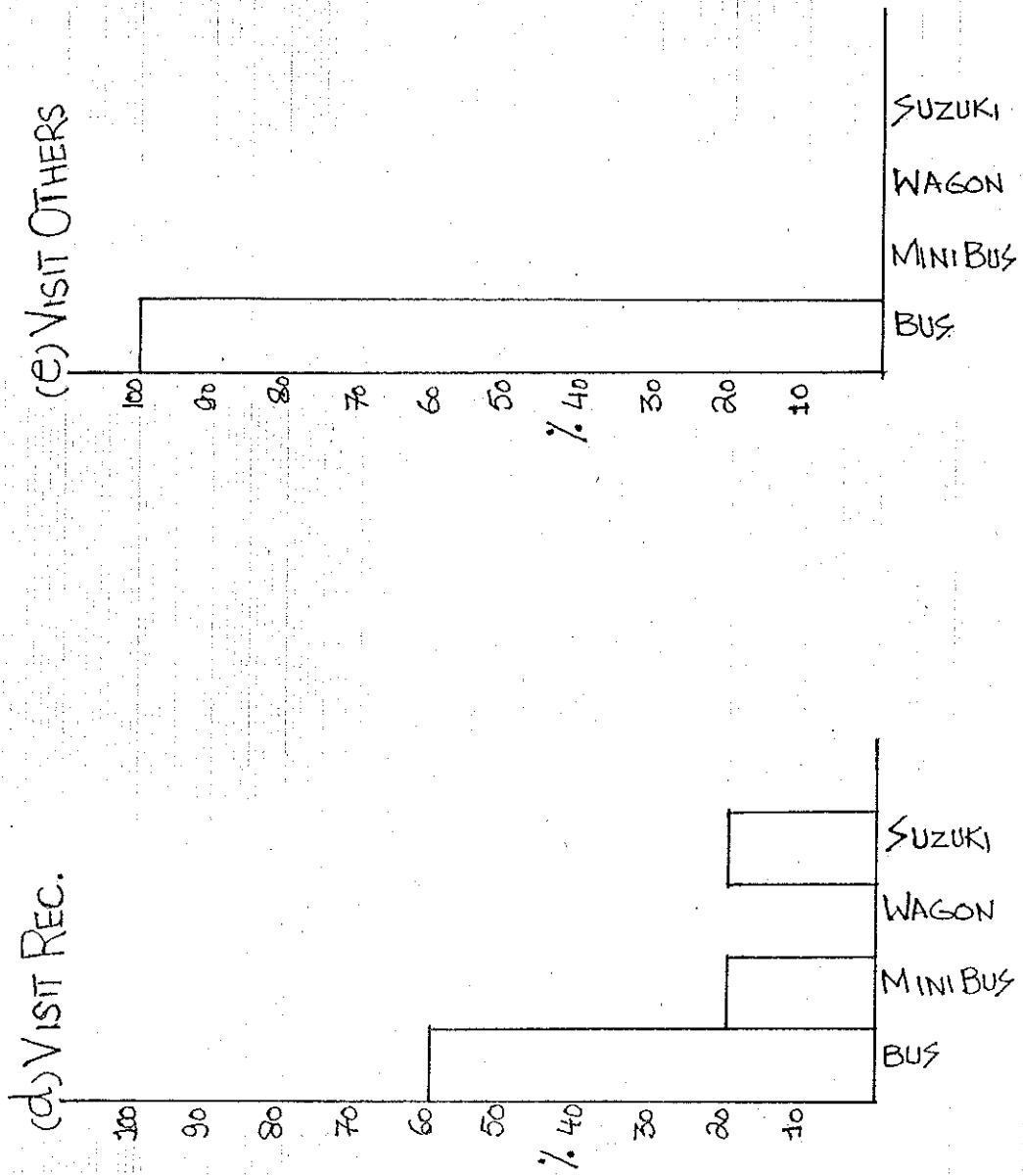


Fig. S.9 (contd): PREFERENCE TO TRAVEL BY OTHER MODE. (PASSENGERTYPE).



In the left column of Table 5.11 are 'yesses' as a percentage of the category immediately above them; figures in the right column are the percentages of all passengers responding in the affirmative.

Interpreting these results, everyone responding positively to the idea of paying more out of 250, 229 (91.6%) passengers were willing to pay to lease 25% more, but only 6.4% were willing to pay at least 50% more. By the time we arrive at a 100% increase in fare only 2% of all positive responding travellers are prepared to pay this level of fare. A total percentage of all responses, who responded in positive is 30.75%.

Disaggregating by passenger type, we see in tabulation that the permanent residents as a group are least inclined to pay 58% more, although it is the temporary resident who is less inclined to pay at least 39% more. However, the differences are small and are probably not significant. Our analysis suggests that as frequency of use declines, the proportion of passengers willing to pay more for a higher quality vehicle also declines, but rises again for very infrequent users. As a test of consistency in attitudes, if we plot willingness to pay more against opinion on fares.

Table 5.11

Willingness to Pay a Higher Fare

	<u>Responses</u>	<u>%</u>
25% More	229	91.6
50% More	16	6.4
100% More	5	2
Total :	250	

Total Percentage of Average Responses = 30.75

Chapter - 6

FINDINGS

In this study general and national trends have been considered before dealing with the taxi industry structure in Quetta city. The findings of this study are based on an extensive data collection and interviewing of passengers/drivers/taxi owners/union office bearers and government officials.

6.1 National Trends

1. At national level Pakistan has seen marked increase in the number of private motor vehicles which have grown by a factor of 3.8 in a period during which the population has increased by only 38%. National taxicab fleet has increased by a factor of 2.4 during, the period 1974-83. The number of rickshaws, which was twice than taxicabs in 1974, has grown by a factor of 2.6 to stand at 36,500. In 1983 the number of taxicabs and rickshaws became double than the buses.
2. Taxi systems in the important cities of Pakistan is an important and integral part of the urban transport system. It was also found out that at a level of 3.17 rickshaws per thousand persons, it is higher than that found in more developed countries with more personal vehicles and better transport system. With the increase

in urban population we should expect a proportionate increase in the number of taxis but the taxi increase is likely to be a function of trends in future public transport vehicle rates.

6.2 City of Quetta: (Summary Statistics given in Tables 6.1, 6.2 or 6.3)

1. The taxicabs are not operating in Quetta City, therefore, rickshaw are used as a taxi. Rickshaw has a better economic performance. Imported vespa motor scooters proved very popular and the liberal policy adopted for their import is no longer operative, operating cost profile of Pakistani-built rickshaw could not become popular because of its so attractive. Thus, the prices of old model of vespa scooters have escalated at a rate out of proportion of their true worth.

2. Since taxicabs are not operating in the city, rickshaw has no competition and it is more popular because it is more economical and also could be due to liberal grant of rickshaw route permits by RTA. Other reasons could be high prices of cars and high cost of maintenance. According to RTA 3,563 rickshaws are operation in the city. RTA has restricted the new permits since 1986 because of this big number is operating in a small city. But they issued only 10 route permits for the taxi which are not taxicab, just hire cars.

Table 6.1

Summary Statistics of Operation

	<u>Rickshaw</u>
Total Population of the city	471,200
Total number of vehicles in the city	46,431
Total number of zones in study area	144
Total number of stands in city	21
Total number of rickshaw on RTA record	3,563
Estimated number of vehicle in fleet (on road)	41,839
Percentage owner drivers	38.6%
Average Model of vehicle	1977
Average age of vehicle	10.54
Oldest Vehicle	1967
Newest Vehicle	1981
Average trip length (study area)	5.14
Daily output (Kms) per vehicle	143
Average days worked/annum/vehicle	338
Average hours worked/annum vehicle	11.9
Daily Revenue (Kms)/vehicle (engaged Km)	118.22
Contractor : Contractor fee (Rs.)	2,240 P.M.
Employee : Contractor fee (Rs.)	2,800 P.M
Average Market Value (Rs.)	Owner-driver Other Owner All Owner
	71,450 72,401.96 71,925.98
Daily number of trips/vehicle	23
Total Annual Kms/Vehicle	48,509.76
Annual Fuel Consumption/Vehicle (Litres)	3,853.2
Average Annual Revenue/Vehicle (Rs.)	Owner-driver Other owner All owner
	72,610 64,148 68,379

contd.../-

Table 6.1 (Contd.)

Summary Statistics of Operation

		<u>Rickshaw</u>
Total Annual renovation cost (Rs.)	Owner-driver	4,703.2
	Other owner	5,060
	All owner	4,881.6
Total average annual fixed costs(Rs.)	Owner-driver	1,295.32
	Other owner	1,179.28
	All owners	1,237.30
Total average annual semi-fixed costs (Rs.)	Owner-driver	4,703.2
	Other owner	14,660
	All owners	9,682
Average fuel consumption Km/Litre		11.4
Average Passenger trip length (Kms)		5.14
Average Distance Empty/Trip (Kms)		1.10
Vehicle Operating Cost (Per Km) (Outright Purchase)	Owner-driver	0.75
	Other Owner	1.05
	All owners	0.90
Vehicle Operating Cost (Per KM) (Bought on Instalments)	Owner-driver	0.76
	Other-owner	1.05
	All owners	0.91
Annual Net surplus (Owner-driver wages allowed at Rs.11,760 pa)	Outright purchase	24,163
	Bought on Instalments	23,923
Main problems facing taxi owners (in priority).	1) Passengers	
	2) Drivers	
	3) Spare Parts	
Annual Cost(Outright purchase)	Owner-driver	38,846.52
	Other owner	48,127
	All owners	43,487
Annual Cost(Bought on Instalments)	Owner-driver	39,086.52
	Other owner	48,085
	All owners	43,586
Annual Revenue minus vehicle costs	Owner-driver	33,643
	Other owner	16,042
	All owners	24,842.5
Number of Passengers carried by taxi system per day.		149,147
Average Journey Distance covered by taxi system per day.		142,371,565.4
Aggregate distance covered by the taxi system per annum.		172,840,174.8

Table 6.2

Summary Statistics on Passenger Use of Taxis

		Rickshaw
Average Vehicle Occupancy		1.82
Average Waiting Time (Minutes)		10.79
Average Walking Distance (Metres)		21.23
Average Trip Length (Kms)		4.14
Average Fare paid (Rupees)		7.10
Frequency (%)	Daily	21.2
	Weekly	38.25
	Less than one week	29.39
	Infrequent	11.16
Percentage Preferring to Travel by Other Mode		73.55
Opinion on Fares (%)	Very Expensive	0.1
	Quite Expensive	2.2
	Reasonable	83.5
	Quite Cheap	13.8
	Very Cheap	0.4
Percentage of Passenger Willing to Pay More		30.75
Opinion on Vehicle (%)	Very Unsatisfactory	0.1
	Unsatisfactory	5.0
	Reasonable	77.7
	Quite Good	17.1
	Very Good	0.0
Passenger Type (%)	Permanent Resident	64.8
	Temporary Resident	26.1
	Visit on Business	7.3
	Visit on Recreation	1.6
	Other Visitors	-

Table 6.3

Summary Statistics - Taxi Fares

	<u>Fare Rate (Rs. Per Km)</u>
Study Area Average	1.71
Rickshaws	1.71
Visitors	1.93
Quetta Railway Station	1.79

3. At the time of survey in 1988, there were 3,563 rickshaws for which route permits were issued but according to ETO only 2,505 rickshaws were operating within city of Quetta including Cantonment. Nearly 28% of rickshaws are 1977 model. These rickshaws travel an estimated 172 million Km per year, out of which about 142 million Kms are covered with fare paying passengers, yielding in the process approximately Rs. 243 million as revenue.

4. The ownership structure of rickshaws in the city of Quetta is nearly evenly divided between owner-drivers and other owners who contract out their vehicles to drivers. Majority of owner-drivers and other owners have only one rickshaw while maximum fleet size recorded is of five vehicles.

5. Fixed costs like capital value, token tax, route permit, fitness tax, insurance, fines and miscellaneous may account in certain cases for more than 1.35% of the operating cost per Km. Engaged kilometers per day averages 82.67% for rickshaw which result in fairly low earnings.

6. Semi-fixed costs include vehicle renovation and lubrication costs. Variable costs include vehicle maintenance and repair, lubrication and routine servicing and fuel cost, etc. These costs average about Rs. 32,617 per year for rickshaw. Other owners contract out their vehicles under varying arrangements like:

- (1) The vehicle is contracted or hired out at Rs.70-100 daily.
- (2) The vehicle is contracted or hired out at Rs.1500-2800 monthly.
- (3) If the driver is a regular employee at Rs.50-60 daily.
- (4) If the driver is a regular employee at Rs. 500-1500 monthly.

7. There are no organized/registered taxi operating companies. There is a taxi union in Quetta but not all owners and drivers of vehicles plying in the city are members of this union which does not have proper office.

8. The relationship and liaison between the rickshaw union office bearers and the city administration (police, RTA, ETO and Civil Administration) is either non-existence or inadequate.

9. The union is not organized on proper footings and according to the office bearers, they and the drivers are not given due respect by the give officials and public.

10. On the whole the official increase in the fare rate has not been compatible with the increase in the price of fuel, tyres and parts, etc. RTA does not have the expertise to do the economic analysis and assess the correct fare rates. Hence, official fare rate is known to be based on assumption/estimation.

11. The vehicle is normally not comprehensively insured. Thus, the passengers and the drivers are not adequately compensated for injuries and deaths.

12. Till 1971 majority of the taxis had functioning meters installed in the vehicles. Now majority of the rickshaws do not carry the meters and those which do have meters normally do not use them. The official fare fixed is Rs. 2.00 per km for rickshaw but mostly the fare is decided after bargaining between the passenger and the driver for the trip length.

13. It is interesting to note that average fare charge is less than the official rate. Passengers do not like the driver to turn the meter on because they think that it might have been tempered with.

14. The average rent charged is cheaper for longer trips (12.4 km) as compared to shorter trip (1.5 km). For the narrow streets and roads of the Quetta city rickshaw has been found very useful and economical. It provides door to door service.

15. Mostly the terms and conditions set out by the contractors while leasing the vehicle are very tough. Correspondingly, wages are low, working conditions are poor, interest rates are very high and profits are minimal.

16. Normally rickshaw is designed for two passengers and cannot carry heavy baggages. The practice of rickshaw sharing is practically non-existence. The drivers normally

face quite a few problems, predominantly at the hands of the passengers and the police. The drivers have complained that some percentage of passengers refuse to pay the agreed rent on reaching the destination while police demands gratification.

17. There are 22 recognized rickshaw stands in the city which were surveyed. The stands are normally without the requisite facilities of proper parking, shade, telephone and rest room, etc. At some stands Rs. 2/- per vehicle is charged as parking fee. Average walking distance to the rickshaw stands is 51.8 metres which is quite reasonable. Even than each and every passenger wants to be picked up and dropped at their door steps. The overall condition of the rickshaws i.e. their appearance and the mechanical performance is not good.

18. Average annual income of owner-drivers and other owners i.e. all owners is estimated to be Rs.24,842 for rickshaw. The driver of rickshaw makes between Rs. 750 to 850 by working 8:00 hours to 12:30 hours per day (i.e. his wages). But, it is more realistic to take into account the project (@ 15% discount rate) on the average purchase price of the rickshaw i.e. in case the owner decides not to buy a rickshaw but invests the money the annual income (all owners) of rickshaw owner is Rs. 14,641.

19. Though rickshaw is economical and useful in narrow streets/roads yet it is uncomfortable and unsafe

vehicle. In case of an accident the driver and the passengers sustain serious injuries and environmentally it produces high noise levels and exhaust emissions.

20. No institutionalized credit is easily available. The owners who are buying their vehicles on hire purchase are economically worse off due to the high finance cost whereby the interest rates are normally more than 3% per month. Failure to pay instalment in time can cost the driver the loss of rickshaw and thus his livelihood.

21. On the average most of the owner-drivers and other owners stay in this business upto 10 years and 12 years respectively. 35% of the all owners showed their wishing to leave the business while their stay is one year.

22. On the average Quetta rickshaw system carries some 149,147 passengers a day. On the average distance covered in each journey for the system tends to be short with the average journey distance in the region of 421,218 Km per day for rickshaws. On aggregate the system performs some 172 million Km per annum for rickshaws.

23. Majority of the passengers (80%) showed their satisfaction over the price of paying agreed fare. About 80% showed their satisfaction over the level of the service in general provided by the rickshaw industry. Over 30.75% indicated that they were prepared to pay at least 25% more

to ride in even better rickshaws although the majority seem to be satisfied with the overall standards of the vehicles and behaviour of the drivers.

24. Average fare for the study area is Rs. 1.71 per Km but for visitors it is Rs. 1.93. As the visitors does not know the reasonable fare rate, drive will try to charge higher rate. In the city of Quetta, all the permanent residents know the lump-sum fare value for each journey as the trip lengths are short.

25. At places like airport and railway station fares are on the average approximately 5% to 10% higher than the study area average i.e. Rs. 1.85 for all vehicles at airport.

26. Out of 3,563 rickshaws plying in the city, 38.6% are operated by owner-drivers. Average model of the vehicle is 1977.

27. Average daily output per vehicle is 118.22 Km with daily revenue Kms of 143.

28. Vehicle operating cost per Km is Rs. 0.75 for owner-driver and about 1.05 for other owners when the rickshaw purchased outrightly. If the vehicle is purchased on instalments, it is Rs. 0.76 and 1.05 per Km respectively. Deducting driver's wage of Rs. 9,600 per annum and operating cost from the revenue the annual net earnings are Rs. 24,163 and Rs. 23,923 for outright and instalments purchase respectively for rickshaw. These figures are true when

depreciation or project on investment of purchase price are not taken into account. When these are taken into account (Table 4.20) the income is very meagre i.e. Rs. 14,641 per annum for rickshaws (all owners average).

29. There has not been any serious effort by the authorities to review the condition of this industry and introduce improvement schemes like cooperatives, loan on easy terms and effective and adequate regulations to control and coordinate the operation of taxis.

30. Spare parts are very expensive. Fast moving parts are sparking plugs, point, fuel filter and tyres.

31. Rickshaw operate independently i.e. there are no rickshaw companies in the city. There are no radio controlled taxicabs in the city.

32. In case three lady passengers want to travel by a rickshaw they would never hire a second one, which will force one of them to travel alone in a rickshaw. Ambulance service is not easily available. Hence, people without cars use rickshaws to carry the sick/wounded to a hospital.

33. urban Transport - wagons and Suzukis carry a big commuters but these ply on fixed routes. Also, during rush hours ladies and old people find it difficult to use the urban transport. So, rickshaws are essential for carrying such passengers, particularly from/to places like railway station, airport, etc. Also, rickshaw provides privacy.

34. A consolidated summary statistics for the four cities (Peshawar, Lahore, Karachi and Quetta) is at Tables 6.4 and 6.5.

Table 6.4
 CONSOLIDATED SUMMARY STATISTICS
 (PESHAWAR, LAHORE, KARACHI & QUETTA)

SL. NO.	DESCRIPTION	PESHAWAR		LAHORE		KARACHI		QUETTA	
		TAXI	RICKSHAW	TAXI	RICKSHAW	TAXI	RICKSHAW	TAXI	RICKSHAW
1.	Total Population of the city	-	564,900	3,447,960	-	6,637,720	-	471,200	-
2.	Total number of vehicles in the city	-	64,100	178,939	-	597,021	-	46,431	-
3.	Total number of zones in study area	-	140	182	-	145	-	144	-
4.	Total number of stands in the city	-	35	42	-	26	-	21	-
5.	Total number of rickshaw/taxicabs on RTA record.	-	5,242	2,123	-	21,504	-	5,767	-
6.	Estimated number of vehicles in fleet(on road)	-	4,934	783	-	366,192	-	41,839	-
7.	Percentage owner drives	-	93.5%	62.5	-	31.2	-	54.5%	-
8.	Average Model of vehicle	-	1972	1968	-	1978	-	1972	-
9.	Average Age of vehicle (Year)	-	6.70	18.0	-	8.30	-	17.32	-
10.	Oldest Vehicle	-	1968	1965	-	1970	-	1956	-
11.	Newest Vehicle	-	1984	1969	-	1983	-	1977	-
12.	Average trip length (study area) (Kms)	-	4.27	7.46	-	7.46	-	6.8	-
13.	Daily output (Kms) per vehicle. (Kms)	-	115.92	90.82	-	169.4	-	192.25	-
14.	Average days worked/annum/vehicle	-	330	324	-	336	-	328	-
15.	Average hours worked/annum/vehicle	-	3,854	4,004.64	-	3,480.96	-	4,156	-
16.	Daily Revenue (Kms)/Vehicle(engaged Km)	-	940	70.35	-	128.12	-	152	-
17.	Contractor : Contractor fee(Rs.)	-	2,065	1,788 p.m	-	1,788 p.m	-	2,295 p.m	-
18.	Employee : Contractor fee(Rs.)	-	2,730	2,475 p.m	-	2,475 p.m	-	3,000 p.m	-
19.	Average : Owner-driver Market : Other-owner Value : All owner	-	38,704 44,153	24,187.50 27,254.50	-	58,289.23 61,059.43	-	55,375 57,500	-
20.	Daily number of trips/vehicle	-	21.68	10.66	-	15.40	-	20.54	-
21.	Total annual kms/vehicle	-	30,456	29,425.7	-	56,824.0	-	63,058	-
22.	Annual fuel consumption/veh.(Litrs)	-	2,486	3,130.10	-	4,548.86	-	6,809.71	-
23.	Average annual : Owner-driver revenue/veh.(Rs.) : Other-owner : All owner	-	55,959 49,760	67,474.1 61,060.1	-	67,155.34 64,778.20	-	112,987 107,822	-
		-	-	64,267.1	-	65,966.77	-	110,404	-
		-	-	71,817	-	71,817	-	68,379	-

Contd..p/-

Table 6.4 (Contd.)
 CONSOLIDATED SUMMARY STATISTICS
 (PESHAWAR, LAHORE, KARACHI & QUETTA)

Sl. No.	DESCRIPTION	PESHAWAR		LAHORE		KARACHI		QUETTA			
		TAXI	RICKSHAW	TAXI	RICKSHAW	TAXI	RICKSHAW	TAXI	RICKSHAW		
24.	Total Annual renovation cost (Rs.)	2,602	3,008.82	3,005.0	4,158	3,795	4,703.2	5,967.85	3,738	3,803	5,060
	Owner-driver	2,159	4,488.33	4,152.5	4,128	3,799	4,881.6	4,488.33	3,799	3,799	4,881.6
	Other-owner	-	-	-	-	-	-	-	-	-	-
	All owner	-	-	-	-	-	-	-	-	-	-
25.	Total average annual fixed costs (Rs.)	1,730	2,550.27	2,250	2,751	2,055	1,295.32	3,325.37	3,460	2,063	1,179.28
	Owner-driver	1,546	2,938.12	1,992.5	3,105	2,059	1,237.30	3,325.37	3,105	2,059	1,179.28
	Other-owner	-	-	-	-	-	-	-	-	-	-
	All owner	-	-	-	-	-	-	-	-	-	-
26.	Total average annual semi-fixed costs (Rs.)	3,105	27,839	36,837	4,861	5,018	4,703.2	14,286	36,338	16,814	14,660
	Owner-driver	14,286	29,379	36,837	16,814	5,018	4,703.2	14,286	36,338	16,814	14,660
	Other-owner	-	28,609	36,837	10,893	10,816	9,682	-	36,837	10,893	9,682
	All owner	-	-	-	-	-	-	-	-	-	-
27.	Average fuel consumption Km/Litra	12.25	9.4	12.50	12.57	12.56	11.4	4.27	6.50	6.23	5.14
28.	Average Passenger trip length (Kms)	2.73	6.60	8.32	7.38	6.23	5.14	2.73	1.96	1.98	1.10
29.	Average Distance Empty/trip (Kms)	1.00	1.19	0.72	1.00	0.87	0.75	1.00	1.19	1.12	0.76
30.	Vehicle operating cost (Per Km) (Outright Purchase)	1.01	1.40	0.83	1.00	0.88	1.05	1.00	1.43	1.22	0.90
	Owner-driver	-	1.40	0.83	1.00	0.88	1.05	-	1.43	1.22	0.90
	Other-owner	-	-	-	-	-	-	-	-	-	-
	All owner	-	-	-	-	-	-	-	-	-	-
31.	Vehicle operating cost (per Km) (Bought on Instalments)	1.45	2.28	0.95	1.20	1.13	1.05	1.45	2.28	1.20	0.76
	Owner-driver	-	1.75	0.84	1.195	1.125	0.91	-	1.75	1.125	0.91
	Other-owner	-	-	-	-	-	-	-	-	-	-
	All owner	-	-	-	-	-	-	-	-	-	-
32.	Annual Net surplus (Owner-driver wages allowed at 85.	18,480	28,453.10	13,914.34	35,725	18,118	24,163	19,567.10	13,218.34	35,275	23,923
	Owner-driver	-	-	-	-	-	-	-	-	-	-
	Bought on Instalments	-	-	-	-	-	-	-	-	-	-
33.	Main problems facing taxi owners (in priority)	1) Passengers	2) Police	3) Spare Parts	1) Police	2) Spare Parts	3) Passengers	1) Pass.	2) Rds.	3) Stands	1) Passengers
		26,759	37,785	35,261	41,481	64,962	38,846.52	47,932	53,582	73,580	48,127
		-	-	41,596.50	47,531.50	69,623	43,487	-	-	-	-
34.	Annual Cost (Outright Purchase)	26,759	37,785	35,261	41,481	64,962	38,846.52	47,932	53,582	73,580	48,127
	Owner-driver	-	-	-	-	-	-	-	-	-	-
	Other-owner	-	-	-	-	-	-	-	-	-	-
	All owner	-	-	-	-	-	-	-	-	-	-
35.	Annual cost (Bought on Instalments)	26,669	38,161	36,147	42,177	65,412	39,086.52	48,652	54,082	73,580	48,085
	Owner-driver	-	-	-	-	-	-	-	-	-	-
	Other-owner	-	-	-	-	-	-	-	-	-	-
	All owner	-	-	-	-	-	-	-	-	-	-
36.	Annual Revenue minus vehicle costs	55,959	49,760	31,770.10	25,326.34	47,800	29,463	12,768.10	10,984.20	34,284	15,719
	Owner-driver	-	-	-	-	-	-	-	-	-	-
	Other-owner	-	-	-	-	-	-	-	-	-	-
	All owner	-	-	-	-	-	-	-	-	-	-
37.	Number of Passengers carried by taxi system per day.	160,453	25,817.43	280,824.54	355,363	430,920	149,147	63,755.64	1,755,153.4	874,162	1,343,101
	Owner-driver	-	-	-	-	-	-	-	-	-	-
	Other-owner	-	-	-	-	-	-	-	-	-	-
	All owner	-	-	-	-	-	-	-	-	-	-
38.	Average Journey distance covered by taxi system per day.	456,740	63,755.64	1,755,153.4	874,162	1,343,101	142,371,565.4	20,656,827	589,731,542.4	875,604	1,973,638
	Owner-driver	-	-	-	-	-	-	-	-	-	-
	Other-owner	-	-	-	-	-	-	-	-	-	-
	All owner	-	-	-	-	-	-	-	-	-	-
39.	Aggregate distance covered by the taxi system per annum.	150 mill.km	20,656,827	589,731,542.4	875,604	1,973,638	172,840,174.8	150 mill.km	20,656,827	589,731,542.4	875,604

Table 6.5
 CONSOLIDATED SUMMARY STATISTICS ON PASSENGER USE OF TAXIS
 (Peshawar, Lahore, Karachi and Quetta)

Sl. No.	Description	PESHAWAR		LAHORE		KARACHI		QUETTA	
		TAXI	RICKSHAW	TAXI	RICKSHAW	TAXI	RICKSHAW	TAXI	RICKSHAW
1.	Average Vehicle Occupancy	-	1.96	3.45	1.76	3.00	2.00	-	1.82
2.	Average Waiting Time (Minutes)	-	6.48	3.0	6.15	7.01	4.23	-	10.79
3.	Average Walking Distance (Metres)	-	77.34	57.73	65.6	54.09	50.00	-	21.23
4.	Average Trip Length (Kms)	-	4.27	6.60	8.32	7.38	6.23	-	4.14
5.	Average Fare paid (Rupees)	-	8.11	94.83	10.45	18.58	9.38	-	7.10
6.	Daily	-	18.7	0.0	21.8	19.10	19.10	-	21.2
	Weekly	-	45.1	11.8	38.4	41.30	41.30	-	38.25
	Less than one week	-	28.9	35.3	28.4	30.30	30.30	-	29.39
	Infrequent	-	7.3	52.9	11.4	9.40	9.40	-	11.16
7.	Percentage Preferring to Travel by other Mode	-	71.5	23.72	78.67	77.60	77.60	-	73.55
8.	Very Expensive	-	0.7	0.0	0.0	0.00	0.00	-	0.1
	Quite Expensive	-	16.0	0.0	0.2	4.00	4.00	-	2.2
	Reasonable	-	82.0	58.8	81.3	77.00	77.00	-	83.5
	Quite Cheap	-	0.7	41.2	17.9	18.30	18.30	-	13.8
	Very Cheap	-	0.0	0.0	0.6	0.70	0.70	-	0.4
9.	Percentage of Passenger Willing to Pay More	-	21.06	49.15	47.51	0.00	0.00	-	30.75

contd....p/-

6.3 CONCLUSIONS AND RECOMMENDATIONS

Taxis serve an important part of transport demand and these are generally used by middle and some-time by the lower group. Steps should be taken by the federal and the provincial governments to optimise the efficiency of the taxi system. In the absence of a quick response by the authorities, the quality of service will further deteriorate.

The four important areas which need the attention and should be considered while formulating a development plan are:-

- (a) physical feasibility - enough drivers/vehicles;
- (b) operational feasibility - integration with other modes of transport;
- (c) institutional feasibility - constraints and/or barriers;
- (d) financial feasibility - potential costs to the city/provincial/federal governments.

City of Quetta has reasonable number of rickshaws. So, there are sufficient rickshaw drivers and vehicles available to offer contractual and/or subscription services in the city but taxi cabs are missing. Foreign assembled Vespa scooters have proved popular and economical as against the locally produced rickshaws. The industry should be streamlined to manufacture Vespa rickshaws which should be comparable with the Italian models both in quality and the price. The supply side of rickshaws should be kept at reasonable

level because both over - supply and under-supply are injuries to the efficient working of the system and overall welfare of the taxi drivers, operators, other owners and the passengers.

Innovative concepts for increasing taxi participation in public transportation and improving service quality in general should be given serious consideration by the authorities. So far the government objectives and policies for use of mass transit in the development plans did not specifically address taxi usage. The policy statement can be to "improve taxi service in all the major cities including Karachi to provide efficient links to the bus station, railway stations, and air terminals".

Consolidation of authority over taxi operation in one agency, to the extent feasible, and coordination with that agency for non-collapsible functions should be considered by the Government. In USA this concept has been proposed in taxi studies over the last three decades. Given the changing role, needs and service concepts in the taxi industry, consolidation of authority with flexibility to address changing industry requirements through administrative process might better serve the public interest. Transport has already been declared as an industry. Hence, people in the taxi industry should also be given due facilities/concessions as planned and provided for other transport modes.

Credit/loan on soft terms for the taxi drivers could be provided by the Government through the banks for the purchase of vehicles. Government Cooperative Stores should be established to supply the spare parts at controlled rates.

Return on investment should be made attractive for the investors. Proper metering denies profitability. Internationally, there are many practices to establish a fare structure. We recommend that fares for fixed trips i.e. for one Km, two Kms, three Kms, etc. should be fixed by the authorities and the fare table be revised annually. The fare table should also indicate waiting time charges. Another non-metered fare system can be zonally, odometer and flat. Because of security and other problems shared-ride system is not likely to work in our cities. The meter system has already proved a failure. Hence, we recommend the first alternative mentioned above i.e. for fixed trips.

It is important to review the location of taxi stands in the city. The stands should be located at appropriate places and un-authorized taxi stands should be eliminated. Cruising practice is internationally recognized. Hence, the cruising drivers cannot be forced to refuse passengers along the road side. Instead, the improvement of city road system should allow taxi stops (like a bus stop) to pick-up/drop a passengers during cruising. Each taxi

stand should be planned and designed to provide basic facilities like shade for the vehicles, telephone, bath room, passenger waiting room, and drinking water, etc. The design of the taxi stand could allow free entry and exit or the one with one entry and one exit. Both have their own advantages. The former encourages open competition while the latter allows a rickshaw to pick up the passengers on its turn.

The existing rules and regulations for the taxi industry are old and inadequate. The rationale for taxi deregulation is three folds. First, it is alleged that the restriction has enabled the operators/firms to charge higher prices than those which can prevail in a non-regulated industry. Second, if the taxis in the industry are too few, as they may be under regulations, the increase in industry size which follows deregulations should improve the level of service to the consumer. Third, most cities which regulated taxis allow only a single type of service, namely, Exclusive-Right Taxi (ERT) service in which a single user or party of user for exclusive control over the vehicle for the duration of the trip. This will command a premium fare. There is another rationale for deregulations to allow taxi operator to provide greater variety of price/service options than is the norm in a regulated industry. Even if deregulation has its advantages, we still need regulated industry for which adequate regulations need to be constituted.

Regulations cannot be expected to be uniform for all the cities but they commonly encampass entry, price and services typically: (1) entries restricted on the basis of either "objective" criteria (such as a ratio of taxi to population) or standard to convenience and necessity; (2) maximum and minimum rates are subscribed; and (3) companies/operators must meet certain service standards such 24-hour availability of service and a certain level of response time, etc. In most cities where taxis are regulated, there is little or no entry into the industry except by the purchase of licence or permits from necessity operators. In addition a single set of rates usually prevails. Deregulation of taxi industry can take the form eliminating or relaxing restriction on rates, on entry or of both. Service standard can some time be retained.

Taxis by law must be comprehensively insured so that, in case of an accident, the vehicle, the driver and the passengers are adequately compensated. Introduction of group insurance and benevolent fund schemes should be considered for the benefit of the taxi drivers.

The City Government may consider the provision of taxi pool information service. This is particularly useful for people engaging taxis on monthly basis to go to place of work or for school going children. This Centre could also be designated as a complaint cell to receive complaints of misconduct, theft etc by the drivers.

Driver training is very important and could include topics like knowledge of the city, highway safety, courtesy to the passengers, knowledge of their legal rights, training in first aid and pride of profession, etc. Every big city should establish a taxi driver training school to impart one week training course to every new driver.

The traditional employment of drivers on commission basis is likely to be replaced by lease - drivers and cooperative - share arrangements. It is important for the taxi industry, transit policy planners, and local regulatory policy makers to undertake these new types of taxi organizations and their internal structures, their operations and their adjustments to different regulatory environments. There is a need to carry out a in-depth study of these non-traditional organizations, with particular emphasis on the cooperative firms. We should pay special attention to several meaningful of the terms 'cooperatives' as it is now used in taxi industry of other countries like USA. Generally cooperative "means a firm of business association". In one of the study done in USA a typocology of non-traditional taxi firm has been constructed. Though it is difficult to draw the realistic typocology because can be usefully drawn and use of outline the defining characteristics which distinguish taxi firm like cooperatives from traditional taxis and firm and from one another.

Rickshaw unions should be encouraged and helped to organize themselves on better footings/modern lines. Union membership should be made mandatory. Government should closely involve the unions in planning the taxi operation and decide on the fares. Unions should be asked to keep proper record of the industry and on the drivers including their addresses and photographs. This is important to combat crime.

Steps should be taken to save this industry from police high-handedness. Once proper rickshaw and taxicab stands and stops are made and the drivers/operators are provided the requisite facilities, enforcement of law should be done strictly. But, there should be no undue harassment and demand for gratification.

Private investor should be encouraged and facilities provided so that he invests, in taxi industry by way of starting well organized firms. Like many new industries, a new investor in taxi industry should be allowed a rebate in the form of no income tax and token tax, etc for first two years of the operation.

RTA and ETO offices should improve upon their record keeping which is inadequate and poorly maintained. If possible it should be computerized.

After the Government introduces improvements in the industry - gives loans, allows duty free import of rickshaw and taxi use, formation of taxi companies, formation of cooperatives, etc., monitoring of projects and a comprehensive evaluation every year is essential which will act as input.

Concluding Comments

Some people term taxi industry as too sick to be revived or call it obsolete but we do not agree with this idea. Fact of the matter is that no one in public or private sector is known to have done any taxi survey before 1987. No authority has ever appreciated that the taxi industry should be an integral part of urban transport system and has made an effort to understand the real problems of taxi operators/drivers. The Urban Bus System has been running in a loss all along, Government considers its operation with huge subsidy as a social obligation. On the same analogy Governments (Federal/Provincial/Local) should provide subsidy/loans on soft terms and extend other facilities to the rickshaw and taxicab operators. We are sure that with proper expert advice and financial assistance the taxi industry in Quetta and other cities can grow into profitable venture.

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