

A4.2 PERSON TRIP SURVEY (HOUSEHOLD INTERVIEW)

A4.2.1 Design of the Survey

a. Designed Sample Rate

Household interview was carried out to collect necessary data and information for estimating the present traffic demand of the inhabitants in the Study Area. This survey was done by direct interview method. According to the General Population Census 1998, the Study Area has 193,156 households and average size of household is assumed 5.7 persons per households. About six thousands (6,000) households in the Study Area were selected at random to be interviewed to cover the minimum sampling rate of 3%.

b. Survey Item

To collect necessary data and information of trips made by each member of households, the survey form was designed to cover household & personal characteristics, and trip descriptions such as criteria for selection of existing & proposed transport mode (see attached Survey Form No.1-1 and -2). Table A4.2.1 shows outline of the person trip survey (household interview).

Table A4.2.1 Outline of the Person Trip Survey (Household Interview)

No.	Survey Item	Contents
(1)	Household Attributes	- Household Structure - Vehicle Ownership (Car, Motorbike and Bicycle) - Monthly Household Income - Parking Space for Owned Car & Payment Method - Owned Car Information (Type & Age) - Address of Residence
(2)	Personal Attributes	- Gender & Age - Occupation & Sector - Driving License Hold - Place of Work / Study - Number of Daily Trips
(3)	Trip Descriptions	- Origin & Destination - Trip Purpose - Number of Sub Trips
	Criteria for Selection of Existing Transport Mode (By Dry & Rainy Season)	- Transport Mode - Waiting Time - Travel Time - Trip Cost / Expense - Reason (Why Using That Mode)
	Criteria for Selection of Proposed Transport Mode	- Intention of Use - Expectation to the Service - Affordable Trip Cost - Acceptable Waiting Time

A4.2.2 Survey Output

a. Effective Number of Interviewed Households and Individuals

Total of 16 supervisors & 96 surveyors were mobilized from May 22 (Monday) to June 9 (Friday), 2000 into the Study Area. Subsequent to demobilization, collected data were manually checked and inputted into the spreadsheets designed for data processing, and then those data were checked and scrutinized for errors, omissions, and ambiguous classifications during the coding procedure.

After completion of the error check, the total number of effective interviewed samples became 6,455 households with sampling ratio of 3.3%. Effective number of sampled individuals and their answers are summarized in Tables A4.2.2, A4.2.3, and A4.2.4.

Table A4.2.2 Summary of the Person Trip Survey

Item	Figures
Population in the Study Area (1998)	1,101,918
Estimated Target Population (Aged 5+)	1,053,410
Sampled Individuals (Aged 5+)	18,817
Number of Total Trips	37,686
Sampling Ratio of Individuals (%)	1.79
Trip Production Ratio (per person, Gross)	2.00

b. Summary of Household Attributes

(1) Household Size

Average number of residents per household was estimated 5.8, and those of which over five (5) year-old were 4.9 per household. The major number of residents per household was considered as five (5) with a share of 20.0%, followed by four (4) with 17.6% and six (6) with 17.5%. These three sizes of household made up 55% of the all households.

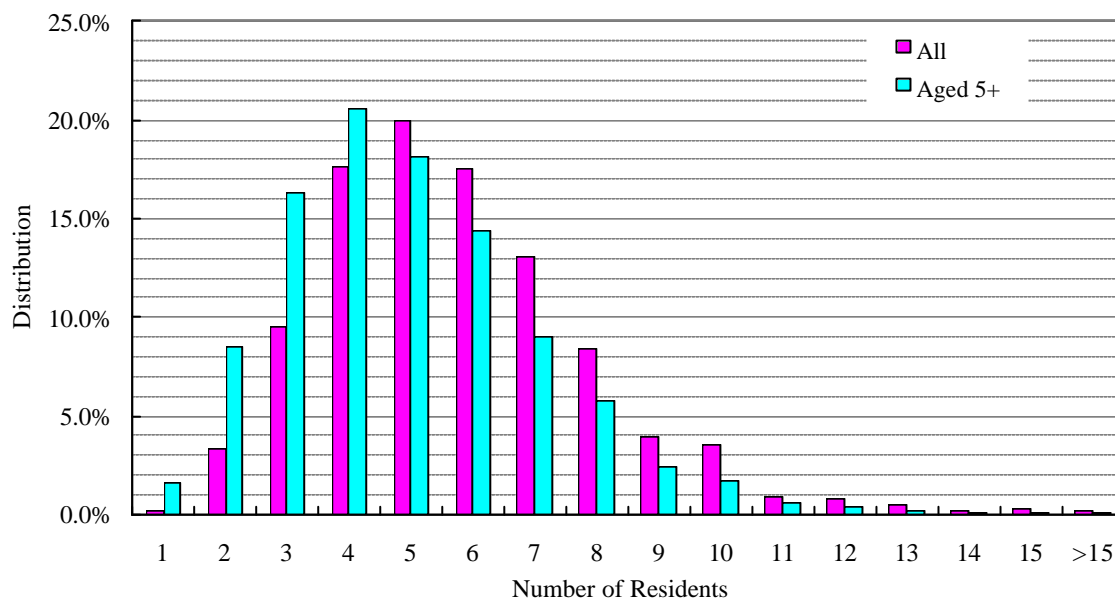


Figure A4.2.1 Distribution of Households by Number of Residents

(2) Household Income

Average income per household was estimated around 300,000 Riel (US\$80) per month, although almost half of households earn less than 250,000 Riel (US\$65) per month. However, 1999's statistics data showed average monthly income per household of Phnom Penh would be more than this result.

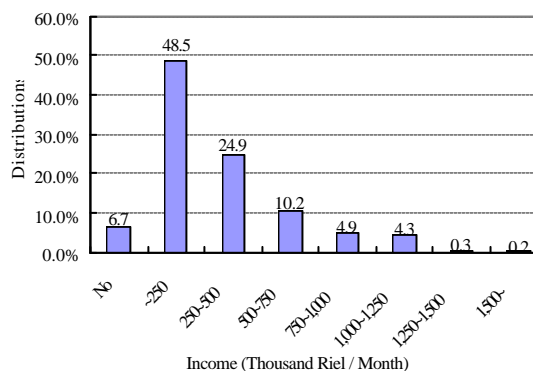


Figure A4.2.2 Distribution of Households by Monthly Income

(3) Car Ownership

Average car ownership per household was estimated 0.15 units with full-time base, and 0.07 units with part-time base. Therefore, total car ownership shall be estimated maximum 0.22 units per household. As shown in Figure A4.2.3, by full-time base, approximately six-sevenths (6/7) of households did not own any unit, although remaining one-seventh (1/7) of households owned at least one (1) unit.

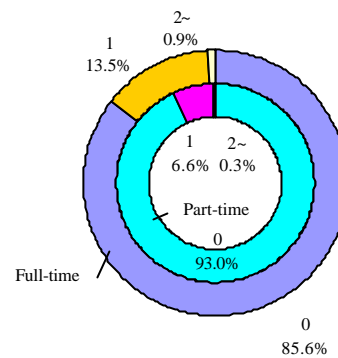


Figure A4.2.3 Distribution of Households by Car Ownership

(4) Motorbike & Bicycle Ownership

Average motorbike and bicycle ownership were estimated 1.19 units and 0.54 units per household. As shown in Figure A4.2.4, for motorbike, about half of households owned one (1) unit, and one-fifth (1/5) owned two (2) units, although another one-fifth (1/5) did not have any unit. For bicycle, one-third (1/3) owned one (1) unit, but three-fifth (3/5) still did not have any unit.

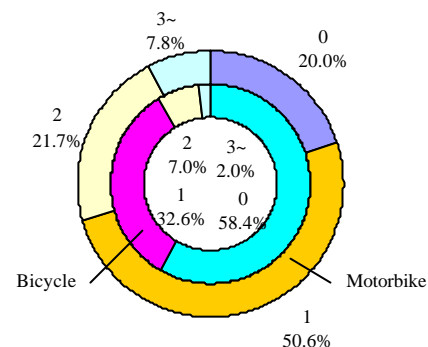


Figure A4.2.4 Distribution of Households by Motorbike & Bicycle Ownership

(5) Household Income Level and Vehicle Ownership

As shown in Figure A4.2.5, it is observed that vehicle ownership ratio, especially which of motorbike and private car, are closely related to household income level by districts base.

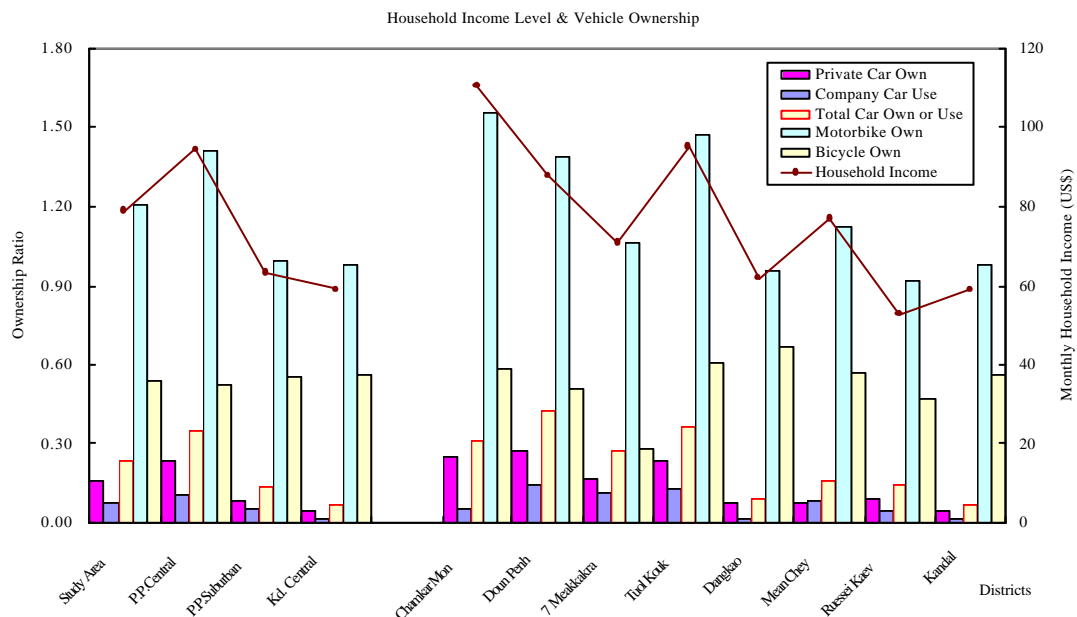
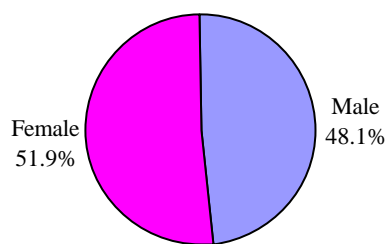


Figure A4.2.5 Household Income Level and Vehicle Ownership

c. Summary of Personal Attributes

(1) Gender and Age

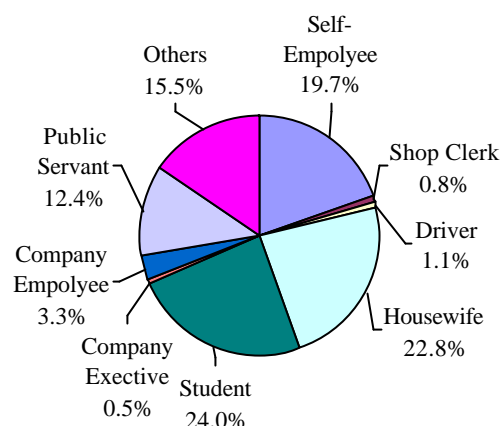
As shown in Figure A4.2.6 (a), 48.1% of interviewees were “Male” and 51.9% were “Female.”



(a) Gender

(2) Occupation

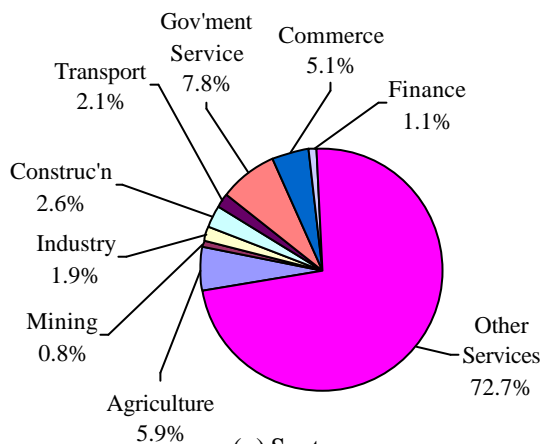
As shown in Figure A4.2.6 (b), the major occupations were “Student” with a share of 24.0%, followed by “Housewife (including househusband)” with 22.8%, “Self-Employee / Freelance” with 19.7%, “Others” with 15.5%, and “Public Servant” with 12.4%.



(b) Occupation

(3) Sector

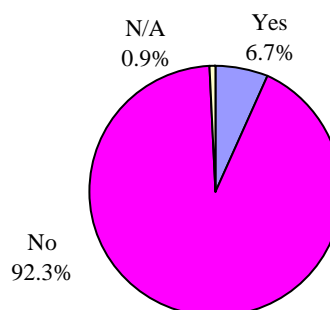
As shown in Figure A4.2.6 (c), except “Student” and “House Wife,” almost three-quarters (3/4) of interviewee answered “Other Services.” Within the remaining one-quarter (1/4), “Government Service” was the second largest with a share of 7.8%, followed by “Agriculture” with 5.9%, and “Commerce” with 5.1%. “Construction,” “Transport,” and “Industry” were only 2.6%, 2.1%, and 1.9% respectively.



(c) Sector

(4) Driving License Possession

As shown in Figure A4.2.6 (d), only 6.7% of interviewee holds driving license(s).



(d) Driving License

Figure A4.2.6 Personal Attributes

d. Summary of Trip Descriptions

(1) Trip Production Rate

The net trip production rates were estimated 5.83 for households and 2.00 for individuals. These two figures indicated that nearly three (3) persons from each household made one (1) round trip per day. In addition, production rates by gender or generation did not show significant differences except over sixty-year-old as shown in Figure A4.2.7.

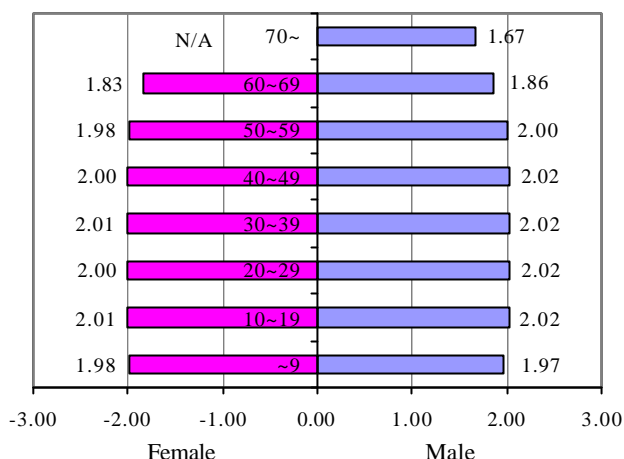


Figure A4.2.7 Trip Production Rates by Gender & Generation

(2) Trip Purpose

As shown in Figure A4.2.8, the major trip purpose was “To Home” with a share of 50.2%, followed by “To Work” with 15.2%, “Shopping” with 14.9%, and “To School” with 12.7%. These four (4) purposes made up 93.0 % of all trips.

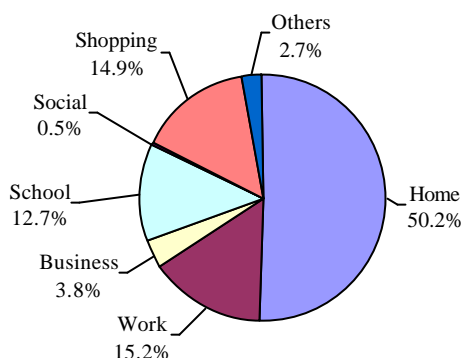


Figure A4.2.8 Trip Purpose

(3) Trip Mode

The composition of trip mode is shown in Figure A4.2.9. The major trip mode was “Motorbike (private)” with a share of 39.0%, followed by “Walk/Others” with 34.2%, “Motodop (Motorbike Taxi)” with 13.8%, and “Motorumo” with 6.1%. Three motorcycle related modes made up 58.9 % of all trips. Use of private car (“Passenger Car” or “Pick-up”) was still low level with shares of 3.6% in total.

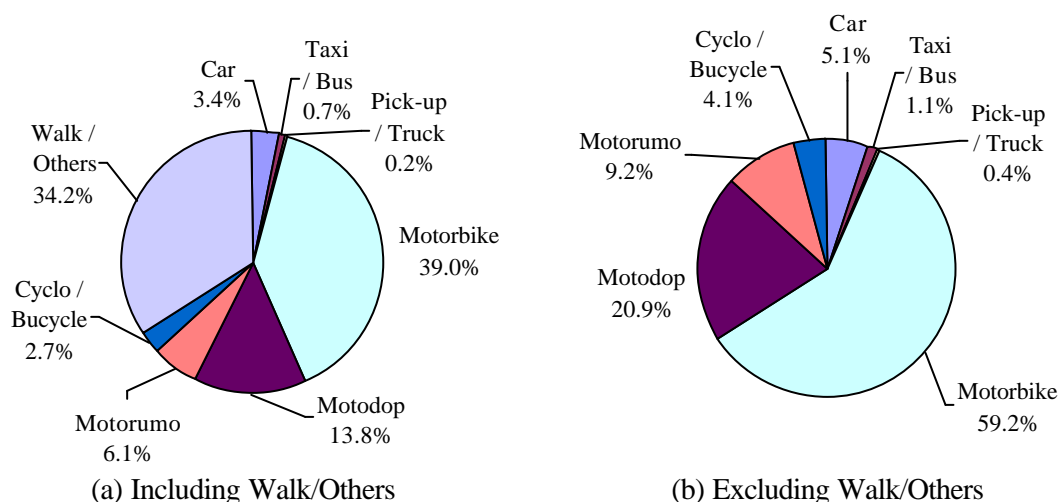


Figure A4.2.9 Trip Mode

However, traffic counts in the urban area showed the higher share of “Light Vehicles” and “Motorcycles” than those of which in the person trip survey. The composition of the trip mode excluding “Walk/Others” from the person trip survey showed that share of “Motorbike (private)” was 59.2%, and “Motodop (Motorbike Taxi)” was 20.9%. These two (2) modes made up more than 80% of all trip modes, and it showed similar kind of composition in the result from the traffic counts in the urban area, although share component of “Motorbike (Private)” and “Motodop (Motorbike Taxi)” were slightly different from the result from the marking sampling survey (motorbike counting).

e. Summary of Present Trip Criteria

(1) Travel Time

According to the household interview, average trip time and waiting time in dry seasons were estimated 12.4 minutes and 2.1 minutes for all trip modes. On the other hand, in rainy seasons, those figures were estimated slightly longer than those of which were in dry season, with 13.7 minutes and 2.3 minutes respectively. Therefore, net travel time would be estimated 14.5 minutes in dry seasons and 16.0 minutes in rainy seasons for all trip modes. Trip time and waiting time distributions are shown in Figure A4.2.10. In spite of this, travel time by various factors (i.e. mode, occupation, income level, zone, etc.) has not been examined yet due to delay of survey outputs. Therefore, those precise figures and their analysis will be provided during the course of the second stage of the Study. In addition, please be aware of that these figures were based on the interviewees’ sensory time, so they might be different from the actual time that they would be spending.

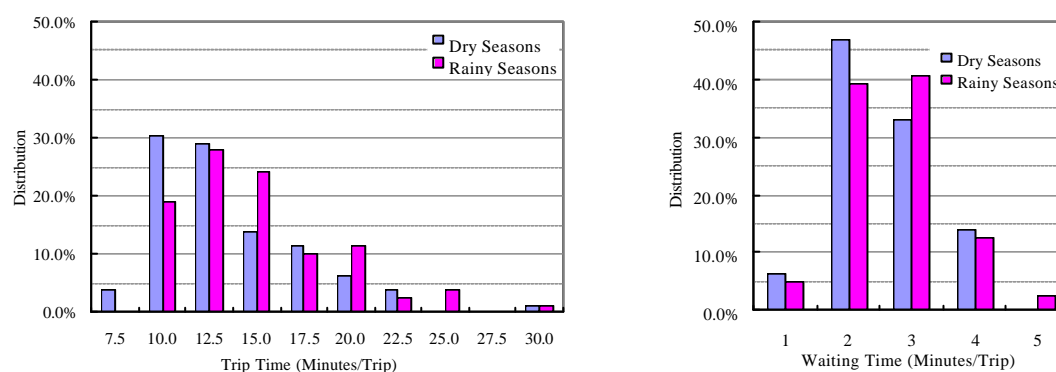


Figure A4.2.10 Travel Time & Waiting Time

(2) Trip Cost

Trip cost spent by non-private vehicle users was estimated around 640 Riel (US\$ 0.17) per trip in average, while around 40% of users spent maximum of 500 Riel (US\$ 0.13), and 35% of users spent up to 750 Riel (US\$ 0.20) per trip. Remaining 25% of users spent more than 750 Riel per trip. By seasons, significant differences were not observed. However, these figures were slightly different from the result of the para transit and bus passenger interview surveys. Trip cost distributions for non-private vehicle users are shown in Figure A4.2.11 (a).

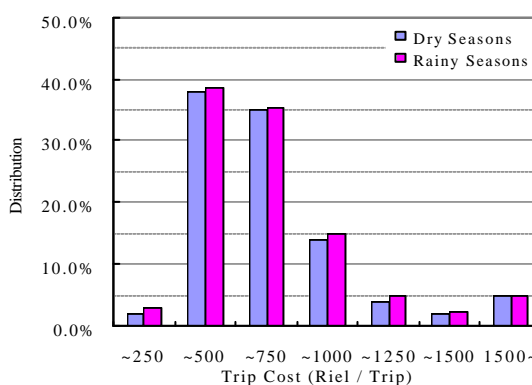


Figure A4.2.11 (a) Trip Cost for Non Private Vehicle Users

On the other hand, those of which spent by private car and motorbike users were estimated around 3,850 Riel (US\$ 1.00) and 1,050 Riel (US\$ 0.27) per trip in average, respectively. While, 41% of private-car users spent more than 4,000 Riel (US\$ 1.04), and almost half of private-bike users spent more than 1,000 Riel (US\$ 0.26) per trip. Note that these cost for private vehicle users are calculated from responded monthly spent cost divided by average number of trips per day, and it is including fuel and oil cost, and parking fees, but excluding maintenance cost.

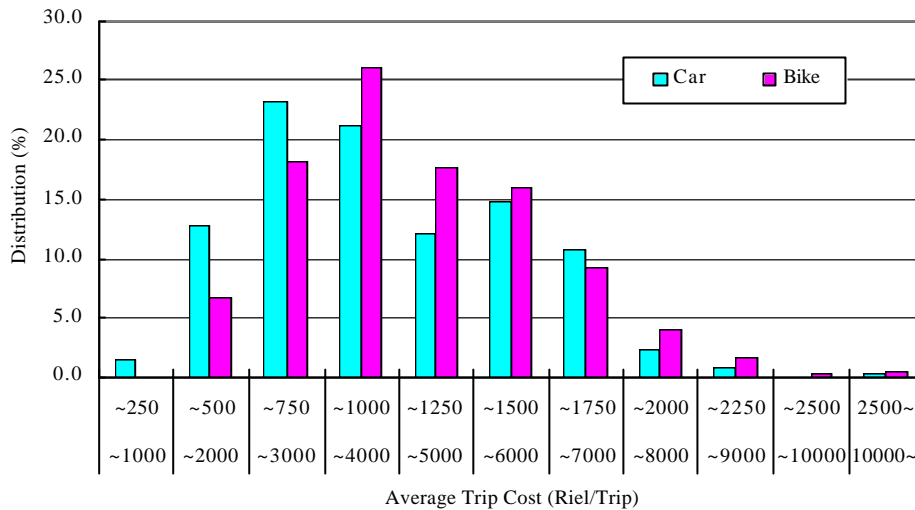


Figure A4.2.11 (b) Trip Cost for Private Vehicle Users

(3) Trip Condition

As shown in Figure A4.2.12, the major reason why people are selecting present mode were “Fastness” with a share of 28.3%, followed by “No Particular Reason” with 25.0%, “Safety” with 22.9%, “Convenience” with 25.7% in average. The answer said “Cheapness” was only 3.7%. On the other hand, no significant differences in the answer between dry seasons and rainy seasons were observed particularly, although the answers said “Convenience” and “Safety” were slightly reduced, while “Fastness” and “Reliability” were slightly gained in rainy seasons.

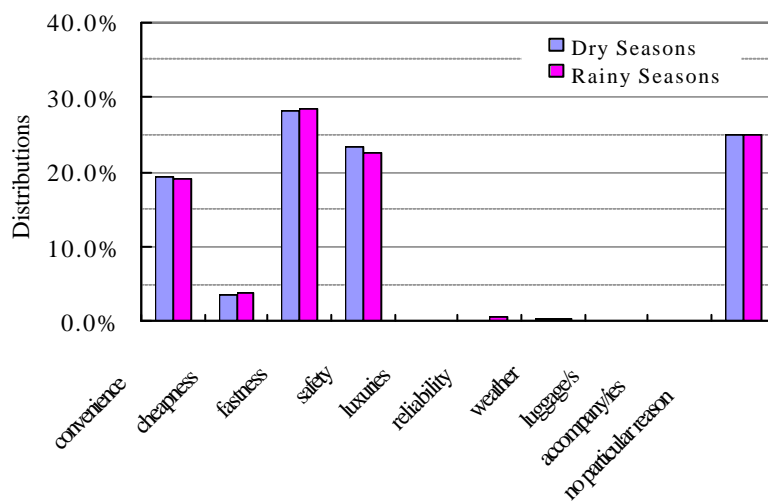


Figure A4.2.12 Reason of Present Mode Selection

f. Summary of Proposed Trip Criteria

(1) Intention of Use

As shown in Figure A4.2.13, when we made a question that “If public transport system (Bus Services) will be available, will you use it?” more than 80% of interviewee answered, “Yes” and some of them were even private vehicle users.

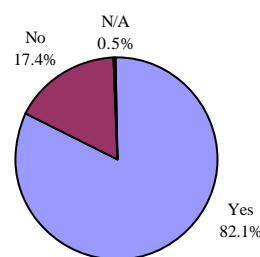


Figure A4.2.13 Intention of Use

(2) Expectation to the Services

As shown in Figure A4.2.14, the major expectation to the proposed services was “Safety” with a share of 64.8%, followed by “Cheapness” with 20.0%, “Luxuries” with 6.3%, and “Convenience” with 5.8% for who answered, “Yes” in previous question.

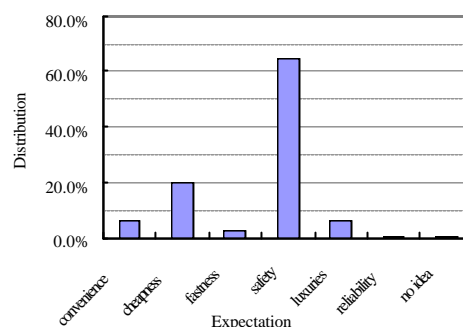


Figure A4.2.14 Expectation to the Service

(3) Affordable Trip Cost

Affordable trip cost was estimated around 480 Riel (US\$ 0.13) per trip in average, while more than 40% of interviewees answered that they would be affordable “Up to 500 Riel” followed by “Up to 250 Riel” with 24 %, “Up to 750 Riel” with 18%. Remaining 17% interviewees answered that they may be able to afford more than 750 Riel. However, these figures were different in some measure from the result of para transit and bus passenger interview surveys. Distributions of affordable trip cost are shown in Figure A4.2.15.

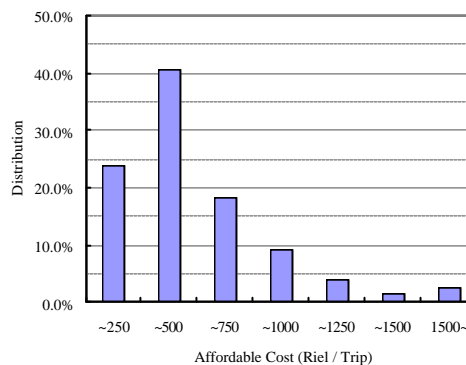


Figure A4.2.15 Affordable Trip Cost

(4) Acceptable Waiting Time

Acceptable waiting time was estimated around 6 minutes in average, while almost half of interviewees answered that they will be able to wait “Up to 5 Minutes”, and about three-eighths (3/8) of interviewees answered “Up to 10 Minutes”. Who can wait more than 10 minutes were only one-eighth (1/8) of interviewees in total. Distributions of acceptable waiting time are shown in Figure A4.2.16.

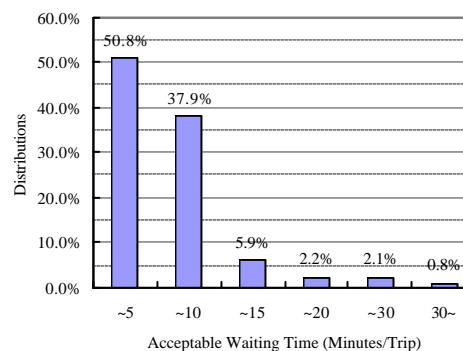


Figure A4.2.16 Acceptable Waiting Time

Table A4.2.3 Sampling Numbers and Ratio of Person Trip Survey (Household Interview)

Traffic Zone No.	Census Code No.	Province/District/Commune	General Population Census 1998 Basis			Interviewed Households		Interviewed Individuals		
			Total Number of Households	Population	Average Household Size	Number of Sampled Households	Ratio of Sampled Households	Number of Sampled Individuals	Ratio of Sampled Individuals	
0000		Phnom Penh Metropolitan Area								
		- Total	(0100-0500)	193,156	1,184,918	5.7	6,455	3.3%	18,817	1.7%
		- Central	(0100-0400)	97,296	578,135	5.9	3,134	3.2%	9,337	1.6%
		- Suburb	(0500-0700)	76,382	428,649	5.6	2,673	3.5%	7,589	1.8%
		- Kandal (Central)	(0800)	19,478	105,114	5.4	648	3.3%	1,891	1.8%
	0100	Chamkar Meas		32,366	187,082	5.8	1,019	3.1%	2,762	1.5%
1	0101	Tonle Basak		8,823	44,513	5.0	257	2.9%	690	1.6%
2	0102	Boeang Keng Kang Muey		2,408	14,405	6.0	76	3.2%	195	1.4%
3	0103	Boeang Keng Kang Pir		2,049	12,055	5.9	65	3.2%	178	1.5%
4	0104	Boeang Keng Kang Bei		3,841	22,700	5.9	119	3.1%	349	1.5%
5	0105	Onlompik		1,549	9,799	6.3	60	3.9%	186	1.5%
6	0106	Tuol Svay Prey Muey		2,208	13,575	6.1	70	3.2%	181	1.3%
7	0107	Tuol Svay Prey Pir		1,793	11,589	6.5	55	3.1%	140	1.2%
8	0108	Tumnob Tuck		2,334	13,720	5.9	70	3.0%	204	1.5%
9	0109	Tuol Tompong Pir		1,371	8,594	6.3	50	3.6%	118	1.4%
10	0110	Tuol Tompong Muey		1,672	10,422	6.2	52	3.1%	152	1.5%
11	0111	Boeang Trahach		1,558	9,452	6.1	60	3.9%	175	1.5%
12	0112	Phsar Daunm Thkov		2,760	16,258	5.9	85	3.1%	194	1.2%
	0200	Dona Penh		22,203	131,913	5.9	730	3.3%	2,314	1.8%
13	0201	Phsar Thmei Muey		1,234	7,447	6.0	40	3.2%	118	1.6%
14	0202	Phsar Thmei Pir		1,305	7,771	6.0	45	3.4%	141	1.8%
15	0203	Phsar Thmei Bei		2,275	13,154	5.8	77	3.4%	270	2.1%
16	0204	Boeang Reang		1,272	7,714	6.1	40	3.1%	117	1.4%
17	0205	Phsar Kasal Muey		1,817	11,223	6.2	60	3.3%	197	1.8%
18	0206	Phsar Kasal Pir		1,352	7,954	5.9	53	3.9%	187	2.4%
19	0207	Chakti Mekh		2,171	12,501	5.8	70	3.2%	236	1.9%
20	0208	Chey Chennat		2,004	12,980	6.5	60	3.0%	187	1.4%
21	0209	Phsar Chas		1,387	8,287	6.0	45	3.2%	138	1.7%
22	0210	Srah Chak		5,945	34,115	5.7	190	3.2%	579	1.7%
23	0211	Voat Phnom		1,441	8,767	6.1	50	3.5%	144	1.6%
	0300	Frampr Meakakra		16,529	96,192	5.8	538	3.3%	1,756	1.8%
24	0301	Ou Ruessel Muey		1,621	9,120	5.6	60	3.7%	231	2.5%
25	0302	Ou Ruessel Pir		1,874	10,722	5.7	60	3.2%	239	2.2%
26	0303	Ou Ruessel Bei		1,498	8,519	5.7	50	3.3%	135	1.6%
27	0304	Ou Ruessel Boun		1,569	9,123	5.8	48	3.1%	136	1.5%
28	0305	Monorom		2,212	12,981	5.9	70	3.2%	225	1.7%
29	0306	Mitakhpap		2,170	12,323	5.7	70	3.2%	214	1.7%
30	0307	Voat Yong		3,684	21,394	5.8	115	3.1%	337	2.0%
31	0308	Boeang Prohit		1,901	12,010	6.3	65	3.4%	239	2.0%
	0400	Tuol Kouk		26,128	154,968	5.9	847	3.2%	2,505	1.6%
32	0401	Phsar Depou Muey		1,645	10,398	6.3	55	3.3%	158	1.5%
33	0402	Phsar Depou Pir		1,798	10,236	5.7	66	3.7%	190	1.9%
34	0403	Phsar Depou Bei		1,699	10,038	5.9	56	3.3%	169	1.7%
35	0404	Tuck Lak Muey		2,362	13,401	5.7	77	3.3%	244	1.8%
36	0405	Tuck Lak Pir		1,718	11,247	6.5	60	3.5%	179	1.6%
37	0406	Tuck Lak Bei		2,936	17,282	5.9	90	3.1%	260	1.5%
38	0407	Boeang Kak Muey		2,587	16,423	6.3	87	3.4%	268	1.6%
39	0408	Boeang Kak Pir		4,260	25,177	5.9	131	3.1%	342	1.4%
40	0409	Phsar Daunm Kor		2,658	15,998	6.0	85	3.2%	259	1.6%
41	0410	Boeang Salaeng		4,535	24,768	5.5	140	3.1%	436	1.8%
	0500	Dangk		17,565	92,461	5.3	714	4.1%	2,246	2.4%
42	0501	Daengao		2,035	10,547	5.2	65	3.2%	193	1.8%
43	0502	Trapeang Krasang		354	3,013	5.4	61	11.0%	182	6.0%
44	0503	Koek Roka		1,068	5,153	5.2	44	4.1%	139	2.7%
45	0504	Phleang Chhch Rot		695	3,640	5.8	35	5.0%	121	3.3%
46	0505	Chaom Chae		3,395	19,740	5.6	110	3.2%	310	1.6%
47	0506	Kakab		3,184	17,679	5.3	102	3.2%	337	1.9%
48	0507	Pong Tuck		1,053	5,561	5.2	40	3.8%	128	2.3%
49	0508	Prey Veasng		563	3,013	4.7	32	5.7%	101	3.4%
50	0509	Samrong Kraom		810	4,211	5.2	37	4.6%	122	2.9%
51	0510	Prey Sa		892	4,221	4.7	38	4.3%	107	2.5%
52	0511	Kraag Thnoeng		564	2,983	5.3	32	5.7%	109	3.7%
53	0512	Kraag Pongro		461	2,016	4.4	30	6.5%	104	5.2%
54	0513	Pratah Lang		765	3,594	4.7	28	3.7%	90	2.5%
55	0514	Sak Sampov		412	1,920	4.7	20	4.9%	59	3.1%
56	0515	Cheang Ak		1,114	5,170	4.6	40	3.6%	144	2.8%
AP	0516	Pochentong International Airport		N/A	N/A	N/A	N/A	N/A	N/A	N/A
	0600	Mean Chey		27,443	157,112	5.7	920	3.4%	2,767	1.8%
57	0601	Stueng Mean Chey		5,552	31,740	5.7	180	3.2%	563	1.8%
58	0602	Boeang Tumpun		5,150	29,037	5.6	165	3.2%	555	1.9%
59	0603	Prack Pra		1,969	11,346	5.8	70	3.6%	169	1.5%
60	0604	Chbar Ampov Muey		1,754	10,378	5.9	60	3.4%	211	2.0%
61	0605	Chbar Ampov Pir		4,428	24,227	5.5	145	3.3%	388	1.6%
62	0606	Chak Angrac Len		2,913	16,599	5.7	100	3.4%	299	1.8%
63	0607	Chak Angrac Kraom		3,151	19,814	6.3	110	3.5%	371	1.9%
64	0608	Nirouth		2,526	13,971	5.5	90	3.6%	211	1.5%
	0700	Ruessel Kaev		31,374	180,076	5.7	1,039	3.3%	2,576	1.4%
65	0701	Khmook		1,120	5,987	5.3	40	3.6%	85	1.4%
66	0702	Tuol Sangkac		4,691	27,244	5.8	145	3.1%	407	1.5%
67	0703	Svay Pak		2,160	12,197	5.6	70	3.2%	175	1.4%
68	0704	Klloumacri Lekh Pramuey		2,366	13,372	5.7	75	3.2%	169	1.3%
69	0705	Phnom Penh Thmei		3,191	17,731	5.6	100	3.1%	291	1.6%
70	0706	Ruessel Kaev		3,309	18,742	5.7	110	3.3%	232	1.2%
71	0707	Tuck Tbla		5,494	33,139	6.0	169	3.1%	416	1.3%
72	0708	Prack Lekh		1,733	10,617	6.1	60	3.5%	160	1.5%
73	0709	Prack Ta Sek		914	4,936	5.4	35	3.8%	88	1.8%
74	0710	Chroy Changra		2,974	16,427	5.5	105	3.5%	256	1.6%
75	0711	Chraag Chamreth Muey		1,308	7,233	5.5	55	4.2%	134	1.9%
76	0712	Chraag Chamreth Pir		2,114	12,451	5.9	75	3.5%	163	1.3%
	0800	Kandal (Central)		19,478	105,114	5.4	648	3.3%	1,891	1.8%
77	0801-10/14/19/24/26	Kandal Stueng (North)		2,657	12,879	4.8	102	3.8%	310	2.4%
78	0802-09/10/12	Klea Svay (North-West)		6,555	33,971	5.2	225	3.4%	622	1.8%
79	0811	Ta Khmau		10,266	58,264	5.7	321	3.1%	959	1.6%

Table A4.2.4 (a) Result of Person Trip Survey (Household Interview) - Household Attributes -

Zero	Number of Owned Vehicle		Monthly Income			On Off Street	Person Method	Amount Paid					N/A	
	Car/full	Cy/park/ Microhid	Motorcycle	None	1000 - 1100			1100 - 1250	1250 - 1500	1500 - 2000	2000 - 2500	>2500		
101	481	13	371	128	562	Total	257	93	121	91	237	57	33	257
102	17	2	15	6	21	100 - 150	63	24	33	24	11	11	1	63
103	15	9	9	46	64	150 - 250	8	7	15	6	2	2	0	8
104	29	4	188	60	281	250 - 350	26	10	33	25	9	6	0	26
105	23	12	82	20	135	350 - 450	35	15	40	35	22	11	0	35
106	27	0	94	21	115	450 - 550	22	8	30	22	11	5	0	22
107	23	0	41	21	62	550 - 650	19	3	13	14	7	2	0	19
108	14	0	144	70	223	650 - 750	11	4	15	14	8	4	0	11
109	14	0	41	43	58	750 - 850	4	1	5	4	2	2	0	4
110	12	4	78	31	113	850 - 950	4	1	3	3	1	1	0	4
111	16	3	102	48	154	950 - 1050	11	1	6	6	2	3	0	11
112	2	1	26	11	30	1050 - 1150	1	0	1	1	0	0	0	1
113	3	1	46	19	66	1150 - 1250	14	3	13	14	5	3	0	14
114	20	7	66	19	115	1250 - 1500	15	3	14	16	3	2	0	15
115	23	12	106	36	177	1500 - 2000	22	6	22	33	6	4	0	22
116	23	5	56	34	80	2000 - 2500	21	3	30	31	0	0	0	21
117	16	6	86	33	141	>2500	12	5	23	28	3	2	0	12
118	14	8	63	23	108	None	21	20	41	0	0	0	0	21
119	14	8	89	39	161	1000 - 1100	16	19	35	33	5	2	0	16
120	18	8	94	36	156	1100 - 1250	17	7	25	28	3	2	0	17
121	8	6	60	22	96	1250 - 1500	19	15	34	14	1	1	0	19
122	37	259	100	446	94	1500 - 2000	41	24	113	142	1	1	0	41
123	2	62	50	111	123	2000 - 2500	10	6	33	38	0	0	0	10
124	7	6	72	113	196	>2500	28	15	54	49	0	0	0	28
125	1	2	11	15	28	None	2	1	4	4	0	0	0	2
126	1	1	6	11	18	1000 - 1100	1	0	2	2	0	0	0	1
127	1	1	6	11	18	1100 - 1250	1	0	2	2	0	0	0	1
128	4	4	16	16	32	1250 - 1500	6	3	16	16	0	0	0	6
129	4	4	16	16	32	1500 - 2000	7	3	20	18	0	0	0	7
130	4	4	16	16	32	>2500	6	3	16	16	0	0	0	6
131	5	3	83	16	107	None	8	5	31	37	0	0	0	8
132	5	3	83	16	107	1000 - 1100	13	7	5	12	0	0	0	13
133	19	5	56	11	79	1100 - 1250	34	13	7	5	0	0	0	34
134	17	13	132	31	193	1250 - 1500	45	23	13	6	3	1	0	45
135	17	13	132	31	193	1500 - 2000	25	13	6	3	1	0	0	25
136	15	12	116	47	177	>2500	11	20	21	18	2	1	0	11
137	12	10	86	47	157	None	24	21	29	22	1	0	0	24
138	12	13	79	29	126	1000 - 1100	11	12	13	12	2	0	0	11
139	10	10	112	46	176	1100 - 1250	41	11	23	17	2	0	0	41
140	9	5	80	24	116	1250 - 1500	30	6	12	8	0	0	0	30
141	12	138	28	219	398	1500 - 2000	18	9	15	10	1	0	0	18
142	12	13	81	25	141	>2500	39	16	8	12	0	0	0	39
143	11	11	117	31	159	None	10	5	15	15	0	0	0	10
144	15	11	142	51	204	1000 - 1100	18	11	11	8	0	0	0	18
145	18	207	86	341	76	1100 - 1250	36	11	7	8	0	0	0	36
146	5	0	32	51	102	1250 - 1500	6	0	2	2	0	0	0	6
147	5	0	32	51	102	1500 - 2000	6	0	2	2	0	0	0	6
148	0	0	0	0	0	>2500	2	0	0	0	0	0	0	2
149	3	0	29	29	58	None	3	0	0	0	0	0	0	3
150	17	3	128	87	235	1000 - 1100	22	10	7	3	0	0	0	22
151	8	0	87	62	157	1100 - 1250	9	9	6	0	0	0	0	9
152	1	0	34	22	57	1250 - 1500	3	1	2	1	0	0	0	3
153	1	0	14	16	31	1500 - 2000	2	1	1	0	0	0	0	2
154	0	0	0	0	0	>2500	2	0	0	0	0	0	0	2
155	0	0	0	0	0	None	2	0	0	0	0	0	0	2
156	2	0	28	23	51	1000 - 1100	1	0	0	0	0	0	0	1
157	4	0	24	12	39	1100 - 1250	4	1	1	0	0	0	0	4
158	3	0	24	12	39	1250 - 1500	4	1	1	0	0	0	0	4
159	2	0	42	35	79	1500 - 2000	7	3	0	0	0	0	0	7
160	26	20	249	96	399	>2500	41	13	6	2	0	0	0	41
161	4	14	222	134	374	None	47	29	9	18	1	0	0	47
162	3	1	50	47	101	1000 - 1100	31	24	4	1	0	0	0	31
163	3	8	80	34	126	1100 - 1250	31	24	4	1	0	0	0	31
164	3	6	80	34	126	1250 - 1500	31	24	4	1	0	0	0	31
165	6	0	129	57	202	1500 - 2000	32	16	7	2	0	0	0	32
166	14	17	129	69	258	>2500	42	16	7	2	0	0	0	42
167	5	0	18	19	42	None	11	2	0	0	0	0	0	11
168	5	0	18	19	42	1000 - 1100	11	2	0	0	0	0	0	11
169	25	14	152	53	243	1100 - 1250	23	10	5	2	1	0	0	23
170	6	0	14	16	30	1250 - 1500	6	0	0	0	0	0	0	6
171	6	0	14	16	30	1500 - 2000	6	0	0	0	0	0	0	6
172	8	0	24	24	69	>2500	3	10	7	2	0	0	0	3
173	8	0	24	24	69	None	3	10	7	2	0	0	0	3
174	9	3	36	65	139	1000 - 1100	8	4	2	1	0	0	0	8
175	3	3	68	65	139	1100 - 1250	10	11	7	3	1	0	0	10
176	26	13	180	70	269	1250 - 1500	17	18	10	3	0	0	0	17
177	2	1	17	16	46	1500 - 2000	4	1	0	0	0	0	0	4
178	2	1	17	16	46	>2500	4	1	0	0	0	0	0	4
179	709	709	709	709	709	None	44	22	21	7	0	0	0	44
180	710	710	710	710	710	1000 - 1100	42	6	6	4	0	0	0	42
181	2	1	71	15	89	1100 - 1250	35	10	1	2	1	0	0	35
182	1	0	45	40	96	1250 - 1500	2	0	0	0	0	0	0	2
183	1	0	45	40	96	1500 - 2000	2	0	0	0	0	0	0	2
184	24	7	318	155	504	>2500	106	61	27	6	0	0	0	106
185	908	473	1684	842	1263	Total	3127	1603	641	318	277	18	13	433
186	908	473	1684	842	1263	On Off Street	4673	6263	4673	6263	4673	6263	4673	6263
187	908	473	1684	842	1263	Person Method	6454	6454	6454	6454	6454	6454	6454	6454
188	908	473	1684	842	1263	Amount Paid	24	34	34	24	24	18	18	18
189	908	473	1684	842	1263	N/A	6454	6454	6454	6454	6454	6454	6454	6454

Table A4.2.4 (c) Result of Person Trip Survey (Household Interview) - Trip Descriptions (1) -

Present Trip Information			If Public Transport (Bus) Service Is Available, Will you use it?			What do you expect?			How much can you pay?			How long can you wait?														
Zone	Trip Purpose	Home	Work	Business	School	Social	Shopping	Others	Yes	No	N/A	convenient	cheaper	safer	reliability	no idea	-\$50	-750	-1000	-1250	-1500	-1500+	18	30-	N/A	
		697	211	246	4	67	200	837	6	251	248	623	137	350	28	12	250	659	439	12	12	12	6	6	0	250
101	Home	697	211	246	4	67	200	837	6	251	248	623	137	350	28	12	250	659	439	12	12	12	6	6	0	250
102	Home	196	63	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15
103	Home	174	46	22	0	27	77	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47
104	Home	334	112	11	119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30
105	Home	185	31	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34
106	Home	178	60	7	73	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39
107	Home	139	48	14	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34
108	Home	204	92	11	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32
109	Home	115	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32
110	Home	132	52	12	101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	106
111	Home	174	89	14	31	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	106
112	Home	200	63	9	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	246
113	Home	119	35	8	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	83
202	Home	144	22	15	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38
203	Home	263	63	14	83	14	37	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
204	Home	125	22	14	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46
205	Home	219	30	29	51	4	58	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	112
206	Home	183	43	19	57	3	64	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	65
207	Home	235	53	11	89	3	79	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	157
208	Home	184	32	6	67	6	55	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	131
209	Home	140	14	8	47	1	57	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
210	Home	583	160	23	190	5	194	5	194	5	194	5	194	5	194	5	194	5	194	5	194	5	194	5	194	154
301	Home	151	49	8	45	0	46	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	116
302	Home	221	31	16	55	0	77	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38
303	Home	128	17	16	35	0	41	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42
304	Home	204	32	18	20	0	202	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
305	Home	225	25	12	68	1	118	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
306	Home	221	51	1	64	0	347	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
307	Home	350	72	42	103	0	613	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55
308	Home	260	59	26	81	17	502	74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72
401	Home	159	55	8	56	0	37	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
402	Home	192	45	30	53	0	135	248	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	240
403	Home	163	55	13	54	0	312	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26
404	Home	238	56	17	84	4	61	13	253	220	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	220
405	Home	168	37	21	42	15	58	29	278	82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	88
406	Home	256	57	23	93	1	63	7	472	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	61
407	Home	255	97	16	63	0	470	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	61
408	Home	374	138	32	57	2	99	30	666	656	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
409	Home	453	57	28	67	0	71	13	410	69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72
501	Home	199	65	19	49	0	251	151	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	148
502	Home	173	78	6	37	0	35	6	297	59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31
503	Home	158	67	9	24	0	184	9	184	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39
504	Home	123	17	30	0	0	38	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
505	Home	342	130	33	97	0	124	12	430	184	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31
506	Home	344	129	24	129	2	46	110	38	276	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
507	Home	127	58	4	26	0	484	114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	114
508	Home	101	42	1	27	0	157	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43
509	Home	118	62	7	23	0	77	171	56	92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	80
510	Home	110	50	2	17	0	128	92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
511	Home	107	46	1	30	1	202	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
512	Home	100	42	5	25	0	132	6	43	6	29	41	82	0	0	0	0	0	0	0	0	0	0	0	0	92
513	Home	87	37	4	21	0	162	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43
514	Home	59	28	2	11	0	80	6	80	6	80	6	80	6	80	6	80	6	80	6	80	6	80	6	80	14
515	Home	138	56	5	42	0	36	3	252	26	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
601	Home	607	210	43	162	5	165	34	1038	188	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	92
602	Home	570	239	20	148	1	137	33	1035	94	19	137	341	3	440	235	2	100	319	267	127	145	62	55	83	
603	Home	206	43	6	41	1	54	3	294	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26
604	Home	230	67	14	61	0	52	0	360	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60
605	Home	456	87	12	87	6	121	15	690	110	12	22	227	0	321	114	0	128	296	118	105	35	16	14	88	
606	Home	293	115	11	101	6	36	535	335	74	3	90	188	0	324	42	0	78	71	107	156	73	44	6	76	
607	Home	388	141	17	102	4	391	271	241	1	0	65	355	2	309	88	0	241	112	127	157	36	20	4	242	
608	Home	34	8	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
702	Home	416	93	1	17	0	26	17	164	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
703	Home	187	49	29	26	0	108	5	742	72	0	28	272	8	422	12	0	72	154	414	126	32	10	0	70	
704	Home	165	32	4	32	0	59	42	326	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28
705	Home	288	110	3																						

Table A4.2.4 (c) Result of Person Trip Survey (Household Interview) - Trip Descriptions (2) -

Zone	Dry Station Self Trip Mode		Minibus		Pickup	Bus	Track	Motorbicycle		Motorcycle	Cycles	Others	N/A	Wage T. Travel T. Trip Cost		1500-	-1500	-1250	-1000	-750	-500	Why do you use?		safety	injuries	reliability	weather	largest	accompan no. loc					
	Car	Taxi	7	8				9	10					11	12							13	14							15	16	17	18	19
101	67	7			4	0	0	71	137	6	18	0	34	1.9	10.7	4	91	55	16	16	222	1174	6	6	6	1174	343	0	0	0	0	0	0	218
102	22	0	0		0	0	0	234	60	0	2	0	0	2.1	20.9	0	52	0	0	0	0	0	0	0	0	0	290	35	0	0	0	0	0	62
103	104	4	0	12	0	0	0	154	134	0	2	0	25	2.8	20.9	0	12	42	44	0	60	139	10	0	0	290	35	0	0	0	0	0	108	
104	56	4	0		2	0	0	337	108	0	2	0	113	1.0	11.6	0	0	0	0	0	0	0	0	0	0	120	35	0	0	0	0	0	113	
105	105	44	0	6	0	0	0	176	308	0	2	0	35	3.5	31.0	0	99	1	0	0	2	265	2	0	0	278	48	0	0	0	0	0	41	
106	106	24	0	6	0	0	0	132	138	0	78	0	78	1.5	10.9	0	0	0	0	0	242	92	0	0	158	32	0	0	0	0	0	74		
107	107	46	3	2	5	0	0	109	112	0	2	0	51	1.7	12.5	0	0	0	0	0	213	86	0	0	101	38	0	0	0	0	0	51		
108	108	18	0	0	6	0	0	263	52	0	8	0	73	2.1	14.2	0	0	0	0	0	356	72	0	0	4	320	0	0	0	0	0	10		
109	109	18	0	0	6	0	0	86	0	0	8	0	113	1.5	11.4	0	0	0	0	0	225	40	0	0	76	4	0	0	0	0	0	113		
110	6	0	0	0	4	0	0	342	0	0	40	0	112	2.8	12.5	0	0	0	0	0	56	0	0	12	168	0	0	0	0	0	0	68		
111	30	0	0	0	0	0	0	218	34	0	16	0	98	2.4	12.6	0	0	0	0	0	314	94	0	0	12	238	0	0	0	0	0	66		
112	8	0	0	0	0	0	0	110	2	0	2	0	77	1.9	18.4	0	0	0	0	0	314	94	0	0	8	68	0	0	0	0	0	46		
201	3	0	0	0	2	0	0	109	9	0	4	0	89	1.5	8.6	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	109		
202	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
203	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
204	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
205	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
206	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
207	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
208	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
209	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
210	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
211	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
212	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
213	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
214	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
215	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
216	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
217	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
218	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
219	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
220	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
221	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
222	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
223	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
224	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
225	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
226	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
227	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
228	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
229	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
230	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
231	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
232	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
233	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
234	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
235	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
236	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
237	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
238	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
239	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
240	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
241	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30		
242	30	2	0	0	0	0	0	152	96	0	4	0	89	1.5	8.6	0	0	0	0	0	13	0												

