

Appendix:

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Table 1: Distribution of modes and non-work activity purposes for seven dominant tour patterns of transit commuters

	Home-based Simple			Home-based Complex												Home- and Work-based									
	Pattern 1		Pattern 2a			Pattern 2b			Pattern 2c				Pattern 2d				Pattern 3a				Pattern 3b				
	H+W+H		H+W+N+H			H+N+W+H			H+W+N+N+H				H+N+W+N+H				H+W+N+W+H				H+W+N+W+N+H				
Fraction of tours	56.00		11.51			4.87			2.73				2.14				9.21				2.78				
Trip Mode	H-W	W-H	H-W	W-N	N-H	H-N	N-W	N-H	H-W	W-N	N-N	N-H	H-N	N-W	W-N	N-H	H-W	W-N	N-W	W-H	H-W	W-N	N-W	W-N	N-H
Public transit	96.7	90.6	96.7	67.4	34.0	47.3	62.6	79.1	94.1	60.8	23.5	27.5	42.5	77.5	80.0	25.0	99.4	2.9	2.9	92.4	98.1	7.7	7.7	71.2	40.4
Walk	2.1	3.3	0.9	18.1	24.2	27.5	36.3	4.4	0.0	17.6	27.5	23.5	27.5	22.5	17.5	37.5	1.7	93.6	94.8	4.7	1.9	90.4	90.4	25.0	26.9
Car	2.5	6.0	1.9	10.2	25.1	14.3	4.4	7.7	0.0	9.8	25.5	29.4	12.5	2.5	2.5	25.0	0.6	1.7	1.7	3.5	0.0	1.9	1.9	3.8	17.3
Taxi	0.6	1.7	0.9	1.4	4.2	0.0	0.0	7.7	2.0	7.8	5.9	5.9	2.5	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	7.7
Other	1.9	2.7	1.9	7.9	14.0	12.1	2.2	4.4	3.9	5.9	17.6	15.7	15.0	0.0	2.5	17.5	0.0	1.7	0.6	1.7	0.0	0.0	0.0	5.8	9.6
Nonwork activity																									
School/Daycare/Religious			4.7			9.9			5.9 3.9				5.0 2.5				1.7				1.9 1.9				
Medical/Dental			4.2			2.2			3.9 0.0				2.5 2.5				1.7				1.9 1.9				
Shopping/Errands			41.9			17.6			37.3 43.1				5.0 27.5				9.3				7.7 34.6				
Social/Recreational			14.4			4.4			11.8 19.6				2.5 12.5				2.3				1.9 19.2				
Transport someone			6.5			26.4			13.7 5.9				45.0 37.5				0.6				0.0 5.8				
Meals			16.7			27.5			19.6 23.5				30.0 10.0				76.7				78.8 19.2				
Others			11.6			12.1			7.8 3.9				10.0 7.5				7.6				7.7 17.3				

Table 2: List of exogenous variables

Variables	Mean	SD
Total respondents	2,063	
Household characteristics		
Household size	2.40	1.24
No.of household vehicles	1.82	0.97
Monthly household income(USD)		
Binary: 1= Low income (less than \$35K) (baseline)	0.19	0.16
Binary: 1= Middle income (\$35K to \$100K)	0.35	0.23
Binary: 1= High income (\$100K or more)	0.45	0.25
No. of workers	1.71	0.72
Presence of child aged 0-5		
Binary: 1= Yes, 0 = No	0.02	0.02
Presence of child aged 6-17		
Binary: 1= Yes, 0 = No	0.15	0.13
Personal characteristics		
Age	42.43	13.77
Gender		
Binary: 1= Male, 0 = Female	0.51	0.25
Ethnicity status		
Binary: 1= Hispanic, 0 = Others	0.11	0.10
Multiple job status		
Binary: 1= Yes, 0 = No	0.08	0.08
Type of employment		
Binary: 1= Full time, 0 = Part time	0.85	0.13
Flexibility in work arrival time		
Binary: 1= Yes, 0 = No	0.53	0.23
Residential location variables		
MSA rail status for household		

Binary: 1= MSA has rail, 0= MSA does not have rail or hh not in MSA	0.61	0.24
Worker density (Workers per sq mile)	3190.42	1842.48
Residential density (Housing unit per sq mile)	8157.77	9584.55
Distance from home to work place (mile)	18.24	22.12

Table 3: List of endogenous variables

Variables	% cases >0	For cases>0	
		Mean	SD
Technology use			
Count of rideshare app usage in last 30 days	33.4	5.70	5.45
Count of times purchased online in last 30 days	71.7	5.03	4.80
<i>Frequency of internet use</i>			
Binary: 1= Daily, 0 = Not Daily		0.96	0.3
Attitudinal factors			
<i>Travel is a financial burden</i>			
1= Strong disagree	6.06	—	—
2= Disagree	23.61	—	—
3=Neither agree or disagree	28.4	—	—
4= Agree	29.63	—	—
5= Strong agree	12.28	—	—
<i>Price of gasoline affects travel</i>			
1= Strong disagree	19.92	—	—
2= Disagree	26.33	—	—
3=Neither agree or disagree	21.69	—	—
4= Agree	20.9	—	—
5= Strong agree	11.14	—	—
<i>Public transit to reduce financial burden of travel</i>			
1= Strong disagree	8.78	—	—
2= Disagree	12.77	—	—
3=Neither agree or disagree	12.28	—	—
4= Agree	31.46	—	—
5= Strong agree	34.71	—	—
<i>Walk to reduce financial burden of travel</i>			
1= Strong disagree	13.17	—	—
2= Disagree	24.8	—	—
3=Neither agree or disagree	18.98	—	—
4= Agree	28.21	—	—
5= Strong agree	14.84	—	—
Activity-travel duration (min)			
Work activity time (min)	—	491.31	112.30
Work travel time (min)	—	54.20	36.44
NW activity time (min)	—	70.31	85.42
NW travel time (min)	—	46.75	41.65
All trips by transit in a tour			
Binary: 1 = Yes, 0 = No	—	0.68	0.22
All trips by multimode in a tour			
Binary: 1 = Yes, 0 = No	—	0.21	0.17
Tour pattern choice (1= Yes, 0 = No)			
Home-based Simple	51.34	—	—
Home-based Complex	23.34	—	—
Home- and Work-based	17.39	—	—

Table 4: Total Effects of Exogenous and Endogenous Variables

From		To															
Variable (total effects)		Technology use			Attitudinal factors				Activity-travel attributes						Tour choice pattern		
		Count of rideshare app	Count of online purchase	Freq of internet use	Travel is a burden	Fuel price affects travel	Transit reduces burden	Walk reduces burden	Work activity time (min)	Work travel time (min)	NW activity time (min)	NW travel time (min)	All trips by transit in a tour	All trips by transit and other modes in a tour	Home-based Simple	Home-based Complex	Home- and Work-based
Household characteristics	HH size	-0.234**	-0.287*	---	0.059**	0.148*	---	---	---	0.036*	-0.150*	-0.161*	0.032**	-0.025**	0.117*	---	-0.160*
	No. of vehicles	-0.378*	0.257*	---	---	0.121*	-0.186*	-0.224*	---	---	-0.091**	---	---	---	0.089*	---	---
	Middle income	---	1.021*	0.043*	-0.237*	-0.428*	---	---	0.277*	-0.089*	---	---	-0.072**	---	-0.257*	---	0.456*
	High income	1.716*	2.428*	0.059*	-0.554*	-0.999*	-0.219*	-0.423*	---	-0.117*	0.394*	0.248**	---	---	-0.396*	-0.189**	0.734*
	No. of workers	---	---	---	---	-0.080**	---	---	---	---	---	---	---	---	---	---	---
	Presence of child aged 0-5	---	1.021*	---	---	---	---	---	---	---	---	0.807*	---	0.170*	-0.391**	---	---
	Presence of child aged 6-17	---	---	---	---	---	---	---	0.275*	---	---	0.296*	-0.141*	0.082*	-0.335*	0.201**	---
Personal characteristics	Age	-0.082*	-0.051*	-0.002*	---	---	0.004**	---	---	0.002*	---	---	---	---	---	---	---
	Male	---	-0.385**	---	-0.170*	---	---	---	---	---	-0.236*	-0.255*	---	---	---	-0.233*	---
	Hispanic	0.693*	---	-0.034*	0.201*	---	---	---	---	---	---	---	---	---	---	---	---
	Multiple job	---	---	---	---	---	---	0.236*	---	---	---	---	---	---	---	---	---
	Full time job	---	---	0.029*	---	---	0.293*	---	0.322*	---	---	---	---	---	---	-0.162**	0.221**
	Flexibility in work arrival time	---	0.704*	0.019**	-0.239*	-0.273*	---	-0.185*	---	-0.060*	0.245*	---	---	---	-0.148*	---	0.144**
Location factors	MSA has rail	1.046*			0.221*	-0.245*	-0.219*	---		0.160*	---	---	---	-0.055*	---	---	---
	Workers density				---	---	---	---					---	---	---	---	---
	Residential density	---	---	---	---	---	---	0.070**		---	0.189*	0.149*	---	---	-0.091*	0.096*	---
	Distance from home to workplace (mile)	-0.309*	---		0.162*	0.148*	---	-0.116*		0.402*	---	0.122*	---	---	---	---	-0.103*
Technology use	Count of rideshare app														---	---	---
	Count of online purchase														-0.012**	0.015*	---

From		To															
Variable (total effects)		Technology use			Attitudinal factors				Activity-travel attributes						Tour choice pattern		
		Count of rideshare app	Count of online purchase	Freq of internet use	Travel is a burden	Fuel price affects travel	Transit reduces burden	Walk reduces burden	Work activity time (min)	Work travel time (min)	NW activity time (min)	NW travel time (min)	All trips by transit in a tour	All trips by transit and other modes in a tour	Home-based Simple	Home-based Complex	Home- and Work-based
	Freq of internet use														-0.323**	---	0.973*
Attitudinal factors	Travel is a burden														0.109*	---	---
	Fuel price affects travel														---	---	-0.073*
	Transit reduces burden														-0.063*	---	0.050**
	Walk reduces burden														---	0.051**	---
Activity-travel attributes	Work activity time (min)								---	0.244*	0.211*	0.114*	0.032*		0.331*	0.166*	0.206*
	Work travel time (min)														---	-0.095*	---
	NW activity time (min)										0.864*	-0.095*	0.097*		-0.528*	0.358*	0.312*
	NW travel time (min)														---	0.397*	-0.215*
	All trips by transit in a tour														---	-0.537*	0.407*
	All trips by transit & other modes in a tour														---	0.298*	-0.673*
Tour choice pattern	Home-based Simple															-0.504*	-0.499**
	Home-based Complex																
	Home- and Work-based																

* : 5% level of significance

** : 10% level of significance