rijkswaterstaat
dienst verkeerskunde

cambridge systematics
europe b.v.

REPORT: 7

PART: 2

TRAVEL DEMAND MODELS

APPENDIX A

APPENDIX A: FULLY-DISAGGREGATE MODEL SPECIFICATIONS

The models are described in Chapter 5 in the corresponding numbered section (e.g., Slow Sub-mode choice, Work in Section 5.2.2).

A2.2 Slow Sub-Mode Choice, Work Tours
A2.3 Slow Sub-Mode Choice, Education
A2.4 Slow Sub-Mode Choice, Shopping and Personal Business
A2.5 Slow Sub-Mode Choice, Social
A2.5 Slow Sub-Mode Choice, Recreation
A2.6 Slow Sub-Mode Choice, Miscellaneous

A3.1 Car Sub-Mode Choice, Education (not recommended)
A3.2 Car Sub-Mode Choice, Work
A3.3 Car Sub-Mode Choice, Shopping and Personal Business
A3.4 Car Sub-Mode Choice, Social and Recreation
A3.5 Car Sub-Mode Choice, Miscellaneous

A4.1 Mode Choice, Work (preliminary)
A4.2 Mode Choice, Work (auxiliary)
A4.3 Mode Choice, Education

A5.2 Joint Mode/Destination Choice, Shopping
A5.3 Joint Mode/Destination Choice, Personal Business
A5.4 Joint Mode/Destination Choice, Social
A5.5 Joint Mode/Destination Choice, Recreation
A5.6 Joint Mode/Destination Choice, Miscellaneous

A6.2 Destination Choice, Fixed Workplace
A6.3 Destination Choice, Other Workplace
A6.4 Destination Choice, Education

A7.1 Frequency Choice, 0/1+, Fixed Workplace
A7.2 Frequency Choice, 0/1+, Other Workplace
A7.3 Frequency Choice, 0/1+, Education (Students)
A7.4 Frequency Choice, 0/1, Education (non-Students)
A7.5 Frequency Choice, 0/1+, Shopping
A7.6 Frequency Choice, 0/1+,
A7.7 Frequency Choice, 0/1+, Social
A7.8 Frequency Choice, 0/1+, Recreation
A7.9 Frequency Choice, 0/1+, Miscellaneous

A8.1 Frequency Choice, Stop/Repeat, Fixed Workplace
A8.2 Frequency Choice, Stop/Repeat, Other Workplace
A8.3 Frequency Choice, Stop/Repeat, Shopping
A8.4 Frequency Choice, Stop/Repeat, Personal Business
A8.5 Frequency Choice, Stop/Repeat, Social
A8.6 Frequency Choice, Stop/Repeat, Recreation
A8.7 Frequency Choice, Stop/Repeat, Miscellaneous
A8.8 Frequency Choice, 1/2+, Education (Students)

Table A2.2 Slow Sub-Mode Choice Model, Work Tours, Page 1 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. W-CONST	1, for walk	1.25	2.53
2. W-DIST1	Minimum of distance (in kms) and 1.0, for walk	-1.74	3.32
3. W-DIST2	Maximum of (distance minus 1) and 0.0, for walk	-0.558	4.60
4. W-AGE 25	1 if traveller's age is less than 25 years, for walk	-0.549	2.07
5. W-LUNCH	1 if either leg of tour begins within 12:00 and 14:00, for walk	-0.184	0.812
6. W-INC-HI	1 if household income greater than £21000 annually, for walk	-1.62	6.2
7. W-NON-FIXED	1 if tour is to an unusual workplace, for walk	0.333	0.911
8. W-BLUE CLR.AG	1 if traveller is "blue collar" or "agricultural" worker, for walk	-0.991	3.13
9. W-SERVICE	1 if traveller is a "service" worker for walk	0.436	1.23
10. W-POP DEN	Population per hectare of origin zone, for walk	0.00821	3.28
11. MW-COM,	1 if traveller is a "commercial" or "part-time" worker, for walk and moped	0.665	
12. M-CONST	1, for moped	-3.86	9.71
13. M-DIST1	Minimum of distance and 9.0, for moped	0.273	5.16

* See Section 5.1 for explanation of these statistics.

Table A2.2 Slow Sub-Mode Choice Model, Work Tours, Page 1 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
14. M-DIST2	Maximum of (distance minus 9.0) and 0.0, for moped	0.0876	1.11
15. M-AGE 20	1 if traveller's age is less than 21, for moped	1.17	3.74
16. M-AGE25-45	1 if traveller's age is 25 through 45, for moped	-0.626	2.03
17. M-EARLY	1 if tour leaves home before 08:00, for moped	0.818	2.87
18. M-NON-FIXED	1 if tour is to an unusual workplace, for moped	-0.390	0.696
19. M-PROF	1 if traveller is a "professional" worker, for moped	-0.471	1.37
20. M-BLUE CLR	1 if traveller is a "blue collar" worker, for moped	0.467	1.56
21. M-NO DRVL	1 if traveller is not licensed to drive a car, for moped	1.01	3.41

Summary Statistics:

Alternative	Number Available	Number Chosen
walk	733	146
moped	726	107
bicycle	733	480
TOTAL OBSERVATIONS:		733

$L^*(0) = -802.44$ $\quad \rho^2 = 0.415$

$L^*(\beta) = -469.06$ $\quad \rho^2_c = 0.271$

Table A2.3 Slow Sub-Mode Choice Model, Education Tours, Page 1 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. W-CONST	1, for walk	-0.143	0.429
2. W=DIST1D	1 if distance is less than 1 km, for walk	-0.458	2.95
3. W-AGE 16-20	1 if traveller's age is 16-20, for walk	-1.36	4.48
4. W-CAR	1 if household owns at least one car, for walk	-0.755	0.485
5. W-LOW-SEC	1 if traveller has lower secondary education, for walk	1.59	2.28
6. W-ADV-SEC	1 if traveller has advanced secondary education or miscoded education, for walk	0.473	
7. W-AGE 10-12	1 if traveller's age is 10-12, for walk	-0.755	5.45
8. W-AGE 13-15	1 if traveller's age is 13-15,for walk	-1.53	6.26
9. W-INC-25+	1 if household income exceeds f25000 annually, for walk	0.316	1.90
10. W-NOINC	1 if household income was miscoded or had no response, for walk	-0.293	
11. W-PRIMARY	1 if traveller has pre-primary, primary or "other" education, for walk	2.28	8.51
12. W-POPDEN	Population density per hectare of origin zone, for walk	0.00841	4.67
13. W-DIST1	Maximum of (distance minus 1.0) and 1.0, for walk	-0.877	10.2

* See Section 5.1 for explanation of these statistics.

Table A2.3 Slow Sub-Mode Choice Model, Education Tours, Page 2 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
14. M-CONST	1, for moped	-1.79	4.65
15. M-ADV-SEC	1 if traveller has advanced secondary or "other" education, for moped	1.04	
16. M-DIST2	Maximum of (distance minus 2.0) and 0.0, for moped	0.110	3.48
17. M-FEMALE	1 if traveller is female, for moped	-0.627	2.24
18. M-AGE16-18	1 if traveller's age is 16-18, for moped	0.308	0.914
19. M-INC-25+	1 if household income exceeds f25000 annually, for moped	0.766	2.65

Summary Statistics:

Alternative	Number Available	Number Chosen
walk	2220	1200
moped	326	89
bicycle	2220	931
TOTAL OBSERVATIONS:		2220

$L^*(0) = -1670.96$ $\quad \rho^2 = 0.369$

$L^*(\beta) = -1054.81$ $\quad \rho_c^2 = 0.366$

Table A2.4 Slow Sub-Mode Choice Model, Shopping and Personal Business Tours, Page 1 of 3

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. W-CONST	1, for walk	0.368	2.11
2. W-DIST	distance (kms), for walk	-0.397	7.66
3. W-POPDEN	Population density per hectares of the origin zone, for walk	0.0103	3.97
4. W-EMPDEN	Employment density per hectares of the destination zone, for walk	0.0153	2.34
5. W-AGE16	1 if traveller is less than 16, for walk	-0.605	2.95
6. W-RETIRED	1 if traveller's occupation is not child, worker, student, housewife, or unemployed, for walk	-0.648	2.70
7. W-AGE-20-30	1 if traveller's age is 20-30, for walk	-0.633	4.26
8. W-AGE60+	1 if traveller's age is over 60, for walk	0.966	5.0
9. W-CAR	1 if traveller's household owns at least one car, for walk	-0.112	0.82
10. W-PMPEAK	1 if tour leaves primary destination 15:30-18:00, for walk	-0.469	3.45
11. W-EVENING	1 if tour leaves primary destination 18:00-20:00, for walk	-0.809	2.01
12. W-LOINC	1 if traveller's household income is less than f17000 annually, for walk	0.151	1.03

* See Section 5.1 for explanation of these statistics.

Table A2.4 Slow Sub-Mode Choice Model, Shopping and Personal Business Tours, Page 2 of 3

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
13. W-NHB	1 if tour includes a non-home-based trip, for walk	-0.539	3.27
14. W-LATE	1 if tour leaves primary destination after 20:00, for walk	1.12	2.05
15. W-PERBUS	1 if tour is made for personal business reasons, for walk	0.414	1.52
16. W-PERBUSWK	1 if tour is made for personal business reasons, and traveller is employed, for walk	-0.252	0.417
17. M-CONSTANT	1, for moped	-5.42	5.85
18. M-DIST	Distance (kms), for moped	0.201	1.95
19. M-MIDINC	1 if traveller's household income is between f21000 and f31000 annually, for moped	-0.652	0.891
20. M-LOINC	1 if traveller's income is less than f17000 annually, for moped	0.870	1.64
21. M-FEMALE	1 if traveller is female, for moped	-0.370	0.613
22. M-AGE16-20	1 if traveller's age is 16-20, for moped	3.53	5.26
23. M-AGE30-45	1 if traveller's age is 30-45, for moped	1.24	1.99
24. M-WORKER	1 if traveller is employed, for moped	0.756	1.30
25. M-CAR	1 if traveller's households owns at least 1 car	-0.613	1.16

* See Section 5.1 for explanation of these statistics.

Table A2.4 Slow Sub-Mode Choice Model, Shopping and Personal Business Tours, Page 3 of 3

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
26. M-RETIRED	1 if traveller's occupation is not child, worker, student, housewife, or unemployed, for moped	2.06	2.53
27. M-W,E-M	1 if traveller used a moped for a work or education tour, for moped	1.47	1.52
28. M-W,E-M, HH	1 if anyone in traveller's household used a moped for a work or education tour, for moped	2.71	4.39
29. M-NHB	1 if tour includes a non-home-based trip, for moped	0.961	2.04
30. M-POPDEN	Population density per hectares of the origin zone, for moped	0.0103	2.21
31. M-PERBUS	1 if tour is made for personal business reasons, for moped	-1.05	0.953

Summary Statistics:

Alternative	Number Available	Number Chosen
walk	1549	907
moped	1396	32
bicycle	1549	610
TOTAL OBSERVATIONS:		1549

Number of Cases:
Number of Parameters:

$L^*(0) = -1639.71$ $\quad \rho^2 = 0.417$

$L^*(\beta) = -956.38$ $\quad \rho_c^2 = 0.186$

Table A2.5 Slow Sub-mode Choice Models,
Social and Recreational Tours, Page 1 of 4

	VARIABLE NAME	VARIABLE DEFINITION	SOCIAL ESTIMATED COEFFICIENT*	SOCIAL ACCURACY OF ESTIMATION*	RECREATION ESTIMATED COEFFICIENT*	RECREATION ACCURACY OF ESTIMATION*
1.	W-CONST	1, for walk	-0.24	0.564	1.27	2.98
2.	W-DIST1	Minimum of distance (kilometers) and 1.0, for walk	0.139	0.316	-0.247	0.568
3.	W-DIST-3	0.0 if distance is less than 1.0; [distance minus 1.0] if distance is between 1.0 and 3.0; and 2.0 if distance is greater than 3.0, for walk	-1.04	6.08	-0.515	3.12
4.	W-DIST3+	Maximum of [distance minus 3.0] and 0.0, for walk	0.0946	1.52	0.128	1.26
5.	W-FEMALE	1 if traveller is female, for walk	0.267	1.17	0.833	4.31
6.	W-AGE16	1 if traveller's age is less than 16, for walk	-0.194	0.642	-0.711	2.69
7.	W-AGE 16-20	1 if traveller's age is 16-20, for walk	-0.330	.722	-1.23	2.91
8.	W-NHB	1 if tour includes a non-home-based trip, for walk	-0.318	1.41	-1.59	4.54
9.	W-AGE 25-30	1 if traveller's age is 25-30, for walk	-.0102	0.0364	-0.324	0.976
10.	W-AGE65+	1 if traveller's age is over 65, for walk	0.752	2.31	-0.140	0.376
11.	W-PMPEAK	1 if tour ends (at home) 15:30-17:30, for walk	0.533	2.32	-0.236	0.888

* See Section 5.1 for explanation of these statistics.

Table A2.5 Disaggregate Slow Sub-mode Choice Models, Social and Recreational Tours, Page 2 of 4

	VARIABLE NAME	VARIABLE DEFINITION	SOCIAL		RECREATION	
			ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
12.	W-EVENG	1 if tour ends (at home) 17:30-19:00, for walk	0.245	0.761	-0.505	1.76
13.	W-LEVENG	1 if tour ends (at home) 19:00-22:00, for walk	0.759	2.27	-1.07	3.88
14.	W-NGHT	1 if tour ends (at home) after 22:00, for walk	0.804	2.57	-0.241	0.712
15.	W-WLWKED	1 if traveller makes a work or education tour by walking, for walk	0.816	2.14	.130	0.516
16.	W-WORKER	1 if traveller is worker, for walk	0.0968	0.338	0.417	1.32
17.	W-POPDEN	Population density per hectares of the origin zone, for walk	0.00821	3.61	0.0107	3.42
18.	M-CONST	1, for moped	-5.02	2.53	-0.769	0.763
19.	M-DIST1	Minimum of distance (kilometers) and 1.0, for moped	2.62	1.20	-1.79	1.39
20.	M-DIST1-3	0.0 if distance is less than 1.0 [distance minus 1.0]; if distance is between 1.0 and 3.0; and 2.0 if distance is greater than 3.0, for moped	0.188	0.522	0.422	1.05
21.	M-DIST3+	Maximum of [distance minus 3.0] and 0.0, for moped	0.197	2.32	0.122	0.803

Table A2.5 Disaggregate Slow Sub-mode Choice Models, Social and Recreational Tours, Page 3 of 4

	VARIABLE NAME	VARIABLE DEFINITION	SOCIAL		RECREATION	
			ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
22.	M-FEMALE	1 if traveller is female, for moped	-1.72	3.37	0.248	0.482
23.	M-POPDEN	Population density per hectares of the origin zone, for moped	0.00638	1.18	0.00785	1.27
24.	M-AGE 16-20	1 if traveller's age is 16-20, for moped	3.14	4.49	1.42	2.31
25.	M-AGE 20-25	1 if traveller's age is 20-25, for moped	1.49	2.32	-1.12	0.750
26.	M-AGE 25-30	1 if traveller's age is 25-30, for moped	-.214	0.218	-1.37	1.22
27.	M-NHB	1 if tour includes a non-home-based trip, for moped	0.780	1.47	-0.973	1.16
28.	M-WORKER	1 if traveller is worker, for moped	0.359	0.662	1.09	2.02
29.	M-M,WKED	1 if traveller makes a work or education tour with moped, for moped	1.17	1.15	1.52	1.51
30.	M-CAR	1 if traveller's household owns at least one car	-1.38	2.61	-1.58	2.81
31.	M-HHM, WKED	1 if anyone in traveller's household makes a work or education tour with moped, for moped	1.62	2.39	1.80	2.44

Table A2.5 Disaggregate Slow Sub-mode Choice Models, Social and Recreational Tours, Page 4 of 4

Summary Statistics, Social Model

Alternative	Number Available	Number Chosen
walk	624	306
moped	528	38
bicycle	624	280
TOTAL OBSERVATIONS		624

$L^*(0) = -646.61$ $\rho^2 = 0.332$

$L^*(\beta) = -431.77$ $\rho_c^2 = 0.204$

Summary Statistics, Recreation Model

Alternative	Number Available	Number Chosen
walk	706	436
moped	415	31
bicycle	706	239
		706

$L^*(0) = -655.63$ $^2 = 0.323$ $\rho^{-2} = 0.312$

$L^*(\beta) = -443.69$ $^2_c = 0.192$ $\rho_c^{-2} = 0.179$

Table A2.6 Disaggregate Slow Sub-Mode Choice Model, Miscellaneous Tours, Page 1 of 3

	VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1.	W-CONST	1, for walk	-0.345	0.943
2.	W-DIST1	Minimum of distance (kilometers) and 1.0, for walk	-0.920	2.57
3.	W-DIST1-3	0 if distance is less than 1; [distance minus 1] if distance is between 1-3; and 2 if distance is greater than 3; for walk	-0.193	1.30
4.	W-DIST3+	Maximum of [distance minus 3] and 0.0, for walk	-0.324	2.65
5.	W-FEMALE	1 if traveller is female, for walk	0.398	1.94
6.	W-AGE16	1 if traveller's age is less than 16, for walk	-0.162	0.608
7.	W-AGE 16-20	1 if traveller's age is 16-20, for walk	-1.05	2.89
8.	W-NHB	1 if tour includes a non-home-based trip, for walk	-1.28	4.59
9.	W-AGE 25-30	1 if traveller's age is 25-30, for walk	0.879	4.60
10.	W-AGE65+	1 if traveller's age exceeds 65, for walk	0.735	2.26
11.	W-PMPEAK	1 if tour ends (at home) between 15:30-17:30, for walk	-0.0306	0.156
12.	W-EVENG	1 if tour ends (at home) 17:30-19:00, for walk	-0.0319	0.101

* See Section 5.1 for explanation of these statistics.

Table A2.6 Disaggregate Slow Sub-Mode Choice Model, Miscellaneous Tours, Page 2 of 3

	VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
13.	W-LEVNG	1 if tour ends (at home) 19:00-22:00, for walk	-0.117	0.449
14.	W-NGHT	1 if tour ends (at home) after 22:00, for walk	0.431	1.07
15.	W-WLWKED	1 if traveller makes a work or education tour by walking, for walk	0.0926	0.279
16.	W-WORKER	1 if traveller is worker, for walk	0.435	1.79
17.	W-POPDEN	Population density per hectare of the origin zone, for walk	0.000121	5.55
18.	W-OTHPUR	1 if tour was made for medical, church, or miscellaneous purposes, for walk	0.854	4.56
19.	W-DELPUR	1 if tour was made to collect or deliver personal goods, for walk	1.04	3.74
20.	M-CONST	1 for moped	-6.61	2.85
21.	M-DIST1	Minimum of distance (kilometers) and 1.0, for moped	2.28	0.993
22.	M-DIST1-3	0 if distance is less than 1; [distance minus 1] if distance is between 1-3; and 2 if distance is greater than 3; for moped	0.579	1.28
23.	M-DIST3+	Maximum of [distance minus 3] and 0.0, for moped	0.206	1.61
24.	M-FEMALE	1 if traveller is female, for moped	-2.05	3.57
25.	M-POPDEN	Population density per hectare of the origin zone, for moped	0.0213	4.67

* See Section 5.1 for explanation of these statistics.

Table A2.6 Disaggregate Slow Sub-Mode Choice Model, Miscellaneous Tours, Page 3 of 3

	VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
26.	M-AGE 16-20	1 if traveller's age is 16-20, for moped	2.12	3.24
27.	M-AGE 20-25	1 if traveller's age is 20-25 years, for moped	3.11	4.53
28.	M-NHB	1 if tour includes a non-home-based trip, for moped	0.155	0.184
29.	M-WORKER	1 if traveller is worker, for moped	0.357	0.545
30.	M-M,WKED	1 if traveller makes a work or education tour by moped, for moped	-2.68	1.65
31.	M-CAR	1 if traveller's household owns at least one car, for moped	-0.885	1.69
32.	M-HHM, WKED	1 if anyone in traveller's household makes a work or education tour by moped, for moped	3.3	4.13
33.	M-OTHPUR	1 if tour was made for medical, church, or miscellaneous purposes, for moped	0.516	0.635
34.	M-DELPUR	1 if tour was made to collect or deliver personal goods, for moped	-0.128	0.121

Summary Statistics:

Alternative	Number Available	Number Chosen
walk	921	487
moped	804	31
bicycle	921	403
TOTAL OBSERVATIONS:		921

$L^*(0) = -964.38$ $\quad \rho^2 = 0.385$

$L^*(\beta) = -592.66$ $\quad \rho_c^2 = 0.204$

Table A3.1 Car Sub-Mode Choice Model, Education Tours, Page 1 of 1 (not recommended)

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. P-COST	1, for passenger	-2.33	3.32
2. D-MALE	1 if traveller is male, for driver	1.62	1.61
3. D-PR-COST	Parking cost at destination for tour (guilders), for driver	-0.423	1.55
4. D-OTH-EDUC	1 if traveller's education is "other," for driver	-2.38	2.14

Summary Statistics:

Alternative	Number Available	Number Chosen
driver	69	63
passenger	69	6
TOTAL OBSERVATIONS:		69

$L^*(0) = -47.83$ $\quad \rho^2 = 0.667$

$L^*(\beta) = -15.91$ $\quad \rho_c^2 = 0.220$

* See Section 5.1 for explanation of these statistics.

Table A3.2 Car Sub-Mode Choice Model, Work Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. D-CONST	1, for driver	0.0995	0.177
2. D-CARS	Number of cars owned by traveller's household, for driver	1.29	3.32
3. D-MALE	1 if traveller is male, for driver	0.930	2.78
4. D-PR-DFC9	1 if primary destination zone hourly parking charge is greater than zero, and arrival at primary destination is after 9:00, for driver (parking difficulty)	2.65	2.13
5. P-DIST	Tour distance (kilometers), for passenger	0.00931	4.01
6. P-PR-COST	Parking cost; product of the hourly parking charge at the destination zone and the difference between departure and arrival times for passenger (guilders)	0.390	2.99
7. P-HHDEN	Households per hectare of the tour's base zone, for passenger	-0.0413	2.75
8. P-EMPDEN	Workers per hectare of the primary destination zone, for passenger	-0.0251	1.89
9. P-WK-OTH-CONST	1 for purpose 25** tours, for passenger	-0.653	1.60

Summary Statistics:

Alternative	Number Available	Number Chosen
driver	1105	1034
passenger	1105	71
TOTAL OBSERVATIONS:		1105

$L^*(0) = -765.93$ $\quad \rho^2 = 0.697$

$L^*(\beta) = -231.56$ $\quad \rho_c^2 = 0.121$

* See Section 5.1 for explanation of these statistics.
** These are tours for work purposes, but not to the fixed workplace.

Table A3.3 Car Sub-Mode Choice Model, Shopping/Personal Business Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. D-CONST	1, for driver	2.55	7.89
2. D-HH-DEN	Households per hectare in the tour's base zone, for driver	-0.0186	2.58
3. D-MALE	1 if traveller is male, for driver	1.12	2.80
4. D-OTH-EDUC	1 if traveller's education is "other," for driver	0.570	0.940
5. P-TT	Tour travel time (minutes), for passenger	0.0191	2.37
6. P-PR-DFC9	1 if primary destination zone hourly parking charge is greater than zero, and arrival at primary destination is after 9:00, for passenger (parking difficulty)	0.979	2.36
7. P-PB-CONST	1 if tour was made for personal business reasons (not shopping), for passenger	-0.504	0.955

Summary Statistics:

Alternative	Number Available	Number Chosen
driver	388	351
passenger	388	37
TOTAL OBSERVATIONS:		388

$L^*(0) = -268.94$ $\quad \rho^2 = 0.600$

$L^*(\beta) = -107.50$ $\quad \rho_c^2 = 0.120$

* See Section 5.1 for explanation of these statistics.

Table A3.4 Car Sub-Mode Choice Model, Social/Recreation Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. D-CONST	1, for driver	0.295	0.487
2. D-PC-RECA	Area devoted to recreation use divided by total area of primary destination zone, for driver	1.55	1.32
3. D-#-OVEHS	Number of bicycles, mopeds, motorcycles, and "other" vehicles owned by the household, for driver	0.138	1.22
4. D-MALE	1 if traveller is male, for driver	1.59	4.45
5. D-CARS/HHS	Number of cars owned by the household divided by household size, for driver	1.47	1.60
6. P-HG-EDUC	1 if traveller has higher education, for passenger	0.765	1.67
7. P-OTH-EDC	1 if traveller's education is "other," for passenger	-0.913	1.18
8. P-PR-COST	Parking cost; product of the hourly parking cost at the time of arrival and the difference between the reported times of departure and arrival, for passenger (guilders)	0.298	1.30
9. P-TT	Tour travel time (minutes), for passenger	0.00543	0.694

Summary Statistics:

Alternative	Number Available	Number Chosen
driver	382	337
passenger	382	45
TOTAL OBSERVATIONS:		382

$L^*(0) = -264.78$ $\quad \rho^2 = 0.542$

$L^*(\beta) = -121.21$ $\quad \rho_c^2 = 0.125$

* See Section 5.1 for explanation of these statistics.

Table A3.5 Car Sub-Mode Choice Model, Miscellaneous Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. D-CONST	1, for driver	0.834	1.07
2. D-#-OVEHS	Number of bicycles, mopeds, motorcycles, and "other" vehicles owned by the household, for driver	0.277	1.96
3. D-MALE	1 if traveller is male, for driver	1.63	3.28
4. D-CARS/HHS	Number of cars owned by the household divided by the household size, for drivers	1.93	1.51
5. P-OTH-EDUC	1 if traveller's education is "other," for passenger	1.62	2.93
6. P-TT	Tour travel time (minutes), for passenger	0.0178	1.49
7. P-PK-TRIP	1 if the tour departs from or arrives at any location between 7:00-9:00 or 15:30-17:30, for passenger	-0.561	-1.24

Summary Statistics:

Alternative	Number Available	Number Chosen
driver	373	348
passenger	373	25
TOTAL OBSERVATIONS:		373

$L^*(0) = -258.54$ $\quad \rho^2 = 0.688$

$L^*(\beta) = -80.61$ $\quad \rho_c^2 = 0.121$

* See Section 5.1 for explanation of these statistics.

Table A4.1 Preliminary Mode Choice Model, Work Tours, Page 1 of 4

	VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1.	C-CONST	1 for car	-1.38	4.09
2.	T-CONST	1 for public transport	0.139	0.266
3.	C-LOGC	Logsum calculated from the disaggregate car sub-mode choice model for work tours (Table A3.2), for car	0.262	$\|t_0\| = 2.96$ $\|t_1\| = 8.34$
4.	S-LOGS	Logsum calculated from the disaggregate slow sub-mode choice model for work tours (Table A2.2) for slow	0.304	$\|t_0\| = 1.45$ $\|t_1\| = 3.31$
5.	CT-TIME	Driving time (minutes) for car; in-vehicle travel time (minutes) plus twice the walking time (minutes) at the home end, for public transport	-0.00738	1.44
6.	CT-COST	Toll Cost (guilders) plus parking cost (guilders) calcuated as the hourly rate in effect at the destination at the time of arrival multiplied by the time spent at the primary destination (minimum 30 minutes), for car; public transport fare using pre-paid pass, for public transport (applied only if straight-line distance less than 15 kms)	-0.116	1.59
7.	T-HDY1	First headway (minutes) on outbound journey (subject to a maximum of 15 minutes), for public transport	-0.152	3.77
8.	T-RHDY1	First headway (minutes) on return journey, for public transport	-0.077	4.27
9.	T-RDAM	1 if origin is in Rotterdam, for public transport	0.449	1.49
10.	S-DIST	Straight-line distance (kms) between origin and primary destination, for slow	-0.358	10.9
11.	S-DIST-10	Maximum of (straight-line distance minus 10 kms) and zero, for slow	0.332	4.56
12.	S-DIST-20	Maximum of (straight-line distance minus 20 kms) and zero, for slow	-0.279	2.20

* See Section 5.1 for explanation of these statistics.

Table A4.1 Preliminary Mode Choice Model, Work Tours, Page 2 of 4

	VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT	ACCURACY OF ESTIMATION
13.	S-LATE	1 if traveller leaves primary destination after 17:30, for slow	-0.446	1.98
14.	S-LUNCH	1 if traveller arrives at or leaves primary destination between 12:00 and 14:00, for slow	0.323	2.04
15.	S-AGE 26	1 if traveller's age is 25 or under, for slow	0.715	3.70
16.	S-MALE	1 if traveller is male, for slow	0.923	3.22
17.	S-HAAG	1 if origin is in The Hague, for slow	0.787	3.29
18.	C-MALE	1 if traveller is male, for car	0.553	1.81
19.	C-AGE 54	1 if traveller's age is 55 or over, for car	-0.903	4.03
20.	C-LOWINC	1 if traveller's household income is below f20,000 annually, for car	-0.341	2.01
21.	C-CARS/ LIC	Number of cars owned per driving license (subject to a maximum of 1.0), for car	2.04	8.08
22.	C-PRDIF9	1 if destination zone has a parking charge, and arrival is after 9:00, for car	-0.603	1.46
23.	C-NOLIC	1 if traveller is not licensed to drive, for car	-2.17	6.54
24.	C-PROF2	1 if traveller's profession is commercial or administrative, for car	-0.413	2.74
25.	C-PKTIME	1 if arrival at destination is between 7:00 and 9:00 or departure from destination is between 15:30 and 17:30, for car	-0.372	1.93
26.	T-LONG15	1 if straight-line distance is greater than 15 kms, for public transport	0.278	0.735
27.	T-SHORT2	1 if straight-line distance is less than 2 kms, for public transport	-1.74	1.69

Table A4.2 Preliminary Mode Choice Model, Work Tours, Page 3 of 4

Summary Statistics:

Alternative	Number Available	Number Chosen
car	1801	1065
public transport	1615	92
slow	1801	644
TOTAL OBSERVATIONS:		1801

$L^*(0) = -1903.2$ $\quad \rho^2 = 0.591$

$L^*(\beta) = -778.9$ $\quad \rho_c^2 = 0.476$

Table A4.2 Auxiliary Mode Choice Model, Work Tours
Page 4 of 4

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. C-CONST	1 for car	0.0532	0.399
2. T-CONST	1 for public transport	0.214	0.899
3. UTILITY	(see text)	0.963	20.2
4. S-DIST	Distance along network (kms), for slow	-0.234	10.9
5. S-DIST-13	Maximum of network distance (kms), -13 and zero, for slow	0.218	4.56
6. S-DIST-26	Maximum of network distance (kms), -26 and zero, for slow	-0.185	2.46
7. PT- 20KM	1 if network distance (slow mode) more than 20 kms, for public transport	0.189	0.65
8. PT- 3KM	1 if network distance (slow mode) less than 3 kms, for public transport	-2.06	2.01

Summary Statistics:

Alternative	Number Available	Number Chosen
car	1801	1065
public transport	1615	92
slow	1801	644
TOTAL OBSERVATIONS:		1801

$L^*(0) = -1903.2$ $\quad \rho^2 = 0.537$

$L^*(\beta) = -881.6$ $\quad \rho_c^2 = 0.406$

Table A4.3 Mode Choice Model, Education Tours, Page 1 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. D-CONST	1 for driver	-5.42	
2. T-CONST	1 for public transport	-1.63	
3. P-CONST	1 for car passenger	-5.41	
4. S-LOGS	Logsum calculated from the slow sub-mode choice model for education tours (Table A2.3), for slow	0.344	$\|t_0\|$ = 1.75 $\|t_1\|$ = 3.34
5. DTP-GTIME	Genealized time, calculated as: total tour travel time (minutes), plus 60 multiplied by "cost" (where "cost" is tour tolls (guilders)) plus parking cost (activity time multiplied by parking rate), plus 0.1 multiplied by the tour distance (kms), for driver; Total tour travel time (minutes) plus 60 multiplied by "cost" (where "cost" is tour tolls (guilders)) plus 0.1 multiplied by tour distance (kms) for car passenger; Tour travel time (minutes) plus 60 multiplied by fare, plus 4 multiplied by the sum of all walk times associated with public transport travel, for public transport	-.00634	3.47
6. T-HDY1	First headway (minutes) on outbound journey (maximum of 20 minutes), for public transport	-0.113	3.76
7. T-HDYS	Sum of all intermediate and return headways (minutes) (maximum of 20 minutes for each headway), for public transport	-0.0303	2.58
8. D-CARS/LIC	Number of cars owned by household per licensed driver, for driver	3.53	3.51
9. P-CARS/HHS	Number of cars owned by household per person, for car passenger	0.749	1.09
10. T-INC	1 if traveller's household income is in the range f1000-f1600 per month, for public transport	0.554	1.59

* See Section 5.1 for explanation of these statistics.

Table A4.3 Disaggregate Mode Choice Model, Education Tours, Page 2 of 2

	VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT	ACCURACY OF ESTIMATION
11.	S-DIST	Tour distance (kms) for slow	-0.273	3.28
12.	S-DIST-6	Maximum of (tour distance minus 6) and zero, for slow	0.0801	0.914
13.	D-ED5,6	1 if traveller's education is technical or university, for driver	2.03	2.97
14.	T-RDAM	1 if origin is in Rotterdam, for public transport	1.37	4.00
15.	P-HHSIZE	Number of people in the household, for car passenger	-0.491	3.64
16.	DP-LATE	1 if tour begins after 16:30, for car driver and passenger	3.16	6.26
17.	P-12-AGE	Number of years that traveller is younger than 12 (0 minimum), for car passenger	0.914	5.45
18.	P-9-AGE	Number of years that traveller is younger than 9 (0 minimum), for car passenger	-0.527	2.32
19.	T-DIST 4	1 if tour distance is less than 4 kms, for public transport	-1.90	3.59
20.	TP-HWIFE	1 if traveller is housewife, for public transport and car passenger	2.26	4.74
21.	P-NLIC	Number of household members licensed to drive, for car passenger	0.508	2.54

Summary Statistics:

Alternative	Number Available	Number Chosen
car driver	98	53
car passenger	2174	95
public transport	1734	72
slow	2174	1954
TOTAL OBSERVATIONS:		2174

$L^*(0) = -2238.63$ $\quad \rho^2 = 0.779$

$L^*(C) = -767.51$

$L^*(\beta) = -495.09$ $\quad \rho_c^2 = 0.355$

Table A5.2 Joint Mode/Destination Choice Model, Shopping Tours, Page 1 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. C-CONST	1 for car, for all destinations	-6.488	-
2. T-CONST	1 for public transport, for all destinations	-3.655	-
3. C-LOGS(J)	Logsum calculated from the car sub-mode choice model for shopping/personal business tours (Table A3.3), for car, for destination j	0.751	$\|t_0\| = 6.51$ $\|t_1\| = 2.16$
4. CT-IVTT(J)	Time (minutes) for car tour; in-vehicle travel time (minutes) for public transport tour; for destination j	-0.0546	-3.67
5. CT-COST(J)	Tour distance (kms) multiplied by f.15 plus tolls plus parking cost for 1 hour, for car; fare (guilders), for public transport; for destination j	-0.265	-1.28
6. T-WALK(J)	Time (minutes) to walk from the end of the public transport trip to the primary destination and the base, for public transport, for destination j	-0.0327	2.0
7. T-HDWY(J)	Total of outbound and return headways (minutes), for public transport, for destination j	-0.0130	1.38
8. T-RDAM	1 if destination is in Rotterdam, for public transport, for destination j	0.665	1.47
9. S-DIST(J)	Tour distance in kms, for slow, for destination j	-0.700	11.5
10. S-DIST8(J)	Maximum of (distance minus 8) and zero, for slow, for destination j	0.351	2.18
11. S-HAAG	1 if destination is in The Hague, for slow, for destination j	-0.604	1.77

* See Section 5.1 for explanation of these statistics.

Table A5.2 Joint Mode/Destination Choice Model, Shopping Tours, Page 2 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT	ACCURACY OF ESTIMATION
12. C-CARS/LIC	Car ownership of a household divided by the number of licensed drivers in the household (maximum value of 1.0), for car, for all destinations	1.34	3.98
13. C-CBD-ORG	1 if tour's origin is in a central business district, for car, for all destinations	-0.710	1.40
14. C-F-LD-CO	1 if traveller is female, is licensed to drive, and her household owns a car, for car, for all destinations	0.767	2.89
15. C-DIST4(J)	1 if tour distance for destination j is less than 4 kms, for car	0.556	2.53
16. CTS-DIST(J)	Tour distance (kms) for destination j, for all modes	-0.103	2.99
17. CTS-CBD-DES(J)	1 if destination j is in a central business district, for all modes	0.349	1.69
18. CTS-RET-DEN(J)	Number of people employed in retail jobs per hectare for destination zone j, for all modes	-0.0215	1.87
19. CTS-POP-DEN(J)	Population per hectare of destination zone j, for all modes	-0.00326	2.90
20. CTS-POP(J)	Population of destination zone j, for all modes**	-3.08	s.e.=.425
21. CTS-RET(J)	Retail employment in destination zone j, for all modes**	0.0	--

Summary Statistics:

Alternative	Number Available	Number Chosen
car (j)	447	169
public transport (j)	176	26
slow (j)	447	252
TOTAL OBSERVATIONS:		447

$L^*(0) = -1806$ $\quad \rho^2 = .504$

$L^*(\beta) = -896$

**Attraction variables appear in the utility function as

$$\log (v_{20} * \exp \beta_{20} + v_{21} * \exp \beta_{21}).$$

The last coefficient is always constrained to be zero.

Table A5.3 Joint Mode/Destination Choice Model, Personal Business Tours, Page 1 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. C-CONST	1 for car, for all destinations	-4.792	8.15
2. T-CONST	1 for public transport, for all destinations	-1.089	0.248
3. C-LOGSC(J)	Logsum variable calculated from the car sub-mode model for shopping/personal business tours (Table A3.3), for car, for destination j	0.793	$\|t_0\|$ = 7.16 $\|t_1\|$ = 1.87
4. CT-IVTT(J)	Time (minutes) for car tour; in-vehicle travel time for tour (minutes), for public transport; for destination j	-0.0464	3.90
5. CT-COST(J)	Tour distance (kms) multiplied by f.15 plus tolls plus parking cost for 1 hour, for car; fare (guilders) for public transport; for destination j	-1.02	8.59
6. T-WALK(J)	Time (minutes) to walk from the ends of the public transport trip to the primary destination and the base, for public transport, for destination j	-0.0673	2.75
7. T-HDWY(J)	Total of outbound and return headways (minutes) for public transport, for destination j	-0.0237	1.98
8. T-RDAM	1 if destination is in Rotterdam, for public transport, for destination j	1.16	2.40
9. S-DIST(J)	Tour distance (kms), for slow, for destination j	-0.539	10.9
10. S-HAAG	1 if destination is in The Hague, for slow, for destination j	-0.710	1.53
11. C-CARS/LIC	Car ownership of a household divided by the number of licensed drivers in the household (maximum value of 1.0), for car, for all destinations	2.00	4.90

* See Section 5.1 for explanation of these statistics.

Table A5.3 Joint Mode/Destination Choice Model, Personal Business Tours, Page 2 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT	ACCURACY OF ESTIMATION
12. C-F-LD-CO	1 if traveller is female, licensed to drive, and her household owns a car, for car, for all destinations	1.52	3.64
13. C-AGE 15	1 if traveller's age is less than 15 years, for car, for all destinations	0.758	1.72
14. CTS-CBD-DES(J)	1 if destination j is in a central business district, for all modes	0.550	2.71
15. CTS-DIST-LATE(J)	Tour distance (kms) if journey home tour begins after 15:30 (3:30 PM), for all modes, for destination j	-0.0255	1.30
16. CTS-INTRA(J)	1 if tour is intrazonal, for all modes for destination j	0.578	3.46
17. CTS-POP(J)	Population of destination j, for all modes**	-3.39	s.e.=0.446
18. CTS-SERV(J)	Service employment of destination j, for all modes**	-2.23	s.e.=0.742
19.CTS-RET(J)	Retail employment of destination j, for all modes**	0.0	--

Summary Statistics:

Alternative	Number Available	Number Chosen
car (j)	352	209
public transport (j)	198	28
slow (j)	352	115
TOTAL OBSERVATIONS:		352

$L^*(0) = -1424$ $\quad \rho^2 = 0.459$

$L^*(\beta) = -770$

**Attraction or size variables: see Table A5.2 for formulation.

Table A5.4 Joint Mode/Destination Choice Model, Social Tours, Page 1 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. C-CONST	1 for car, for all destinations	-2.77	
2. T-CONST	1 for public transport, for all destinations	-2.985	
3. C-LOGSA (J)	Logsum from car sub-mode choice model for social tours (Table A3.4), for car, for destination j	.191	$\|t_0\|$= 2.37 $\|t_1\|$= 10.0
4. S-LOGSS (J)	Logsum from slow sub-mode choice model for social tours (Table A2.5), for slow, for destination j	0.276	$\|t_0\|$= 1.63 $\|t_1\|$= 4.26
5. CT-IVTT (J)	Time (minutes) for car trip; in-vehicle travel time for public transport; for destination j	-0.0220	5.09
6. CT-COST (J)	Tour distance (kms) multiplied by f0.20 plus tolls plus parking cost (parking rate multiplied by time at destination) for car, fare for public transport; for destination j	-0.422	14.5
7. T-WALK(J)	Walk time (excluding transfers) in minutes for public transport to destination j	-0.0227	2.87
8. T-HDWY(J)	Total of outbound and return headways (minutes) for public transport for destination j	-0.0182	3.28
9. T-ROTT	1 if origin is in Rotterdam, for public transport, for all destinations	1.06	3.16
10. S-DIST(J)	Distance (kms) for destination j, for slow	-0.354	13.1
11. C-CAR/LIC	Car ownership of a household divided by the number of licensed drivers in the household (maximum value of 1.0), for car, for all destinations	1.35	5.19
12. T-AGE-45	1 if traveller's age is over 45, for public transport, for all destinations	1.41	3.99

* See Section 5.1 for explanation of these statistics.

Table A5.4 Joint Mode/Destination Choice Model, Social Tours, Page 2 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT	ACCURACY OF ESTIMATION
13. S-LATE	1 if journey home begins after 17:30, for slow, for all destinations	-0.650	2.81
14. C-CARAVL	1 if traveller has a driver's license and his household owns a car, for car, for all destinations	1.08	3.82
15. C-LATER	1 if tour begins after 19:00, for car, for all destinations	0.984	3.37
16. C-FEMALE	1 if traveller is female, for car, for all destinations	-0.654	1.83
17. C-MNCA	1 if traveller is male and either has no license to drive or household owns no car, for car, for all destinations	-1.39	2.94
18. CTS-PMSHT (J)	1 if tour begins after 15:30 and tour length is less than 4 kms, for destination j, for all modes	.970	5.60
19. CTS-LOWDN (J)	1 if population density of zone j is less than 2 persons per hectare, for all modes	0.751	4.91
20. CTS-INTRA (J)	1 if tour to destination j is intrazonal; for all modes	0.552	4.22
21. CTS-POPDN (J)	Population per hectare of zone j, for all modes	-0.0000441	4.33
22. CTS-POP (J)	Log population of zone j, for all modes (constrained)	1.0	-

Summary Statistics:

Alternative	Number Available	Number Chosen
car (j)	680	345
public transport (j)	592	69
slow (j)	680	266
TOTAL OBSERVATIONS:		680

$L^*(0) = -2764.53$ $\quad \rho^2 = 0.374$

$L^*(\beta) = -1729.30$

Table A5.5 Joint Mode/Destination Choice Model, Recreation Tours, Page 1 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. C-CONST	1 for car, for all destinations	-3.993	
2. T-CONST	1 for public transport, for all destinations	0.269	
3. C-LOGSA(J)	Logsum from car sub-mode choice model for social tours (Table A3.4), for car, for destination j	0.444	$\|t_0\| = 8.31$ $\|t_1\| = 10.4$
4. C-LOGSS(J)	Logsum from slow sub-mode choice model for social tours (Table A2.5), for slow, for destination j	0.372	$\|t_0\| = 2.33$ $\|t_1\| = 3.93$
5. CT-IVTT(J)	Time (minutes) for car tour; in-vehicle travel time for public transport; for destination j	-0.0735	6.11
6. CT-COST(J)	Tour distance (kms) multiplied by f0.10 plus tolls plus parking cost (parking rate multiplied by time at destination) for car; fare for public transport; for destination j	-0.501	4.31
7. T-WALK(J)	Walk time (excluding transfers) for public transport(minutes), for destination j	-0.0688	2.61
8. T-HDWY(J)	Total of outbound and return headways (minutes), for public transport to destination j	-0.145	3.19
9. T-RDAM(J)	1 if tour origin is not Rotterdam, and destination is in Rotterdam, for public transport	2.88	4.05
10. S-DIST(J)	Distance (kms) to destination j, for slow	-0.522	18.7
11. S-FEMALE	1 if traveller is female, for slow,	-0.446	2.12
12. C-CAR/LIC	Car ownership of household divided by number of licensed drivers in the household (maximum value of 1.0), for car, for all destinations	0.729	2.48

* See Section 5.1 for explanation of these statistics.

Table A5.5 Joint Mode/Destination Choice Model, Recreation Tours, Page 2 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT	ACCURACY OF ESTIMATION
13. C-SHORT6 (J)	1 if tour length to destination j is less than 6 kms, for car	1.02	4.96
14. C-RDAM	1 if origin is in Rotterdam, for car, for all destinations	-1.10	3.03
15. S-LATE	1 if tour begins after 17:30 for car, for all destinations	-0.555	2.80
16. CTS-POPDN (J)	Population per hectare of zone j, for all modes	-0.000112	5.76
17. CTS-SERV (J)	Service employment of zone j, for all modes**	-1.19	0.440
18. CTS-POP(J)	Population of zone j, for all modes**	-2.62	0.474
19. CTS-RECA (J)	Recreational area (hectares) of zone j, for all modes**	0.0	-

Summary Statistics:

Alternative	Number Available	Number Chosen
Car (j)	552	230
Public transport (j)	444	19
Slow (j)	552	303
TOTAL OBSERVATIONS:		552

$L^*(0) = -2257.20$ $\quad \rho^2 = 0.478$

$L^*(\beta) = -1178.02$

**Size or attraction variables: see Table A5.2 for formulation.

Table A5.6 Joint Mode/Destination Choice Model, Miscellaneous Tours, Page 1 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. C-CONST	1 for car, for all destinations	-3.87	
2. T-CONST	1 for public transport, for all destinations	-0.621	
3. S-LOGSS(J)	Logsum from slow sub-mode choice model for miscellaneous tours (Table A2.6), for slow, for destination j	0.374	$\|t_0\| = 2.33$ $\|t_1\| = 3.90$
4. CT-IVTT(J)	Tour travel time (minutes for car; in-vehicle travel time plus walk time at tour ends plus wait time (half of the sum of the headway out and return) for public transport, for destination j	-0.0216	3.05
5. CT-COST(J)	Tour distance (kms) multiplied by f0.15 plus tolls plus parking cost for 1 hour for car; fare for public transport; for destination j	-0.405	3.31
6. C-CAR/LIC	Car ownership divided by number of by number of licensed drivers in the household (maximum value of 1.0), for car, for all destinations	1.26	3.98
7. C-SERVPAX	1 if tour purpose is serve passenger, for car, for all destinations	1.73	3.35
8. C-AGE12	1 if traveller's age is less than 12 years, for car, for all destinations	2.10	5.72
9. S-DIST(J)	Tour distance (kms) for destination j, for slow	-0.278	9.19
10. S-HHSIZE	If tour purpose is serve passenger, number of people in traveller's household, for slow, for all destinations	0.384	3.18
11. CTS-DIST (J)	Tour distance (kms) for destination j, for all modes	-0.0752	3.75
12. CTS-CBDES (J)	1 if destination j is a central business district zone, for all modes	1.04	7.41

* See Section 5.1 for explanation of these statistics.

Table A5.6 Joint Mode/Destination Choice Model, Miscellaneous Tours, Page 2 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT	ACCURACY OF ESTIMATION
13. CTS-LOWDN (J)	1 if population per hectare of zone j is less than 200, for all modes	0.584	2.90
14. CTS-DISTAG 12(J)	If traveller's age is less than 12, tour distance (kms) for destination j, for all modes	-0.148	2.36
15. CTS-INTRA (J)	1 if tour to destination zone j is intrazonal, for all modes	1.23	11.2
16. CTS-DISTSP (J)	If tour purpose is serve passenger, tour distance (kms) for destination j, for all modes	-0.0412	2.98
17. CTS-POP(J)	Log population of zone j for all modes	1.0	-
18. C-LOGSA(J)	Logsum from car sub-mode choice model for miscellaneous tours (Table A3.5), for car, for destination j	1.0	-

Summary Statistics:

Alternative	Number Available	Number Chosen
Car (j)	753	366
Public transport (j)	317	31
Slow (j)	753	356
TOTAL OBSERVATIONS:		753

$L^*(0) = -2876$ $\quad \rho^2 = 0.450$

$L^*(\beta) = -1582$

Table A6.2 Destination Choice Model, Fixed Workplace Tours, Page 1 of 3

	VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1.	LOGSUM(J)	Logsum from work mode choice model (Table A4.2), for destination j	0.325	$\|t_0\|$=5.16 $\|t_1\|$=10.7
2.	DISTANCE (J)	Tour distance (km), for destination j	-0.0669	19.6
3.	FEM-DIST(J)	If female, tour distance for destination j	-0.0246	5.12
4.	HIED-DIST(J)	If traveller has had higher education, tour distance for destination j	0.0124	3.58
5.	LNHR-DIST(J)	If time at destination exceeds 6 hours, tour distance for destination j	-0.0249	3.28
6.	FRNG-DIST(J)	If origin is in northern suburban area, tour distance for destination j	-0.0251	4.13
7.	PRED-DIST(J)	If education level is primary, tour distance for destination j	-0.00723	1.31
8.	RURL-DIST(J)	If origin population density of home base zone is less than 500 per hectare, tour distance, for destination j	-0.00919	2.48
9.	AGRI-DIST(J)	If tour maker is an agricultrual worker, tour distance, for destintion j	-0.0810	3.16
10.	LATE-DIST(J)	If work tour starts after 17:30, tour distance for destination j	-0.0753	1.44
11.	INTRA-ZONE(J)	1 if tour to destination j is intrazonal	0.973	10.2
12.	ZUID-RDAM(J)	1 if home is a southern zone and destination j is in Rotterdam	3.23	6.55
13.	RDAM-SELF(J)	1 if home and destination j are both in Rotterdam	1.15	4.37
14.	ZOET-DENH(J)	1 if home is in Zoetermeer and destination j is in The Hague	1.29	2.39

* See Section 5.1 for explanation of these statistics.

Table A6.2 Destination Choice Model, Fixed Workplace Tours, Page 2 of 3

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT	ACCURACY OF ESTIMATION
15. DLFT-SELF(J)	1 if home in Delft and destination j is in Delft	1.92	3.89
16. DENH-BALF(J)	1 if destination j is in The Hague	0.937	4.51
17. HAGL-BALF(J)	1 if destination j is in The Hague's surrounding area	1.11	4.96
18. EUPT-BALF(J)	1 if destination j is in Europoort,	0.948	3.96
19. Z-02,07-B(J)	1 if destination j is aggregate zone 02 or 07	1.17	4.32
20. Z-03,04-B(J)	1 if destination j is aggregate zone 03 or 04	0.427	2.42
21. Z-05,06-B(J)	1 if destination j is aggregate zone 05 or 06	0.660	3.13
22. Z-08,09-B(J)	1 if destination j is aggregate zone 08 or 09	0.137	0.657
23. Z-10-BALF(J)	1 if destination j is aggregate zone 10	0.0848	0.572
24. Z-11-BALF(J)	1 if destination j is aggregate zone 11	1.11	3.24
25. Z-18-BAL(J)	1 if destination j is aggregate zone 18	-0.453	1.39
26. Z-21-BAL(J)	1 if destination j is aggregate zone 21	-1.34	2.59
27. Z-25-BAL(J)	1 if destination j is aggregate zone 25	0.259	1.29
28. Z-27,28-BAL(J)	1 if destination j is aggregate zone 27,28	0.601	2.09
29. Z-33-BAL(J)	1 if destination j is aggregate zone 33	0.474	1.28

Table A6.2 Destination Choice Model, Fixed Workplace Tours, Page 3 of 3

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT	ACCURACY OF ESTIMATION
30. Z-34-BAL(J)	1 if destination j is aggregate zone 34	-0.571	1.82
31. Z-35,36-BAL(J)	1 if destination j is aggregate zone 35,36	0.449	1.88
32. Z-37-BAL(J)	1 if destination j is aggregate zone 37	0.408	0.872
33. Z-38,39-BAL(J)	1 if destination j is aggregate zone 38,39	-0.480	1.67
34. Z-57-BAL(J)	1 if destination j is aggregate zone 57	-0.843	1.93
35. NON-AGRI-EMP(J) or AGRIC-EMP(J)	Log of non-agricultural employment of zone jfor non-farm workers, agricultural employment of zone j, for farm workers	1.0	-

Summary Statistics:

Total Observations: 1450

$L^*(0) = -4338.40$ $\rho^2 = 0.164$

$L^*(\beta) = -3628.48$

Table A6.3 Destination Choice Model, Unusual Workpace Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. INTRA(J)	1 if tour to destination j is intrazonal	2.42	12.7
2. DISTANCE (J)	Tour distance (km) for destination j	-0.0409	10.6
3. PROF-DIST (J)	If occupation is Professional, tour distance for destination j	-0.237	2.53
4. MORN-DIST (J)	If tour departs destination before 12:00, tour distance for destination j	-0.0171	2.01
5. EVE-DIST (J)	If arrival at destination after 14:00, tour distance for destination j	-0.0185	2.66
6. RDAM(J)	1 if destination j is in Rotterdam	-0.564	2.60
7. EMP(J)	Total employment of destination j**	-1.52	s.e.=0.382
8. POP(J)	Population of zone j**	0.0	-
9. LOGS(J)	0.265 multiplied byu logsum from mode choice for work tours, (Table A4.2), for destination j	1.0	-

Summary Statistics:

Number of Observations = 259

$L^*(0) = -776.76$ $\rho^2 = 0.277$

$L^*(\beta) = -561.84$

* See Section 5.1 for explanation of these statistics.
**Size or attraction variables: see Table A5.2 for formulation.

Table A6.4 Destination Choice Model, Education Tours, Page 1 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. LOGS(J)	Logsum from mode choice model for education tours (Table A4.3), for destination j	0.418	$\|t_0\|$=7.67 $\|t_1\|$=10.7
2. INTRA(J)	1 if tour to destination j is intrazonal	0.595	6.89
3. DIS-PRIMED(J)	If education is primary, tour distance, for destination j	-0.497	18.4
4. DIS-SECED(J)	If education is secondary, tour distance, for destination j	-0.148	11.9
5. DIS-PRE-UNIV(J)	If education is pre-university, tour distance, for destination j	-0.139	9.61
6. DIS-TECH(J)	If education is technical, tour distance for destination j	-0.0808	2.02
7. DIS-UNIV(J)	If education is university, tour distance, for destination j	-0.0841	1.74
8. DIS-OTH(J)	If education is other, tour distance, for destination j	0.130	8.47
9. DIS-MALE(J)	If traveller is male, tour distance for destination j	0.0262	3.03
10. DIS-LUNCH(J)	If tour leaves base before 14:00 and arrives at destination after 12:00 tour distance for destination j	0.0591	3.56
11. DIS-LATE(J)	If tour leaves base after 14:00, tour distance for destination j	-0.0328	2.35
12. DIS-AGE16(J)	If traveller's age is over 15, tour distance for destination j	0.0445	4.85
13. STUDENTS(J)	Log number of students of appropriate age enrolled in schools in destination j	1.0	-

* See Section 5.1 for explanation of these statistics.

Table A6.4 Destination Choice Model, Education Tours, Page 2 of 2

Summary Statistics:

Number of Observations = 1921

$L^*(0) = -5608.39$ $\rho^2 = 0.598$

$L^*(\beta) = -2253.49$

Table A7.1 Frequency Choice Model, 0/1+, Fixed Work Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. 1+,CONST	1, for 1+	0.347	2.30
2. 1+,HHSIZE	Number of people in traveller's household, for 1+	0.0568	1.38
3. 1+,AGE 64	1 if traveller's age is over 64, for 1+	-0.884	1.44
4. 1+,WIFE/STUDT	1 if traveller's occupation is "wife" or "student," for 1+	-4.79	16.2
5. 1+,PRIM-ED	1 if traveller's education is "primary" for 1+	-0.438	3.01
6. 1+,AGE-56	Maximum of (age minus 56) and 0.0, for 1+	-0.221	5.37

Summary Statistics:

Alternative	Number Available	Number Chosen
0 tour	3031	2173
1+ tours	3031	858
TOTAL OBSERVATIONS:		3031

$L^*(0) = -2100.9$ $\quad \rho^2 = 0.512$

$L^*(\beta) = -1025.5$ $\quad \rho_c^2 = 0.432$

* See Section 5.1 for explanation of these statistics.

Table A7.2 Zonal Frequency Choice Model, 0/1+, Other Work Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. 1+,CONST	1, for 1+	-1.90	26.5
2. 1+,LOGSD	Logsum from aggregate destination choice model for usual work tours (Table 39), for 1+	0.0355	$\|t_0\|$=1.23 $\|t_1\|$=33.4
3. 1+,DRIVER	1 if traveller is licensed to drive, for 1+	0.496	6.28
4. 1+,AGE 64	1 if traveller's age is over 64, for 1+	-3.37	13.0
5. 1+,MALE	1 if traveller is male, for 1+	1.73	22.2
6. 1+,HIINC	1 if traveller's home zone is classed as "high" income, for 1+	0.208	2.21

Summary Statistics:

Alternative	Number Available	Number Chosen
0 tours	5217	3680
1+ tours	5217	1537
TOTAL OBSERVATIONS:		5217

$L^*(0) = -3616.14$ $\quad \rho^2 = 0.319$

$L^*(\beta) = -2463.93$ $\quad \rho_c^2 = 0.221$

* See Section 5.1 for explanation of these statistics.

Table A7.3 Frequency Choice Model, 0/1+, Education Tours, Children and Students, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. 1+,CONST	1, for 1+	1.79	5.60
2. 1+,LOGSD	Logsum from disaggregate destination choice model for education tours (Table A6.4), for 1+	0.125	$\|t_0\|$=2.19 $\|t_1\|$=15.3
3. 1+,7-AGE	Maximum of (7 minus age) and 0.0, for 1+	-0.329	4.44
4. 1+,AGE16-20	1 if traveller's age is between 16 and 20, for 1+	-0.505	2.62
5. 1+,AGE 20	1 if traveller's age is over 20, for 1+	-1.74	4.84
6. 1+,MALE 13	1 if traveller is male and less than 13 years old, for 1+	0.410	2.36
7. 1+, CARS 13	1 if traveller's age is under 13 and traveller's household owns at least one car, for 1+	0.539	2.87
8. 1+,CARS-13-17	1 if traveller's age is between 13 and 17 and traveller's household owns at least one car, for 1+	0.388	2.03
9. 1+, DENS 5K	1 if traveller's home zone density exceeds 5000 people per square kilometer, for 1+	-0.353	2.13
10. 1+,NONW 0	1 if at least 1 adult does not work in in traveller's household, for 1+	0.358	2.05

Summary Statistics:

Alternative	Number Available	Number Chosen
0 tours	1818	287
1+ tours	1818	1531
TOTAL OBSERVATIONS:		1818

$L^*(0) = -1260.14$ $\quad \rho^2 = 0.403$

$L^*(\beta) = -752.11$ $\quad \rho^2_c = 0.051$

* See Section 5.1 for explanation of these statistics.

Table A7.4 Frequency Choice Model, 0/1, Education Tours, Non-Students, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. 1+,CONST	1, for 1+	-4.89	15.9
2. 1+,AGE19,20	1 if traveller's age is 19 or 20, for 1+	2.81	5.26
3. 1+,AGE21-30	1 if traveller's age is between 21 and 30, for 1+	1.90	5.39
4. 1+,AGE31-45	1 if traveller's age is between 31 and 45, for 1+	1.38	3.78
5. 1+,PRE-UNIV	1 if traveller's education is "pre-university," for 1+	-1.32	2.19
6. 1+,HIINC	1 if traveller's household's income exceeds f40,000 annually, for 1+	0.783	2.70

Summary Statistics:

Alternative	Number Available	Number Chosen
0 tours	2894	2819
1 tours	2894	75
TOTAL OBSERVATIONS:		2894

$L^*(0) = -2005.96$ $\quad \rho^2 = 0.840$

$L^*(\beta) = -320.03$ $\quad \rho_c^2 = 0.080$

* See Section 5.1 for explanation of these statistics.

Table A7.5 Frequency Choice Model, 0/1+, Shopping Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. 1+,CONST	1, for 1+	-2.12	7.41
2. 1+,LOGSMD	Logsum from disaggregate joint mode/destination choice model for shopping tours (Table A5.2), for 1+	0.00522	$\|t_0\|$=0.298 $\|t_1\|$=56.8
3. 1+,NONWORK	1 if traveller is a non-worker, for 1+	1.56	11.7
4. 1+,AGE 17	1 if traveller's age is below 17, for 1+	-1.85	12.1
5. 1+,AGE 64	1 if traveller's age is above 64, for 1+	-0.395	2.95
6. 1+,LOWDEN	1 if traveller's home zone population/per hectare is below 2, for 1+	-0.448	2.72
7. 1+,ADULTS	Number of adults in traveller's household, for 1+	-0.165	2.09
8. 1+,FEMALE	1 if traveller is female	0.750	6.60
9. 1+,PRIM-ED	1 if traveller's education is primary	-0.461	4.27

Summary Statistics:

Alternative	Number Available	Number Chosen
0 tours	3817	3136
1+ tours	3817	681
TOTAL OBSERVATIONS:		3817

$L^*(0) = -2645.74$ $\quad \rho^2 = 0.424$

$L^*(\beta) = -1525.13$ $\quad \rho_c^2 = 0.148$

* See Section 5.1 for explanation of these statistics.

Table A7.7 Frequency Choice Model, 0/1+, Social Tours, Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. 1+,CONST	1, for 1+	-1.65	10.4
2. 1+,HHSIZE	Number of people in traveller's household, for 1+	-0.112	2.88
3. 1+,NONWORK	1 if traveller is a non-worker, for 1+	1.09	9.87
4. 1+,AGE 16	1 if traveller's age is below 16, for 1+	-1.19	8.27
5. 1+,CITY	1 if traveller's home is in Rotterdam or The Hague, for 1+	-0.342	3.25
6. 1+,AGE 64	1 if traveller's age is above 64, for 1+	-0.475	3.53

Summary Statistics:

Alternative	Number Available	Number Chosen
0 tours	3929	3301
1+ tours	3929	628
TOTAL OBSERVATIONS:		3929

$L^*(0) = -2723.37$ $\quad \rho^2 = 0.397$

$L^*(\beta) = -1643.12$ $\quad \rho_c^2 = 0.048$

* See Section 5.1 for explanation of these statistics.

Table A7.8 Frequency Choice Model, 0/1+, Recreation Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. +,CONST	1, for 1+	-1.58	5.56
2. 1+,LOGSMD	Logsum from disaggregate joint mode/destination choice model for recreation tours (Table A5.5), for 1+	0.0642	$\|t_0\|$=1.02 $\|t_1\|$=14.9
3. 1+,FEMALE	1 if traveller is female, for 1+	-0.282	2.62
4. 1+,AGE 16	1 if traveller's age is below 16, for 1+	0.931	8.28
5. 1+, WIFE LDC	1 if traveller's occupation is housewife, traveller is licensed to drive, and traveller's household owns at least 1 car, for 1+	0.700	3.79
6. 1+,LOWINC	1 if traveller's income is below f21,000 annually, for 1+	-0.443	3.97
7. 1+,CITY	1 if traveller's home is in Rotterdam or The Hague, for 1+	-0.303	2.34
8. 1+,RETIRED	1 if traveller's occupation is retired, for 1+	0.554	3.26

Summary Statistics:

Alternative	Number Available	Number Chosen
0 tours	3929	3395
1+ tours	3929	534
TOTAL OBSERVATIONS:		3929

$L^*(0) = -2723.37$ $\rho^2 = 0.449$

$L^*(\beta) = -1500.87$ $\rho_c^2 = 0.039$

* See Section 5.1 for explanation of these statistics.

Table A7.9 Frequency Choice Model, 0/1+, Miscellaneous Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. 1+,CONST	1, for 1+	-1.82	7.50
2. 1+,LOGSMD	Logsum from disaggregate joint mode/ destination choice model for miscellaneous tours (Table A5.6), for 1+	0.00905	$\|t_0\|$=0.181 $\|t_1\|$=19.8
3. 1+,ADULTS	Number of adults in traveller's household, for 1+	-0.198	2.36
4. 1+,WIFELDC	1 if traveller's occupation is housewife, traveller is licensed to drive, and traveller's household owns at least 1 car, for 1+	0.403	2.50
5. 1+,AGE 64	1 if traveller's age is over 64, for 1+	-0.416	2.43
6. 1+,AGE 17	1 if traveller's age is below 17, for 1+	-1.63	9.62
7. 1+,LOINC	1 if traveller's household income is below f1600 per month, for 1+	-0.491	3.29
8. 1+,YOUTHS	Number of children under 16 years in traveller's household, for 1+	0.209	4.90
9. 1+,NONWORK	1 if traveller is a non-worker, for 1+	0.820	6.24

Summary Statistics:

Alternative	Number Available	Number Chosen
0 tours	3817	3279
1+ tours	3817	538
TOTAL OBSERVATIONS:		3817

$L^*(0) = -2645.74$ $\rho^2 = 0.449$

$L^*(\beta) = -1457.19$ $\rho_c^2 = 0.061$

* See Section 5.1 for explanation of these statistics.

Table A8.1 Frequency Choice Model, Stop/Repeat, Fixed Work Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. GO-CONST	1, for go	-2.43	16.6
2. GO-AGE56	Maximum of (Age minus 56) and 0.0, for go	0.120	2.88
3. GO-LOGSM	Logsum calculated from disaggregate main mode choice model of work tours (Table A4.2), for go	0.800	$\lvert t_0 \rvert$=6.54 $\lvert t_1 \rvert$=1.64

Summary Statistics:

Alternative	Number Available	Number Chosen
stop	997	860
go	997	137
TOTAL OBSERVATIONS:		997

$L^*(0) = -691.1$ $\quad \rho^2 = 0.466$

$L^*(\beta) = -369.3$ $\quad \rho^2_c = 0.074$

* See Section 5.1 for explanation of these statistics.

Table A8.2 Frequency Choice Model, Stop/Repeat Other Work Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. GO-CONST	1, for go	-2.64	6.61
2. GO-LOGSM	Logsum caculated from disaggregate main mode choice model for work tours (Table A4.2), for go	0.780	$\|t_0\|$=2.43

Summary Statistics:

Alternative	Number Available	Number Chosen
stop	156	139
go	156	17
TOTAL OBSERVATIONS:		156

$L^*(0) = -108.1$ $\quad \rho^2 = 0.537$

$L^*(\beta) = -50.1$ $\quad \rho_c^2 = 0.067$

* See Section 5.1 for explanation of these statistics.

Table A8.3 Frequency Choice Model, Stop/Repeat, Shopping Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. GO-CONST	1, for go	-1.60	6.02
2. GO-AGE17	1 if traveller's age is less than 17, for go	-1.03	1.70
3. GO-HHINC/PER	Household income divided by number of persons in household, for go	-0.0567	1.75

Summary Statistics:

Alternative	Number Available	Number Chosen
stop	765	681
go	765	84
TOTAL OBSERVATIONS:		765

$L^*(0) = -530.26$ $\quad \rho^2 = 0.507$

$L^*(\beta) = -261.37$ $\quad \rho_c^2 = 0.013$

* See Section 5.1 for explanation of these statistics.

Table A8.4 Frequency Choice Model, Stop/Repeat, Personal Business Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. GO-CONST	1, for go	-2.88	7.42
2. GO-NONWORK	1 if traveller is a "non-worker", for go	0.735	1.72

Summary Statistics:

Alternative	Number Available	Number Chosen
stop	476	433
go	476	43
TOTAL OBSERVATIONS:		476

$L^*(0) = -329.94$ $\rho^2 = 0.568$

$L^*(\beta) = -142.67$ $\rho^2_c = 0.012$

* See Section 5.1 for explanation of these statistics.

Table A8.5 Frequency Choice Model, Stop/Repeat, Social Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. GO-CONST	1, for go	-3.08	6.31
2. GO-HHSIZE	Number of people in traveller's household, for go	0.133	1.31
3. GO-NONWORK	1 if traveller is a non-worker, for go	0.609	1.78
4. GO-AGE16	1 if traveller's age is below 16, for go	-1.10	1.99
5. GO-MALE-LDC	1 if traveller is male, licensed to drive, and whose household owns at least one car, for go	0.729	2.16

Summary Statistics:

Alternative	Number Available	Number Chosen
stop	700	628
go	700	72
TOTAL OBSERVATIONS:		700

$L^*(0) = -485.20$ $\rho^2 = 0.533$

$L^*(\beta) = -226.69$ $\rho^2_c = 0.023$

* See Section 5.1 for explanation of these statistics.

Table A8.6 Frequency Choice Model,
Stop/Repeat, Recreation Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. GO-CONST	1, for go	-1.71	10.2
2. GO-AGE 16	1 if traveller's age is below 16, for go	-0.309	1.16
3. GO-WIFELDC	1 if traveller's occupation is "housewife", traveller is licensed to drive, and traveller's household owns at least one car, for go	0.477	1.37
4. GO-RETIRED	1 if traveller's occupation is retired for go	0.421	1.28

Summary Statistics:

Alternative	Number Available	Number Chosen
Stop	632	534
Go	632	98
TOTAL OBSERVATIONS:		632

$L^*(0) = -438.07$ $\quad \rho^2 = 0.385$

$L^*(\beta) = -269.30$ $\quad \rho_c^2 = 0.012$

* See Section 5.1 for explanation of these statistics.

Table A8.7 Frequency Choice Model, Stop/Repeat, Miscellaneous Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. GO-CONST	1, for go	-2.17	5.89
2. GO-LOGSMD	Logsum calculated from disaggregate joint mode/destination choice model for miscellaneous tours (Table A5.6), for go	0.100	$\|t_0\|$=1.07
3. GO-NONWORK	1 if traveller is a non-worker, for go	0.991	4.44
4. GO-AGE 64	1 if traveller's age is above 64, for go	-1.17	2.48
5. GO-AGE 17	1 if traveller's age is below 17, for go	-2.04	4.58
6. GO-PRIM-ED	1 if traveller's education is "primary"	-0.477	1.96
7. GO-YOUTHS	Number of children below age 17 in household, for go	0.363	4.53

Summary Statistics:

Alternative	Number Available	Number Chosen
Stop	754	538
Go	754	216
TOTAL OBSERVATIONS:		754

$L^*(0) = -522.63$ $\quad \rho^2 = 0.226$

$L^*(\beta) = -404.30$ $\quad \rho_c^2 = 0.105$

* See Section 5.1 for explanation of these statistics.

Table A8.8 Frequency Choice Model, 1/2+, Education Tours, Students, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. 2+,CONST	1, for 2+	0.575	3.97
2. 2+,LOGSM	Logsum from mode choice model, for education tours (Table A4.3), for 2+	0.494	$\|t_0\|$=5.56
3. 2+,SEC-ED	1 if travellers education code is "secondary", for 2+	-1.41	5.88
4. 2+,PRE-UNIV	1 if traveller's education code is "pre-university", for 2+	-1.81	6.90
5. 2+,TECH-UNIV	1 if traveller's education code is "technical" or "university", for 2+	-1.59	2.65
6. 2+,OTHER-ED	1 if traveller's education code is "other", for 2+	0.0223	0.0645
7. 2+,HHINC 25	1 if traveller's household income is below f25,000 annual, for 2+	-0.411	2.55
8. 2+,RDAM	1 if traveller lives in Rotterdam, for 2+	-0.831	3.29
9. 2+,ADNOCAR	Number of adults in household without a car available, for 2+	0.377	2.36

Summary Statistics:

Alternative	Number Available	Number Chosen
1 tour	915	526
2+ tours	915	389
TOTAL OBSERVATIONS:		915

$L^*(0) = -634.23$ $\quad \rho^2 = 0.215$

$L^*(\beta) = -497.91$ $\quad \rho_c^2 = 0.202$

* See Section 5.1 for explanation of these statistics.

APPENDIX B

APPENDIX B: ZONAL MODEL SPECIFICATIONS

The models are in general aggregations of the corresponding-numbered models in Appendix A.

B3.2 Car Sub-Mode Choice, Work
B3.3 Car Sub-Mode Choice, Shopping and Personal Business
B3.4 Car Sub-Mode Choice, Social and Recreation
B3.5 Car Sub-Mode Choice, Miscellaneous

B4.2 Mode Choice, Work
B4.3 Mode Choice, Education

B5.2 Joint Mode/Destination Choice, Shopping
B5.3 Joint Mode/Destination Choice, Personal Business
B5.4 Joint Mode/Destination Choice, Social
B5.5 Joint Mode/Destination Choice, Recreation
B5.6 Joint Mode/Destination Choice, Miscellaneous

B6.2 Destination Choice, Fixed Workplace
B6.3 Destination Choice, Other Workplace
B6.4 Destination Choice, Education

B7.1 Frequency Choice, 0/1+, Fixed Work
B7.2 Frequency Choice, 0/1+, Other Work
B7.3 Frequency Choice, 0/1+, Education (Children)
B7.4 Frequency Choice, 0/1+, Education (Adults)
B7.5 Frequency Choice, 0/1+, Shopping
B7.6 Frequency Choice, 0/1+, Personal Business
B7.7 Frequency Choice, 0/1+, Social
B7.8 Frequency Choice, 0/1+, Recreation
B7.9 Frequency Choice, 0/1+, Miscellaneous

B8.1 Frequency Choice, Stop/Repeat, Fixed Work
B8.2 Frequency Choice, Stop/Repeat, Other Work
B8.3 Frequency Choice, Stop/Repeat, Shopping
B8.5 Frequency Choice, Stop/Repeat, Social
B8.6 Frequency Choice, Stop/Repeat, Recreation
B8.7 Frequency Choice, Stop/Repeat, Miscellaneous
B8.8 Frequency Choice, 1/2, Education (children)

Table B3.2 Zonal Car Sub-Mode Choice Model
Work Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. D-CONST	1, for driver	0.477	0.512
2. D-CAR/POP	Number of cars in origin zone divided by population of origin zone, for driver	6.09	1.99
3. D-MALE	1 if traveller is male, for driver	1.11	3.21
4. D-PRKDFC	1 if primary destination zone hourly parking charge is greater than zero, and arrival at primary destination is after 9:00, for driver (parking difficulty)	2.11	1.56
5. P-DIST	Tour distance (kilometers), for passenger	0.00873	3.74
6. P-PRCOST	Hourly parking charge (guilders) in effect at the primary destination zone, for passenger	2.84	2.42
7. P-HHDEN	Households per hectare in the tour's base zone, for passenger	-0.0436	2.92
8. P-EMPDEN	Workers per hectare in the tour's primary destination zone, for passenger	-0.0263	1.97
9. P-PURP25	1 for purpose 25** tours, for passenger	-0.524	1.28
10. P-MORN-EP	1 if tour begins and ends in peak periods, for passenger	1.31	4.64

Summary Statistics:

Alternative	Number Available	Number Chosen
driver	1098	1027
passenger	1098	71
TOTAL OBSERVATIONS:		1098

$L^*(0) = -761.07$ $\quad \rho^2 = 0.702$

$L^*(\beta) = -226.44$ $\quad \rho_c^2 = 0.139$

* See Section 5.1 for explanation of these statistics.
** These are tours for work purposes, but not to the fixed workplace.

Table B3.3 Zonal Car Sub-Mode Choice Model, Shopping/Personal Business Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. D-CONST	1, for driver	2.52	8.23
2. D-HH-DEN	Households per hectare in the tour's base zone, for driver	-0.0177	2.44
3. D-MALE	1 if traveller is male, for driver	1.13	2.83
4. P-ATIME	Tour travel time (minutes), for passenger	0.0199	2.50
5. P-PRKDFC	1 if primary destination zone hourly parking charge is greater than zero, and arrival at primary destination is after 9:00, for passenger	0.888	2.18
6. P-PB-CONST	1 if tour was made for personal business reasons (not shopping), for passenger	-0.535	1.01

Summary Statistics:

Alternative	Number Available	Number Chosen
driver	389	352
passenger	389	37
TOTAL OBSERVATIONS:		389

$L^*(0) = -269.63$ $\quad \rho^2 = 0.600$

$L^*(\beta) = -107.72$ $\quad \rho_c^2 = 0.126$

* See Section 5.1 for explanation of these statistics.

Table B3.4 Zonal Car Sub-Mode Choice Model, Social/Recreation Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. D-CONST	1, for driver	0.979	1.15
2. D-PC-RECA	Area devoted to recreational use divided by total area of the primary destination zone, for driver	1.32	1.29
3. D-MALE	1 if traveller is male, for driver	1.68	4.90
4. D-CAR/POP	Number of cars divided by population in zone of origin, for driver	0.599	0.207
5. P-PCOST	Hourly parking charge (guilders) at the primary destination zone, for passenger	0.482	0.712
6. P-ATIME	Tour travel time (minutes), for passenger,	0.00567	0.813

Summary Statistics:

Alternative	Number Available	Number Chosen
driver	413	363
passenger	413	50
TOTAL OBSERVATIONS:		413

$L^*(0) = -286.27$ $\quad \rho^2 = 0.523$

$L^*(\beta) = -136.41$ $\quad \rho_c^2 = 0.105$

* See Section 5.1 for explanation of these statistics.

Table B3.5 Zonal Car Sub-Mode Choice Model, Miscellaneous Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. D-CONST	1, for driver	1.81	6.64
2. DP-UTILITY	See text	0.706	3.20

Summary Statistics:

Alternative	Number Available	Number Chosen
driver	392	364
passenger	392	28
TOTAL OBSERVATIONS:		392

$L^*(0) = -271.71$ $\quad \rho^2 = 0.648$

$L^*(\beta) = -95.57$ $\quad \rho_c^2 = 0.053$

* See Section 5.1 for explanation of these statistics.

Table B4.2 Zonal Mode Choice Model, Work Tours,
Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. C-CONST	1 for car	-2.71	11.4
2. T-CONST	1 for public transport	-0.685	6.77
3. CTS-UTIL	Linear additive combination of coefficients and variables (3, 5-9, 13, 16-18, 22, 23, 25, 26 from preliminary mode choice model (Table A4.1). All multiplied by coefficient of variable 3 from auxiliary model, plus linear combination of variables 4-7 from auxiliary model with coefficients (corrected)	.546	17.6
4. C-CAROWN	1 if traveller's household owns a car, for car	1.76	6.67
5. T-INTRA	1 if tour to destination j is intrazonal, for public transport	-5.13	5.10
6. C-LOGC	Logsum calculated from the zonal car sub-mode choice model for work tours (Table B3.2), for car	0.223	$\lvert t_0 \rvert = 4.55$ $\lvert t_1 \rvert = 15.8$
7. C-MP&EP	1 if tour arrives at primary destination in the morning peak or earlier, and leaves in the afternoon peak	-0.25	1.99

Summary Statistics:

Alternative	Number Available	Number Chosen
car	1985	1150
public transport	1985	172
slow	1985	663
TOTAL OBSERVATIONS:		1985

$L^*(0) = -2180.73$ $\quad \rho^2 = 0.486$

$L^*(\beta) = -1119.49$ $\quad \rho_c^2 = 0.369$

* See Section 5.1 for explanation of these statistics.

Table B4.3 Zonal Mode Choice Model, Education Tours, Page 1 of 2

	VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1.	D-CONST	1 for driver	-2.13	
2.	T-CONST	1 for public transport	-2.59	
3.	P-CONST	1 for car passenger	-5.35	
4.	DTP-UTIL	Utility variable; linear combination of variables 5,6,7 and their coefficients from mode choice model (Table A4.3), for driver, public transport, and car passenger	0.251	4.61
5.	T-LOWINC	1 if average income of home-base zone is "low," for public transport	0.501	1.33
6.	T-RDAM	1 if home-base zone is in Rotterdam, for public transport	1.12	3.94
7.	D-LATE	1 if departure from destination is in the late evening (after 12:30), for driver and car passenger	2.26	6.28
8.	P-AGE 5-11	1 if traveller's age is 5-11, for car passenger	1.91	4.69
9.	P-AGE 12-17	1 if traveller's age is 12-17, for car passenger	-0.619	1.35
10.	P-CAR/ POP	Number of cars registered in home zone divided by population of home zone, for car passenger	4.18	2.34
11.	P-POP/ HHS	Population of home zone divided by number of households in home zone (average household size), for car passenger	-0.286	1.23
12.	T-AGE 5-11	1 if traveller's age is 5-11, for public transport	-1.32	3.26
13.	S-FEM 17	1 if traveller is a female aged over 17, for slow	-0.584	1.91

* See Section 5.1 for explanation of these statistics.

Table B4.3 Zonal Mode Choice Model, Education Tours, Page 2 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT	ACCURACY OF ESTIMATION
14. T-INTRA	1 if tour is intrazonal, for public transport	-2.76	5.24
15. S-DIST	Tour distance (kms), for slow	-0.134	11.2

Summary Statistics:

Alternative	Number Available	Number Chosen
car driver	105	59
car passenger	2459	113
public transport	2459	111
slow	2459	2176
TOTAL OBSERVATIONS:		2459

$L^*(0) = -2731.68$ $\quad \rho^2 = 0.739$

$L^*(C) = -991.99$

$L^*(\beta) = -713.33$ $\quad \rho^2_c = 0.281$

Table B5.2 Zonal Joint Mode/Destination Choice Model, Shopping Tours, Page 1 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. C-CONST	1 for car, for all destinations	-5.791	8.95
2. T-CONST	1 for public transport, for all destinations	-2.271	2.15
3. CT-IVTT(J)	Tour in-vehicle travel time (minutes) for car and public transport, for destination j	-0.0373	3.10
4. CT-COST(J)	Tour distance (kms) multiplied by f.15 plus tolls plus parking cost (parking rate multiplied by average time spent at destination for shopping travel), for car; fare (guilders) for public transport; for destination j	-0.224	1.28
5. T-WALK(J)	Time (minutes) to walk from the ends of public transport tour to the primary destination and base, for public transport, for destination j	-0.017	1.36
6. T-HDWY(J)	Total of outbound and return headways (minutes), for public transport, for destination j	-0.0306	2.75
7. S-DIST(J)	Tour distance (kms), for slow, for destination j	-0.408	7.21
8. S-HAAG(J)	1 if origin is in The Hague, for slow, for destination j	-0.462	1.55
9. C-CAROWN	1 if traveller's household owns a car, for car, for all destinations	1.84	4.73
10. C-CBD-ORG	1 if tour's origin is in a central business district, for car, for all destinations	-1.14	2.40
11. C-DIST4(J)	1 if tour distance for destination j is less than 4 kms, for car	0.668	2.58
12. CTS-DIST(J)	Tour distance (kms), for destination j, for all modes	-0.0903	2.89

* See Section 5.1 for explanation of these statistics.

Table B5.2 Zonal Joint Mode/Destination Choice Model, Shopping Tours, Page 2 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT	ACCURACY OF ESTIMATION
13. CTS-CBD-DES(J)	1 if destination j is in a central business district, for all modes	0.189	1.04
14. CTS-POP-DEN(J)	Population per hectare of destination zone j, for all modes	-0.00491	3.93
15. C-INTRA(J)	1 if tour is intrazonal, for car, for destination j	-0.0512	0.189
16. S-INTRA(J)	1 if tour is intrazonal, for slow, for destination j	0.892	3.53
17. CTS-POP(J)	Population of destination zone j, for all modes**	-3.20	s.e.=0.294
18. CTS-RET(J)-LOGSA(J)	Retail employment of destination zone j, for all modes, for destination j**	0.0	-
19. C-LOGSA(J)	Logsum from car sub-choice model (Table B3.3), for car, for destination j (constrained)	1.0	-

Summary Statistics:

Alternative	Number Available	Number Chosen
car (j)	517	211
public transport (j)	232	36
slow (j)	517	270
TOTAL OBSERVATIONS:		517

$L^*(0) = -2093.24$ $\rho^2 = 0.489$

$L^*(\beta) = -1069.49$

**Size or attraction variables: see Table A5.2 for formulation.

Table B5.3 Zonal Joint Mode/Destination Choice Model
Personal Business Tours, Page 1 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. C-CONST	1 for car, for all destinations -3.49	-4.815	
2. T-CONST	1 for public transport, for all destinations	-2.675	2.41
3. CT-UTIL (J)	"Utility": for car: -0.0464 (coefficient of time from disaggregate model, see Table B3.5) multiplied by tour travel time, plus -1.02 (coefficient of cost from dis- aggregate model, see Table B3.5) multi- plied by cost (distance multiplied by f0.15 plus tolls plus parking cost); for public transport: linear combination of in-vehicle travel time, fare, walk time and headways, each multiplied by their coefficients from the disaggregate model of Table B3.5 (-0.0464, -1.02, -0.0673, -0.0237), for destination j	0.380	3.23
4. T-RDAM(J)	1 if destination j is in Rotterdam, for public transport	1.13	3.05
5. S-DIST(J)	Tour distance (kms) for destination j, for slow	-0.300	5.05
6. S-HAAG(J)	1 if destination j is in The Hague, for slow	-0.866	2.07
7. C-CAROWN	1 if traveller's household owns a car, for car, for all destinations	2.10	4.20
8. T-UFO	1 if traveller is female, not licensed to drive, and her household owns no cars, for public transport, for all destinations	1.18	2.88
9. C-AGE-18	1 if traveller's age is less than 18, for car, for all destinations	0.726	1.94
10. CTS-CBD-DES(J)	1 if destination j is in a central business district, for all modes	0.630	3.68

* See Section 5.1 for explanation of these statistics.

Table B5.3 Zonal Joint Mode/Destination Choice Model
Personal Business Tours, Page 2 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT	ACCURACY OF ESTIMATION
11. CTS-DIST-LATE(J)	Tour distance (kms) if tour begins after 15:30, to destination j, for all modes	-0.0134	1.22
12. CTS-INTRA (J)	1 if tour is intrazonal, for destination j for all modes	0.509	1.68
13. C-INTRA(J)	1 if is intrazonal, for destination j, for car	-0.722	2.11
14. CTS-DIST (J)	Tour distance (kms) for destination j, for all modes	-0.213	5.12
15. CTS-DIST-10(J)	Maximum of (tour distance minus 10) and 0.0, for destination j, for all modes	0.147	4.19
16. CTS-POP(J)	Population of destination zone j, for all modes**	-3.17	s.e.=0.404
17. CTS-SERV (J)	Service employment of zone j, for all modes**	-1.99	s.e.=0.537
18. CTS-RET-EMP(J)	Retail employment of zone j for all modes**	0.0	-
19. C-LOGSA(J)	Logsum from car sub-mode choice model (Table 19), for destination j, for car (constrained)	1.0	-

Summary Statistics:

Alternative	Number Available	Number Chosen
car (j)	437	267
public transport(j)	271	44
slow (j)	437	126
TOTAL OBSERVATIONS:		437

$L^*(0) = -1773.39$ $\rho^2 = 0.415$

$L^*(\beta) = -1038.24$

**Size or attraction variables: see Table A5.2 for formulation.

Table B5.4 Zonal Joint Mode/Destination Choice Model, Social Tours, Page 1 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. C-CONST	1 for car, for all destinations	-4.046	7.43
2. T-CONST	1 for public transport, for all destinations	-2.017	3.20
3. C-LOGSA(J)	Logsum from car sub-mode choice model for social tours (Table B3.4), for car, for destination j	0.337	$\|t_0\|$ = 4.24 $\|t_1\|$ = 8.34
4. CT-IVTT(J)	Tour time (minutes) for car in-vehicle travel time for public transport; for destination j	-0.0272	6.06
5. CT-COST(J)	Tour distance (kms) multiplied by f0.20 plus tolls plus parking cost (parking rate multiplied by average time at destination) for car; fare for public transport; for destination j	-0.390	13.0
6. T-WALK(J)	Walk time (excluding transfers) (minutes), for public transport, for destination j	-0.0268	2.87
7. T-HDWY(J)	Total of outbound and return headways (minutes), for public transport for destination j	-0.0189	3.90
8. T-RDAM	1 if origin is in Rotterdam, for public transport, for all destinations	1.31	4.36
9. S-DIST(J)	Tour distance (kms) for destination j, for slow	-0.283	4.05
10. C-CAROWN	1 if traveller's household owns a car, for all destinations, for car	1.67	5.67
11. T-AGE65	1 if traveller's age is over 65, for public transport, for all destinations	1.02	3.18
12. S-LATE	1 if tour begins after 17:30, for slow, for all destinations	-0.677	2.54
13. C-CARAVL	1 if traveller is licensed to drive and his household owns a car, for car, for all destinations	1.05	3.77

* See Section 5.1 for explanation of these statistics.

Table B5.4 Zonal Joint Mode/Destination Choice Model, Social Tours, Page 2 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT	ACCURACY OF ESTIMATION
14. C-LATER	1 if traveller reaches destination after 17:30, for car, for all destinations	1.25	4.23
15. S-DIST6(J)	Maximum of (distance minus 6 kms), and zero, for slow, for destination j	-0.195	1.80
16. C-MNCA	1 if traveller is male and has no car or is not licensed to drive, for car, for all destinations	-1.10	2.73
17. CTS-PMSHT (J)	1 if tour distance is less than 4 kms and tour reaches destination after 15:30, for destination j, for all modes	1.07	6.35
18. CTS-LOWDN (J)	1 if population per hectare of destination zone is less than 2, for all modes, for all destinations	0.572	3.70
19. CTS-INTRA (J)	1 if tour is intrazonal, for destination zone j, for all modes	0.809	3.10
20. CTS-POPDN (J)	Population per hectare for all modes, for destination j	-0.00495	4.89
21. C-INTRA (J)	1 if tour is intra-zonal, for destination zone j, for car	-0.643	2.21
22. C-AGE65	1 if traveller's age is over 65, for car, for all destinations	1.36	4.08
23. CTS-POP(J)	Log population of zone j, for all modes	1.0	-

Summary Statistics:

Alternative	Number Available	Number Chosen
car(j)	731	373
public transport(j)	423	75
slow(j)	731	283
TOTAL OBSERVATIONS:		731

$L^*(0) = -2964.81$ $\quad \rho^2 = 0.376$

$L^*(\beta) = -1849.37$

Table B5.5 Zonal Joint Mode/Destination Choice Model, Recreation Tours, Page 1 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. C-CONST	1 for car, for all destinations	-3.896	7.06
2. T-CONST	1 for public transport, for all destinations	-1.154	1.08
3. C-LOGSA(J)	Logsum from car sub-mode choice model for social tours (Table B3.4), for car, for destination j	0.415	$\|t_0\|$ = 7.18 $\|t_1\|$ = 10.1
4. CT-IVTT(J)	Tour travel time (minutes) for car; in-vehicle travel time for public transport; for destination j	-0.0610	5.59
5. CT-COST(J)	Tour distance (kms) multiplied by f0.10 plus tolls plus parking cost (parking rate multiplied by average time at destination) for car; fare for public transport; for destination j	-0.771	6.65
6. T-WALK(J)	Walk time (excluding transfers) (minutes) for public transport, for destination j	-0.0580	2.85
7. T-HDWY(J)	Total of outbound and return headways (minutes), for public transport for destination j	-0.0432	2.39
8. T-RDAM(J)	1 if destination j is in Rotterdam, and origin is not in Rotterdam, for public transport	1.84	3.30
9. S-DIST(J)	Tour distance (kms) for destination j, for slow	-0.413	13.1
10. S-FEMALE	1 if traveller is female, for slow, for all destinations	-0.470	2.39
11. CAROWN	1 if traveller's household owns a car, for car, for all destinations	1.39	3.98
12. C-SHORT6 (J)	1 if tour distance for destination j is less than 6 kms, for car	0.632	2.83

* See Section 5.1 for explanation of these statistics.

Table B5.5 Zonal Joint Mode/Destination Choice Model, Recreation Tours, Page 2 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
13. C-RDAM	1 if origin is in Rotterdam, for car, for all destinations	-1.11	3.32
14. S-LATE	1 if tour begins after 17:30 for slow, for all destinations	-0.585	3.12
15. CTS-POPDN (J)	Population per hectare of zone j, for j, for all modes	-0.00835	4.94
16. C-INTRA (J)	1 if tour to destination zone j is intra-zonal, for car	-0.273	1.21
17. S-INTRA (J)	1 if tour to destination zone j is intra-zonal, for slow	1.03	4.89
18. CTS-SERV (J)	Service employment of zone j, for all modes**	-0.740	s.e.=0.590
19. CTS-POP(J)	Population of zone j, for all modes**	-2.07	s.e.=0.609
20. CTS-RECA (J)	Recreational area (hectares) of zone j, for all modes**	0.0	-

Summary Statistics:

Alternative	Number Available	Number Chosen
Car (j)	613	248
Public transport (j)	285	19
Slow (j)	613	346
TOTAL OBSERVATIONS:		613

$L^*(0) = -2501.99$ $\rho^2 = 0.474$

$L^*(\beta) = -1316.69$

**Size or attraction variables: see Table A5.2 for formulation.

Table B5.6 Zonal Joint Mode/Destination Choice Model, Miscellaneous Tours, Page 1 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. C-CONST	1 for car, for all destinations	-5.218	11.2
2. T-CONST	1 for public transport, for all destinations	-2.783	7.95
3. CT-UTIL (J)	Linear combination of time and cost, and their respective disaggregate coefficients (Table A5.6). Public transport time includes half the sum of the outbound and return headways in addition to its disaggregate specification, for destination j	0.593	3.32
4. C-CAROWN	1 if traveller's household owns a car, for all destinations, for car	1.54	3.84
5. C-SERVPAX	1 if tour purpose is serve passenger for car, for all destinations	1.92	3.23
6. C-AGE12	1 if traveller's age is less than 12 years, for car, for all destinations	1.95	4.79
7. S-DIST(J)	Tour distance (kms) for destination j, for slow	-0.343	10.8
8. S-POP(J)/ HH(J)	If tour purpose is serve passenger, population divided by number of households in tour origin zone, for slow	0.507	2.60
9. CTS-DIST (J)	Tour distance (kms) for destination j, for all modes	-0.0779	4.94
10. CTS-CBDES (J)	1 if destination j is a central business district zone, for all modes	0.818	6.72
11. CTS-LOWDN (J)	1 if population per hectare of zone j is less than 2, for all modes	0.610	3.88
12. CTS-DISTAG	If traveller's age is less than 12, tour distance (kms) for destination j, for all modes	-0.0713	2.18

* See Section 5.1 for explanation of these statistics.

Table B5.6 Zonal Joint Mode/Destination Choice Model, Miscellaneous Tours, Page 2 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
13. CTS-INTRA (J)	1 if tour to destination zone j is intrazonal, for all modes	0.682	5.64
14. CTS-DISTSP (J)	If tour purpose is serve passenger, tour distance (kms) for destination j, for all modes	-0.0568	5.48
15. CTS-POP(J)	Log population of zone j for all modes	1.0	-
16. C-LOGSA(J)	Logsum from car sub-mode choice model for miscellaneous tours (Table B3.5), for car, for destination j		

Summary Statistics:

Alternative	Number Available	Number Chosen
Car (j)	874	442
Public transport (j)	418	38
Slow (j)	874	394
TOTAL OBSERVATIONS:		874

$L^*(0) = -3529.14$ $\rho^2 = 0.434$

$L^*(\beta) = -1996.09$

Table B6.2 Zonal Destination Choice Model for Fixed Work Destination, Page 1 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. UTILITY(J)	Utility measure, linear combination of variables 1-3, 5, 6, 8, 10-15 (and their coefficients) from disaggregate model (Table A6.2), for destination j	0.530	6.61
2. DIST(J)	Tour distance (km) for destination j	-0.096	6.16
3. DIST-15(J)	Tour distance over 15 km, for destination j (max of (0, distance-15))	0.057	3.81
4. DIST-35(J)	Tour distance over 35 km for destination j (max of (0, distance-35))	.031	3.09
5. INTRA(J)	1 if to destination j is intrazonal	-0.077	0.57
6. BF-1-(J)	Balancing factor, 1 if destination j is in aggregate zone 1	0.905	4.95
7. BF-2-(J)	Balancing factor, 1 if destination j is in aggregate zone 2	1.22	3.68
8. BF-3-(J)	Balancing factor, 1 if destination j is in aggregate zone 3	-0.08	0.42
9. BF-4-(J)	Balancing factor, 1 if destination j is in aggregate zone 4	0.249	1.25
10. BF-6-(J)	Balancing factor, 1 if destination j is in aggregate zone 6	0.859	3.91
11. BF-10-(J)	Balancing factor, 1 if destination j is in aggregate zone 10	.016	0.14
12. BF-11-(J)	Balancing factor, 1 if destination j is in aggregate zone 11	0.985	2.68
13. BF-18-(J)	Balancing factor, 1 if destination j is in aggregate zone 18	-0.612	1.87
14. BF-28-(J)	Balancing factor, 1 if destination j is in aggregate zone 28	0.214	0.72
15. BF-34-(J)	Balancing factor, 1 if destination j is in aggregate zone 34	-0.608	2.12

* See Section 5.1 for explanation of these statistics.

Table B6.2 Zonal Destination Choice Model for Fixed Work Destination, Page 2 of 2

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT	ACCURACY OF ESTIMATION
16. BF-35-(J)	Balancing factor, 1 if destination j is in aggregate zone 35	-0.553	2.65
17. BF-38-(J)	Balancing factor, 1 if destination j is in aggregate zone 38	-0.767	2.09
18. EMP(J)	Log employment in destination zone j	1.0	-

Summary Statistics:

Number of Observations: 1392

$L^*(0) = -4128.65$ $\rho^2 = 0.143$

$L^*(\beta) = -3538.85$

Table B6.3 Zonal Destination Choice Model, Other Workplace Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. UTILITY(J)	Linear combination of variables 1,2,5 6,9 from disaggregate model with relevant coefficients, for destination j	0.549	4.77
2. DIST-16(J)	Maximum of (distance minus 16 kms) and 0.0, to destination j	0.00935	0.23
3. DIST(J)	Distance, to destination j	-0.0930	2.98
4. POP(J)	Population, of zone j**	-1.11	s.e.=0.359
5. EMP(J)	Employment, of zone j**	0.0	-

Summary Statistics:

Number of Observations = 208

$L^*(0) = -975.83$ $\rho^2 = 0.269$

$L^*(\beta) = -713.75$

* See Section 5.1 for explanation of these statistics.

**Size or attraction variables: see Table A5.2 for formulation.

Table B6.4 Zonal Destination Choice Model, Education Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. LOGS(J)	Logsum variable calculated from zonal mode choice model for education tours (Table B4.3), for destination j	1.0	-
2. DIST-5-11(J)	If traveller's age is 5-11, tour distance to destination j	-0.430	18.9
3. DIST-12-17(J)	If traveller's age is 12-17, tour distance to destination j	-0.0992	15.8
4. DIST 17(J)	If traveller's age is over 17, tour distance to destination j	-0.434	3.94
5. DIST-FEMALE(J)	If traveller is female, tour distance to destination j	0.400	2.84
6 DIST-HI INC(J)	If average income of home base zone is "high", tour distance for destination j	0.0319	3.65
7. ROTT(J)	1 if tour to destination j is intra-zonal and is within Rotterdam	1.439	7.83
8. INTRA(J)	1 if tour to destination j is intrazonal	0.311	3.48
9. DIST-LATE(J)	If tour departs from primary destination after 17:30, tour distance, for destination j	-0.0556	3.91
10. STUDENTS (J)	Log number of Students enrolled in destination zone j	1.0	-

Summary Statistics:

Number of Observations = 1695

$L^*(0) = -5020.44$ $\rho^2 = 0.506$

$L^*(\beta) = -2479.65$

* See Section 5.1 for explanation of these statistics.

Table B7.1 Zonal Frequency Choice Model, 0/1+, Usual Work Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. 1+,CONST	1, for 1+	-1.90	26.5
2. 1+,LOGSD	Logsum from aggregate destination choice model for usual work tours (Table B6.2), for 1+	0.0355	$\|t_0\|$=1.23 $\|t_1\|$=33.4
3. 1+,DRIVER	1 if traveller is licensed to drive, for 1+	0.496	6.28
4. 1+,AGE 64	1 if traveller's age is over 64, for 1+	-3.37	13.0
5. 1+,MALE	1 if traveller is male, for 1+	1.73	22.2
6. 1+,HIINC	1 if traveller's home zone is classed as "high" income, for 1+	0.208	2.21

Summary Statistics:

Alternative	Number Available	Number Chosen
0 tours	5217	3680
1+ tours	5217	1537
TOTAL OBSERVATIONS:		5217

$L^*(0) = -3616.14$ $\quad \rho^2 = 0.319$

$L^*(\beta) = -2463.93$ $\quad \rho^2_c = 0.221$

* See Section 5.1 for explanation of these statistics.

Table B7.2 Zonal Frequency Choice Model, 0/1+, Other Work Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. 1+,CONST	1, for 1+	-4.46	23.4
2. 1+,MALE	1 if traveller is male, for 1+	1.46	8.27
3. 1+,AGE 64	1 if traveller's age is above 64, for 1+	-1.25	3.74
4. 1+,DRIVER	1 if traveller is licensed to drive, for 1+	0.974	5.26

Summary Statistics:

Alternative	Number Available	Number Chosen
0 tours	5236	4972
1+ tours	5236	264
TOTAL OBSERVATIONS:		5236

$L^*(0) = -3629.31$ $\quad \rho^2 = 0.744$

$L^*(\beta) = -930.66$ $\quad \rho_c^2 = 0.110$

* See Section 5.1 for explanation of these statistics.

Table B7.3 Zonal Frequency Choice Model, 0/1+, Education Tours, Children, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. 1+,CONST	1, for 1+	1.63	8.41
2. 1+,LOGSD	Logsum from aggregate destination choice model for education tours (Table B6.4), for 1+	0.104	$\lvert t_0 \rvert$=1.98 $\lvert t_1 \rvert$=17.0
3. 1+,AGE 12	1 if traveller's age is below 12, for 1+	0.470	3.44
4. 1+,DENS 5K	1 if traveller's home zone density exceeds 50 people per hectare, for 1+	-0.472	3.06

Summary Statistics:

Alternative	Number Available	Number Chosen
0 tours	1960	397
1+ tours	1960	1563
TOTAL OBSERVATIONS:		1960

$L^*(0) = -1358.57$ $\quad \rho^2 = 0.280$

$L^*(\beta) = -978.70$ $\quad \rho^2_c = 0.009$

* See Section 5.1 for explanation of these statistics.

Table B7.4 Zonal Frequency Choice Model, 0/1+, Education Tours, Adults, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. 1+,CONST	1, for 1+	-2.56	14.3
2. 1+,LOGSD	Logsum from aggregate destination choice model for education tours (Table B6.4), for 1+	0.170	$\|t_0\|$=2.58 $\|t_1\|$=12.6
3. 1+,AGE 64	1 if traveller's age is over 64, for 1+	-2.77	4.73
4. 1+,LDC	1 if traveller's age is between 18 and 64, traveller is male, and traveller is licensed to drive, and traveller's household owns at least one car, for 1+	-0.475	2.74
5. 1+,NLDC	1 if traveller's age is between 18 and 64, traveller is male, and traveller is not licensed to drive, and traveller's household owns at least one car, for 1+	1.85	8.53

Summary Statistics:

Alternative	Number Available	Number Chosen
0 tours	5234	5010
1+ tours	5234	224
TOTAL OBSERVATIONS:		5234

$L^*(0) = -3627.93$ $\quad \rho^2 = 0.765$

$L^*(\beta) = -853.40$ $\quad \rho^2_c = 0.077$

* See Section 5.1 for explanation of these statistics.

Table B7.5 Zonal Frequency Choice Model, 0/1+, Shopping Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. 1+,CONST	1, for 1+	-2.27	17.5
2. 1+,LOGSMD	Logsum from disaggregate joint mode destination choice model for shopping tours (Table B5.2), for 1+	0.0426	$\|t_0\|$=0.958 $\|t_1\|$=21.6
3. 1+,FEMALE	1 if traveller is female, for 1+	1.95	22.7
4. 1+,AGE 12	1 if traveller's age is below 12, for 1+	-0.708	4.10
5. 1+,CAROWN	1 if traveller's household owns at least 1 car and traveller is at least 18, for 1+	-0.328	4.29
6. 1+,RETIRED	1 if traveller is a male over 64, for 1+	1.75	9.41
7. 1+,AGE 64	1 if traveller's age is above 64, for 1+	-0.613	5.02
8. 1+,LOWINC	1 if traveller's mean home zone income is "low," for 1+	-0.353	2.37

Summary Statistics:

Alternative	Number Available	Number Chosen
0 tours	7204	5983
1+ tours	7204	1221
TOTAL OBSERVATIONS:		7204

$L^*(0) = -4993.38$ $\quad \rho^2 = 0.426$

$L^*(\beta) = -2866.56$ $\quad \rho_c^2 = 0.126$

* See Section 5.1 for explanation of these statistics.

Table B7.6 Zonal Frequency Choice Model, 0/1+, Personal Business Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. 1+,CONST	1, for 1+	-2.22	18.0
2. 1+,LOGSMD	Logsum from disaggregate joint mode/ destination choice model for personal business tours (Table B5.3), for 1+	0.0764	$\|t_0\|$=2.59 $\|t_1\|$=31.3
3. 1+,AGE 12	1 if traveller's age is below 12, for 1+	-0.616	3.54
4. 1+,FEMALE	1 if traveller is female, for 1+	0.845	9.73
5. 1+,MALE 64	1 if traveller is male and over 64 years old, for 1+	0.758	4.82

Summary Statistics:

Alternative	Number Available	Number Chosen
0 tours	7204	6435
1+ tours	7204	769
TOTAL OBSERVATIONS:		7204

$L^*(0) = -4993.38$ $\rho^2 = 0.528$

$L^*(\beta) = -2359.23$ $\rho^2_c = 0.036$

* See Section 5.1 for explanation of these statistics.

Table B7.7 Zonal Frequency Choice Model, 0/1+, Social Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. 1+,CONST	1, for 1+	-2.08	28.5
2. 1+,AGE 18	1 if traveller's age is under 18, for 1+	-0.310	2.84
3. 1+,CITY	1 if traveller's home is in Rotterdam or The Hague, for 1+	-0.231	2.87
4. 1+,FEMALE	1 if traveller is female, for 1+	0.784	9.16
5. 1+,RETIRED	1 if traveller is a male over 64, for 1+	0.850	5.90

Summary Statistics:

Alternative	Number Available	Number Chosen
0 tours	7204	6179
1+ tours	7204	1025
TOTAL OBSERVATIONS:		7204

$L^*(0) = -4993.38$ $\quad \rho^2 = 0.429$

$L^*(\beta) = -2850.12$ $\quad \rho_c^2 = 0.033$

* See Section 5.1 for explanation of these statistics.

Table B7.8 Zonal Frequency Choice Model, 0/1+, Recreation Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. 1+,CONST	1, for 1+	-2.89	12.3
2. 1+,LOGSMD	Logsum from aggregate joint mode/destination choice model for recreation tours (Table B5.5), for 1+	0.219	$\|t_0\|$=3.92 $\|t_1\|$=14.0
3. 1+, HHSIZE	Average household size (population divided by number of households) in traveller's home zone, for 1+	0.418	4.36
4. 1+,AGE 18	1 if traveller's age is below 18, for 1+	0.679	6.20
5. 1+,AGE 12	1 if traveller's age is below 12, for 1+	0.378	3.15
6. 1+,RETIRED	1 if traveller is a male over 64, for 1+	0.449	2.72
7. 1+,FEMALE-LD	1 if traveller is female and licensed to drive, for 1+	0.511	4.53

Summary Statistics:

Alternative	Number Available	Number Chosen
0 tours	7204	6354
1+ tours	7204	850
TOTAL OBSERVATIONS:		7204

$L^*(0) = -4993.38$ $\quad \rho^2 = 0.491$

$L^*(\beta) = -2539.65$ $\quad \rho_c^2 = 0.029$

* See Section 5.1 for explanation of these statistics.

Table B7.9 Zonal Frequency Choice Model, 0/1+, Miscellaneous Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. 1+,CONST	1, for 1+	-1.99	32.1
2. 1+FEMALELD	1 if traveller is female and licensed to drive, for 1+	0.495	4.88
3. 1+,AGE 18	1 if traveller is female between 18 and 64, for 1+	-0.236	1.86
4. 1+,HWIFE	1 if travaller is a female between 18 and 64, for 1+	0.522	5.81
5. 1+,AGE 12	1 if traveller's age is below 12, for 1+	-0.618	3.45
6. 1+,POPDEN 5K	1 if population per square kilometer of traveller's home zone exceeds 5000, for 1+	-0.187	2.32

Summary Statistics:

Alternative	Number Available	Number Chosen
0 tours	7203	6238
1+ tours	7203	965
TOTAL OBSERVATIONS:		7203

$L^*(0) = -4992.69$ $\quad \rho^2 = 0.456$

$L^*(\beta) = -2718.47$ $\quad \rho_c^2 = 0.042$

* See Section 5.1 for explanation of these statistics.

Table B8.1 Zonal Frequency Choice Model, Stop/Repeat Usual Work Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. GO-CONST	1, for go	-0.968	10.4
2. GO-FEMALE	1 if traveller is female, for go	-0.517	2.72
3. GO-RDAM	1 if tour's origin is Rotterdam, for go	-1.42	4.38
4. GO-HAAG	1 if tour's origin is The Hague, for go	-0.928	2.94
5. GO-BRABANT	1 if tour's origin is North Brabant, for go	-0.606	3.91
6. GO-LOGSM	logsum calculated from aggregate main mode choice model for work tours (Table B4.2), for go	1.0	-

Summary Statistics:

Alternative	Number Available	Number Chosen
stop	1811	1550
go	1811	261
TOTAL OBSERVATIONS:		1811

$L^*(0) = -1255.29$ $\quad \rho^2 = 0.455$

$L^*(\beta) = -684.35$ $\quad \rho_c^2 = 0.084$

* See Section 5.1 for explanation of these statistics.

Table B8.2 Zonal Frequency Choice Model, Stop/Repeat, Other Work Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. GO-CONST	1, for go	-1.67	11.1
2. GO-LOGSM	Logsum calculated from aggregate main mode choice model from work tours (Table B4.2), for go	1.0	-

Summary Statistics:

Alternative	Number Available	Number Chosen
stop	343	290
go	343	53
TOTAL OBSERVATIONS:		343

$L^*(0) = -237.75$ $\rho^2 = 0.387$

$L^*(\beta) = -145.71$ $\rho^2_c = 0.013$

* See Section 5.1 for explanation of these statistics.

Table B8.3 Zonal Frequency Choice Model, Stop/Repeat, Shopping Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. GO-CONST	1, for go	-1.71	6.25
2. GO-LOGSMD	Logsum calculated from aggregate joint mode/destination choice model for shopping tours (Table B5.2), for go	0.135	$\|t_0\|$=1.19

Summary Statistics:

Alternative	Number Available	Number Chosen
stop	1383	1221
go	1383	162
TOTAL OBSERVATIONS:		1383

$L^*(0) = -958.62$ $\rho^2 = 0.480$

$L^*(\beta) = -498.79$ $\rho^2_c = 0.001$

* See Section 5.1 for explanation of these statistics.

Table B8.5 Zonal Frequency Choice Model, Stop/Repeat, Social Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. GO-CONST	1, for go	-2.09	20.4
2. GO-AGE18	1 if traveller's age is below 18, for go	-0.780	2.18

Summary Statistics:

Alternative	Number Available	Number Chosen
stop	1141	1025
go	1141	116
TOTAL OBSERVATIONS:		1141

$L^*(0) = -790.88$ $\quad \rho^2 = 0.529$

$L^*(\beta) = -372.19$ $\quad \rho^2_c = 0.008$

* See Section 5.1 for explanation of these statistics.

Table B8.6 Zonal Frequency Choice Model, Stop/Repeat, Recreation Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. GO-CONST	1, for go	-1.75	14.2
2. GO-AGE 18	1 if traveller's age is below 18, for go	-0.438	2.24
3. GO-HIINC	1 if traveller's mean home zone income is "high", for go	0.471	2.20

Summary Statistics:

Alternative	Number Available	Number Chosen
Stop	990	850
Go	990	140
TOTAL OBSERVATIONS:		990

$L^*(0) = -686.21$ $\rho^2 = 0.419$

$L^*(\beta) = -398.52$ $\rho^2_c = 0.012$

* See Section 5.1 for explanation of these statistics.

Table B8.7 Zonal Frequency Choice Model, Stop/Repeat, Miscellaneous Tours, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. GO-CONST	1, for go	-1.18	8.85
2. GO-AGE 18	1 if traveller's age is below 18, for go	-1.13	3.65
3. GO-AGE 65	1 if traveller's age is over 65, for go	-1.22	3.28
4. GO-FEMALE	1 if traveller is female, age is between 18 and 64, for go	0.655	4.30

Summary Statistics:

Alternative	Number Available	Number Chosen
Stop	1350	965
Go	1350	385
TOTAL OBSERVATIONS:		1350

$L^*(0) = -935.75$ $\quad \rho^2 = 0.188$

$L^*(\beta) = -759.86$ $\quad \rho_c^2 = 0.058$

* See Section 5.1 for explanation of these statistics.

Table B8.8 Zonal Frequency Choice Model, 1/2, Education Tours, Children, Page 1 of 1

VARIABLE NAME	VARIABLE DEFINITION	ESTIMATED COEFFICIENT*	ACCURACY OF ESTIMATION*
1. 2+CONST	1, for 2+	-0.857	6.96
2. 2+,LOGSM	Logsum from aggregate mode choice model for education tours, (Table B4.3), for 2+	0.854	$\|t_0\|$=6.49
3. 2+,AGE 12	1 if traveller's age is below 12, for 2+	1.68	13.2

Summary Statistics:

Alternative	Number Available	Number Chosen
1 tour	1566	887
2+ tours	1566	679
TOTAL OBSERVATIONS:		1566

$L^*(0) = -1085.47$ $\quad \rho^2 = 0.195$

$L^*(\beta) = -873.88$ $\quad \rho_c^2 = 0.185$

* See Section 5.1 for explanation of these statistics.