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PSYCHOLOGICAL ATTITUDES TOWARDS HIGHWAY SAFETY

NTRC - 37

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PSYCHOLOGICAL ATTITUDES TOWARDS HIGHWAY SAFETY

The rate of road accidents in the developing countries invariably is many times higher than the developed countries. To the people in the developing countries, this is primarily due to bad roads, lack of adequate signs/signals and rapid growth of motor vehicles. It is quite common to hear people then compare their roads with Freeways, Motorways and Autobahns to prove how bad their roads are. They talk about "Trafficing without police" meaning if you have a perfectly engineering roads, you would not need traffic police to make the drivers obey the rules. The drivers would voluntarily obey the rules and would not commit any infringement. Others talk about education at any early age as the only effective means of controlling driver behaviour.

There is generally no recognition of the fact that the roads are built to cater for traffic demand and roadway facilities have a certain capacity and a two lane road carrying 2000 vehicles per day does not qualify to be upgraded to a four lane divided highway of freeway or motorway standard. Secondly, it is also not generally appreciated that if the traffic volume increases by 100% over a period of time, the accident rate or even the number of accidents need not become double during that period as there is no linear relationship between the two.

Objective:

The study attempts to test the following commonly accepted beliefs:

1. The traffic rules violation is primarily committed by un-educated drivers.
2. The traffic rules violation is generally committed by young and in-experienced drivers.
3. The traffic rules violation is basically committed by drivers without licenses.
4. The traffic rules violation is normally committed by public service vehicle drivers.
5. The public service vehicle drivers commit violation because of intoxication due to drugs.
6. The public service vehicle drivers commit violation because of monetary reasons.
7. The root cause of traffic violation is road congestion.
8. The root cause of traffic violations and accidents is the presence of animal drawn vehicles in the traffic stream.
9. The root cause of traffic violations is lack of adequate traffic signs.
10. The accidents are primarily caused by bad roads.
11. The root cause of traffic violations is mechanically defective vehicles.
12. Road users know the rules fully well but deliberately violate them for sociological reasons.
13. The road users violate the rules because there are too few traffic police to check them.
14. The root cause of traffic violations is due to high sense of fatalism in road users.

Scope:

The study was conducted within the twin cities of Rawalpindi-Islamabad and involved 400 drivers of various professional, income and educational background. The field work was carried out during Summer and Autumn of 1978.

Methodology

The detailed personality test of projective type was prepared covering all aspect of road users behaviour related to highway safety. Locations selected were properly engineered with no congestion and having adequate traffic signs, etc.

The road users violating various traffic rules were apprehended with the help of the traffic police and were given a choice either to undergo the test or face prosecution. Those agreeing to the test were interviewed in depth to determine the factors motivating them to commit the infringement for which they were apprehended. The violations for which the drivers were stopped generally related to:

- i) Violating the traffic signal.
- ii) Violating the stop sign.
- iii) Overtaking dangerously or where prohibited.
- iv) Over-speeding.
- v) Turning from the wrong lane.
- vi) Following too closely behind another vehicle.
- vii) Violating one-way restriction.

The subjects were either interviewed "on the spot" or within 24 hours after the violation, under very relaxed and congenial conditions. The services of a qualified Psychologist were acquired from one of the local educational institutions for psychological testing.

Study Area:

Rawalpindi is an old city with usual land use of high density developments for such cities. The population of Rawalpindi in 1978 was 0.9 million. In comparison, the Islamabad is a new city, built in sixties. It has low density developments mostly residential with pockets of commercial establishment spread through out the city. The population of Islamabad was approximately 150,000 in 1978. The motor vehicle population of the twin cities was roughly 50,000, with 15.00% heavy commercial vehicle, 5.00% light commercial vehicle, 31.00% private cars and 49% two wheelers. The number of animal drawn vehicle registered in the twin cities was 1900.

Analysis:

For the purpose of analysis, the subjects were divided into professional and non-professional categories. Under professional category fuel the drivers of the public transport such as truck, bus, taxi drivers and chauffers. Under non-professional, businessmen, landlords and students were included.

The analysis was carried out under the following sub-heads:

- (A) Offences background.
- (B) Personal data of the subjects.
- (C) Driver training and licensing practice.
- (D) Subject's knowledge of the rules.
- (E) Enforcement quality.
- (F) Attitudes.

A. OFFENCE BACKGROUND

Under this head, the location of the offences, times of offences, their weekly distribution and type of the offences involved were studied.

Location of Offences: Approximately 43% were at urban intersection, 43% at sub-urban intersections and 15% at an urban links.

Time of Offence: The study was generally carried out during office working time, usually between 10 A.M. to 2 P.M. The office timings were between 7.30 A.M. to 2.30 P.M.

Day of Week: The largest number of data were collected on Thursday (24%), followed by Wednesday and Monday (16%), Saturday and Tuesday (14%), Sunday (12%). The least number of data (5%) were collected on Friday, being the weekly holiday. Distribution of data with regard to the days of the week is given below:

Weely Distribution

<u>Days</u>	<u>Percent</u>
Saturday	14
Sunday	12
Monday	16
Tuesday	14
Wednesday	16
Thursday	24
Friday	5
<u>T o t a l:</u>	<u>100</u>

Type of Offence: Majority of the offenders (54%) were stopped for lane violations followed by 20% for failing to observe stop sign, 12% for violating signal, 8% for improper left turn, 4% for violating one way restrictions, and 3% for dangerous overtaking as detailed below:

TYPE OF OFFENCES

<u>Type</u>	<u>Percent</u>
Lane Offence	53.25
Stop Sign	19.50
Signal	12.25
Left turn	7.75
One way	4.25
Overtaking	2.50
Others	0.50
<u>T o t a l :</u>	<u>100.00</u>

E. PERSONAL DATA

Under this head, the age, sex, marital status family size, profession, salary, education, driving experience, accident record, etc. were investigated.

Age: The ages of the subjects varied between 18 and 63 years. The median age was 32 years. 37.50% of the drivers involved were under 30 years, with only 10.00% being older than 41 years as detailed below:

AGE DISTRIBUTION

<u>Years</u>	<u>Percent</u>
18-23	10.75
24-29	26.75
30-35	34.75
36-41	17.75
42-47	5.50
48-53	3.50
54-59	0.75
60-65	0.25
<u>Total:</u>	<u>100.00</u>

Sex: The study involved only male subjects as it was not considered feasible to include female drivers due to two reasons. Firstly, the ratio of the female drivers in the traffic stream was in-significant and secondly, cultural factors did not allow inclusion of females in the study.

Marital Status: Out of 400 subjects, 81% were married. The largest single group was that of married public/service drivers (41.25%), followed by married private/government organization (18.25%) and married civil servant (10.25%) as detailed below:

<u>MARITAL STATUS</u>		<u>(Percent)</u>	
<u>Type of drivers</u>	<u>Married</u>	<u>Single</u>	<u>Total</u>
<u>Professional drivers:</u>			
Public Service	41.25	6.25	47.5
Private/Govt.Organ:	18.25	5.00	22.75
<u>Non-professional drivers:</u>			
Army Officers	1.50	0.50	2.00
Civil Servants	10.25	2.50	12.75
Semi-Public or Private Corp.Officials	4.50	2.25	6.75
Businessmen	4.50	1.00	5.05
Landlords	0.05	0.00	5.05
Students	0.00	2.25	2.25
<u>T o t a l:</u>	<u>81.00</u>	<u>19.00</u>	<u>100.00</u>

Profession: 70% of the subjects were professional drivers while 30% non-professional drivers. This is in line with the general distribution of traffic composition in the country as detailed below:

PEROFESSIONAL BACKGROUND

<u>Profession</u>	<u>Percent</u>
Professional drivers:	
Public Service.	47.5
Private or Govt.Organ:	22.75

Sub - Total :	70.25

Non-professional drivers:	
Army Officers	2.00
Civil Service	12.75
Semi-Public or Private Corp.Servants:	6.75
Businessmen	5.5
Landlords	0.5
Students	2.25

Sub-Total :	29.75
T o t a l :	100.00

Salary/Income: The income of the subjects varied between Rs. 350.00 (US \$ 35) per month to Rs. 6000(US \$ 600) per month. The median salary/income was Rs.1270(US \$ 127). 32.75% of the subjects earned less than Rs.1000 (US \$ 100) per month while only 19.75% subjects earned more than Rs. 2000 (US \$ 200) per month. The income distribution may be seen below:

INCOME DISTRIBUTION

<u>Income</u> (Rs)	<u>Percent</u>
100- 500	8.5
500-1000	24.25
1000-1500	31.75
1500-2000	15.75
2000-2500	9.25
2500-3000	4.5
3000-3500	2.0
3500-4000m	0.75
4000-4500	1.25
4500-5000	0.25
5000-5500	0.75
5500-6000	1.00
<u>Total:</u>	<u>100.00</u>

Education: 23.5% of the subjects were un-educated, 22.25% had primary education, 36.75% had secondary education and 17.5% were graduates. Out of the professional drivers, 22.25% had no education compared with only 0.75% for non-professional drivers as detailed below:

EDUCATION DISTRIBUTION (PERCENT)

<u>Education</u>	<u>Professional</u>	<u>Non-Professional</u>	<u>Total</u>
Nil	22.75	0.75	23.50
Primary	21.25	1.00	22.25
Secondary	26.25	10.50	36.75
Graduates		17.50	17.50
<u>T o t a l :</u>	<u>70.25</u>	<u>29.75</u>	<u>100.00</u>

Familiarity with the Area: A large majority (78.75%) of the subjects were very familiar with the study area. In most cases, they either operated regularly along a fixed route in the study area or resided in the study area and hence were fully aware of the geometric configuration of the street as well as the system of signs and signals in the study area. Only 4.25% of the subjects were strangers as detailed below:

<u>Familiarity with area</u>	<u>Percent</u>
Very familiar	78.75
Somewhat familiar	17.00
<u>Not familiar at all</u>	<u>4.25</u>
<u>T o t a l :</u>	<u>100.00</u>

Driving Experience: The driving experience of the subjects ranged between 1 to 38 years. The median was 9.86 years. 23.50% of the subjects had driving experience less than 5 years, while 18.50% had driving experience of more than

20 years as detailed below:

DRIVING EXPERIENCE (PERCENT)

<u>Y e a r</u>	<u>Professional</u>	<u>Non-Professional</u>	<u>T o t a l</u>
00.0 - 05.00	13.00	10.5	23.50
05.1 - 10.00	18.5	8.75	27.25
10.1 - 15.00	11.5	4.5	16.00
15.1 - 20.00	12.0	3.0	14.75
20.1 - 25.00	6.75	1.25	8.00
25.1 - 30.00	4.00	1.00	5.00
30.1 - 35.00	2.5	0.75	3.25
35.1 - 40.00	2.55	-	2.25

Vehicles: 37.25% of vehicles involved in the survey were buses and mini-buses, 7.0% trucks, 35.75% cars and taxis while the remaining 19.50% were two-wheelers as detailed below:

VEHICLE SAMPLE DISTRIBUTION

<u>Type of Vehicle</u>	<u>Percent</u>
Trucks	7.75
Buses	13.00
Vans	24.00
Taxis	13.25
Cars	22.5
Motor-Cycles	19.5
Total:	100.00

Accident Record: A very large majority (83.00%) did not admit involvement in any kind of accident over their entire driving experience which ranged in some cases to 40 years. Only 2.00% admitted involvement in a major accident and Vs 15.0% for minor accidents as detailed below:

ACCIDENT RECORD (PERCENT)

<u>Driving Experience</u>	<u>One Major Accident</u>	<u>One Minor Accident.</u>	<u>No Accident</u>	<u>T o t a l</u>
0 - 5	2.12	11.700	86.18	100.00
5 - 10	1.83	24.77	73.40	100.00
10 - 15	1.56	14.06	84.38	100.00
15 - 20	1.69	16.94	81.37	100.00
20 - 25	0.00	13.33	86.67	100.00
25 - 30	5.00	10.00	85.00	100.00
30 - 35	0.00	15.38	84.62	100.00
35 - 40	0.00	11.00	89.00	100.00
T o t a l:	2.00	15.00	83.00	100.00

Experience Abroad: Out of 400 subjects, 7% had been abroad and had the opportunity of either driving or observing driver behaviour in the developed countries.

Use of drugs: Although the subjects were not actually tested for use of drugs, etc. However, every subject was closely observed for any sign of being under the influence of drug/alcohol. Not a single subject appeared to apparently affected by drugs/alcohol.

Mechanically defective vehicles: Although no thorough physical check was made to determine the mechanical fitness of the vehicles. However, all the commercial vehicles which are by law required to undergo fitness test every six months, carried the requisite certificate. Also all the vehicles /visible sign of mechanical defects. The study did not reveal any were closely observed for any/vehicle covered by the survey with serious defects and all the vehicles were found to be generally in good mechanical condition.

C. DRIVER LICENSING & TRAINING

It is quite common belief that the driver training and licensing practices are not only very cursory, they are also not very strictly administered. The survey covered possession of license, driving education, driver testing, etc.

Possession of driving license: Contrary to the general impression, the incidents of driving without a valid driving license was very negligible. 97% of the professional drivers and 82% of the other drivers were found to carry the license on their person as detailed below:

POSSESSION OF DRIVING LICENSE

<u>Type of drivers</u>	<u>Percent</u>
Professional Drivers:	
Public Service	97.00
Private or Govt. Organ:	98.00

Sub - Total :	97.00

Non-Professional Drivers:	
Army Officers	86.00
Civil Servants	83.00
Semi-Public Servants	75.00
Businessmen	95.00
Landlords	100.00
Students	55.00

Sub - Total	82.00

Average :	92.50

Driving tests: The survey revealed that 43% of individuals with comfortable position in life were not tested before the issuance of driving license. In case of professional drivers; only 3% of the public service and 11% of the private/government organization drivers admitted receiving driving licenses without under-going any test. These were primarily members of the armed services, who are entitled under law to a public service license on their retirement from service without undergoing any test, provided they carry a certificate from the army that they have been driving a heavy vehicle for a period of at least three years prior to their release from the service as detailed below:

DRIVING TESTS

	Percent drivers tested					Total
	Nil	Once	Twice	Three times	Four times	
Professional drivers:						
Public Service	3	62	26	6	3	100
Private or Govt. Organization:	11	60	20	9	0	100
Non-professional drivers:						
Army Officers	57	43	0	0	0	100
Civil Servants	29	63	8	0	0	100
Semi-Public or Private Corp. Servants.	44	38	12	6	0	100
Businessmen	35	65	0	0	0	100
Landlords	100	0	0	0	0	100
Students	63	25	12	0	0	100

However, it did show that people with higher education enjoyed greater favour regarding exemption from testing prior to licensing. More than half of the graduates were not tested as compared with only 6% un-educated drivers. The same pattern also prevailed in cases where drivers reported appearing for tests more than once.

DRIVER TEST VS EDUCATION

Education	Percent drivers tested					Total
	Nil	Once	Twice	Thrice	Four times	
Nil	6	58	33	3	-	100
Primary	10	55	28	7	-	100
Secondary	27	59	8	3	3	100
Graduates	54	34	9	3	-	100

Mode of learning to driver: Majority of the professional drivers reported learning driving from a friend while a substantial proportion ranging from 33% for civil servants to 75% for students claimed learning driving on their own as detailed below:

MODE OF LEARNING (PERCENT)

Type of driver	School	Friend	Self	Army	Total
Professional Drivers:					
Public Service	-	56	29	15	100
Private or Govt. Organization.	11	40	9	40	100
Non-Professional Drivers:					
Army Officers	29	29	42	0	100
Civil Servants	8	54	34	4	100
Semi-Public or Private Corp.	6	50	38	6	100
Businessmen	0	55	45	0	100
Landlords	0	30	70	0	100
Students	0	25	75	0	100

D. KNOWLEDGE OF RULES

A systematic effort was made to gauge the extent of ignorance of traffic safety rules on the part of the road users. The questions related to possession and reading of the code, confidence level of the subjects ranging knowledge of the rules and actual level of the knowledge of the rules.

Possession of Highway Code: Three months prior to the survey, possession of the personal copy of the Highway Code by the drivers in the whole of the country was made mandatory by law. The survey revealed that 92% of the public service drivers, 94% of the private or government organization drivers, 67% of the army officers, 88% of the civil servants 98% of the semi-public officials, 90% of the businessmen and 89% of the students possessed the Pakistan Highway Code.

POSSESSION OF HIGHWAY CODE

<u>Type of drivers</u>	<u>% Possessed</u>
Professional drivers:	
Public Service	92
Private or Govt. Organ:	94
Non-Professional drivers:	
Army Officers	67
Civil Servants	88
Semi-Public or Private Orgn:	98
Businessmen	90
Landlords	100
Students	89

Reading of the Code: In order to determine whether driver complied with the spirit of the law and read the code after purchasing it or merely completed the requirement of mandatory possession. The survey revealed that very few drivers actually read the Code, 60% never read the code, 22% read it partially. The remaining 18% claimed reading the Code in total as detailed below:

READING OF HIGHWAY CODE

Type of drivers:	Percent			Reading
	All	Some	None	Total
Professional Drivers:				
Public Service	18	49	33	100
Private or Govt. Orgn:	40	37	23	100
Non-Professional Drivers:				
Army Officers	50	17	33	100
Civil Servants	42	35	23	100
Semi-Public or Private Organization	29	53	18	100
Businessmen	24	43	33	100
Landlords	0	100	0	100
Students	33	11	56	100

Confidence of knowledge of the Code: To determine the reasons for not reading the code, the subjects were asked if they thought they already knew the contents of the Code. The majority (55-100%) of the subjects said with confidence that they knew all the rules contained in the Code as detailed below:

CONFIDENCE OF RULES OF KNOWLEDGE

<u>Type of drivers</u>	<u>Percent</u>
Professional drivers:	
Public Service	75
Private or Govt. Orgn:	71
Non-Professional Drivers:	
Army Officers	67
Civil Servants	66
Semi-Public or Private Corp.	82
Businessmen	67
Landlords	100
Students	55

Confidence of knowledge of driving: The subjects were also asked if they believed that they knew all the rules a driver ought to know. 83-100% of the subjects replied in affirmative with confidence as detailed below:

CONFIDENCE OF TRAFFIC RULES KNOWLEDGE

<u>Type of drivers</u>	<u>Percent</u>
Professional drivers:	
Public Service	94
Private or Govt. Orgn:	100
<u>Non-Professional Drivers:</u>	
Army Officers	83
Civil Servants	100
Semi-Public or Private Corp.	100
Businessmen	90
Landlords	100
Students	89

Actual knowledge of the rules: With this background, the subjects were then asked the following twenty specific questions from the Highway Code.

- (1) Use of Horn: Pakistan Highway Code clearly states that un-necessary use of horn should be avoided and lays down that the horn should be used only when another road user is violating a traffic safety rule and it should not be used as a device informing other road users of your arrival at any point. When the subjects were asked if they would use horn while going through an intersection as a precautionary measure, the reply was generally in affirmative, as can be seen from the table below:

USE OF HORN

<u>Type of drivers</u>	<u>Use of horn (Percent)</u>
Professional drivers:	
Public Service	86
Private or Semi-Public	88
Non-Professional Drivers:	
Army Officers	50
Civil Servants	56
Semi-Public or Private Corp. Servants.	63
Businessmen	68
Students	100

The level of education or years of driving experience did not seem to have any bearing.

(2) Round-About: The subjects were asked to state the rules regarding Right-of-Way at a roundabout. The ignorance was practically total and even the drivers with driving experience of 36-40 years did not know the rule. The table below shows the percent-age of subject of different driving experience groups who could give correct answer to the question of the right-of-Way at a round-about:-

<u>Right-of-Way at Roundabout</u>	
<u>Experience (Years)</u>	<u>Correct Response (Percent)</u>
1 - 5	3
6 - 10	2
11 - 15	2
16 - 20	3
21 - 25	0
26 - 30	5
31 - 35	8
36 - 40	0

The level of education also did not seem to have much effect as may be seen from the table below:

	<u>Education</u>	<u>Correct Response</u>
	Nil	7
	Primary	6
	Secondary	9
	Graduates	14

(3) Crossing Major Roads: The subjects were also asked to state the rule regarding crossing of the major road while approaching from a minor road. The survey revealed that a very negligible proportion of the drivers knew that it was absolutely necessary to come to a complete stop before crossing a major road even if there was no traffic on the major road. Length of the driving experience in this regard did not seem to have any bearing, as can be seen from the table below:

CROSSING MAJOR ROADS

<u>Experience (Years)</u>	<u>Percent Correct Responses</u>
1 - 5	11
6 - 10	15
11 - 15	8
16 - 20	12
21 - 25	16
26 - 30	10
31 - 35	23
36 - 40	11

The level of education in this case also did not seem to have any bearing.

(4) Overtaking: Majority of the fatal accidents in Pakistan result due to improper and dangerous overtaking. In order to determine if the driver knew the rule regarding right-of-way while overtaking, they were asked as to what would they do if while overtaking another vehicle suddenly appeared from the opposite direction. The general

response was as can be seen from the following table:

OVERTAKING

Response of subjects	Percent of drivers
Flash headlights	57
Accelerate and Overtake	31
Return to left lane	12

- (5) Dipping Headlights Behind a Vehicle: The drivers were asked if they were supposed to dip their headlights when approaching a vehicle from behind at night time. This is obviously a leading question and it was expected that overwhelming response would be affirmative. In order to determine if their reply was based on actual knowledge, a follow up question was asked from those who gave correct answer. Contrary to the expectation, very large proportion of the drivers did not know the real reasons for requiring the following drivers to dip their lights. In this case also the driving experience did seem to have a bearing on the correctness of the reply.

DIPPING LIGHTS AT NIGHT TIME

Experience	Correct Responses (Percent)
1 - 5	6
6 - 10	13
11 - 15	44
16 - 20	34
21 - 25	56
26 - 30	55
31 - 35	54
36 - 40	67

- (6) Following Distance: A large number of rear-end collision take place due to failure of the drivers to maintain a safe following distance. The survey revealed that the knowledge of the drivers regarding this rule was almost nil. Once again the length of driving experience did not have a bearing on the knowledge of the subjects of the rule as indicated

below:

SAFE FOLLOWING DISTANCE

Experience (Years)	Percent Correct Responses
1 - 5	2
6 - 10	6
11 - 15	2
16 - 20	3
21 - 25	6
26 - 30	0
31 - 35	15
36 - 40	0

(7) Lane Markings: Traffic in Pakistan is highly indisciplined and disorderly. Nobody seems to follow the lane markings, although a large number of roads have been provided with lane markings at great cost. The survey revealed that very few drivers knew the real meaning of even such primary markings as solid line in middle of the road, as is indicated in the table below:

ROAD MARKINGS

Experience (Years)	Correct Responses (Percent)
1 - 5	15
6 - 10	13
11 - 15	9
16 - 20	17
21 - 25	3
26 - 30	10
31 - 35	23
36 - 40	22

(8) Railway Crossing: In Pakistan, a number of very fatal accidents involving public service vehicles happen at both manned and un-manned railway crossings. In order to determine the attitude of the drivers while going through a level crossing, they were asked if the driver of the motor vehicle could be held responsible in case of an accident between rail and motor vehicle which took place at a manned level crossing, if the gate was open. A majority of subjects did not believe that driver of the motor vehicle could be faulted for the accident. The results are given below:

LEVEL CROSSING

Experience (Years)	Correct Responses (Percent)
1 - 5	17
6 - 10	41
11 - 15	22
16 - 20	34
21 - 25	31
26 - 30	50
31 - 35	23
36 - 40	44

(9) Helping another driver in overtaking: The public service vehicle drivers in Pakistan have a very common practice of helping a vehicle approaching from behind in overtaking. For this purpose they use right indicator to inform the following driver that the road ahead is clear and that he should overtake. The left indicator means do not overtake. However, the practice being very dangerous is forbidden in law. When asked whether they should help another driver in overtaking and if so how. A substantial majority of the subjects stated that they would help another driver in overtaking and that the use of indicator for this purpose was a proper practice, as may be seen from the table below:

HELPING ANOTHER DRIVER IN OVERTAKING

Experience (Years)	Correct Responses (Percent)
1 - 5	29
6 - 10	13
11 - 15	16
16 - 20	15
21 - 25	22
26 - 30	20
31 - 35	15
36 - 40	33

As expected, the lack of knowledge was much smaller in private vehicle drivers as compared with professional drivers as can be seen below:

Type of drivers	Correct Responses (Percent)
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Professional drivers:

Public Service	13
Private or Govt. Orgn:	11

Non-Professional Drivers:

Army officers	64
Civil Servants	45
Semi-Public or Private Corp.	30
Businessmen	41

(10) Interpretation of Turn Signals: A large number of accidents are caused every year when a vehicle in front intending to turn right gives right indicator, which is interpreted by the driver following as an indication to him to overtake. The survey revealed that the subjects' knowledge about the correct use and meaning of indicator was dangerously low as shown in the table below:

INTERPRETATION OF TURN SIGNAL

Experience	Correct Responses (Percent)
1 - 6	15
6 - 10	18
11 - 15	5
16 - 20	8
21 - 25	3
26 - 30	15
31 - 35	8
36 - 40	0

(11) School Bus: The knowledge of the subjects was also very poor regarding the rule to be followed with regard to a schools bus when the children embark or disembark. A large majority of the subjects were of the opinion that it was safe to pass slowly and by blowing horn. The table below gives the figures:

PASSING SCHOOL BUS

Experience	Correct Responses (Percent)
1 - 5	5
6 - 10	7
11 - 15	11
16 - 20	10
21 - 25	66
26 - 30	20
31 - 35	8
36 - 40	11

- (12) Emergency Vehicle: It has been observed that people in general in Pakistan do not give any special attention to an emergency vehicle. The subjects were asked as to what the law required them to do when they heard the siren or saw the flashing signal of an emergency vehicle. The results below show that a substantial majority was ignorant regarding this law:

EMERGENCY VEHICLE

Driving Experience	Correct Responses (Percent)
1 - 5	25
6 - 10	31
11 - 15	17
16 - 20	22
21 - 25	9
26 - 30	23
31 - 35	23
36 - 40	25

- (13) Emergency Vehicle Vs Other: A follow up question was asked as to who had the right-of-way if the subject was approaching a signalized intersection on green, and an emergency vehicle on emergency run was also approaching the intersection along the cross road which was showing red signal for the emergency vehicles. The correct response was generally in the range of 70 - 85%.

It was obviously tempered by the previous question and therefore does not reflect the true extent of the knowledge at the time the subject was apprehended for violating the traffic rules.

- (14) Traffic Police Vs Signal: When asked whether a traffic policemen in uniform can over rule an indication given by a traffic sign, signal or lane marking, the subjects either did not know or did not feel it should:

TRAFFIC POLICE VS SIGNAL

Experience (Years) Correct Responses (Percent)

Table with 2 columns: Experience (Years) and Correct Responses (Percent). Rows include ranges from 1-5 to 36-40 years.

- (15) Turning Right: To the question as to how they will turn right if another vehicle was following behind, a large percentage of the subjects said that they will pull to the left and let the other vehicle pass before turning right. The percentage of correct responses according to the experience of the subjects are given below:

TURNING RIGHT

Experience (Years) Correct Responses (Percent)

Table with 2 columns: Experience (Years) and Correct Responses (Percent). Rows include ranges from 1-5 to 36-40 years.

Further probing revealed that the drivers were ignorant of the fact that they had the Right-of-Way and the following driver is supposed to overtake on the left in this case.

(16) Right Turn on Red Signal: A large number of subjects said that it was alright to take right turn on red signal. The table below gives the experience of the drivers compared:

<u>RIGHT TURN ON RED</u>	
<u>Experience (Years)</u>	<u>Correct Responses (Percent)</u>
1 - 5	21
6 - 10	18
11 - 15	6
16 - 20	19
21 - 25	9
26 - 30	20
31 - 35	15
36 - 40	22

(17) Left Turn on Red Signal: Left turn on red signal is allowed in Pakistan, under clearly specified conditions. The law require that driver has to come to a complete stop and yield to the pedestrain crossing the road and to the traffic coming from right. The survey revealed that a large number of the subjects were under the impression that left turn was allowed without any condition and there was no difference between a left turn on red and a left turn on green signal. The knowledge of the subjects having no correlation with the number of years of driving.

LEFT TURN ON RED

<u>Experience (Years)</u>	<u>Correct Responses (Percent)</u>
1 - 5	4
6 - 10	10
11 - 15	6
16 - 20	7
21 - 25	13
26 - 30	15
31 - 35	7
36 - 40	11

- (18) Rear-end Collision: It is a common observation in Pakistan that drivers do not care so much to keep safe following distance. This factor causes many rear-end collisions. Although in such cases it is always the vehicle behind that is at fault, a great percentage of the subjects believed that it was the vehicle in front who was to be blamed for stopping suddenly without proper warning as indicated by the table below:

REAR END COLLISION

<u>Experience (Years)</u>	<u>Correct Responses (Percent)</u>
1 - 5	19
6 - 10	37
11 - 15	31
16 - 20	25
21 - 25	28
26 - 30	30
31 - 35	15
36 - 40	33

- (19) Lane for Right-Turn: The subjects were asked as to which lane they would use for turning right on a four lane divided highway. The survey revealed that an alarming majority did not know which lane to get into before taking a right turn in such case. Most of the subjects thought that it was better to keep

to the left lane of traffic and make a right turn only after the vehicles approaching from behind have passed. The percentage of the responses of the subjects, according to experience of driving are given below:

RIGHT OF TURN ON DUAL CARRIAGEWAY

<u>Experience (Years)</u>	<u>Correct Responses (Percent)</u>
1 - 5	8
6 - 10	17
11 - 15	22
16 - 20	14
21 - 25	10
26 - 30	15
31 - 35	22
36 - 40	11

(20) On-coming Vehicle: When the subjects were asked as to what they would do upon seeing a vehicle coming from the opposite direction in the wrong lane over-taking another vehicle. The following table gives the response:

REACTION AT ON-COMING VEHICLES

Education	<u>R e a c t i o n (Percent)</u>						
	Stop	Move Left	Flash & Horn	Give way	Move right	Oth-er	To-tal
1.	2.	3.	4.	5.	6.	7.	8.
Nil	22	39	17	6	1	15	100
Primary	52	30	11	2	0	5	100
Secondary	39	38	15	0	2	6	100
Graduates	40	32	24	0	0	4	100

Summary of Rules Knowledge: The overall level of the knowledge of rules regarding nine most fundamental traffic safety rules viz-a-viz the length of driving experience and level of education was dismally low as may be seen from the table at page-29.

KNOWLEDGE OF TRAFFIC RULES

Item	Right of Way at Round-About	Is Stop Sign a Mandatory Sign	Safe following Distance Rule	Meaning of Continuous Line	Crossing Un-Manned Railway Track	Proper Use of Indicators	Traffic Police Vs Traffic Signal	Proper Method of Turning Right	Responsibility for Rear-End Collision
1 - 5	3	11	2	15	47	15	11	3	19
6 - 10	2	15	6	13	41	18	8	28	37
11 - 15	2	8	2	9	2	5	16	15	31
16 - 20	3	12	3	17	34	8	2	17	25
21 - 25	0	16	6	3	41	3	6	13	28
26 - 30	5	10	0	10	61	15	10	25	30
31 - 35	8	23	15	23	23	9	0	23	16
36 - 40	0	11	0	22	-	0	0	33	33
DRIVING EXPERIENCE VS KNOWLEDGE									
Nil	7	10	2	11	33	0	5	21	9
Primary	0	13	6	13	45	18	12	25	13
Secondary	5	14	5	10	36	9	10	15	5
Graduates	14	17	4	16	49	14	17	13	14
EDUCATION VERSUS KNOWLEDGE									

ENFORCEMENT QUALITY

The quality of enforcement in Pakistan is generally very low. The enforcement is limited to mainly checking of documents of public service vehicles and prosecuting over-loading and overcharging. The private car drivers are seldom checked. The only time private cars are stopped when they are involved in an accident or when under a special order their documents are to be checked for payment of taxes, etc. as may be seen from the instructions issued to the Traffic Police in Punjab Province by the Chief of the Provincial Police in December, 1978:

"Motor Mobile Patrol Inspectors would not stop Private cars unless glaring offences come to notice or the cars are required to be checked under special orders".

There is no check on moving violation such as speeding, reck-less driving or violating signs or signals. To quantify the enforcement emphasis of the traffic police, following questions were included in the survey:

Stopped by Traffic Police: When asked whether or not the respondent was ever stopped by the traffic police for any reasons whatsoever, it was revealed that 94% of taxis drivers and 97% of the truck drivers were stopped by traffic police for various reasons during preceding six months. On the other hand, only 29% of the motor-cycles, 35% cars and 48% of the private carrier drivers were stopped by the traffic police during the corresponding period. The average number of times various category of drivers were stopped during this period ranged between 0.56-1.00 for private vehicle drivers and 9.4-15.0 for public service drivers. The details may be seen below:

ENFORCEMENT EMPHASIS

Type of Vehicle	% Vehicles Stopped	Average number of Times Stopped
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Private Vehicles:

Motor Cycles	29	0.56
Cars	33	0.58
Mini-buses	48	1.00

Public Service Vehicles:

Taxis	94	12.00
Mini-buses	95	9.40
Buses	95	10.00
Trucks	97	15.00

Ticketed by Traffic Police: Out of 400 subjects, only 9% motor-cycles, 4% of the Cars, 21% private carriers Vs 66% Taxis, 80% Mini-buses, 42% buses and 61% trucks reported receiving a traffic citation mostly for non-possession of documents such as registration, insurance, route permit, and driving license etc. during preceding six months time. The number of citations ranged from 0.88 - 0.30 for private vehicles compared with 1.16 - 6.46 for public service vehicles. The table below shows the percentage of vehicles and also the average number of time each subject was ticketed during six months:

ENFORCEMENT EFFECTIVENESS

Type of Vehicle	% Vehicles ticketed	Frequencies of citation
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Private Vehicles:

Motor Cycles	9	0.08
Cars	4	0.94
Mini-buses	21	0.30

Public Service Vehicles:

Taxis	66	2.15
Mini-buses	80	6.46
Buses	42	1.28
Trucks	61	1.16

F. A T T I T U D E S

The analysis under this head could be grouped into the following :

- (a) Attitude towards Offence.
- (b) Attitude towards Traffic Police.
- (c) Attitude towards Life.
- (d) Attitude towards Problem.
- (e) Attitude towards Traffic Education.

a) Attitude towards Offence: Under this sub-head the following questions were asked :

(i) Reasons of Offence: The subjects were asked to explain the reasons for infringement of the rule committed by them. As expected, majority (85-88%) of them did not believe that their action was in fact an violation of the rules. They either did not know the actual rule or did not understand the real meaning of a sign or road marking. Education level of the respondent did not seem to matter either. In each case they expressed great surprise when shown or read the relevant provision of the Highway Code. The table below gives details of reported reasons for the offences committed by the subjects:

REASONS OF OFFENCE

Education	Reasons (Percent)						Total
	Ignorance	Hurry	Vehicle defect	Pre-Occu- pi- ed.	Follow- ing Others	Con- fu- sed	
Nil	88	6	3	1	2	0	100
Primary	87	7	1	0	3	2	100
Secondary	85	6	3	3	0	3	100
Graduates	86	5	0	4	2	3	100

When asked as to how many other drivers in their opinion committed the violation for which they were apprehended, the invariable reply was that almost everybody did it. In this case also the level of education did not seem to have any effect. Table below gives the response related to the educational level of the respondent:

EXTENT OF ALLEGED VIOLATION

<u>Education</u>	<u>All</u>	<u>Extent (Percent)</u>	
		<u>Majority</u>	<u>Few</u>
Nil	9	11	5
Primary	8	15	2
Secondary	7	17	1
Graduates	7	14	4
<u>T o t a l:</u>	<u>31</u>	<u>57</u>	<u>12</u>

(ii) Reasons about other Driver's Offence: When asked to comment as to why so many drivers violated the traffic rules, majority of the drivers stated that the other drivers did not know the rules. This was perhaps due to their own experience where they found that they did not know the actual rule and because convinced that the other also misunderstood it the same as they did. Table below gives three most commonly expressed reasons:

PERCEIVED REASONS FOR OFFENCE

<u>Education</u>	<u>Reasons (Percent)</u>				<u>Total</u>
	<u>Igno- rance</u>	<u>Hurry</u>	<u>Careless</u>	<u>Others</u>	
Nil	48	20	20	12	100
Primary	36	20	24	20	100
Secondary	48	24	4	24	100
Graduates	40	20	16	24	100

(iii) Over-loading: Because of transport shortage in the country, there is very high incidence of over-loading in public service vehicles. People are seen riding on the roofs or hanging from the vehicles. There is also constant hue and cry in the press to stop it. The drivers of the public service vehicles were asked as to how many number of extra passenger they feel can be accommodated in their vehicles without causing serious inconvenience to the travellers, the seating capacity of a bus is generally 52 and that of a mini-bus 12. The average number of passengers generally overloaded, as reported by the drivers of buses and mini-buses were 7 and 2, respectively. The minimum and maximum number reported were 2 - 15 and 2 - 3, respectively for buses and mini-buses.

OVERLOADING BY P.S.V.

<u>Public Service Vehicle</u>	<u>No. Passengers Overloaded</u>		
	<u>Min.</u>	<u>Av.</u>	<u>Max.</u>
Buses	2	7	15
Mini-buses	1	2	3

When asked if overloading to the extent indicated by them was okay and should be legalized, 100% of the truck drivers, 90% of the bus drivers, 94% of the mini-bus drivers, and 100% of the taxi drivers responded in negative on the ground that it would damage the vehicle:

OVERLOADING

<u>Type of drivers</u>	<u>% Against</u>
Truck drivers	100
Bus drivers	90
Mini-bus drivers	94
Taxi drivers	100

(iv) Stopping Regulation: There is a general complaint about public service vehicles picking up and putting down passengers at places other than recognized stop which results in traffic indiscipline. On the other hand, it is convenient for the public to be able to

flag any bus or mini-bus at any place and avoid walking long distances. The survey revealed that 71% of the bus drivers, 11% of the mini-bus drivers, and 74% of the taxi drivers felt that it was alright to pick up passengers anywhere on the road, on the ground of the convenience of the passengers:

INDISCRIMINATE STOPPING

<u>Type of drivers</u>	<u>Percent Favouring</u>
Bus drivers	71
Mini-bus-drivers	11
Taxi drivers	74

- (v) Working Hours: It is commonly believed that the Public Service Vehicle drivers work long hours non-stop. The survey revealed that the average daily driving hours of the public service drivers reported by them ranged between 7 - 9 hours, which may not be true and should not be taken at its face value:

WORKING HOURS

<u>Type</u>	<u>Hours</u>
Trucks	9
Buses	8
Mini-Buses	8
Taxis	7

- (v) Driving Stamina: The following table gives the detail of the average hours a subject thought he would be able to drive continuously without feeling tired. The table also gives the percentage of subjects whose estimate about their estimate was based on the actual experience of driving:

DRIVING STAMINA

<u>Type of drivers</u>	<u>Estimated Stamina</u>	<u>Actual Experience</u>
Professional drivers:		
Public Service	11	96
Private or Govt.Organ:	12	84

(Contd. on next page)

<u>Type of drivers</u>	<u>Estimated Stamina</u>	<u>Actual Experience</u>
Non-Professional drivers:		
Army Officers	10	63
Civil Servants	7	38
Semi-Public or Privat-Organ:	5	33
Businessmen	9	77
Landlords	5	50
Students	8	0

(vii) Fatigue: It is also commonly believed that a large number of accidents occur due to fatigue on the part of drivers. The drivers were asked as to how they overcome fatigue while driving long distance. The response was that they generally took 10 to 15 minutes rest and refreshments like tea and meals every two or three hours of driving. This may also not be very accurate.

(b) Attitudes Towards Traffic Police: A number of questions were asked to probe the attitude of the road users towards the traffic police, as detailed below:

(i) Traffic Police's Responsibility in Encouraging the Offences:- A majority of the subjects considered traffic police as highly responsible for encouraging the violations of traffic rules. This tendency was comparatively higher in un-educated drivers and those with little education. In the case of educated drivers, comparatively larger percentage was of the view that traffic police was fairly or somewhat responsible for the traffic offences. The figures of the responses of the subjects are given below:

Education of Respondent	Traffic Police Responsibility (Percent)			
	Highly Responsible	Fairly Responsible.	Some what Responsible.	Not at all Responsible.
Nil	55	18	11	16
Primary	68	4	18	10
Secondary	49	24	19	8
Graduates	43	26	25	6

(ii) Acquaintance with Traffic Police: There is also general belief that traffic police are mixed up with the public service drivers and deliberately ignore the violations of traffic rules committed by public service drivers. Also it is believed that in case one knew anybody in the traffic police, he could very easily manipulate any citation received by him for violating traffic rules. Attempt was made to determine if any set pattern existed for getting acquainted intimately with traffic police. The survey revealed that 53% of the public service drivers, 60% of the private organization drivers, 84% of army officers, 66% of civil servants, 73% of semi-public officials, 70% of businessmen and 61% of the students felt that money was the only method of developing an acquaintance with traffic police. The table is given below:

METHOD OF ACQUAINTANCE

Type of drivers	Relation-ship.	Enter-tainments	Money	Friend-Ship.	Other
Professional drivers:					
Public Service	13	10	53	3	21
Private or Govt. Organizations:	8	12	63	5	12
Non-Professional drivers:					
Army Officers	0	16	84	0	10
Civil Servants	16	6	66	2	10
Semi-Public or Private Corp.	7	11	75	0	10
Businessmen	10	20	70	0	0
Landlords	0	0	100	0	0
Students	11	11	88	0	0

(iii) Actual Acquaintance: When questioned as to their actual acquaintance with the traffic police officials to help them out, a great majority of the subjects did not admit that they knew anyone who would be helpful if they got in trouble with the traffic police. Only 60% of Semi-Public Vehicle drivers and 50% of businessmen stated

that they actually knew somebody in the traffic police who would be called upon to help in such cases. Surprisingly the proportion of civil servants claiming such acquaintance was very small. This was perhaps due to traditional discreteness of the civil servants. The table below shows the figures for all types of driver's acquaintance figures:

ACQUAINTANCE WITH TRAFFIC POLICE

Type of drivers	Percent
<u>Professional drivers:</u>	
Public Service	9
Private or Govt. Organ:	28
<u>Non-Professional Drivers:</u>	
Army Officers	0
Civil Servants	35
Semi-Public or Private Organ:	60
Businessmen	50
Landlords	0
Students	37

c. Attitude Towards Life: A number of questions were asked to see the extent of fatalism prevailing in the lives of the road users, as detailed below:

(i) Premonition: Contrary to the general belief, premonition of the coming event as reflected by a bad dream or an un-pleasant incidence first thing in the morning, did not come out very strongly. However the belief in the forewarning of the incident did show some relationship with level of education as indicated in table below:

P R E M O N I T I O N

<u>Education</u>	<u>Percent believing</u>
Nil	30
Primary	21
Secondary	23
Graduates	16

(ii) Belief in Fate: Majority of the subjects very strongly believed in fate. However, the degree of belief was related with the level of education being smaller with higher education:

BELIEF IN FATE

<u>Education</u>	<u>Strongly</u>	<u>Fairly</u>	<u>Somewhat</u>	<u>Nil</u>	<u>Total</u>
Nil	94	4	2	0	100
Primary	95	5	0	0	100
Secondary	65	23	12	0	100
Graduates	36	32	20	12	100

(iii) Expected Mode of Death: When asked as to their most likely mode of death, the majority of the subjects thought they were likely to die of old age. Only a quarter of graduates thought they would perhaps die of heart attack.

LIKELY MODE OF DEATH

(Percent)

<u>Education</u>	<u>M o d e</u>				<u>Total</u>
	<u>Disease</u>	<u>Accidents</u>	<u>Old age</u>	<u>Heart Attack</u>	
Nil	18	18	58	6	100
Primary	26	11	58	5	100
Secondary	18	19	59	4	100
Graduates	8	12	56	24	100

(iv) Predestination of Offence: When asked if they were predestined to commit the violation and be caught for the offence committed. 94% of the un-educated subjects replied in affirmative to commit the offence. As regards the belief in predestination, it was highest in the un-educated and diminished steadily with increase in level of education, as can be seen from the table below:

PREDESTINATION

<u>Education</u>	<u>Percent believed</u>
Nil	94
Primary	85
Secondary	54
Graduates	36

(v) Possibility of Avoidance: When asked if the dilemma faced by them could have been averted by them by not committing the violations, the response was strongly related with the level of education. Person with least or nil education did not believe that they could have avoided committing the offence while the persons with higher education clearly understood that the problem could have been avoided if they had been a little more careful and had not violated the rule for which they were apprehended. This is in line with the response of the subjects with regard to predestination of the incidence. Table below gives response of various subjects relative to their education level:

POSSIBILITY OF AVOIDANCE

<u>Education</u>	<u>Yes (Percent)</u>
Nil	18
Primary	30
Secondary	46
Graduates	84

- (vi) Favourite Vehicle: An attempt was made to determine the psychological attitude of the subjects towards the vehicle they would like to drive. Quite contrary to the expectation, 75% of the uneducated, 76% of the primary education, 88% of the secondary education, and 84% of the graduates said they would like to chose the safest vehicles for themselves as compared to the most beautiful, fastest, and the most expensive vehicle, as is clear from the following table

FAVOURITE VEHICLE

Education	Most beau- tiful	Fastest	Most Ex- pensive	Safest
Nil	10	3	11	75
Primary	7	2	15	76
Secondary	2	3	7	88
Graduates	9	4	3	84

The response can be taken as true and frank reflection of the feeling of the subjects for the reason that their behaviour immediately prior to their apprehension for violating traffic rules did not show that they regarded road safety very seriously. The most probable reason for this type of response is the fact that they were being interviewed by Highway Safety people and therefore ranked safety as the highest requisite as most appropriate answer under the circumstances.

- d. Attitude Towards the Problem: Perception of the different categories of people is determined by their own experience and their knowledge of methods used by other people to overcome their problem. The following questions were asked to explore the attitude of the road users towards the problem:

(i) Stifer Penalties: Although overall majority of the subjects were not in favour of stiffer penalties, there was a clear-cut majority of the professional drivers who ruled out the possibility that stiffer penalties would be able to remedy the traffic hazards. It was interesting to note that the subjects having a very high or comparatively higher status were in favour of stiffer penalties, probably because they did not consider themselves to be the defaulters. The figures, according to the profession of the subjects, are given below:

STIFFER PENALTIES

<u>Type of drivers</u>	<u>Percentage in favour</u>
Professional drivers:	
Public Service	38
Private or Govt. Organ:	41
Non-Professional drivers :	
Army Officers	50
Civil Servants	46
Semi-Public or Private Orgn:	48
Businessmen	61
Landlords	100
Students	40

(ii) Driver's Education: An overwhelming number of the subjects were strongly in favour of drivers education in traffic safety, thus indicating indirectly the fact that ignorance of traffic rules was an important factor in traffic safety problems. The responses of the various types of drivers are given below:

DRIVER EDUCATION

<u>Type of drivers</u>	<u>Percent in favour</u>
Professional drivers:	
Public Service Drivers	86
Private or Govt. Organ:	95

(Contd. on next page)

<u>Type of drivers</u>	<u>Percent in favour</u>
Non-Professional drivers:	
Army Officers	100
Civil Servants	85
Semi-Public or Private Organ:	78
Businessmen	83
Landlords	100
Students	100

(iii) Stiffer Driving Tests: When the subjects were asked whether stiffer driving tests would help in overcoming the traffic safety problems, an overwhelming majority of the non-professional drivers, as compared to the professional drivers favoured stiffer driving tests. This response might have been due to fact that obtaining a driving license has never been a problem for a non-professional driver. It is usually very difficult for a professional driver to get a driving license. The profession wise responses of the subjects are as follows:

STIFFER TESTS

<u>Type of drivers</u>	<u>Percent in favour</u>
Professional drivers:	
Public Service Drivers	54
Private or Govt. Organ:	68
Non-Professional Drivers:	
Army Officers	87
Civil Servants	65
Semi-Public or Private Organ:	65
Businessmen	72
Landlords	100
Students	80

(iv) Re-testing Drivers: A large percentage of the subjects said that retesting of all drivers would be beneficial for the road safety because it would acquaint them with the latest traffic rules. In this case there was no significant difference between the responses of the professional and non-professional drivers, as can be seen in

the table below:

RE TESTING

<u>Type of drivers</u>	<u>Percent in favour</u>
Professional drivers:	
Public Service drivers	56
Private or Govt. Organ:	73
Non-Professional drivers:	
Army Officers	75
Civil Servants	62
Semi-Public or Private Organ:	57
Businessmen	78
Landlords	50
Students	60

(w) Safer Vehicles: The table given below shows that most of the subjects believed that having a safe vehicle was not an important factor in traffic safety. They said that a vehicle could not be blamed for an accident or a traffic violation:

SAFER VEHICLES

<u>Type of Drivers</u>	<u>Percent in favour</u>
Professional drivers:	
Public Service Drivers:	24
Private or Govt. Organ:	41
Non-Professional Drivers:	
Army Officers	38
Civil Servants	46
Semi-Public or Private Organization	57
Businessmen	50
Landlords	50
Students	20

(vi) Safer Roads: A great majority of the non-professional drivers, as compared to the professional drivers, replied that the roads in Pakistan were not good and that the road hazards could be minimized by improving the condition of the roads and making them more safe. The table is given below:

SAFER ROADS

<u>Type of Drivers</u>	<u>Percent in favour</u>
<u>Professional drivers:</u>	
Public Service Drivers	64
Private or Govt. Organ:	41
<u>Non-Professional Drivers:</u>	
Army Officers	62
Civil Servants	77
Semi-Public or Private Organization.	70
Businessmen	72
Landlords	100
Students	130

C O N C L U S I O N S

The results of the study were generally very consistent. The hypothesis were either proved or dis-proved in clear terms without any ambiguity. A brief description of the hypothesis and the results of the study are given below:

1. Hypothesis : The traffic rules violation is primarily committed by un-educated drivers:

The study clearly established that violation of traffic rules is not restricted to un-educated drivers. Whereas only 23.50% of the subjects were un-educated, 36.75% had secondary education and 17.50% were graduates.

2. Hypothesis : The traffic rules violation is primarily committed by young & in-experienced drivers:

The study revealed that the hypothesis did not hold as the median age of the subject was 32 years. The young drivers between the age of 18-23 constituted only 10.75% while 62.5% of the subjects were older than 29 years.

Similarly, the hypothesis regarding driving experience also did not prove correct. Only 23.50% of the subjects had driving experience of 5 years or less. The drivers with experience ranging from 10 years to 40 years constituted approximately 50% of the sample.

3. Hypothesis : The traffic rules violation is primarily committed by drivers without license:

The hypothesis was also not proved as 92.50% of all those involved in the study held valid driving license. The possession of driving license was highest

among the Public Service Vehicle and ranged from 92% to 98%. The remaining two percent who were without valid driving license were owner driver of a taxi cab who for the regular driver, temporarily the regular driver being on leave and were using the cab for private use. The incidence of driving without proper driving license was highest among students where more than half were caught driving without licenses.

4. Hypothesis : The traffic rules violation is primarily committed by public service vehicle drivers:

The hypothesis also did not hold as less than 50% of the subjects were public service drivers, whereas 70-75% of the vehicles in the traffic stream are generally public service vehicles.

5. Hypothesis: The Public Service Vehicle Drivers commit violations due to excessive use of drugs:

The hypothesis also did not hold. Every subject especially the drivers of the public service vehicles were closely examined for any signs of alcohol/drug intoxication. The drivers were generally quite alert and sober. There was no outward sign of excessive use of alcohol or drugs, in even a single subject.

6. Hypothesis : The Public Service Vehicle drivers commit traffic rules violation for monetary gains:

The violations on the part of public service vehicles which can lead to monetary gains are speeding to achieve greater number of trips in a given time and overloading. However, the nature of offence studied were such that they did not involve any monetary gains. As regards, speeding, there is general tendency on the part of road users to ignore speed limits as may be seen from the results of a speed survey on Islamabad Highway, the road which links the twincities of Islamabad and Rawalpindi. The speed limit on the road is 80 km for cars and 65 km for heavy vehicles.

The survey shows that 57% of cars and 87% of buses and mini-buses exceeded the speed limit with impunity. The survey results are also supported by the result of "Travel Speed Study" of various roads on country-wide basis, carried out by the National Transport Research Centre of the Planning Commission. Therefore, it is very difficult to say that the public service vehicle drivers violate the traffic rules for monetary gains.

The extent of overloading in public service vehicles was not precisely determined. The survey was not carried out during peak hours when most of the overloading is done. Although on the average, the bus drivers reported carrying seven passengers more than allowed and mini-bus drivers admitted to carrying only two passengers in excess during peak hours. There is obviously a

considerable understatement in both cases. The extent of overloading is visibly much higher. However, the studies carried out by the experts from time to time has identified imbalance in costs and fares of transport. There has been 1000% increase in fuel price, 500% in labour and 1200% in chassis of buses during 1955-1978. In contrast the fares which are controlled by the Government have been allowed to increase only 100%. On the other hand, opportunity cost of money is very high and return in other ventures such as retailing, commerce, real estate and industry is many times that of transport. As a result, the investment in transport is no longer as attractive as they used to be and very little is being invested in transport sector. This has resulted in a very serious shortage of transport which forces the people to put up with inconvenience due to overloading rather than wait indefinitely for the next bus.

By the same measure the transporter has to resort to overloading as it is no longer possible for him to make any profit on his investment without resorting to overloading. Because of acute shortage of transport, the passengers are willing to pay full fare and travel without a seat or

sometime even on the roof of a bus or hanging from the sides, a not so uncommon sight especially on secondary and tertiary routes. The passengers are obliged to put up with it because they are fully aware that alternative would be endless hours of waiting. Therefore, it seems that they are doing all this with the full blessing of the travelling public. Under the circumstances can we really say with confidence that the transporters resorting to these malpractices for monetary gains alone and are thus acting very unscrupulously.

7. Hypothesis : The root cause of the problem is road congestion:

The hypothesis is based on the assumption that the drivers which are caught in a traffic jam become irritated and violate the traffic rules to get through which otherwise they would not. The hypothesis also did not prove as the locations selected did not experience any kind of congestion at any time during the survey. As a matter of fact, the location selected had traffic capacity much higher than the peak hour flow therefore even during peak hour they never experienced any congestion.

However, the concept of congestion in the countries like Pakistan is different. By talking to the subjects it transpired that a typical Pakistani driver would consider a road as congested:

- i) If there are lot of other vehicles at any time. The lot means anything from a dozen onward. The number of lanes available to the traffic does not matter.
- ii) If he drives at a signalized intersection and there are other vehicles in front of him waiting for the light to turn green. The fact that even the last person in the queue would get through the intersection before the light turns red, does not matter.
- iii) If he approaches a major road from a sid road and has to stop for vehicles on the main road before he can cross. The fact that the wait may be only for few seconds and only one or two vehicles may be on the main road.

8. Hypothesis: The root cause of the traffic violation is presence of animal drawn vehicles in the traffic stream.

This also did not prove as the locations selected were such where entry of animal drawn vehicles was banned.

9. Hypothesis: The root cause of the problem is lack of adequate traffic signs to guide the motorists with safety

This also did not hold as the locations selected were well signed and there was no deficiency as far road markings, signs, and other traffic control devices were concerned. In majority of the cases, the subjects did not even notice the sign for the violation of which they were apprehended, even though the sign was very clearly and properly installed.

To further explore the aspect a separate survey was carried out regarding observance of traffic control device by the drivers. Two locations, properly marked and signed, were selected. The survey revealed that in the majority (84-94%) of the cases involving of a traffic control device other than a signal, the subject failed to notice the presence of the device. When the sign was pointed out, the response was total surprise followed by the remarks that they had seen or noticed the sign before. This is especially very significant for three reasons. Firstly, the sign was most conspicuously placed. Secondly, the sign had been in position for a number of years and thirdly, majority of the drivers were very familiar with area and regularly used the intersection almost on daily basis. The problem was universal and was not limited to any category of drivers. Even in this case the level of education of the drivers did not seem to have any influence on his observance of sign as indicated in table below:

OBSERVANCE OF TRAFFIC SIGN

<u>Education</u>	<u>Not observed (Percent)</u>
Nil	89
Primary	89
Secondary	94
Graduates	93

10. Hypothesis: The root cause of the problem is bad roads:

This is also based on the popular feelings on the part of the road users in Pakistan that all the roads in the country are narrow, winding with blind curves, potholed and uneven. They believe that the bad riding quality of these roads result in frustration on the part of the drivers and they are tempted to violate the traffic rules. This feeling arise due to the common belief that all road in the developed countries are of the standard of Motorways whereas in Pakistan there are such roads. Therefore, the traffic has no chance to be orderly. There is no appreciation of the fact that divided highways are built not for safety but for capacity.

To further explore the perception of the problem by the subjects, they were asked as to what should be the minimum number of lanes for Pakistan Highway between Rawalpindi-Gujar Khan and the daily traffic in

this reach range between 4000 and 4500 vehicle per day. The proportion of animal drawn vehicles is around 5%. The unanimous opinion of all the subjects were that keeping in view the traffic volume it should be at least four lane divide. Obviously an ordinary road user does not have any idea of the capacity of a two lane, which under our conditions of traffic composition and at a very high level of service should be at least 7000 vpd.

11. Hypothesis: The root cause of the problem is mechanically defective vehicles:

The hypothesis did not hold as the percent vehicle with obvious mechanical defects encountered in the survey was very negligible. The point was also not proved in the study of 1800 accidents which occurred in Punjab during 1972. The proportion of accidents due to defective vehicles was very negligible. This is inspite of the fact that drivers normally involved in the accidents try to blame it on brake failure, tie rod breakage and tire burst. Considerable efforts are made by the drivers to get this view accepted by the traffic police so that they get a lighter sentence or get off scott free.

12. Hypothesis: The drivers know the rules fully well but deliberately violate them for socio-economic reasons:

This turned out to be totally un-true. The survey revealed that the drivers do not know even the most

basic and fundamental traffic safety rules. The problem was compounded by the fact that they did not know what they did not know and hence assumed that they knew every rules there was to know.

13. Hypothesis: The drivers violate the rules because there are too few traffic police to check them:

This hypothesis also did not prove as the locations selected were generally manned by a contingent of traffic police cops. All the violations were made in the presence of the traffic cops on duty, who as being significant.

The hypothesis was also proved wrong by a separate survey of four locations in Islamabad. These locations are supervised and manned round the clock and generally 4 - 6 traffic cops. The survey involved counts of total number of vehicles by category approaching the intersection from any direction and number who committed any violation of traffic rules. The survey was carried out when the intersection was fully manned and repeated under similar conditions of traffic and time of the day by removing the traffic cops and leaving the intersection unattended and unmanned. The result as given in the table at page 56 show that there was no difference in number of violations whether the cops were there or not.

EFFECTIVENESS OF TRAFFIC POLICE

TRAFFIC UNITS	SUPER MARKET CHOWK: AABPARA CHOWK: ZERO POINT: FAIZABAD CHOWK				TRAFFIC RULE VIOLATIONS - PERCENT			
	UN-MANNED	MANNED	UN-MANNED	MANNED	UN-MANNED	MANNED	UN-MANNED	MANNED
PEDESTRIAN	17	20	20	20	11	12	15	15
BICYCLE	52	44	11	10	10	11	13	9
TWO WHEELERS	31	30	38	24	11	10	16	12
C A R S	19	15	25	21	6	7	10	9
MINI - BUSES	36	22	49	31	19	19	27	22
B U S E S	36	30	30	44	8	9	16	9
TRUCKS	-	-	25	25	8	5	21	1
A V E R A G E	26	21	28	22	9	10	17	12

14. Hypothesis: Accidents are caused primarily by mechanically defective vehicles:

Although no detailed check of mechanical condition of the vehicles involved in the survey was made, nevertheless the general conditions of the vehicles did not indicate any serious mechanical fault with any vehicle. However, other studies carried out indicate that the proportion of accidents which can be attributed to mechanical defects is in the range of 3 - 5% which is certainly far below the general impression. Therefore, it can not be said that the accidents are happening primarily because of mechanically defective vehicles.

15. Hypothesis : High degree of sense of fatalism in the drivers is mainly responsible for our high rate of accidents:

This hypothesis also did not hold very well. Although a high sense of drivers with lower education believed quite strongly in fate, it can not be said with any degree of certainty that the accidents are happening because of it for two reasons:

- (a) Violation of rules detected during the survey was not related to level of education.
- (b) The ignorance of rules is so overwhelming that it cover-rides any other factors. Nobody deliberately wants to get hurt. The fact that drivers did very little to show that they took due precaution, it is obvious that they did not consider their action to be dangerous in any way.

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YIWAHBA YAWHTEL 2000-01 Part II

1. Do you possess a license? Yes/No
If no, give reasons:
2. Were you tested before Yes/No
you received the licence?
If tested how many times: 1, 2, 3, 4.
3. How did you learn driving?
i) drivers training school
ii) from a trained driver
iii) learned on my own
4. How did this violation
happen? (follow-up
question will be asked
to probe his answer
to question 4)
5. Which of the things in your
vehicle do you give regular
and particular attention
to before driving?
6. Did you notice the traffic sign? If no, Why? Yes/No
.....
.....
7. In your opinion how many drivers
commit this particular offence (s)
(mentioned in para 4) frequently? all/majority/few (d)
8. How many times were you
checked by traffic police? 1, 2, 3, 4, not checked at all
9. Have you ever been given a ticket? Yes/No
What was the reason?
10. Do you think acquaintance with any
member of traffic police help?
11. What different methods do people
usually adopt to make acquaintance
with traffic police?
12. Do you know anyone who would be
helpful if you get in trouble Yes/No
with traffic police

Part III

- 13. How many passengers can you accommodate in your vehicle.
- 14. Do you think overloading is alright? Yes / No
If yes, why:
- 15. Do you think it is alright to pick-up the passengers any-where on the road? Yes / No
Reasons for your answer.
- 16. How many hours do you usually drive per day?
- 17. Why do you drive for long hours?
- 18. How many hours do you think you can drive continuously without feeling tired?
- 19. Have you ever driven that long hour? Yes / No

Part IV

- 20. How do you overcome fatigue?
- 21. Describe the type of vehicle that you would like to choose for yourself.
Most beautiful
Fastest
Most expensive/Safest
- 22. Do you possess a highway code? Yes/No
Have you read it? Yes/No
- 23. Do you know all the rules in the Code? Yes/No
- 24. Do you know all the rules a driver ought to know? Yes/No
- 25. If any heavy vehicle is coming from the opposite direction in the wrong lane, what will you do?
- Reasons for your answer?
- 26. Do you believe in fate? Very strongly/fairly strongly/to some extent/not at all.
- 27. Which of the following ways are you likely to die? Disease/Road Accident/Oldage/heart attack/any other.

28. Do you think it was your destiny to be put in this dilemma? Yes/No
29. Do you think you could have avoided it by not violating this rule? Yes/No
30. Did you have any fore-warning of this trouble? Yes/No
If yes, describe it.
31. Should you use your horn while going through an intersection? Yes/No
32. Who has the right of way at a roundabout?
33. Is it necessary to come to a complete stop before crossing a major road even if there is no traffic on the major road?
34. What would you do when you are overtaking a vehicle and suddenly see another vehicle approaching from opposite direction?
35. Are you supposed to dip your headlights when approaching behind another vehicle at night?
Why?
36. What is the minimum safe following distance at 50 mph?
37. When there is a continuous line along the middle of the road what does it indicate? (1)Overtaking allowed if the road is clear
(2)Overtaking not allowed at all.
38. In case of an accident between rail and motor vehicle at a level crossing with open gate is it any fault of the driver of the motor vehicle?
39. If you see in your rear-view mirror a vehicle approaching at high speed behind you, should you help him in overtaking?
How?
40. If you are approaching behind another vehicle on a Highway and the vehicle in front gives a right indicator what does it mean? (1) Vehicle in front asking you to overtake
(2) Vehicle in front turning right.
41. Can you pass a school bus if you blow your horn to warn the children, if you are coming from the opposite direction?
42. When you hear the siren of an emergency vehicle what does the law require you to do? (1)Speed up and get out of the way?
(2)Signal the driver to pass?
(3)Pull to the right as far as possible & stop?
(4)Pull to the left as far as possible & stop?

43. If you are approaching an intersection with green signal and notice an emergency vehicle approaching from right, can you cross the intersection. Yes/No
44. While waiting at a red signal, you are ordered by the traffic policeman to proceed, would you obey his order? Yes/No
45. How will you turn-right if another vehicle is following you? (1) Pull to the left and let the other vehicle pass. (2) Give indicator and turn
46. Can you turn right on red signal? Yes/No
47. Can you turn left on red light? If yes, what are the conditions for that? Yes/No (a) You have the right of way (b) You come to a complete stop and yield to other road users. (c) Slow down and go carefully.
48. Can you turn left on red light at signalized crossing by overtaking on the right if your lane is blocked by another vehicle waiting to go straight? Yes/No
49. In case of a rear-end collision due to sudden stoppage of vehicle in front, who is at fault. Vehicle in front Vehicle behind Both
50. In what lane of traffic should you drive when you intend to make a right-hand turn?
51. Is the traffic police in any way responsible for encouraging the violations of traffic rules? Highly/fairly/somewhat/not at all
52. Which of the following are the most important factors in overcoming the traffic safety problems:
 (1) Stiffer penalties
 (2) drivers education
 (3) stiffer driving tests
 (4) retesting of all drivers
 (5) safer vehicles
 (6) safer roads

53. Have you been exposed to highway safety campaign through:
 Media Frequency
 ...T.V. Regularly/casually/Nil
 ...Radio
 ...Cinema
 ...Newspaper
 ...Posters
54. What is your opinion about it?

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100