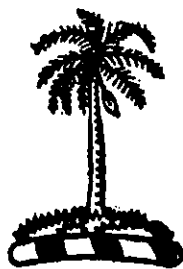


**URBAN TRANSPORT STUDY**  
**IN**  
**GREATER METROPOLITAN AREAS**  
**OF**  
**GEORGETOWN, BUTTERWORTH AND BUKIT MERTAJAM**  
**MALAYSIA**

**CAR OWNER INTERVIEW SURVEY**

**TECHNICAL REPORT — 01**



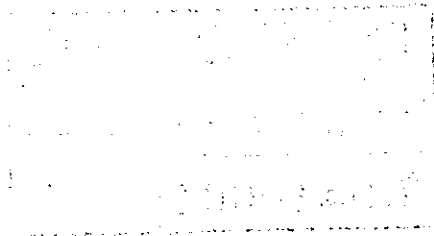
**AUGUST, 1979**

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CAR OWNER - INTERVIEW SURVEY

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1. An Outline of Car O-D Survey

In order to study urban traffic situations, it is necessary to obtain the starting points (origin) and the ending point (destination) of each trip made.

A proper plan for traffic which meets the existing traffic demands can be made if detailed information of traffic movements is obtained. In the study area concerned, an origin-destination survey for all vehicles has been made.

This section explains the outline of this survey.

1-1 The Procedure of the Car O-D Survey

There are some methods by which the O-D Survey can be done. Three methods were first discussed before the most suitable method for this particular area was chosen.

These methods of the Car O-D Survey takes into consideration how these questionnaires are administered that is whether the survey is executed by personal interviews or by mail, and where these questionnaires are administered that is whether it is done by the road side or at home/office.

The method used in Car O-D Survey are illustrated in Table 1

TABLE 1: Methods of Car O-D Survey

Administration of questionnaire Survey Points	Interview Schedule	Mailed Questionnaire
By the road side	A	C
By home/office	B	D

The specific features of the above methods are illustrated in Table 2.

TABLE 2: The Features of the Car O-D Survey

The methods of Car O-D Survey	The contents of the questionnaire	Collection rate expected	No: of Interviewed required	The use registration records
A	Simple questions are, e.g. "Where do you come from?" "Where are you going?" Therefore are imcomplete O-D table can be made	High collection rate expected	Many interviewed required	No use made of records
B	More detailed questions are asked therefore a complete O-D table can be made			Use made of the records
C	If too many questions are asked, the accuracy of the answer are at stake. Therefore, only a few questions are asked. This method is not suitable for making an O-D table.	Highly dependent on the cooperation of the interviewers approached	Required less interviewer than the above	No use made of the records
D	It is used to obtain the characteristics of traffic movements.			Use made of the records

For carrying out the car O-D survey, the most suitable method was selected so that it would serve our purpose.

1-2 The Contents of the Car O-D Survey in this study area.

With regard to the purpose of this study, it is important that the following considerations are given to the data collected.

The purpose of this study is to draw up a broad master

plan. Therefore, it is not sufficient to take measures that will only help to solve local traffic problems. This more detailed and more broad data is needed.

To analyse traffic data we also need other basic data. Therefore, if it is possible, these basic data should be collected together with the traffic data.

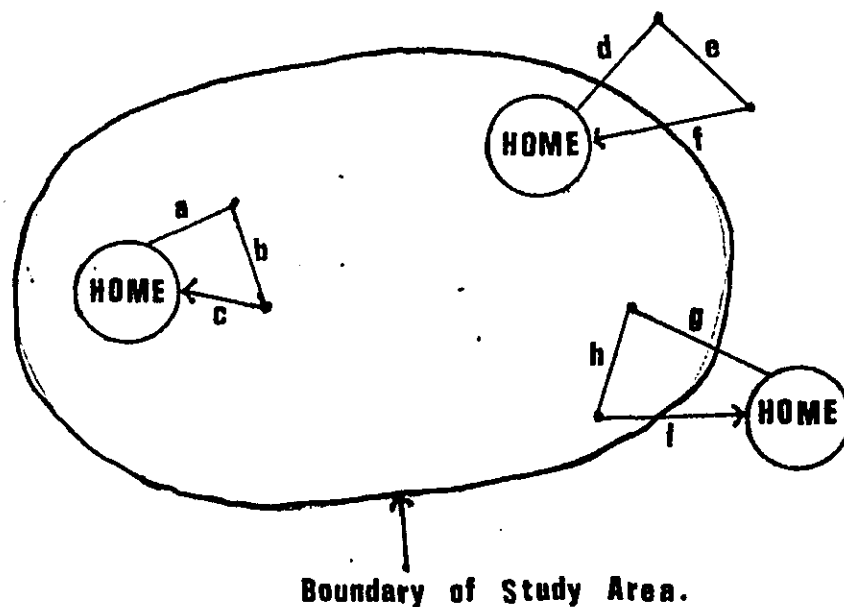
After giving due consideration to the above, the procedure of car O-D Survey is as follow:-

A large part of car O-D survey was conducted using the interview method at the home/office of the sampled vehicle owners. This method of data collection was expected to yield a high collection rate.

In addition to this method, interviews were conducted at the roadside and on board th ferries. This was done to offset the limitations that are present in the method of home/office interviews.

The type of traffic movements in the study area can be divided as follows:-

FIGURE 1: THE TYPE OF TRAFFIC MOVEMENT.





With reference to the above diagram Figure 1, trips a - f can be obtained from the owner-interview method while trips d, f, g, and i can be obtained from the cordon-line interview method. Only trip h. cannot be obtained by either methods, but this trip will be taken into consideration in the course of making future estimates.

The ferry serves a very important transport function. As such all plans for the construction of the bridge have to take the ferry transport into consideration. This is why the ferry survey was included into the other surveys.

The following types of survey were also conducted during the month of June of 1979.

TABLE 3 a: THE CONTENTS OF THE SURVEYS

<u>Types of survey</u>	<u>Methods of survey</u>	<u>Elements of survey</u>	<u>Purpose of survey</u>
Owner-interview survey	interview at the owner's home sampled from registration cards.	<ul style="list-style-type: none"> <li>• vehicles (car, van, truck, bus, taxi)</li> <li>• motor cycles</li> </ul>	this survey is conducted in order to grasp the movement of internal trip.
Cordon-interview survey	interview by the road side	<ul style="list-style-type: none"> <li>• vehicles</li> <li>• motor cycles</li> </ul>	In the owner interview survey, vehicles entering or passing through this study area from other areas cannot be determined.  Cordon-interview will cover these.
	count of the traffic volume	<ul style="list-style-type: none"> <li>• vehicles</li> <li>• motor cycles</li> <li>• bicycles</li> <li>• pedestrians</li> </ul>	
Ferry-survey	interview on the ferry	<ul style="list-style-type: none"> <li>• vehicles using ferry</li> </ul>	Comprehending the situation of ferry utilization is important for studying the bridge construction project. Therefore, the ferry survey will be conducted.
	count of the ferry users	<ul style="list-style-type: none"> <li>• vehicles</li> <li>• motor-cycles</li> <li>• pedestrians</li> <li>• bicycles</li> </ul>	

In addition to the above survey, we also carried out the Screen Survey which recorded the volume of traffic passing the imaginary line. The purpose of this survey is to verify the results of the owner-interview survey.

TABLE 3b:- THE CONTENTS OF THE SURVEY

Screen-line survey	count of the traffic volume	<ul style="list-style-type: none"> <li>• vehicles</li> <li>• motorcycles</li> <li>• bicycles</li> <li>• pedestrians</li> <li>• trishaws</li> </ul>	This survey is conducted in order to verify the result of the owner-interview survey
--------------------	-----------------------------	--	--

1-3

The Planning of the Survey Schedule

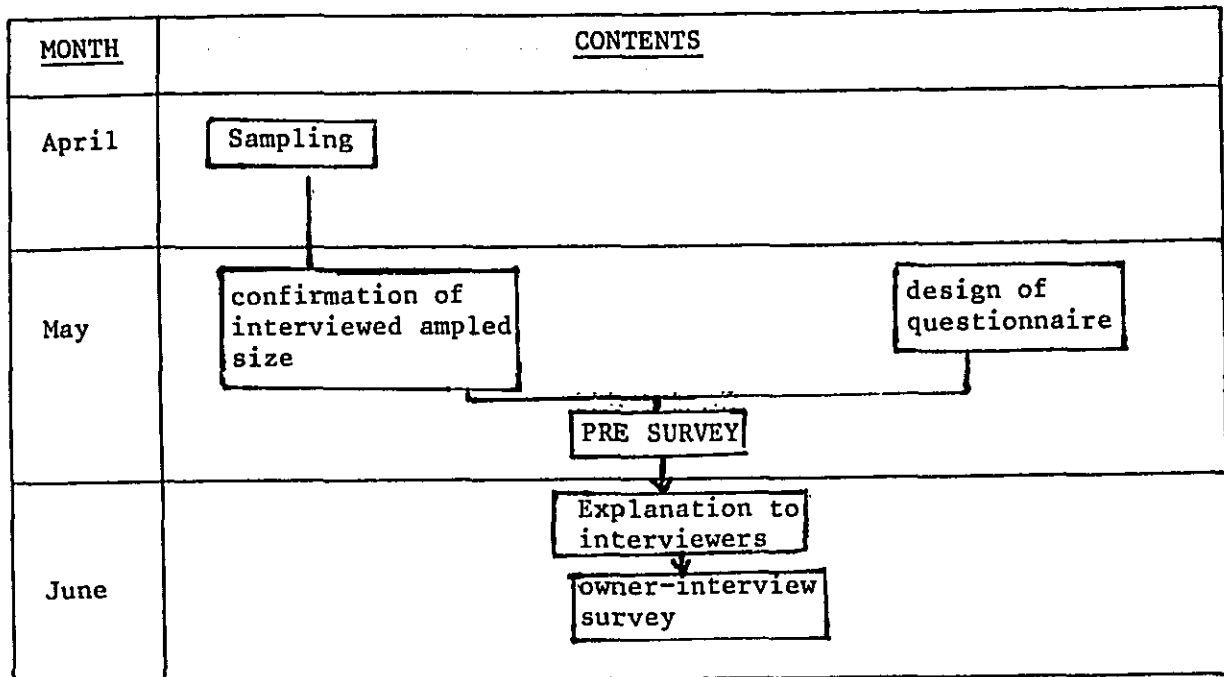
In planning the survey schedule, attention was paid to the following:-

- i) the period of the survey was the average time and did not include any 'special' days.
- ii) it was conducted during the time when there was a great availability of interviewers/surveyors.

It was in the month of June that the above conditions were met because in that month there were no big occasion except for the birthday of the King. Also it was vacation time for the students at the university and they were suitable for the position of interviewers.

The Survey Schedule planned is as follows:-

FIGURE 2:- THE SURVEY SCHEDULE



In fact, the actual schedule of the survey as it was being carried out is as follows:-

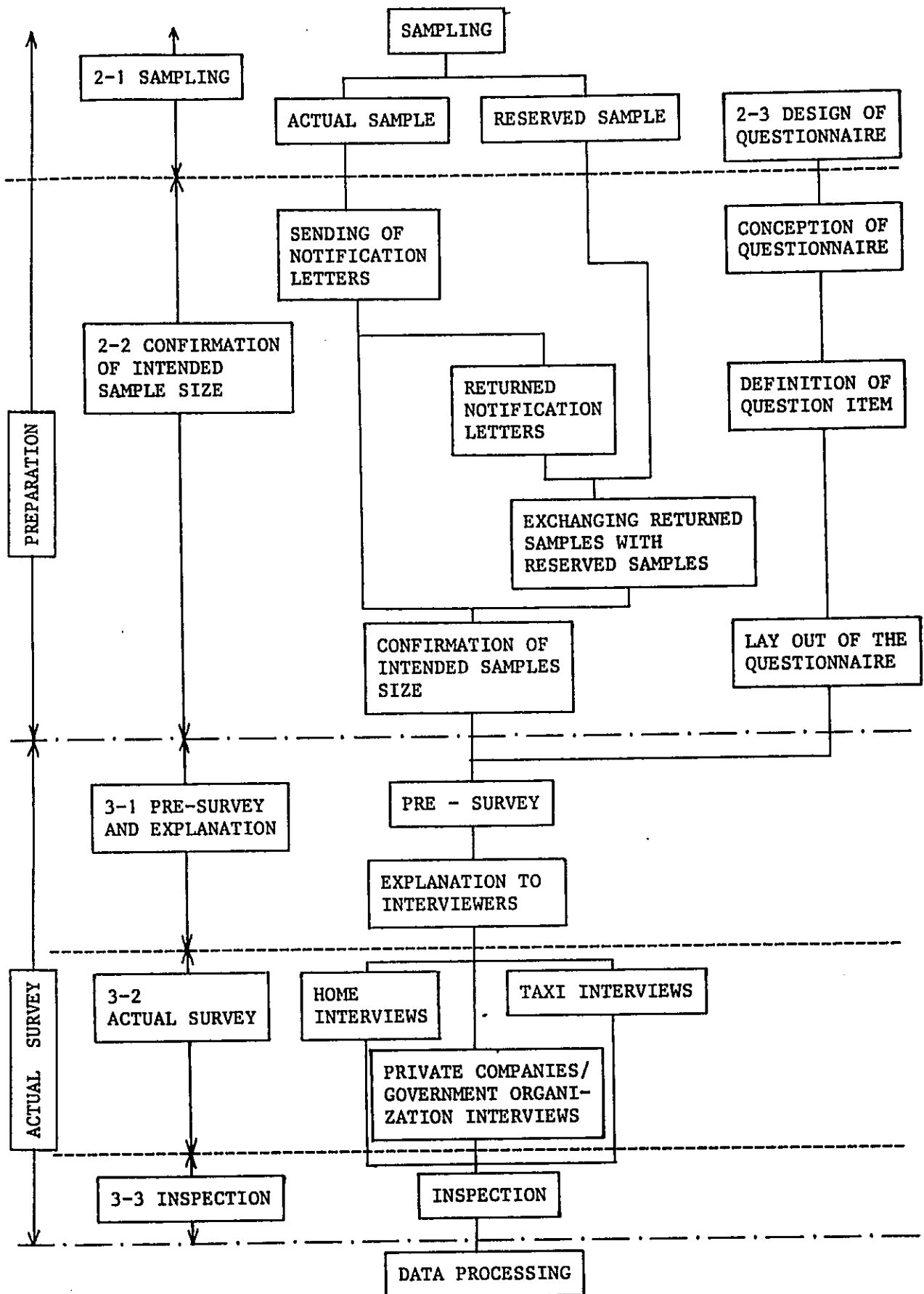
16th April - 10th May	sampling
17th May	notifications were sent to sampled owner's homes
20th May - 23rd May	pre survey
1st June - 2nd June	explanation to the interviewers
4th June - 23rd June	owner interview survey
25th June - 31st July	inspection of collected questionnaire and data processing.

1-4

General Flow Chart of "Owner - Interview" Survey

The owner - interview survey was carried out according to the following flow chart. The duration of the actual interview was three weeks and it involved 260 interviewers.

FIGURE 3 GENERAL FLOW-CHART



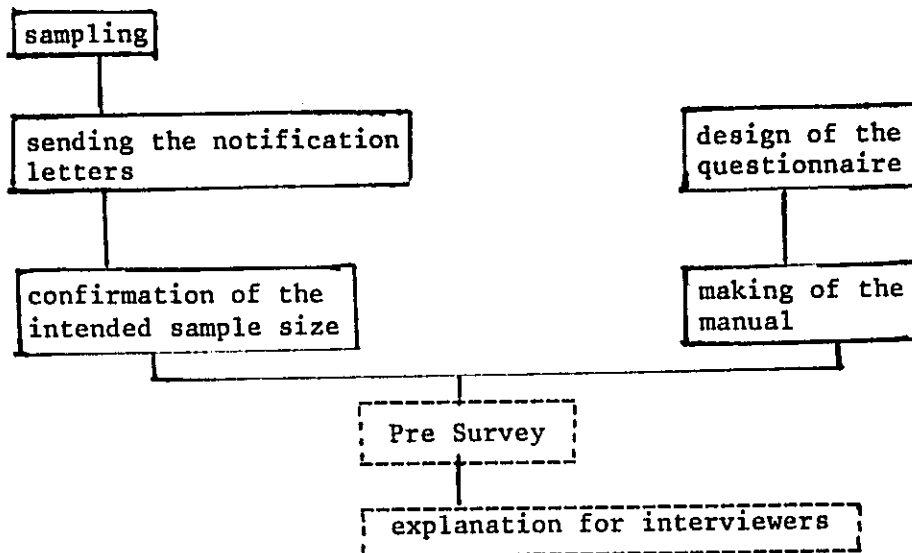
2.

## Preparation For The Survey

The bigger the scale of the survey, the more we must sufficiently be prepared for the survey. This section deals with the contents/results of the preparation of the survey.

The scedule of the preparation is as follows:-

FIGURE. 4:- FLOW CHART OF THE PREPARATION



2-1

### Sampling

The purpose of sampling in the owner interview survey was to select the vehicles which are the units of the survey. Before starting on the sampling procedure, we had to decide what records were needed.

Generally speaking, the records which we made use of for the sampling procedure in the owner interview survey were as follows:-

- i) Registration cards of residents.
- ii) Registration cards of vehicles
- iii) Maps of residence
- iv) Others.

In the state of Penang, all motorcycles and vehicles are registered at R.I.M.V. Therefore it was most appropriate to make use of the above mentioned records.

The following information can be obtained from the registration records of the R.I.M.V.

- i) Registration number of vehicles/motorcycles which is made up of the registration letter and the registration number.
- ii) The registration letter began from 'PA' and continues in alphabetical order. As of May 1979, the latest registration letter is 'PAC'.
- iii) The registration number is from 1 to 9999.
- iv) These registration numbers were registered in order in which the application were made. Therefore there is no classification by area or by type of vehicles except for taxis.
- v) The registration letter of taxis is 'H'.

Given the above information the following sampling procedure was decided upon:-

Since the owner-interview survey was to be conducted only in the internal area, it was enough to just take a sample of vehicle owners living in the internal areas. This however was not possible because the records do not have such a classification, viz by area. Thus the sampling procedure had to be carried out for all the vehicles from the state of Penang and then the units of the owner-interview survey were selected from this sample that is only vehicles owners living in the internal areas.

Car ownership according to zone was estimated from the total sample size obtained for the state of Penang.

a) Planning of the Sample Size

The number of vehicles and motorcycles registered with the R.I.M.V. in the state of Penang up to the end of May 1979 is shown in the following table:-

TABLE 4: THE NUMBER OF VEHICLES AND MOTORCYCLES

TYPE BY CAR		NUMBER
VEHICLES	PRIVATE VEHICLE	65352
	GOODS VEHICLE	11504
	RENTAL VEHICLE	31
	SUB TOTAL	76887
	TAXI	474
	BUS	1073
TOTAL		78434
MOTORCYCLES		124984
GRAND TOTAL		203418

( IN THE STATE OF PENANG)

Before the survey can begin, the sample size must be determined.

The confidence limit of the O-D survey is shown in the following equation;-

$$Lp_1 : P_1 \pm w \sqrt{\frac{P_1 P_2}{s.r}} (1 - r)$$

- $Lp_1$  : the confidence limit of  $P_1$
- $P_1$  : the ratio of one specific O-D
- $P_2$  :  $(1 - P_1)$
- $r$  : sample rate
- $s$  : total number of trips in the area
- $w$  : the coefficient of statistics.

In this study area we calculated the confidence limit of  $P_1$  using the above equation. The results are as follows:-

There are altogether 56 zones in the internal area.

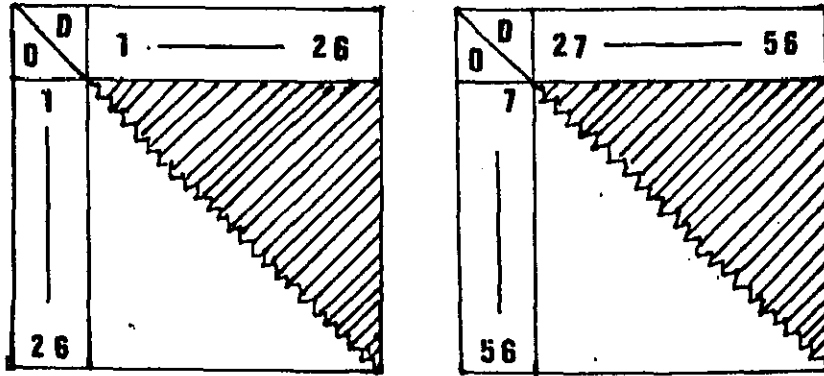
FIGURE 5: CONTENTS OF O-D TABLE

		O	Internal Area	
			Penang Island	Province Wellesly
O			1.....26	27.....56
Internal Area	Penang Island	1.....26		
	Province Wellesly	27.....56		

The owner-interview survey must obtain the O-D movements of vehicles of only the shaded portions in the above table. This is because trips made across the Straits of Malacca will be accounted for by the Ferry Interview Survey. Also it is not necessary to distinguish between O-D from D-O for the purpose of this survey.

Therefore it is sufficient to obtain information of trips as shown in the shaded portions of the diagrams below:-





(The above tables are called Triangle Tables as compared to Square Tables)

In this case, the ratio of one specific O-D ( $P_1$ ) is

$$\left( \frac{26 + 27}{2} + \frac{30 + 31}{2} \right)^{-1}$$

and the total number of trips are estimated

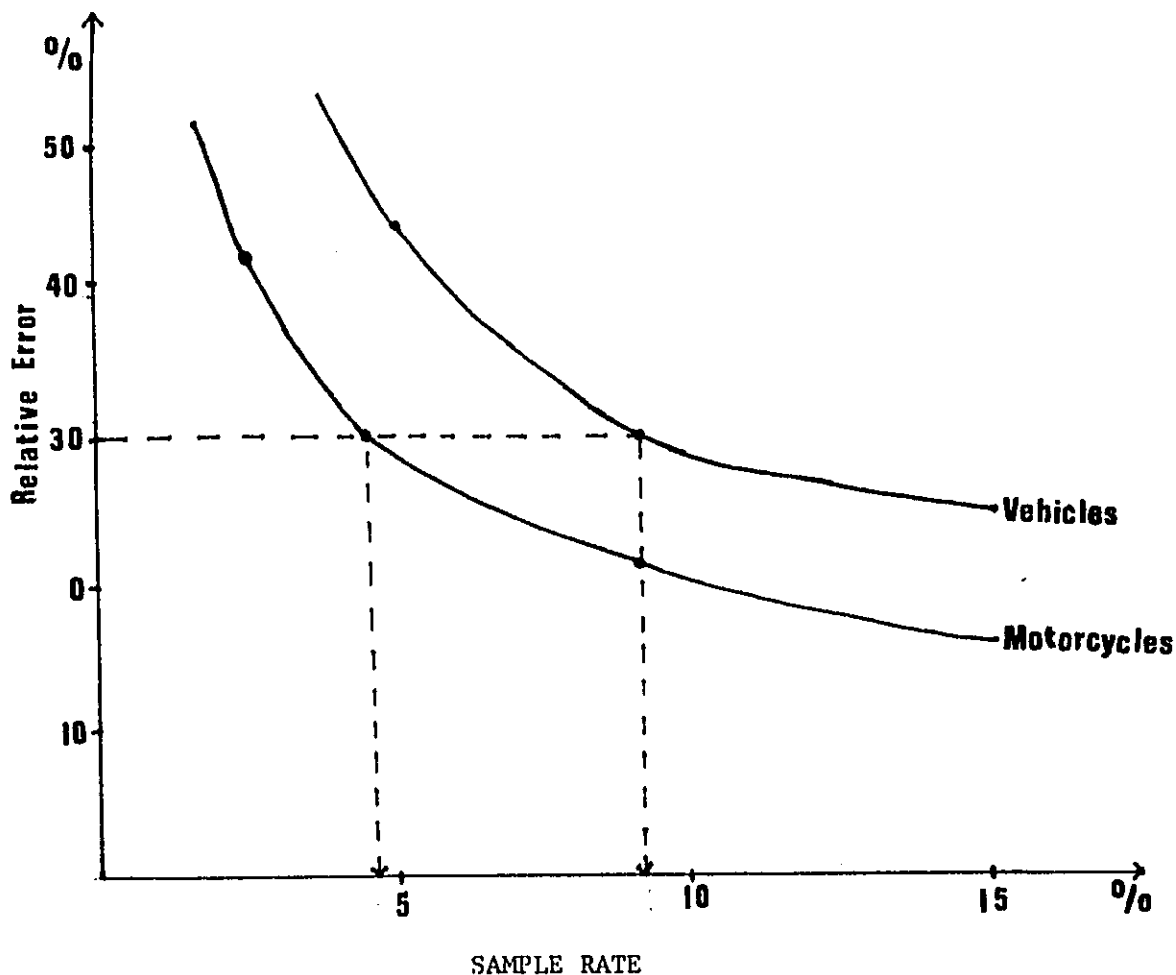
by the total number of vehicles multiplied by the average number of trips. In this case, the total number of trips is 235200. (78400 vehicles multiplied by 3 trips)

Therefore the confidence limit of  $P_1$  of a sample size of 9% is as follows:-

$$\begin{aligned}
 P_1 & \pm w \sqrt{\frac{P_1 P_2}{s.r.}} (1 - r) \\
 & = 0.001225 \pm 1.65 \sqrt{\frac{0.001225 \times 0.998775}{235200 \times 0.09}} (1 - 0.09) \\
 & = 0.001225 \pm 0.00037.8
 \end{aligned}$$

So the relative error from a sample size of 9% is 30%  $\left( \frac{0.000378}{0.001225} \right)$ . The relative error to sample size can be represented below (Figure 6)

FIGURE 6 THE RELATIONSHIP BETWEEN THE RELATIVE ERROR AND THE SAMPLE RATE.



The above graph shows that relative error decreases as sample size increases

Therefore, the higher the sample size, the higher the rate of accuracy of the data collected.

Generally speaking, a relative error of 30% or less is acceptable for the O-D survey.

Therefore, for this study area, we use a sample size that will give us a relative error that is not above 30%.

The initial target of the sample rate is as follows:-

TABLE 5: THE INITIAL TARGET OF THE SAMPLE RATE

VEHICLES	MOTORCYCLES
9%	4.5%

However, the above sample-rate can only be used to analyse traffic movements. So it is necessary to consider the uncollected ratio.

The uncollected ratio depends on the nature for the survey area, that is, the extent of the area, the population density and the convenience of the public transport system.

From our experience, it is estimated that the uncollected ratio is 65% in this area.

Therefore, it is suitable for the initial sample rate to be 14% (9%/65%) for vehicles and 7% (45%/65%) for motorcycles.

It was decided that the sampling job would be done with the above mentioned sample size.

b) The Sampling Sheet

Sampling sheet was used for the sampling procedure as well as for the interviews. Therefore the sampling sheets were devised such that the top portion is for 'supervisor' while the lower portion is for 'interviewer'.

An example of the sampling sheet is on Page 0.

c) The Sampling Procedure

Before the owner interview survey can be carried out, sampling must first be done using the registration cards/records

## Sampling Card A (for supervisor)

V 1 1 1 P A B 4 3 6 9

Type of vehicle	<input checked="" type="checkbox"/> Car	<input type="checkbox"/> Taxi	<input type="checkbox"/> Motor cycle
	<input type="checkbox"/> Van, Pick up		
	<input type="checkbox"/> Medium lorry	<input type="checkbox"/> Scooter	
	<input type="checkbox"/> Heavy lorry		
	<input type="checkbox"/> Bus		
	register number	PAB 4369	
Owner's name	ZAKARIA BIN AHMAD.		
Owner's address	15, LEITH STREET GHAUT, PG.		
Zone Code	<input checked="" type="checkbox"/> GEORGETOWN		
	<input type="checkbox"/> BUTTERWORTH		
	<input type="checkbox"/> Other		

Sample	
<input checked="" type="checkbox"/> sample	<input type="checkbox"/> reserve <input type="checkbox"/> other
Notification	
Date Dispatched	mark if returned
17th. May	<input type="checkbox"/>

interview	
Date trips made	8th. June. 79
name of assistant supervisor	Goh Saw Lan
name of interviewer	Fatimah Hj. Kassim

<input checked="" type="checkbox"/> Collection	<input type="checkbox"/> Non-collection
--	---

## Sampling Card B (for interviewer)

V 1 1 1 P A B 4 3 6 9

Type of vehicle	<input checked="" type="checkbox"/> Car	<input type="checkbox"/> taxi	<input type="checkbox"/> motor cycle
	<input type="checkbox"/> Van, Pick up		
	<input type="checkbox"/> Medium lorry	<input type="checkbox"/> scooter	
	<input type="checkbox"/> Heavy lorry		
	<input type="checkbox"/> Bus		
	register number	PAB 4369	
owners name	ZAKARIA BIN AHMAD.		
owners address	15, LEITH STREET GHAUT, PG.		
telephone number			
memo			

results of interview	
<input type="checkbox"/>	refused to answer
<input type="checkbox"/>	moved out to another place
<input type="checkbox"/>	unable to be located
<input type="checkbox"/>	sold to another
<input type="checkbox"/>	damaged car
<input type="checkbox"/>	scrapped car
<input checked="" type="checkbox"/>	interviewed

results of visiting		
	date	time
No. 1	8th. June	10 a.m.
No. 2	9th. June	9 p.m.
No. 3		

Signature of interviewer	
--------------------------	---

from R.I.M.V.

According to the sample rate, about 10% of the samples from the registration cards (vehicles 14%, motorcycles 7%) were taken out to make up the intended sample size. Thus, at every 7th registration card, the vehicle was sampled. On the other hand, motorcycles were sampled at every 14th registration card. The information that is the owner's home, address, registration number of the vehicle were then transferred from the registration card to the sampling sheet.

(Details of the sampling procedure is shown in the 'manual of sampling')

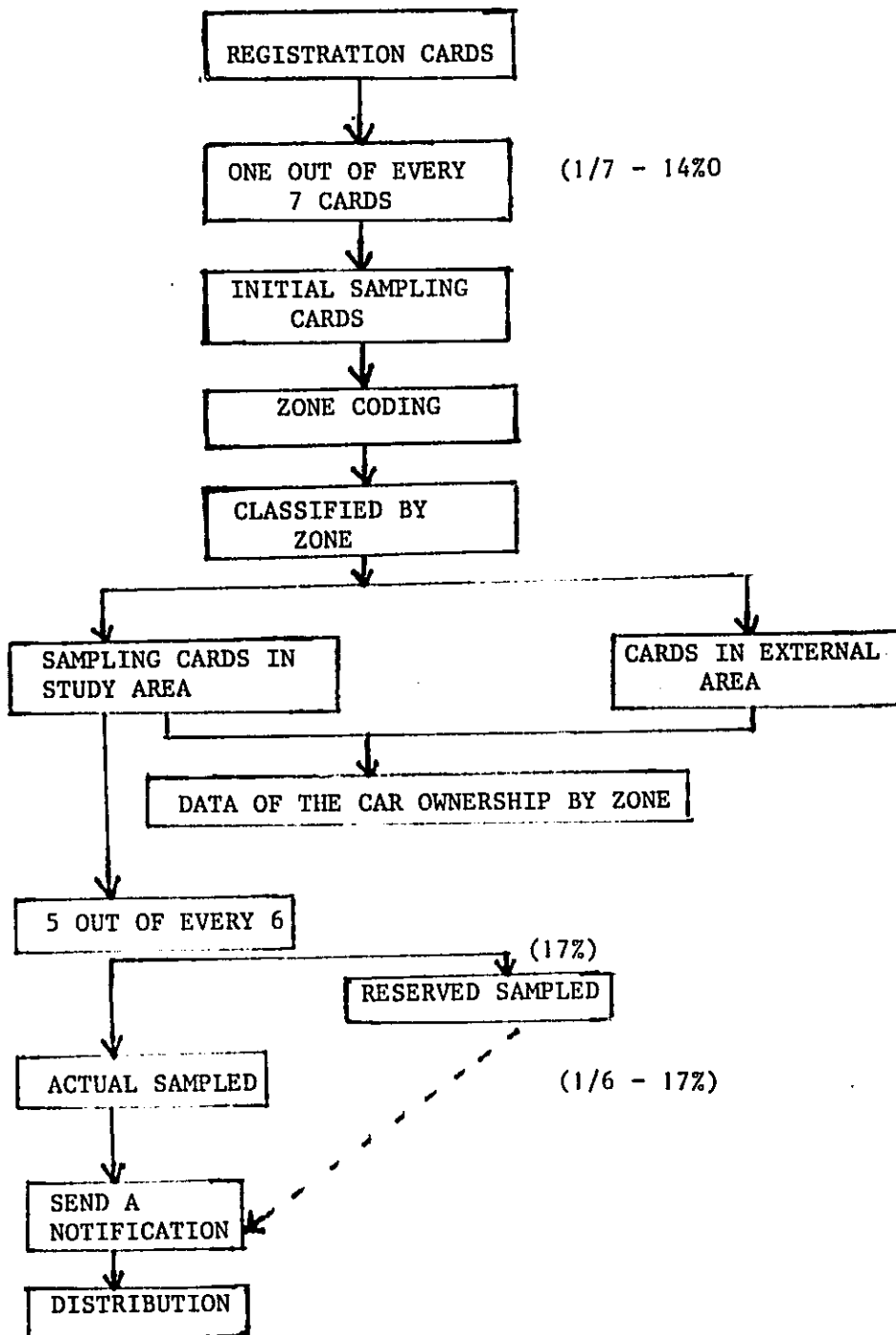
Then the sampling sheets were divided into 2 categories, viz sampling sheets for vehicles and motorcycles.

These were in turn classified into the different zones. The ownership of zone was estimated from the number of samples by zone.

Next, the sampling sheets were divided into 2 categories, that is one to be used in the actual interview survey (the actual sample) while the other became the reserved sample. The procedure for obtaining the reserve sample was by selecting every 6th registration card for vehicles and every 7th registration card for motorcycles.

The illustration for the work flow chart is in Figure 4

FIGURE 7: THE ILLUSTRATION FOR SAMPLING OF VEHICLES



The rate of actual sample is about 12% (14% multiply 83% is 12%).

d) The Results of the Sampling Procedure

Using this sampling procedure, the sample size was shown as Table 6:

TABLE 6: THE RESULTS OF THE SAMPLING PROCEDURE

ZONE CODE	CAR	VAN	M.LORRY	H.LORRY	BUS	TOTAL OF VEHICLE	MOTOR CYCLE	TOTAL	
INTERNAL AREA	1	4483	276	136	91	68	5154	3399	8553
	2	220	6	4	3	1	234	124	358
	3	615	16	2	5	7	645	440	1085
	4	136	5	2	6	1	150	204	354
	SUB TOTAL	5454	303	144	105	77	6183	4167	10350
	5	975	74	45	47	6	1147	965	2112
	6	313	20	6	24	3	366	245	611
	7	606	30	22	69	6	733	912	1645
	8	77	10	6	4		97	176	273
	SUB TOTAL	1971	134	79	144	15	2343	2298	4641
TOTAL	7425	437	223	249	92	8526	6465	14991	
EXTERNAL AREA	9	154	7	14	4	8	187	170	357
	0	605	48	34	75	7	769	1050	1820
	TOTAL	759	55	48	79	15	956	1220	2176
GRAND TOTAL	8184	492	271	428	107	9482	7685	17167	

(Above figure was not included in the reserved samples)

The aim of this owner interview survey is to obtain information on the movements of trips made in the internal area. The target for the sample size for this survey was 14, 991.

As mentioned earlier, the registration of vehicles/motorcycles at the R.I.M.V. does not take into consideration the classification by area. Therefore it was necessary to estimate the number of vehicles in the internal area by using the ratio in the sample table below.

The number of vehicles estimated are as follows:-

FIGURE 8: THE NUMBER OF VEHICLES

<p><b>V</b> : 1546 <b>M</b> : 2765 <b>T</b> : 4311</p>	<p><b>V</b> : 51146 <b>M</b> : 67769 <b>T</b> : 118915</p>	<p><b>V</b> : 19381 <b>M</b> : 37373 <b>T</b> : 56754</p>	<p>PROVINCE WELLESE</p>
<p>PENANG ISLAND</p>		<p><b>V</b> : 6361 <b>M</b> : 17077 <b>T</b> : 23438</p>	

Total number of vehicles/motorcycles in the State of Penang.

Vehicles : 78434  
Motorcycles : 124984  
Total : 203418

(up to end of May 1979)



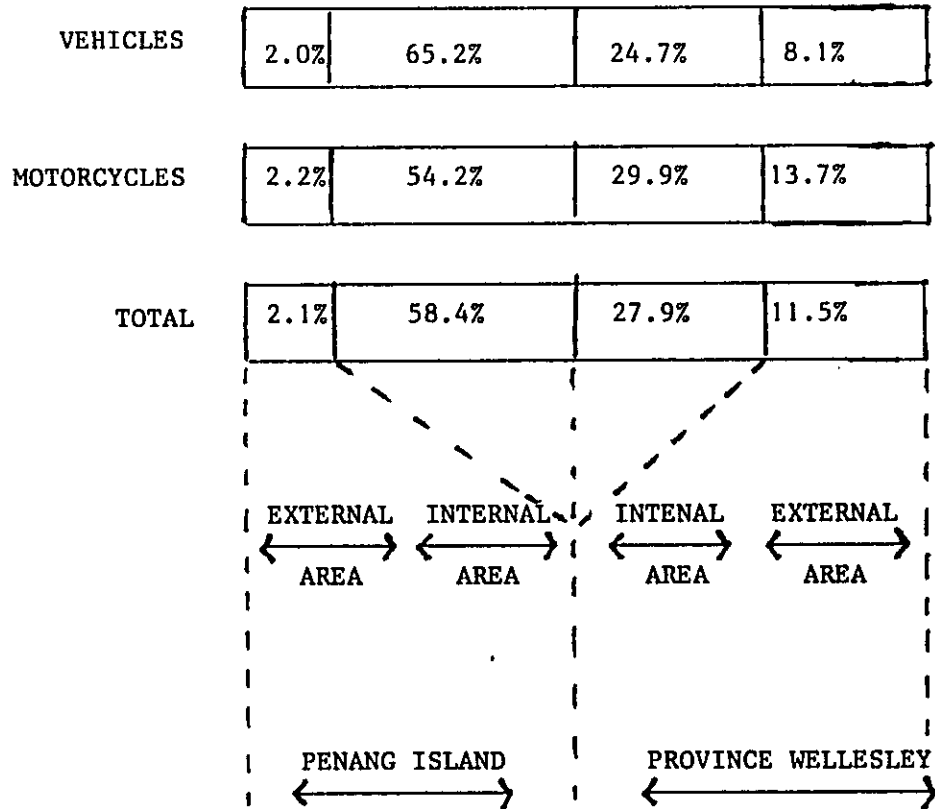
TABLE 7:

THE NUMBER OF VEHICLES

	<u>VEHICLES</u>			<u>MOTORCYCLES</u>		
	POPULATION OF VEHICLES	SAMPLE SIZE	COLLECTION RATE EXPECTED	POPULATION OF MOTORCYCLES	SAMPLE SIZE	COLLECTION RATE EXPECTED
INTERNAL AREA	70512	8526 (12.1%)	6346 (9%)	105112	6465 (6.2%)	4730 (4.5%)
EXTERNAL AREA	7922	-	-	19872	-	-
TOTAL	78434			124984		

The ratio by area from the above results is shown in Figure 9 below:-

FIGURE 9: THE RATIO BY AREA



The ratio of vehicles to motorcycles is shown in Figure —

FIGURE 10: THE RATIO OF VEHICLES TO MOTORCYCLES

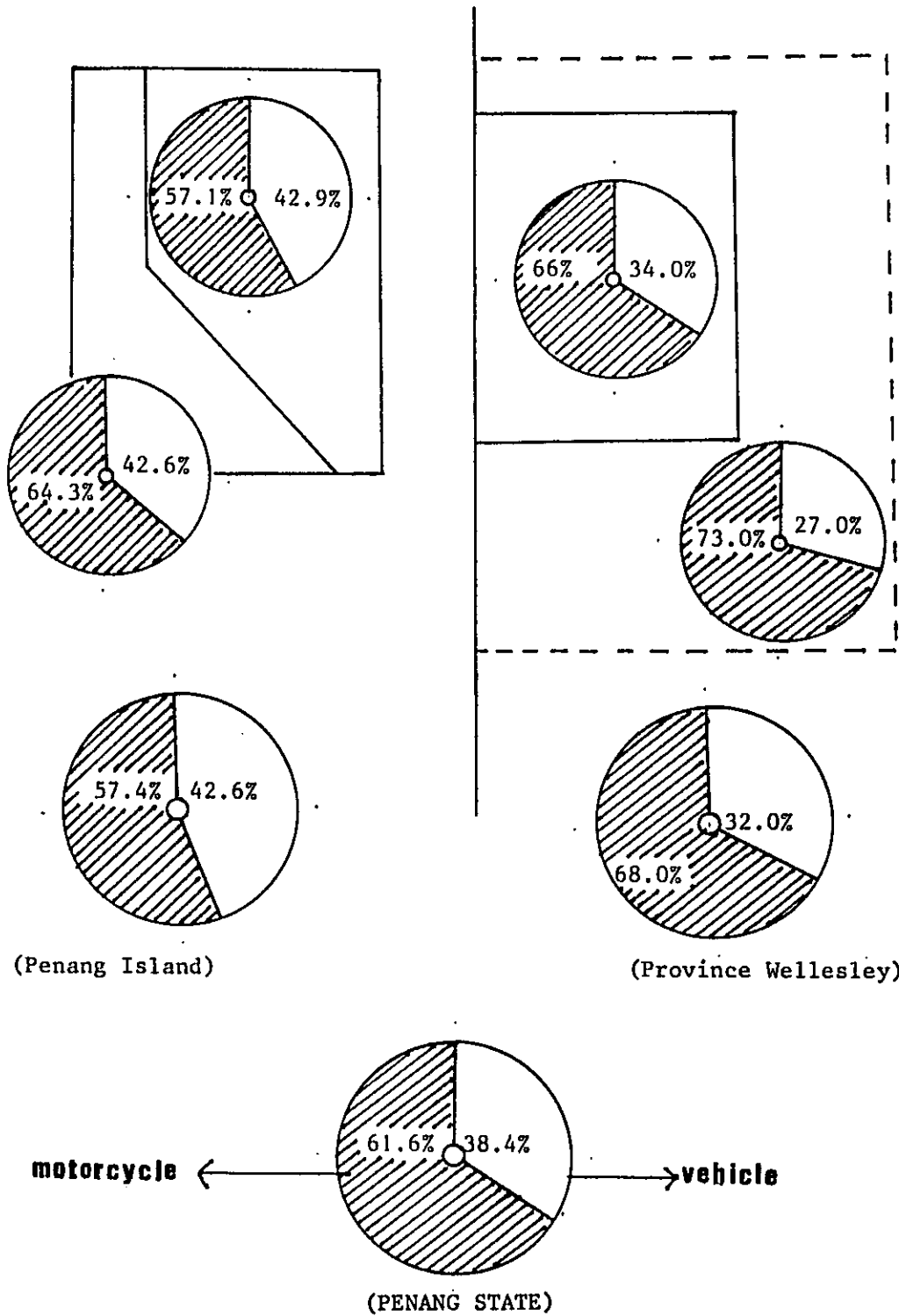


TABLE 8a: SAMPLE SIZE BY ZONE

<u>ZONE CODE</u>	<u>CAR</u>	<u>M/CYCLE</u>	<u>TOTAL</u>
111	1,064	706	1,769
121	263	193	456
122	393	160	553
123	98	83	181
124	304	113	417
125	237	161	398
131	912	739	1,651
132	412	251	663
133	302	340	642
141	224	145	369
142	367	208	575
143	369	318	687
211	168	65	233
212	41	37	78
221	24	27	51
311	112	81	193
321	17	24	41
322	-	3	3
323	3	-	3
331	372	113	485

TABLE 8b: SAMPLE SIZE BY ZONE

<u>ZONE CODE</u>	<u>CAR</u>	<u>M/CYCLES</u>	<u>TOTAL</u>
332	69	90	159
333	48	102	150
334	13	33	46
411	50	35	85
412	60	98	158
413	42	53	95
511	602	433	1,035
512	109	1,057	216
513	94	59	153
514	186	1,345	321
521	57	60	117
522	60	88	148
523	12	15	27
524	10	23	33
525	80	41	121
611	190	101	291
621	16	21	37
622	121	99	220
623	18	20	38
711	5	7	12

TABLE c: SAMPLE SIZE BY ZONE

ZONE CODE	CAR	M/CYCLES	TOTAL
712	13	19	32
713	33	60	93
721	32	62	94
722	15	23	38
723	35	84	119
731	38	61	99
732	275	309	584
733	137	77	214
734	72	81	153
741	32	71	103
742	47	53	100
811	27	69	96
812	38	55	93
821	9	28	37
822	19	31	50
TOTAL	8,526	6,465	14,991

d) "Manual of Sampling"

The sampling procedure is the most basic procedure of the whole study. The person engaged in carrying out the sampling process should follow the procedure stated below;\_

- 1.0 The following material should be collected from the assistant supervisors concerned:-
  - i) One set of registration cards
  - ii) Required amount of sampling cards (forms)
  - iii) One copy of records card.
  
- 2.0 The next process is to transfer the particulars of the sample from the registration card to the sampling card.
  
- 2.1 In counting or choosing the samples , the following cards which are marked:-
  - i) DEAD
  - ii) TRANSFERED TO
  - iii) MANSOH/DIBATALKAN

(But the date of the mark should be noted and compared with the 'date' of the latest ownership) should be ignored
  
- 2.2 For Sample A

The first sample is picked from the 7th card.  
The second sample is picked from the next 14th card.  
This process is repeated and the succeeding sample are picked from every 14th card up to the end of the set of registration cards.
  
- 2.3 For Sample B

The same set of registration cards is used.  
The first sample is picked from the 3rd card.  
The second sample is picked from the next 14th card.  
This process is repeated as in sample A. However, in this case it is need not to transfer the register

cards of motorcycles.

#### 2.4 Records Card

The total number of vehicles sample is then recorded into the records card according to whether they are sample A or B and according to the following classification:-

- a) Vehicles (excluding motorcycle/scooters/autocycles) and
- b) Motorcycles (excluding cars/saloons; vans; Pick-ups, medium lorries; heavy lorries; bus)

2.5 The next step is to bring all the cards (sample forms, records cards and registration cards) to the assistant supervisors concerned for inspection/approval of work done.

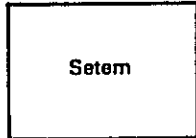
2-2

#### Confirmation of Intended Sample Size

Before the vehicle owners could be interviewed, it was necessary to confirm their existence and to inform them in advance of the need for their cooperation in this study. Therefore advance notices (notification letters) were sent to every sampled owner's home and this in turn confirmed the sample size because sampled owners who were no longer at the address which they registered their vehicles at R.I.M.V. had their notifications returned to us.

##### a) Sending of Notification Letters.

An example of the notification letter is given below:-



Kepada,

ZAKARIA BIN AHMAD.  
15, LEITH STREET GHAUT,  
PENANG.

JIKA TIDAK DITERIMA TOLONG KEMBALIKAN KEPADA:

UNIT PERANCANG EKONOMI NEGERI  
PEJABAT SETIAUSAHA KERAJAAN NEGERI  
BANGUNAN TUANKU SYED PUTRA  
PETI SURAT 3006  
PULAU PINANG.

V 1 1 1 P A B 4 3 6 9



YUNIT PERANCANG EKONOMI NEGERI  
PEJABAT SETIAUSAHA KERAJAAN,  
BANGUNAN TUANKU SYED PUTRA,  
PETI SURAT 3006  
PULAU PINANG.

Talipon: Pulau Pinang 64461  
Taligeram: SECSTATE, PULAU PINANG

Kepada Sesiapa yang berkenaan

Tuan,

**Menemuramah Pemilik-Pemilik Kereta  
dan Motorikal**

Sukacita dimaklumkan bahawa Kerajaan Malaysia dengan kerjasama Kerajaan Jepun sedang menjalankan satu kajian pengangkutan bagi kawasan-kawasan bandar di Pulau Pinang.

2. Di dalam hal ini, kajian mengenai tempat asal (origin) dan tempat tujuan (destination) kereta-kereta dan motorikal-motorsikal akan diadakan bagi mengkaji dan memahami keadaan lalulintas di Pulau Pinang. Cara kajian ini dijalankan adalah melalui menanyakan soalan-soalan kepada pemilik-pemilik kereta dan motorsikal mengenai perjalanan biasa mereka dalam sehari.

3. Kami telah mendaftarkan nama tuan sebagai memasuki kajian ini dan oleh itu seorang penemuramah akan pergi ke rumah tuan dalam bulan Jun, 1979 ini.

4. Dengan segala hormatnya diharap dapatlah tuan memberi kerjasama tuan di dalam menjawab soalan-soalan yang akan dikemukakan oleh penemuramah berkenaan nanti.

Kerjasama tuan sangat-sangat disanjung tinggi.

Saya yang menurut perintah,

(SAIKHOL ROSLI BIN SABDIN)  
Penolong Pengarah,  
Yunit Perancang Ekonomi Negeri,  
b/p. Setiausaha Kerajaan,  
Pulau Pinang.



The notifications that were sent to the sampled owner's were in Bahasa Malaysia, but there was a translation in English use as reference.

State Economic Planning Unit,  
State Secretariat,  
Tuanku Syed Putra Building,  
P.O. Box 3006,  
PENANG.

To whom it may concern,

Sir,

Interview of Vehicle and Motorcycle Owners

1. We are pleased to inform you that the Malaysian Government with the cooperation of the Japanese Government is undertaking a transport study for urban areas in Penang.
2. In this regard, a study concerning the origin and destination of vehicles and motorcycles will be made to examine and understand the traffic situation in Penang. The method of this study will involve questionnaire interviews with vehicle and motorcycle owners about their usual routes.
3. We have listed your name for the purpose of this study and as such, an interviewer will be paying you a visit in the month of June 1979.
4. We sincerely hope that you will render your fullest cooperation in answering the questions of the interviewer at such time.

Your cooperation is fully appreciated.

Yours faithfully,

---

Deputy Director  
State Economic Planning Unit  
s/f State Secretariat  
Penang.

The names and addresses of the sampled vehicle-owners were first transferred from the sampling sheet to the notification letters on the 17th May 1979, these notification letters were despatched by mail.

b) Exchanging Returned Samples with Reserve Samples

Those notification letters that were returned for various reasons were replaced with the names and addresses from the reserve sample.

The reserve sample was prepared with the anticipation that some of the notifications would be returned. However, more notifications than expected were returned for the following reasons:-

TABLE 9: REASONS FOR RETURNED NOTIFICATIONS

		<u>NUMBER</u>	<u>(PERCENTAGE)</u>
SENT NOTIFICATIONS		14,991	
RESERVED	MOVED AWAY	500	(19.5)
	PASSED AWAY	2	( 0.1)
	HOUSE DEMOLISHED	122	( 4.8)
	NO SUCH PERSON	743	(29.0)
	NO SUCH ADDRESS	854	(33.4)
	NO SUCH ROAD	19	( 0.7)
	INCOMPLETE ADDRESS	140	( 5.5)
	OTHERS	179	( 7.0)
SUB TOTAL		2,559	100.0
RETURNED/SENT			17.1

The reasons for the high rate of returned notifications were contributed not only through errors incurred in transferring the information from the registration records but also from errors in the registration records themselves

The replacement of those samples that had their notifications returned with the reserve sample was done according to zone code and vehicle type. But because a large number of notification letters were returned, there was a slight reduction in the sample size of some zones.

c) Confirmation of Intended Sample Size

The owner interview survey was conducted with the following sample size.

TABLE 10: INTENDED SAMPLE SIZE

VEHICLES	MOTORCYCLES	TOTAL
8181	6537	14,718

N.B. The above figures neither includes company/government organizations, owned cars nor taxies because the interview method for these is different from the ordinary survey.

TABLE 11: INTENDED SAMPLE SIZE BY AREA

AREA	VEHICLE	MOTORCYCLE	TOTAL
111, 121, 122, 123, 124 125, 131, 132, 133, 141 142, 143. GEORGETOWN	4992	3563	8555
OTHER AREA IN PENANG ISLAND	967	629	1596
PENANG ISLAND	5959	4192	10151
511, 512, 513, 514 (BUTTERWORTH)	865	711	1576
711, 712, 713, 721, 722 723, 731, 732, 733, 734 741, 742 (BUKIT MERTA JAM)	718	976	1694
OTHER AREA IN PROVINCE WELLESLEY	639	658	1297
PROVINCE WELLESLEY	2222	2345	4567
GRAND TOTAL IN INTERNAL AREA	8181	6537	14718

2-3

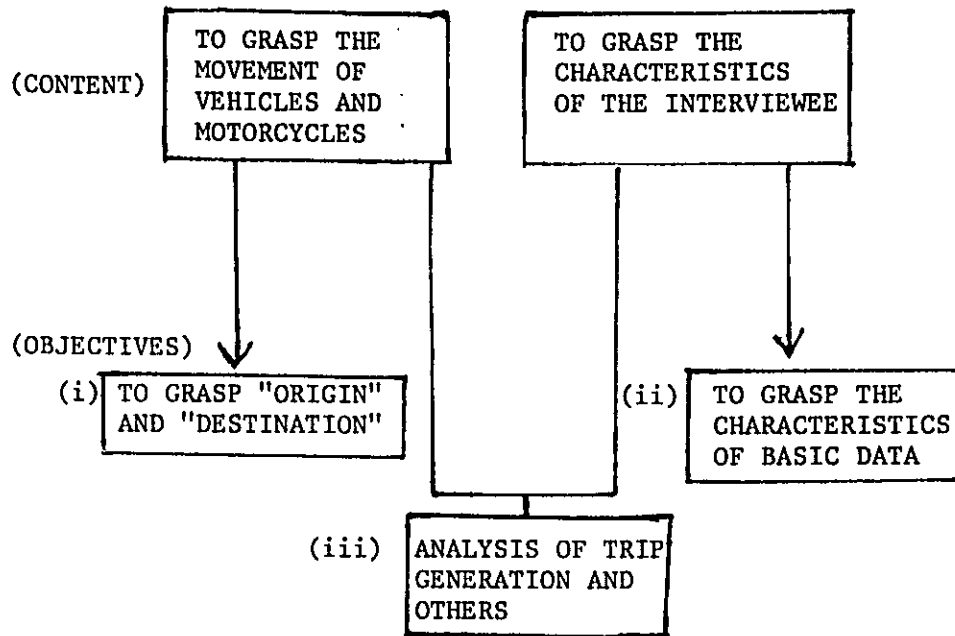
Design of Questionnaires

The designing of the questionnaire is a very important job. The questionnaire is expected to be easy to comprehend and easy to compare.

a) Objectives of Questionnaire

The objectives of the questionnaire are as follows:-

FIGURE 12. OBJECTIVES OF QUESTIONNAIRE



i) To grasp 'origin' and 'destination'

This is an essential objective of this survey. So the movement of vehicles and motorcycles during one average day must be obtain.

In order to grasp the above movement, it is required that the following items be questioned upon.

- a) type of vehicle
- b) origin
- c) destination
- d) trip purpose
- e) departure/arrival time
- f) number of passengers
- g) type and amount of commodity carried.

ii) To grasp the characteristic of the owner

This is necessary to grasp the characteristic of the people of each zone, that is what kind of people are involved. These questions about the characteristics are used not only for traffic analysis but also as basic data for this study.

Therefore the following items are required:-

- a) address of owner
- b) sex of owner
- c) age of owner
- d) number of occupants of owner's home
- e) occupation of owner
- f) types of establishment about working place
- g) Size of employment about working place
- h) address of working place.

iii) Analysis of trip generation and others

It is generally thought that the movement of vehicles and motorcycles differ according to the characteristics of the owner, that is by occupation, age, sex, etc. It is expected that the number of routine trips, their origins and destinations also differ.

Therefore, analysis must be done on the relationship between the movement and the attributes of the owner. Besides this information regarding parking place is needed in order to grasp the actual nature of parking patterns. Therefore it is required that the following items be questioned upon:-

- a) period of owner-ship
- b) average mileage per day
- c) usage of vehicle per week.
- d) nature of establishment
- e) place of parking

b) Defination of Items to be Questioned Upon

The contents of these items are divided into the following two groups:

- i) 'Trip' Items.
- ii) Other Items.

i) Defination of Trip

The 'trip' means the route taken from the origin to the destination. This is explained by Figure 13

EXAMPLE OF TRIP MADE - FIGURE 13

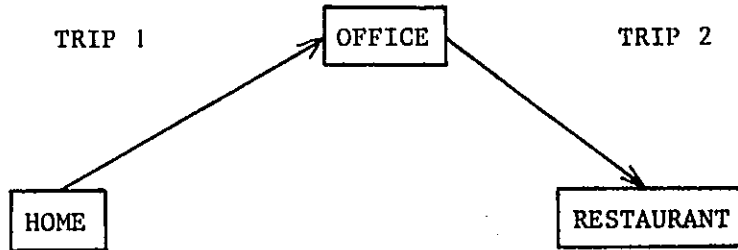


ORIGIN

DESTINATION

In the example of Figure 14, there are 2 trips. And the destination of the first trip is the same as the origin of the second trip.

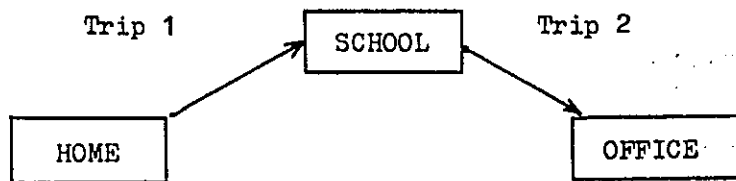
EXAMPLE OF TRIP MADE - FIGURE 14.



EXCEPTIONS:

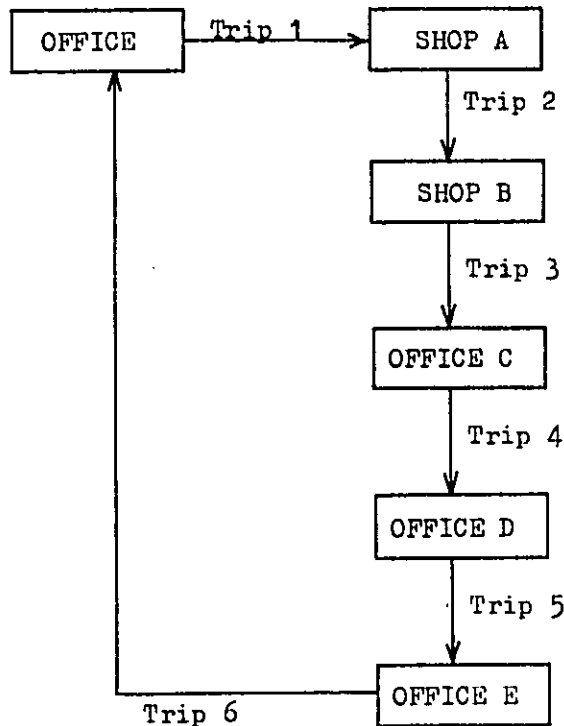
CASE I:

In the case of a "disjointed trip" i.e. where there is a dropping off point or a collection point in the actual route taken i.e. when the driver stops to drop or pick up someone on the way. In this case, the movement is divided into 2 trips. The first trip is to school and the second trip to office.



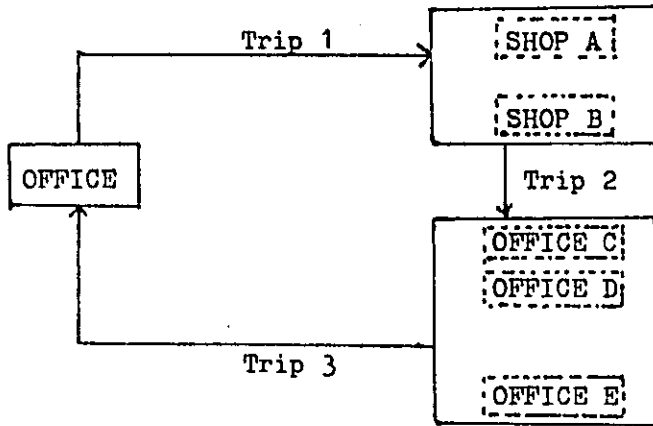
CASE II:

This is a case where there are many short trips taken along the route. Sales delivery is one example.

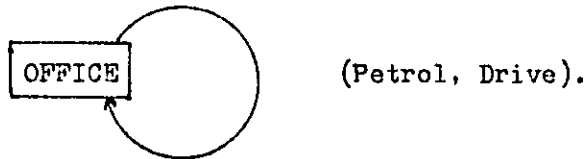


In the above case, there are 6 trips. But if shop A and shop B are very near to each other, and also office C, office D and office E are very near, then we can change the example to the following manner.

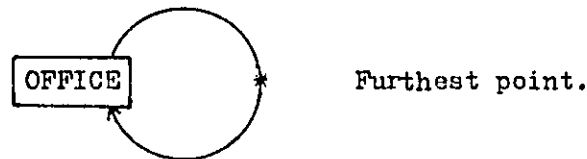




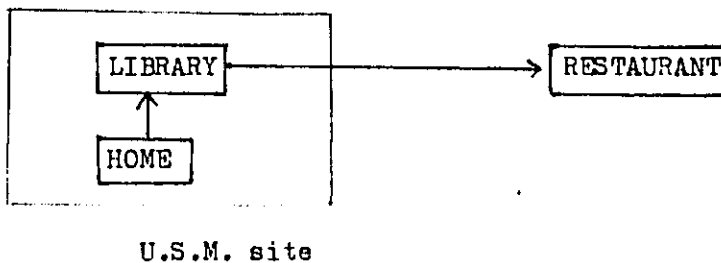
CASE III: When there is no specific destination in the route taken. This occurs when the trip has no fixed stops that is when it is a circular trip.  
 E.g. to the petrol station or for a drive.



In the above diagram, the circular trip can be considered as 2 trips. The first trip is from the office to the furthest point. The second trip is from the furthest point to the office.



CASE IV: In the case when the trips are done within the same site, that is, in an internally closed area. (eg. in U.S.M., in a big factory site)



ii) Other Items

A) Type of Vehicle

- 1) Motor car : two door car, four door car.
- 2) Van : station wagon, small vans and utilities. (light 2 axles)
- 3) Medium lorry : lorry and large van. (heavy 2 axles)
- 4) Heavy lorry : lorry with 3 axles, trailers, tractors and tippers.
- 5) Motor cycle : motor scooter, lambreta, ordinary motor cycle.

B) Form of ownership

- 1) Individual : personally owned or privately owned.
- 2) Company and Cooperative : public company, private company, shop and cooperative.
- 3) Government/semi-government : Fully government bodies such as ministry, government department and state government bodies.

Semi government bodies are MARA, FELDA, MAS, L.L.N., P.D.C. and other state development Corporation.

C) Purpose

- 1) Going to work : going to working place. sending other people to work place.
- 2) Business engagement: selling insurance, sending goods to customers, Moving salesman and other business trip.
- 3) To home : Going home from work, shopping, school, entertainment etc.
- 4) Shopping /marketing: going to market, shops and other shopping place for the purpose of buying fish/vegetables, clothes, household necessities etc.
- 5) For food/entertainment : going for meal at restaurant, cafe, coffee house, going to cinema night clubs, sight seeing, picnic and games.

- 6) To school : Studying, sending children to school, sending other people to school. (exclude teachers and school workers)
  - 7) Social visits : Social gathering, visiting relatives, going to airport and other private trip.
  - 8) Others : Other than the above purpose.
- D) Nature of establishment
- 1) Residential : Houses and lodging apartments.
  - 2) Office and Commercial : Semi government offices, fully government offices, private company offices, hotel and entertainment building, medical supply, Restaurant.
  - 3) Factory : Manufacturing company, Iron and Steel, light industry, heavy industry, cottage industry.
  - 4) Education : Schools, private institution, private library and public library.
  - 5) Agriculture/Fishing : Market place, farmland, forest land.
  - 6) Others : Transportation, air port, shipping, swimming pool, playground, seaside and parks.
- E) Occupation
1. ADMINISTRATIVE AND MANAGERIAL WORKERS:
    - Legislative official and government administrators.
    - Managers except in Farming, agriculture, commerce and catering.
  2. PROFESSIONAL, TECHNICAL & RELATED WORKERS:
    - Physical scientists and technicians.
    - Architects, Engineers, surveyors and related professionals.
    - Aircraft and ships' officers.
    - Medical doctors, surgeons, dentists and other medical officers and assistants.
    - Veterinary assistants and related workers.
    - Statisticians, mathematicians, system analysts and related technicians.
    - Economists, Accountants.
    - Jurist - Lawyers, judges, and other legal officers.
    - University, Higher Education, secondary and Primary School teachers.
    - Authors, Journalists and related workers.

Sculptors, photographers, creative artists, composers.  
Professional athletes and sportsmen.

3. CLERICAL AND RELATED WORKERS:

Clerical supervisors.  
Government executive official.  
Stenographers, typists and teletypists.  
Book-keepers, cashiers, computing and office machine operators.  
Telephone and telegraph operators.  
Other clerical workers not classified elsewhere.

4. SALES WORKERS:

Managers of wholesale and retail trade.  
Working proprietors of wholesale and retail trade.  
Salesman, commercial travellers, sales agents and other  
business services salesman.  
Shop assistants, street vendors, hawkers, canvassers and  
news-vendors.  
Sales workers not classified elsewhere.

5. SERVICE WORKERS:

Managers and working proprietors of catering and lodging  
services.  
House keeping and related service supervisors.  
Cooks, waiters, bar tenders and related workers.  
Launderers, dry-cleaners, pressers and related workers.  
Hair and Beauty saloon workers.  
Members of Police and armed forces.  
Service workers not classified elsewhere.

6. FACTORY, CONSTRUCTION WORKER AND GENERAL LABOURERS.

Production supervisors and general foreman.  
Miners, quarrymen, drillers, wood makers, metal processors,  
and other related workers.  
Tailors, dress makers, sewer, shoe makers, leather good  
makers, etc.  
Machinery and electrical fitters and related operators.  
Plumbers, welders, sheet metal preparers and other related  
workers.  
Brick layers, carpenters and other construction workers.  
Stationery engines and related equipment operators.  
Other Labourers and workers not classified elsewhere.

7. AGRICULTURAL, ANIMAL HUSBANDRY AND FORESTRY WORKERS:

Farm managers and supervisors.  
Padi planter, rubber planter, farmers, padi and rubber  
farm workers.  
Forestry workers.  
Fishermen, hunters etc.

8. STUDENT:

Primary School, Secondary School, College, University, and  
Private Institution. Include student of music school,  
typing/commerce school.

9. HOUSE-WIFE:  
Wives not working.
10. UNEMPLOYED:  
Pensioner, old age, no job.
- F) Type of Establishment
- 1) Government : Semi-government such as MARA, FELDA, MAS, L.L.N., P.D.C., other development Corporation bodies.  
Fully government bodies such Ministry Department, and the states government bodies.
- 2) Manufacturing Company : Textiles Co., litronix, rubber iron and steel, food and beverages.  
: Clothing, wood product, paper, chemical, petroleum, non-mineral, electrical, machinery and transport equipment.
- 3) Commerce/Trade : Chamber of Commerce, Trading Company, shops supermarket and emporium.
- 4) Finance and Banking : Finance company, insurance company, national bank and commercial Banks.
- 5) Construction : Housing, Building, Civil Engineering, Construction and private Construction.
- 6) Other private Company : Any other form of company which cannot be explained by the above definition.
- 7) Others : Farmers, hawkers, fishermen or other small self-employed businesses.
- G) Type of Commodity Carried
- 1) No luggage : The person travels without carrying anything.
- 2) Agriculture or Fishery product : Vegetables, fruits, flower, fish or any other marine products, rubber (excluding processed products).
- 3) Timber, Lumber or wood product : Plywood, plank, Timber, logs (excluding wood furniture and manufactured good).

5. SERVICE WORKERS:

Managers and working proprietors of catering and lodging services.

House keeping and related service supervisors.

Cooks, waiters, bar tenders and related workers.

Launderers, dry-cleaners, pressers and related workers.

Hair and Beauty saloon workers.

Members of Police and armed forces.

Service workers not classified elsewhere.

6. FACTORY, CONSTRUCTION WORKER AND GENERAL LABOURERS.

Production supervisors and general foreman.

Meners, quarrymen, drillers, wood makers, metal processors, and other related workers.

Tailors, dress makers, sewer, shoe makers, leather good makers, etc.

Machinery and electrical fitters and related operators.

Plumbers, welders, sheet metal preparers and other related workers.

Brick layers, carpenters and other construction workers.

Stationery engines and related equipment operators.

Other Labourers and workers not classified elsewhere.

7. AGRICULTURAL, ANIMAL HUSBANDRY AND FORESTRY WORKERS:

Farm managers and supervisors.

Padi planter, rubberplanter, farmers, padi and rubber farm workers.

Forestry workers.

Fishermen, hunters etc.

8. STUDENT:

Primary School, Secondary School, College, University, and Private Institution.

Include student of music school, typing/commerce school.

9. HOUSE-WIFE:

Wives not working.

10. UNEMPLOYED:

Pensioner, old age, no job.

F: Type of Establishment

1) Government

:Semi-government such as MARA, FELDA, MAS, L.L.N., P.D.C., other development Corporation bodies.

Fully government bodies such Ministry Department, and the states government bodies.

2) Manufactory Company.

:Textiles Co., litronix, rubber iron and steel, food and beverages.

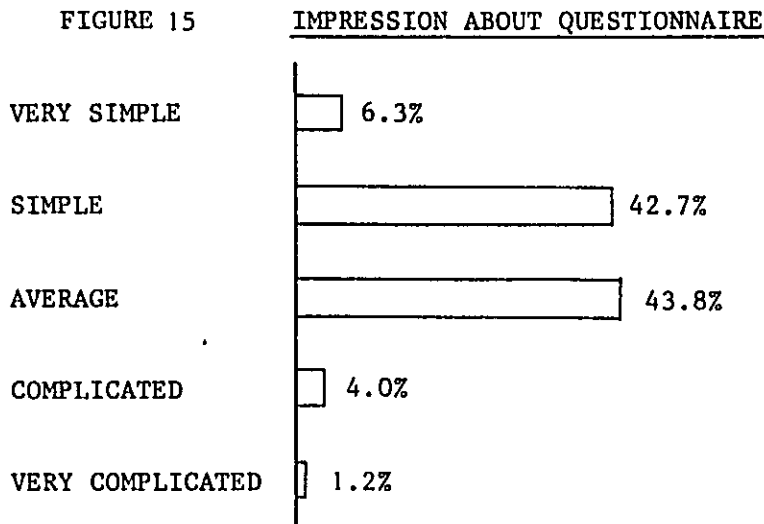
:Clothing, wood product, paper, chemical, petroleum, non-mineral, electrical, machinery and transport equipment.

- 3) Commerce/Trade : Chamber of Commerce, Trading Company, shops supermarket and emporium.
- 4) Finance and Banking : Finance company, insurance company, national bank and commercial Banks.
- 5) Construction : Housing, Building, Civil Engineering, Construction and private Construction.
- 6) Other private Company : Any other form of company which cannot be explained by the above definition.
- 7) Others : Farmers, hawkers, fishermen or other small self-employed businesses.
- G) Type of Commodity Carried
- 1) No luggage : The person travels without carrying anything.
- 2) Agriculture or Fishery product: Vegetables, fruits, flower, fish or any other marine products, rubber (excluding processed products).
- 3) Timber, Lumber or wood product : Plywood, plank, Timber, logs (excluding wood furniture and manufactured good).
- 4) Minerals : Tin ore, iron ore, granite, sand, stones.
- 5) Metal product and machinery : Steel pipe, motor cars, electrical appliances, iron and steel product and other product of light heavy industries.
- 6) Products of light industries : Daily commodities, textile, toys, processed food, furniture.
- 7) Chemical products : oil, fertilizer, fuel, other bulky products.
- 8) Miscellaneous.

c) Layout of Questionnaire Items

It is very important how in what order the questionnaire items are arranged. Therefore, special efforts were made to see that the items were arranged in the best possible manner so the 'trial' arrangement was repeated and improved upon.

Interviewers' impression about this questionnaire were as followed:-



The large part of interviewers answered 'simple' or 'average'. These result were unexpected because many question items were contained in the questionnaire although the trial arrangement was repeated.



**CONFIDENTIAL**

**VEHICLE OWNER INTERVIEW QUESTIONNAIRE**

STATE OF PENANG

THE PURPOSE OF THIS INTERVIEW IS TO COLLECT THE NECESSARY INFORMATION FOR OUR STUDY TO DRAW UP A MASTER PLAN FOR THE TRANSPORT SYSTEM IN PENANG. PLEASE ANSWER THE FOLLOWING QUESTIONS REGARDING YOUR TRAFFIC MOVEMENT FOR THE WHOLE DAY (24 HOURS).

SHEET NO.

VEHICLE REGISTERED NO.

DATE OF TRIP:

**INSTRUCTION**

- A Please tick  In the appropriate  given in the Questionnaire Sheet.
- B Write number and other necessary information for the remainder Questions.

1 NAME:

2 ADDRESS:

3 FORM OF OWNERSHIP:

- Individual  
 Company and Co-operative  
 Government

4 SEX

- Male  Female

5 AGE

- Below 19  40 - 49  
 20 - 29  50 -  
 30 - 39

6 NUMBER OF OCCUPANTS

7 OCCUPATION:

- Administrative & Managerial  Factory, Construction & General Work  
 Professional, Technical & related work  Agriculture, Animal husbandary & Forestry  
 Clerical & related work  Student  
 Sale work  Housewife  
 Service Work  Unemployed

8 TYPE OF VEHICLE <input type="checkbox"/> Car <input type="checkbox"/> Van <input type="checkbox"/> Medium Lorry <input type="checkbox"/> Heavy Lorry <input type="checkbox"/> Bus <input type="checkbox"/> Motorcycle	9 LOADING CAPACITY OF VAN/MEDIUM LORRY/HEAVY LORRY (IN TONS OR GALLONS) ----- <input type="checkbox"/> tons ----- <input type="checkbox"/> gallons	TRIPS MADE DURING THE LAST 24 HOURS				21 TRIP PURPOSE 1 going to work 2 Business Engagement 3 going home 4 shopping/marketing 5 for food/entertainment 6 to school 7 social visit 8 others (please specify)	22 NATURE OF ESTABLISHMENT 1 residential 2 office and commercial 3 factory 4 educational 5 Agricultural and fishery 6 others	23 PLACE OF PARKING		24 NUMBER OF PASSENGERS INCLUDING DRIVER	25 TYPE AND AMOUNT OF COMMODITY CARRIED for van/medium lorry/heavy lorry 1 no luggage 2 agriculture, fishery and meat products 3 timber, lumber or wood products 4 minerals 5 metal products and machinery 6 products of light industry 7 chemical products 8 miscellaneous	TYPE AND AMOUNT OF COMMODITY CARRIED		
		17 ORIGIN (Name & Address)	18 DEPARTURE TIME	19 DESTINATION (Name & Address)	20 ARRIVAL TIME			1 roadside 2 public 3 private 4 vacant land 5 own garage	1 charged 2 free			1 full 2 ¾ full 3 ½ full 4 ¼ full 5 less than ¼		
10 PERIOD OF OWNERSHIP: <input type="checkbox"/> 1 - 2 yrs <input type="checkbox"/> 3 - 4 yrs <input type="checkbox"/> 5 yrs -		11 TYPES OF ESTABLISHMENT <input type="checkbox"/> Government <input type="checkbox"/> Construction <input type="checkbox"/> Manufacturing Co. <input type="checkbox"/> Other Private Company <input type="checkbox"/> Commerce/Trade <input type="checkbox"/> others <input type="checkbox"/> Finance/Banking	12 SIZE OF EMPLOYMENT <input type="checkbox"/> 1 - 4 <input type="checkbox"/> 20 - 49 <input type="checkbox"/> 5 - 9 <input type="checkbox"/> 50 - 99 <input type="checkbox"/> 10 - 19 <input type="checkbox"/> 100 and over	13 ADDRESS OF WORKING PLACE	14 AVERAGE MILEAGE PER DAY:	15 USAGE OF VEHICLE PER WEEK: <input type="checkbox"/> 1 - 2 days <input type="checkbox"/> 5 - 6 days <input type="checkbox"/> 3 - 4 days <input type="checkbox"/> Everyday	16 REASON FOR NO MOVEMENT:  (to be filled by interviewer)	TRIP No.	AM :	AM :	23 PLACE OF PARKING	24 NUMBER OF PASSENGERS INCLUDING DRIVER	25 TYPE AND AMOUNT OF COMMODITY CARRIED	TYPE AND AMOUNT OF COMMODITY CARRIED
PM :	PM :													
AM :	AM :													
PM :	PM :													
AM :	AM :													
PM :	PM :													

Please turn over

TRIP NO.	TRIPS MADE DURING THE LAST 24 HOURS				21 TRIP PURPOSE 1 going to work 2 Business engagement 3 going home 4 shopping/marketing 5 for food/entertainment 6 to school 7 social visit 8 others (please specify)	22 NATURE OF ESTABLISHMENT 1 residential 2 office and commercial 3 factory 4 educational 5 agricultural and fishery 6 others	23 PLACE OF PARKING		24 NUMBER OF PASSENGERS INCLUDING DRIVER	25 TYPE AND AMOUNT OF COMMODITY CARRIED (for van/medium lorry/heavy lorry)	
	17 ORIGIN (Name & Address)	18 DEPARTURE TIME		19 DESTINATION (Name & Address)			20 ARRIVAL TIME			1 roadside 2 public 3 private 4 vacant land 5 own garage	1 charged 2 free
6		AM : PM :		AM : PM :							
7		AM : PM :		AM : PM :							
8		AM : PM :		AM : PM :							
9		AM : PM :		AM : PM :							
10		AM : PM :		AM : PM :							
11		AM : PM :		AM : PM :							
26 NAME OF ROADS FREQUENTLY TAKEN:					27 COMMENT/RECOMMENDATION FROM INTERVIEWEE:				28 NAME OF INTERVIEWER:		

Thank you!

SULIT

SENARAI PERTANYAAN KEPADA PEMILIK KENDERAAN (NEGERI) PULAU PINANG

TUJUAN SOAL-SELIDIK INI IALAH UNTUK MENGUMPUL MAKLUMAT-MAKLUMAT YANG PENTING BERHUBUNG DENGAN PERJALANAN KENDERAAN UNTUK DIGUNAKAN DI DALAM KAJIAN MENYEDIAKAN SATU PELAN INDUK SISTEM PENGANGKUTAN DI PULAU PINANG. DIHARAP PIHAK TUAN DAPAT MENJAWAP BEBERAPA SOALAN DI BAWAH BERHUBUNG DENGAN PERJALANAN KENDERAAN TUAN BAGI TEMPUH PERJALANAN SATU HARI (24 JAM.)

NOMBOR BORANG:

NOMBOR PENDAFTARAN KENDERAAN

TARIKH PERJALANAN

ARAHAN

- A TOLONG TANDAKAN  DI KOTAK  YANG SESUAI DI DALAM BORANG INI.
- B TULISKAN ANGKA DAN LAIN-LAIN KETERANGAN BAGI MENJAWAB SOALAN-SOALAN LAIN.

1 NAMA:

2 ALAMAT

3 BENTUK HARKMILK

- Persendirian
- Syarikat atau koperasi
- Kerajaan

4 JANTINA

- Lelaki  Perempuan

5 UMUR

- Bawah 19  40 - 49
- 20 - 29  50 ke atas
- 30 - 39

6 JUMLAH ISI RUMAH

7 PEKERJAAN

- Pentadbiran & Pengurusan
- Profesional, Teknikal dan yang berkaitan
- Perkeranian dan yang berkaitan
- Pekerja jualan
- Perkhidmatan
- Pekerja kilang, pembinaan dan buruh kasar
- Pertanian, Pertenakan dan Perhutanan
- Pelajar
- Suri rumah tangga
- Tidak bekerja (penganggur)

8 JENIS KENDERAAN	9 JUMLAH HAD MUATAN BAGI VAN DAN LORRY (DALAM TAN ATAU GALLON)	PERJALANAN DALAM MASA 24 JAM YANG LEPAS				21 TUJUAN PERJALANAN	22 JENIS KEMUDAHAN PERTUBUHAN	23 TEMPAT LETAK KENDERAAN	24 JUMLAH PENUMPANG TERMASUK PEMANDU	25 JENIS DAN JUMLAH BARANG YANG DIBAWA (untuk van, lori pertengahan dan lori berat)
		17 TEMPAT PERMULAAN (Nama dan Alamat)	18 MASA BERTOLAK	19 TEMPAT DITUJU (Nama dan Alamat)	20 MASA SAMPAI					
<input type="checkbox"/> kereta <input type="checkbox"/> van <input type="checkbox"/> lori pertengahan <input type="checkbox"/> lori berat <input type="checkbox"/> bas <input type="checkbox"/> motosikal	<input type="checkbox"/> tan <input type="checkbox"/> galen					1 tempat kerja 2 tujuan perniagaan 3 ke rumah 4 membeli belah 5 makan/hiburan 6 ke sekolah 7 lawatan sosial 8 lain-lain tujuan (tolong huraikan)	1 perumahan 2 pejabat/perdagangan 3 kilang 4 pelajaran 5 pertanian dan perikanan 6 lain-lain	1 tepi jalan 2 tempat awam 3 persendirian 4 tanah kosong 5 tempat letak kereta di rumah	1 kena bayar 2 percuma	1 tiada muatan 2 barang pertanian perikanan dan daging 3 kayu kayan dan barang-barang daripada kayu 4 bahan galian 5 barang-barang besi dan alat-alat mesin 6 barang perusahaan ringan 7 bahan-bahan kimia 8 lain-lain
10 JANGKA MASA HAK MILIK										
<input type="checkbox"/> 1 - 2 th <input type="checkbox"/> 3 - 4th <input type="checkbox"/> 5th ke atas										
11 JENIS PERTUBUHAN										
<input type="checkbox"/> kerajaan <input type="checkbox"/> pembinaan <input type="checkbox"/> syarikat pembuatan <input type="checkbox"/> lain-lain syarikat persendirian <input type="checkbox"/> perdagangan/perniagaan <input type="checkbox"/> lain-lain <input type="checkbox"/> kewangan/bank										
12 JUMLAH PEKERJA										
<input type="checkbox"/> 1 - 4 <input type="checkbox"/> 20 - 49 <input type="checkbox"/> 5 - 9 <input type="checkbox"/> 50 - 95 <input type="checkbox"/> 10 - 19 <input type="checkbox"/> 100 ke atas										
13 ALAMAT TEMPAT KERJA:										
14 JUMLAH PERJALANAN (BATU) SEHARI										
15 KEGUNAAN KENDERAAN DALAM SEMINGGU										
<input type="checkbox"/> 1 - 2 hari <input type="checkbox"/> 5 - 6 hari <input type="checkbox"/> 3 - 4 hari <input type="checkbox"/> setiap hari										
16 ALASAN/SERAB TIDAK MEMBUAT PERJALANAN										
(akan diisi oleh penemuramah)										

Sila Lihat Sebelah

NOMBOR PERJALANAN	PERJALANAN DALAM MASA 24 JAM YANG LEPAS				21 TUJUAN PERJALANAN	22 JENIS KEMUDAHAN PERTUBUHAN	23 TEMPAT LETAK KENDERAAN	24 JUMLAH PENUMPANG TERMASUK PEMANDU	25 JENIS DAN JUMLAH BARANG YANG DIBAWA (untuk van, lori pertengahan & lori berat)	
	17 TEMPAT FERMULAAN (Nama dan Alamat)	18 MASA BERTOLAK	19 TEMPAT DITUJU (Nama dan Alamat)	20 MASA SAMPAI					1 tiada mustah	1 penuh
6		AM : PM :		AM : PM :	1 tempat kerja 2 tujuan perniagaan 3 ke rumah 4 membeli belah 5 makan/hiburan 6 ke sekolah 7 lawatan sosial 8 lain-lain tujuan (tolong huraikan)	1 perumahan 2 pejabat/perdagangan 3 kilang 4 pelajaran 5 pertanian dan perikanan 6 lain-lain	1 tepi jalan 2 tempat awam 3 persendirian 4 tanah kecoeng 5 tempat letak kereta di rumah	1 kena bayar 2 percuma		
7		AM : PM :		AM : PM :						
8		AM : PM :		AM : PM :						
9		AM : PM :		AM : PM :						
10		AM : PM :		AM : PM :						
11		AM : PM :		AM : PM :						
26 NAMA JALAN YANG SELALU DIGUNAKAN					27 KOMEN/CADANGAN DARIPADA ORANG YANG DITEMURAMAH			28 NAMA PENEMURAMAH:		

Terima kasih!

d) Formulation of other Questionnaires

It is the purpose of the owner interview survey, to catch the movement of all types of vehicles. But there are some exceptions, the movements of which cannot be obtained by using the owner interview survey questionnaire. These are the movements of taxi, factory bus and school bus. These type of vehicles have too many collection/dropping points as compared to usual vehicles.

Therefore, the questionnaire must be adapted to take into account the actual movement of these vehicles.

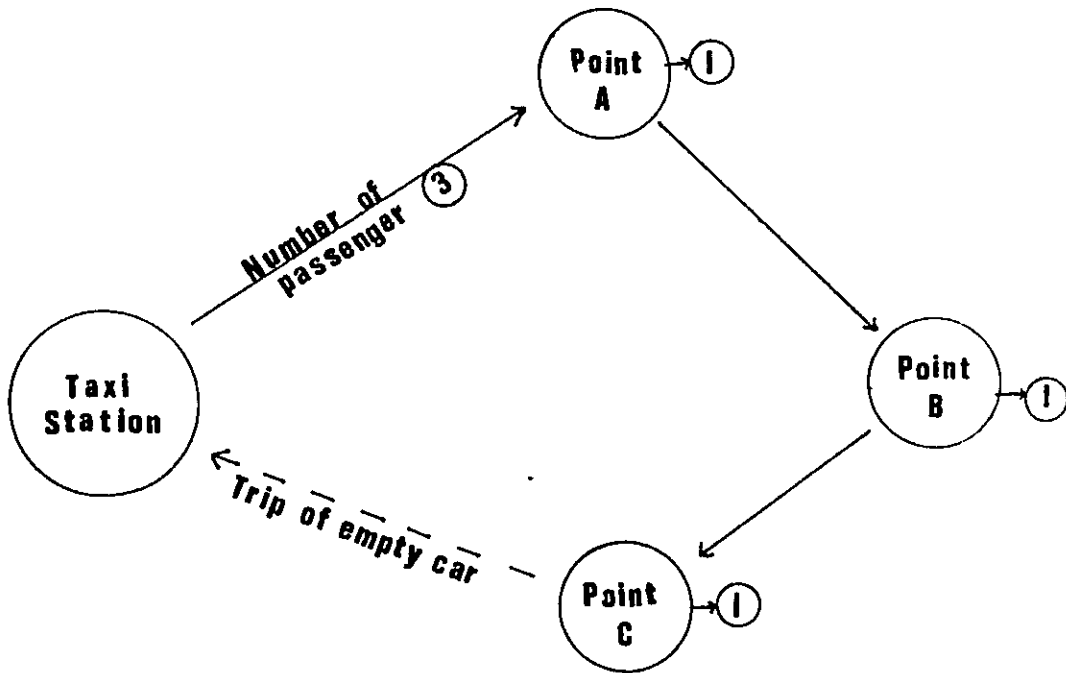
i) The taxi survey questionnaire

The difference between the movement of taxis from other usual vehicles, movement in that taxis have some specific dropping points, that is, the place where the passengers are dropped off. Therefore a column for 'dropping points' were included.

An example of this is as follows:-

FIGURE 16

ILLUSTRATION OF TAXI MOVEMENT



ORIGIN	DESTINATION					NO: OF PASSENGERS
		(1)	(2)	(3)	(4)	
TAXI STATION	POINT C	POINT A	POINT B	-	-	3

The movement that are obtained by this questionnaire are only for passenger trips. The trips of empty cars are to be estimated after the questionnaires are collected.

ii) The Factory-Bus Survey Questionnaire

Usually the movement of the factory bus is from the factory to each worker's residence.

As this movement has many trips, a column for 'collection/dropping area' was made.

iii) The School-Bus Survey Questionnaire

Since each school bus has some particular school as its destination, different from the factory bus, had to be designed.

TAXI INTERVIEW QUESTIONNAIRE				STATE OF PENANG		ZONE NO.	SHEET NO.				
① OWNER'S NAME:		③ DRIVER'S NAME:		⑤ NUMBER OF OCCUPANTS		⑥ DRIVER'S AGE <input type="checkbox"/> Below 19 <input type="checkbox"/> 40 — 49 <input type="checkbox"/> 20 — 29 <input type="checkbox"/> 50 — <input type="checkbox"/> 30 — 39					
② ADDRESS:		④ ADDRESS:				⑦ VEHICLE REGISTERED NO.:					
⑧ USAGE OF VEHICLE PER WEEK <input type="checkbox"/> 1 — 2 days <input type="checkbox"/> all days <input type="checkbox"/> 3 — 4 days <input type="checkbox"/> 5 — 6 days		⑨ REASON FOR NO MOVEMENT:		⑩ DATE OF TRIP:							
⑪ PERIOD OF OWNERSHIP : <input type="checkbox"/> 1 — 4 YRS. <input type="checkbox"/> 5 — 9 YRS. <input type="checkbox"/> 10 — 15 YRS. <input type="checkbox"/> 15 YRS. AND ABOVE		⑫ FORM OF OWNERSHIP : <input type="checkbox"/> INDIVIDUAL <input type="checkbox"/> PRIVATE COMPANY <input type="checkbox"/> COOPERATIVE		⑬ AVERAGE MILEAGE TAKEN PER DAY : <input type="checkbox"/> 10 — 29 MLS. <input type="checkbox"/> 30 — 49 MLS. <input type="checkbox"/> 50 — 69 MLS. <input type="checkbox"/> 70 — 89 MLS. <input type="checkbox"/> 90 — 99 MLS. <input type="checkbox"/> 100 MLS. —		⑭ NO. OF TRIP MADE PER DAY (AVERAGE) .....		⑮ NAME OF TAXI STATION: .....			
⑯ INSTRUCTION: PLEASE TICK ✓ IN THE APPROPRIATE □ GIVEN AND WRITE DOWN NECESSARY INFORMATION AND ALSO INDICATE NOS. IN THE APPROPRIATE COLUMN FOR THE REMAINDER QUESTIONS.											
		①① PERIOD OF OWNERSHIP		①② FORM OF OWNERSHIP		①③ AVERAGE MILEAGE TAKEN PER DAY		①④ NO. OF TRIP MADE PER DAY (AVERAGE)		①⑤ NAME OF TAXI STATION	
		①⑥ USAGE OF VEHICLE PER WEEK		①⑦ REASON FOR NO MOVEMENT		①⑧ DATE OF TRIP					
		①⑧ TRIP NO.		①⑨ ORIGIN (Name and Address)		①⑩ DEPARTURE TIME		①⑪ DESTINATION (Name and Address)		①⑫ ARRIVAL TIME	
		①⑬ DROPPING POINTS		①⑭ NO. OF PASSENGERS							
		1		2		3		4			
		AM : PM :		AM : PM :		AM : PM :		AM : PM :		AM : PM :	
		2		3		4		5		6	
		AM : PM :		AM : PM :		AM : PM :		AM : PM :		AM : PM :	
		3		4		5		6		7	
		AM : PM :		AM : PM :		AM : PM :		AM : PM :		AM : PM :	
		4		5		6		7		8	
		AM : PM :		AM : PM :		AM : PM :		AM : PM :		AM : PM :	
		5		6		7		8		9	
		AM : PM :		AM : PM :		AM : PM :		AM : PM :		AM : PM :	
		6		7		8		9		10	
		AM : PM :		AM : PM :		AM : PM :		AM : PM :		AM : PM :	
		7		8		9		10		11	
		AM : PM :		AM : PM :		AM : PM :		AM : PM :		AM : PM :	

PLEASE TURN OVER

NO. OF TRIP	⑩ ORIGIN (Name & Address)	⑪ DEPARTURE TIME		⑫ DESTINATION (Name & Address)	⑬ ARRIVAL TIME		⑭ DROPPING POINTS				⑮ NO. OF PASSENGERS	
		AM	:		PM	:	1	2	3	4		
8		AM	:		AM	:						
		PM	:		PM	:						
9		AM	:		AM	:						
		PM	:		PM	:						
10		AM	:		AM	:						
		PM	:		PM	:						
11		AM	:		AM	:						
		PM	:		PM	:						
12		AM	:		AM	:						
		PM	:		PM	:						
13		AM	:		AM	:						
		PM	:		PM	:						
14		AM	:		AM	:						
		PM	:		PM	:						
15		AM	:		AM	:						
		PM	:		PM	:						
⑯ NAME OF INTERVIEWER:												

THANK YOU!



FACTORY BUS INTERVIEW QUESTIONNAIRE		STATE OF PENANG		ZONE NO.	SHEET NO.			
1 OWNER'S NAME:		3 DRIVER'S NAME:		5 <input type="checkbox"/> MALE <input type="checkbox"/> FEMALE	6 NO. OF OCCUPANTS:			
2 ADDRESS:		4 ADDRESS:		7 AGE: <input type="checkbox"/> below 19 <input type="checkbox"/> 40-49 <input type="checkbox"/> 20-29 <input type="checkbox"/> 50- <input type="checkbox"/> 30-39	8 VEHICLE REGISTERED NO.:			
		9 USAGE OF VEHICLE PER WEEK: <input type="checkbox"/> 1-2 days <input type="checkbox"/> 3-4 days <input type="checkbox"/> 5-6 days <input type="checkbox"/> everyday		10 REASON FOR NO MOVEMENT:				
11 TYPE OF VEHICLE <input type="checkbox"/> VAN <input type="checkbox"/> BUS <input type="checkbox"/> MINI BUS <input type="checkbox"/> OTHERS  12 PERIOD OF OWNERSHIP : <input type="checkbox"/> 1-2 YRS. <input type="checkbox"/> 3-4 YRS. <input type="checkbox"/> 5-9 YRS. <input type="checkbox"/> 10 YRS. AND ABOVE  13 FORM OF OWNERSHIP : <input type="checkbox"/> INDIVIDUAL <input type="checkbox"/> COMPANY AND CO-OPERATIVE <input type="checkbox"/> OTHERS  14 AVERAGE MILEAGE TAKEN PER DAY : <input type="checkbox"/> 0 ml. - 9 ml. <input type="checkbox"/> 10 ml. - 19 ml. <input type="checkbox"/> 20 ml. - 29 ml. <input type="checkbox"/> 30 ml. - 39 ml. <input type="checkbox"/> 40ml. - 49 ml. <input type="checkbox"/> 50 ml. and above  15 NO. OF TRIPS MADE PER DAY: _____		16 DATE OF TRIP:		NAME OF INTERVIEWER:				
		TRIP NO.	17 ORIGIN (Name & Address)	18 DEPARTURE TIME	19 DESTINATION (Name & Address)	20 ARRIVAL TIME	21 COLLECTION/DROPPING AREA	22 NO. OF PASSENGERS
		1		(AM)		(AM)	1 2 3 4	
				(PM)		(PM)	5 6 7 8	
		2		(AM)		(AM)	1 2 3 4	
	(PM)			(PM)	5 6 7 8			
3		(AM)		(AM)	1 2 3 4			
		(PM)		(PM)	5 6 7 8			
4		(AM)		(AM)	1 2 3 4			
		(PM)		(PM)	5 6 7 8			
<b>INSTRUCTIONS:</b> 1 Please tick appropriately as to the <input type="checkbox"/> given for relevant questions.  2 Indicate nos. and necessary information for the remainder questions.								

Please turn over

TRIP NO.	17 ORIGIN (Name & Address)	18 DEPARTURE TIME		19 DESTINATION (Name & Address)		20 ARRIVAL TIME		21 COLLECTION/DROPPING AREA				22 NO. OF PASSENGERS
		(AM)	(PM)	(AM)	(PM)	(AM)	(PM)	1	2	3	4	
5		(AM)		(AM)		1		2		3		
		(PM)		(PM)		5		6		7		
6		(AM)		(AM)		1		2		3		
		(PM)		(PM)		5		6		7		
7		(AM)		(AM)		1		2		3		
		(PM)		(PM)		5		6		7		
8		(AM)		(AM)		1		2		3		
		(PM)		(PM)		5		6		7		

Thank you!

SCHOOL BUS INTERVIEW QUESTIONNAIRE

STATE OF PENANG

ZONE NO.

SHEET NO.

1 OWNER'S NAME:

3 DRIVER'S NAME:

5 SEX:  MALE  
 FEMALE

6 NO. OF OCCUPANTS:

7 AGE:  BELOW 19  40-49  
 20-29  50-  
 30-39

8 VEHICLE REGISTERED NO.:

2 ADDRESS:

4 ADDRESS:

9 USAGE OF VEHICLE PER WEEK:  1-2 days  5-6 days  
 3-4 days  everyday

10 REASON FOR NO MOVEMENT:

11 TYPE OF VEHICLE:

- CAR
- VAN
- BUS
- MINI BUS
- OTHERS

12 PERIOD OF OWNERSHIP:

- 1-2 YRS.
- 3-4 YRS.
- 5-9 YRS.
- 10 YRS. AND ABOVE

13 FORM OF OWNERSHIP:

- INDIVIDUAL
- COMPANY AND CO-OPERATIVE
- GOVERNMENT/SEMI GOVERNMENT

14 AVERAGE MILEAGE TAKEN PER DAY:

- 0 ml. - 9 ml.
- 10 ml. - 19 ml.
- 20 ml. - 29 ml.
- 30 ml. - 39 ml.
- 40 ml. - 49 ml.
- 50 ml. and above

15 NO. OF TRIPS MADE PER DAY:

INSTRUCTIONS:

- 1 PLEASE TICK  APPROPRIATELY AS TO  GIVEN FOR RELEVANT QUESTIONS.
- 2 INDICATE NOS. AND NECESSARY INFORMATION FOR THE REMAINDER QUESTIONS.

16 DATE OF TRIP:

NAME OF INTERVIEWER:

TRIP NO.	17 ORIGIN (Name & Address)	18 DEPARTURE TIME	19 DESTINATION (Name & Address)	20 ARRIVAL TIME (AM/PM)	21 COLLECTION/DROPPING AREA				22 NO. OF PASSENGERS
		(AM)			1	2	3	4	
		(PM)			5	6	7	8	
1	X				9	10	11	12	
					13	14	15	16	
		(AM)				1	2	3	4
		(PM)				5	6	7	8
2	X				9	10	11	12	
					13	14	15		

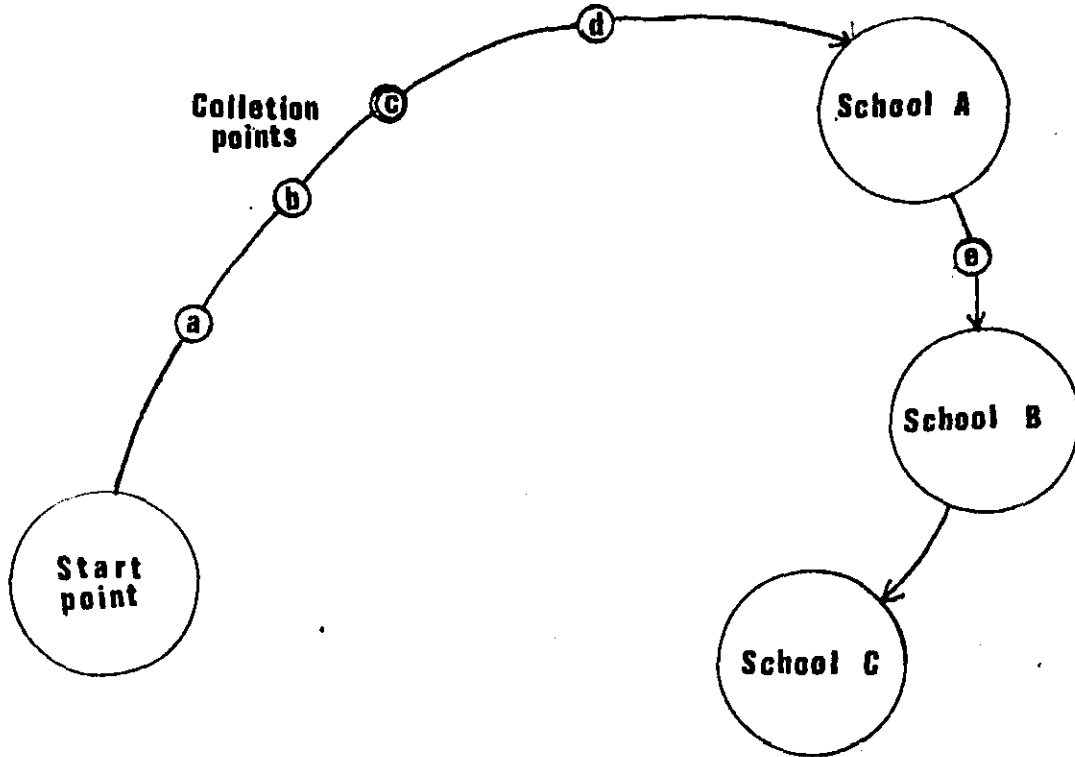
PLEASE TURN OVER

TRIP NO.	17 ORIGIN (Name & Address)	18 DEPARTURE TIME	19 DESTINATION (Name & Address)	20 ARRIVAL TIME (AM/PM)	21 COLLECTION/DROPPING AREA				22 NO. OF PASSENGERS
					1	2	3	4	
3		(AM)	1		1	2	3	4	
		(PM)	2		5	6	7	8	
			3		9	10	11	12	
			4		13	14	15	16	
4		(AM)	1		1	2	3	4	
		(PM)	2		5	6	7	8	
			3		9	10	11	12	
			4		13	14	15	16	

THANK YOU!

An example of this is as follows:-

FIGURE 17. ILLUSTRATION OF SCHOOL BUS MOVEMENT



ORIGIN	DESTINATION	COLLECTION/DROPPING AREA			
STARTING POINT	SCHOOL A	a	b	c	d
	SCHOOL B	e			
	SCHOOL C				

3

The Actual Survey

The duration of the actual interviews was 3 weeks and it involved about 230 interviewers

3-1

Pre Survey and Instructions

a) The Pre Survey

During the actual survey, it was expected that many problems would arise. In anticipation of this, the survey material had to be prepared carefully. For this above mentioned purpose, the pre survey was executed twice.

The first pre survey was carried out in order to improve the questionnaire and second one was carried out in order to standardize the survey method.

i) The first Pre Survey

This survey was carried out to test whether the questionnaire was applicable for local use or not. This pre survey was carried out by 2 assistant supervisors and 10 samples were collected. These samples were collected on the spot in different areas.

On completion of this survey it was found that some questions could not be understood by the respondents. These include "the family size", "the address of establishment" and "size of establishment". Therefore the above mentioned items were changed together with the lay out of the questionnaire.

ii) The Second Pre Survey

In this case, the home interview survey was carried out in the same way as the actual survey would be done according to the 'manual of pre survey'.

It involved 20 clerks who were the interviewers.

"Manual of Pre Survey"

1. Purpose of Pre Survey

Although we have prepared some material for survey, it is not a complete one.

So when the survey is administered, there will be many queries.

For example, "How does one overcome the situation when the owner has sold out his car?"

In anticipation of this, we must standardize the method of

carrying out the survey.

Therefore the pre survey will be carried out and we expect many problems to arise which will be experienced by the clerks.

## 2. Execution of Pre Survey

The pre survey is a form of test and practise of the survey method.

### TRAINING OF INTERVIEWER

The method of interview will be explained by the 'manual of of owner interview'.

And questions will be asked in order to confirm whether the way to fill in the questionnaire is understood.

### HANDING OF MATERIALS

Clerks will receive the following materials.

1. Sampling sheets (for interviewer)
2. Questionnaires.
3. An identification
4. A bag

### EXECUTION OF PRE SURVEY

Interviewers need not come to this office when they have to visit the sampled home. And they may choose their working time, anytime they like. But they must make efforts to interview the owners.

The following schedule is suitable for this survey.

(In the morning)

look for the home.

(confirm the time when the owners' will return)

(In the afternoon)

take a rest.

(In the evening)

conduct interviews.

When the interviews are over, the collected questionnaires must be brought into this office

It is advisable that the interview are carried out according to the following method.

1. Let the owner see your identification and confirm the receipt of the notification letter. If there has been no receipt you must explain the purpose of this study and ask for his co-operation showing a notification letter to the owner.

2. Confirm the registered number of vehicles.

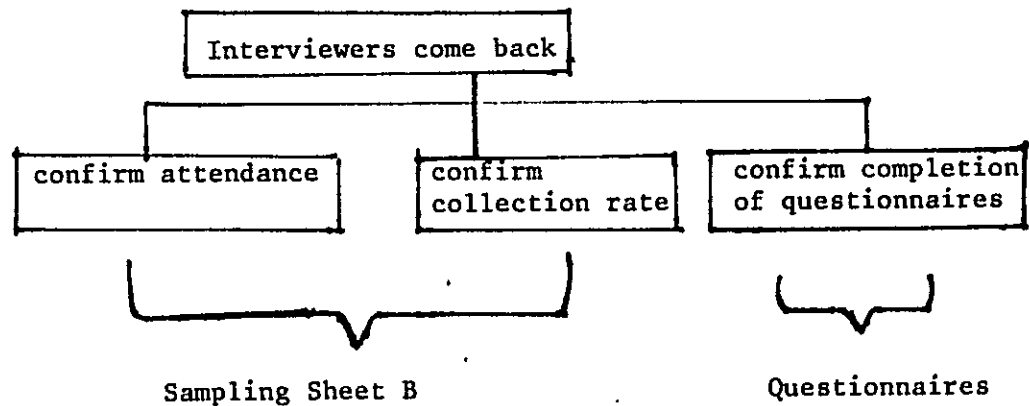
If he has sold his vehicles, you must ask him whether he has another one. And if he has another one, you may change the objective vehicle to the new one.

3. Begin the interview according to the questionnaire.

4. Express your thanks to the interviewee.

#### INSPECTION OF QUESTIONNAIRES

The object of inspection is as follows:-





(Confirmation of Attendance)

Assistant Supervisors must confirm their attendance from the collection rate and results of visiting.

The days which are recorded in "results of visiting" may be acknowledged as days of work.

But when the collection rate is less than 25%, assistant supervisors must ask for details of work done daily.

And if assistant supervisors are satisfied with the explanations given, then their attendance can be confirmed.

But when assistant supervisors, are not satisfied with the explanations given, then inspection must be made on the interviewees attendance by the supervisor.

(Confirmation of Collection rate)

Collection rate is filled in the following table.

As this is also the table which is used for the payment of allowance, this must be carefully done by assistant supervisors.

(Confirmation of Questionnaires)

This job is conducted with the aid of the "manual of inspection (unprepared)"

Assistant supervisors must take care to inspect the following items:-

1. Whether the answers are filled in for the appropriate/ important columns.
2. Whether the trips are continuously written.

If there are any mistakes, assistant supervisors have to fill in the questionnaires or rewrite the questionnaire with help from the interviewer.

(Completion of the response of interviewers )

After the interviewers have finished, they will have many responses. These responses are recorded by assistant supervisors as a guide to the actual survey. Assistant supervisors must make a report regarding the responses obtained from the pre survey.

iii) Results of Pre Survey

The collection rate of the pre survey was very much lower than was expected.

TABLE 12 RESULTS OF PRE SURVEY

Sample size of pre survey	Total number of collected questionnaires	Collection rate
100	39	39%

One problem that was faced was in meeting the owner. Most of the owners had either moved to another area or did not stay at the given address. In other cases, the owner's had registered his vehicle using another address and not his own.

The second problem was that there was a lack of co-operation on the part of the respondent, the Chinese, who were unwilling to be interviewed. This was mainly due to the fact that notification letters sent to them were in Bahasa Malaysia and they therefore understood little or not at all about the general purpose of the survey.

Considering these circumstances, the following had to be done.

First and foremost, the interview method had to be changed and secondly, public requests for cooperation had to be made.

This massive study was given more publicity via the newspapers and the radio. The newspaper cutting below is an example.

# TRANSPORT STUDY

PENANG, Sat. — The State Economic Planning Unit appealed today for full cooperation from the public in their transport study in the urban areas of George Town, Butterworth and Bukit Mertajam.

In a statement today, the Unit explained that the main purpose of the study was to formulate a master plan on the transportation system in the State for the future.

In order to grasp and analyse the present State traffic conditions, interviews will be carried out with

vehicle owners.

The road points and dates for this survey are: Batu Ferringhi and Bayan Lepas (June 7); Seberang Prai Simpang Empat Permatang Buloh, Permatang Kaula and Pekan Darat (June 5); Berapit (June 7); Telok Air Tawar, Sungai Dua and Gua Perahu (June 11); Kubang Semang, Kampung Cherok Tokun Atas and Simpang Ampet Taik (June 12).

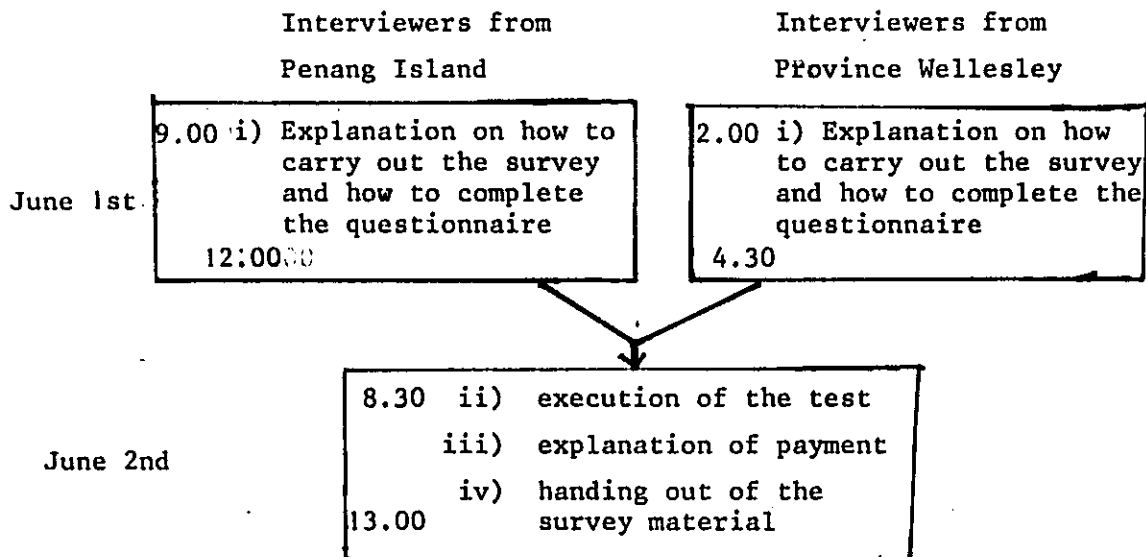
On June 13, the interviews will be carried out with passengers on board two ferries.

## b) Instruction to Interviewers

From June 1st to June 2nd, instructions were given to the interviewers pertaining to their task at the auditorium of Dewan Sri Pinang.

These interviewers were divided into 2 groups and the explanation was given as follows:-

FIGURE 17 PROGRESS OF EXPLANATION



1) Explanation on how to carry out the survey and how to complete the questionnaire

This explanation was conducted according to:-  
"THE GUIDE TO OWNER INTERVIEW SURVEY" and "THE SUPPLEMENT TO INTERVIEW'S MANUAL".

"THE SUPPLEMENT TO INTERVIEW'S MANUAL" was made from the results of the pre survey. Some amendments were made to the "GUIDE TO OWNER INTERVIEW SURVEY".

FIGURE 18 IMPRESSION ABOUT THE MANUAL

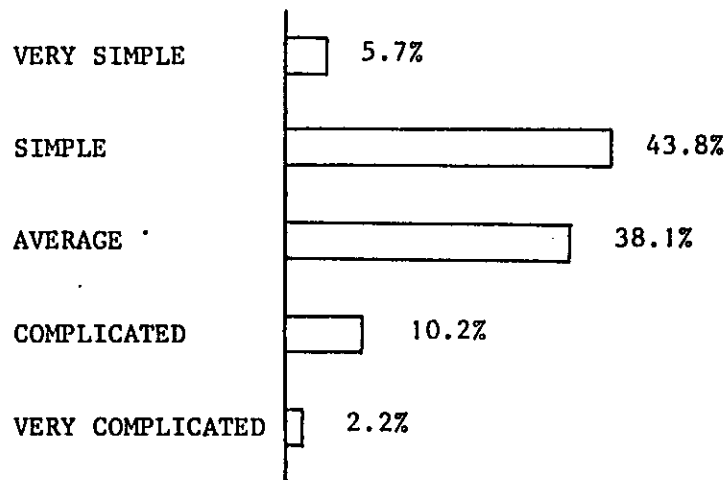
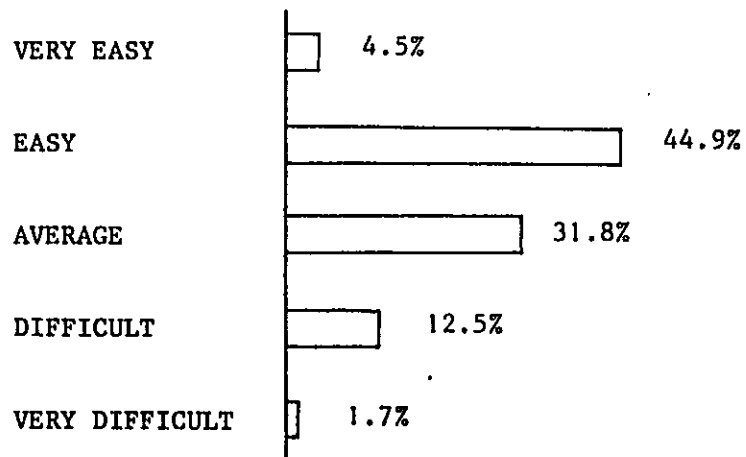


FIGURE 19 IMPRESSION ABOUT THE EXPLANATION



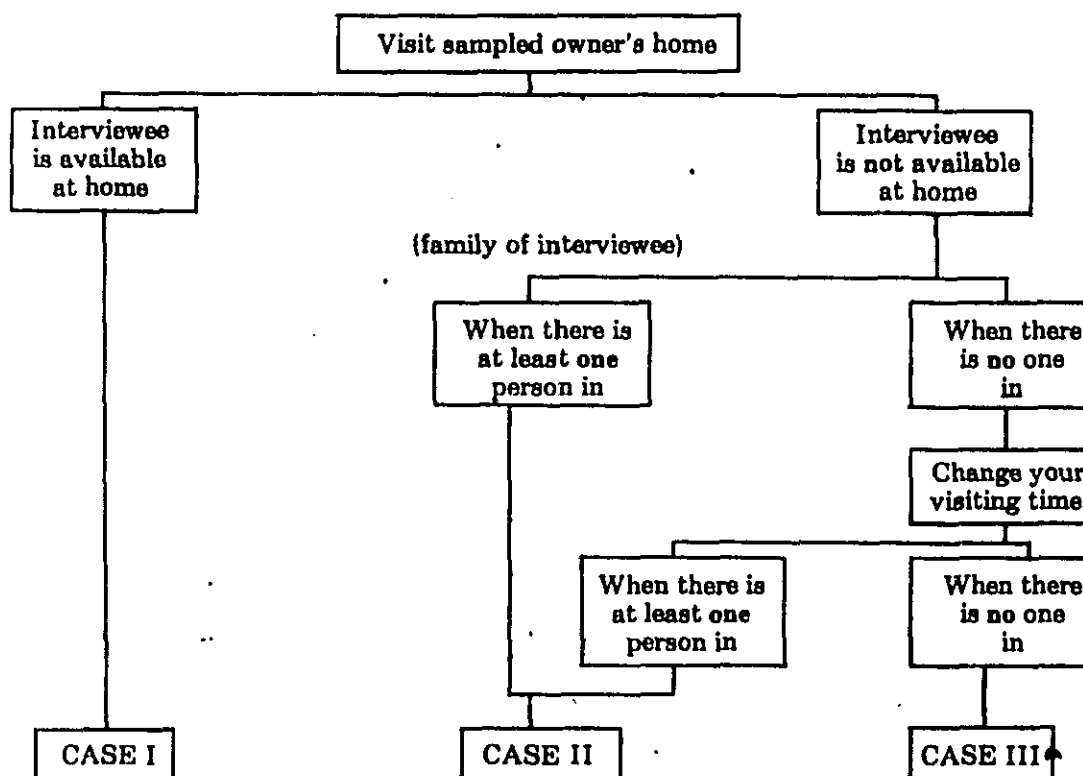
### PURPOSE OF THE STUDY

The purpose of this study is to examine the origin and destination of road-users in Penang Island and Province Wellesley. This survey will provide various information on the ownership of vehicles, relevant details of the owners interviewed, as well as the characteristics of traffic operation and traffic movement in the Study Area. From this survey, a Masterplan will be drawn for the transport system in the State of Penang.

### HOW TO INTERVIEW

For private individual ownership

In the course of your work, when you call on the sampled owner's home, you will be faced with various situations. In order to know what to do when different situations arise, the following cases are given. You may follow them when the situation demands it.



Case I, Case II and Case III will be explained separately.

#### CASE I: When the interviewee is available at home

This survey involves the routine trips made by the owners on the average. As such, only Monday, Tuesday, Wednesday and Thursdays shall be the days to be taken into consideration.

##### A: In the case when the interviewer visits on Monday.

If you visit the owner before he finished making the trips, then you must explain the purpose of this survey to him and how to complete the questionnaire correctly. Leave the questionnaire for him to complete filling in the trips he made that day (Monday). Then confirm when you can come again to collect the questionnaire. You must go at an appointed time to collect it.

However, if you visit him in the evening when he has finished making his trips, then you can interview him immediately for the trips made that day (Monday).

**B:** In the case when the interviewer visits on Tuesday, Wednesday, Thursday and Friday.

You must interview the previous day's movement of the sampled vehicle. But if the interviewee does not remember his movement on the previous day, you must follow the procedure as explained in A above.

**CASE II: When there is at least one person available**

You must find out from this person when you can meet the owner. When you have done that, you must re-visit the house and interview the owner in the same manner as described in case I.

But if on your second visit, you are still unable to meet the owner, you may leave the questionnaire with a member of his family (exclude children and old men). You must explain to him/her the purpose of this survey and the correct method of filling in. Then confirm the exact day when you can collect the questionnaire.

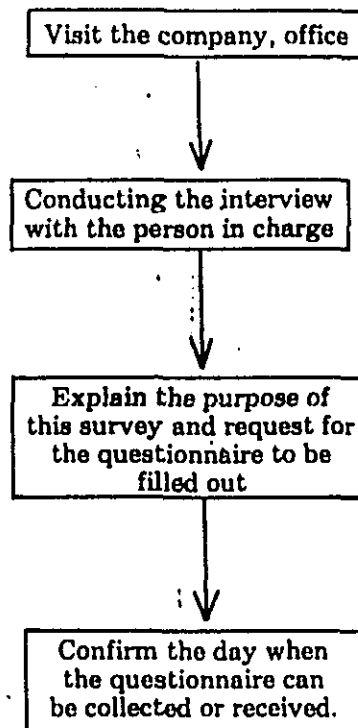
**CASE III: When there is no one available**

This case is a special exception.

You must make efforts to meet the interviewee. But if you call on the sampled owner's home for more than 3 times and there is still no persons available, then you can leave the questionnaire in the house with a written note, requesting for the owner's cooperation. Then come and collect it another day.

**OWNERSHIP OF COMPANY OR GOVERNMENT BODIES.**

In the case when the form of holding is a company or a government body, the following procedure should be followed:—



## INSTRUCTIONS TO OWNER-INTERVIEW SURVEY

### I PROCEDURE OF SURVEY

The random samples of vehicles from different categories are selected from the registration cards taken from RIMV, Penang. The interviewer will visit the owner of the vehicle, the name and address of which is found in the Questionnaire Sheet, and interview him according to the instructions given. The interviewer will go and find the owner of the selected vehicle following the name and address according to the instructions described in the Questionnaire Sheet.

In the case where the vehicle is driven by its owner, the interviewer should continue to ask him/her regarding the trips made by him/her and the rest of the questions. If it is driven by a different person, the information regarding trips made for the last 24 hours should be obtained by questioning the driver of the vehicle concerned. If the driver interviewed has not completed his/her trips for the day, the information on the previous days trip is taken.

It is also noted that in order to avoid errors in recording, answers should be recorded immediately as they are given.

There are two (2) categories of owner — interviews to be carried out:

- (i) the vehicles which belong to individual owners (private ownership)
- and (ii) the vehicles which are the property of Government/semi Government), co-operative Societies, Companies and other Registered Bodies.

### II (i) QUESTIONS FOR INDIVIDUAL OWNER/DRIVER.

The interview should commence with an introductory greeting:

"Good Morning/Afternoon Sir (or Madam). We are carrying out a traffic survey. Would you please answer some questions about yourself and the usage of your vehicle."

The interviewer should inquire and record the following:

- (1) Zone Number, Vehicle registered number, Owner's name and address columns (1) and (2) and the name of the interviewer should be filled before starting the interview. This will enable the interviewer to go and find the owner of the selected vehicle by following the name and address as recorded in the Questionnaire sheet.
- (2) Column [3] [Form of ownership]  
Ask the owner what type of ownership the vehicle was registered under and tick the appropriate space provided.
- (3) Column [4] [Sex]  
Indicate ownership by male or female.
- (4) Column [5] [Age of owner]  
Inquire exact age of owner and tick the appropriate range of age given.
- (5) [Column [6] [Number of occupants]  
Ask owner to quote the number of persons (including himself) occupying the house.
- (6) Column [7] [Occupation]  
Ask the owner his/her occupation and tick the appropriate range as in column

- (7) **Column [8] [Type of Vehicle]**  
Tick the corresponding type of vehicle used into the column (8)
- (8) **Column [9] [Loading Capacity]**  
In the case of Van/Medium Lorry/Heavy Lorry ask the owner the amount commodities (in tons) which can be legally accommodated in the vehicle. If the vehicle is used for transporting gasoline or petroleum ask him the capacity in gallons.
- (9) **Column [10] [Period of ownership]**  
Ask the owner the number of years the vehicle has been in his ownership and fill into column (10)
- (10) **Column [11] [Type of Establishment.]**  
Ask the owner what type of establishment he/she is engaged in. Then tick appropriately the type of establishment into column (11).
- (11) **Column [12] [Size of Employment]**  
Ask the owner where is his/her working place and then enter the full address into the column (12).
- (12) **Column [13] [Address of working place]**  
Ask the owner the size of employment of his/her working place, then tick appropriately the size of employment into the column (13).
- (13) **Column [14] [Average mileage taken per day]**  
Ask the owner to estimate the average number of miles he would travel in a day.
- (14) **Column [15] [Usage of Vehicle per week]**  
Ask the owner the number of days he uses the vehicle in a week.
- (15) **Column [16] [Reason of no movement]**  
In the case where no movement is made when interviewed, ask the owner for the reason and enter the information given into column (16).
- (16) **Column [17] [Origin of the trip]**  
Ask the owner/driver the origin of his first trip for that day i.e. the place where he started his journey. Record the name and address of the place. If owner is unsure of exact name of the place, identify it with the nearest town or provide the map for him to indicate the area.
- (17) **Column [18] [Departure Time]**  
Obtain the exact time at which he started the journey. If owner is not sure, ask him for the approximate hour. Specify the time as a.m. or p.m.
- (18) **Column [19] [Destination of the Trip.]**  
Ask the owner/driver where he/she finally closed his/her journey for the first trip and put the name of the place into column (19). The same attention given in column (17) should also be given here.
- (19) **Column [20] [Arrival Time]**  
Ask the owner/driver the exact time he/she arrived at the destination for each trip and enter the time into column (20), in either a.m. or p.m.
- (20) **Column [21] [Trip Purpose]**  
Ask the owner/driver the purpose of the trip and mark the corresponding number according to the categories listed in the Questionnaire Sheet. If there are many passengers in the vehicle, write the answers (in numbers) for each of the trips made into the empty column below column (21)



(21) **Column [22] [Nature of establishment]**

Ask the owner/driver the nature of the establishment for which the trip was made. Then insert the number that corresponds to the categories listed in column (22). If there are more than one passenger in the vehicle then enter the answer for each trip into the columns provided. (i.e. in case where there are more than one destination).

(22) **Column [23] [Place of Parking]**

Ask the owner/driver where he/she usually park his/her vehicle for the trip made. Then tick the corresponding number according to the categories listed in the questionnaire. Also ask him/her whether he/she has to pay parking fees, then put the corresponding number according to the categories into the column (23).

(23) **Column [24] [Number of Passengers]**

Ask the owner/driver the number of passengers who boarded his/her vehicle for each trip he/she made. Put the figure to the column (24) If he/she is not sure of the exact numbers ask him/her to give the approximate number. In the case where there are no other passengers, put 1 (one) into the corresponding column (i.e. to include himself).

(24) **Column [25] [Type and amount of commodity carried]**

Ask the owner/driver what kind of commodities are carried each trip and put the corresponding number according to the categories listed in the column (25). And in the case where the vehicle is not carrying any commodity enter number 1 (one) into the column (i.e. to indicate empty). Also ask him/her the approximate amount of commodities, carried and put approximately into the next column. (To facilitate an answer quote the categories listed i.e. full, ¾ full ... during the interview).

2nd, 3rd and the rest of trips made.

(25) The same attention with regard to the rest of the trips made for last 24 hours should be paid as of the first trip and enter them into the appropriate columns in the Questionnaire sheet.

(26) **Column [26] [Name of roads frequently taken]**

Ask the owner/driver the names of the main roads he/she normally uses in his/her daily trips and enter the names of the roads into the column (26).

(27) **Column [27] [Comment/recomendation from interview]**

Ask the owner/driver to give any comments or recomendations regarding his/her journey, travelling risks or whatever related problems faced by him/her when using the roads. then write down the information given into the columns (27).

(28) **Termination of the interview.**

(i) The interviewer should terminate each interview by saying:

"That's the end of the interview."

"Thank you for your kind co-operation."

**Remarks:**

- a. Questions four (4) to eight (8) are only applicable for individual ownership vehicles. For other forms of ownership this information is not required.
- b. Question nine (9) is applicable to van/medium lorry and heavy lorry only.
- c. No information are required regarding details of working place from either student, housewife or the unemployed.

- d. Information on the trips made for last 24 hours should be taken from the driver of the vehicle if the vehicle is always driven by another person other than the owner.

### III QUESTIONS FOR VEHICLES UNDER THE PROPERTY OF GOVERNMENT/ SEMI GOVERNMENT — COMPANIES AND OTHER BODIES.

- (1) For vehicle under the property of either one of the above mentioned bodies, write down the name and address of the owner concerned into the column (1) and (2). Zone number, vehicle registered number and name of interviewer should also be filled by the interviewer before starting the interview.
- (2) No information are required for the columns (4), (5), (6), (7) and (13).
- (3) The information regarding the trips made for the last 24 hours will be gathered by questioning the company Manager or the Personnel in charge.
- (4) The information regarding the trips made for the last 24 hours will be obtained by questioning the driver or the personnel in charge and all information are then recorded in the Questionnaire Sheet according to the instructions described.
- (5) The process of interviewing and recording the information should be carried out in the same procedure as described for the individual-owner interview in paragraph 3.0 (i) above.

## "SUPPLEMENT TO INTERVIEWS' MANUAL"

There are a few additions and modifications to be made on the interviewers' manual. The following are important details to be taken into consideration.

### I Defination of Completed Questionnaire

A Completed Questionnaire may be defined in terms of 2 types:-

- a) No movement type: This is the Questionnaire that is filled in from column (1) to column (15), and where the next column (16) is filled in with a pertinent reason for no movement made that day. Examples of pertinent reasons are:-

- ill
- on leave
- damaged
- under repair
- others

- b) Movement Type: For this type, all questions must be answered in the Questionnaire. The important questions are "Origine" (17) "Destination (19) and "Purpose" (21).

If the above answer are missing or incompleated, the collected Questionnaire are of no use to this survey. But it is hoped that all the collected Questionnaires are completed at least up to the following columns:-

Columns	(1)	(2)	(3)	
	(7)	(8)	(11)	(15)
	(17)	(19)	(21)	(23)

### II The Questionnaire

The following are clarifications on some of the Questionnaire items in the columns:-

Column (03) - Form of Ownership

If the vehicle is registered under the manager's name, and he uses it for both company and individual use, we classify as under "individual".

Column (07) - Occupation

Owners may be involved in more than one type of work. Examples: sales and service work. In such a case, consider only his main work or business.

Column (09) - Loading Capacity

This does not refer to the capacity of the whole vehicle but only the maximum weight of goods than can be loaded into the vehicle.

If the owner is unsure of the capacity in tons/gallons, ask him to give it in another form of measurement. It can be converted later.

Column (11) - Types of Establishment

The categories "others" here include those who are involved in hawking, fishing, farming and those small concerns with no registered trading name.

Column 17-19 - Origin And Destination

- i) When the complete Questionnaires are collected back, the origins and destinations will be converted into zone codes by using maps and zone code tables. Therefore, the origins and destinations written in the columns must be followed by detailed addresses of the places. If the owner is not sure of the address, then ask him further for nearby landmarks, famous buildings or nearest identifiable roads.  
(e.g. Cathay Cinema, Merlin Hotel, U.S.M.)
- ii) If the owner has made many trips but cannot remember the exact order of the trips, draw a rough sketch of all the origins and destinations first. Then average them and write them into the Questionnaire sheet. This will avoid a confusion of the sequence of the types taken.
- iii) The interviewer should be careful that the owner understands about the "origin". Here we are referring to the origin of the very first movement of the vehicle made that day and not just for the purpose of work alone, that is, if the vehicle is company-owned. The interviewer may think that since the vehicle is company owned, they record down the trips made from the place on work and neglect trips that may have been made before that i.e. from his home to workplace. In actual fact, he should consider the trip he made from his home to the workplace.

Column (21) - Trip Purpose

Here "going to work" should be understood as "going to place of work/employment".

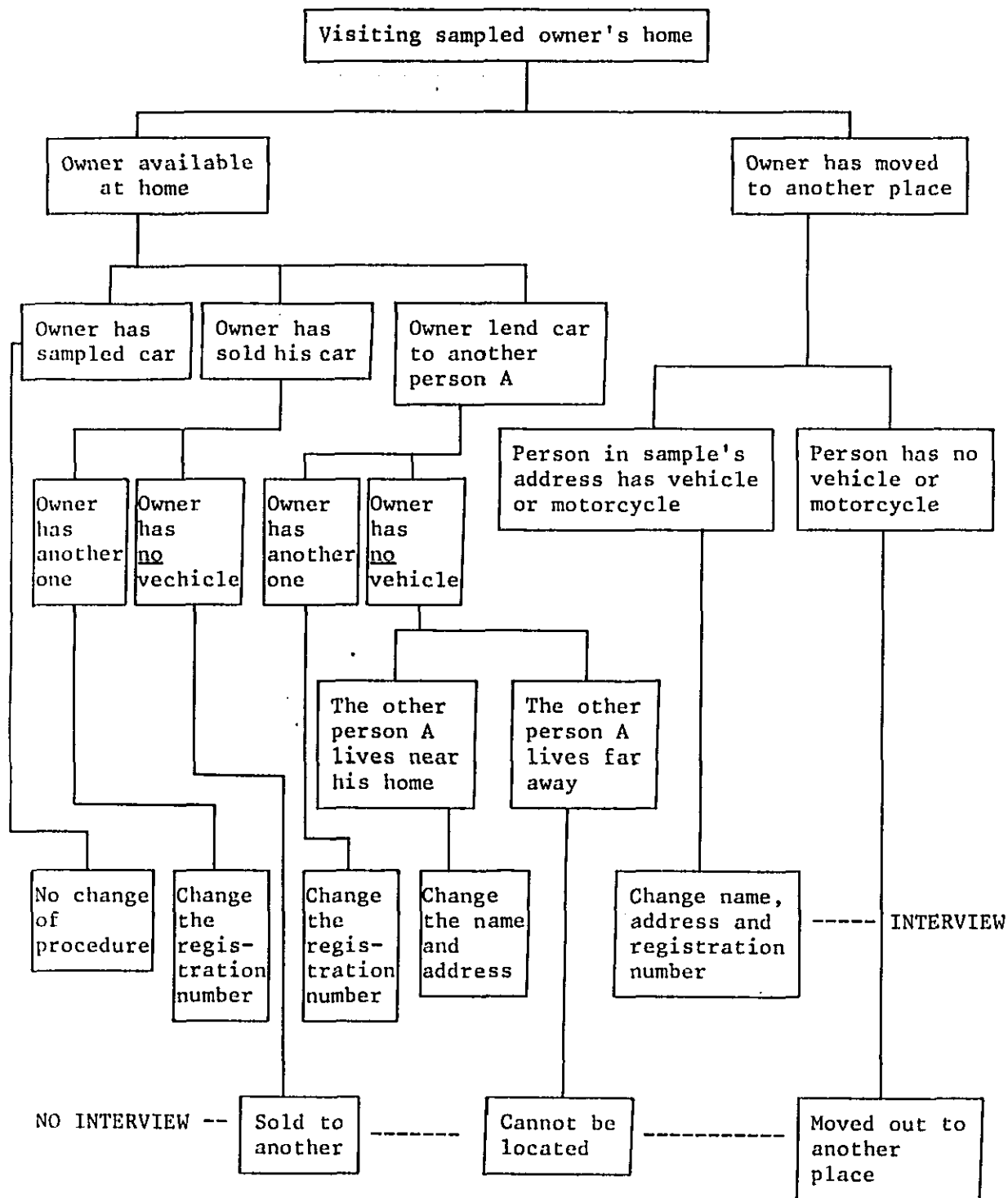
III The Interview

The interviewer should take note of additions in the following items during their interview visits:-

(a) Owners' name, address and registered number

When the interviewer visit the sampled owners' home, he will be faced with various structions. As a guide, the following diagram ill strates what he should do in each situation.

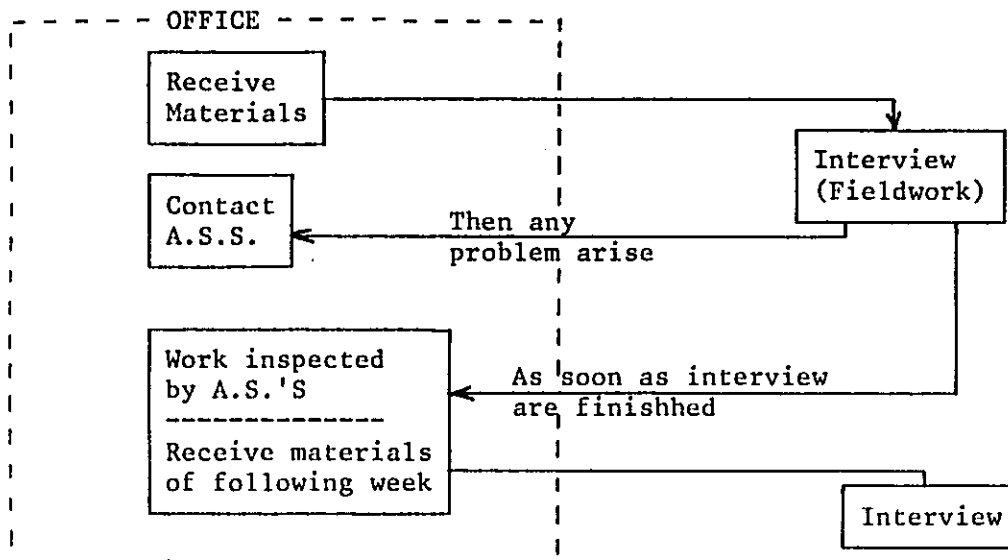
In the case where the interviewer visits a home but finds out that the owner can be interviewed only at his office, then he can get that address and arrange for the interview to be done by a clerk or an Assistant Supervisor who stay near the address of the office.



(If possible, write down the address he moved to)

## Contact with Assistant Supervisors

Interviewers are expected to follow the schedule below



Interviewers must report back to the office to their respective A.S.'s as soon as they have completed their interviews.

The office is opened during the following times:-

MONDAY --- THURSDAY	8.30 a.m. - 1.00 p.m.
	2.00 p.m. - 4.30 p.m.
FRIDAY	8.30 a.m. - 12.00 p.m.
	2.00 p.m. - 4.30 p.m.
SATURDAY	8.30 a.m. - 1.00 p.m.

Interviewers are also expected to report by Monday mornings regardless of whether they finished or not.

### V. Sample Sheet

- i) "Telephone number" (on card B - for Interview)  
Interview should try to fill in the telephone numbers of the owner wherever possible.
- ii) Memo (on card B)  
This space may be used for the following particulars:-
  - comments on sampled vehicle (e.g. accident or sold)
  - address of new owner - when sampled owner has moved
  - comments of owner
  - address of owner's office
  - etc.

ii) Execution of the test

Although the explanation was conducted, not all of the interviewers could understand the method of survey. In order to ensure that the interviewers comprehended the instructions and explanation clearly, the test was executed.

The questions and answers were as follows:-

Question 1

Mr. Wong Tsien Yee is the personnel officer of an electronics company, Malaysian Semi-Conductors, Sdn. Bhd., Bayan Lepas.

The following is his previous day's trip in his car, Registration No: PAB 7472. He lives at 51, Minden Heights 2, Glugor.

"I sat off for work at 7.30 a.m. Before that, I sent my wife to the Jelutong Market at around 7.00 a.m. and arrived there in 15 minutes. After dropping her at the market, I proceeded to the Penang Free School via Free School Road to send my son. This took me another 15 minutes. From there, I headed towards my office at Bayan Lepas. It normally takes me half an hour to reach my office.

At 10.00 a.m. I left my office and arrived at the SOCSO Office in Bank Negara building at Light Street at 10.40 a.m. After discussing some legal problems, I walked to the City Bank at 11.40 a.m. which is situated 2 blocks away along the same street. I left the bank at 12.00 noon and reached my office at 12.50 p.m.

I went to the factory canteen with my colleague at 1.00 p.m. for lunch and that took half an hour. At 2.00 p.m. I went over to see the factory manager whose office is in the same site. At 2.30 p.m. I walked over to see the store manager over a complaint of thefts. I was with him from 2.45 p.m. to 3.30 p.m. As a personnel manager I have to attend to all these matters.

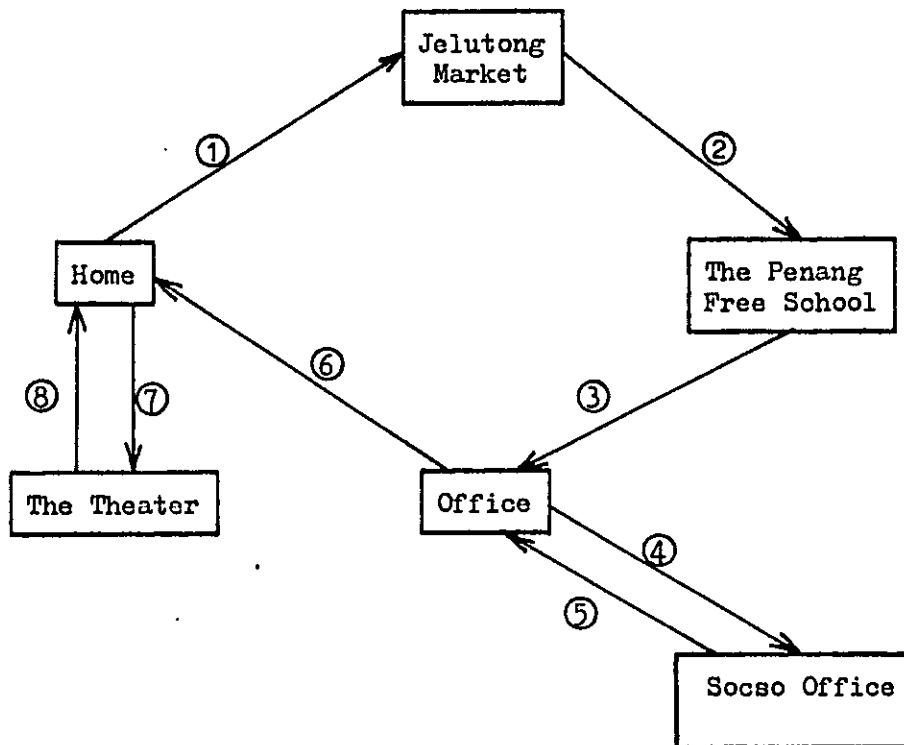
Office work finished at 5.00 p.m. and I arrived home at approximately 5.40 p.m. Last night, I went for a show with my wife and son at 8.25 p.m. and reached the theatre at 8.50 p.m. The show ended at 11.30 p.m. and we arrived home at 12.00 p.m.



The correct answers about the movement of trips are as follows:-

FIGURE 20

ANSWER



This question considers the following:-

- 1) Disjointed trip which is one that has a dropping - off point or a collection point which has to be counted as 1 trip.
- 2) The trips which are done within the same site, that is in an internally closed area, should not be counted as many trips.

Question 2

I am Mr. Hew Wee Tseng and I stay at 59, Brown Garden, Penang. I am working as a delivery-van-driver. The following is a description of my previous day's trip.

Date: 31-5-1979.

I normally get a ride from my friend in his car at 7.50 a.m. which brings me to the shop where I work at 12-B, Penang Road at about 8.15 a.m. From here I take my van and leave immediately (8.20 a.m.) with an assistant for a chicken-farm, Happy Valley, where I collect eggs to be delivered to various houses. I arrive there at about 8.45 a.m. and wait for the eggs to be loaded in my van. (the loading capacity of my van is 18 cwt.) I drive off at 9.15 a.m. to Island Glades, Green Lane and arrive there at about 9.35 a.m. Here I go to 50 houses where orders have been made for eggs. I spend about 4 minutes at each house. I usually finish delivering at Island Glades at about 11.30 a.m. and then I head for Island Park which is 15 minutes ride from Island Glades. Here again, I make deliveries to about 40 houses. I finish at about 1.00 p.m. and arrive at my shop at 1.30 p.m.

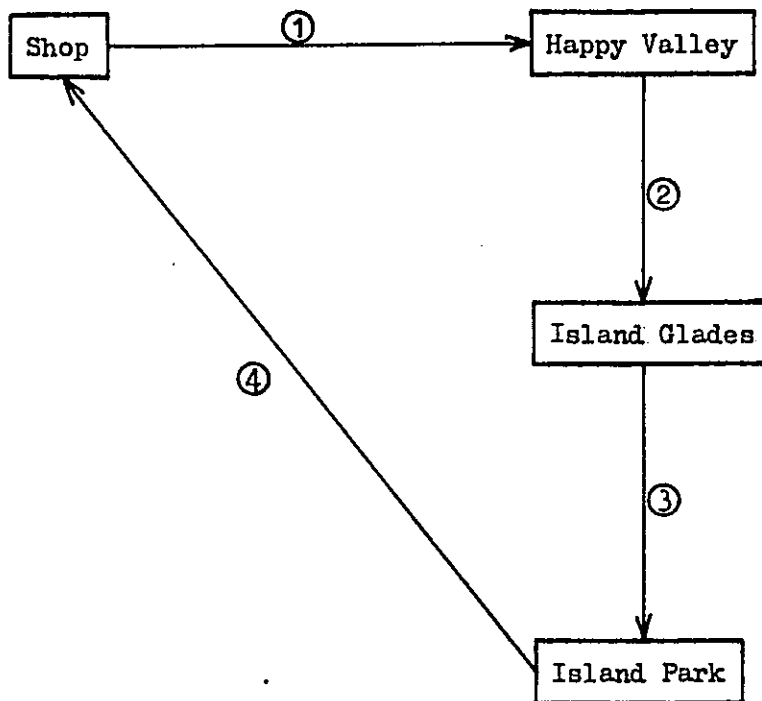
Yesterday at 1.40 p.m. I also went out for lunch with a friend in his car. I arrive at the restaurant at about 1.45 p.m. At 2.10 p.m. I went for a joy-ride for about 10 minutes in my friend car. I returned to the shop at 2.30 p.m. and attended to the shop the whole afternoon.

At 5.00 p.m. my friend came to fetch me home. I reached home at 5.40 p.m.

I went out in the evening by bus to town at 7.40 p.m. I stayed in town from 8.30 p.m. to 11.00 p.m. and returned home by 11.30 p.m.

The answer to this question of trip numbers is 4

FIGURE 21      ANSWER



This question considers the following:-

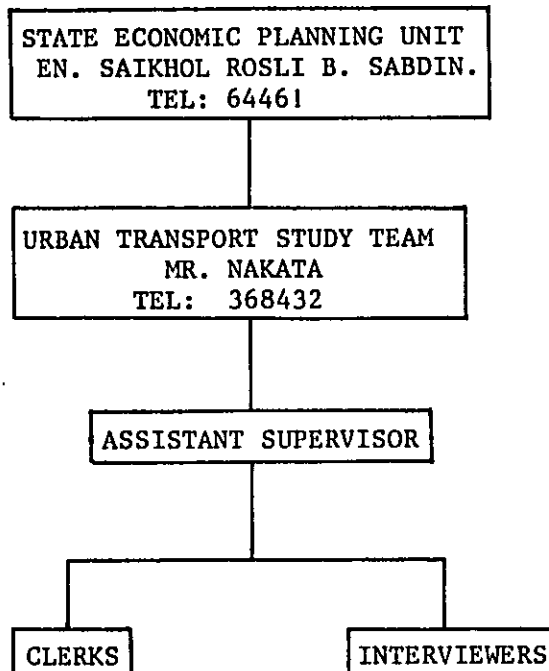
- 1) The object of this survey is the movement of the sampled vehicle and not the movement of the owners. In this case, only the movement of the van has to be interviewed for.
  
- 2) A trip which has many short trips as in this case of this question where there is a distribution of goods may be omitted.

The completed questionnaires which were filled by trained interviewers were checked and (there were any mistakes, the errors were corrected by their assistant supervisors. The results of the test was good.

iii) Organization and Payment

The organization and the payment were explained as in the manual:-

1. ORGANIZATION.



In any case of any problem, please contact your assistant supervisor (A.S.)

2. PURPOSE

This study is carried out so that a master plan can be drawn up for the traffic system in the State of Penang. The results of the study will not be used for any other purpose.

From 4th June 1979 to 23rd June 1979, various kinds of traffic surveys (eg. roadside interviews and ferry interviews) will be held for this purpose. Even if the interviewee has already been interviewed in any of these surveys, this owner-interview survey must still be done.

3. WORK - SCHEDULE

Interviewers need not come to the office when they have to visit the sampled home. And they may choose their working time, anytime they like. But they must make efforts to interview the owners. The following schedule is suitable for this survey.

(in the morning) look for the home (confirm the time when the owners will return)

(in the afternoon) take a test

(in the evening) conduct interviews

When all the interviews are over, the collected questionnaires must be brought into this office.

4. PAYMENT

The basic payment of \$11.00 per day as stated in the appointment letter is no longer valid and is replaced by the following scheme.

Payment will be paid according to the results of the collection of questionnaires made. If you collect one completed questionnaire, you will be paid \$3.50 which is the constant pay for each completed questionnaire.

Payment for the transport allowance and the overtime allowance varies and is according to the following table.

ZONE CODE	ADDITIONAL PAYMENT PER COLLECTED QUESTIONNAIRE
1 (except 143)	\$1.00
143, 211 - 211, 311 - 334 411- 412, 511- 514 732- 734	\$1.20
413, 6, 8, 521 - 524 711 - 713, 721 - 722 741 - 742	\$1.40

As long as consistent work is done according to instruction given it is expected that an average of 17 questionnaires per week can be completed.

5. GENERAL

This survey will last for 3 weeks (from 4th June to 23rd June). If interviewers wish to leave the ends of the survey, they must get a replacement, if possible.


iv) Handing the Material

All the material which was handed to the interviewers were as follows:-

- 1) Sampling sheets (for interviewer)
- 2) Questionnaires
- 3) 'The Guide to the Owner Interview Survey'
- 4) 'The Supplement to the interviews' manual'
- 5) Identification
- 6) Request notes

Identification are as follows:-

FIGURE 22 IDENTIFICATION

 **KAJIAN LALULINTAS**  
**UNIT PERANCANG EKONOMI No. 214**  
**NEGERI, PULAU PINANG.**  
**DAN**  
**JAPANESE GOVERNMENT MISSION**

Name: .....

Jawatan: .....

Kad Pengenalan No. ....

.....  
Tandatangan Pemegang

1. Pas ini ialah surat rasmi yang dikeluarkan untuk digunakan oleh mereka dalam menjalankan tugas rasmi dalam kajian Pengangkutan P. Pinang.
2. Pas ini hendaklah dipakai pada setiap masa semasa menjalankan tugas.
3. Pas ini hendaklah diserahkan balik kepada pejabat yang mengeluarkan apabila orang yang memegangnya telah berhenti atau bertukar dari jawatan yang menyebabkan pas ini dikeluarkan.
4. Kehilangan pas ini mestilah dimaklumkan dengan segera kepada pejabat yang mengeluarkannya.
5. Siapa yang menjumpai pas ini hendaklah menyerahkan pas ini ke Bahagian Polis atau kepada Pegawai Polis. Pegawai Polis dikehendaki mengembalikan pas ini kepada Setiausaha kerajaan Negeri Pulau Pinang.

.....  
**SAIKHOL ROSLI SABDIN**  
bp Penolong Pengarah YPEN  
Pulau Pinang

The request notes are as follows:-

FIGURE 23 THE REQUEST NOTE

YUNIT PERANCANG EKONOMI NEGERI  
PEJABAT SETIAUSAHA KERAJAAN,  
BANGUNAN TUANKU SYED PUTRA,  
PETI SURAT 3006  
PULAU PINANG.

---

(Date)

Dear

With reference to the notification sent to you earlier, I have been sent to interview you and regret to find that you have not been available. As such, it is kindly requested of you to complete the questionnaire provided by  when I will call again to  
date      time  
collect it.

Thank you for your cooperation.

---

(Interviewer)

c) The job of Assistant Supervisors

The job specifications of the Assistant Supervisors.

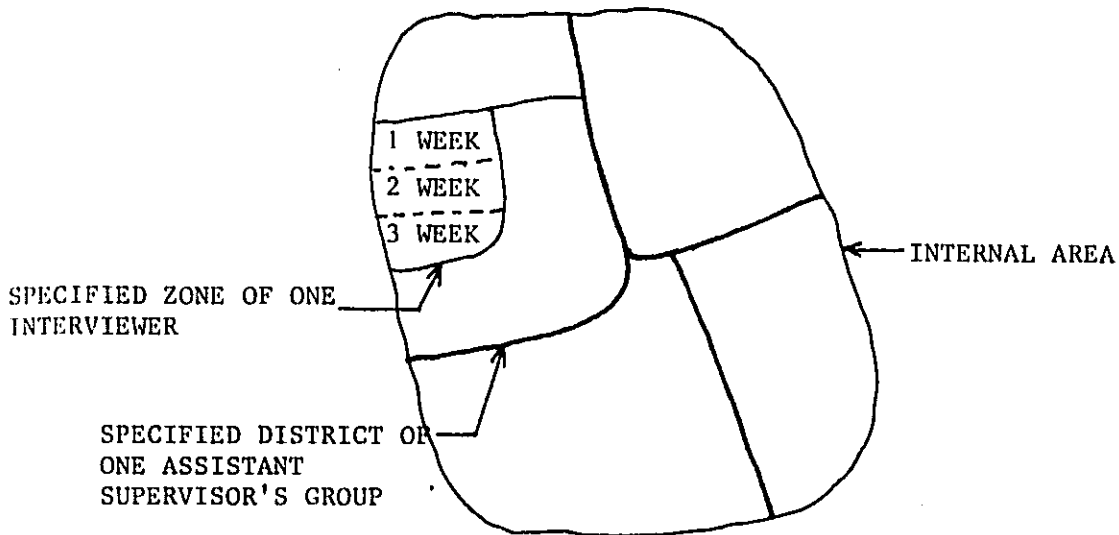
In this survey, the role of the assistant supervisors is very important. The planning of the survey was done with them in mind.

Although the assistant supervisors were given many and varied job functions. They were able to perform them well.

Their job functions are as follows:-

The Internal Area is divided into 4 districts

FIGURE 24 EXAMPLE OF SPECIFIED ZONE



( 1,500 samples divided by 230 interviewers is about 65 samples.)  
( So one interviewer should carry out about 22 samples per week.)

- 1) The allocation of assistant supervisor's specified districts.
- 2) Choose the clerks and form the groups.
- 3) Compared and addressed sampling sheets are divided into zones and vehicles types (vehicles and motorcycles). When doing this, the government-owned vehicles and companies-owned vehicles are kept separately from the rest.

This is because these interviews are very difficult to be carried out by the interviewers, so this survey will be carried out by a special group of interviewers.



17th May

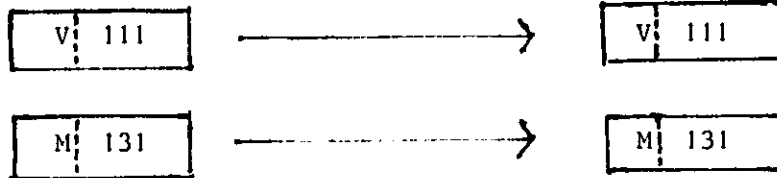
Notifications are sent to sampled owners home.

Some of them are returned

- 4) Exchange the returned sampling sheets with the reserved sampling sheets according to zone code and type of car.

(Returned sheets)

(Reserved sheets)



Then address the new notifications

- 5) Confirmation on how to carry out the owner-interview survey.

- a) Owner interview questionnaire
- b) Example of questionnaire
- c) Definition table of questionnaire items
- d) Definition of 'Trip'
- e) How to interview
- f) Manual of owner-interview

- 6) Execution of pre-survey

When the owner-interview survey is administered, there will be many queries about the survey from the interviewers. In anticipation of this, we must prepare the more detailed survey manual and standardize the way to carry out the survey. Therefore, the pre-survey is carried out.

At first assistant supervisors explain to clerks how to carry out the owner interview survey and then the clerks carry out the pre-survey. One clerk is to interview only 2 samples that belong to zone code 111.

After that we amend the manual.

- 7) Choose the interviewers according to their address race and possession of motorcycles.

It will be easier for an interviewer with a motorcycle to visit rural areas.

- 8) Divide the sampling sheets among the interviewers according to zone code and owner's address.

This job is very important. The area of the interviewer must be as narrow as possible in order to obtain a high collection rate.

- 9) Sampling sheets of each interviewer are spread over 3 weeks with equal portion in each week.

First week	22	Third week	22
Second week	21	Total	65

- 10) Preparation of training.

With reference to the results of the pre-survey, we must decide on the correct way to train the interviewers.

- 11) Training of interviewers.

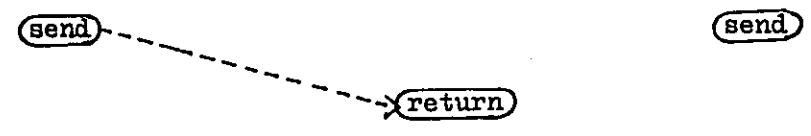
- 12) Preparation of survey material

- a) sampling sheets.
- b) questionnaire
- c) example
- d) manual for interviewer.
- e) a bag.

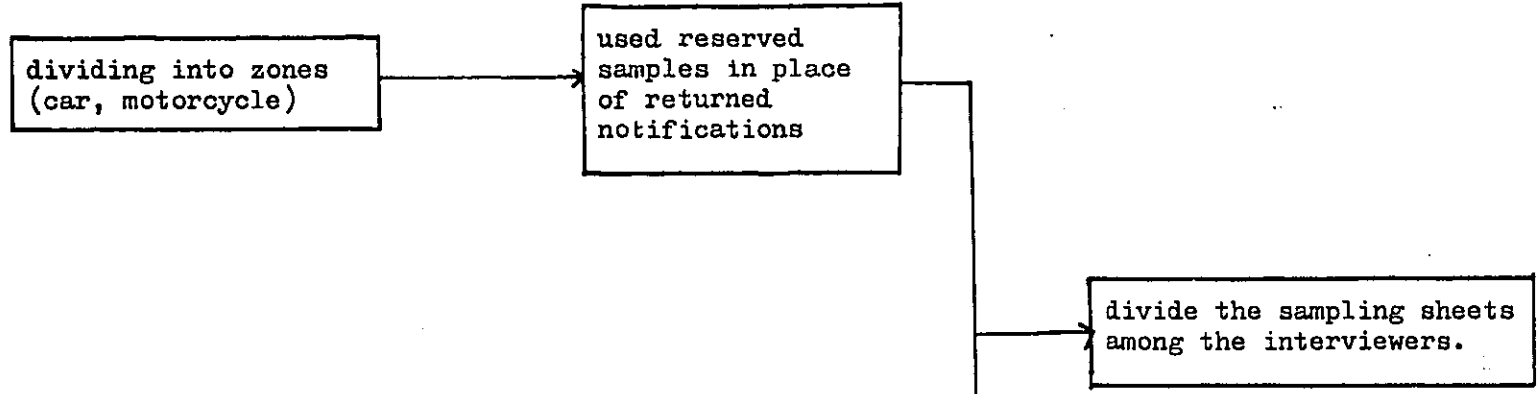
- 13) Deliver the survey material to interviewers. (one wee's portion)

- 14) Keep in contact with the interviewers.  
Interviewers need not come to this office when they have to visit the owner's home. But in order to confirm their attendance, the interviewers must contact the Assistant Supervisor once a day.
- 15) Answer the many queries from the interviewers.
- 16) Standardize the answer to the queries.
- 17) Inspect collected questionnaires.  
If the questionnaire is not complete the interview will have to be done again either by a second visit or by phone.
- 18) Record the results of the interviewers.  
The interviewer's payment for the completed questionnaire must be added to his constant pay from the Japanese Mission according to the results of the collections made.  
This addition includes transport allowance and allowance for work done overtime.

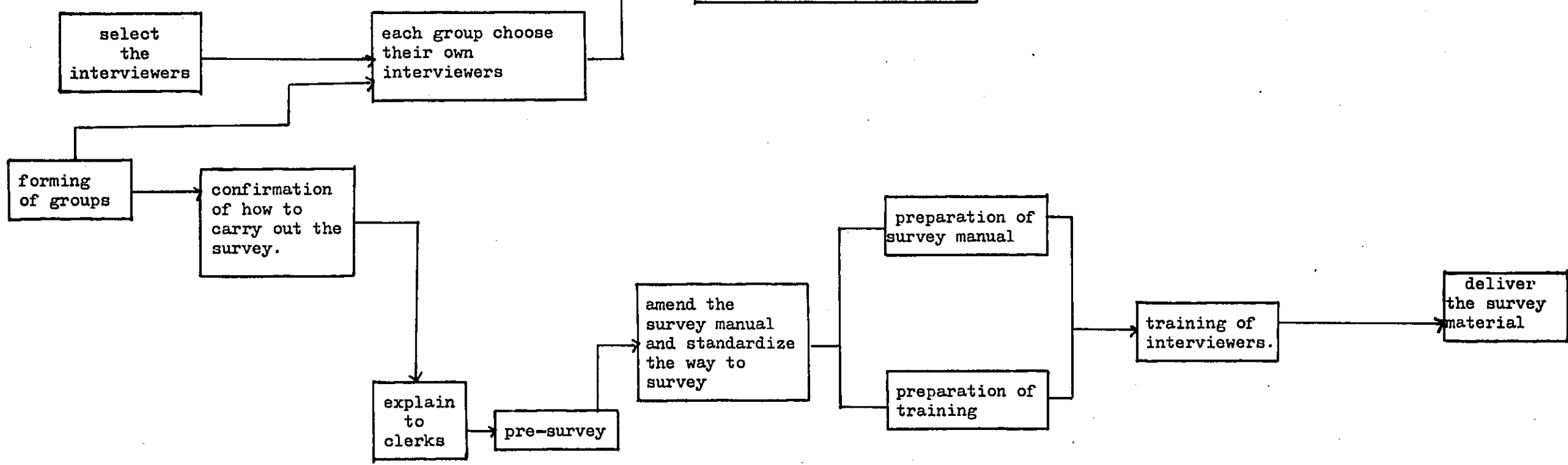
NOTIFICATION



SAMPLING SHEET



PREPARATION OF SURVEY



The Actual Survey

This interview involved the routine trips made by the owner on the average, so the following days were specified as the most appropriate days for the interviews to be conducted.

FIGURE 25 THE SPECIFIED DAYS FOR INTERVIEWS

JUNE																							
	1	2	③	4	5	⑥	7	8	9	⑩	11	12	13	14	15	16	⑰	18	19	20	21	22	23
EXPLANATION			●	●		●				●	●	●	●					●	●	●	●		

●: SPECIFIED DAY.

Friday, Saturday and Sunday were wxceptional.

For the purpose of conducting the interview smoothly, the sample was divided into the following 3 types and 3 separate teams were allocated for each.

TABLE 13 TASKS OF SURVEY TEAMS

<u>SURVEY TEAM</u>	<u>TASKS</u>
Home interview team	Interview of owners at their homes
Private Company/ Government Organization interview team	Interview of company vehicles/government vehicles at their office
Taxi interview team	Interview of taxi-drivers at the taxi stations.

TABLE 14 ORGANIZATION OF THE SURVEY TEAM

<u>SURVEY TEAM</u>	<u>INTENDED NUMBER OF INTERVIEWS</u>	<u>TEAM LEADERS</u>	<u>INTERVIEWERS</u>	<u>CLERKS</u>
Home interview team	14718 vehicles	9	230	9
Private Company/ Government Organization interview team	173	2	16	-
Taxi interview team	11 stations	1	8	-

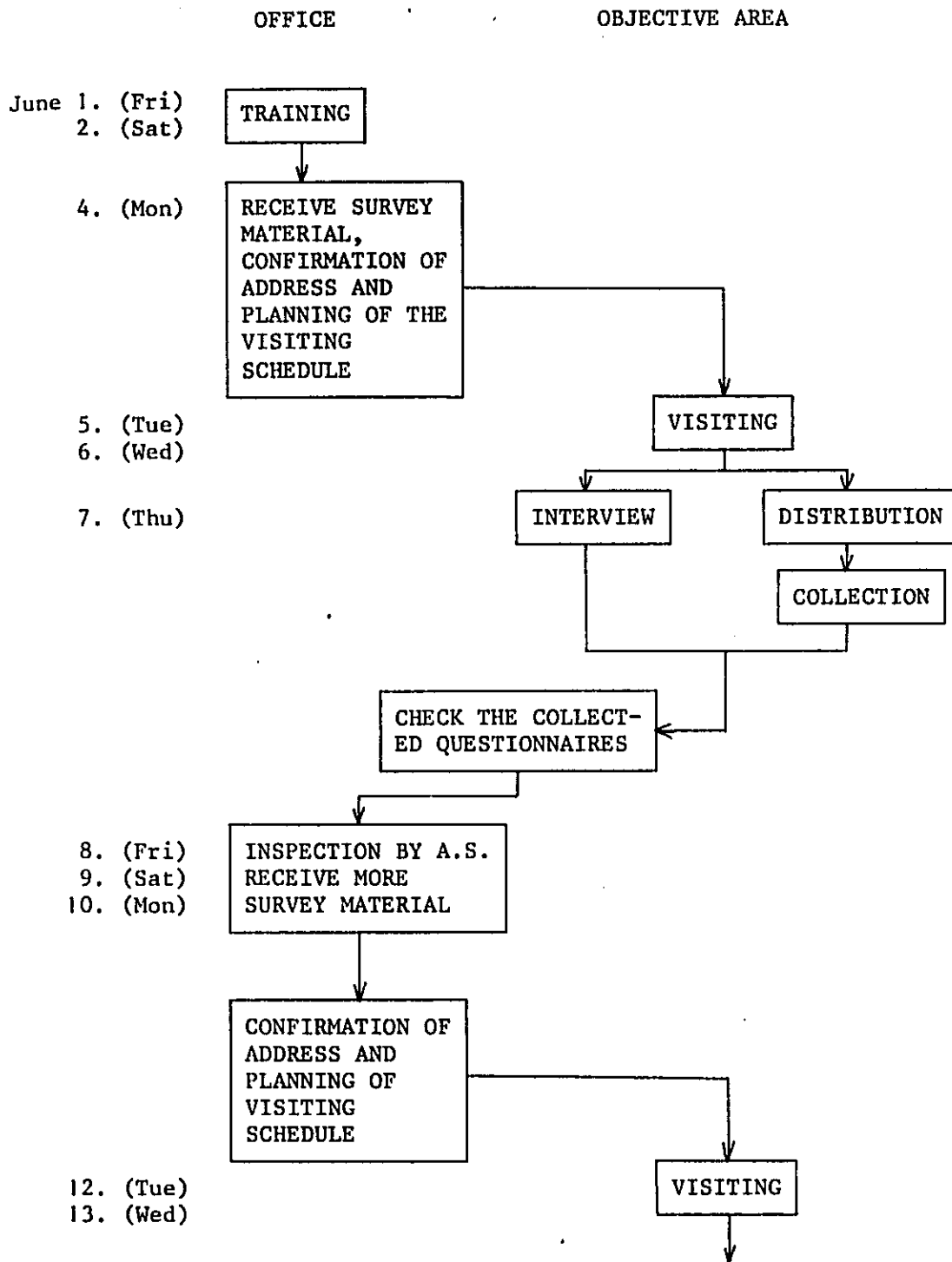
a) The Home Interview Survey

This survey is the most massive survey among of all the owner interview surveys. This involved about 230 interviewers during 3 weeks.

i) Method of survey

This survey was carried out according to the following schedule. Each interviewer was given an average portion of 22 samples per week.

FIGURE 26 SCHEDULE FOR THE INTERVIEWER

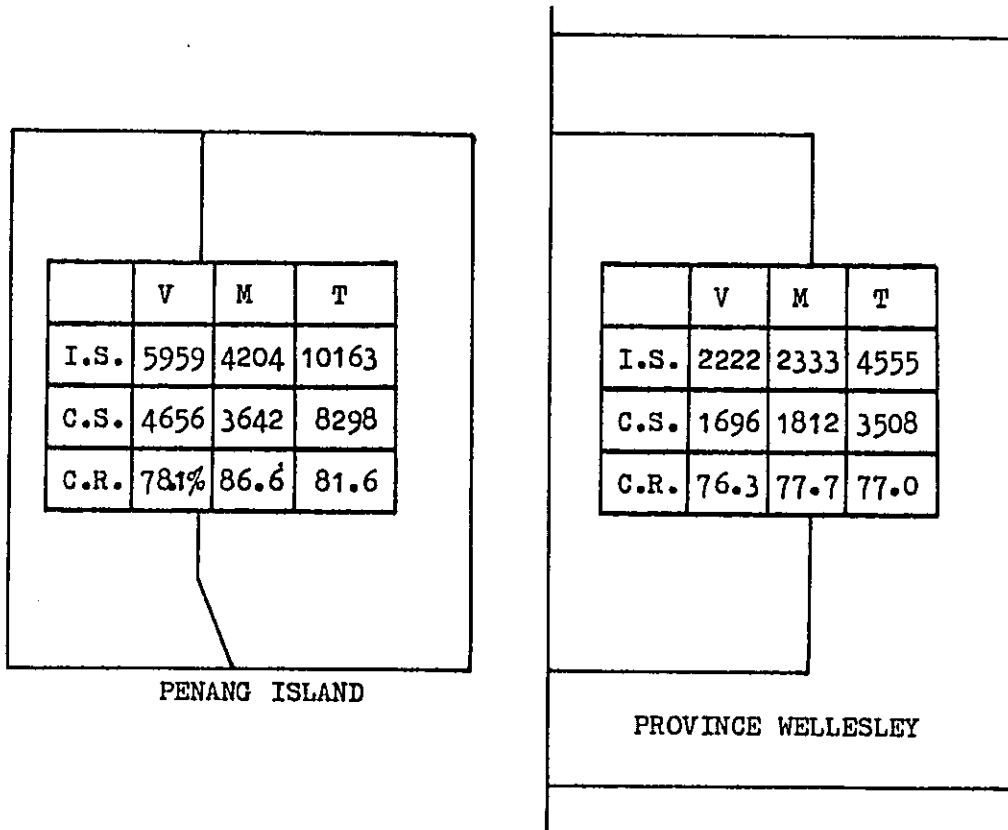


(Repeat 3 times from 3rd June to 23rd June)

ii) The Results of the Interview

The collection rate for this interview was better than was expected, possibly due to much effort put in by the interviewers.

FIGURE 27 RESULTS OF INTERVIEW



	<u>VEHICLES</u>	<u>MOTORCYCLES</u>	<u>TOTAL</u>
INITIAL SAMPLES	8181	6537	14718
COLLECTED SAMPLES	6352	5454	11806
COLLECTION RATE	77.6	83.4	80.2



TABLE 15 REASON FOR INTERVIEW NOT CONDUCTED

(PENANG ISLAND)

	<u>VEHICLES</u>	<u>M/CYCLES</u>	<u>TOTAL</u>
REFUSE TO ANSWER	93	35	128
MOVED OUT TO OTHER PLACE	425	261	686
UNABLE TO LOCATED	344	311	655
SOLD TO ANOTHER	115	63	178
SCRAPPED CAR	13	6	19
OTHERS	117	82	199
TOTAL	1107	758	1865

(PROVINCE WELLESLEY)

	<u>VEHICLES</u>	<u>M/CYCLES</u>	<u>TOTAL</u>
REFUSE TO ANS.	18	14	32
MOVED OUT TO OTHER PLACE	137	119	256
UNABLE TO LOCATED	278	287	565
SOLD TO ANOTHER	82	59	141
SCRAPPED CAR	2	1	3
OTHERS	17	24	41
TOTAL	534	504	1038

GRAND TOTAL

<u>REASONS</u>	<u>VEHICLES</u>	<u>MOTORCYCLES</u>	<u>TOTAL</u>
REFUSE TO ANSWER	111	49	160 (5.5)
MOVED OUT TO OTHER PLACE	562	380	942 (32.3)
UNABLE TO BE LOCATED	622	598	1220 (41.9)
SOLD TO ANOTHER	197	122	319 (11.0)
SCRAPPED CAR	15	7	22 (0.8)
OTHERS	134	106	249 (8.6)
TOTAL	1641	1262	2912 (100.6)

However, there were some problems faced by both interviewer and interviewee which were brought to the fore.

Examples of these are as follows:-

a) Since the notification letters were written only in Malay, the non-Malays especially the Chinese, who could not read Malay, were inclined to be uncooperative.

b) As the questionnaires included some questions of relational occupation, many interviewees thought that the survey was for the income tax department and not for the Economic Planning Unit, which it really was for.

The interviewers impressions on their experiences are shown in TABLE 16.

TABLE 16 INTERVIEWERS IMPRESSIONS FROM INTERVIEWEE

	<u>NUMBER</u>	<u>PERCENTAGE</u>
VERY FRIENDLY	7	3.5
FRIENDLY	116	57.4
INDIFFERENT	58	28.7
HOSTILE	20	9.9
VERY HOSTILE	1	0.5
TOTAL	202	100.0

TABLE 17 INTERVIEWERS IMPRESSION FOR LOCATING THE OWNERS HOUSE

	<u>NUMBER</u>	<u>PERCENTAGE</u>
VERY EASY	7	3.1
EASY	38	17.0
AVERAGE	62	27.8
DIFFICULT	65	29.1
VERY DIFFICULT	51	22.9
TOTAL	223	100.0

TABLE 18 INTERVIEWERS IMPRESSION FOR THE BASIC PAYMENT

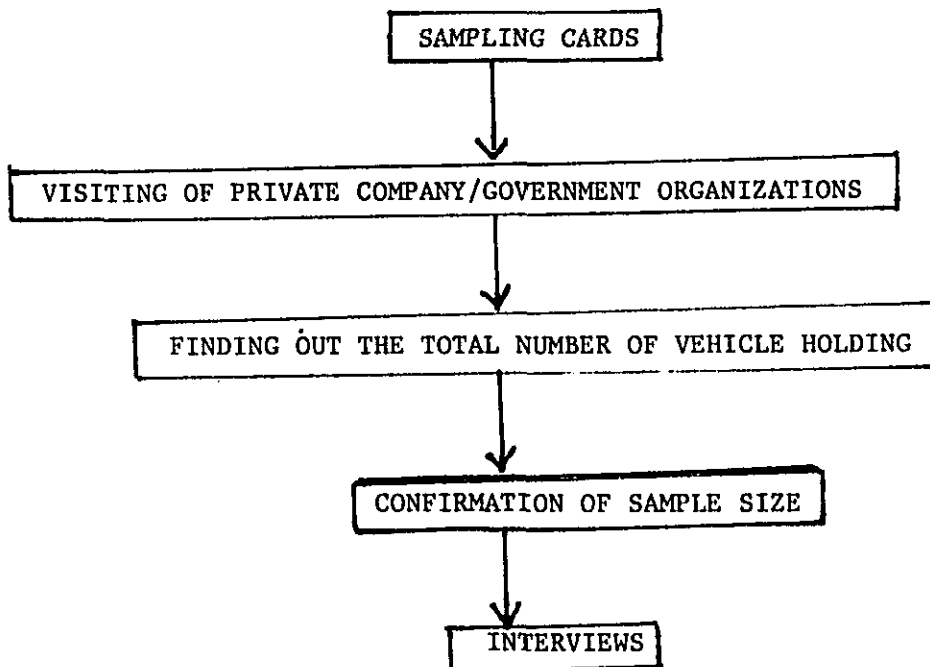
	<u>NUMBER</u>	<u>PERCENTAGE</u>
VERY HIGH	3	1.7
HIGH	4	2.3
MEDIUM	121	68.8
LOW	41	23.3
VERY LOW	7	4.0
TOTAL	176	100.0

b) Private Company/Government Organizations Interviews

Companies/Government Organizations were visited according to the sampling sheets and interviews were conducted.

In order to assure that the exact sample size is obtained, this interview was executed as follows:-

FIGURE 28. THE FLOW CHART



When the sample ratio was less than 20 per cent of the total number of vehicles holdings, new samples were chosen for this survey. This survey was carried out by a special group, compared of selected interviewers.

TABLE 19. RESULTS OF INTERVIEW

TOTAL NUMBER OF PRIVATE COMPANIES	160						
VEHICLE TYPE	<u>CAR</u>	<u>MEDIUM LORRY</u>	<u>HEAVY LORRY</u>	<u>VAN</u>	<u>BUS</u>	<u>MOTOR CYCLE</u>	<u>TOTAL</u>
TOTAL HOLDINGS	465	42	302	232	220	129	1390
SAMPLE SIZE	193	31	120	100	90	57	591
COLLECTED NUMBER	189	30	62	98	86	53	518
COLLECTION RATE	97.9	96.8	51.7	98.0	95.6	93.0	87.6
SAMPLING RATE	40.6	71.4	20.5	42.2	89.0	41.1	37.3

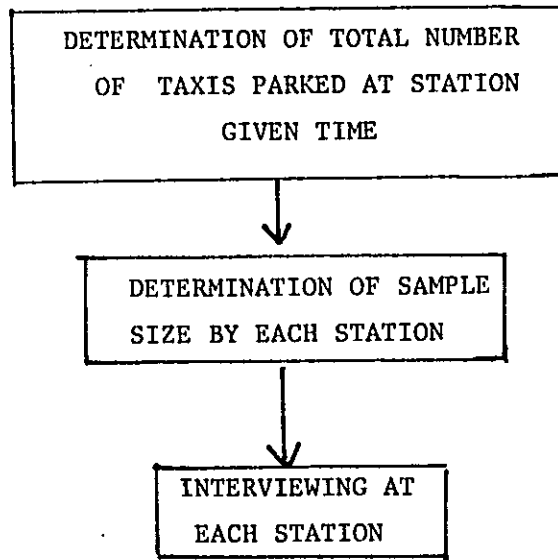
TOTAL NUMBER OF GOVERNMENT ORGANIZATION.	13						
VEHICLE TYPE	<u>CAR</u>	<u>MEDIUM LORRY</u>	<u>HEAVY LORRY</u>	<u>VAN</u>	<u>BUS</u>	<u>MOTOR CYCLE</u>	<u>TOTAL</u>
TOTAL HOLDINGS	40	26	134	46	76	10	313
SAMPLE SIZE	18	10	50	22	30	4	134
COLLECTED NUMBER	18	10	27	22	20	4	101
COLLECTION RATE	100.0	100.0	54.0	100.0	66.6	100.0	75.4
SAMPLING RATE	45.0	38.5	20.1	47.8	26.3	20.0	32.3

c) Taxi Interview

Owners of taxis whose names were obtained the sampling sheets were interviewed as in the same way as in the other interview as the registrations were done only according to the owners names, it was estimated that it would be a problem to find out the actual movement of a particular taxi because the owners are not always the driver of these taxis. So the interviews

were carried out in the following way.

FIGURE. 29 ..



Firstly, the pre survey was conducted for the purpose of obtaining the total number of taxis parked at each taxis-station. This pre survey was conducted over 2 days ago at 10 stations in the Study area.

Then samples of taxi at each taxi-station were picked out at 70%. These interviews were considered to be more different to conduct compared to the other interviews. This was because the drivers of taxis do not really remember their movements, but the special interviewers, selected for this purpose, conducted this survey patiently from early morning to midnight.

TABLE 20. RESULTS OF SURVEY

TOTAL NUMBER OF TAXI STATIONS	10
AVERAGE TOTAL OF PARKED TAXIS	336
SAMPLE SIZE	235 (70%)
COLLECTED TOTAL	210
COLLECTION RATE	89.4%

TABLE 21(a) RESULTS OF TAXI SURVEY

STATION NO:	NAME AND ADDRESS OF STATION	TOTAL NUMBER OF TAXIS PARKED										SAMPLED NUMBER	COLLECTED SAMPLE	COLLECTION RATE
		TIME	DATE			AVERAGE								
			16/6	17/6	18/6		19/6							
1.	Ferry terminal taxi station, Weld Quay, Penang	Morning (a.m.)	48	58	32	51	40.8	29	26	89.6				
		Afternoon (p.m.)	48	17	32	-								
		Average	48	37.5	27	51								
2. and 3.	Penang Road And Merlin Hotel taxi station, Penang.	Morning (a.m.)	-	28	31	31	23.5	17	15	88.2				
		Afternoon (p.m.)	12	20	23	-								
		Average	12	24	27	31								
4.	Maxwell Road taxi station Penang.	Morning (a.m.)	36	27	27	25	28.8	21	17	81.0				
		Afternoon (p.m.)	30	36	24	-								
		Average	33	31.5	25.5	25								
5.	Jade Auto Company, 25, Burma Road taxi station, Penang.	Morning (a.m.)	19	10	13	20	14.5	11	13	100.0				
		Afternoon (p.m.)	16	8	10	-								
		Average	17.5	9	11.5	20								
6.	Airport taxi station, Bayan Lepas, Penang.	Morning (a.m.)	92	68	75	80	73.7	52	42	80.8				
		Afternoon (p.m.)	41	83	71	-								
		Average	66.5	75.5	73	80								



(CONDT) TABLE 21(b) RESULTS OF TAXI SURVEY

STATION NO:	STATION NAME AND ADDRESS OF STATION	TOTAL NUMBER OF TAXIS PARKED							SAMPLED NUMBER	COLLECTED SAMPLE	COLLECTION RATE
		TIME	DATE			AVERAGE					
			16/6	17/6	18/6		19/6				
7.	Ah Huat taxi tour agency, Butterworth.	Morning (a.m.)	4	5	5	6					
		Afternoon (p.m.)	8	7	10	-					
		Average	6	6	7.5	6	6.4	5	5	100.0	
		Morning (a.m.)	4	8	8	5					
8.	Bagan tour taxi service centre, Bagan Luar Road, Butterworth.	Afternoon (p.m.)	1	2	6	-					
		Average	2.5	5	7	5	4.9	4	6	100.0	
		Morning (a.m.)	132	128	131	102					
9.	Butterworth Co-Operative taxi society, P.P.C. building, Butterworth	Afternoon (p.m.)	165	153	151	-					
		Average	148.5	140.5	141	102	133	93	75	80.6	
		Morning (a.m.)	21	29	24	21					
10.	Taxi station, Market Road, Bukit Mertajam	Afternoon (p.m.)	19	18	26						
		Average	20	23.4	25	21	22.4	16	11	68.8	
		Morning (a.m.)									

d) Confirmation of Sample Rate

Total sample size and sample rate collected of above mentioned interviews are as follows:-

TABLE 22 RESULTS OF CAR O-D SURVEY

		<u>VEHICLE</u>	<u>M/CYCLE</u>	<u>TOTAL</u>
POPULATION OF VEHICLES IN (IN INTERNAL AREA)		70500	105100	175600
COLLECTED NUMBER	HOME INTERVIEW SURVEY	6352	5454	11806
	PRIVATE COMPANY/ GOVERNMENT ORGANIZATION INTERVIEW SURVEY	562	57	619
	TAXI INTERVIEW SURVEY	210	-	210
	TOTAL	7124	5511	12635
SAMPLE RATE		10.1	5.28	7.2

Prior to the actual survey, the target collection expected was 9% for vehicles and 4.5% for motorcycles. However, the actual collection of vehicles and motorcycles is 10% and 5% respectively indicating the good response and cooperation from the public and the high success of the survey.

3-3

Inspection

After the questionnaires were collected, all questionnaires were inspected by Assistant Supervisors and clerks.

The procedure of inspection was given in the 'Manual Of Inspection'

" Manual of Inspection "

After the collected questionnaires are brought back to this office by the interviewers, they must be inspected by A.S. and the following points must be noted.

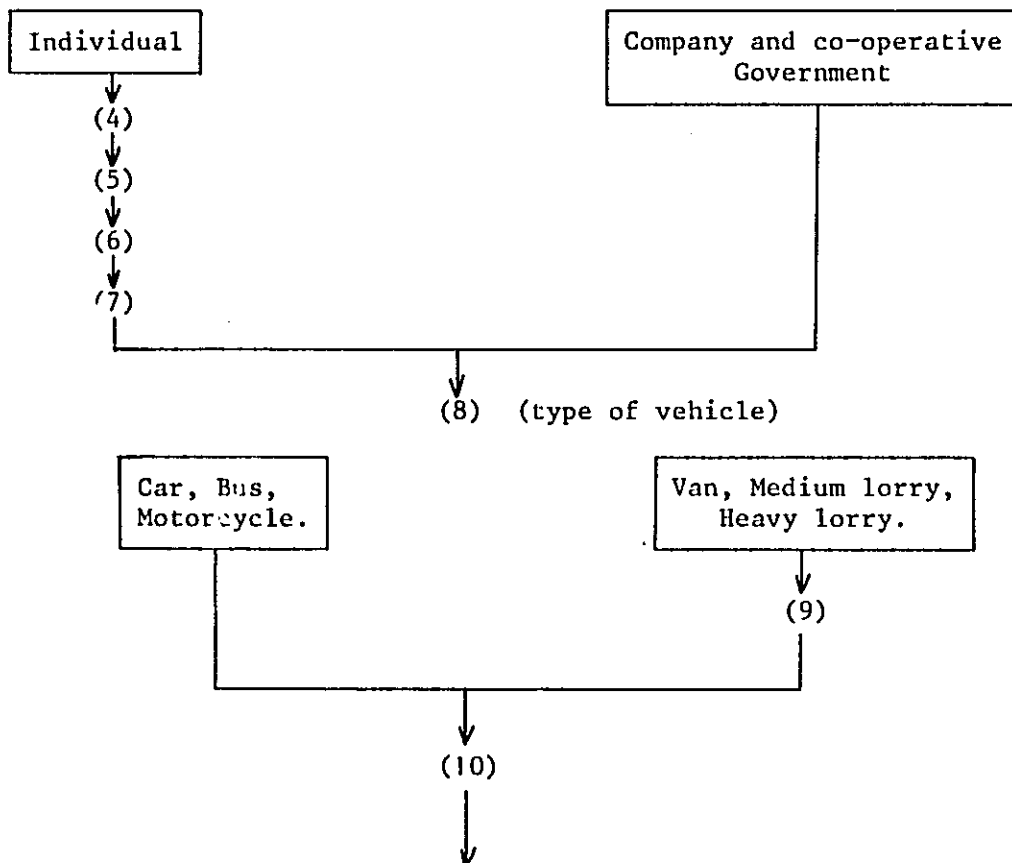
1. Whether the trips are continuously written. If there are any mistakes, we have to fill in the questionnaire or rewrite the with help from the interviewer.

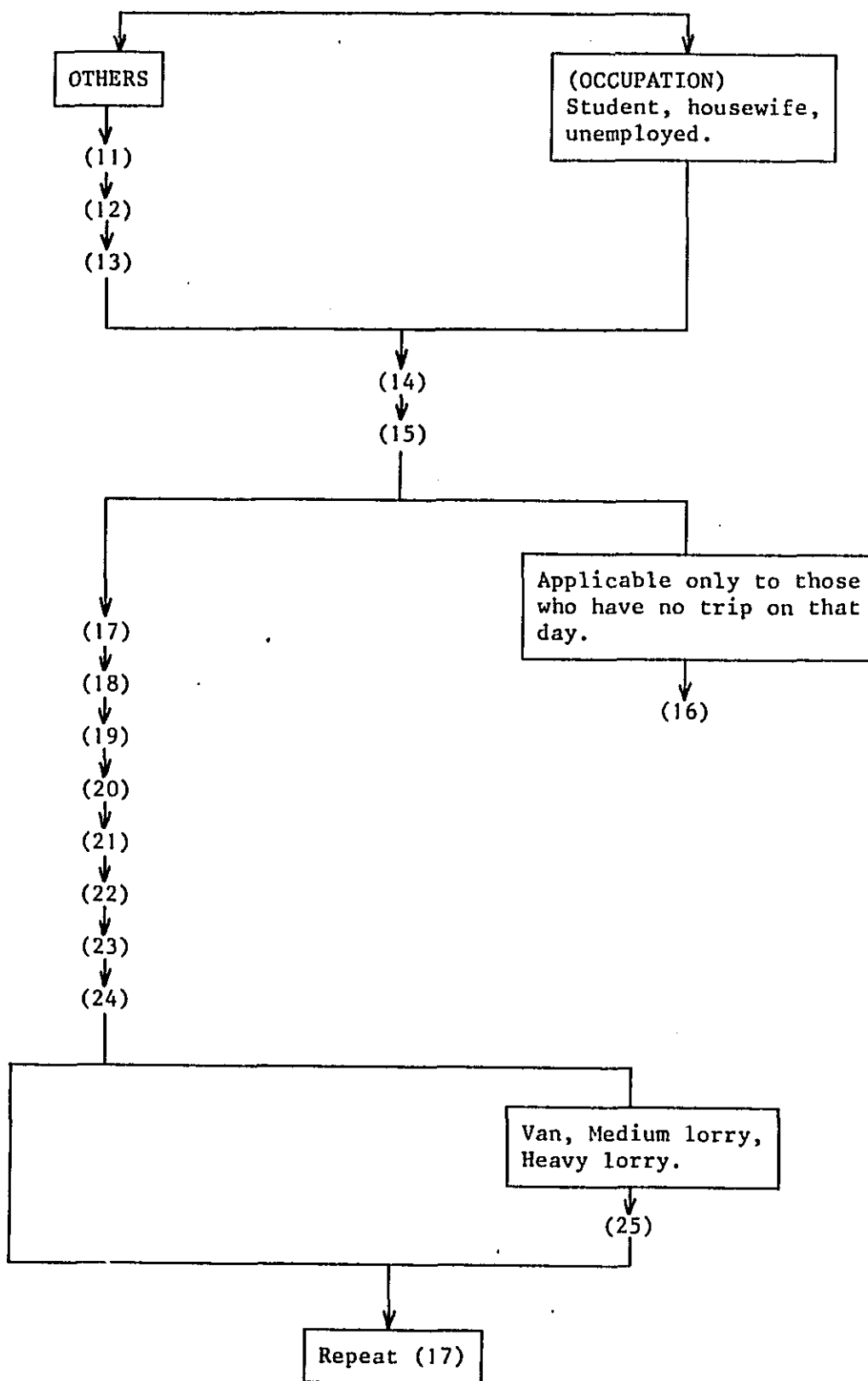
Eg. (in-correct)	(correct)
(Home) $\xrightarrow{\text{1st trip}}$ (Office)	(Home) $\xrightarrow{\text{1st trip}}$ (Office)
(Home) $\xleftarrow{\text{2nd trip}}$ (Restaurant)	(Office) $\xrightarrow{\text{2nd trip}}$ (Restaurant)
	(Home) $\xleftarrow{\text{3rd trip}}$ (Restaurant)

If the mistakes are left uncorrected, this questionnaire is of no use to this study.

2. Whether the answers are filled in the appropriate/important columns.

- (1)
- ↓
- (2)
- ↓
- (3) (form of ownership)





3. Other Remarks

SHEET NO. : After you have inspected the questionnaire, you must fill in this column with regular order starting from 3 0001.

VEHICLE REGISTERED NUMBER : Please check with (8)  
 V ..... car, van, lorry, bus.  
 M ..... motorcycle.

DATE OF TRIP : If this column is filled on a Friday, Saturday, Sunday or 6th June (holiday), you must check with the interviewer. In this case, the questionnaire is an incompleted one.

(3) : If the car is registered under the manageris name and he also uses it for individual use, this car is classified under "individual".

(1)-(17) : When the owner has a chauffier, these questions must be attributed to the owner (not chauffier). But it is the chauffier who is interviewed.

(9) : This does not mean the capacity of the whole vehicle. We must find out the maximum weight of goods. If owner is unsure of the capacity in tons/gallons, another form of measurement may be filled in. This will be converted later.

(16) : The pertinent reasons for no movement are as follows:-

1. ill
2. on leave
3. damaged (accident)
4. under repair
5. other

"Lend to another" is not a reason for no movement.

(17)-(19) : Please check whether the trips are continuously written.

	ORIGIN	DESTINATION
1.		
2.	(same)	
3.	(same)	
4.	(same)	

This interviewer should be very careful to make the respondent understand that when we asked about "origin", we are referring to the origin of very first movement or usage of the vehicle of the previous day and not just for the purpose of work alone that is, if the vehicle is company owned. Respondents and interviewer tend to think that since the vehicle is company-owned, they would only record down the first trip of the vehicle for work purposes, and neglect earlier trips example a salesman using a company car, will drive from his home to his work place before beginning on his business trips. Thus, the first journey home to work should be noted down.

(18) (20) : . Please check the order of departure time and arrival time.

(21) :  others must be classified from  to  . If you cannot classify then, the following principle must be referred to. The purposes that are admitted for business is classified  , and for private is classified  .

4. Appendix.

If you rewrite any column, please use the blue/black pen (do not use the red one).

After your inspection is complete, please fill in the "SHEET NO" and your name on the top right side.

Introduction

Data processing by a computer is divided into 2 parts, that is analysing the existing traffic flow conditions based upon the surveys conducted and to forecast future traffic flows which will be calculated by using both the results of the analysis of the existing conditions and by considering some future changes like population changes, land use patterns, improvements of traffic conditions, etc.

In this case the former which is the analysis of the existing conditions will be dealt with and it is the most important in this procedure in order to get the Origin - Destination Tables called O-D Tables which show movements of vehicles among the zones.

O - D Table

The traffic flow shown in the O-D Tables are for movements among zones for both inside and outside of the study area. Refer to the table below.

FIGURE 30 EXAMPLE OF O-D TABLE

		Zone no. j				
		1	2	---	n	total
Zone no. i	1			⋮		
	2			⋮		
	⋮			⋮		
	⋮			⋮		
	n			⋮		
total						$T_j = \sum_{i=1}^n t_{ij}$

$T_i = \sum_{j=1}^n t_{ij}$

Here,  $t_{ij}$  means the number of a particular vehicle movement which starts at zone  $i$  and arrive at zone  $j$ .

$T_i = \sum_{j=1}^n t_{ij}$  means the total number of vehicles which start or are generated from zone  $i$ , and also  $T_j = \sum_{i=1}^n t_{ij}$  means the total number of vehicles which arrive or are attracted to zone  $j$ .

It is possible to have many types of O-D Tables as for example Tables in which the movement of a particular type of vehicles is charted or Tables where the trip purpose of the vehicles are charted.

It is very useful to prepare these tables for they can be used for the purpose of analyzing the existing conditions.

Information on the zones that have the highest number of vehicles, the types of vehicles, their origin and thus their destinations, their trip purpose etc., can all be obtained from these tables. These information is important in the designing of measures for improving existing traffic conditions.

In the process of traffic assignment to road network, data from the O-D Table is used. Since O-D Table only shows the number of trips from zone i to zone j, we will not know which road is selected for the trip from zone i to j.

Traffic assignment is the process of finding the path which is taken by a driver and the forecast of the traffic volume along a particular section of a particular road.

The calculation is made by using the route where the time taken to travel between zone i and j on the distance between these zones is lowest.



RELATIONSHIP BETWEEN THE O-D TABLE AND EACH SURVEY.

An O-D Table which shows all the movements of all types of vehicles both inside and outside of the study area can be derived from the result of each survey that have been done.

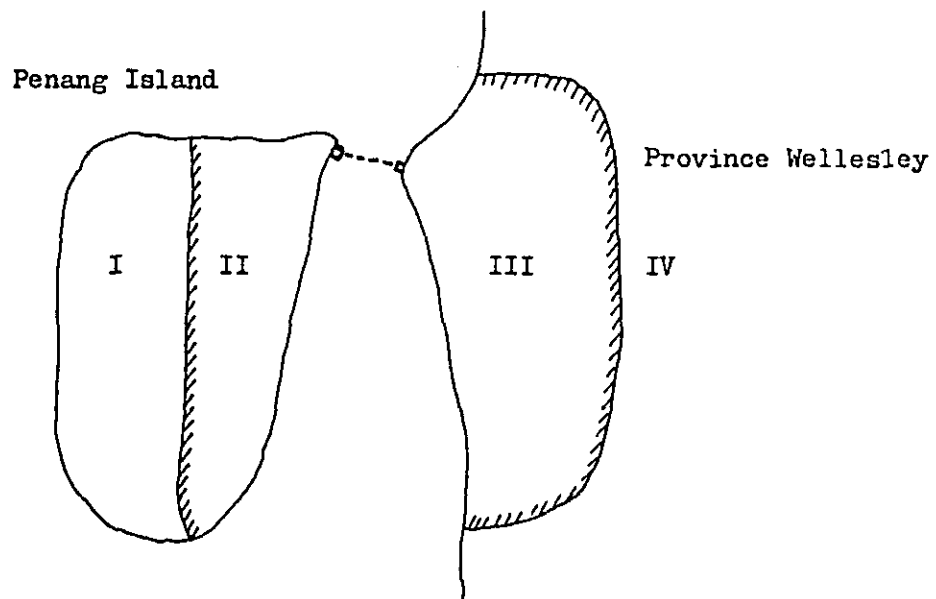
The following figure shows the relationship between an O-D Table and each survey and how each survey is tabulated.

As an example, the Owner-Interview Survey is used. The data from this survey is used to analyse the movements i.e. the origin and destinations of vehicles inside the study area of Butterworth (sphere III in the figure) and George Town (sphere II).

In fact the data from the Owner-Interview survey include movements of vehicles between Butterworth and George Town and from George Town to zones out of the study area because the survey traces the movements taken for a day by vehicles.

Therefore in the O-D Table, only trips taken within the study area is recorded and any other trips is disregarded or double counting may occur. Then an enlargement of the data to accomodate the population size is done.

FIGURE 31 THE RELATIONSHIP BETWEEN O-D TABLE AND EACH SURVEY



II, III : The study area.

I, IV : Out of the study area.

TABLE 23 CONCEPTUALIZED FRAMEWORK OF THE O-D TABLE

O \ D	P.P.		P.W.	
	I	II	III	IV
I	C <sub>1,1</sub>	C <sub>1,2</sub>	F <sub>1,3</sub>	F <sub>1,4</sub>
II	C <sub>2,1</sub>	OI <sub>2,2</sub>	F <sub>2,3</sub>	F <sub>2,4</sub>
III	F <sub>3,1</sub>	F <sub>3,2</sub>	OI <sub>3,3</sub>	C <sub>3,4</sub>
IV	F <sub>4,1</sub>	F <sub>4,2</sub>	C <sub>4,3</sub>	C <sub>4,4</sub>

**C**: Cordon-line Survey

**F**: Ferry-Interview Survey for cars and motorcycles.

**OI**: Owner-Interview Survey including taxis and buses.

Here,

$$C_{1,2} = C_{2,1}, \quad C_{3,4} = C_{4,3}.$$

4-4

PROCEDURE OR FLOW OF DATA IN EACH SURVEY UP TO THE COMPLETION OF THE O-D TABLE.

The work in this topic is divided into two parts. Part 1 includes the procedure from the coding of the completed question - naire sheets right up to obtaining the correct data. This is illustrated in the flow-chart of figure 4.

Figure 5 shows a sample of the data collected from the Cordon-Survey which was checked by a computer and the sign \*\*\* in the figure shows the serious errors detected in that sample from the results of data cleaning by the computer.

Part 2 includes the procedure of obtaining the necessary O-D Tables by using the correct data, and figure 6 shows the flow-chart of Owner-Interview Survey.

FIGURE 32 FLOW CHART OF DATA CHECKING.

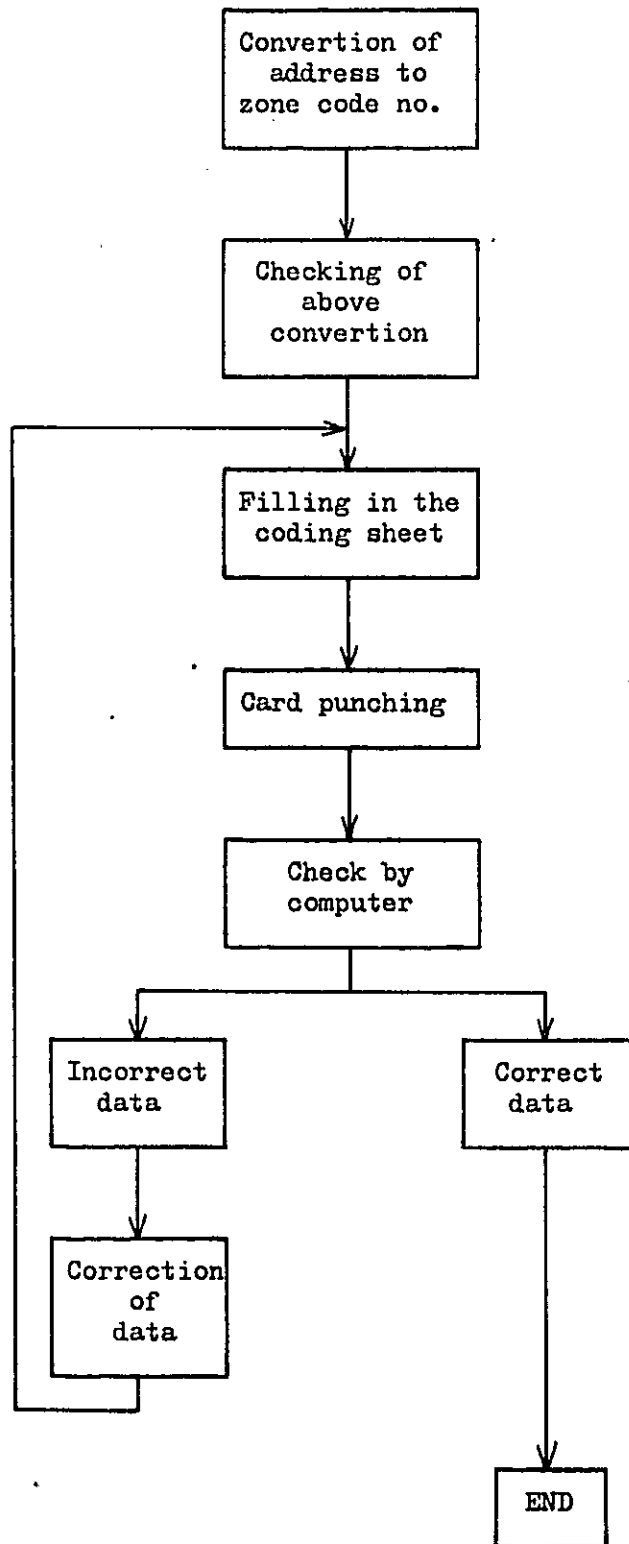
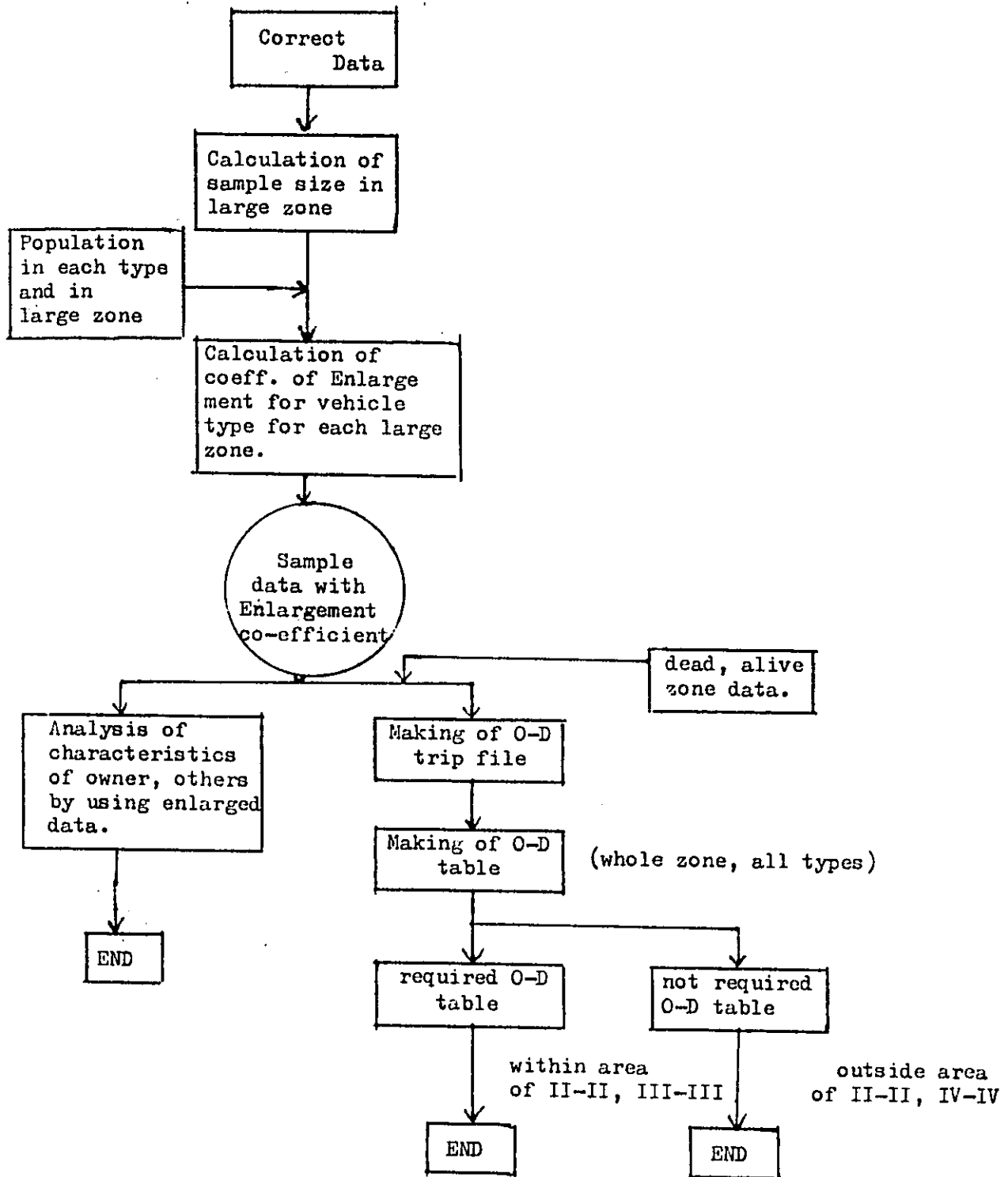


FIGURE 32 A SAMPLE OF DATA CHECKING THROUGH A COMPUTER

*** PART-I OUTPUT FOR DATA CORRECTION															OWNER															PAGE= 11														
*1	*2	2	3	4	5	6	7	8	9	10	12	13	14	5	6	*3	17.	18	19	20	12	23	4	25.	18	19	20	12	23	4	25.	18	19	20	12	23	4	25						
ERR	DAT	SHEET	RG	AD	FMA	NO	D	T	LOD	P	YS	ADD	AV	U	R	NO	ORG.	DEP	DES	ARR	TN	PC	N	TF.	DEP	DES	ARR	TN	PC	N	TF.	DEP	DES	ARR	TN	PC	N	TF.						
TYP	NO.	NO.	CD	CD	QFG	OC	C	V	CAP	O	EE	WP	ML	V	M	TR	CD	TIME	CD	TIME	PE	PF	P	CE	TIME	CD	TIME	PE	PF	P	CE	TIME	CD	TIME	PE	PF	P	CE						
177	20612	BL121	114	6	2	1	0.0	2	16	124	4	4	0	8	121.	7	0	121	710	64	12	3	00.	715	121	725	64	12	2	00.	725	121	735	31	52	1	00							
178	20613	PU121	112	1	4	1	0.0	2	35	131	10	4	0	8	121.	730	131	750	12	32	1	00.	9	0	92	11	0	22	12	1	00.	13	0	123	15	0	22	12	1	00				
179	20614	PM121	114	4	2	1	0.0	1	14	111	10	4	0	5	121.	730	331	8	0	21	12	1	00.	910	111	930	12	22	1	00.	1030	133	1050	21	12	1	00							
180	20615	PAA121	111	7	8	6	0.0	1	00	0	6	3	0	2	121.	7	0	142	715	64	42	2	00.	1410	121	1420	31	52	2	00.														
181	20616	PO121	114	6	6	6	0.0	2	35	111	30	4	0	4	121.	3	0	111	310	12	12	1	00.	1230	121	1245	31	52	1	00.	19	0	122	1915	56	12	1	00						
182	20617	PAB124	125	5	9	1	0.0	1	00	0	15	4	0	5	124.	850	122	9	0	84	12	2	00.	9	0	122	9	5	46	21	1	00.	940	124	945	31	52	1	00					
*** 183	20618	PR121	2**	***	1	0.0	3	31	111	15	4	0	4	121.	10	0	111	10	5	12	12	1	00.	14	0	111	1410	22	11	1	00.	1440	111	1450	12	12	1	00						
*** 184	20619	PAB132	113	7	2	1	0.0	2	71	121	30	4	0	6	132.	9	0	121	920	12	12	2	00.	12	0	132	1225	31	52	2	00.	14	0	121	1420	12	12	2	00					
185	20620	PAC121	114	8	4	1	0.0	1	32	111	7	3	5	0	0.																													
* 186	20621	PAC121	112	4	2	6	0.0	1	62	111	20	4	0	14	121.	890	123	835	52	12	1	00.	845	111	9	0	12	12	1	00.	10	0	132	1020	24	32	1	00						

NOTE	ST	T	N
ERROR	OR: Cordon Station No.	V: type of vehicle	P: no. of passengers
TYPE	D	F: form of ownership	C: commodity type
***: serious error (must be corrected)	OR: Direction.	R: registered address	CAP: maximum capacity
*: small error (not necessary to correct)	T	A	L: loading
space: no error	TIM: Time (hours & minutes)	OG: origin code	
	H M	DT: destination code	
	N: No. of data.	T	
	D	P: trip purpose	

FIGURE 33 Flow chart of making O-D Table in the case of Owner Interview Survey.



ITEMS ANALYSED FROM THE EXISTING TRAFFIC CONDITIONS.

The output which is derived from the analysis of the existing traffic conditions is as follows:-

- a) O - D Table
  - O - D Tables for each type of vehicles.
  - O - D Tables for each trip purpose.
  - O - D Tables for all types of vehicles and for all purposes.
- b) Analysis of the characteristics of owners of cars and motorcycles.
  - Number of each type of vehicles in each zone.
  - Form of ownership, sex, age and occupation of owners.
  - Distribution of working place of owners.
  - Average mileage and average number of each type of vehicles used in each zone.
- c) Analysis of trip movements.
  - Number of origin trips and destination trips that end in each zone.
  - Number of each type of vehicles and trip purpose of each.
  - Mean value of trip movements made a day for each type of vehicle.
  - Variations in the number of trips for every hour for every zone and for every type of vehicles.
- d) Others
  - Meantime required to travel between zones for each type of vehicle.
  - Number of passengers in each type of vehicle.
  - Analysis of parking places.
  - Analysis of types of commodities carried.
  - Others.

# REPORT ON INTERVIEWEES' IMPRESSIONS

## Appendix

"Report on interviewers' Impressions." .....	1
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"Report of the General Comments from Interviewees." .....	35
"Report on Ownership of Company." .....	52
"Sample of Private Companies/Government Organizations Interview." .....	60
"Panduan Untuk Menemuramah Pemilik-pemilik Kendaraan."	

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# REPORT ON INTERVIEWERS' IMPRESSIONS

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## A. OUTLINE

This report aims at understanding the impressions of the interviewers involved in the home interview survey. This is particularly important because the interviewer, acting as the direct linkage or the in-between of the survey project and the object of study (vehicle owners) serves as a valuable source of information regarding the following :-

### a. Survey Materials

- i. the questionnaire.
- ii. the manual of owner-interview.
- iii. the explanation that was given to them.

### b. The actual conducting of the survey interms of :-

- i. the locating of the interviewees' homes.
- ii. the interviewees' response.

### c. Their remuneration/payment.

### d. The problems faced by interviewers.

## B. 1. FINDINGS - GENERAL

### 1. Sex - Composition

Male	Female	Total
81	95	176

Table 1

Out of the 230 interviewers involved in the home interview survey, only 176 of them could be contacted to give their response. Out of this number, 81 were males and the females made up the other 95.



2. Qualification

	Male	Female	Total
MCE/GCE/SPM	55	69	124
HSC	26	26	52

Table 2

Although there were some interviewers who have ICE qualification they were not among <sup>those</sup> who responded with their impressions.

For those who responded, 124 (70.45 %) of them have MCE or equivalent qualification, out of which 55 were males and 69 were females. 52 (29.54 %) of the interviewers were of HSC qualification, out of which half were males and the other half females.

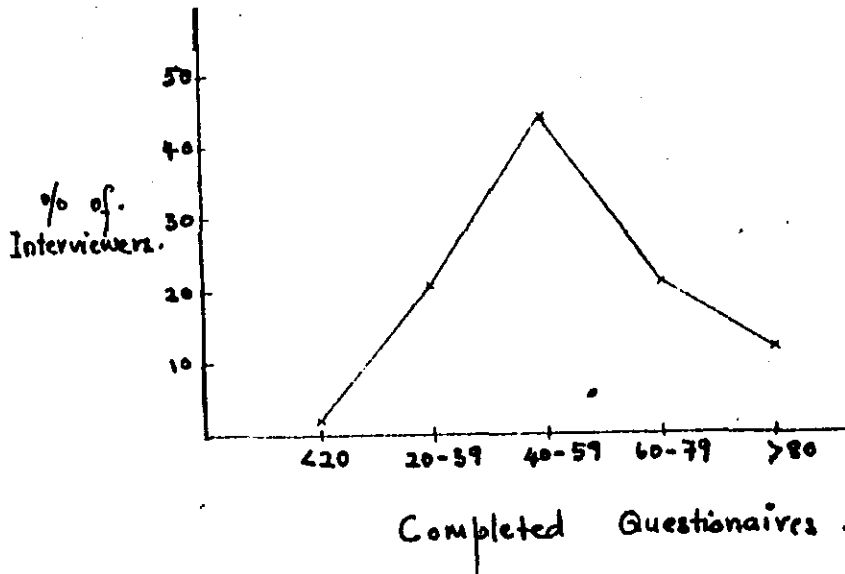
3. Number of Questionnaires Completed

Table 3

	Male	Female	Total	%
< 20	2	2	4	2.36
20 - 39	14	20	34	20.11
40 - 59	37	39	76	44.97
> 60 - 79	16	18	34	20.11
> 80	12	9	21	12.43
TOTAL	81	88	169	100.00

As can be seen from table 3 and graph 1 (below), the collection of questionnaires assumed a normal curve, whereby only 2.36 % of interviewers could complete less than 20 questionnaires while these who conduct between 40 - 59 interviews made up the majority of 44.97 %. 20.11 % of the interviewers completed between 60 - 79 interviews and only 12.42 % managed to complete over 80 interviews. In fact 3 interviews<sup>6</sup> finished over 100 interviews during the scheduled interview period.

- (Graph 1) Graph showing Percentage of Questionnaires Completed.



4 Form of Transport

Table 4

	Male	Female	Total	%
a bus	21	36	57	25.22
b bicycle	14	17	31	13.71
c motorcycle	40	13	53	23.45
d car	2	5	7	3.09
e on foot	26	52	78	34.51
TOTAL	103	123	226	100.00

The form of transport most commonly used in terms of degree of importance is :-

- a. on foot - 34.51 %
- b. bus - 25.22 %
- c. motorcycle - 23.45 %
- d. bicycle - 13.71 %
- e. car - 3.09 %

The females form the majority of those going on foot and by bus (two-thirds in both cases).

Three-quarters of the 23.45 % possessing motorcycles were male interviewers. The ease of movement on motorcycles may account for the higher collection rate of the males generally (see Report on Interviewers' Movement - page 7)

Only 13.71 % cycled while 3.09 % drove to the place of interview.

34 of the total interviewers (19.31 %) had also commented that they had used more than one form of transport.

3-II FINDINGS - INTERVIEWEES' IMPRESSIONS

a. IMPRESSIONS ON SURVEY MATERIALS

(1) Questionnaire

	Total	%
a. very complicated	2	1.13
b. complicated	8	3.97
c. average	77	43.75
d. simple	75	42.61
e. very simple	11	6.25
f. no comments	3	1.70
	176	100.00

Table 5

Most of the interviewees gave the comment that the home-interview questionnaire was average and easily understood. This maybe attributed to the general high level of education (MCE equivalent and above) of the interviewees. However, about 5 % commented that the questionnaire was complicated while 1.7 % gave no comment.

(ii) Manual of Owner Interview

	Total	%
a. very complicated	4	2.27 %
b. complicated	18	10.22 %
c. average	67	38.06 %
d. simple	77	43.75 %
e. very simple	10	5.68 %
	176	100.00 %

Table 6

(87.49 %) of the interviewers find the manual easy to understand. However, 12.49 % were of the opinion that the manual was complicated (7 % more than for the questionnaire)

(iii) Explanation at Auditorium

	Total	%
a. very difficult	3	1.7
b. difficult	22	12.5
c. average	56	31.8
d. easy	79	44.88
e. very easy	8	4.54
f. no comment	8	4.54
	176	100.00

Table 7

Again, most of the interviewers (81.22 %) responded with the reply that the explanation that had been delivered to them was easily understood. 14.2%, which was slightly more than the figure for the manual felt that the explanation had been complicated. This maybe because the explanation was not clearly explained or smoothly delivered. The manual, on the other hand, had been given to the interviewers for their ready reference.

b. IMPRESSION ON ACTUAL SURVEY

(1) Locating the Owners' House

The bus, bicycle, motorcycle and car provides the physical aid to the locating of the vehicle owners' addresses besides nature's gift to man's transport i.e. on foot.

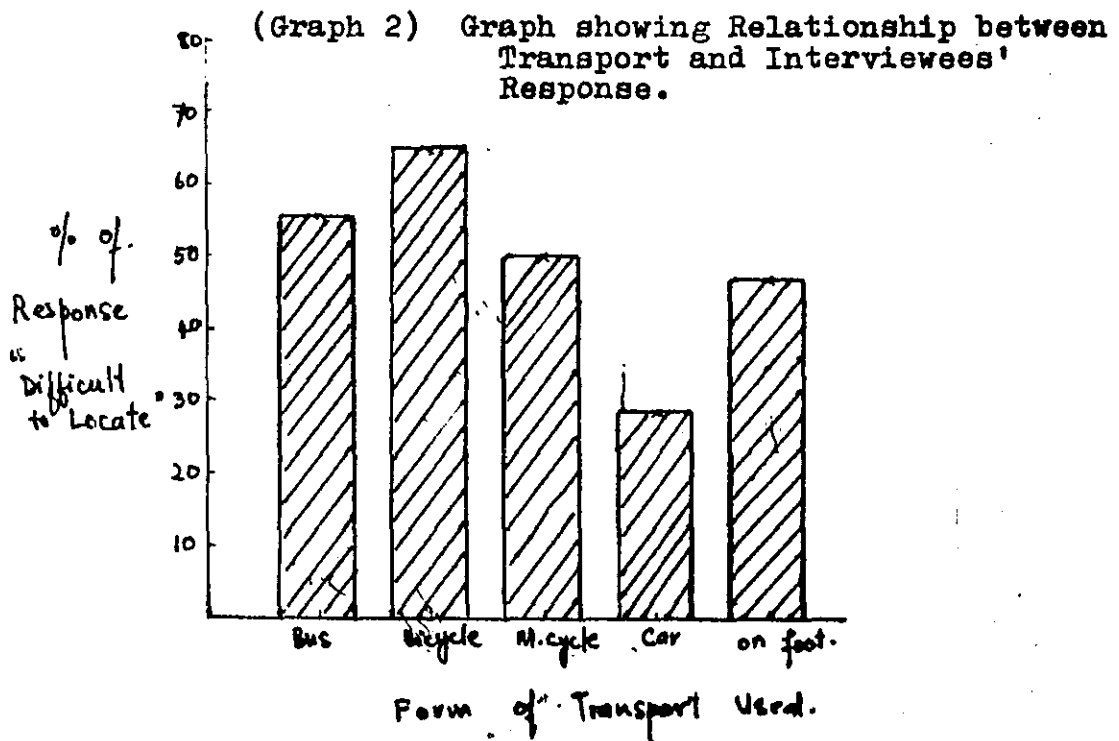
- Of those using the bus for their interview rounds, 55.35 % commented on the difficulty of locating while 33.92 % and 16 % gave the comment 'average' and 'easy' respectively. The reason for the difficulty is understandable as the bus only served a few major roads, thus supplying the interviewees a limited transport service.
- Two-thirds (64.51 %) of those who cycle had difficulty of locating, compared to 22.58 % and 12.9 % who gave the comments 'average' and 'easy' respectively.
- About  $\frac{1}{2}$  (50.94 %) of those on motorcycles, surprisingly commented on the difficulty of locating, despite the fact that the motorbike is one of the most convenient forms of transport in terms of speed, parking and manoeuvring the streets. The other half i.e. 24.52% each gave the comments 'average' and 'easy.'
- Only 7 interviewers made use of the car, out of which 2 commented on the difficulty while the rest do not find much problem.
- Of those on foot, 47.36 % commented on the difficulty, 26.31 % on 'average' and 26.31 % find no problem in terms of locating at all.

The interviewers' response in terms of difficulty of locating is being compared below to find out whether there is any relationship between transport type and the response 'difficulty of locating' (refer graph 2)

LOCATING THE OWNERS HOUSE

Table 8

	bus		bicycle		m/cycle		car		on foot		Total
	T	%	T	%	T	%	T	%	T	%	
a V. difficult	11		8		14		1		17		51
b difficult	20	55.4	12	64.5	13	50.9	1	28.6	19	47.3	65
c average	19	33.9	7	22.6	13	24.5	3	42.9	20	26.3	62
d easy	6	16.0	4	12.9	11			-	17		38
e V. easy					2	24.5	2	28.7	3	26.3	7
<b>TOTAL</b>	56		31		53		7		76		223



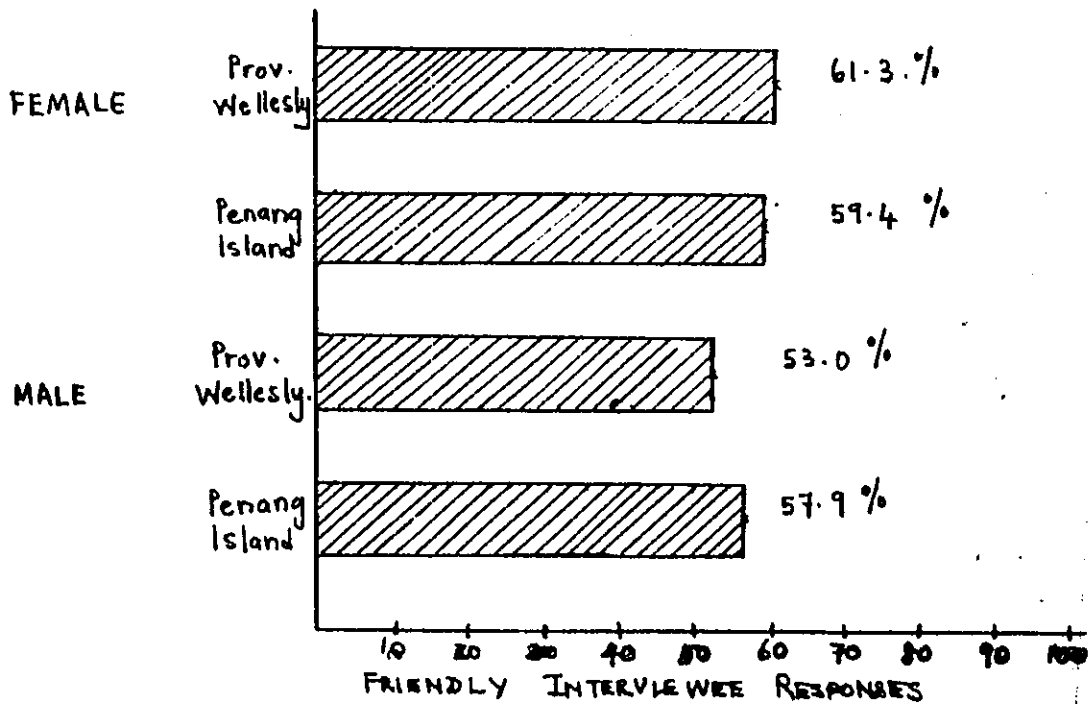
The graph shows that the highest % of interviewees commenting on difficulty of locating were these who cycle (64.51 %), followed by these taking buses (55.35 %) and using the motorcycle (50.94 %) and finally those who walked. Only less than 30 % of those who drove the car complained. The high percentage of interviewees having their own means of transport especially those who cycled or used the motorbike or even the car and yet complained about the difficulty of locating the homes, clearly shows that there is no relationship between transport and the locating the homes. This is because the % of those with transport who had complained had exceeded the % who goes on foot. The high % of those using the bus, not only felt the difficulties that accompanied bus usage but also the problem of walking since the bus do not provide a door-to-door service.



(ii) Interviewee Responses

Table 9 shows that the majority of the interviewees met friendly responses at the interviewee's homes. The female interviewees who thereby viewed their respondents as friendly made up 59.4 % in Penang Island and 61.3 % in Province Wellesly. For the male, the figure is 57.9 % and 53.0 % respectively for Penang Island and Province Wellesly.

GRAPH (3) SHOWING INTERVIEWEE RESPONSES



Graph 3 shows the comparison of the male and female friendly responses. In both Penang Island and Province Wellesly the female received a higher percent of friendly responses. The difference in Penang Island between females and males is only 1.66 % while in Province Wellesly, the percent for females exceeded that of males by 8.36 %. This shows that on the whole, females were more favourably accepted especially in Province Wellesly where it is more rural.

INTERVIEWEE RESPONSES

	Male				Female			
	Pg. Island		Prov. W.		Pg. Island		Prov. W.	
	T	%	T	%	T	%	T	%
a. V. hostile	-	-	1	5.9	-	-	-	-
b. hostile	8	12.5	2	11.8	6	9.4	4	12.9
c. indifferent	19	29.7	5	29.4	20	31.3	8	25.8
d. friendly	36	56.3	8	47.1	36	56.3	19	61.3
e. V. friendly	1	1.6	1	5.9	2	3.1	-	-
TOTAL	64	36.4	17	9.7	64	36.4	31	17.6

Table 9.

c (i) The Payment

	Total	%
a) very low	7	3.97
b) low	41	23.29
c) medium	121	68.75
d) high	4	2.27
e) very high	3	1.70
TOTAL	176	100.00

Table 10

Two-thirds of the interviewers (68.75 %) felt that the basic payment of \$3.50 per questionnaire was satisfactory while 3.97 % commented that the payment was high while 27.26 % complained that payment had been low.

c (ii) Best Payment Per Questionnaire

Table 11

\$3.50 or below	\$4.00 range	\$5.00 range	\$6.00 range	\$7.00 range	\$8.00 range	\$10.00 range	\$12.00 range	
4	25	64	22	2	3	3	1	T
2.25	14.19	36.35	12.49	1.13	1.7	1.7	0.59	%

The best payment as had been stated by the interviewers had ranged from as low as 50¢ to \$12 for each completed questionnaire. However, 63.03 % felt that the best payment is between \$4 - \$6 for each questionnaire, out of which 36.35 felt the best payment should be at \$5.00.

d. Problems faced by Interviewers

The problems encountered by the interviewers have been listed in table below.

Table 12

		<u>Total</u>
1. <u>Difficulty of locating</u>		
a. wrong address/name	3	
b. not at home/several visits required	33	
c. have to suit Rs convenience	8	96
d. houses not sequential	52	
e. others;		
i. difficult to trace the driver if, company case		
2. <u>Responses</u>		
a. uncooperative	33	
b. suspicious	8	51
c. false information given	11	
d. others;		
i. some interviewees do not understand the purpose		
3. Dogs		24
4. Language communication problems		10
5. Questionnaire - too personal questions - irrelevant.		5
6. Transport Problem		7
7. Others :		
a. Youngster give a lot of nonsense.		
b. Have to shout for the interviewees name - no door bell.		
c. Sometimes had to sit too long for an interview when I had to rush for others.		
d. Interviewees sick.		

(i) Difficulty of locating

This problem, as can be seen from the table, does not only include difficulty due to wrong sampled address or name which had been copied from R.I.M.V. records but also the interviewer had to pay several visits to the sampled houses because the interviewee was not at home when the interviewer visited him/her. Very often this means that the interviewers had had to suit the respondents' convenience by coming at an appointed time either very early at 7 a.m. before the interviewee goes to work or after he comes back from work at night. Another great difficulty faced is the difficulty of locating due to the unorganised and unsequential physical location of the sampled address. This problem is commonly encountered in rural areas and unplanned squatter settlement where the houses had sprouted up in haphazard arrangement. In fact the most number of interviewers (52 in number) had complained about this problem.

(ii) Interviewee's Responses is the second major problem faced. Interviewees have been described by 33 interviewers as uncooperative. This is understandable as the general public is often suspicious of government interviews, thinking that our interviewers had been sent to check on their road tax or even their income tax. Thus the purpose of the interviews was very often misunderstood by the interviewee's pre-assumptions and premonitions. This often gave the interviewers a feeling that false information had been given. Such responses not only come from the uneducated and the poor but even from top personnels of companies.

(iii) Dogs posed the third major problem whereby their fierce response often prevented the interviewers any access to their owners. This maybe accidental where the dogs' owners were not at home and therefore have no part in the fierce reception but in many cases, the owners either purposely set the dogs after the interviewers or else stay indoors while allowing their dogs to do the reception.

(iv) Language communication is another source of problem for the interviewer. Very often a Malay interviewer may have to interview rural uneducated Chinese households who could not understand the interviewer at all. Such communication problems thereby gave rise to hostile and uncooperative responses.

(v) Five of the interviewers felt that the questions was rather personal and also irrelevant to the project purpose thereby inducing uncooperative responses.

(vi) Only seven interviewers faced the problem of transport. This is only relevant for those depending on public transport which does not get them to their destination thereby requiring them to walk long distance to the sampled home.

(vii) Other reasons included problem from cheeky youngsters who often crowded around the interviewer asking and giving irritating remarks. Interviewers also had difficulty of calling for the respondent and sometimes, the latter maybe too friendly so much so that interviewers, having to sit too long at the interview, were late for their other appointed interviews.

#### COMMENTS

Several conclusive comments on the above findings are listed below.

1. A great majority of 77 % of the interviewers managed to finish a sizeable number of over 40 interviews.
2. More of the female interviewers had to walk and take a bus (two-thirds). The majority (three-quarters) of those on motorbike were males and yet the percent of those having motorcycles as their means of transport and yet complained about the difficulty of locating respondents' homes exceeded those who walk and complained about the difficulty of locating. This shows that there is no relationship between transport and the locating of homes.

3. A high percent of the interviewers, due to their general high educational level, find the survey materials i.e. questionnaire, manual and the explanation given to them easy to understand.
4. More females than males have better and more friendly responses than males on the whole. The difference is especially marked in Province Wellesly where the females were more favourably accepted than the males.
5. Majority of the interviewers felt that the payment was quite satisfactory.
6. However, the best payment as suggested by most of the interviewers was \$5.00 for each interview.

D. CONCLUSION

The interviewers' impressions had highlighted several important points pertaining to the home interview survey (as listed in "Comments"). The fact that the female interviewers received more friendly responses reveals the fact that they are more suitable as the 'in-between' of the survey project and the object of study.

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# REPORT ON INTERVIEWERS' MOVEMENT

---

## A. OUTLINE.

This report aims at understanding the movement of the 230 interviewers involved in the home-interview survey. Their movement is characterised by :-

1. Number of visits made to each sampled address.
2. Time at which the interviews<sup>ways</sup> conducted i.e. collection time.

## B. METHOD OF ANALYSIS.

(a) The data for the "number of visits" and "collection time" were obtained from 'Sampling Card B' in which each interviewer will note down the date and time of every visit made to each sampled address in the column "Results of Visiting".

(b) The information from all Sampling Card 'B' (column - 'Result of Visiting') for each of the 9 groups was then transferred to the 'Record for Interviewers Movement'.  
for each of the groups. This record supplies the information on the number of visits as stated in 'The Outline' above, according to the variables of :-

- (1) The result of their visits,  
i.e. whether interviews are conducted (collected)  
or not (not collected).
- (2) Sex,  
- whether interviewer is male or female.

These 2 variables were cross-tabulated.



(c) Method of Analysis of Interviewer Visits

"The record of Interviewers Movement" was expanded to accommodate more detail information on all the groups (A - I) in Table 1a, 1b, 1c.

Table 1a refers to the Male interviewers Movement

Table 1b refers to the Female interviewers movement

Table 1c refers to the Total number of interviewers (male and female) movement.

For each of Figure 1a, Figure 1b, Figure 1c, 4 graphs were drawn.

Graph I — refers to Georgetown area (i.e. Groups A-E)

Graph II — refers to study area in Penang Island (i.e. group A-F)

Graph III — refers to the study area in Province Wellesly (i.e. groups G,H,I)

Graph IV — refers to the total Study Area of Penang and Province Wellesly.

(d) Method of Analysis of The Interviewers Time of Collection

The time of the interviewers' visits at which interviews were conducted had been compiled by The Group's Supervisors for their respective groups in

Table 2 includes the detail information of the interviewers' time of collection for all the groups (A to I) and incorporating data for the 4 graphs (I - Georgetown, II - Penang Study Area, III - Province Wellesly Study Area, and IV - Total Study Area)

Table 2a gives the absolute sub-totals for the graph whilst

Table 2b gives the percentage sub-totals necessary for the 4 graphs.

## C. RESULT OF ANALYSIS.

### I. Results of Interviewers Movement (by Sex)

#### I. 1a. Male Interviewers Movement

##### Graph 1a - I - Georgetown

###### — (collection)

60.8 % of the total interviews conducted for Georgetown area (total of 2652 interviews) were done on the 1st visit of the interviewer at the respondent's house. Another 30.8 % were completed during the 2nd visit while the remainder (7.4 %) only managed to be completed after 3 or more visits by the interviewer.

###### — (non-collection)

Of the total number of interviews which were not conducted due to various reasons, as much as 88.4 % occurred during the interviewer's 1st visit at the respondent's home. Another 9.04 % and the remaining 2.56 % of the non-collection occurred after 2 visits or more respectively by the interviewers.

##### Graph 1a - II - Penang Island

— The figures for collection of interviews on the 1st, 2nd, 3rd or more visits by the male interviewers were 64.9 %, 27.8 % and 7.4 % respectively.

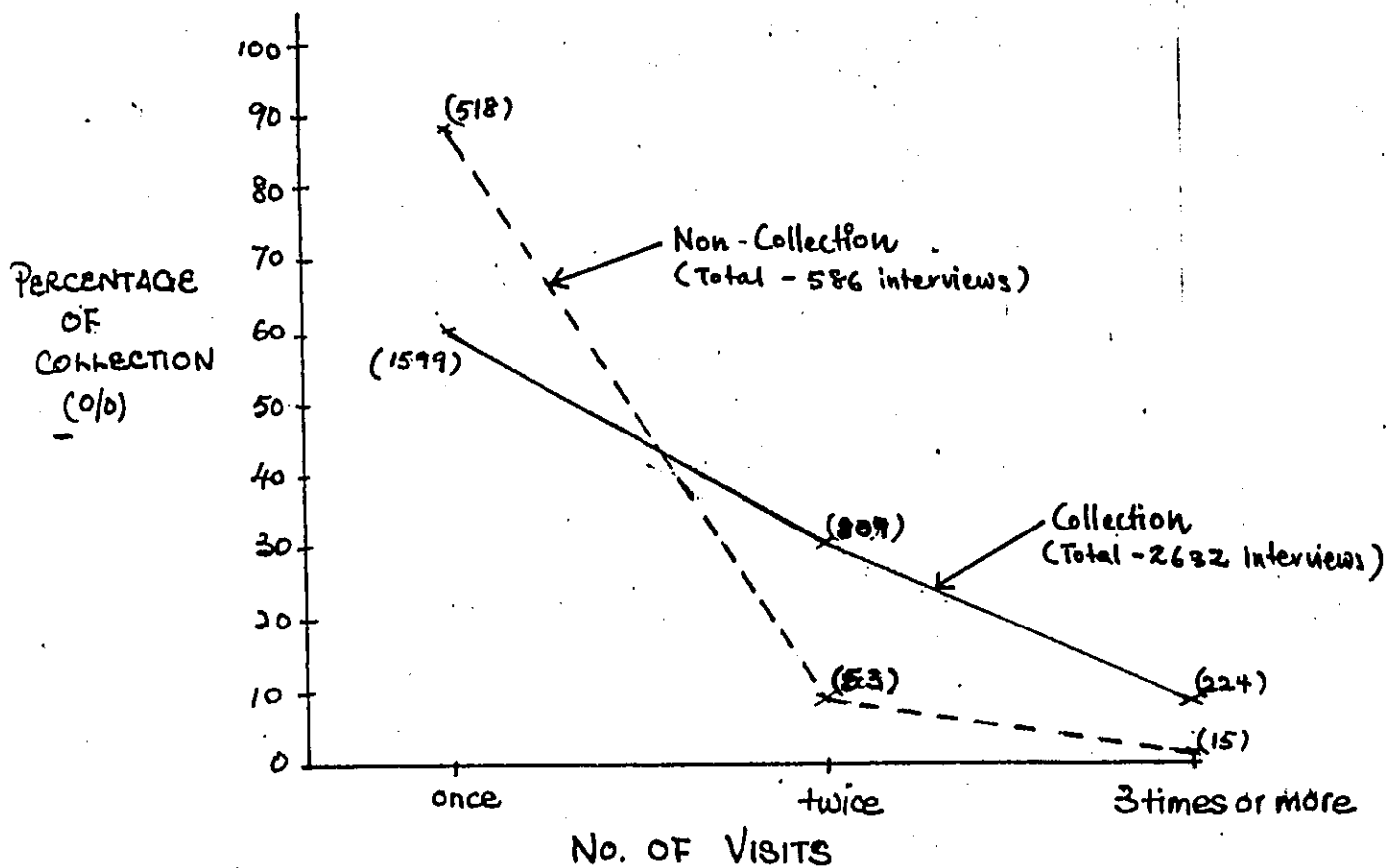
— The non-collection figures were 88.88 %, 8.27 % and 2.86 % for the 1st, 2nd, 3rd or more visits by the male interviewers.

##### Graph 1a - III - Province Wellesly

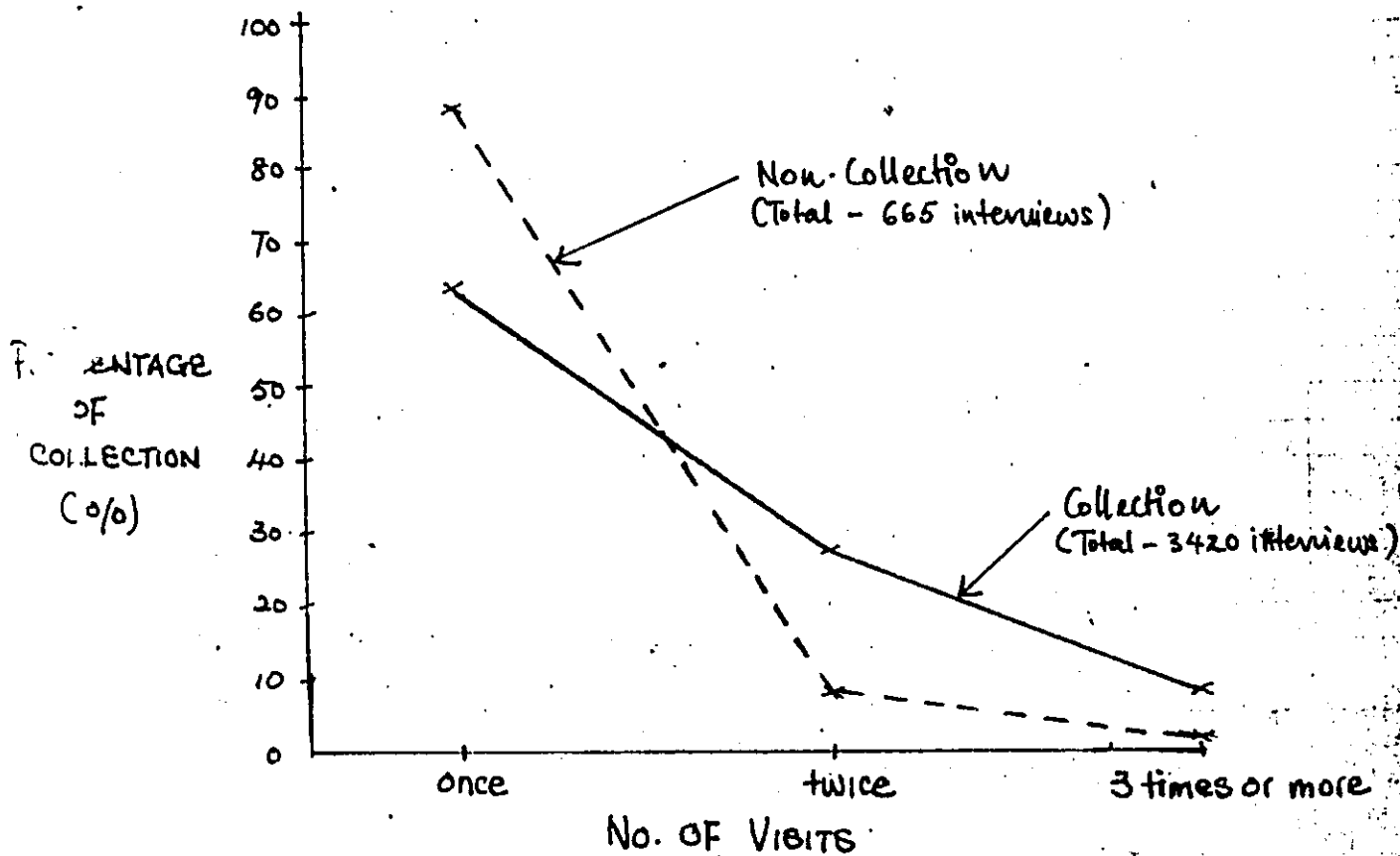
— The figures for collection for the study area in Province Wellesly were 82.3 %, 15.5%, 2.2 % on the male interviewers' 1st, 2nd, 3rd or more visits at the sampled address.

— Non-collection rates are 93.94 %, 1.06 % and 0 % respectively on the male interviewers' 1st, 2nd and 3rd or more visits.

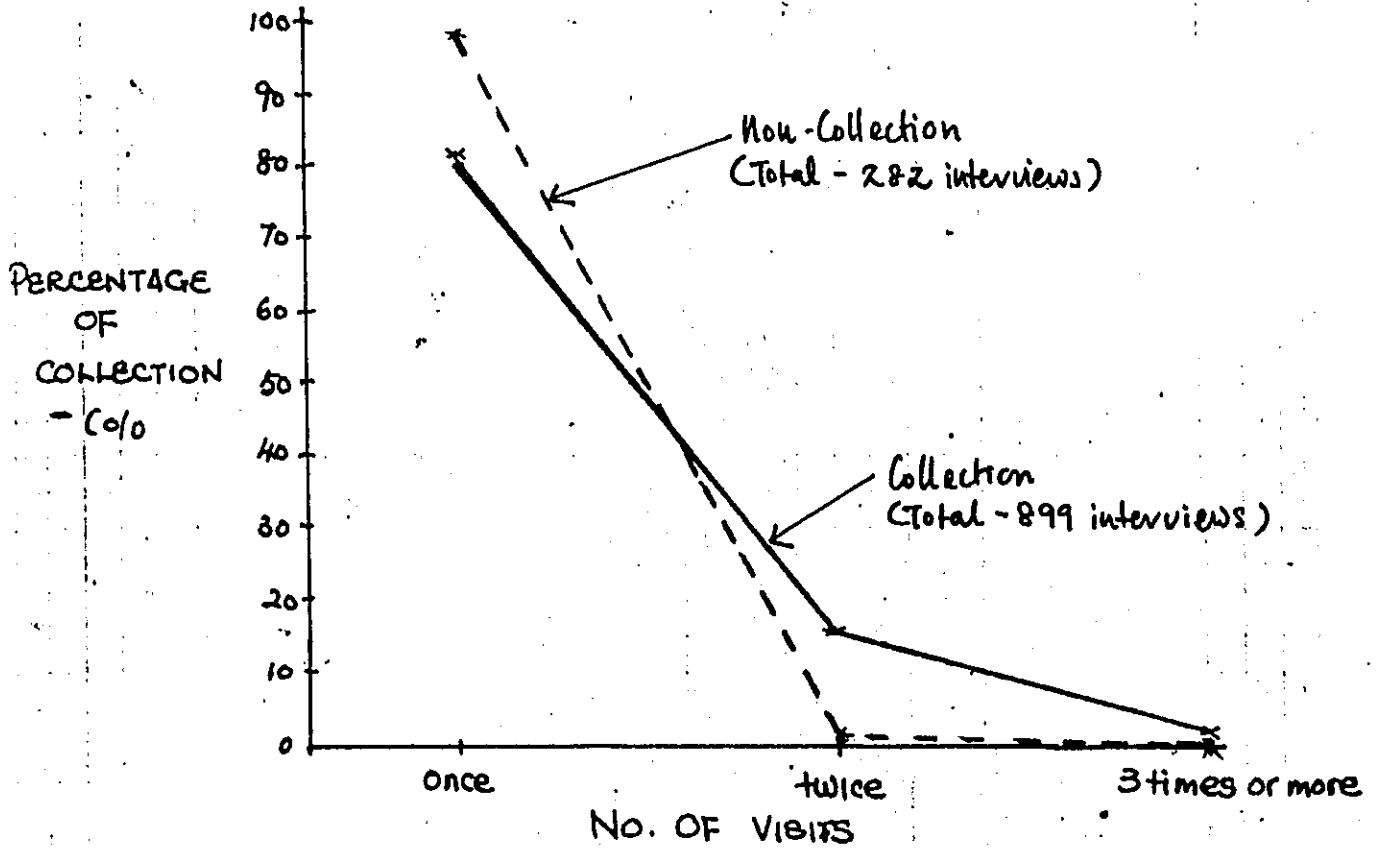
GRAPH 1 a - I: INTERVIEWERS' MOVEMENT (MALE) - GEORGETOWN



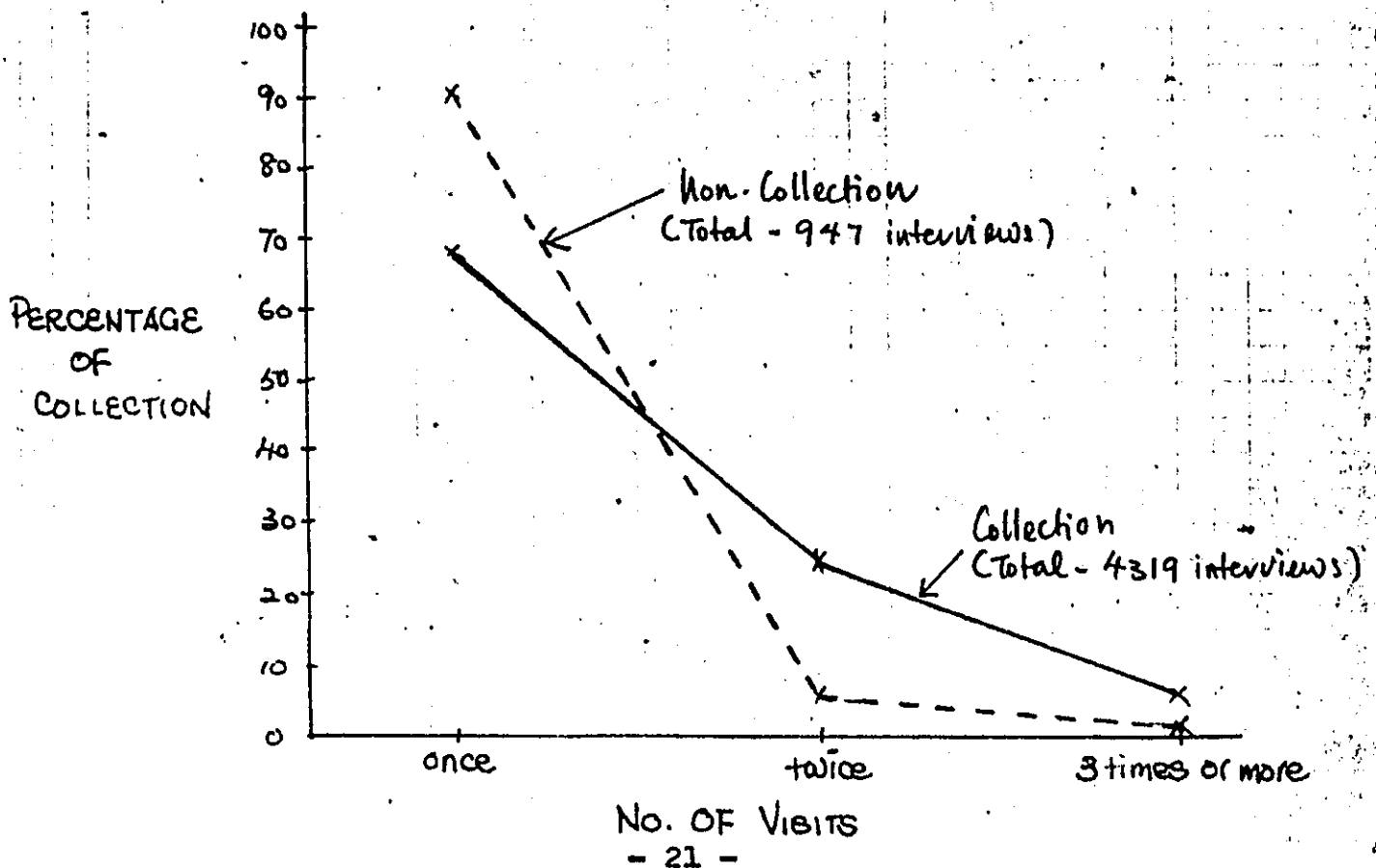
GRAPH 1 a - II: INTERVIEWERS' MOVEMENT (MALE) - PENANG ISLAND



GRAPH I A-III: INTERVIEWERS' MOVEMENT (MALE) - PROVINCE WELLESLEY.



GRAPH I A-IV: INTERVIEWERS' MOVEMENT (MALE) - TOTAL.



Table

# FIG 1 - INTERVIEWERS' MOVEMENT

(c) Total for Male & Female Movement :

No. of Visits	Once		Twice		3 times or more		Total	%	
	M+F Sub-total	%	M+F Sub-total	%	M+F Sub-total	%			
Collected (total)	I	3477	61.80	1743	30.80	419	7.40	5659	100
	II	4492	64.74	1980	28.54	466	6.72	6938	100
	III	1997	83.63	338	14.15	53	2.22	2388	100
	IV	6489	69.58	2318	24.86	519	5.57	9326	100
Now Collected	I	1022	86.46	122	10.32	38	3.21	1182	100
	II	1185	87.39	127	9.37	44	3.24	1356	100
	III	843	74.08	33	3.68	20	2.23	896	100
	IV	2028	70.05	160	7.10	64	4.25	2252	100
Total	I	4519	66.06	1865	27.26	457	6.68	6841	100
	II	5677	68.45	2107	25.40	510	6.15	8294	100
	III	2840	86.48	371	11.30	73	2.22	3284	100
	IV	8517	73.56	2478	21.40	583	5.04	11,578	100
Collection Rate	I		77.38		93.46		91.68		82.72
	II		79.13		93.97		91.37		83.65
	III		70.32		91.11		72.60		72.72
	IV		76.19		93.54		89.02		80.55

Graph 1a - IV - Total Study Area

- Of the total collection rates by the males it was mostly conducted on their 1st visit (68.5 % collection) whilst they achieved the remaining 26.2 % and 6.3 % of the collection for the total study area on their 2nd and 3rd visits.
- A major percentage (91.9 %) of the total non-collected samples also occurred during the interviewers' 1st visit whilst the remaining 6.1 % and 2 % occurred during the 2nd and 3rd visits respectively.

I. 1b. Female Interviewers' Movement

- Graph 1b - I - Georgetown
- Graph 1b - II - Penang Island
- Graph 1b - III - Province Wellesly
- Graph 1b - IV - Total Study Area.

For the movement of the female interviewers, a similar analysis as for the male's movement is applicable to that of the female interviewers movement. The data and information<sup>are</sup> obtained from the respective graphs and also Table 1b.

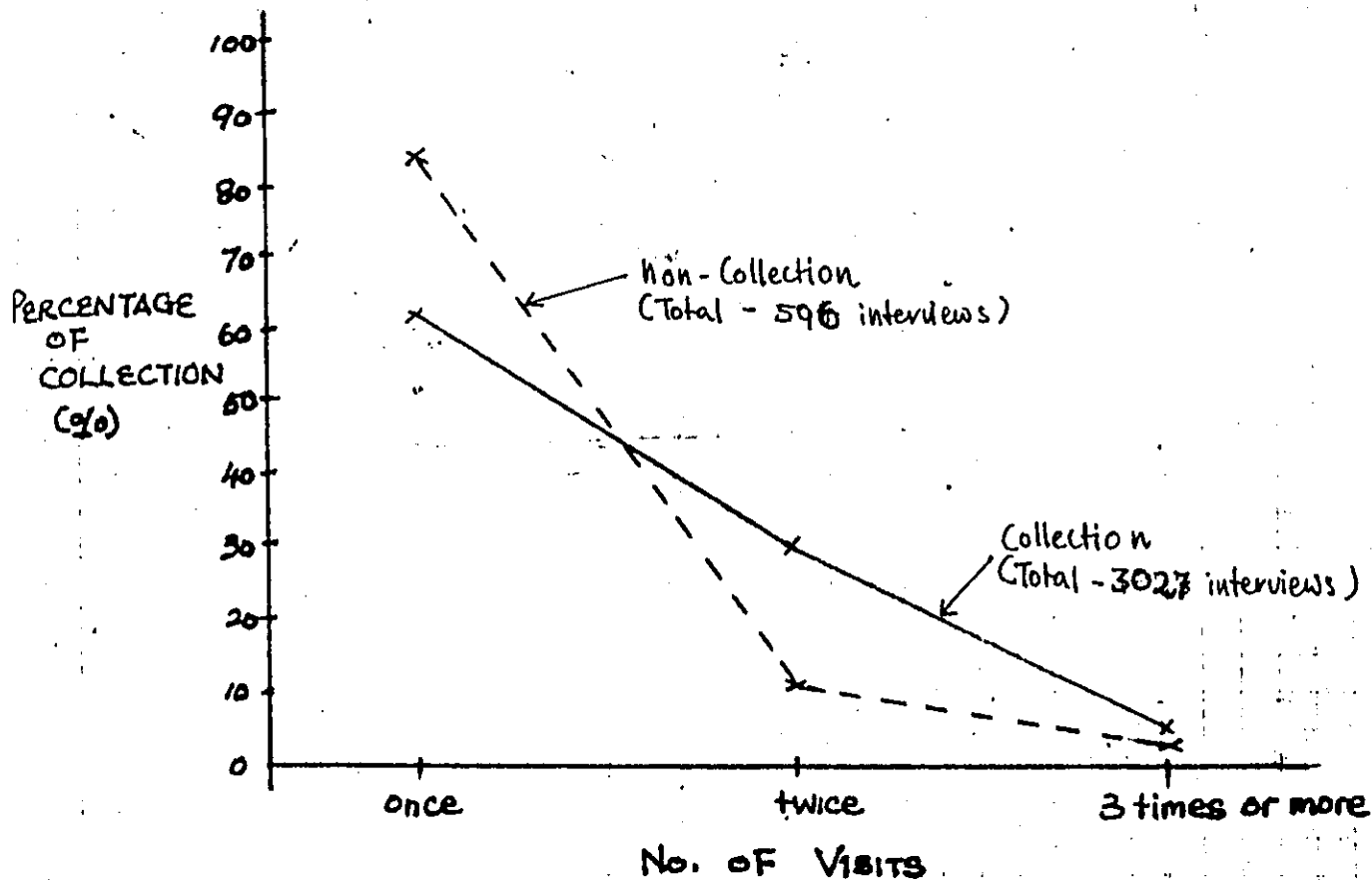
I. 1c Total Interviewers Movement (Male and Female)

- Graph 1c - I - Georgetown
- Graph 1c - II - Penang Island
- Graph 1c - III - Province Wellesly
- Graph 1c - IV - Total Study Area.

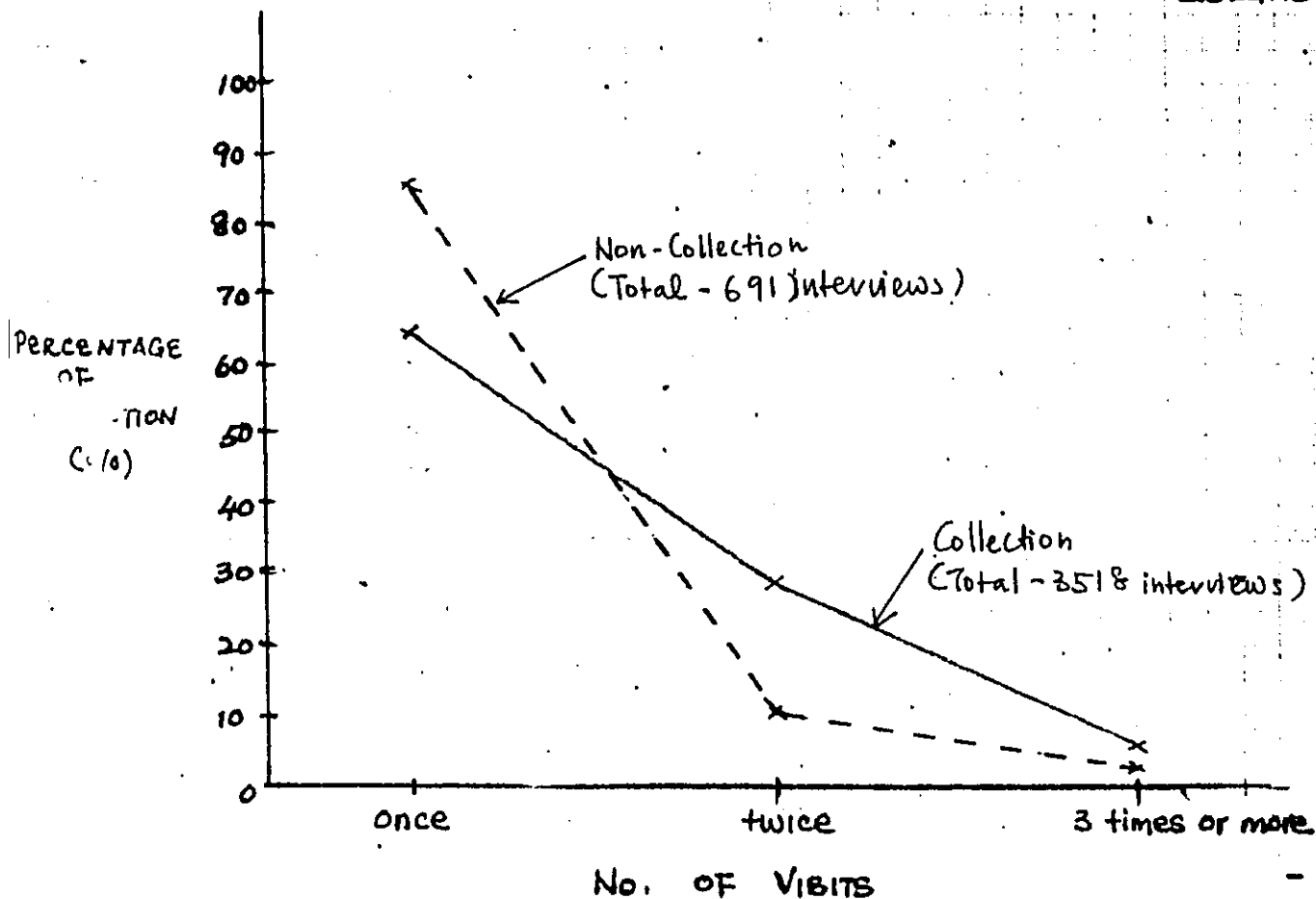
This section refers to the total number of interviewers' movement i.e. inclusive of male and female interviewers with regard to their number of visits at the sampled address.

Table 1c and graph 1c (I, II, III, IV) illustrates the data necessary for the similar analysis applied for 1a.

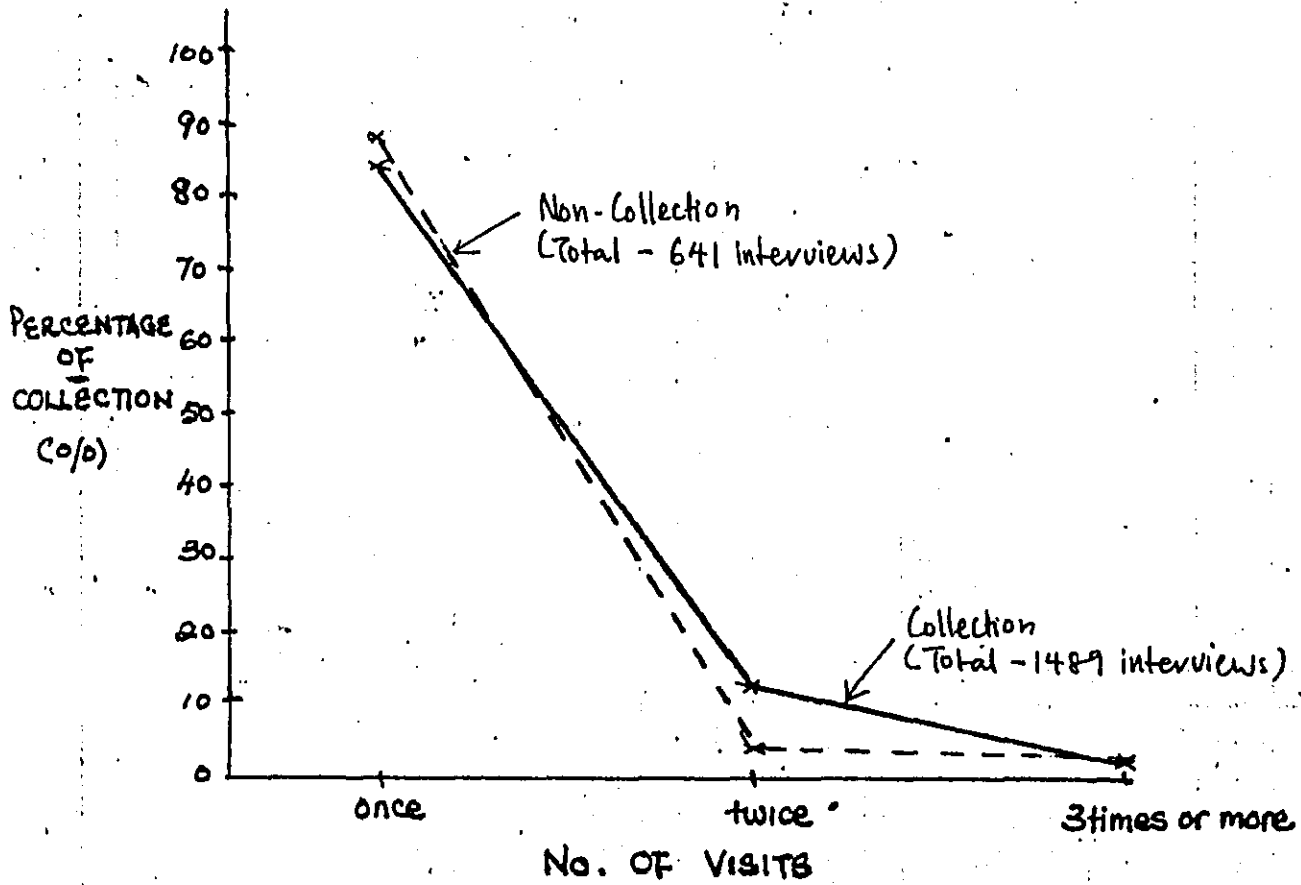
GRAPH I.b-I : INTERVIEWERS' MOVEMENT (FEMALE) - GEORGETOWN



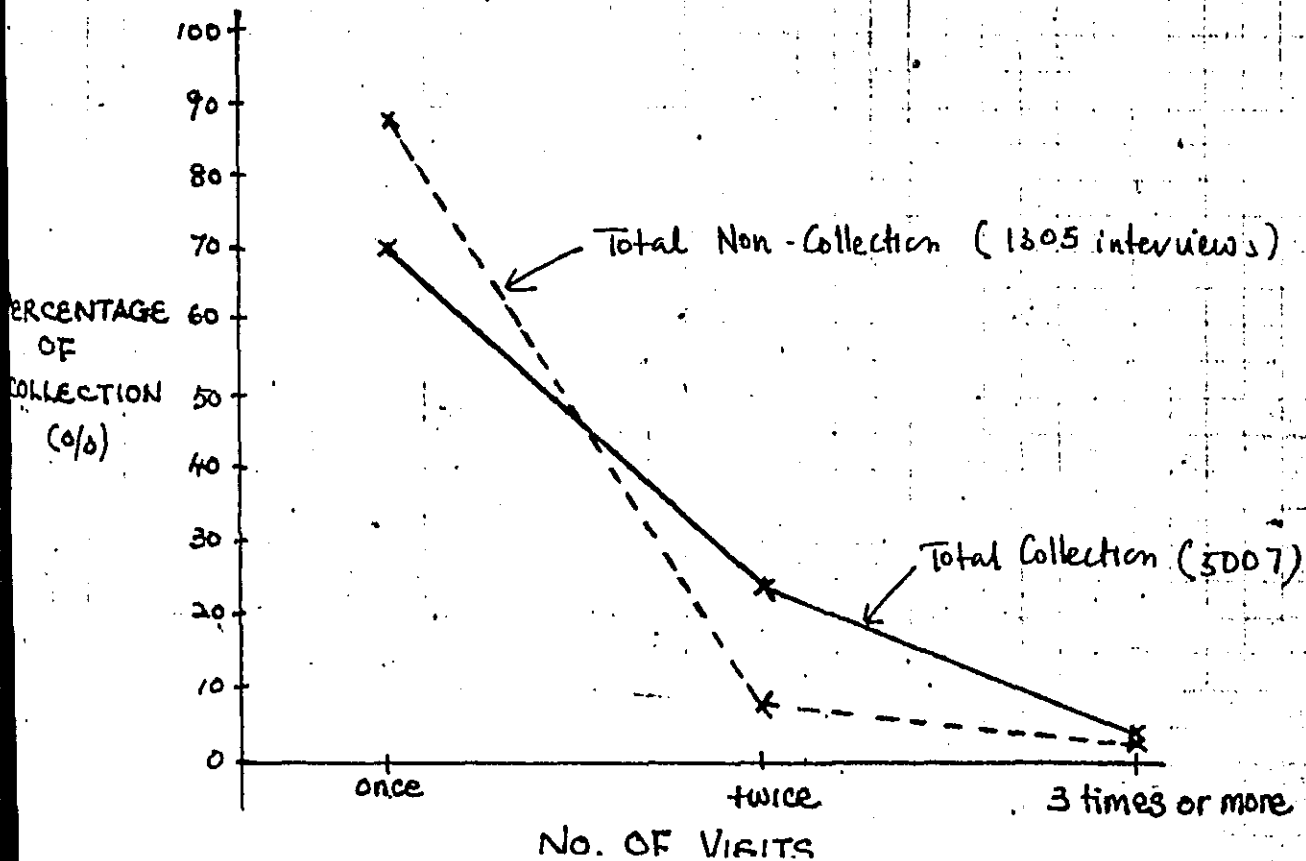
GRAPH I.b-II : INTERVIEWERS' MOVEMENT (FEMALE) - PENANG ISLAND



GRAPH I b-III : INTERVIEWERS' MOVEMENT (FEMALE) - PROVINCE WELLESLEY.

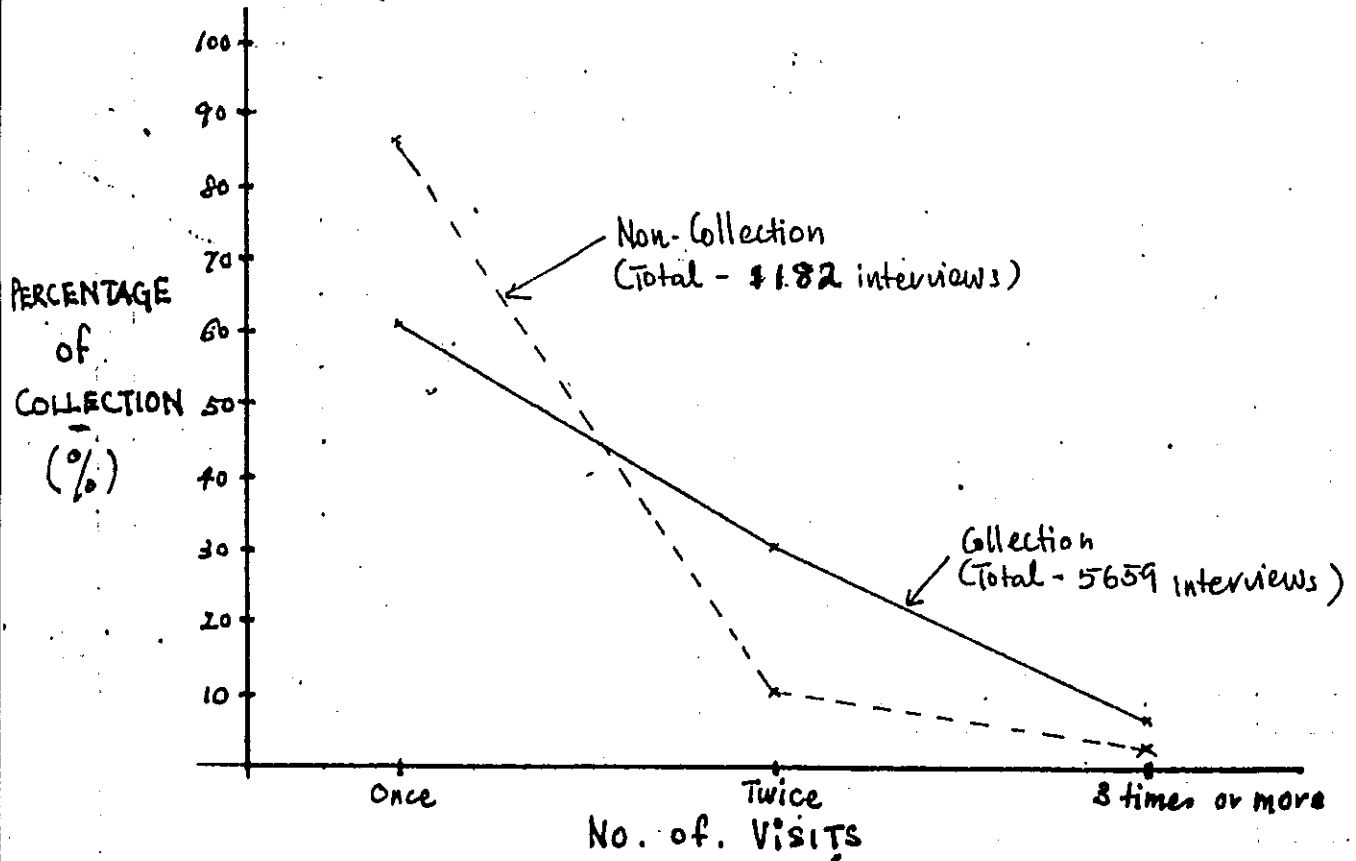


GRAPH I b-IV : INTERVIEWERS' MOVEMENT (FEMALE) - TOTAL

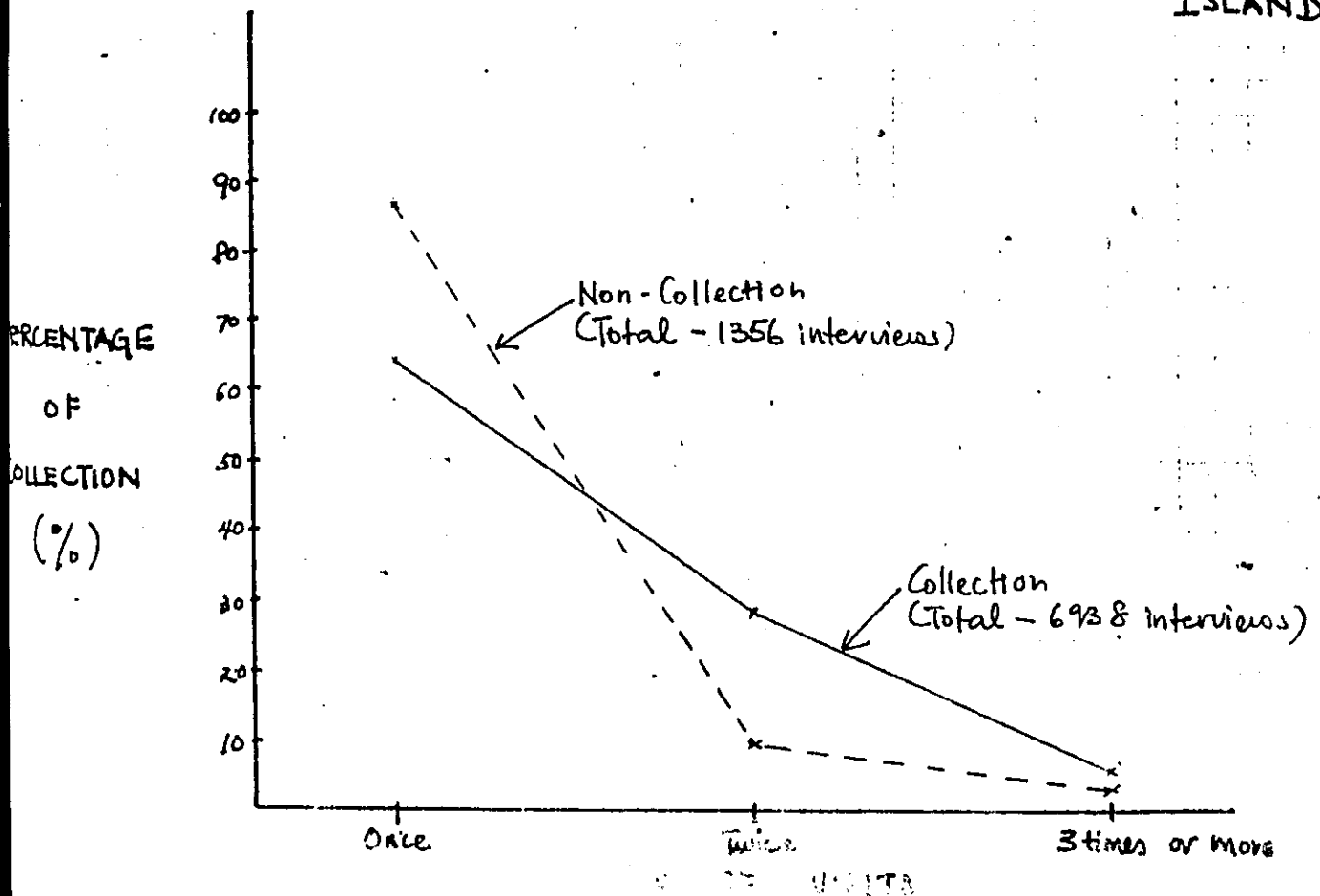




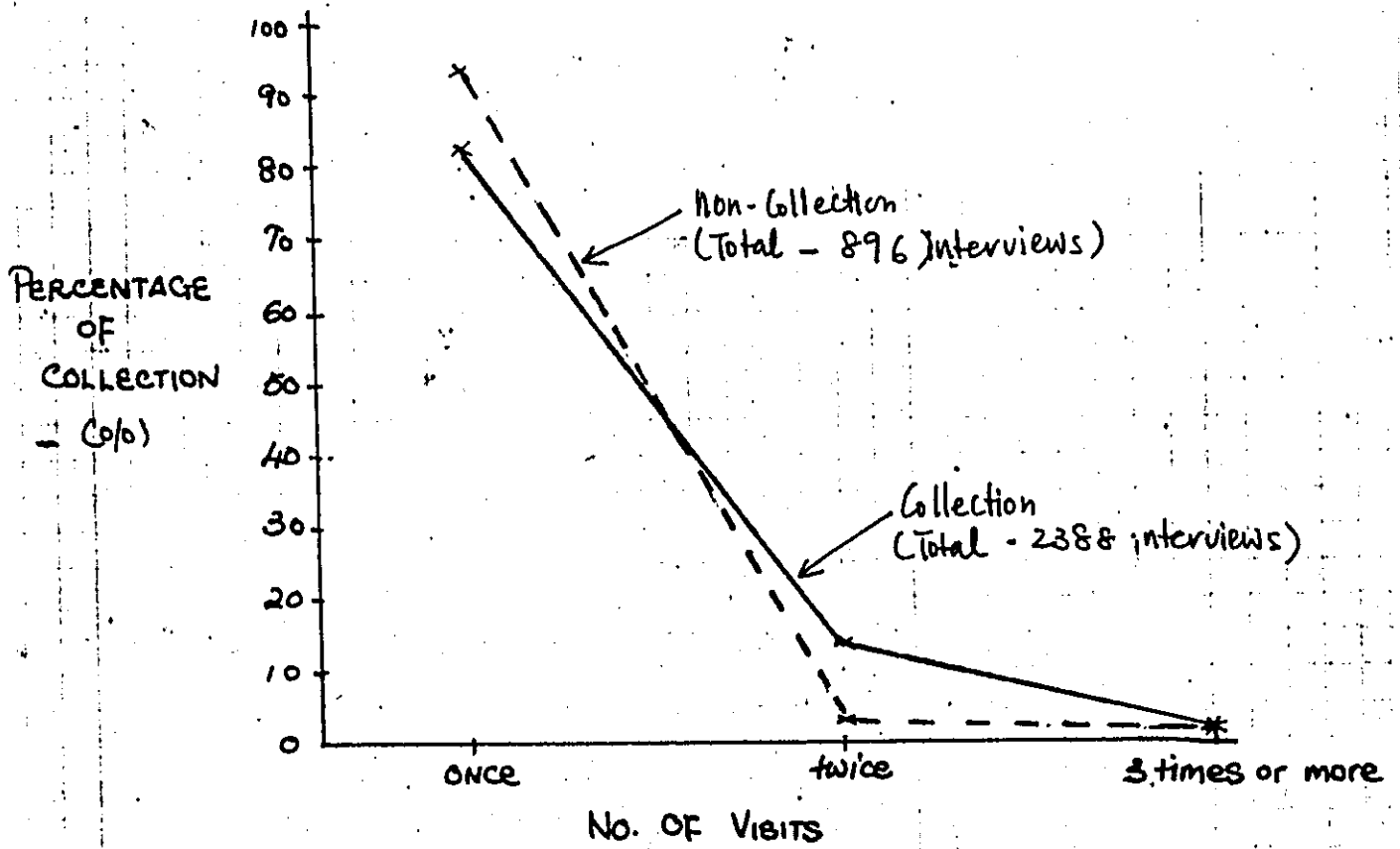
GRAPH 1c - I : INTERVIEWERS' MOVEMENT (MALE & FEMALE) - GEORGETOWN



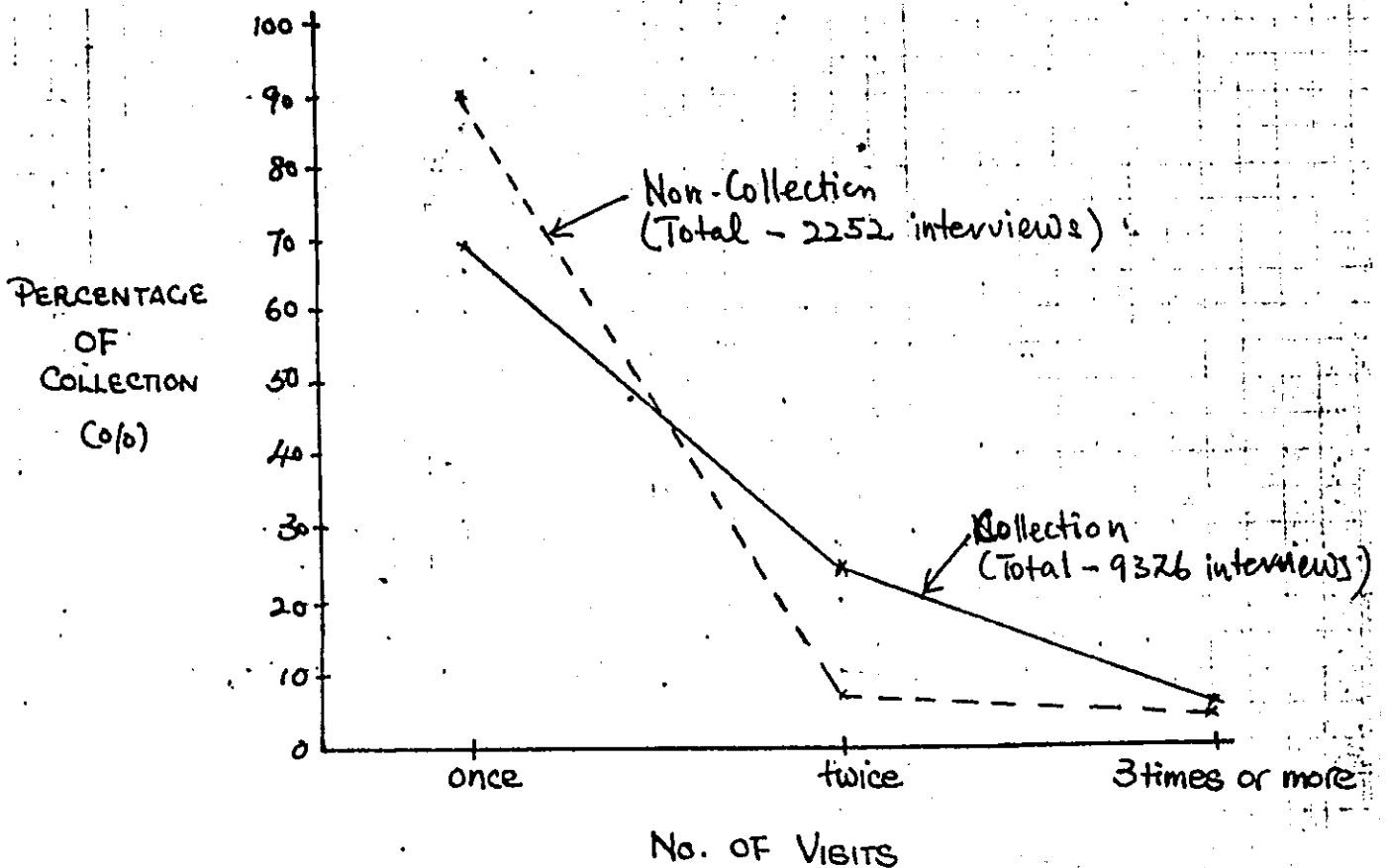
GRAPH 1c - II : INTERVIEWERS' MOVEMENT (MALE & FEMALE) - PENANG ISLAND



GRAPH IC-III : INTERVIEWERS' MOVEMENT (MALE & FEMALE) - PROVINCE WELLES LY



GRAPH IC-IV : INTERVIEWERS' MOVEMENT (MALE & FEMALE) - TOTAL



II. Comparison of Interviewers' Collection Rate and Movement by Sex.

(Refer to graph 1d)

As can be seen from the graph, collection rate for males exceed that of females in all cases i.e. whether it is on the 1st visit 2nd visit or more. This maybe attributed to the fact that male interviewers have more access to interviewees' homes by their possession of transport, mostly motorcycles. Moreover it is more convenient for the males rather than the female interviewers to interview at night time, (the collection from 7 p.m - 11 p.m had accounted for 17 % of total collection).

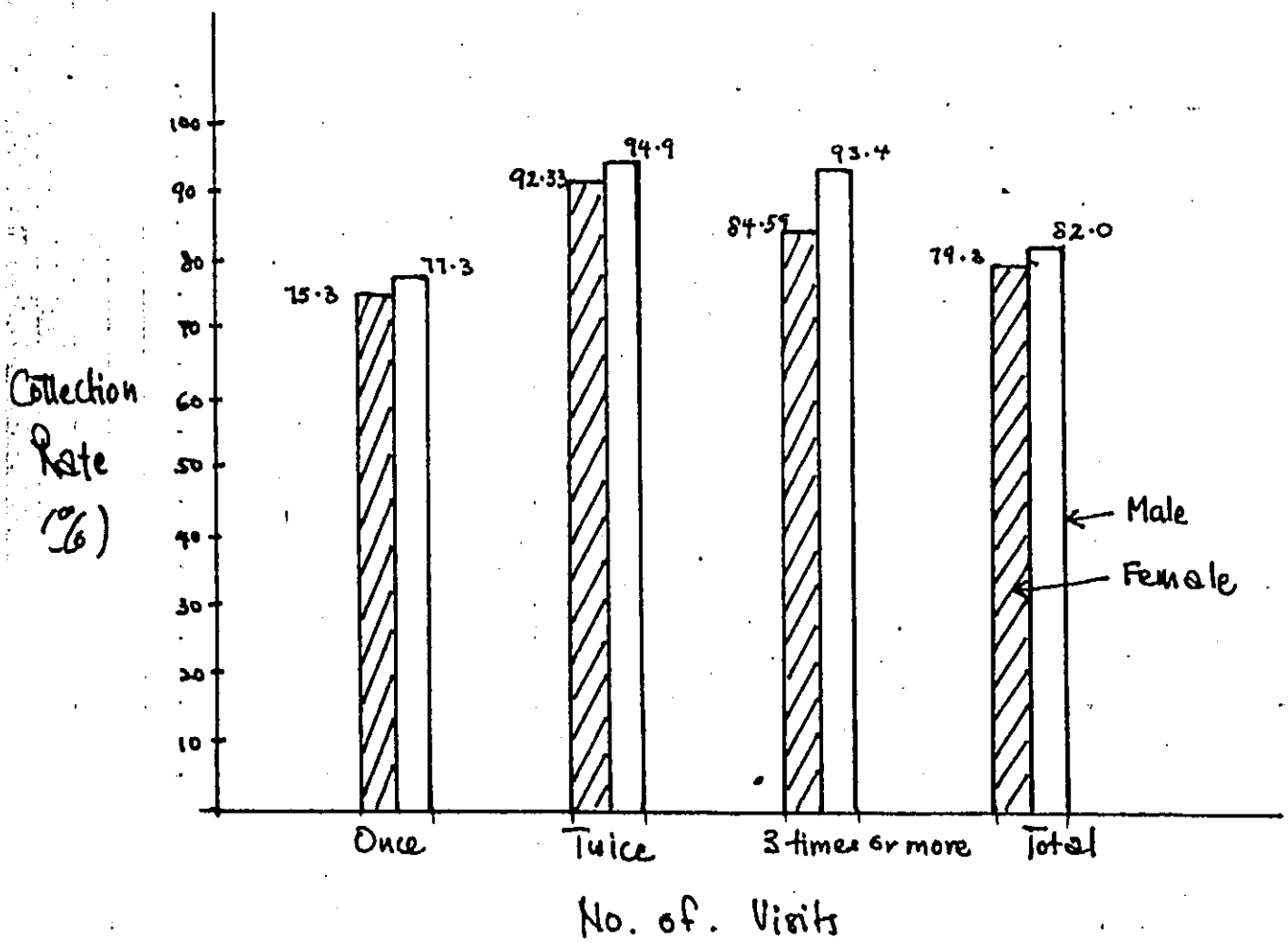
III. Comparison of Interviewer's Movement by Study Area

For this purpose, Graphs 1c (I, II, III, IV) are compared.

The finding are as follows :-

- a. Collection rates for Georgetown and Total Study area of Penang Island stands at an average of between 60 % - 65 % at the 1st visit by the interviewer. This accounted two-thirds of total collection for Penang Island and Georgetown. The greater portion of the other one-third of the interviews were conducted in the 2nd visit and the remainder on the 3rd visit.
- b. For Province Wellesly however, total collection rates on the 1st visit was 83.63 % which is 22 % and 19 % higher than the collection for Georgetown and total study area of Penang respectively. This collection of 83.63 % on the 1st visit accounted for slightly over four-fifths of total collection for Province Wellesly. The other one-fifth of the collection was conducted on the 2nd and 3rd visits.
- c. Non-collection rates however, do not vary very much between Penang Island and Province Wellesly. The difference stands at only 9 %, 6 % and 1 % respectively on the 1st, 2nd and 3rd visits.

GRAPH 1d - COLLECTION RATE BY SEX



- d. Total collection rates of both male and female interviewers in the total study area comes to an average of 69.58 %, 24.86 % and 5.57 % for the 1st, 2nd and 3rd visit.

Total non-collection rates are 90.05 %, 7.1 % and 4.25 % on each of the visits.

#### IV. Results of Interviewers' Time of Collection

Refer Table 2a and Table 2b.

a. Graph 2 - I - Georgetown

Collection time begins from 7.00 a.m onwards. The rate of collection steadily increases, reaching its highest point of just below 10 % at around 10 a.m and 11 a.m. From 1 p.m to 4 p.m, collection rate is almost steady at around 6 - 7 %. From 5 - 6 p.m, the rate of collection rises to about 10 % after which collection rates declines until 11 p.m.

Note : "Others" on the X - axis "Time of Collection" refers to those times that has not been specified by the interviewer.

b. Graph 2 - II - Penang Island

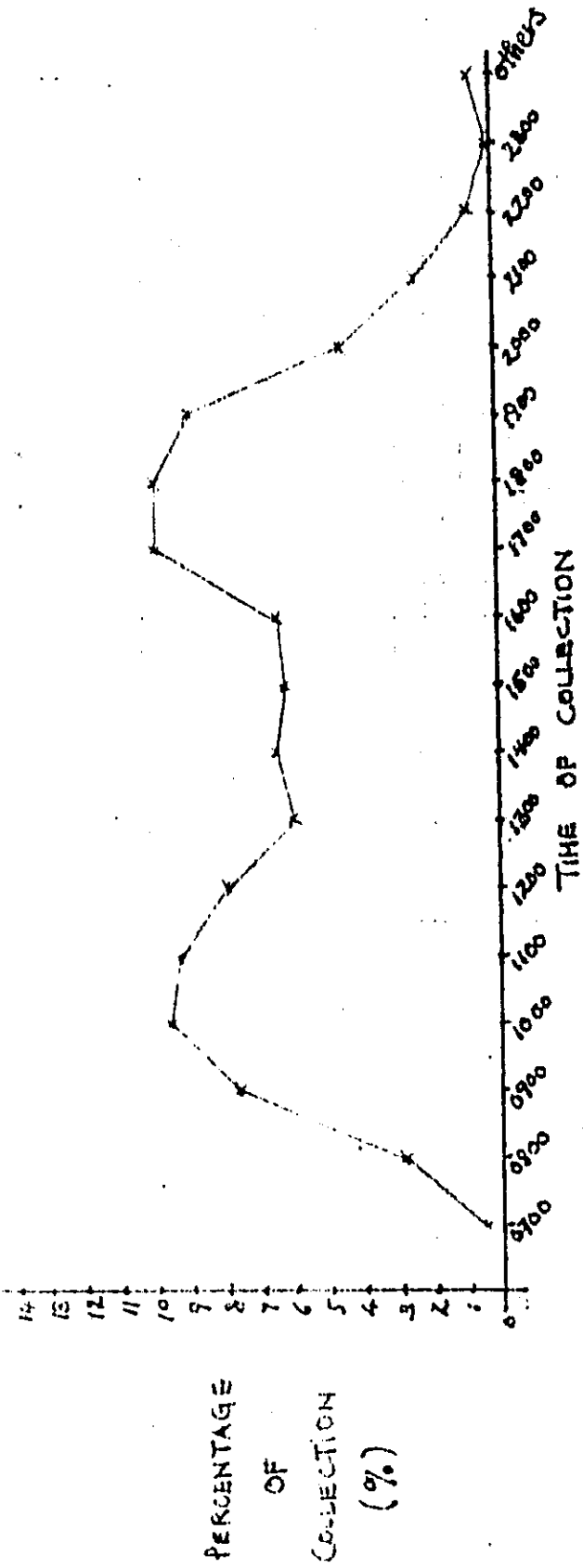
The collection rate follows a similar trend as for Georgetown, reaching the highest at around 9 % at around 10 a.m and 11 a.m. However, the highest collection rate i.e. 11.5 % is at 6 p.m in the evening.

c. Graph 2 - III - Province Wellesly

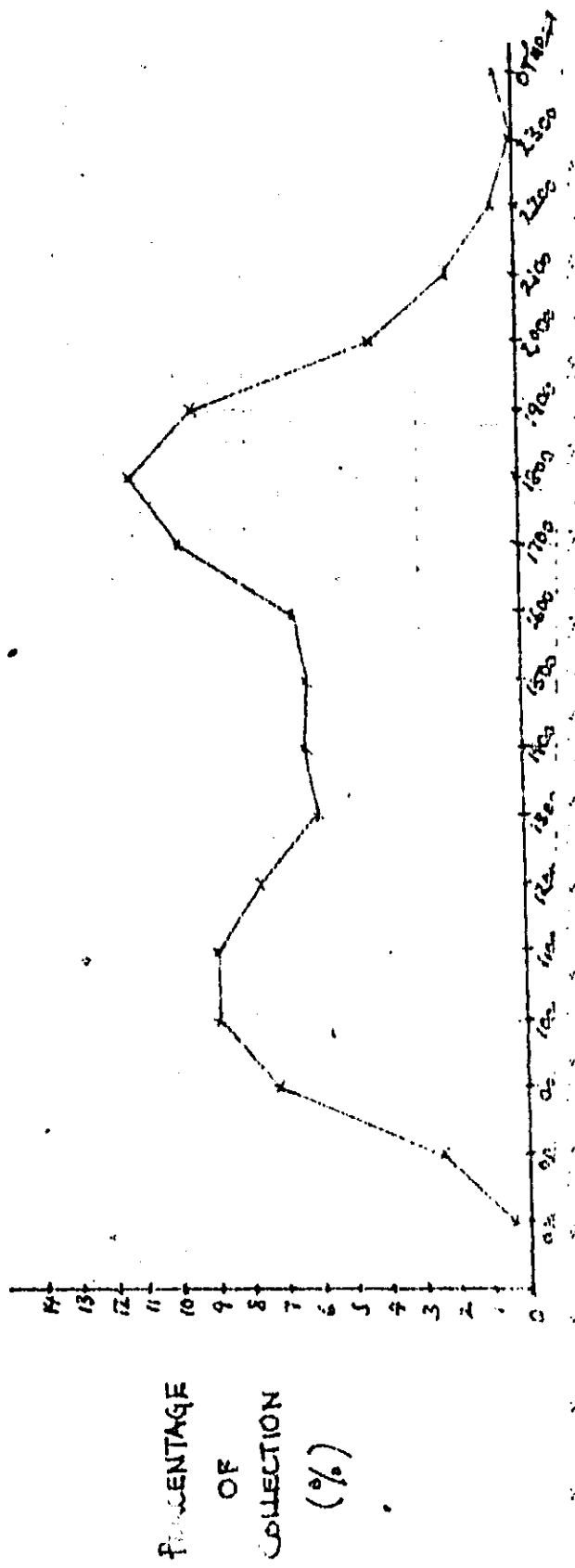
The collection trend in Province Wellesly is slightly different from that of Penang. The highest collection rate of 14 % occurred in the morning at 10 a.m, after which it decreases down to 6.4 % at 1 p.m. After 1 p.m, the rate steadily increases to about 9 % at 4 - 5 p.m, after which a decrease in the rate followed.

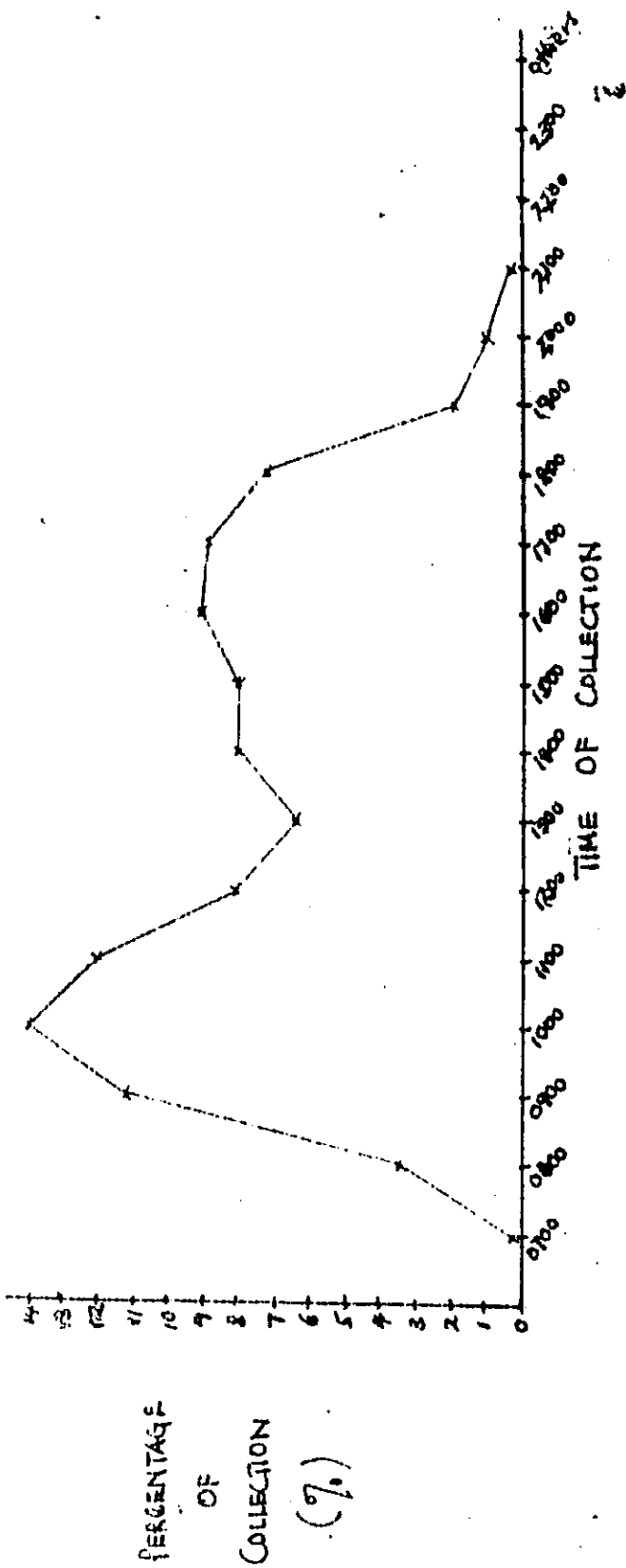
d. Graph 2 - IV - Total Study Area

The trend is similar to that of the different study areas with the peak collection rate of 10.3 % at 10 a.m and 6 p.m. Moderate collection of 6 - 7 % occurred between these 2 times.

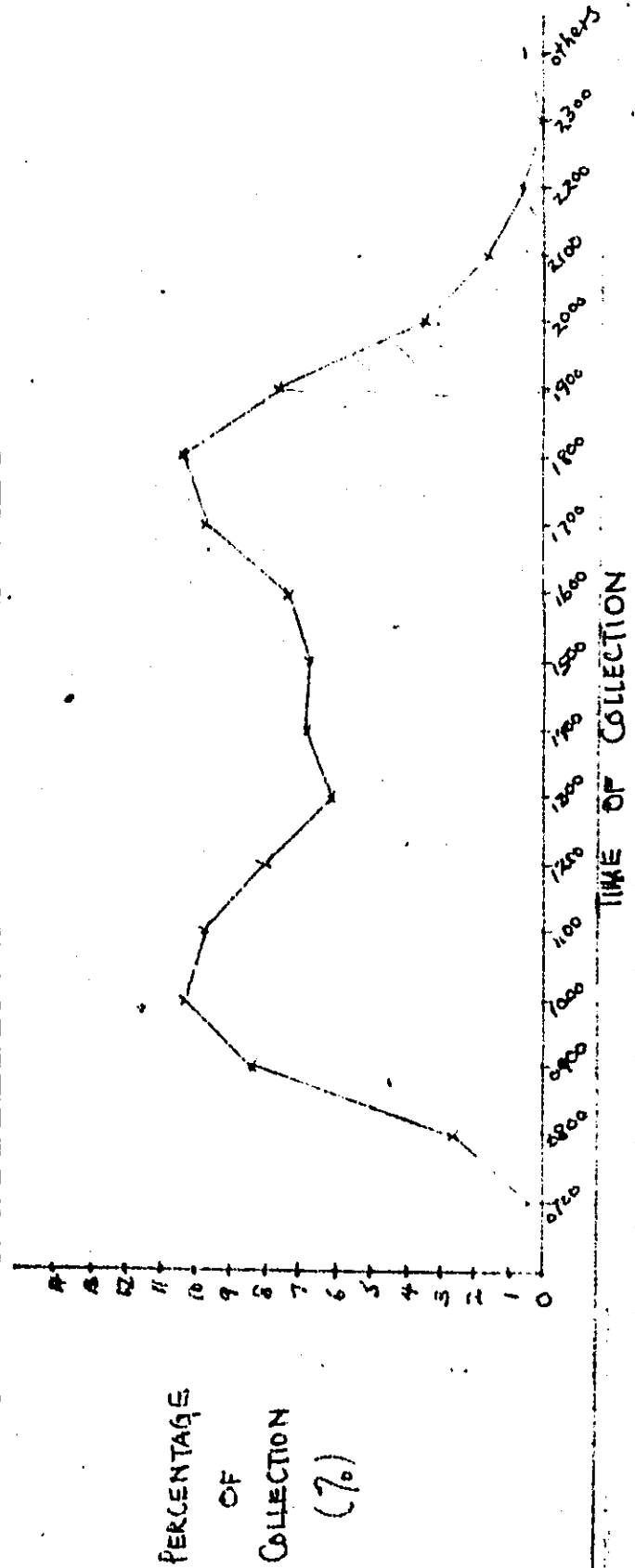


GRAPH Z-II - INTERVIEWERS' TIME OF COLLECTION (PENANG ISLAND)





GRAPH Z-IV - INTERVIEWERS' TIME OF COLLECTION ( TOTAL )



## D. COMMENTS

### 1. Interviewers' Movement (Number of Visits)

On the whole, collection rate is very good as the interviewers were able to achieve at least 60 % or 2/3 of their total collection (in Penang Island) on their very first visit at the sampled address. The collection rate on the 1st visit in Province Wellesly is even higher i.e above 80 % or 4/5th of the total collection for Province Wellesly. The higher collection rate in Province Wellesly may be attributed to the fact that in more urban Georgetown and Penang Island, most of the respondents are in the employed - occupations i.e they are employed by others so that their working place is different from their residence. Thus, the respondents are usually not at home thereby requiring more visits by our interviewers. On the other hand, most of the sampled respondents in Province Wellesly are engaged in more self-employed occupation of service, sales, agriculture which means their residence is also their working place. Thus, collection rate is higher since they are easily located at home. This also accounted the fact that only one-quarter of the remaining collection rate in Province Wellesly need to be completed compared to one-third in Penang Island.

### 2. Interviewers' Time of Collection

Interviewers usually have to start their interviewing or collection of questionnaires as early as 7 a.m and ended as late at 11 o'clock at night. The best time is around 10 - 11 a.m and 5 - 6 p.m. The morning peak especially in Province Wellesly maybe attributed to the fact that respondents are easily located at home on the interviewers' rounds. The evening collection peak of 5 - 6 p.m may be attributed to the fact that respondent have just arrived back home.



E. CONCLUSION

The interviewer's movement as had been characterised by number of visits made to the samples address had been very encouraging as at least 2/3rd of the total interviewers had been conducted on the very 1st visit. However, interviewers had had to adjust their working time according to the peak collection time, as well as to suit respondent's convenience from as early as 7 a.m to 11 p.m at night. This trend is indeed normal for any interviewing work schedule.

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# REPORT OF THE GENERAL COMMENTS

## FROM INTERVIEWEES

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This report is based on the interviewee's comments and recommendations regarding the traffic and road system.

The data collected from the questionnaires are in column No. 27 and are divided into 2 headings :-

- i) Condition of the roads.
- ii) System of the roads.

### A. SYSTEM OF ROADS

This section covers more on the traffic system. Comments and recommendations are divided into the following :-

- i) Traffic lights - this includes comments on the present traffic lights e.g. traffic lights too slow or too fast, and any recommendations for more traffic lights.
- ii) Roundabouts - general comments on the roundabout. Recommendation of roundabout instead of traffic lights.
- iii) Intersection/junction - any comments on junctions.
- iv) Pedestrian bridge/  
zebra cross. - recommendations for pedestrian bridge or zebra cross along busy roads.
- v) Parking - lack of parking space etc.

vi) Lanes

- recommendations for separate lanes for motorcycles, bicycles, cars and etc.

## B. CONDITION OF ROADS

This section covers the comments and recommendations regarding the present conditions of the roads.

The comments and recommendations are divided into the followings:-

- i) Narrow roads - any recommendation on road widenings and comments on narrow roads.
- ii) Roads under repair/digging - comments on frequent repair, diggings by the authorities and other bodies e.g. LLN, etc.
- iii) Uneven roads/pot holes/slippery roads - any comments regarding the road surface.
- iv) Dirty/dusty - caused by any construction and fumes by vehicles, especially heavy lorries and buses.
- v) Congestion - heavy traffic,

ANALYSIS OF RESULTS:

PART 1:

From Table + 1A, it is found that the roads in Penang Island that received the most number of comments and reccomendations are as follows; ( see map 1A )

- 1) Green Lane / Scotland Road
- 2) Jalan Datuk Keramat.
- 3) Jalan Air Itam
- 4) Penang Road / Prangin Road
- 5) Jelutung Road
- 6) Gelugor / Bayan Lepas Road.

From table 1B, the roads that received the most number of comments and reccomendations in Butterworth are as follows; (see map 1B )

- 1) Jalan Raja Uda / Telaga Air Road
- 2) Bagan Luar Road / Kampung Gajah Road
- 3) Prai Main Road / Chain Ferry Road
- 4) Jalan Permatang Pauh
- 5) Market Road
- 6) Jalan Kulim
- 7) Jalan Besar Bukit Mertajam.

Part II

From the data collected (Part I), the results are as follows:

1) Penang Island

5216 - Comments and recommendation made on road condition.

1814 - Comments and recommendation made on the system of roads.

2) Butterworth

2169 - Comments and recommendation made on the road condition.

507 - Comments and recommendation made on the system of roads.

For detail results, see table II.

From the results obtained, it is observed that in Penang Island and Butterworth, most of the comments and recommendation made were related to traffic congestion, width of roads, parking and traffic lights.

	PENANG ISLAND	BUTTERWORTH
TRAFFIC CONGESTION	43%	42%
PARKING PROBLEM	22%	45%
NARROW ROADS	29%	35%
TRAFFIC LIGHTS	24%	34%

## PENANG ISLAND

## BUTTERWORTH

	CONDITION OF ROAD	SYSTEM OF ROAD	CONDITION OF ROAD	SYSTEM OF ROAD
NARROW ROAD	29%		35%	
ROAD UNDER CONSTRUCTION REPAIR/DIGGING	12%		7%	
ROAD SURFACE UNEVEN, POT HOLE, SLIPPERY	12%		13%	
DIRTY/DUSTY	4%		3%	
CONGESTION	43%		42%	
TRAFFIC LIGHT		24%		34%
ROUND ABOUT		14%		2%
ROAD SIGN		12%		6%
INTERSECTION/JUNCTION		10%		7%
PEDESTRIAN BRIDGE		4%		2%
PARKING		22%		45%
FLY OVER		5%		1%
LANE		9%		3%

TABLE II

CONDITION OF ROAD : PENANG ISLAND

	NARROW ROAD	ROAD UNDER CONST, REPAIR, DIGGING	UNEVEN, POT HOLE SLIPPERY	DUSTY/DIRTY	CONGESTION	TOTAL		
GENERAL	795	343	312	93	980	2523		
GREEN LANE / SCOTLAND RD.	45	1	7	6	144	203		
CAUNTER HALL	2		3		2	7		
DAMUK KRANAT / AIR ITAM	127	74	84	10	188	483		
ANSON ROAD	6	1			12	19		
PENANG RD. / PRANGIN RD.	24	2	3	25	162	216		
SG. PINANG	2	11	8	1	9	31		
CARNAVON STREET	3		8		8	19		
BRIDGE STREET	18		7	2	27	54		
BEACH STREET	20	1	4		48	73		
JELUTONG ROAD	90	8	20	22	101	241		
GELUGOR RD / B. LEPAS / BATU UBAN	230	163	95	46	311	845		
CAMPBELL ST. / CHULIA ST.	7				13	20		
NORTHAM ROAD	2		1		38	41		
PERAK ROAD	33		6		27	66		
BATU FERRINGHI	4					4		

TABLE IA:

CONDITION OF ROAD

	NARROW ROAD	ROAD UNDER CONST. REPAIR, DIGGING	UNEVEN, POT HOLE SLIPPERY	DUSTY/DIRTY	CONGESTION	TOTAL		
BAHU LANCANG, ROAD	2		1			3		
BRICK KILN ROAD	3		1		4	8		
TG. TOKONG, ROAD	10		5		8	23		
WELD QUAY	2	10	8	6	18	44		
MACALISTER ROAD	3	3	3		29	38		
BURMAH ROAD	9	1	7	1	29	47		
HAMILTON ROAD					2	2		
LANGKAWI	1		1			2		
FARADAY RD   THOMAS RD			5			5		
NOORDIN STREET	3	1	18		4	26		
VICTORIA ST.	3					3		
KG. MELAYU	7		1		9	17		
HUTTON LANE					3	3		
RELAU ROAD	12	3		8		23		
FARQUHAR ST.	20				52	72		
TG. BUNGA	3		5		3	11		





SYSTEM OF ROAD : PENANG ISLAND

	TRAFFIC LIGHT	ROUND ABOUT	ROAD SIGN	INTERSECTION/ JUNCTION	PEDESTRIANT BRIDGE/ZEBRACROSS	PARKING	FLY OVER	LANE	TOTAL
GENERAL	221	98	63	29	34	297	51	27	880
GREEN LANE   SCOTLAND RD	26	30	5	44	6	11	7	5	134
CAUNTER HALL	1			1					2
DATUK KRANAT   AIR ITAM	34	83	51	5	2	11	6	8	200
ANSON ROAD				2			1		3
PENANG RD   FRANGIN RD	31	20	15		2	30	18	7	123
SG. PINANGI	41		5	24	27	2			99
CARNAYON STREET		1		1					2
BRIDGE STREET	2			2	5		2		11
BEACH STREET	1	1			7	24		2	35
JELUTONG ROAD	15		6	25	10	14		4	74
GELUGOR   B. LEPAS   <sup>BMT</sup> UBAN	15	6	10	1		1		7	40
CAMPBELL ST.   CHULIA ST.						2	2	11	15
NORTHAM ROAD	4		1	7			1		13
PERAK ROAD	3	1	5	5			1		15
BATU FERRINGHI									

TABLE I A ii

SYSTEM OF ROAD

	TRAFFIC LIGHT	ROUND ABOUT	ROAD SIGN	INTERSECTION/ JUNCTION	PEDESTRIANT BRIDGE/ZEBRACROSS	PARKING	FLY OVER	LANE	TOTAL
BATU LANCANG RD.				7		2			9
BRICK KILN RD.	2	3					1	1	7
TG. TOKONG RD.	2			3		1			6
WELD QUAY	1					1		2	4
MACALISTER RD.		3				2			5
BURMAH RD.	3				1	2			6
HAMILTON RD.				1					1
LANGKAWI									
FARADAY RD   THOMAS RD.									
NOBROM ST.						1		5	6
VICTORIA ST.								3	3
KG. MELAYU	2			1	2				5
HUTTON LANE		1					1		2
RELAU ROAD									
PARQUHAR ST.	15		40	25		1	1		82
TG. BUNGA	5		23						28



CONDITION OF ROAD

BUTTERWORTH

	NARROW ROAD	ROAD UNDER CONST. REPAIR, DIGGING	UNEVEN, POT HOLE SLIPPERY	DUSTY/DIRTY	CONGESTION	TOTAL		
GENERAL	303	73	123	23	385	907		
CHEMPA LANE	2		2	1		5		
JLN. RAJA UDA, SIRAM TELAGA AIR	33	18	16	4	62	133		
HENGI CHOR THEAN	29	9	6	1	7	52		
BGN LUAR RD / KG. GATAH RD.	40	8	6	2	67	123		
PRAI MAIN RD. / CHAIN FERRY	16	7	25	5	40	93		
JLN. MATA KUCING	11	1	4		20	36		
JLN. BAGIAN AJAM	6		1	2	8	17		
JLN. PTG. PAUH / SG. PUYU	21	11	11	9	50	102		
KG. BENGALI	4	4	3		1	12		
SG. NYIOR	2		2			4		
MARKET RD.	38	5	11	2	41	97		
STOWELL RD.	7	1		1	5	14		
DANBY ST.	8		1		5	14		
ARUMUGAM PILLAI	33	1	4		27	65		
JLN. KULIM	63	12	14	3	38	130		

TABLE IBI

CONDITION OF ROAD

	NARROW ROAD	ROAD UNDER CONST, REPAIR, DIGGING	UNEVEN, POT HOLE SLIPPERY	DUSTY/DIRTY	CONGESTION	TOTAL		
JLN. BESAR	89	1	4		54	121		
STATION RD.	3	1	2	1	13	20		
PERMATANG BARM RD.	4		2		5	11		
KG. CROSS ST.	1				2	3		
JLN. TANAH LIAT	9		3		6	18		
JLN. NEGAT HARUN	7		3	1	13	24		
JLN. MURTH	14	1			10	25		
ASTON ROAD	22	1	2	2	26	53		
JLN. SGI. RAMBAT	15		10	3	12	40		
JLN. BUNGA RAYA	7		15	12	6	40		
PENANTI								
JLN. KUBANG SEMANGI	3	1	1	1	4	10		
TOTAL	760	155	271	73	910	2169		

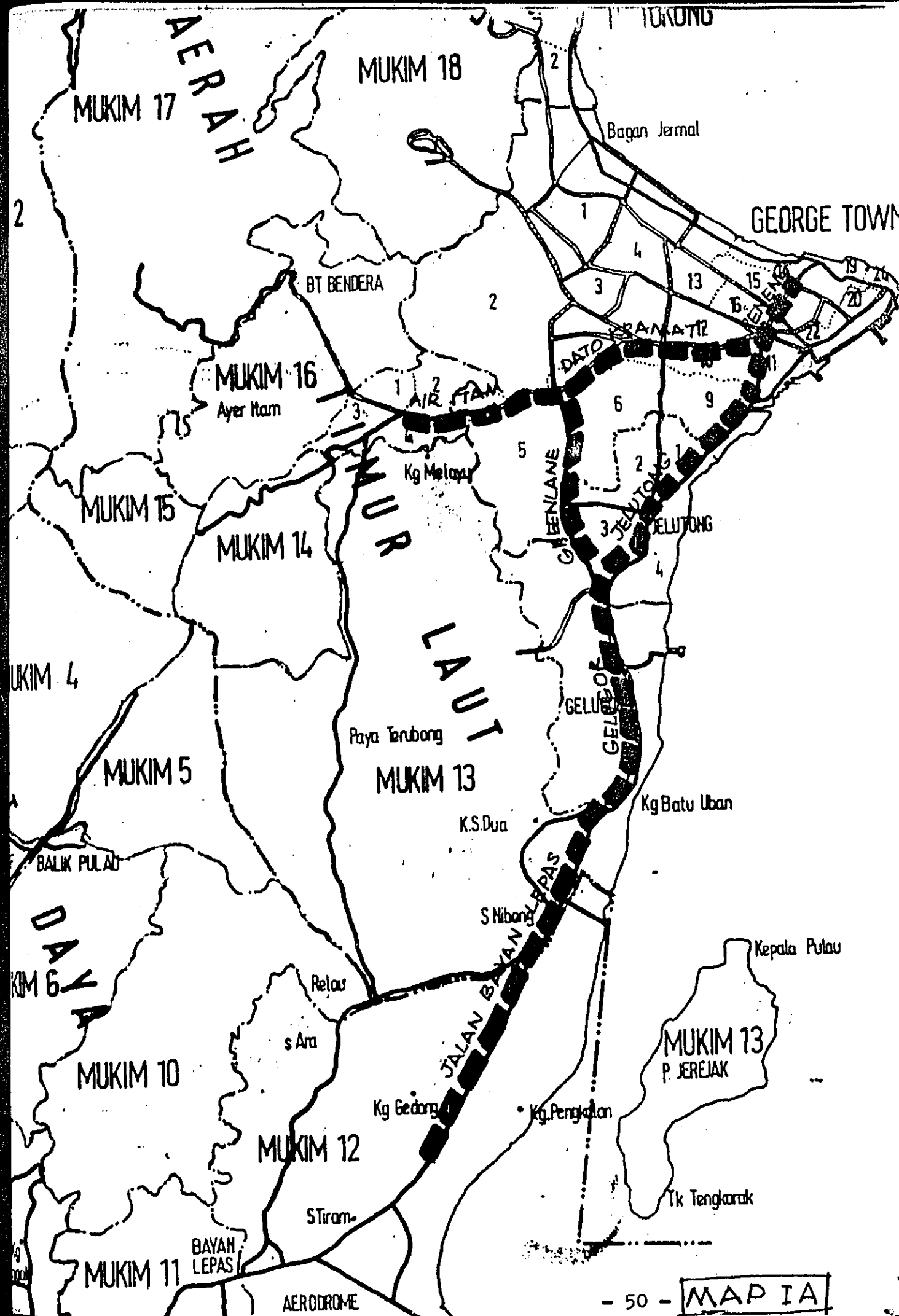
	TRAFFIC LIGHT	ROUND ABOUT	ROAD SIGN	INTERSECTION/ JUNCTION	PEDESTRIAN BRIDGE/ZEBRACROSS	PARKING	FLY OVER	LANE	TOTAL
GENERAL	32	5	14	10	6	75	2	5	152
CHEMPA LANE									
JLN. RATA RATA, SIRAM TELAGA DIE	41	1	3	15				2	62
HENG CHOR THEAN	8					1			9
SGN LUAR RD / KG. GAJAH	25		8	7	3	5	1		49
RAH MAIN RD   CHAIN FERRY	37	5				3		2	47
JLN. MATA KUCINGI	2								2
JLN. BAGIAN AJAM									
JLN. PTG. PAUH   SG. PUYU	3		1	1		2			7
KG. BENGALI									
SG. NYIOR	2								2
MARKET ROAD	3					13		7	23
STOWELL ROAD	1					1			2
DANBY STREET.	1					3			4
ARUNUGAM PILLAI	3			2		4			9
JLN KULIM	5					36			41

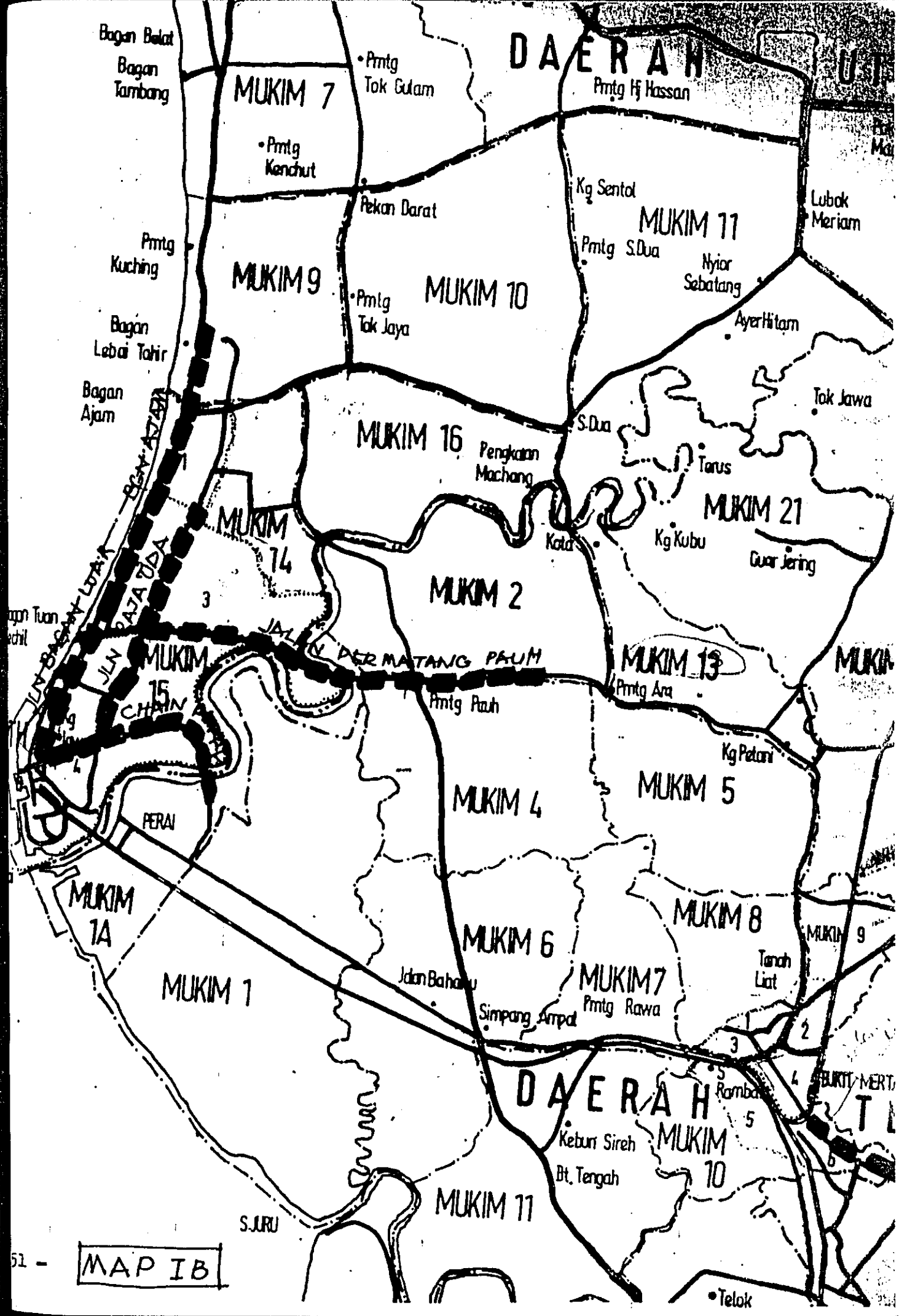
TABLE I Bii

SYSTEM OF ROAD

	TRAFFIC LIGHT	ROUND ABOUT	ROAD SIGN	INTERSECTION/ JUNCTION	PEDESTRIANT BRIDGE/ZEBRACROSS	PARKING	FLY OVER	LANE	TOTAL
JLN. BESAR	4					39			46
STATION ROAD						4			4
SG. BATU ROAD									
SG. CROSS. ST.						2			2
JLN TANAH LIAT						2			2
JLN. NEGAT HARUN	1					3			6
JLN. MURTY						8		1	9
ASTON ROAD	2					16			18
JLN. SG. RAMBAI						4			4
JLN. BUNGA RAYA PENANTI						4			4
JLN. KUBANG SEMANG									
TOTAL	173	11	29	35	9	230	3	17	507







MAP IB

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## REPORT ON OWNERSHIP OF COMPANIES

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The overall result of the survey is very satisfactory as most of the companies interviewed gave very good response to the interviewer. However, during the previous days of the week, the procedure of survey was not very well done due to the problem of locating the Companies to be interviewed. Because of this, the Companies visited during the first week was very few. The second week survey showed a very good sign of progress.

During the three weeks of survey, we interviewed 160 Companies whose total holdings was 1390 vehicles. Out of this total holdings, we managed to interview 471 vehicles as a sample for our study. These samples comprise of 189 cars, 53 motorcycles, 30 medium lorries, 62 heavy lorries, 39 buses and 98 vans. The overall percentage of the sample size is 34 % of the total holding. Out of this number of samples only 3.1 % i.e. 15 samples cannot be interviewed or we call "refuse to answer". This shows that the collection rate is 96.9 %. Thus the results obtained is very encouraging to the study. The reason for this "refuse to answer" sample is simply because the company has already shifted to other places or there is no such company as named in the sample chosen.

(Refer to the table of Analysis of Company Vehicle)

ANALYSIS OF COMPANY VEHICLES

ASSISTANT SUPERVISOR: NOORDIN MD NOOR.

TOTAL NUMBER OF COMPANIES		160						
TYPES OF VEHICLES	CAR	MOTOR CYCLE	MEDIUM LORRY	HEAVY LORRY	BUS	VAN	TOTAL	
NUMBER OF VEHICLES OWNED	465	129	42	302	220	232	1390	
NUMBER OF SAMPLES	189	53	30	62	39	98	471	
REFUSE TO ANS. SAMPLE	4	4	1	0	4	2	15	

ANALYSIS OF COMPANY VEHICLE - BY TYPES OF ESTABLISHMENT.

This analysis is important for our study as we want to examine the correlation between the type of establishment and the ownership of vehicle. To get a clear picture of the pattern of holding between these major companies, we have divided the type of establishment into 6 categories, ie. Manufacturing, Commerce and Trade, Finance and Banking, Construction, Other Private Companies and Others. ( for defination, please refer to the defination table of owner interview survey)

The composition of companies are as below:-

a) Manufacturing	- 64 companies
b) Commerce/Trade	- 40 companies
c) Others	- 36 companies
d) Other private Companies	- 8 companies
e) Construction	- 7 companies
f) Finance/Banking	- 5 companies

TOTAL

160

As for the total holding, "others", possessed the most vehicles ie. 547, manufacturing 515 vehicles, commerce/trade 161 vehicles and then followed by other private companies, construction and finally finance/banking.

Eventhough the manufacturing companies owned 515 vehicles yet the average holding is only 8.1 compared to the other private company and construction company which have an average holding of 11.3 and 8.4 respectively. The data shows that "others" ie. the transport company, small shops (Sdn Bhd), forestry, farming etc. has the most number of average holding - 15.2

As for the composition of vehicles in each type of establishment, we found that cars occupied greater volume in the pattern of holding. For example, manufacturing owned 41% of the total holding, commerce and trade 45%, finance and banking 78%, other private companies 56%.

Lorry ownership occupied the second greater volume in the pattern of holding. This is illustrated below:-

Manufacturing	- 17% of company's holding.
Commerce/Trade	- 17% of company's holding.
Construction	- 47% of company's holding.
Other Private Co.	- 2 % of company's holding.
Others	- 36% of company's holding.

The other type of vehicle do not have true correlation with the Type of Establishment.

ANALYSIS OF COMPANY VEHICLES

BY TYPE OF ESTABLISHMENT:

TYPE OF ESTABLISHMENT	NUMBER OF COMPANY	TOTAL NUMBER OF HOLDING.													
		CAR		MOTORCYCLE		MEDIUM LORRY		HEAVY LORRY		BUS		VAN		TOTAL	
		TOTAL	AVE	TOTAL	AVE	TOTAL	AVE	TOTAL	AVE	TOTAL	AVE	TOTAL	AVE		
GOVERNMENT															
MANUFACTURING	64	210	3.28	31	0.5	18	0.3	70	1.10	57	0.9	129	2.02	515	8.1
COMMERCE/TRADE	40	72	1.8	28	0.7	11	0.28	17	0.43	2	0.1	31	0.76	161	4.03
FINANCE/BANKING	5	14	2.8	3	0.6	-	-	-	-	-	-	1	0.2	18	3.6
CONSTRUCTION	7	17	2.42	10	1.43	-	-	28	4	-	-	4	0.6	59	8.4
OTHER PRIVATE COMPANY	8	50	6.25	2	0.25	1	0.13	1	0.13	-	-	36	4.5	90	11.3
OTHERS	36	102	2.83	55	1.53	12	0.33	186	5.17	161	4.47	31	0.86	517	15.2
TOTAL	150	465	3.1	129	0.86	42	0.3	302	2.01	220	1.47	232	1.55	1390	

BY NOORDIN MD. NOOR

ANALYSIS OF COMPANY INTERVIEW - BY SIZE OF EMPLOYMENT.

In our analysis we also take into account the relationship between the size of employment and the ownership of vehicle. Here we divide the characteristic of employment in to six different types ie. 1-4, 5-9, 10-19, 20-49, 50-99, and 100 and over.

From the survey, we found out that the highest number of holding is in companies which have more than 100 workers. These companies are mostly manufacturing companies and situated in the Prai Industrial Complex and the Bayan Lepas Free Trade Zone. The total number of companies under this category is 64 with the total holdings of 726 vehicles ( 52% of the total holdings ) The companies which have 50-99 number of employment owned 263 vehicles or 19% of the total holding. The companies which have 20-49 number of employment owned 201 vehicles or 15% of the total holding. Thus, as a conclusion we can say that the total number of holding varies directly with the size of employment.

As for the average holding the characteristic are as follows:-

<u>SIZE OF EMPLOYMENT</u>	<u>AVERAGE HOLDING</u>
1-4	1
5-9	7.9
10-19	3.3
20- 49	6.5
50-99	11
100-	11.3



ANALYSIS OF COMPANY VEHICLES

BY SIZE OF EMPLOYMENT.

SIZE OF EMPLOYMENT	TOTAL NUMBER OF HOLDING														AVERAGE
	NUMBER OF COMPANY	CAR		MOTORCYCLE		MEDIUM LORRY		HEAVY LORRY		BUS		VAN		TOTAL	
		TOTAL	AVE.	TOTAL	AVE.	TOTAL	AVE.	TOTAL	AVE.	TOTAL	AVE.	TOTAL	AVE.		
1 - 4	6	2	0.3	2	0.3	1	0.17	-	-	-	-	1	0.17	6	1
5 - 9	17	58	3.41	6	0.35	3	0.18	59	3.5	-	-	8	0.5	134	7.9
10 - 19	18	27	1.5	11	0.61	4	0.22	11	0.61	-	-	7	0.39	60	3.3
20 - 49	31	74	2.39	47	1.5	6	0.2	41	1.32	-	-	33	1.06	201	6.5
50 - 99	24	75	3.13	28	1.17	3	0.13	54	2.30	52	2.17	51	2.13	263	11
100 -	64	229	3.58	35	0.55	25	0.40	137	2.14	168	2.63	132	2.06	726	11.3
TOTAL	160	465	2.91	129	0.81	42	0.26	302	1.89	220	1.38	232	1.45	1390	

BY NOORDIN MD. NOOR

The pattern of holding in various size of employment possessed the same characteristic as in the type of employment. Every company owns cars more than any other vehicles. The component in the pattern of holding is shown in the average graph. Neumerically they are as follows:-

<u>SIZE OF EMPLOYMENT</u>	<u>CAR HOLDING</u>	<u>% OF CAR TO TOTAL HOLDING</u>
1 - 4	2	33%
5 - 9	59	43%
10 - 19	27	45%
20 - 49	74	37%
50 - 99	75	29%
100 -	229	32%
<hr/>		
TOTAL	465	34%
<hr/> <hr/>		

Next is lorry holding which comprise of 25%, van 17%, bus 16% and motorcycle 9%.

For further detail on analysis of company vehicles (by size of employment refer to the table given )

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## SAMPLE OF PRIVATE COMPANIES GOVERNMENT ORGANISATION

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<u>No.</u>	<u>NAME OF DEPARTMENT</u>	<u>PERSON IN CHARGE</u>
1.	Penang Port Commission (P.P.C.) or (M.P.P.P.)	Encik Hashim Miah B. Baba Miah. (Assistant Secretary II)
2.	Penang Water Authority (P.B.A.)	Encik Abdul Samad B. Hussain. (Secretary)
3.	Town Council, Penang. (Majlis Perbandaran Pulau Pinang)	Encik Ooi Chin Hai. (Transport Manager)
4.	University Sains M'sia	Encik Abdul Latif B. Nasarudin. (Transport Clerk)
5.	Police Station B'worth Province Wellesly.	Inspector Mohd. Amin B. Mohd. Zain
6.	Public Work Department Farquhar Street, Pg.	Encik Abdul Rahman B. Marican. (Transport Overseer)
7.	Police Station, B.M. Province Wellesly	Asp. Abdul Aziz B. Nawawi.
8.	Religious Department (Jabatan Hal Ehwal Ugama Islam, P.Pinang)	Encik Othman B. Haji Omar. (Chief Clerk)
9.	Veterinary Department Pulau Pinang.	Dr. Joseph Louis. (Veterinary Officer)
10.	Custom & Excise D'ment P.Pinang & Province Wellesly.	Encik Ibrahim B. Mohd. Sultan. (Work Officer)
11.	Social Welfare Depart- ment, Pulau Pinang.	Encik Mohd. Shabir B. Abd. Rahman (Chief Clerk)
12.	Spastic Children Association, Penang.	Mr. Tan Boon Hoe. (Association Committee Member)
13.	Town Council, Province Wellesly	Encik Ismail B. Md. Noor. (Chief Assistant Secretary)

PRIVATE COMPANIES

<u>NAME OF COMPANY</u>	<u>ADDRESS</u>
1. . Koay Thye Hong Saw-Mill Sdn. Bhd.	19-19A, Sungai Pinang Road, Pg.
2. Syarikat Kilang Chuan Huat Sdn. Bhd.	193, Sungai Pinang Road, Pg.
3. Hotel Ambassador (M) Sdn. Bhd.	55, Penang Road, Pg.
4. Min Sem Omnibus Co. Sdn. Bhd.	411, Permatang Batu, Bukit Mertajam, P.W.
5. Syarikat Pengangkutan Chuan Seong Joo dan Wanchik Sdn. Bhd.	59, Jalan Bunga Raya, B.M. P.W.
6. Heng Yip Machinery Industries Sdn. Bhd.	6314, Mk. 14, Mak Mandin Industrial Estate. Butterworth.
7. Eastern Mobile Crane & Engineering Sdn. Bhd.	4353, Heng Choon Thuan Road, Butterworth.
8. Ban Gyan Thye Sawmill Ltd.	71-77, Bridge Street, Pg.
9. Syarikat Perkhidmatan Pengangkutan Federal Bhd.	8, Jalan Kelab, P.O. Box 14, Butterworth.
10. Chew Eong Lian T/A Wan Hin Sawmill & Company	6, Mesjid Road, Penang.
11. The Salvation Army Boy Home	15, Hilir Sungai Pinang (Transferring to 8A, Logan Rd.Pg.
12. See Hup Transport Co.	33, Jln. Kampong Gajah, B'worth.
13. Krian Lorry Transport Sdn. Bhd.	485, Jln. Sungai Rambai, B.M.
14. Central Province Wellesly Transport Co. Sdn. Bhd.	3697, Jln. Bagan Luar, P.W.
15. United Traction Co. Sdn. Bhd.	4157, Bagan Luar Road, B'worth.
16. Kwong Wah Jit Poh Press Bhd.	2 & 4, Chulia Street Ghaut, Pg.
17. Loytape Bhd.	1017, Prai Ind. Complex, P.W.

<u>NAME OF COMPANY</u>	<u>ADDRESS</u>
18. Syarikat Kenderaan Berkerjasama Tanggongan Bhd.	4459, Bagan Luar Road, B'worth
19. Kian Guan Pengangkutan (EM) Sdn. Bhd.	1758, Jln. Rozhan, Mk. 15, Alma B. Mertajam. P.W.
20. Hong Lim Timber Ind. (PG) Sdn. Bhd.	291, Bridge Street, Pg.
21. B'Worth Transport Co. Sdn. Bhd.	2101, Kampung Gajah Road. B'worth. B'Worth.
22. M'sia - S'Pore Baptist Mission.	40 A-D Mk. 17 Batu Ferringhi, Pulau Pinang.
23. Bharat Heavy Electricals Limited.	Prai Power Station, Prai, Malaysia.
24. Syarikat Pengangkutan Sdn. Bhd.	167, Victoria Street, Penang.
25. Tai Heng Transport Sdn Bhd.	58, Jalan Bunga Raya, B. Mertajam.
26. Teik Granite Quarry Sdn Bhd.	77, Bridge Street, Penang.
27. Kim Thye Rice Mill Sdn.Bhd.	417, Burmah Road, Penang.
28. Guthrie Trading (M) Sdn Bhd.	33, Beach Street, Penang.
29. Nanyang Press(M) Sdn Bhd.	24, 25A&B Weld Quay, Penang.
30. Penang/Singapore Lorry Service Sdn Bhd.	51, Jln. Bunga Raya, Bukit Mertajam. P.W.
31. Lim Kheng Kim Sdn Bhd.	82-H Free School Road, Penang,
32. Hong Leong, Lurssen Shipyard Bhd.	4567, New Chain Ferry Road, B'worth. B.W.
33. Maeda Construction Co.	24, Gerbang Midlands. Pg.
34. Hup Seng Huat Kee Sdn. Bhd.	14, Penang Street Pg.
35. Makok Construction Sdn. Bhd.	70, Sri Bahari Road, Pg.
36. Creative Wood Industries Sdn. Bhd.	283, Burmah Road, Pg.
37. Chain Ferry Development Sdn. Bhd.	2, Church Street, Penang.
38. New Zealand Insurance Co. Ltd.	21, Beach Street, Penang.
39. Malaysia Can Co. Sdn. Bhd.	2001, Mk. 1. Prai, Industrial Complex, P.O. Box 66, B'worth.

<u>NAME OF COMPANY</u>	<u>ADDRESS</u>
40. M/S Federal Oil Palm Sdn. Bhd.	47, Chulia Street, Penang.
41. Island & Peninsular Development Bhd.	2, Church Street Ghaut, Pg.
42. Syarikat Kenderaan & Pengangkutan Bekerjasama P. Pinang, Sdn Bhd.	588, Bayan Lepas, Pg.
43. Industrial & Agricultural Sdn. Bhd.	3645, Jln. Bagan Luar, B'worth.
44. Gestetner (M) Sdn. Bhd.	72, Bishop Street, Pg.
45. Md. Motor & Finance Sdn. Bhd.	375, Penanti, B. Mertajam.
46. Southern Banking Berhad	21, Beach Street, Pg.
47. United Malayan Banking Bhd.	50-54, Beach Street, Pg.
48. Malayan Banking Berhad.	Jln. Darby, B. Mertajam P.W.
49. Algemene Bank Naderland N.V.	9, Beach Street, Pg.
50. Shell Malaysia Trading Sdn. Bhd.	No. 5, Jln. Pantai. B'worth.
51. M/S Oriental Steel Ind. Sdn. Bhd.	178-A, Beach Street, Pg.
52. Image Colour Lab. Sdn. Bhd.	20, Argyll Road, Pg.
53. Far East Motors	203, Burmah Road, Pg.
54. Hoechst M'sia Sdn. Bhd.	49-J, Weld Quay, Penang.
55. Malayan Refrigeration Co.	1 <sup>k</sup> , Jln. Sg. Kelaan, Tg. Bungah.
56. Thong Yew Maan Timber Sdn. Bhd.	62 <sup>A</sup> , Beach Street, Pg.
57. Pentex Sdn. Bhd.	F 3-8, Mandarin Arcade, 202-A Macalister Road, Pg.
58. Bara Windsor (M) Sdn. Bhd.	254, Victoria Street, Pg.
59. M/S Super Oxygen Sdn. Bhd.	C/O 214, Victoria Street, Pg.
60. East Asiatic Co. Ltd.	3, Weld Quay, Penang.

<u>NAME OF COMPANY</u>	<u>ADDRESS</u>
61. Tan Chong Industries	274, Victoria Street, Pg.
62. Boustead Trading Sdn. Bhd.	1, Weld Quay, Penang.
63. Barkath Store	1, Union Street, Pg.
64. Kelvin Hughes (M) Sdn. Bhd.	243, Victoria St. Pg.
65. Interchem - Toyo (S.E.A.) Ltd.	3, Macalister Lane, Pg.
66. Rio Electronic Cordn. Ltd.	197, Carnavon St. Penang.
67. Wong Electrical & Teak Wood (PG) Sdn. Bhd.	126, Rope Walk, Pg.
68. Lim Kim Peng T/A Lim Kim Peng	612, Tanjung Bungah, Pg.
69. M/S Dunlop Malaysian Ind. Bhd.	9-11, Gat Leboh China, Pg.
70. U & I Auto Accessories	7 <sup>A</sup> , Lorong Abu Siti, Pg.
71. Tai Hock Motor Sdn. Bhd.	66, Patani Road, Pg.
72. Messr. Hong Giap	308-310, Penang Road, Pg.
73. Union Electronic Sdn. Bhd.	11, Sg. Ujong Road, Pg.
74. Renown Wire Netting Ind. Sdn. Bhd.	125, Beach Street, Penang.
75. M/S Hock Keng Ind. Sdn. Bhd.	178 - A, Beach Street, Pg.
76. Southern Iron & Steel Works Sdn. Bhd.	178 - A, Beach Street, Pg.
77. Eastern & Oriental Hotel	10, Farquhar Street, Pg.
78. Temerloh Rubber Estate Bhd. Temerloh Estate	Chartered Bank Chamber, Beach Street, Pg.
79. Casuarina Beach Hotel	Lau Geok Swee Bldg., Batu Ferringi, Pg.
80. Malayan Food Agencies Sdn. Bhd.	266 - 268, Victoria Street, Pg.
81. Hilir Oil Palm Sdn. Bhd.	242, Beach Street, Pg.
82. United Asian Bank Bhd.	21, China Street, Ghaut, Pg.

<u>NAME OF COMPANY</u>	<u>ADDRESS</u>
83. Malaysia Trade & Transport Sdn. Bhd.	16-B, Weld Quay, Pg.
84. Integrated Forward & Shipping Sdn. Bhd.	49, Chulia Street, Pg.
85. Moon Travel Sdn. Bhd.	Casuarina Lobby, Lau Geok Swee Building, Batu Ferringhi, Pg.
86. Shaw Bros. (Pg.) Sdn. Bhd.	8, Swatow Lane, Penang.
87. Eugene Chemicals Sdn. Bhd.	73-75, Ah Quee Street, Pg.
88. George Cohen (M) Sdn. Bhd.	25, Beach Street, Penang.
89. Great G'ru Knitting Factory (Sdn) Bhd.	No. 4-8, Lorong Mak Mandin 1, Mak Mandin Industrial Estate, P.O.Box 5, B'worth.
90. Eagle and Pagoda Brand	Teck Ann Medical Factory Sdn. Bhd. 486, Jln. Sg. Rambai, B. Mertajam. P.W.
91. Solex Vegetable Oil Bhd.	4826, Jln. Permatang Pauh, B'worth, P.W.
92. Khoong Guan Veg. Oil. Refinery Sdn. Bhd.	4825, Jln. Permatang Pauh, Mak Mandin, B'worth.
93. Asia Pharmaceutical Product Sdn. Bhd.	No. 2 & 4, Lorong Mak Mandin 2, Mk. 14, B'worth. P.W.
94. Pufrut Preserving Works (M) Sdn. Bhd.	2-D, Lorong Delima 6, Island Glades, Penang.
95. Qualitex Sdn. Bhd.	2022, Prai Industrial Complex, Prai, B'worth.
96. Universal Garment Mg. Sdn. Bhd.	11-A, Acheen Street, Penang.
97. Tan Su Hong T/A Teow Hong Trading Company	1350, Jln. Tan Sai Gin, B.M. P.W.
98. Summit Petroleum (M) Sdn. Bhd.	Lot 91, Prai Industrial Complex, Prai.
99. Syarikat Poly Insulation Foam Sdn. Bhd.	Nos. 6500 & 6501, Kawasan Miel, Mak Mandin, B'worth. P.W.



<u>NAME OF COMPANY</u>	<u>ADDRESS</u>
100. Allied Malayan Development Bhd.	4828, Mak Mandin Industrial Estate, B'worth.
101. India Malaysia Textile Bhd.	179-241, Mak Mandin Industrial Estate, B'worth.
102. Optilon Malaysia Sdn. Bhd.	995-997, Prai Ind. Estate, B.W.
103. Kanebo Malaysia S.M. Sdn, Bhd.	Prai Free Trade Zone, Prai.
104. Penfabric Sdn. Bhd.	Plot No. 117-119-200-202, Prai Prai Free Trade Zone, Prai.
105. Palmex Industries Sdn. Bhd.	Prai Industrial Estate, Prai, P.W.
106. Malaysia Sea Products Sdn. Bhd.	2005, Mk. 1, Perai Industrial Complex, P.O.Box 11 D. P.W.
107. Malayan Sugar Manufacturing Co. Sdn. Bhd.	Malayan Sugar Co. Sdn. Bhd. Prai.
108. Fraser & Neave (M) Sdn. Bhd.	190 Argyll Road, Penang.
109. Lion (M) Sdn. Bhd.	190 Argyll Road, Penang.
110. Mostex (M) Sdn. Bhd.	Bayan Lepas, Free Trade Zone, Pg.
111. Motorola, Penang.	Phase 111, Free Trade Zone, Bayan Lepas, Penang.
112. Malaysia AICA Sdn. Bhd.	5100, Mak Mandin Industrial Estate, B'worth. P.W.
113. Malayawata Sdn. Bhd.	P.O. Box 60, Prai, P.W.
114. Federal Cables, Wires and Metal Mfg. Bhd.	Mak Mandin Industrial Estate, B'worth, P.W.
115. Dora Knitwear Sdn. Bhd.	Miel Industrial Complex, Prai P.W. P.O. Box 46, B'worth.
116. Malayan Electro Chemical Industrial Co. Sdn. Bhd.	Lot No. 97, Prai, Industrial Complex, Prai. P.W.
117. Schott Glass (M) Sdn. Bhd.	Lot 217/218, Free Trade Zone, Prai, P.W.
118. Penfibre Sdn. Bhd.	Prai Industrial Estate.
119. Pentex Sdn. Bhd.	Prai Free Trade Zone, P.O.Box W.D. 3, Prai. P.W.

<u>NAME OF COMPANY</u>	<u>ADDRESS</u>
120. Sanda Plastic Industries Sdn. Bhd.	993, Mk. 1, Kawasan Miel, Prai, P.W.
121. Armstrong Cycle Parts, Sdn. Bhd.	1028, Prai Industrial Complex, Prai.
122. M/S Agricultural Chemical Malaysia Sdn. Bhd.	962, Mk. 1, Prai Industrial Complex, Prai, P.W.
123. Penang Edible Oil Sdn. Bhd.	352, Kawasan Perusahaan Prai, Prai, P.W.
124. Suzuki Assemblers Malaysia Sdn. Bhd.	P.O. Box 85, B'worth, P.W.
125. Afasia Knitting Factory	3/3A, Sungai Nyior, B'worth.
126. Fraser & Neave (M) Sdn. Bhd.	3724, Jln. Sungai Nyior, B'worth.
127. Khian Guan Biscuit Mfg. Co. Sdn. Bhd.	3738, Siram Road, B'worth.
128. Viking Askin Sdn. Bhd.	Prai Free Trade Zone, P.O.Box 481 B'worth.
129. Continental Food Ind.	4403, Jln. Permatang Pauh, P.W. 428, Beach Street, Pg. (Office)
130. General Gomma	56, Prai Industrial Complex, Prai
131. Bangsa Textiles, Prai Industrial Complex, Prai	Prai Industrial Complex, Prai.
132. ACME Canning Sdn. Bhd.	4820, Mak Mandin Industrial Est.
133. Barkath Chemical Sdn. Bhd.	2030, Prai Industrial Estate, Prai.
134. Butterworth Iceworks Sdn. Bhd.	4402, Chain Ferry Road, Penang.
135. ALMA Rubber Estates Sdn. Bhd.	P.O. Box W.D. 201, B. Mertajam, P.W.
136. Lam Soon Oil Soap Mfg.	15, Lorong Baru, Penang.
137. Central Industrial Corp. Sdn. Bhd.	1415, Prai Industrial Complex, Prai.
138. Syarikat Eastern Powder Sdn. Bhd.	4806, Mak Mandin Estate, B'worth. P.W.

139.

<u>NAME OF COMPANY</u>	<u>ADDRESS</u>
139. Intel (M) Sdn. Bhd.	Free Trade Zone, Bayan Lepas.
140. Palm Co. Oil Mill Ind. Complex Prai.	Palm Co. Oil Mill Industrial Complex, Prai.
141. Central Elastic Corp. Sdn. Bhd.	Plot 56-611, Prai Industrial Complex, P.O. Box W.D. 204, Prai
142. Bright Garments (M) Sdn. Bhd.	463-A, Sungai Rambai, B.Mertajam, P.W.
143. Evercrips Snack Production (M) Sdn. Bhd.	2019, Prai Industrial Complex, Prai, P.W.
144. Cement Industrial of M'sia Sdn. Bhd.	1st Floor, Public Bank Building, 87-A, Bishop Street, Penang.
145. Prai M'sia Rattan & Wood Industries Sdn. Bhd.	Lot 128, Prai Industrial Estate, Prai, Province Wellesly.
146. Pan Asia Paper Product Manufacturing Sdn. Bhd,	Lot 294-297, Kawasan Prai Ind. Complex. Prai.
147. Gan Kok Wood Industries Sdn. Bhd.	14, Ah Quee Street, Penang.
148. Hong Bee Hardware Co. Sdn. Bhd.	93, Beach Street, Penang.
149. Woodard Textile Mill, Sdn. Bhd.	Phase 3, Sungai Kluang Estage, Bayan Lepas.
150. Perniagaan Mustagim Sdn. Bhd.	110, Penang Street, Penang.
151. Syarikat Rangkaian Setia Sdn. Bhd.	44, Jln Danby, B. Mertajam, P. W.
152. Syarikat Ebban Sdn. Bhd.	6583, Jln. Bagan Jermal. P.W.
153. Seng Chow Tin Minis Co.	32, Beach Street, Penang.
154. Rhaman Aydraulic Tin Bhd.	25, Beach Street, Penang.
155. Securicor (M) Sdn. Bhd.	9, Jln. Pangkor, Penang.
156. Lean Hock Co. Sdn. Bhd.	51, Jln. Besar, B. Mertajam.
157. Nestle's Products (M) Ltd.	1 <sup>A</sup> , Weld Quay, Penang.
158. Hacks Malaysia Sdn. Bhd.	5093, Mak Mandin Industrial Estate, B'worth.

**PANDUAN UNTUK MENEMURAMAH  
PEMILEK-PEMILEK KENDERAAN**

**PENERANGAN KEPADA  
PENEMURAMAH**

**KAJIAN PENGANGKUTAN BANDAR  
PULAU PINANG & SEBERANG PRAI  
(Kawasan Metropolitan)**

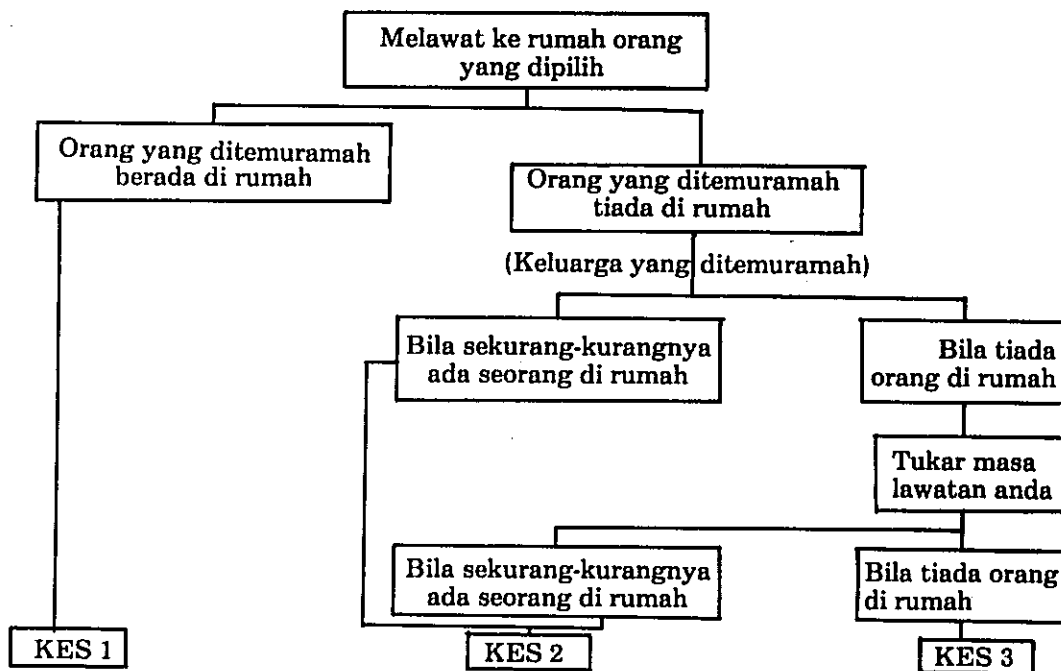
## TUJUAN PENYELIDIKAN

Tujuan penyelidikan ini ialah untuk mengkaji tempat asal dan tempat tujuan pengguna-pengguna jalanraya di Pulau Pinang dan Seberang Prai. Penyelidikan ini akan menyediakan berbagai-bagai maklumat mengenai hak milik kenderaan, butir-butir mengenai temuduga hak milik dan juga ciri-ciri operasi lalu-lintas dan perjalanan lalu-lintas di dalam kawasan penyelidikan. Dari penyelidikan ini plan induk akan di lukis untuk sistem lalu-lintas di negeri Pulau Pinang.

## BAGAIMANA HENDAK MENEMURAMAH

### Kepunyaan Swasta Persendirian.

Dalam menjalankan kerja anda akan menemui berbagai-bagai situasi semasa melawat ke rumah orang yang telah dipilih. Untuk mengetahui apakah yang patut dilakukan semasa timbulnya berbagai-bagai situasi dalam kes-kes berikut yang telah diberi. Anda bolehlah mengikutnya apabila keadaan memerlukan.



Kes 1, Kes II dan Kes III akan diterangkan berasingan

### Kes 1. Apabila pemilik ada di rumah

Pembaruan ini termasuk pusingan perjalanan di buat oleh tuan-punya dalam masa hitung panjang hanya pada hari Isnin, Selasa, Rabu, dan Khamis akan menjadi hari pengambilan dalam perhatian.

[A] Dalam masalah bila penemuramah melawat pada hari Isnin.

Anda mesti menerangkan tujuan pembaruan tersebut pada tuanyang hendak ditemuramah dan bagaimana hendak mengisi borang soalan dengan betul. Tinggalkan Soalan untuk dia menghabiskan bila dia tidak dapat mencatatkan untuk hari yang lepas (Isnin).

Bila sudah tetap anda boleh datang kembali untuk mengambil jawapannya. Anda mesti pergi pada hari yang telah ditetapkan untuk mengambil soalan tersebut.

**[B] Dalam kes bila penemuramah melawat pada hari Isnin, Rabu, Khamis dan Jumaat.**

Anda mesti menemuramah pada hari yang telah lepas untuk gerakan sampel kenderaan. Tetapi jikalau yang ditemuramah, tidak dapat mengingati perjalanan pada hari yang lepas, anda mesti mengikut aturcara dalam (A).

**Kes II Bila hanya seorang sahaja yang terdapati.**

Anda mesti berjumpa orang ini dan tanyakan bilakah boleh berjumpa dengan tuan rumah itu. Bila anda sudah selesai, anda mesti berjumpa sekali lagi di rumahnya dan menemuramah dalam soalan yang serupa yang telah diterangkan dalam masalah (i).

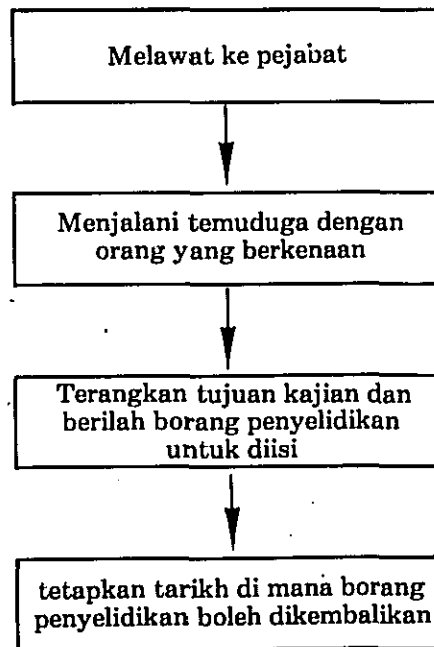
Tetapi apabila anda melawat ke rumah itu kali kedua tetapi tidak juga berjumpa dengan tuan rumah, anda mesti tinggalkan soalan tersebut pada salah seorang daripada ahli keluarganya (tidak kira kecil atau besar). Kamu mesti menerangkan kepada mereka tujuan pembaruan tersebut dengan cara yang betul untuk mengisinya. Dan tetapkan hari bila anda akan datang mengambil soalan itu.

**Kes III Bila tiada seorangpun yang ditemui.**

Dalam kes ini, sangat diharapkan bahawa anda mestilah mencari jalan untuk bertemu dengan tuan yang akan ditemuramah. Apabila anda panggil nama pemilik kenderaan itu lebih daripada tiga kali tetapi tiada orang juga maka anda dikehendaki meninggalkan borang soalan, selideki percetakan catitan, meminta kerjasama pemilik mengisinya. Kemudian datang pada pagi besoknya untuk mengambil borang itu kembali.

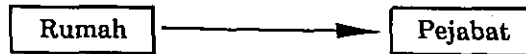
#### **Hak pemilik Syarikat atau badan kerajaan**

Dalam masalah ini, Apabila hak pemilik adalah syarikat atau badan kerajaan, perkara-perkara di bawah diikuti



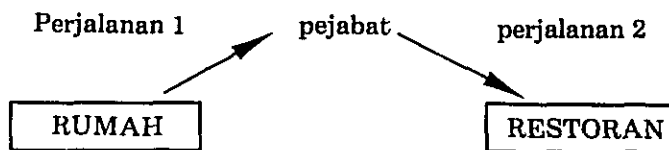
### penjelasan perjalanan

Dalam pengkajian ini, kita terpaksa menjelaskan makna perjalanan. Yang dimaksudkan dengan perjalanan ialah jalan yang digunakan untuk sesuatu perjalanan hinggalah sampai ke tempat yang dituju. Ini dengan jelasnya diterangkan oleh rajah 1



Rajah 1

Walau bagaimanapun ada kemungkinan lebih dari satu perjalanan dibuat dalam sehari. Ini dapat dilihat seperti tertara dalam rajah 2.



Rajah 2

Dalam hal ini tempat tujuan perjalanan pertama adalah sama dengan tempat asal perjalanan kedua. Jadi bila hendak menyoal tuanpunya kenderaan mengenai perjalanan yang diambil, anda bolehlah melakukannya seperti berikut:—

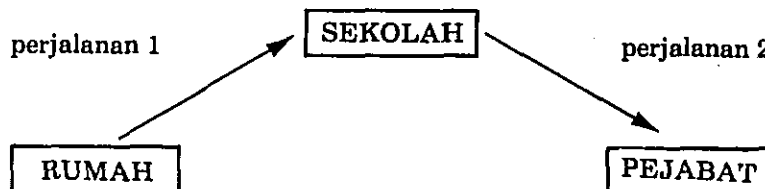
Soalan (i) "Dari manakah anda memulakan perjalanan anda?" (inilah jawapan yang mesti ditulis untuk tempat asal perjalanan pertama)

Soalan (ii) "Kemanakah anda pergi selepas ini?" (Inilah jawapan yang mesti ditulis untuk tempat tujuan perjalanan kedua)

Terdapat banyak pengecualian dan perubahan dalam kes-kes ini, dan dengan ini, kita mestilah memberi perhatian supaya kita dapat memperoleh butiran-butiran lanjut yang sebenarnya dalam perjalanan sesuatu kenderaan itu.

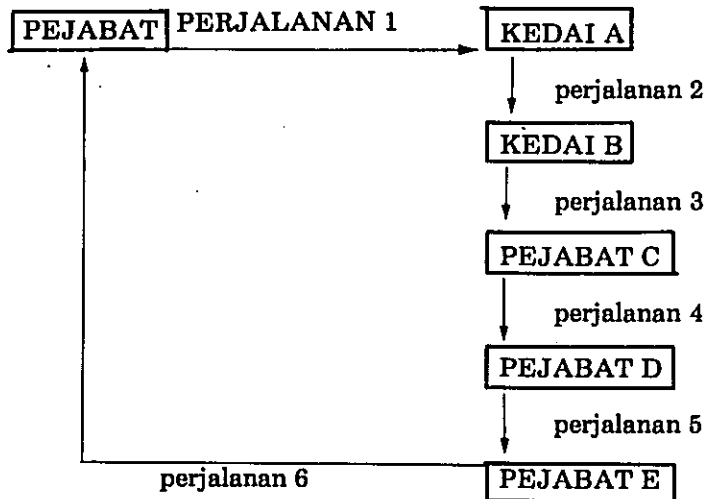
### PENGECCUALIAN-PENGECCUALIAN

Kes I: Dalam kes "perjalanan yang terputus-putus" iaitu di mana terdapat tempat penurunan atau tempat pengutipan dalam perjalanan yang sebenarnya (Bilamana pemandu berhenti untuk orang turun atau orang naik dalam perjalanan Rajah 3) Dalam hal ini, perjalanan itu dibahagi kepada 2. perjalanan pertama ialah ke sekolah dan perjalanan kedua ialah ke pejabat.



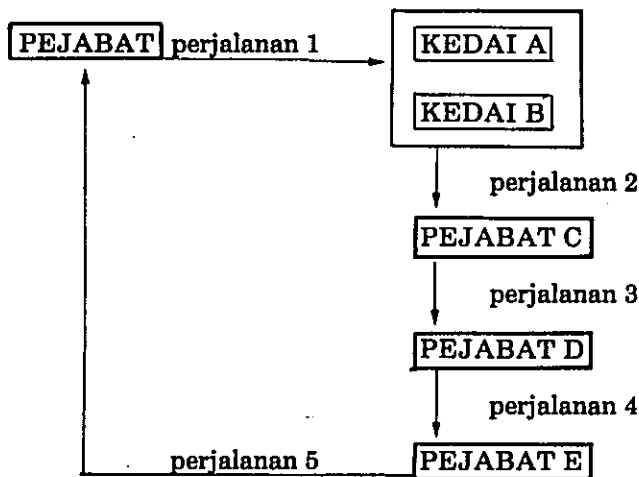
Rajah 3

Kes II: Ini ialah satu hal di mana terdapat banyak perjalanan yang singkat yang diambil oleh pemandu dalam perjalanannya dari jalan yang sebenar. Satu contoh ialah penghantaran barang-barang pesaran.

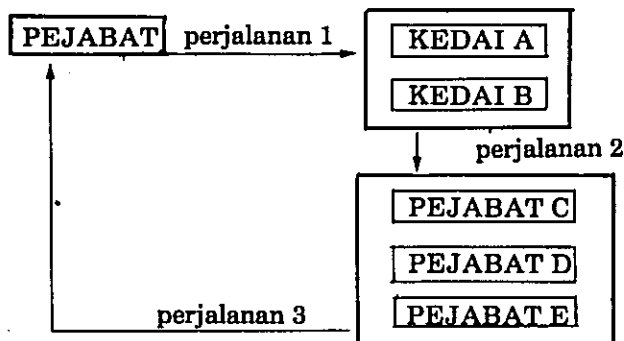


Rajah 4

Dalam kes yang tersebut di atas, terdapat 6 perjalanan tetapi sekiranya kedai A dan kedai B adalah terlalu dekat dengan satu sama lain, kita bolehlah menukarkan contoh di atas kepada yang berikut: — (Rajah 5)



Sekiranya pejabat C, D, E terletak berhampiran dengan satu sama lain, dengan itu kita bolehlah menukar perjalanan kepada yang berikut (Rajah 6)





Kes III: Tiada tempat tujuan yang khusus dalam perjalanan yang diambil perkara ini terjadi disebabkan oleh tiada tempat perhatian yang tetap iaitu bila perjalanan itu bulat.

(Contoh: pergi ke stesyen minyak atau untuk bersiar-siar.



Rajah 7

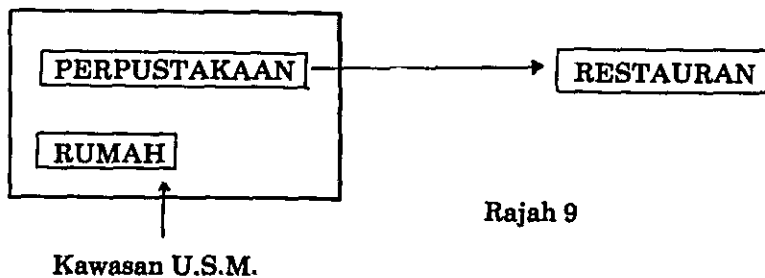
Dalam gambarajah yang tersebut di atas, perjalanan bulat bolehlah dianggap sebagai 2 perjalanan. Perjalanan pertama ialah dari pejabat hingga tempat yang terjauh. Perjalanan kedua ialah dari tempat yang terjauh hingga ke pejabat



Rajah 8

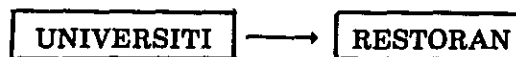
KES IV: Sekiranya perjalanan itu dilakukan dalam tempat yang sama iaitu dalam kawasan yang tertutup.

(Contoh: di usm, dalam kawasan kilang yang terbesar)



Rajah 9

Dalam perkara di atas, dua perjalanan telah dilakukan. Tetapi kita tidak perlu bertanya mengenai perjalanan yang dilakukan dalam kawasan yang sama. Perkara di atas bolehlah direkod seperti berikut: -



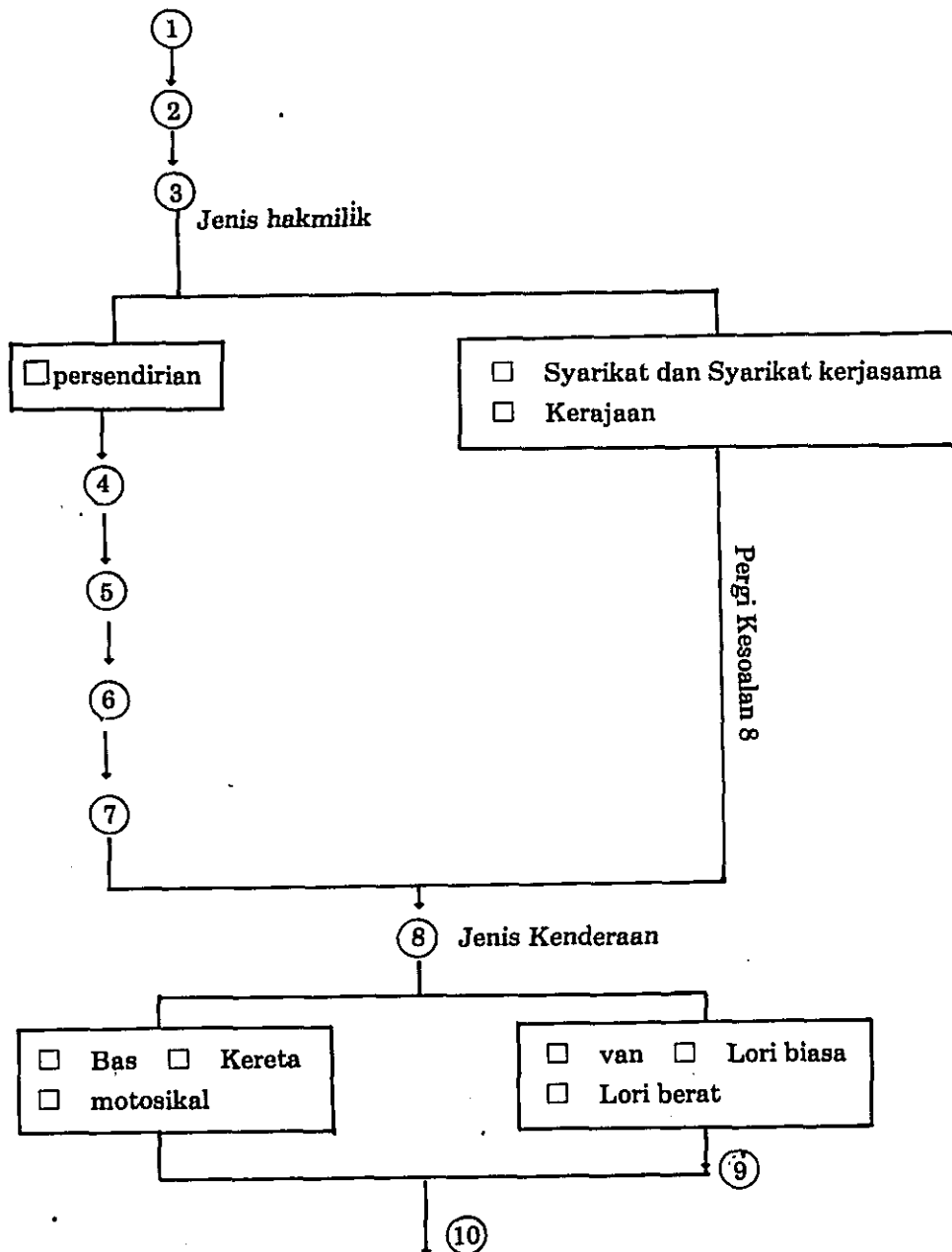
Rajah 10

## PANDUAN AM UNTUK MENGISI BORANG PERTANYAAN

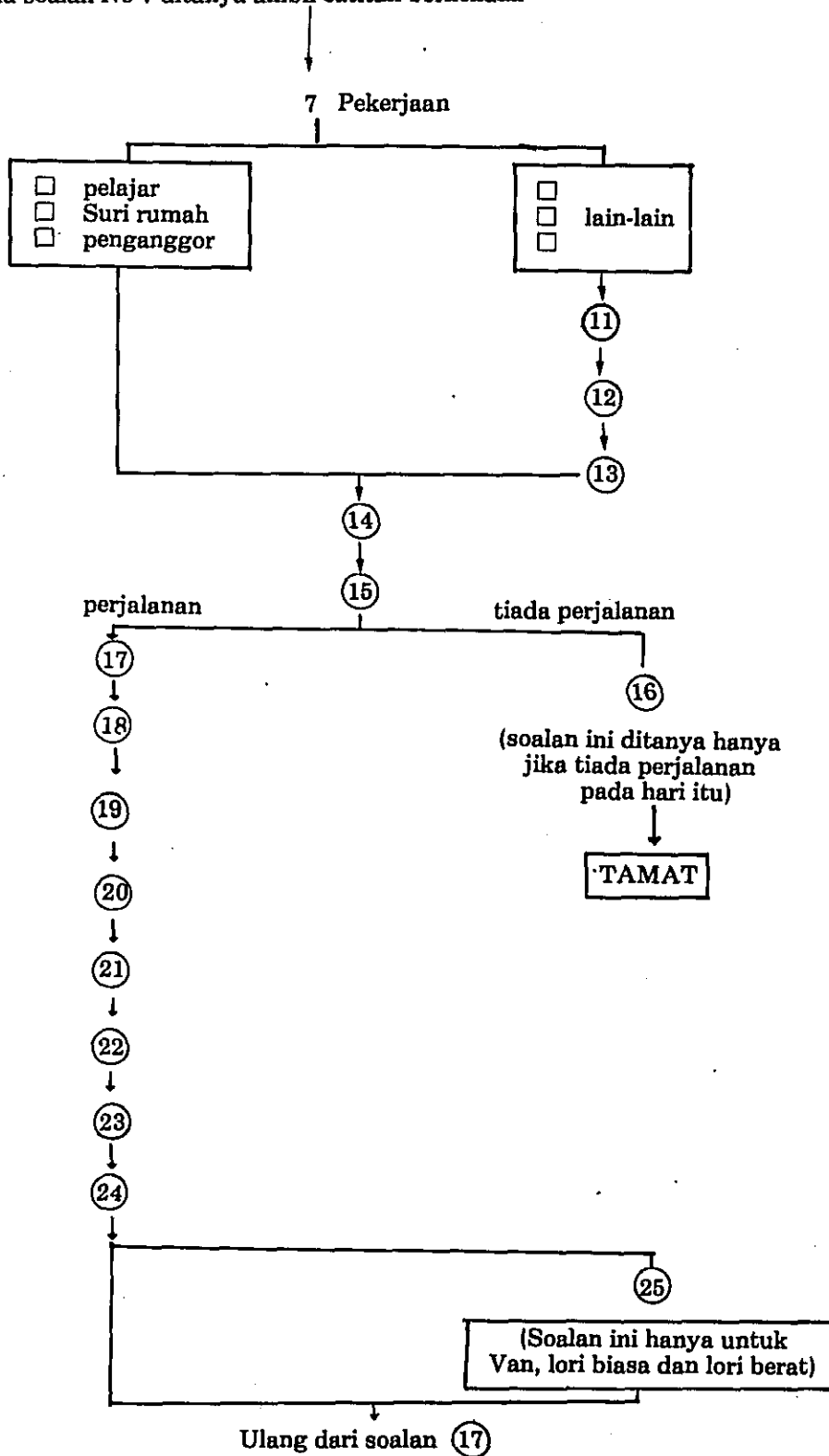
(Merujuk kepada borang pertanyaan)

Bagaimana hendak membaca:

Anak panah ( $\downarrow$ ) menunjukkan arah pertanyaan. Contoh: Daripada ①  $\rightarrow$  ② bermaksud daripada soalan satu kepada soalan dua. Kadang-kadang setengah soalan di tinggal semasa menemuduga. Jadi ikutilah arah anak panah dalam rajah di bawah untuk lebih memahami bagaimana soalan-soalan yang patut diisi.



Bila soalan No 7 ditanya ambil catitan berkenaan



(Penuhi dengan lengkap lain-lain perjalanan untuk hari itu dalam ruang masing-masing.)

## JADUAL DEFINASI

### A) JENIS KENDERAAN

1. Motokar : Dua pintu, empat pintu.
2. Van : Station wagon, van kecil
3. Lori Pertengahan : Lori dan van besar, (berat 2 axles)
4. Lori Berat : Lori yang mengandungi 3 axles, trela, traktor dan 'tippers'.
5. Motosikal : Scooter, 'lambretta', motosikal biasa.

### B) BENTUK HAKMILIK

1. Persendirian : Pemilik Peribadi atau pemilik persendirian
2. Syarikat dan koperatif : Syarikat awam, syarikat persendirian, kedai dan koperatif.
3. Kerajaan : Badan kerajaan sepenuh seperti jabatan kementerian kerajaan dan kerajaan negeri.  
Badan separuh kerajaan ialah MARA, FELDA, MAS, LLN, PDC dan lain jabatan koperatif negeri.

### C) TUJUAN

1. Ketempat kerja : Ketempat Bekerja.
2. Tujuan Perniagaan : Bayaran insuran, menghantar barang kepada pembeli, jurujual bergerak.
3. Kerumah : Balik dari kerja, membeli belah, sekolah, hiburan dan sebagainya.
4. Membeli belah : Ke pasar, kedai dan ke tempat membeli belah untuk tujuan membeli ikan/sayur-sayuran, kain baju, barang-barang keperluan dan sebagainya.
5. Makan/hiburan : Ketempat makan di restaurant, Bar, kedai kopi, panggung wayang, kelab malam, bersiar-siar, berkelah dan sukan.
6. Ke sekolah : Belajar, menghantar anak ke sekolah dan orang lain ke sekolah. (Tidak termasuk guru-guru dan pekerja-pekerja sekolah).
7. Lawatan sosial : Kumpulan sosial melawat sanak saudara, ke tempat lapangan-terbang.
8. Lain-lain : Lain-lain tujuan.

### D) JENIS KEMUDAHAN PERTUBUHAN

1. Kemudahan Perumahan : Perumahan dan tempat penginapan.
2. Pejabat/Perdagangan : Pejabat separuh kerajaan pejabat kerajaan, Syarikat Persendirian, Hotel dan hiburan, perubatan, restaurant.
3. Kilang : Company pengeluaran, besi dan keluli, perusahaan ringan, perusahaan berat, perusahaan kain.
4. Pelajaran : Sekolah, Yayasan Persendirian, perpustakaan persendirian dan perpustakaan awam.
5. Pertanian/Perikanan : Tempat pasar, Tanah ladang.
6. Lain-lain : Pengangkutan, lapangan terbang, perkapalan, kolam renang, tepi laut, padang permainan dan taman.

### E) PEKERJAAN

#### (1) PENTADBIRAN

Pegawai Perundangan dan pentadbiran kerajaan. Pengurus (lain daripada pengurus perdagangan, pertanian dan pengurusan Hotel).

#### (2) PAKAR-PAKAR TEKNIK DAN YANG BERKAITAN.

Ahli sains Fizik, Juruteknik.

Arkitek, Jurutera, Jurukur dan pekerjaan yang berkaitan.

Pegawai-pegawai penerbangan dan perkapalan.  
Doktor-doktor perubatan, pembedahan, pergigian dan lain-lain.  
Pegawai perubatan dan pembantu-pembantu.  
Doktor-doktor haiwan dan pembantu serta pekerjaan yang berkaitan.  
Pegawai-pegawai perangkaan, pakar ilmu Hisab, penganalisa sistem dan pekerjaan yang berkaitan dengan teknik.  
Ahli-ahli Ekonomi, Akauntan.  
Juri-juri, peguam-peguam, hakim-hakim dan lain-lain pegawai-pegawai perundangan.  
Pensyarah Universiti, guru-guru sekolah rendah dan menengah.  
Pengarang, wartawan dan pekerjaan yang berkaitan.  
Pengukir, jurugambar pelukis dan pengubah lagu, ahli sukan professional.

**(3) PERKERANIAN DAN KERJA YANG SETARAF**

Penyelia Perkeranian.  
Eksekutif kerajaan.  
Steno, jurutaip dan kerani Akaun, Juru wang dan operator-operator jentera.  
Operator talipon dan taligeraf.  
Lain-lain pegawai perkeranian yang tidak dapat ditarafkan di dalam mana-mana pekerjaan.

**(4) PEKERJA JUALAN**

Pengurus, pemborong, pekedai-pekedai runcit, jurujual, agen penjual dan lain-lain perkhidmatan jualan.  
Pekedai runcit, penjaja, pekerja jualan yang tidak ditarafkan di dalam mana-mana pekerjaan.

**(5) PEKERJA PERKHIDMATAN**

Pengurus dan pekerja-pekerja tempat-tempat penginapan, surirumah dan kerja-kerja yang bersangkutan seperti tukang masak, pelayan, pelayan bar dan pekerja-kerja yang berkaitan. Tukang dobi, pengunting rambut, pengerinting rambut.  
Ahli-ahli di dalam jabatan polis dan tentera.

**(6) PEKERJA KILANG PEMBINAAN DAN BURUH KASAR**

Penyelia pengeluaran dan foreman  
Pelombong, pengali, pemeroses logam dan lain-lain pekerjaan yang setaraf.  
Tukang jahit, Tukang kasut dan lain-lain pekerjaan yang menggunakan bahan-bahan kulit.

**(7) Pertanian, pemeliharaan binatang dan pekerja-pekerja perhutanan.** Pengurus ladang dan penyelia penanaman padi, penanam padi, penanam getah, peladang dan pekerja ladang getah.  
Pekerja perhutanan.  
Nelayan, pemburu dan lain-lain.

**(8) Pelajar.**

Sekolah rendah, sekolah menengah, Maktab Universiti dan sekolah persendirian termasuk pelajar sekolah muzik, kelas menaip dan sekolah perdagangan.

**(9) Suri Rumahtangga**

**(10) Penganggor — bersara, tua, tiada pekerjaan.**

**(11) Lain-lain.**

**F] BENTUK PERTUBUHAN**

- (1) Kerajaan** : Separuh kerajaan seperti MARA, FELDA, MAS, LLN, PDC. dan lain-lain badan berkanun.  
Kerajaan separuh seperti jabatan Kementerian dan badan Kerajaan negeri.
- (2) Syarikat pengeluaran** : Kilang kain, litronik, getah, besi, dan keluli, makanan dan minuman.

- Pakaian, pengeluaran kayu, bahan-bahan kimia, minyak, bukan bahan-bahan galian alat elektrik dan alat pengangkutan.
- (3) Perdagangan/perniagaan : Persatuan perdagangan, syarikat perniagaan kedai, supermarket dan pasar raya.
  - (4) Kewangan dan Bank : Syarikat Kewangan, syarikat insuran bank Nasional dan Bank perdagangan.
  - (5) Pembinaan : Perumahan, Bangunan, Kejuruteraan pembinaan awam dan pembinaan persendirian.
  - (6) Lain Syarikat persendirian : Lain daripada syarikat tersebut di atas yang tidak boleh diterang.
  - (7) Lain-lain : Penjaja, Nelayan dan Petani.

#### **JENIS BARANG BARANG YANG DIBAWA**

- (1) Tiada muatan : Tiada membawa sebarang benda.
- (3) Kayu kayan dan barang-barang daripada kayu : Kayu kayan (tidak termasuk perabut dan barang-buatan)
- (4) Bahan Galian : Bijih timah, bijih besi, granite pasir dan batu.
- (5) Barang-barang besi dan alat-alat mesin : Paip keluli, motokar, barang-barang elektrik, hasil-hasil besi dan keluli serta hasil daripada perindustrian ringan dan berat.

## I ATURAN PENYELIDIKAN

Contoh sebarang kenderaan-kenderaan dari berbagai kategori adalah dipilih dari had-had pendaftaran yang diambil dari RIMV, Pulau Pinang. Penemuramah akan mengunjungi tuan kenderaan yang nama dan alamatnya terdapat dalam kertas pertanyaan (Questionnaire Sheet) dan temuramahlah ia mengikut arahan yang diberi:—

“Penemuramah mestilah pergi mencari tuan punya [pemilik] kenderaan yang dipilih mengikut nama dan alamat seperti tercatat di dalam kertas pertanyaan dan juga mengikut arahan-arahan yang diberi”.

Sekiranya pemilik itu sendiri yang memandu kenderaannya penemuramah mestilah menanyakannya mengenai perjalanan-perjalanan yang dibuat olehnya dan juga menyudahi soalan-soalan lain:—

Sekiranya kenderaan itu dipandu oleh orang lain. Maklumat mengenai perjalanan yang dibuat dalam masa 24 jam yang lepas mestilah diperolehi dengan menayakan pemandu yang berkenaan.

Jika pemandu itu belum menghabiskan perjalanannya untuk hari itu maklumat mengenai perjalanan yang dibuat untuk hari yang dahulunya hendaklah diambil.

Untuk mengelakan sebarang kesilapan semasa mencatat. Jawapan hendaklah dicatatkan dengan segera setelah menerimanya.

Terdapat-terdapat kategori mengenai pelaksanaan temuramah tuan punya kenderaan:—

(i) Kenderaan yang menjadi hak milik perseorangan (private ownership) dan (ii) Kenderaan-kenderaan kepunyaan kerajaan/sepuluh kerajaan persatuan-persatuan ko-operatif, Syarikat-syarikat dan lain-lain Badan-badan yang berdaftar.

### II (i) Soalan-soalan untuk pemilik perseorangan/pemandu

Temuramah hendaklah dimulakan dengan memberi salam dahulu:—

“Selamat pagi/petang Tuan (atau puan). Kami sedang menjalankan penyelidikan lalu-lintas. Kami harap Tuan/puan dapat memberi kerjasama dengan menjawab soalan-soalan yang akan dikemukakan mengenai diri anda dan juga berkenaan dengan penggunaan kenderaan anda.”

(6) Penemuramah mestilah menanyakan dan mencatatkan perkara-perkara berikut:—

(i) Nombor kawasan (Zone number). Nombor daftar kenderaan, Nama pemilik dan Alamat. Ruangan (1) dan (2) dan nama penemuramah mestilah diisikan sebelum memulakan temuramah. Ini akan membolehkan penemuramah itu pergi mencari pemilik kenderaan yang dipilih berdasarkan nama dan alamat seperti yang tercatat dalam kertas pertanyaan.

(2) Ruangan (3) (Pembentukan)

Tanya pemilik kenderaan itu apakah jenis kenderaan yang dimiliki yang telah didaftarkan di bawah dan tandakan ruangan yang berkenaan.

(3) Ruangan (4) (Jantina)

Tandakan jenis jantina pemilik — lelaki atau perempuan

(4) Ruangan (5) (umur pemilik)

Tanyakan berapa umur pemilik dan tandakan mengikut ruangan umur yang telah diberi.

(5) Ruangan (6) (Bilangan orang yang tinggal dalam rumah) Tanya pemilik berapa banyakkah orang yang tinggal di dalam rumah itu (termasuk dirinya sendiri)

(6) Ruangan (7) (Pekerjaan)

Tanya pemilik pekerjaannya dan tandakan di ruangan yang telah ditentukan.

(7) Ruangan (8) (Jenis kenderaan)

Tandakan jenis kenderaan yang berkaitan yang digunakan ke dalam ruangan (8)

(8) Ruangan (9) (Jumlah muatan)

untuk van/lori pertengahan/lori berat, tanya pemilik berapakah muatan (dalam tan)

yang boleh dimuatkan mengikut undang-undang ke dalam kenderaan tersebut. Jika kenderaan itu digunakan untuk menghantar gasoline atau petrol, tanyakan muatannya.

- (9) Ruang (10) (Tempuh masa Kepunyaan)  
Tanyakan pemilik sudah berapa tahunkah kenderaan itu menjadi miliknya dan isikan ke dalam ruang (10).
- (10) Ruang (11) (Jenis pertubuhan)  
Tanya pemilik apakah jenis pertubuhan yang ia berkecimpung kemudian tandakan jenis pertubuhan ke dalam ruang (11).
- (11) Ruang (13) (Besarnya bilangan pekerja)  
Tanya pemilik berapa banyak bilangan pekerja di tempat kerjanya kemudian tandakan dengan berpatutan di ruang (13) bilangan pekerja.
- (12) Ruang (13) (Alamat tempat kerja)  
Tanya pemilik di manakah tempat kerjanya dan kemudian masukkan alamatnya yang penuh ke ruang (12)
- (13) Ruang (14) (Purata jumlah dalam kiraan batu yang dijalankan dalam sehari.  
Suruh pemilik menganggarkan purata jumlah batu yang digunakan dalam perjalanan dalam sehari.
- (14) Ruang (15) (Penggunaan kenderaan dalam seminggu)  
Tanya pemilik dalam sehingga berapa kalikah kenderaan digunakan.
- (15) Ruang (16) (Sebab-sebab mengapa tidak membuat perjalanan)  
Sekiranya pemilik tidak membuat perjalanan penemuramah hendaklah menanyakan sebab-sebabnya dan kemudian masukkan maklumat-maklumat itu ke dalam ruang (16)
- (16) Ruang (17) (Tempat permulaan perjalanan)  
Tanya pemilik/pemandu tempat permulaan perjalanannya yang pertama untuk hari itu ia itu tempat di mana dia memulakan perjalanannya. Catitkan nama dan alamat tempat itu. Sekiranya pemilik tidak begitu pasti mengenai nama yang tepat untuk tempat itu, tentukan dengan nama pekan yang berdekatan atau berikan peta kepadanya untuk menentukan kawasan itu.
- (17) Ruang (18) (Masa perjalanan di mulakan)  
Dapatkan masa permulaan perjalanannya dengan tepat sekiranya pemilik itu tidak begitu pasti dapatkan anggaran masa. Nyatakan samada waktu itu pagi, petang atau malam.
- (18) Ruang (19) (Destinasi perjalanan)  
Tanyakan kepada pemilik atau pemandu ke manakah tujuannya yang terakhir untuk perjalanan yang pertama. Isikan nama tempat di dalam ruang (19). Perkara yang sama haruslah dititikberatkan pada ruang (17).
- (19) Ruang (20) (masa tiba)  
Tanyakan kepada pemilik atau pemandu masa yang ia akan tiba ke tempat yang ditujui dengan tepat, untuk setiap perjalanan, isikan ke dalam ruang (30) samaada a.m. atau p.m.
- (20) Ruang (21) (Tujuan perjalanan)  
Tanyakan kepada pemilik/pemandu tujuan perjalanannya dan tandakan kepada nombor yang berkaitan dalam kategori yang terdapat dalam kertas borang pertanyaan. Jika terdapat penumpang di dalam kenderaan tuliskan kilangan penumpang (dengan angka untuk setiap perjalanan yang dibuat di dalam ruang yang disediakan (21).
- (21) Ruang (22) ciri-ciri dalam penubuhan.  
Tanyakan kepada pemilik ciri-ciri dalam penubuhan pada perjalanan yang dibuat kemudian tuliskan pada nombor yang berikut dalam kategori yang terdapat pada ruang (22). Jika terdapat lebih dari seorang penumpang dalam kenderaan tuliskan jawapan pada setiap jawapan dalam ruang yang disediakan (Contoh: Dalam masaalah di mana terdapat lebih dari satu perjalanan)



- (22) Ruang (23) (Tempat meletak kereta)  
Tanyakan kepada pemilik/pemandu di mana ia ataupun mereka meletakkan kenderaannya semasa perjalanannya, kemudian tandakan nombor yang berkenaan berdasarkan kategori yang terdapat di dalam borang soal-selidik. Juga tanyakan samaada ia membayar apa-apa bayaran kemudian tuliskan nombor yang berikut berdasarkan kategori dalam ruang (23).
- (23) Ruang (24) (Bilangan penumpang)  
Tanyakan kepada pemilik/pemandu bilangan penumpang yang menaiki kenderaannya dalam tiap-tiap perjalanan yang dibuat. Masukkan angka itu dalam ruang (24) sekiranya dia tidak begitu pasti akan bilangan ia minta dia berikan anggaran, sekiranya tidak ada penumpang lain masukkan 1 (satu) dalam ruang yang berkenaan (Termasuk dirinya sendiri).
- (24) Ruang (25) (Jenis dan bilangan muatan yang dibawa. Tanyakan kepada pemilik/pemandu, jenis muatan yang dibawanya dalam setiap perjalanan kemudian tandakan bilangannya dalam ruang yang berkenaan seperti yang tercatat dalam ruang (25). Sekiranya kenderaan itu tidak membawa apa-apa muatan masukkan nombor 1 (Satu) dalam ruang (menunjukkan ianya kosong) Tanyakan juga padanya anggaran bilangan muatan yang dibawa dan masukkan di dalam ruang yang berikut (untuk kemudahan jawapan ikutlah pembahagian yang dicatitkan. Contoh: penuh,  $\frac{3}{4}$  penuh ... semasa menemuduga.
- (25) Perjalanan kedua, ketiga dan yang lainnya.  
Perhatian yang sama pada lain-lain perjalanan yang dibuat dalam masa 24 jam yang lalu, haruslah dititik beratkan juga seperti perjalanan permulaan dan dimasukkan ke dalam ruang yang tertentu di dalam borang soal-selidik.
- (26) Ruang (26) (Nama jalan-jalan yang selalu diikuti)  
Tanyakan kepada pemilik/pemandu nama jalan-jalan yang selalu dilalui dalam perjalanan hari dan masukkan nama-nama ini ke dalam ruang (26).
- (27) Ruang (27) (Komen apa-apa cadangan daripada orang-orang yang ditemuramah)  
Tanyakan kepada pemandu/pemilik jika ia ada apa-apa komen atau apa-apa cadangan yang bersangkutan dengan perjalanan atau apa-apa lain yang berkaitan dengan masalah-masalah yang dihadapi ketika melalui jalan itu dan tuliskan keterangan yang diberi.
- (28) Di akhir temuramah.  
1) Penemuramah hendaklah mengakhiri dengan mengucapkan "selesaikan sudah temuramah ini dan diucapkan terima-kasih atas kerjasama tuan!"

Catitan:

- Soal 4—8 hanyalah untuk pemilik kenderaan persendirian, untuk pemilik jenis lain data ini tidak diperlukan.
- Soalan (9) hanya untuk van, lori pertengahan dan lori berat sahaja.
- Data-data mengenai tempat kerja tidak diperlukan dari penuntut, surirumah dan mereka yang tidak bekerja.
- Data-data mengenai perjalanan dalam masa 24 jam yang lepas hendaklah diambil dari pemandu kenderaan sekiranya kenderaan itu selalunya dipandu oleh orang lain.

III. Soalan untuk kenderaan yang dimiliki oleh Kerajaan, separuh Kerajaan — badan swasta dan lain-lain badan.

- Untuk kenderaan yang dimiliki oleh salah satu badan yang tersebut di atas, tulis nama dan alamat pemilik yang berkenaan di ruang (1) dan (2) nombor zone, nombor pendaftaran kenderaan dan nama penemuramah hendaklah dimasukkan sebelum temuramah dimulakan.
- Butir-butir tidak diperlukan untuk ruang 4, 5, 6, 7 dan 13.
- Data-data mengenai perjalanan yang dibuat dalam masa 24 jam yang lepas boleh didapati dengan menyoal pengurus atau mereka yang berkenaan.

- 4) Data-data mengenai perjalanan yang dibuat dalam masa 24 jam yang lepas boleh didapati dengan menyoal pemandu atau mereka yang bertanggungjawab. Data-data ini hendaklah direkodkan di dalam borang soal-selidik berpandukan arahan yang diberi.
- 5) Proses penemuramah dan merekodkan data-data hendaklah dijalankan sama seperti mana yang diarahkan untuk penemuramah pemilik persendirian dalam perenggan 3.0 (1) di atas.

