

Table 3.12. Access Mode Choice Models

Variab	Acronym	Definition	Coefficient / Constant Applied for Mode						Long Trip				Business		Short Trip Commute		Recreation / Other		
			Drive/ Park	Rental Car	Pick-up/ Drop-off	Taxi	Transit	Walk	Business / Commute		Recreation / Other		Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat	Coefficient
<i>Level of Service Coefficients</i>																			
1	ivt	In-vehicle time (minutes)	x	x	x	x	x			-0.060	Constr	-0.030	Constr	-0.040	Constr	-0.030	Constr	-0.025	Constr
2	cost	Cost (\$)	x	x	x		x			-0.075	Constr	-0.120	Constr	-0.050	Constr	-0.100	Constr	-0.100	Constr
4	aivt-pkup	Pick-up/drop-off auto in-vehicle time (minutes)			x					-0.014	-2.5	-0.031	-3.1					-0.003	-0.7
5	adis-taxi	Pick-up/drop-off auto distance (miles)					x			-0.084	-4.8	-0.070	-3.8	-0.041	-0.8			-0.014	-2.4
12	ovt	Walk and wait time (minutes)						x	x	-0.147	-6.4	-0.083	-2.5	-0.100	-2.9	-0.060	Constr	-0.061	-2.5
17	carused	Car access to transit in transit access to main mode? (0/1)						x		-4.836	-4.6	-1.807	-1.9	-1.469	-1.1			-3.345	-3.6
21	railused	Rail used to access main mode? (0/1)						x		3.689	5.2	1.727	2.4	3.313	2.7			3.271	4.2
<i>Constants</i>																			
101	dp-acc	Access constant	x							4.923	Constr	4.356	Constr	4.166	Constr	5.000	Constr	3.232	Constr
102	dp-egr	Egress constant	x																
103	dp-cvr	To/from conventional rail? (0/1)	x																
104	dp-hsr	To/from high speed rail? (0/1)	x																
105	dp-alone	Traveling alone? (0/1)	x									-1.925	-3.0						
106	dp-nocars	Zero car household? (0/1)	x																
107	dp-carsltw	Fewer autos than workers? (0/1)	x							-1.547	-2.2	-1.903	-2.8			-3.775	-1.9	-1.166	-3.2
108	dp-lowinc	Low income household? (0/1)	x							-2.741	-1.8	-1.960	-2.8	-2.017	-1.2			-0.493	-1.6
109	dp-hiinc	High income household? (0/1)	x							0.709	1.6	0.339	1.4						
110	dp-misinc	Missing income household? (0/1) (for model estimation only)	x																
111	dp-laxacc	Access LAX airport? (0/1)	x							-3.128	-3.8	-1.275	-1.7						
112	dp-sfoacc	Access SFO airport? (0/1)	x							-4.082	-4.4	-3.036	-2.6						
113	dp-oakacc	Access OAK airport? (0/1)	x																
114	dp-sjcacc	Access SJC airport? (0/1)	x									-1.479	-2.1						
115	dp-sanacc	Access SAN airport? (0/1)	x							-1.410	-2.3	-1.370	-2.3						
116	dp-buracc	Access BUR airport? (0/1)	x																
201	rc-acc	Access constant		x						-5.547	Constr	-5.000	Constr						
202	rc-egr	Egress constant		x															
203	rc-cvr	To/from conventional rail? (0/1)		x						-3.000	Constr	-5.000	Constr						
204	rc-hsr	To/from high speed rail? (0/1)		x															
205	rc-alone	Traveling alone? (0/1)		x															
206	rc-nocars	Zero car household? (0/1)		x						5.110	3.2								
207	rc-carsltw	Fewer autos than workers? (0/1)		x															
208	rc-lowinc	Low income household? (0/1)		x															
209	rc-hiinc	High income household? (0/1)		x						2.953	2.4								
211	rc-misinc	Missing income household? (0/1) (for model estimation only)		x															
301	sp-onephh	One person household? (0/1)			x														
302	sp-hhsize	Household size			x					0.606	2.9	0.478	2.8			0.672	1.4	0.273	2.6
401	tx-acc	Access constant					x			1.771	Constr	-2.155	Constr	-1.682	Constr	-4.104	Constr	-0.024	Constr
402	tx-egr	Egress constant					x												
403	tx-cvr	To/from conventional rail? (0/1)					x			-2.827	-2.6	-2.265	-2.4						
404	tx-hsr	To/from high speed rail? (0/1)					x					-1.092	-2.1						
405	tx-alone	Traveling alone? (0/1)					x					-0.877	-1.8						
406	tx-nocars	Zero car household? (0/1)					x												
407	tx-carsltw	Fewer autos than workers? (0/1)					x												
408	tx-lowinc	Low income household? (0/1)					x			-3.010	-1.9								
409	tx-hiinc	High income household? (0/1)					x					0.849	1.9						
411	tx-misinc	Missing income household? (0/1) (for model estimation only)					x												
501	tr-acc	Access constant						x		4.390	Constr	-1.908	Constr	5.000	Constr	5.000	Constr	1.052	Constr
502	tr-egr	Egress constant						x											
503	tr-cvr	To/from conventional rail? (0/1)						x											
504	tr-hsr	To/from high speed rail? (0/1)						x											
505	tr-alone	Traveling alone? (0/1)						x				1.569	2.3						
506	tr-nocars	Zero car household? (0/1)						x				1.439	1.7						
507	tr-carsltw	Fewer autos than workers? (0/1)						x		1.480	2.1							1.985	2.6
508	tr-lowinc	Low income household? (0/1)						x				0.846	1.0						
509	tr-hiinc	High income household? (0/1)						x										0.000	Constr
511	tr-misinc	Missing income household? (0/1) (for model estimation only)						x											
601	wk-acc	Access constant							x	5.000	Constr	4.696	Constr	5.000	Constr	5.796	Constr	1.391	Constr
602	wk-egr	Egress constant							x										
603	wk-air	To/from airport? (0/1)							x	-3.000	Constr	-2.634	-1.0						
98	mlogsum	Logsum								0.387	5.9	0.451	3.3	0.570	4.3	0.458	2.0	1.000	Constr
99	hscale	Scale on hypothetical choices								0.682	15.9	1.000	Constr	1.000	Constr	1.000	Constr	1.000	Constr
Implied Value of Time										\$48.00		\$15.00		\$48.00		\$18.00		\$15.00	
Ratio OVT/IVT										2.45		2.76		2.51		2.00		2.43	

Table 3.13. Egress Mode Choice Models

Variable	Acronym	Definition	Coefficient / Constant Applied for Mode						Long Trip				Short Trip					
			Drive/ Rental		Pick-up/ Drop-off		Taxi Transit Walk		Business / Commute		Recreation / Other		Business		Commute		Recreation / Other	
			Park	Car					Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
<i>Level of Service Coefficients</i>																		
1	ivt	In-vehicle time (minutes)	x	x	x	x	x	-0.060	Constr	-0.030	Constr	-0.040	Constr	-0.030	Constr	-0.025	Constr	
2	cost	Cost (\$)	x	x	x		x	-0.075	Constr	-0.120	Constr	-0.050	Constr	-0.100	Constr	-0.100	Constr	
4	aivt-pkup	Pick-up/drop-off auto in-vehicle time (minutes)			x					-0.015	-3.9							
5	adis-taxi	Pick-up/drop-off auto distance (miles)				x		-0.126	-7.9	-0.052	-6.6	-0.230	-3.1			-0.096	-3.5	
12	ovt	Walk and wait time (minutes)					x	-0.139	-6.2	-0.060	Constr	-0.117	-3.1	-0.075	Constr	-0.050	Constr	
17	carused	Car access to transit in transit access to main mode? (0/1)					x					-5.118	-4.3	-4.466	-6.2			
21	railused	Rail used to access main mode? (0/1)					x			2.960	5.0					2.570	3.5	
<i>Constants</i>																		
101	dp-acc	Access constant	x															
102	dp-egr	Egress constant	x					1.751	Constr	-5.418	Constr	-0.635	Constr	-0.723	Constr	5.000	Constr	
103	dp-cvr	To/from conventional rail? (0/1)	x					-9.490	-2.5									
104	dp-hsr	To/from high speed rail? (0/1)	x					-2.251	-1.8									
105	dp-alone	Traveling alone? (0/1)	x															
106	dp-nocars	Zero car household? (0/1)	x															
107	dp-carsltw	Fewer autos than workers? (0/1)	x															
108	dp-lowinc	Low income household? (0/1)	x					-18.006	-2.5	-1.263	-1.1							
109	dp-hiinc	High income household? (0/1)	x															
110	dp-misinc	Missing income household? (0/1) (for model estimation only)	x															
111	dp-laxacc	Access LAX airport? (0/1)	x															
112	dp-sfoacc	Access SFO airport? (0/1)	x															
113	dp-oakacc	Access OAK airport? (0/1)	x															
114	dp-sjcacc	Access SJC airport? (0/1)	x															
115	dp-sanacc	Access SAN airport? (0/1)	x															
116	dp-buracc	Access BUR airport? (0/1)	x															
201	rc-acc	Access constant		x														
202	rc-egr	Egress constant		x				5.979	Constr	1.827	Constr	-0.988	Constr	-5.000	Constr	5.000	Constr	
203	rc-cvr	To/from conventional rail? (0/1)		x				-3.522	-2.4	-1.176	-3.1							
204	rc-hsr	To/from high speed rail? (0/1)		x						-0.552	-2.4							
205	rc-alone	Traveling alone? (0/1)		x						-2.588	-4.7							
206	rc-nocars	Zero car household? (0/1)		x														
207	rc-carsltw	Fewer autos than workers? (0/1)		x														
208	rc-lowinc	Low income household? (0/1)		x				-2.082	-0.9	-1.891	-3.7							
209	rc-hiinc	High income household? (0/1)		x														
211	rc-misinc	Missing income household? (0/1) (for model estimation only)		x														
301	sp-onephh	One person household? (0/1)			x													
302	sp-hhsize	Household size			x			0.974	2.8									
401	tx-acc	Access constant				x												
402	tx-egr	Egress constant				x		5.000	Constr	1.055	Constr	4.653	Constr	-1.425	Constr	5.000	Constr	
403	tx-cvr	To/from conventional rail? (0/1)				x												
404	tx-hsr	To/from high speed rail? (0/1)				x		2.507	3.6									
405	tx-alone	Traveling alone? (0/1)				x				-2.768	-4.6							
406	tx-nocars	Zero car household? (0/1)				x												
407	tx-carsltw	Fewer autos than workers? (0/1)				x												
408	tx-lowinc	Low income household? (0/1)				x		-3.002	-2.3	-1.038	-2.3							
409	tx-hiinc	High income household? (0/1)				x										1.499	2.8	
411	tx-misinc	Missing income household? (0/1) (for model estimation only)				x												
501	tr-acc	Access constant					x											
502	tr-egr	Egress constant					x	5.000	Constr	-3.655	Constr	5.000	Constr	5.000	Constr	5.000	Constr	
503	tr-cvr	To/from conventional rail? (0/1)					x	3.580	5.2	1.830	2.8							
504	tr-hsr	To/from high speed rail? (0/1)					x	0.592	0.7	1.032	1.9							
505	tr-alone	Traveling alone? (0/1)					x											
506	tr-nocars	Zero car household? (0/1)					x											
507	tr-carsltw	Fewer autos than workers? (0/1)					x											
508	tr-lowinc	Low income household? (0/1)					x			1.216	1.9					1.948	2.2	
509	tr-hiinc	High income household? (0/1)					x							-0.581	-1.1			
511	tr-misinc	Missing income household? (0/1) (for model estimation only)					x											
601	wk-acc	Access constant					x											
602	wk-egr	Egress constant					x	5.000	Constr	3.076	Constr	5.000	Constr	5.000	Constr	5.000	Constr	
603	wk-air	To/from airport? (0/1)					x	-2.074	-2.0									
98	mlogsum	Logsum						0.280	6.9	0.470	5.3	0.649	2.9	0.487	2.6	0.758	4.1	
99	hscale	Scale on hypothetical choices						0.516	9.8	1.000	Constr	0.412	3.0	0.334	5.2	0.610	4.8	
Implied Value of Time								\$48.00		\$15.00		\$48.00		\$18.00		\$15.00		
Ratio OVT/IVT								2.32		2.00		2.92		2.50		2.00		

Table 3.15. Main Mode Choice Models

Variable	Acronym	Definition	Coefficient / Constant Applied for Mode				Long Trip				Business		Short Trip		Recreation / Other	
			Car	Air	Conv. Rail	High Speed Rail	Business / Commute		Recreation / Other		Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
							Coefficient	t-stat	Coefficient	t-stat						
<i>Level of Service Coefficients</i>																
1	cost	Cost (\$)	x	x	x	x	-0.017	-12.8	-0.035	-18.5	-0.109	Constr	-0.148	-11.3	-0.108	-8.1
2	time	In-vehicle time (minutes)	x	x	x	x	-0.018	Constr	-0.011	-14.2	-0.050	Constr	-0.025	Constr	-0.014	-5.2
3	reli	Reliability (Percent on time)	x	x	x	x	0.023	Constr	0.005	1.9	0.023	1.8	0.007	0.7	0.004	0.7
4	freq	Service headway (minutes)		x	x	x	-0.179	-191.0	-0.011	-14.7	-0.050	-18.1	-0.025	-12.7	-0.014	-8.4
5	accls	Access mode choice logsum					0.136	3.4	0.204	3.7	0.463	Constr	0.330	Constr	0.303	3.4
6	egrls	Egress mode choice logsum					0.171	3.9	0.399	7.1			0.330	Constr		
7	accls<-5	Access mode choice logsum less than -5? (0/1)														
8	egrls<-5	Egress mode choice logsum less than -5? (0/1)														
9	freq>60	Service headway greater than 60 minutes? (0/1)														
10	reli>90	Reliability greater than 90 percent? (0/1)														
<i>Constants</i>																
104	c-group	Traveling in a group? (0/1)	x				1.086	4.6	1.430	9.1						
105	c-nocars	Zero car household? (0/1)	x													
106	c-carslt2	Fewer than 2 cars for household size greater than 1? (0/1)	x						-0.308	-2.3	-1.114	-1.2	-1.824	-1.3	-0.728	-2.3
107	c-hhsize	Household size	x				0.182	1.2	0.296	4.4			0.877	1.7		
108	c-hiinc	High income household? (0/1)	x								-1.232	-2.3	-1.180	-1.6		
200	a-const	Mode constant		x			-10.269	Constr	-4.683	Constr						
207	a-loinc	Low income household? (0/1)		x												
208	a-hiinc	High income household? (0/1)		x			1.180	4.6								
209	a-msinc	Missing income household? (0/1) (for model estimation only)		x												
210	a-group	Traveling in a group? (0/1)		x			-0.356	-2.8	-0.505	-3.7						
211	{lax-sfo}	Airport interchange served? (0/1)		x			5.000	Constr	5.000	Constr						
212	{sfo-lax}	Airport interchange served? (0/1)		x			5.000	Constr	5.000	Constr						
213	{lax-oak}	Airport interchange served? (0/1)		x			5.000	Constr	5.000	Constr						
214	{oak-lax}	Airport interchange served? (0/1)		x			5.000	Constr	5.000	Constr						
215	{lax-sjc}	Airport interchange served? (0/1)		x			5.000	Constr	5.000	Constr						
216	{sjc-lax}	Airport interchange served? (0/1)		x			5.000	Constr	5.000	Constr						
217	{lax-sac}	Airport interchange served? (0/1)		x			5.000	Constr	5.000	Constr						
218	{sac-lax}	Airport interchange served? (0/1)		x			5.000	Constr	5.000	Constr						
221	{bur-sfo}	Airport interchange served? (0/1)		x			4.151	Constr	4.151	Constr						
222	{sfo-bur}	Airport interchange served? (0/1)		x			5.363	Constr	5.363	Constr						
223	{bur-oak}	Airport interchange served? (0/1)		x			2.032	Constr	2.032	Constr						
224	{oak-bur}	Airport interchange served? (0/1)		x			4.145	Constr	4.145	Constr						
225	{bur-sjc}	Airport interchange served? (0/1)		x			3.757	Constr	3.757	Constr						
226	{sjc-bur}	Airport interchange served? (0/1)		x			5.000	Constr	5.000	Constr						
227	{bur-sac}	Airport interchange served? (0/1)		x			5.602	Constr	5.602	Constr						
228	{sac-bur}	Airport interchange served? (0/1)		x			1.421	Constr	1.421	Constr						
231	{ont-sfo}	Airport interchange served? (0/1)		x			5.000	Constr	5.000	Constr						
232	{sfo-ont}	Airport interchange served? (0/1)		x			5.000	Constr	5.000	Constr						
233	{ont-oak}	Airport interchange served? (0/1)		x			2.233	Constr	2.233	Constr						
234	{oak-ont}	Airport interchange served? (0/1)		x			2.269	Constr	2.269	Constr						
235	{ont-sjc}	Airport interchange served? (0/1)		x			3.263	Constr	3.263	Constr						
236	{sjc-ont}	Airport interchange served? (0/1)		x			5.000	Constr	5.000	Constr						
237	{ont-sac}	Airport interchange served? (0/1)		x			5.907	Constr	5.907	Constr						
238	{sac-ont}	Airport interchange served? (0/1)		x			3.787	Constr	3.787	Constr						
241	{sna-sfo}	Airport interchange served? (0/1)		x			4.652	Constr	4.652	Constr						
242	{sfo-sna}	Airport interchange served? (0/1)		x			2.409	Constr	2.409	Constr						
243	{sna-oak}	Airport interchange served? (0/1)		x			-0.231	Constr	-0.231	Constr						
244	{oak-sna}	Airport interchange served? (0/1)		x			-2.852	Constr	-2.852	Constr						
245	{sna-sjc}	Airport interchange served? (0/1)		x			4.348	Constr	4.348	Constr						
246	{sjc-sna}	Airport interchange served? (0/1)		x			2.963	Constr	2.963	Constr						
247	{sna-sac}	Airport interchange served? (0/1)		x			3.571	Constr	3.571	Constr						
248	{sac-sna}	Airport interchange served? (0/1)		x			-1.996	Constr	-1.996	Constr						
251	{san-sfo}	Airport interchange served? (0/1)		x			5.000	Constr	5.000	Constr						
252	{sfo-san}	Airport interchange served? (0/1)		x			5.000	Constr	5.000	Constr						
253	{san-oak}	Airport interchange served? (0/1)		x			1.704	Constr	1.704	Constr						
254	{oak-san}	Airport interchange served? (0/1)		x			1.952	Constr	1.952	Constr						
255	{san-sjc}	Airport interchange served? (0/1)		x			5.000	Constr	5.000	Constr						
256	{sjc-san}	Airport interchange served? (0/1)		x			5.000	Constr	5.000	Constr						
257	{san-sac}	Airport interchange served? (0/1)		x			5.000	Constr	5.000	Constr						
258	{sac-san}	Airport interchange served? (0/1)		x			5.686	Constr	5.686	Constr						
300	h-const	Mode constant				x	-6.757	Constr	-0.713	Constr	-7.530	Constr	-6.964	Constr	-5.685	Constr
307	h-loinc	Low income household? (0/1)				x										
308	h-hiinc	High income household? (0/1)				x	1.147	4.8								
309	h-msinc	Missing income household? (0/1) (for model estimation only)				x										
400	r-const	Mode constant			x		-4.620	Constr	1.272	Constr	-6.232	Constr	-7.126	Constr	-5.541	Constr
407	r-loinc	Low income household? (0/1)			x											
408	r-hiinc	High income household? (0/1)			x		0.613	1.4								
409	r-msinc	Missing income household? (0/1) (for model estimation only)			x											
99	Theta0099	Nesting coefficient		x	x	x	0.692	10.4	0.738	13.0	0.516	Constr	0.420	3.9	0.689	6.1
Implied Value of Time							\$63.64		\$18.45		\$27.60		\$10.12		\$7.95	