

**Northern California / Southern Oregon Rural
Intelligent Transportation Systems (ITS) Areawide
Travel and Safety Improvement Project**

Task 2.4
**Traveler Needs Survey
Significance Testing
Volume II**

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INTRODUCTION

The demographic data collected in the Northern California / Southern Oregon Traveler Needs Survey were used to define the categories in the significance testing. Our analyses included significance testing based upon t-statistics to determine whether certain demographic variables (i.e. males, residents, specified age groups) significantly influence the response to various opinion-based questions. The chi-squared analysis is used to determine if differences in responses across groups (e.g., residents vs. tourists, males vs. females, or between specified age groups) are statistically significant at a predetermined level of probability. For this analysis, a 95% confidence level ($p \leq 0.05$) was selected for reporting purposes. Thus, statistically significant differences in responses meant there was only five chances in one hundred that the variation across categories was due to something other than actual differences (e.g., biased samples) in the groups being analyzed.

Before performing the modeling exercises to determine variable significance, minor data transformations were necessary. Data that had multiple non-numeric choices (i.e., urban/rural/suburban or work/school/shopping) were transformed into singular indicator variables. Data that had multiple choices with a range of numerical values were transformed one of two ways: (1) average values for each range were determined and assigned so that a single variable resulted for all values or (2) an indicator variable was created for each range of values so that multiple variables resulted. For example, a single new variable, *avinc*, was created by determining the average values for each of the income ranges specified. Interpretation of this variable led to conclusions about how increasing or decreasing income levels likely affect the opinion-based response. Nothing definitive could be said about any particular income group using this variable. Alternatively, four indicator variables (*povinc*, *lowinc*, *midinc* and *highinc*) were created for each income range. This specification allowed conclusions to be drawn specifically about certain income groups.

Model interpretation is as follows. Inclusion of the variable in the model indicated that the variable significantly affected the response to the particular opinion-based question. For this analysis, a 95% confidence interval was used which corresponds to a t-statistic value of 1.96. Considering the example on the following page, familiar travelers and those traveling in the area for reasons related to school were found to significantly affect “Lack of information from signs along the roadway”. The variable “one” is included in each model to allow for estimation of the β_0 value in the ordered probit model. Interpreting these results further, the negative sign preceding the estimated coefficient indicates a propensity to respond toward the lower or negative end of the ranking. The magnitude of the coefficient indicates the relative strength of variable influence on the outcome, although with more complicated model forms such as the ordered probits, interpretation of the coefficient magnitude is challenged.

For example...

Lack of information from signs along the roadway

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	0.63771	5.40147e-002	11.80621
fam	-0.29140	6.78777e-002	-4.29302
sch	-0.89174	0.32999	-2.70234
Thresh 1	1.05593	3.36023e-002	31.42434
Thresh 2	1.68439	4.10274e-002	41.05525
Thresh 3	2.58830	8.87820e-002	29.15343

A copy of the Traveler Needs Survey is included in Appendix A, as well as the frequencies and percentages for each question in Appendix B.

Table 1: Encountering slow moving vehicles like snowplows, farm equipment or RV's

```
-Probit dep[p1] ind[one ca or work shop med rv grad somecoll avmiles]
maxit[50]
```

Dependent variable: p1

Value	Label	Count	Percent	Upper Threshold
1		254	24.42	0.000
2		501	48.17	0.601
3		157	15.10	1.160
4		118	11.35	2.341
99		10	0.96	

At convergence grad * dir = 0.000530

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	0.39575	8.60624e-002	4.59839
ca	0.28991	7.91960e-002	3.66071
or	0.25007	9.11767e-002	2.74271
work	0.24454	9.20078e-002	2.65783
shop	0.73374	0.23906	3.06933
med	-1.55155	0.67915	-2.28455
rv	-0.37927	0.10605	-3.57626
grad	-0.18968	9.42874e-002	-2.01172
somecoll	-0.23749	8.32149e-002	-2.85388
avmiles	1.14871e-003	2.48851e-004	4.61606
Thresh 1	1.35298	3.51394e-002	38.50313
Thresh 2	1.93888	4.14897e-002	46.73164
Thresh 3	3.16224	0.11745	26.92298

```
auxiliary statistics          at convergence          initial
log likelihood                -1283.26661        -1521.33294
number of observations         1040
percent correctly predicted    48.36538
```

Table 2: Running off the roadway

dep[p2] ind[one rur shop somecoll avinc coll] maxit[50]

Dependent variable: p2

Value	Label	Count	Percent	Upper Threshold
1		446	42.88	0.000
2		390	37.50	0.855
3		100	9.62	1.282
4		86	8.27	2.113
99		18	1.73	

At convergence grad * dir = 0.000431

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	0.34756	6.72317e-002	5.16958
rur	0.18280	7.21124e-002	2.53494
shop	0.84800	0.23416	3.62148
somecoll	-0.33637	8.54166e-002	-3.93800
avinc	-1.86403e-006	8.23630e-007	-2.2631-Probit
coll	-0.29707	8.87881e-002	-3.34584
Thresh 1	1.06068	3.28346e-002	32.30373
Thresh 2	1.50146	3.88758e-002	38.62203
Thresh 3	2.36409	9.03498e-002	26.16591

auxiliary statistics	at convergence	initial
log likelihood	-1259.32581	-1295.29034
number of observations	1040	
percent correctly predicted	43.17308	

Table 3: Lack of information from signs along the roadway

-Probit dep[p3] ind[one fam sch] maxit[50]

Dependent variable: p3

Value	Label	Count	Percent	Upper Threshold
1		340	32.69	0.000
2		412	39.62	0.592
3		171	16.44	1.213
4		99	9.52	2.113
99		18	1.73	

At convergence grad * dir = 0.000553

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	0.63771	5.40147e-002	11.80621
fam	-0.29140	6.78777e-002	-4.29302
sch	-0.89174	0.32999	-2.70234
Thresh 1	1.05593	3.36023e-002	31.42434
Thresh 2	1.68439	4.10274e-002	41.05525
Thresh 3	2.58830	8.87820e-002	29.15343

auxiliary statistics	at convergence	initial
log likelihood	-1363.31508	-1468.32941
number of observations	1040	
percent correctly predicted	40.09615	

Table 4: Debris, objects or animals on the roadway

-Probit dep[p4] ind[one grad somecoll tech oth rec part self truck] maxit[50]

Dependent variable: p4

Value	Label	Count	Percent	Upper Threshold
1		249	23.94	0.000
2		490	47.12	0.555
3		149	14.33	1.053
4		140	13.46	2.272
99		12	1.15	

At convergence grad * dir = 0.000382

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	0.97575	6.63115e-002	14.71470
grad	-0.26623	9.69398e-002	-2.74635
somecoll	-0.24536	8.36473e-002	-2.93329
tech	0.27500	0.11735	2.34339
oth	-0.31714	7.51848e-002	-4.21812
rec	-0.14940	7.03834e-002	-2.12260
part	-0.37641	0.13757	-2.73609
self	0.28672	0.12793	2.24121
truck	0.26634	0.12867	2.06995
Thresh 1	1.32071	3.30689e-002	39.93808
Thresh 2	1.84063	3.79784e-002	48.46526
Thresh 3	3.08771	0.10822	28.53048

auxiliary statistics	at convergence	initial
log likelihood	-1309.98142	-1559.76969
number of observations	1040	
percent correctly predicted	48.26923	

**Table 5: Passing trucks and other heavy vehicles
(clearance/visibility)**

-Probit dep[p5] ind[one ca or rv shop urb] maxit[50]

Dependent variable: p5

Value	Label	Count	Percent	Upper Threshold
1		154	14.81	0.000
2		413	39.71	0.114
3		281	27.02	0.898
4		186	17.88	2.526
99		6	0.58	

At convergence grad * dir = 0.000578

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	0.96191	6.55302e-002	14.67885
ca	0.38942	7.74464e-002	5.02825
or	0.26586	8.77191e-002	3.03078
rv	-0.32310	0.10120	-3.19252
shop	0.57290	0.23826	2.40456
urb	-0.19955	6.92037e-002	-2.88352
Thresh 1	1.19441	3.55052e-002	33.64030
Thresh 2	1.99765	4.20351e-002	47.52340
Thresh 3	3.65763	0.14439	25.33155

auxiliary statistics	at convergence	initial
log likelihood	-1368.01805	-2104.53734
number of observations	1040	
percent correctly predicted	40.09615	

Table 6: Driving on hills or curves

-Probit dep[p6] ind[one male rv shop coll tech] maxit[50]

Dependent variable: p6

Value	Label	Count	Percent	Upper Threshold
1		253	24.33	0.000
2		484	46.54	0.549
3		190	18.27	1.234
4		106	10.19	2.471
99		7	0.67	

At convergence grad * dir = 0.000532

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	0.88661	5.94442e-002	14.91493
male	-0.24427	6.85649e-002	-3.56264
rv	-0.23048	0.10197	-2.26015
shop	0.58754	0.23405	2.51036
coll	-0.20942	8.20958e-002	-2.55086
tech	0.39954	0.11343	3.52229
Thresh 1	1.27892	3.63707e-002	35.16337
Thresh 2	1.98696	4.53223e-002	43.84062
Thresh 3	3.25582	0.13404	24.28996

auxiliary statistics	at convergence	initial
log likelihood	-1303.15672	-1533.88554
number of observations	1040	
percent correctly predicted	46.63462	

Table 7: Road conditions like ice, snow, rain or fog

-Probit dep[p7] ind[one rv shop ret] maxit[50]

Dependent variable: p7

Value	Label	Count	Percent	Upper Threshold
1		181	17.40	0.000
2		449	43.17	0.268
3		211	20.29	0.873
4		190	18.27	2.380
99		9	0.87	

At convergence grad * dir = 0.000720

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	0.90995	4.46240e-002	20.39151
rv	-0.23702	0.10409	-2.27713
shop	0.90156	0.24034	3.75119
ret	0.15084	7.33026e-002	2.05772
Thresh 1	1.21748	3.25500e-002	37.40325
Thresh 2	1.83340	3.76360e-002	48.71396
Thresh 3	3.37149	0.12345	27.31057

auxiliary statistics	at convergence	initial
log likelihood	-1383.65851	-1836.44467
number of observations	1040	
percent correctly predicted	44.13462	

Table 8: Driving through construction zones

-Probit dep[p8] ind[one rv pass avmiles part stud tech grad] maxit[50]

Dependent variable: p8

Value	Label	Count	Percent	Upper Threshold
1		207	19.90	0.000
2		462	44.42	0.367
3		184	17.69	0.916
4		180	17.31	2.471
99		7	0.67	

At convergence grad * dir = 0.000852

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	0.81512	6.82921e-002	11.93572
rv	-0.21528	0.10053	-2.14144
pass	-0.38680	0.18113	-2.13544
avmiles	6.26904e-004	2.42670e-004	2.58336
part	-0.35239	0.13712	-2.56989
stud	-0.52198	0.22197	-2.35152
tech	0.31782	0.11320	2.80767
grad	-0.20937	9.11886e-002	-2.29599
Thresh 1	1.23797	3.22323e-002	38.40780
Thresh 2	1.80328	3.73887e-002	48.23076
Thresh 3	3.38409	0.13423	25.21141

auxiliary statistics	at convergence	initial
log likelihood	-1356.84255	-1710.58749
number of observations	1040	
percent correctly predicted	44.42308	

Table 9: Destination visitors bureau or chamber of commerce

-Probit dep[s1] ind[one fam urb hihimi male tech grad ret unemp] maxit[50]

Dependent variable: s1

Value	Label	Count	Percent	Upper Threshold
1		381	36.63	0.000
2		448	43.08	0.831
3		164	15.77	1.693
4		32	3.08	2.186
99		15	1.44	

At convergence grad * dir = 0.000255

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	0.37163	7.63596e-002	4.86679
fam	-0.23822	7.06243e-002	-3.37303
urb	0.15462	7.10059e-002	2.17762
hihimi	-0.27669	7.68608e-002	-3.59984
male	-0.16530	7.16389e-002	-2.30740
tech	0.31176	0.11644	2.67748
grad	0.32619	9.19272e-002	3.54833
ret	0.43186	7.33782e-002	5.88542
unemp	0.54027	0.20190	2.67593
Thresh 1	1.23331	4.21152e-002	29.28435
Thresh 2	2.13667	5.54976e-002	38.50030
Thresh 3	2.65530	8.85164e-002	29.99786

auxiliary statistics	at convergence	initial
log likelihood	-1194.05898	-1285.70697
number of observations	1040	
percent correctly predicted	46.05769	

Table 10: State departments of tourism

-Probit dep[s2] ind[one ca or shop avmiles ret] maxit[50]

Dependent variable: s2

Value	Label	Count	Percent	Upper Threshold
1		485	46.63	0.000
2		379	36.44	0.957
3		130	12.50	1.704
4		22	2.12	1.994
99		24	2.31	

At convergence grad * dir = 0.000403

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	0.32205	8.24621e-002	3.90544
ca	-0.31496	8.00894e-002	-3.93257
or	-0.43463	9.30372e-002	-4.67156
shop	0.62459	0.23780	2.62654
avmiles	-7.07026e-004	2.60959e-004	-2.70934
ret	0.38173	7.41146e-002	5.15055
Thresh 1	1.08286	4.08051e-002	26.53746
Thresh 2	1.85690	4.63688e-002	40.04634
Thresh 3	2.15740	6.17277e-002	34.95019

auxiliary statistics	at convergence	initial
log likelihood	-1166.79987	-1201.08917
number of observations	1040	
percent correctly predicted	47.11538	

Table 11: Television / radio advertisements

-Probit dep[s3] ind[one coll grad] maxit[50]

Dependent variable: s3

Value	Label	Count	Percent	Upper Threshold
1		439	42.21	0.000
2		421	40.48	0.942
3		138	13.27	1.746
4		24	2.31	2.113
99		18	1.73	

At convergence grad * dir = 0.000428

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	0.33997	4.58451e-002	7.41572
coll	-0.35219	8.64612e-002	-4.07344
grad	-0.38045	9.75315e-002	-3.90080
Thresh 1	1.15595	4.10581e-002	28.15408
Thresh 2	1.96252	5.02302e-002	39.07060
Thresh 3	2.32620	7.16317e-002	32.47445

auxiliary statistics	at convergence	initial
log likelihood	-1188.52294	-1217.17709
number of observations	1040	
percent correctly predicted	48.26923	

Table 12: Kiosks, i.e. small computerized information centers

-Probit dep[s4] ind[one avmiles high ret] maxit[50]

Dependent variable: s4

Value	Label	Count	Percent	Upper Threshold
1		602	57.88	0.000
2		281	27.02	1.032
3		101	9.71	1.609
4		28	2.69	1.928
99		28	2.69	

At convergence grad * dir = 0.000652

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	4.91787e-003	7.03738e-002	6.98821e-002
avmiles	-9.98855e-004	2.68661e-004	-3.71789
high	-0.37652	9.76165e-002	-3.85713
ret	0.20629	7.64176e-002	2.69954
Thresh 1	0.85128	3.69252e-002	23.05411
Thresh 2	1.43564	4.18424e-002	34.31058
Thresh 3	1.75901	5.87436e-002	29.94390

auxiliary statistics	at convergence	initial
log likelihood	-1117.9217	-1150.99227
number of observations	1040	
percent correctly predicted	57.88462	

Table 13: Travel magazines or newspaper travel sections

-Probit dep[s5] ind[one rec fam urb avmiles avinc male] maxit[50]

Dependent variable: s5

Value	Label	Count	Percent	Upper Threshold
1		246	23.65	0.000
2		408	39.23	0.329
3		312	30.00	1.467
4		60	5.77	2.213
99		14	1.35	

At convergence grad * dir = 0.000572

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	0.77186	8.90070e-002	8.67186
rec	0.18674	7.12632e-002	2.62045
fam	-0.17571	6.96423e-002	-2.52297
urb	0.18852	6.97262e-002	2.70369
avmiles	-5.81779e-004	2.57913e-004	-2.25572
avinc	2.12131e-006	7.93097e-007	2.67472
male	-0.15137	6.93983e-002	-2.18120
Thresh 1	1.07190	3.87709e-002	27.64705
Thresh 2	2.22585	5.24151e-002	42.46576
Thresh 3	2.96439	9.36707e-002	31.64696

auxiliary statistics	at convergence	initial
log likelihood	-1325.35665	-1613.67003
number of observations	1040	
percent correctly predicted	39.23077	

Table 14: The Internet

-Probit dep[s6] ind[one young mid avmiles avinc high self] maxit[50]

Dependent variable: s6

Value	Label	Count	Percent	Upper Threshold
1		648	62.31	0.000
2		172	16.54	0.801
3		149	14.33	1.489
4		43	4.13	1.928
99		28	2.69	

At convergence grad * dir = 0.000834

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	-0.32711	8.50206e-002	-3.84738
young	0.47456	0.14589	3.25277
mid	0.21422	8.86296e-002	2.41697
avmiles	-5.68650e-004	2.74960e-004	-2.06812
avinc	3.05501e-006	8.73067e-007	3.49917
high	-0.44911	0.10302	-4.35960
self	-0.42966	0.15402	-2.78969
Thresh 1	0.51090	3.13903e-002	16.27560
Thresh 2	1.21407	4.26269e-002	28.48140
Thresh 3	1.64350	6.26151e-002	26.24759

auxiliary statistics	at convergence	initial
log likelihood	-1116.99169	-1190.70205
number of observations	1040	
percent correctly predicted	62.30769	

Table 15: Tourist attractions (parks/recreation/historical)

-Probit dep[t1] ind[one or senior fam midmi male high] maxit[50]

Dependent variable: t1

Value	Label	Count	Percent	Upper Threshold
1		129	12.40	0.000
2		294	28.27	0.250
3		357	34.33	0.674
4		202	19.42	1.591
99		58	5.58	

At convergence grad * dir = 0.000511

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	1.69984	7.10822e-002	23.91368
or	-0.21516	7.84202e-002	-2.74362
senior	-0.17831	7.41442e-002	-2.40496
fam	-0.23826	6.93648e-002	-3.43486
midmi	-0.39769	0.10661	-3.73018
male	-0.28411	6.82894e-002	-4.16042
high	-0.26370	8.33579e-002	-3.16349
Thresh 1	0.94133	3.55952e-002	26.44541
Thresh 2	1.89226	3.90115e-002	48.50534
Thresh 3	2.87850	6.37942e-002	45.12158

auxiliary statistics	at convergence	initial
log likelihood	-1479.18173	-1942.8483
number of observations	1040	
percent correctly predicted	33.46154	

Table 16: Distance to destination

-Probit dep[t2] ind[one avage rec gen fam male rv high full part] maxit[50]

Dependent variable: t2

Value	Label	Count	Percent	Upper Threshold
1		88	8.46	0.000
2		254	24.42	0.250
3		374	35.96	0.491
4		266	25.58	1.591
99		58	5.58	

At convergence grad * dir = 0.000761

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	1.99526	0.15842	12.59477
avage	5.44271e-003	1.84407e-003	2.95146
rec	-0.48968	8.20233e-002	-5.97000
gen	-0.46243	9.75699e-002	-4.73952
fam	-0.19831	6.95408e-002	-2.85171
male	-0.32858	6.98589e-002	-4.70344
rv	-0.31842	0.10401	-3.06137
high	-0.21845	8.32689e-002	-2.62339
full	-0.21971	7.98587e-002	-2.75125
part	-0.28839	0.13892	-2.07598
Thresh 1	0.96935	3.77382e-002	25.68630
Thresh 2	1.95160	4.05794e-002	48.09329
Thresh 3	3.18453	7.06273e-002	45.08925

auxiliary statistics	at convergence	initial
log likelihood	-1422.45912	-2080.85572
number of observations	1040	
percent correctly predicted	34.61538	

Table 17: The best route to destination

-Probit dep[t3] ind[one mid work fam male auto truck cycle rv pass] maxit[50]

Dependent variable: t3

Value	Label	Count	Percent	Upper Threshold
1		61	5.87	0.000
2		174	16.73	0.250
3		380	36.54	0.450
4		356	34.23	1.504
99		69	6.63	

At convergence grad * dir = 0.000771

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	3.15962	0.15551	20.31845
mid	-0.31948	8.34665e-002	-3.82762
work	0.32099	0.10390	3.08939
fam	-0.25138	7.14780e-002	-3.51687
male	-0.14974	7.13832e-002	-2.09764
auto	-1.26285	0.16449	-7.67721
truck	-1.21158	0.21692	-5.58528
cycle	-2.07963	0.32189	-6.46059
rv	-1.56480	0.18410	-8.49986
pass	-1.63590	0.23122	-7.07502
Thresh 1	0.84271	3.98784e-002	21.13209
Thresh 2	1.87111	4.25936e-002	43.92933
Thresh 3	3.32746	7.25858e-002	45.84174

auxiliary statistics	at convergence	initial
log likelihood	-1357.62958	-2096.54475
number of observations	1040	
percent correctly predicted	39.71154	

Table 18: Location of traveler services (rest stops, visitor information centers, service stations, etc.)

-Probit dep[t4] ind[one young mid old work fam sub avmiles male pass nohigh self] maxit[50]

Dependent variable: t4

Value	Label	Count	Percent	Upper Threshold
1		86	8.27	0.000
2		213	20.48	0.250
3		366	35.19	0.357
4		324	31.15	1.654
99		51	4.90	

At convergence grad * dir = 0.000933

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	2.11320	9.84532e-002	21.46401
young	-0.72543	0.14456	-5.01811
mid	-0.49531	9.63939e-002	-5.13840
old	-0.34125	7.99442e-002	-4.26859
work	0.24252	9.56387e-002	2.53577
fam	-0.25852	7.03279e-002	-3.67598
sub	-0.26447	8.24613e-002	-3.20724
avmiles	5.08339e-004	2.45026e-004	2.07463
male	-0.42622	6.96742e-002	-6.11728
pass	-0.70832	0.17427	-4.06445
nohigh	0.60364	0.25059	2.40890
self	-0.32972	0.12730	-2.59012
Thresh 1	0.86947	3.76726e-002	23.07962
Thresh 2	1.84423	4.14053e-002	44.54094
Thresh 3	3.26702	7.41216e-002	44.07655

auxiliary statistics	at convergence	initial
log likelihood	-1400.29073	-2256.07512
number of observations	1040	
percent correctly predicted	37.21154	

Table 19: Locations of traffic delays due to special events, road closures, construction zones and/or detours

-Probit dep[t5] ind[one young work rec gen fam sub hihimi male] maxit[50]

Dependent variable: t5

Value	Label	Count	Percent	Upper Threshold
1		89	8.56	0.000
2		261	25.10	0.250
3		372	35.77	0.508
4		265	25.48	1.636
99		53	5.10	

At convergence grad * dir = 0.000770

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	2.39487	0.11811	20.27679
young	-0.31212	0.13578	-2.29867
work	-0.65739	0.14110	-4.65888
rec	-0.94602	0.12277	-7.70581
gen	-0.93638	0.13432	-6.97121
fam	-0.15174	7.08225e-002	-2.14247
sub	-0.19801	8.24990e-002	-2.40010
hihimi	0.30204	7.30656e-002	4.13382
male	-0.17702	6.88812e-002	-2.56997
Thresh 1	0.96984	3.73153e-002	25.99033
Thresh 2	1.94010	4.05333e-002	47.86439
Thresh 3	3.19884	7.27704e-002	43.95794

auxiliary statistics	at convergence	initial
log likelihood	-1427.00534	-2059.74262
number of observations	1040	
percent correctly predicted	36.63462	

Table 20: Locations of accidents of incidents

-Probit dep[t6] ind[one ca young rec gen male pass coll grad full part]
maxit[50]

Dependent variable: t6

Value	Label	Count	Percent	Upper Threshold
1		108	10.38	0.000
2		258	24.81	0.250
3		330	31.73	0.438
4		285	27.40	1.583
99		59	5.67	

At convergence grad * dir = 0.000965

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	2.10965	9.30069e-002	22.68274
ca	0.20562	6.81065e-002	3.01916
young	-0.28723	0.13602	-2.11158
rec	-0.53088	8.13434e-002	-6.52640
gen	-0.37063	9.70903e-002	-3.81739
male	-0.26291	6.86613e-002	-3.82916
pass	-0.39445	0.17525	-2.25077
coll	-0.35033	8.31104e-002	-4.21525
grad	-0.22470	9.20161e-002	-2.44199
full	-0.39901	7.06381e-002	-5.64868
part	-0.50549	0.13587	-3.72046
Thresh 1	0.92243	3.55894e-002	25.91879
Thresh 2	1.79693	3.88739e-002	46.22457
Thresh 3	3.06006	6.90433e-002	44.32090

auxiliary statistics	at convergence	initial
log likelihood	-1454.13677	-2085.60457
number of observations	1040	
percent correctly predicted	32.40385	

Table 21: Weather conditions throughout your area of travel

```
-Probit dep[t7] ind[one ca young mid rec gen fam male pass part self]
maxit[50]
```

Dependent variable: t7

Value	Label	Count	Percent	Upper Threshold
1		55	5.29	0.000
2		201	19.33	0.250
3		340	32.69	0.450
4		391	37.60	1.636
99		53	5.10	

At convergence grad * dir = 0.000852

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	2.57132	9.90642e-002	25.95609
ca	0.15863	7.13162e-002	2.22439
young	-0.69541	0.13811	-5.03527
mid	-0.37192	8.22371e-002	-4.52255
rec	-0.61495	8.29728e-002	-7.41148
gen	-0.47277	9.92563e-002	-4.76316
fam	-0.23130	7.33691e-002	-3.15251
male	-0.29367	7.05999e-002	-4.15958
pass	-0.45769	0.17724	-2.58232
part	-0.33276	0.13583	-2.44983
self	-0.29557	0.12899	-2.29132
Thresh 1	0.97830	3.94626e-002	24.79053
Thresh 2	1.89528	4.14950e-002	45.67491
Thresh 3	3.49989	7.66938e-002	45.63457

```
auxiliary statistics          at convergence          initial
log likelihood                -1345.43663        -2046.50964
number of observations         1040
percent correctly predicted    40.48077
```

Table 22: Knowing trip-planning assistance is available from rest stops or other places along you route

```
-Probit dep[t8] ind[one ca young mid rec gen fam avinc male coll part]
maxit[50]
```

Dependent variable: t8

Value	Label	Count	Percent	Upper Threshold
1		156	15.00	0.000
2		286	27.50	0.250
3		318	30.58	0.615
4		224	21.54	1.609
99		56	5.38	

At convergence grad * dir = 0.000733

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	2.00351	9.81298e-002	20.41692
ca	0.22927	7.10109e-002	3.22871
young	-0.57552	0.13924	-4.13324
mid	-0.29693	8.11007e-002	-3.66129
rec	-0.31074	8.09879e-002	-3.83692
gen	-0.33792	9.73504e-002	-3.47118
fam	-0.41099	7.25495e-002	-5.66496
avinc	-3.14149e-006	7.92562e-007	-3.96372
male	-0.24495	6.94712e-002	-3.52598
coll	-0.32372	8.17385e-002	-3.96043
part	-0.41059	0.13327	-3.08082
Thresh 1	0.89258	3.42803e-002	26.03773
Thresh 2	1.75727	3.89309e-002	45.13817
Thresh 3	2.87813	6.94652e-002	41.43259

```
auxiliary statistics          at convergence          initial
log likelihood                -1475.66525        -1921.70287
number of observations                1040
percent correctly predicted          34.23077
```

Table 23: Do You Prefer to Get Tourist and Traveler Information

Dependent variable: t9

Value	Label	Count	Percent
1		301	30.71
2		92	9.39
3		527	53.78
4		60	6.12

At convergence grad * dir = 0.000000

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
before	-2.59593	0.32347	-8.02529
while	-0.64826	0.42842	-1.51313
both	-2.07834	0.21525	-9.65529
ca1	1.02086	0.22324	4.57299
avage1	1.84371e-002	3.96424e-003	4.65085
avinc1	4.28030e-006	1.63260e-006	2.62178
auto1	0.70808	0.21984	3.22085
avage2	-1.22194e-002	6.17867e-003	-1.97768
full2	-0.66361	0.25584	-2.59385
self2	-1.85762	0.74239	-2.50221
ca3	0.65612	0.20904	3.13879
male3	-0.36627	0.13541	-2.70482
auto3	0.39795	0.19602	2.03011
high3	-0.72324	0.16449	-4.39699

auxiliary statistics	at convergence	initial
log likelihood	-1016.65462	-1358.56847
number of observations	980	
percent correctly predicted	53.87755	

Table 24: Do You Prefer that traveler information be updated and verified

```
-Probit dep[a1] ind[one ca or senior mid old sch rec gen male nohigh]
maxit[50]
```

Dependent variable: a1

Value	Label	Count	Percent	Upper Threshold
1		26	2.50	0.000
2		248	23.85	0.250
3		101	9.71	0.450
4		603	57.98	1.558
99		62	5.96	

At convergence grad * dir = 0.000892

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	3.15036	0.12602	24.99921
ca	-0.31047	8.31236e-002	-3.73505
or	-0.27171	9.55003e-002	-2.84510
senior	-0.39919	0.13685	-2.91700
mid	-0.80212	0.13476	-5.95215
old	-0.49926	0.12835	-3.88996
sch	-0.79623	0.30966	-2.57128
rec	-0.44666	9.19810e-002	-4.85598
gen	-0.26104	0.10861	-2.40345
male	-0.24996	7.44395e-002	-3.35791
nohigh	0.53668	0.26583	2.01889
Thresh 1	1.36146	2.65975e-002	51.18757
Thresh 2	1.64897	2.67701e-002	61.59764
Thresh 3	3.75738	7.84586e-002	47.88994

```
auxiliary statistics          at convergence          initial
log likelihood                -1128.82792        -1825.6756
number of observations         1040
percent correctly predicted     58.75
```

Table 25: Mayday device

```
-mnl dep[a2] ivalt[yesdev:one zero rur:rur zero male:male zero self:self zero
stud:stud zero]
```

Dependent variable: a2

Value	Label	Count	Percent
0		199	20.56
1		769	79.44

At convergence grad * dir = 0.000586

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
yesdev	-1.94971	0.16127	-12.08940
rur	0.51587	0.16449	3.13612
male	0.46423	0.17568	2.64241
self	0.61007	0.26698	2.28512
stud	1.01392	0.45656	2.22081

auxiliary statistics	at convergence	initial
log likelihood	-477.55136	-670.96647
number of observations	968	
percent correctly predicted	79.54545	

-Probit dep[a3] ind[one ca or young rec gen male truck coll] maxit[50]

Dependent variable: a3

Value	Label	Count	Percent	Upper Threshold
1		117	11.25	0.000
2		217	20.87	0.250
3		415	39.90	0.583
4		260	25.00	1.884
99		31	2.98	

At convergence grad * dir = 0.000272

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	1.45969	9.12608e-002	15.99467
ca	0.36692	7.70382e-002	4.76279
or	0.33258	8.77326e-002	3.79079
young	-0.45561	0.13756	-3.31217
rec	-0.25869	8.38553e-002	-3.08494
gen	-0.36421	0.10010	-3.63836
male	-0.27763	6.86692e-002	-4.04302
truck	0.32708	0.13349	2.45025
coll	-0.17385	8.05360e-002	-2.15870
Thresh 1	0.78019	3.67106e-002	21.25254
Thresh 2	1.87620	4.34081e-002	43.22234
Thresh 3	3.22713	8.01591e-002	40.25907

auxiliary statistics	at convergence	initial
log likelihood	-1405.69643	-1927.72587
number of observations	1040	
percent correctly predicted	41.53846	

Table 27: A telephone number to report an incident or accident

-Probit dep[a4] ind[one young mid old med rec avmiles male pass unemp coll] maxit[50]

Dependent variable: a4

Value	Label	Count	Percent	Upper Threshold
1		66	6.35	0.000
2		163	15.67	0.250
3		367	35.29	0.450
4		405	38.94	1.780
99		39	3.75	

At convergence grad * dir = 0.000241

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	1.96390	9.53936e-002	20.58735
young	-0.66561	0.14839	-4.48558
mid	-0.48955	9.29587e-002	-5.26632
old	-0.16016	7.97840e-002	-2.00737
med	-1.64660	0.62026	-2.65471
rec	-0.26678	7.12199e-002	-3.74585
avmiles	7.11389e-004	2.58706e-004	2.74980
male	-0.19057	6.92824e-002	-2.75057
pass	-0.45215	0.17643	-2.56281
unemp	0.48258	0.20522	2.35158
coll	-0.21835	8.06129e-002	-2.70860
Thresh 1	0.78110	3.89451e-002	20.05649
Thresh 2	1.77652	4.32412e-002	41.08408
Thresh 3	3.47383	8.11320e-002	42.81704

auxiliary statistics	at convergence	initial
log likelihood	-1331.48009	-2005.11505
number of observations	1040	
percent correctly predicted	44.32692	

-Probit dep[a5] ind[one young male coll part] maxit[50]

Dependent variable: a5

Value	Label	Count	Percent	Upper Threshold
1		148	14.23	0.000
2		229	22.02	0.250
3		400	38.46	0.665
4		227	21.83	1.817
99		36	3.46	

At convergence grad * dir = 0.000467

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	1.30065	6.16625e-002	21.09307
young	-0.37685	0.13628	-2.76531
male	-0.15557	6.77351e-002	-2.29680
coll	-0.31310	7.87639e-002	-3.97514
part	-0.37931	0.13238	-2.86542
Thresh 1	0.73230	3.41234e-002	21.46033
Thresh 2	1.76397	4.09129e-002	43.11532
Thresh 3	2.93779	7.37709e-002	39.82319

auxiliary statistics	at convergence	initial
log likelihood	-1466.88342	-1862.55713
number of observations	1040	
percent correctly predicted	38.65385	

Table 29: A special radio channel for road conditions,

-Probit dep[a6] ind[one ca avage male pass high tech coll] maxit[50]

Dependent variable: a6

Value	Label	Count	Percent	Upper Threshold
1		96	9.23	0.000
2		173	16.63	0.250
3		411	39.52	0.396
4		330	31.73	1.898
99		30	2.88	

At convergence grad * dir = 0.000526

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	1.27198	0.12419	10.24260
ca	0.15011	6.88428e-002	2.18052
avage	3.32967e-003	1.64190e-003	2.02794
male	-0.15650	6.80443e-002	-2.30004
pass	-0.50750	0.17500	-2.90001
high	-0.20314	8.93738e-002	-2.27293
tech	0.26562	0.11750	2.26050
coll	-0.18043	8.56785e-002	-2.10587
Thresh 1	0.69321	3.64562e-002	19.01488
Thresh 2	1.75824	4.29455e-002	40.94126
Thresh 3	3.29241	8.23346e-002	39.98819

auxiliary statistics	at convergence	initial
log likelihood	-1386.69183	-2143.34678
number of observations	1040	
percent correctly predicted	39.23077	

Table 30: A local TV channel with continuously updated tourist

-Probit dep[a7] ind[one young male rv high somecoll coll grad full] maxit[50]

Dependent variable: a7

Value	Label	Count	Percent	Upper Threshold
1		304	29.23	0.000
2		285	27.40	0.167
3		268	25.77	0.931
4		150	14.42	1.856
99		33	3.17	

At convergence grad * dir = 0.000828

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	1.10443	9.02045e-002	12.24367
young	-0.48079	0.14181	-3.39040
male	-0.20151	6.86504e-002	-2.93533
rv	-0.28560	0.10464	-2.72935
high	-0.25797	0.10949	-2.35611
somecoll	-0.41362	0.10441	-3.96159
coll	-0.68827	0.10803	-6.37086
grad	-0.61117	0.11578	-5.27870
full	0.15332	7.02140e-002	2.18360
Thresh 1	0.74213	3.13540e-002	23.66948
Thresh 2	1.54292	3.98151e-002	38.75218
Thresh 3	2.51992	7.52469e-002	33.48875

auxiliary statistics	at convergence	initial
log likelihood	-1469.00905	-1751.60617
number of observations	1040	
percent correctly predicted	31.82692	

-Probit dep[a8] ind[one shop rec gen lowinc highinc auto] maxit[50]

Dependent variable: a8

Value	Label	Count	Percent	Upper Threshold
1		391	37.60	0.000
2		238	22.88	0.266
3		227	21.83	0.927
4		147	14.13	1.804
99		37	3.56	

At convergence grad * dir = 0.000624

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	0.70959	8.13339e-002	8.72437
shop	-0.60643	0.25695	-2.36011
rec	-0.31639	8.30638e-002	-3.80901
gen	-0.24108	0.10101	-2.38670
lowinc	-0.22209	8.12242e-002	-2.73430
highinc	0.23496	9.49731e-002	2.47399
auto	-0.20052	7.42326e-002	-2.70121
Thresh 1	0.59532	2.82679e-002	21.05996
Thresh 2	1.27047	3.68988e-002	34.43124
Thresh 3	2.17970	7.05513e-002	30.89524

auxiliary statistics	at convergence	initial
log likelihood	-1467.00857	-1564.40596
number of observations	1040	
percent correctly predicted	36.92308	

Table 32: A cellular phone

-Probit dep[a9] ind[one ca or urb povinc lowinc midinc auto ret] maxit[50]

Dependent variable: a9

Value	Label	Count	Percent	Upper Threshold
1		198	19.04	0.000
2		170	16.35	0.250
3		283	27.21	0.321
4		356	34.23	1.856
99		33	3.17	

At convergence grad * dir = 0.000208

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	1.32154	9.15652e-002	14.43275
ca	0.15843	7.80779e-002	2.02918
or	0.20174	8.82723e-002	2.28545
urb	-0.20191	6.99031e-002	-2.88840
povinc	-0.55727	0.11346	-4.91150
lowinc	-0.43100	9.36276e-002	-4.60338
midinc	-0.20199	8.59824e-002	-2.34920
auto	-0.15949	7.37704e-002	-2.16192
ret	-0.25309	7.00521e-002	-3.61286
Thresh 1	0.51820	2.83860e-002	18.25563
Thresh 2	1.23774	3.63297e-002	34.06967
Thresh 3	2.83195	8.09021e-002	35.00462

auxiliary statistics	at convergence	initial
log likelihood	-1468.21306	-2045.92024
number of observations	1040	
percent correctly predicted	34.51923	

Table 33: Changeable Message Signs

-Probit dep[a10] ind[one ca cycle] maxit[50]

Dependent variable: a10

Value	Label	Count	Percent	Upper Threshold
1		101	9.71	0.000
2		186	17.88	0.250
3		373	35.87	0.344
4		336	32.31	1.725
99		44	4.23	

At convergence grad * dir = 0.000795

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	1.22987	4.82980e-002	25.46423
ca	0.22529	6.69350e-002	3.36587
cycle	-0.63243	0.28525	-2.21708
Thresh 1	0.71219	3.47958e-002	20.46759
Thresh 2	1.66019	3.95356e-002	41.99224
Thresh 3	3.04352	7.02411e-002	43.32967

auxiliary statistics	at convergence	initial
log likelihood	-1449.11144	-2260.3914
number of observations	1040	
percent correctly predicted	35.09615	

Table 34: Warning signs for speed, curves and animal presence

-Probit dep[all] ind[one young mid senior fam avmiles pass coll] maxit[50]

Dependent variable: all

Value	Label	Count	Percent	Upper Threshold
1		47	4.52	0.000
2		115	11.06	0.250
3		301	28.94	0.450
4		543	52.21	1.843
99		34	3.27	

At convergence grad * dir = 0.000358

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	2.07853	9.44892e-002	21.99752
young	-0.71525	0.14545	-4.91757
mid	-0.55028	8.92060e-002	-6.16870
senior	-0.21176	8.47262e-002	-2.49938
fam	-0.18955	7.08366e-002	-2.67583
avmiles	5.68152e-004	2.53555e-004	2.24074
pass	-0.52010	0.17698	-2.93883
coll	-0.27555	8.23380e-002	-3.34660
Thresh 1	0.71455	4.10303e-002	17.41520
Thresh 2	1.63343	4.56453e-002	35.78520
Thresh 3	3.71593	8.75880e-002	42.42512

auxiliary statistics	at convergence	initial
log likelihood	-1196.49798	-1860.44132
number of observations	1040	
percent correctly predicted	52.88462	

Table 35: An in-vehicle device to enhance driving capabilities in low-visibility situations

-Probit dep[a12] ind[one work male coll] maxit[50]

Dependent variable: a12

Value	Label	Count	Percent	Upper Threshold
1		181	17.40	0.000
2		195	18.75	0.250
3		291	27.98	0.362
4		339	32.60	1.843
99		34	3.27	

At convergence grad * dir = 0.000390

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	1.08178	5.89276e-002	18.35777
work	0.21345	8.81521e-002	2.42136
male	-0.20013	6.74888e-002	-2.96539
coll	-0.22995	7.87619e-002	-2.91959
Thresh 1	0.58752	2.90093e-002	20.25290
Thresh 2	1.30979	3.57634e-002	36.62381
Thresh 3	2.81785	7.77761e-002	36.23021

auxiliary statistics	at convergence	initial
log likelihood	-1498.27327	-1991.40987
number of observations	1040	
percent correctly predicted	33.65385	

Table 36: Small computerized information centers - Kiosks - at convenient locations

-Probit dep[a13] ind[one rec auto ret] maxit[50]

Dependent variable: a13

Value	Label	Count	Percent	Upper Threshold
1		221	21.25	0.000
2		239	22.98	0.250
3		346	33.27	0.755
4		201	19.33	1.856
99		33	3.17	

At convergence grad * dir = 0.000579

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	1.11391	7.13664e-002	15.60834
rec	-0.17621	6.81516e-002	-2.58560
auto	-0.18724	7.09899e-002	-2.63752
ret	-0.24422	7.16670e-002	-3.40777
Thresh 1	0.65819	3.10355e-002	21.20781
Thresh 2	1.57221	3.96840e-002	39.61816
Thresh 3	2.71345	7.67555e-002	35.35188

auxiliary statistics	at convergence	initial
log likelihood	-1502.59992	-1751.37777
number of observations	1040	
percent correctly predicted	32.69231	

Table 37: An in-vehicle device to help you avoid collisions or running off the roadway

-Probit dep[a14] ind[one ca rec coll] maxit[50]

Dependent variable: a14

Value	Label	Count	Percent	Upper Threshold
1		197	18.94	0.000
2		180	17.31	0.250
3		309	29.71	0.411
4		320	30.77	1.843
99		34	3.27	

At convergence grad * dir = 0.000880

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	0.95597	5.91662e-002	16.15737
ca	0.14420	6.82572e-002	2.11265
rec	-0.14579	6.59850e-002	-2.20948
coll	-0.22588	8.00279e-002	-2.82257
Thresh 1	0.52970	2.85263e-002	18.56891
Thresh 2	1.29948	3.65545e-002	35.54912
Thresh 3	2.74766	7.67772e-002	35.78744

auxiliary statistics	at convergence	initial
log likelihood	-1503.8172	-1911.52701
number of observations	1040	
percent correctly predicted	32.98077	

Table 38: If you could recognize a direct benefit on your driving

experience, how likely would you be to use the special services

-Probit dep[a15] ind[one rec urb rur high coll] maxit[50]

Dependent variable: a15

Value	Label	Count	Percent	Upper Threshold
1		48	4.62	0.000
2		180	17.31	0.250
3		428	41.15	0.334
4		350	33.65	1.843
99		34	3.27	

At convergence grad * dir = 0.000762

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	2.03479	8.33360e-002	24.41671
rec	-0.14776	6.63288e-002	-2.22766
urb	-0.23934	8.40387e-002	-2.84803
rur	-0.23587	8.53070e-002	-2.76499
high	-0.21791	8.71004e-002	-2.50179
coll	-0.19092	8.24715e-002	-2.31497
Thresh 1	0.91185	4.19396e-002	21.74185
Thresh 2	2.03460	4.46629e-002	45.55454
Thresh 3	3.57800	8.01706e-002	44.62981

auxiliary statistics	at convergence	initial
log likelihood	-1327.65843	-2419.88987
number of observations	1040	
percent correctly predicted	41.82692	

Table 39: If you could recognize a direct benefit on your driving experience, how likely would you be to pay for the special services or devices discussed above?

Dependent variable: a16

Value	Label	Count	Percent	Upper Threshold
1		197	18.94	0.000
2		271	26.06	0.250
3		389	37.40	0.931
4		143	13.75	1.769
99		40	3.85	

At convergence grad * dir = 0.000850

Independent Variable	Estimated Coefficient	Standard Error	t-Statistic
one	0.71088	0.14434	4.92484
ca	0.18779	7.79566e-002	2.40887
or	0.20540	8.91766e-002	2.30327
avage	3.82947e-003	1.72613e-003	2.21853
work	0.18834	9.21757e-002	2.04328
urb	-0.21660	8.76853e-002	-2.47020
rur	-0.24312	8.97860e-002	-2.70779
avinc	2.05483e-006	7.85257e-007	2.61675
male	-0.17618	6.89487e-002	-2.55528
self	-0.25386	0.12954	-1.95974
Thresh 1	0.76828	3.39793e-002	22.61040
Thresh 2	1.84394	4.14465e-002	44.48978
Thresh 3	2.69987	6.71273e-002	40.22011

auxiliary statistics	at convergence	initial
log likelihood	-1470.42197	-1757.81388
number of observations	1040	
percent correctly predicted	37.5	

Appendix A: Traveler Needs Survey

PERCEIVED CORRIDOR CHALLENGES

When you are traveling in Northern California / Southern Oregon, how often are you concerned about the following? (**Circle one number per question**)

	NEVER CONCERNED	OCCASIONALLY CONCERNED	FREQUENTLY CONCERNED	ALWAYS CONCERNED
Encountering slow moving vehicles like snowplows, farm equipment or RV's.....	1	2	3	4
Running off the roadway.....	1	2	3	4
Lack of information from signs along the roadway.....	1	2	3	4
Debris, objects or animals on the roadway.....	1	2	3	4
Passing trucks and other heavy vehicles (clearance/visibility)...	1	2	3	4
Driving on hills or curves.....	1	2	3	4
Road conditions like ice, snow, rain or fog.....	1	2	3	4
Driving through construction zones.....	1	2	3	4

SOURCES OF TOURIST/TRAVELER INFORMATION

When **planning** to take a trip in Northern California / Southern Oregon do you utilize the following information sources?

	NEVER	OCCASIONALLY	FREQUENTLY	ALWAYS
Destination visitors bureau or chamber of commerce.....	1	2	3	4
State Departments of Tourism.....	1	2	3	4
Television / radio advertisements.....	1	2	3	4
Kiosks, i.e. small computerized information centers.....	1	2	3	4
Travel magazines or newspaper travel sections.....	1	2	3	4
The Internet.....	1	2	3	4

TOURIST AND TRAVELER INFORMATION

How important are each of the following kinds of **INFORMATION** to you before you start a trip in Northern California / Southern Oregon. (Circle one number per question)

	NOT AT ALL IMPORTANT	SOMEWHAT IMPORTANT	IMPORTANT	VERY IMPORTANT
Tourist attractions (parks/recreation/historical).....	1	2	3	4
Distance to destination.....	1	2	3	4
The best route to destination.....	1	2	3	4
Location of traveler services (rest stops, visitor information centers, service stations, etc.).....	1	2	3	4
Locations of traffic delays due to special events, road closures, construction zones and/or detours.....	1	2	3	4
Locations of accidents or incidents.....	1	2	3	4
Weather conditions throughout your area of travel.....	1	2	3	4
Knowing trip-planning assistance is available from rest stops or other places along your route.....	1	2	3	4

Do you prefer to get tourist and traveler information

Before you start a trip.....	1
While on the road.....	2
Both.....	3
Neither.....	4

ADVANCED TECHNOLOGY AND INFORMATION SOURCES

Do you prefer that traveler information be updated and verified (Circle one)

Once per minute.....	1
Once per hour.....	2
Once per day.....	3
As needed.....	4

Suppose an attachment was available for your vehicle that would alert police and emergency medical services if you should run off the road or be involved in a collision. Would you be interested in having something like that installed in your car or truck? (Circle one)

Yes.....	1
No.....	2

If available, how likely would you be to use each of the following services or devices to aid in driving or obtain traveler or tourist information? **(Circle one number per question)**

	NOT AT ALL LIKELY	SOMEWHAT UNLIKELY	SOMEWHAT LIKELY	VERY LIKELY
A telephone number for road conditions.....	1	2	3	4
A telephone number to report an incident or accident.....	1	2	3	4
A special radio channel for tourist information.....	1	2	3	4
A special radio channel for road conditions, accidents, incidents, closures, etc.....	1	2	3	4
A local TV channel with continuously updated tourist and traveler information.....	1	2	3	4
A small in-vehicle computer with traveler information.....	1	2	3	4
A cellular phone.....	1	2	3	4
Changeable message signs.....	1	2	3	4
Warning signs for speed, curves and animal presence that change based on conditions.....	1	2	3	4
An in-vehicle device to enhance driving capabilities in low-visibility situations.....	1	2	3	4
Small computerized information centers – or kiosks – at convenient locations.....	1	2	3	4
An in-vehicle device to help you avoid collisions or running off the roadway.....	1	2	3	4

If you could recognize a direct benefit on your driving experience, how likely would you be to **USE** the special services or devices discussed above? **(Circle one)**

- Not at all likely..... 1
- Somewhat unlikely..... 2
- Somewhat likely..... 3
- Very likely..... 4

If you could recognize a direct benefit on your driving experience, how likely would you be to **PAY FOR** the special services or devices discussed above? **(Circle one)**

- Not at all likely..... 1
- Somewhat unlikely..... 2
- Somewhat likely..... 3
- Very likely..... 4

DEMOGRAPHICS (Circle one number per question)

The following information is needed to ensure that your travel needs are properly represented in this survey. It will be used for the purposes of this survey only.

Residence	California.....	1
	Oregon.....	2
	Other.....	3
Familiarity with area	Familiar.....	1
	Unfamiliar.....	2
Gender	Male.....	1
	Female.....	2
Age	15 – 24 Years.....	1
	25 – 44.....	2
	45 – 64.....	3
	65 +.....	4
Live in	Urban area / city.....	1
	Rural area / country.....	2
	Suburban.....	3
Type of vehicle normally driven in this area	Automobile.....	1
	Commercial (Truck, Bus).....	2
	Motorcycle.....	3
	RV.....	4
	Passenger only.....	5
Majority of vehicle travel in this area is to travel to	Work.....	1
	School.....	2
	Shopping.....	3
	Medical.....	4
	Recreation.....	5
	General.....	6
Average miles traveled per day for the trips <i>purpose</i> circled above	0 – 49.....	1
	50 – 99.....	2
	100 – 300.....	3
	300 +.....	4
Employment	Full – time.....	1
	Part – time.....	2
	Self – employed.....	3
	Retired.....	4
	Unemployed.....	5
	Student.....	6
	Other.....	7
Education completed	Less than high school.....	1
	Technical training.....	2
	High school.....	3
	Some college.....	4
	College degree.....	5
	Graduate degree.....	6
Income (per household)	Under \$20,000.....	1
	20,000 – 39,000.....	2
	40,000 – 79,000.....	3
	80,000 +.....	4

Appendix B: Frequencies and Percentages by Question

The frequencies and percentages are listed below in the order the questions appear on the survey.

Encountering slow moving vehicles like snowplows, farm equipment, or R.V.'s

	Frequency	Percent
Never concerned	254	24.7
Occasionally concerned	501	48.6
Frequently concerned	157	15.2
Always concerned	118	11.5

Running off the roadway

	Frequency	Percent
Never concerned	446	43.6
Occasionally concerned	390	38.2
Frequently concerned	100	9.8
Always concerned	86	8.4

Lack of information from signs along the roadway

	Frequency	Percent
Never concerned	340	33.3
Occasionally concerned	412	40.3
Frequently concerned	171	16.7
Always concerned	99	9.7

Debris, objects or animals on the roadway

	Frequency	Percent
Never concerned	249	24.2
Occasionally concerned	490	47.4
Frequently concerned	149	14.5
Always concerned	140	13.6

Passing trucks and other heavy vehicles (clearance/visibility)

	Frequency	Percent
Never concerned	154	14.9
Occasionally concerned	413	39.9
Frequently concerned	281	27.2
Always concerned	186	17.9

Driving on hills or curves

	Frequency	Percent
Never concerned	253	24.5
Occasionally concerned	484	46.9
Frequently concerned	190	18.4
Always concerned	106	10.3

Road conditions like ice, snow, rain or fog

	Frequency	Percent
Never concerned	181	17.6
Occasionally concerned	449	43.5
Frequently concerned	211	20.5
Always concerned	190	18.4

Driving through construction zones

	Frequency	Percent
Never concerned	207	20.0
Occasionally concerned	462	44.7
Frequently concerned	184	17.8
Always concerned	180	17.4

Destination visitors Bureau or chamber of commerce

	Frequency	Percent
Never	318	37.2
Occasionally	448	43.7
Frequently	164	16.0
Always	32	3.1

State departments of tourism

	Frequency	Percent
Never	485	47.7
Occasionally	379	37.3
Frequently	130	12.8
Always	22	2.2

Television / Radio advertisements

	Frequency	Percent
Never	439	43.0
Occasionally	421	41.2
Frequently	138	13.5
Always	24	2.3

Kiosks, i.e. small computerized information centers

	Frequency	Percent
Never	602	59.5
Occasionally	281	27.8
Frequently	101	10.0
Always	28	2.8

Travel magazines or newspaper travel sections

	Frequency	Percent
Never	246	24.0
Occasionally	408	39.8
Frequently	312	30.4
Always	60	5.8

The Internet

	Frequency	Percent
Never	648	64.0
Occasionally	172	17.0
Frequently	149	14.7
Always	43	4.2

Tourist attractions (parks/recreation/historical)

	Frequency	Percent
Not at all important	129	13.1
Somewhat important	294	29.9
Important	357	36.4
Very important	202	20.6

Distance to destination

	Frequency	Percent
Not at all important	88	9.0
Somewhat important	254	25.9
Important	374	38.1
Very important	266	27.1

The best route to destination

	Frequency	Percent
Not at all important	61	6.3
Somewhat important	174	17.9
Important	380	39.1
Very important	356	36.7

Location of traveler services (rest stops, visitor information centers, service stations, etc.)

	Frequency	Percent
Not at all important	86	8.7
Somewhat important	213	21.5
Important	366	37.0
Very important	324	32.8

Location of traffic delays due to special events, road closures, construction zones and/or detours

	Frequency	Percent
Not at all important	89	9.0
Somewhat important	261	26.4
Important	372	37.7
Very important	265	26.8

Location of accidents or incidents

	Frequency	Percent
Not at all important	108	11.0
Somewhat important	258	26.3
Important	330	33.6
Very important	285	29.1

Weather conditions throughout your area of travel

	Frequency	Percent
Not at all important	55	5.6
Somewhat important	201	20.4
Important	340	34.4
Very important	391	39.6

Knowing trip-planning assistance is available from rest stops or other places along your route

	Frequency	Percent
Not at all important	156	15.9
Somewhat important	286	29.1
Important	318	32.3
Very important	224	22.8

Do you prefer to get tourist and traveler information

	Frequency	Percent
Before you start your trip	302	30.7
While on the road	92	9.3
Both	530	53.9
Neither	60	6.1

Do you prefer that traveler information be updated and verified

	Frequency	Percent
Once per minute	26	2.7
Once per hour	248	25.4
Once per day	101	10.3
As needed	603	61.7

Suppose a device were available for your vehicle that would alert police and emergency medical services if you should run off the road or be involved in a collision. Would you be interested in having something like that installed in your vehicle?

	Frequency	Percent
Yes	769	79.4
No	199	20.6

A telephone number for road conditions

	Frequency	Percent
Not at all likely	117	11.6
Somewhat likely	217	21.5
Somewhat unlikely	415	41.1
Very likely	260	25.8

A telephone number to report an accident or incident

	Frequency	Percent
Not at all likely	66	6.6
Somewhat likely	163	16.3
Somewhat unlikely	367	36.7
Very likely	405	40.5

A special radio channel for tourist information

	Frequency	Percent
Not at all likely	148	14.7
Somewhat likely	229	22.8
Somewhat unlikely	400	39.8
Very likely	227	22.6

A special radio channel for road conditions, accidents, incidents, closures, etc.

	Frequency	Percent
Not at all likely	96	9.5
Somewhat likely	173	17.1
Somewhat unlikely	411	40.7
Very likely	330	32.7

A local TV channel with continuously updated tourist and traveler information

	Frequency	Percent
Not at all likely	304	30.2
Somewhat likely	285	28.3
Somewhat unlikely	268	26.6
Very likely	150	14.9

A small in-vehicle computer with traveler information

	Frequency	Percent
Not at all likely	391	39.0
Somewhat likely	238	23.7
Somewhat unlikely	227	22.6
Very likely	147	14.7

A cellular phone

	Frequency	Percent
Not at all likely	198	19.7
Somewhat likely	170	16.9
Somewhat unlikely	283	28.1
Very likely	356	35.4

Changeable message signs

	Frequency	Percent
Not at all likely	101	10.1
Somewhat likely	186	18.7
Somewhat unlikely	373	37.4
Very likely	336	33.7

Warning signs for speed, curves and animal presence that change based on conditions

	Frequency	Percent
Not at all likely	47	4.7
Somewhat likely	115	11.4
Somewhat unlikely	301	29.9
Very likely	543	54.0

An in-vehicle device to enhance driving capabilities in low visibility situations

	Frequency	Percent
Not at all likely	181	18.0
Somewhat likely	195	19.4
Somewhat unlikely	291	28.9
Very likely	339	33.7

Small computerized information centers – or Kiosks – at convenient locations

	Frequency	Percent
Not at all likely	221	21.9
Somewhat likely	239	23.7
Somewhat unlikely	346	34.4
Very likely	201	20.0

An in-vehicle device to help you avoid collisions or running off the roadway

	Frequency	Percent
Not at all likely	197	19.6
Somewhat likely	180	17.9
Somewhat unlikely	309	30.7
Very likely	320	31.8

If you could recognize a direct benefit on your driving experience, how likely would you be to use the special services or devices discussed above?

	Frequency	Percent
Not at all likely	48	4.8
Somewhat likely	180	17.9
Somewhat unlikely	428	42.5
Very likely	350	34.8

If you could recognize a direct benefit on your driving experience, how likely would you be to pay for the special services or devices discussed above?

	Frequency	Percent
Not at all likely	47	4.7
Somewhat likely	115	11.4
Somewhat unlikely	301	29.9
Very likely	543	54.0

Residence

	Frequency	Percent
California	413	42.0
Oregon	248	25.2
Other	322	32.8

Familiarity with area

	Frequency	Percent
Familiar	615	62.7
Unfamiliar	366	37.3

Gender

	Frequency	Percent
Male	616	64.0
Female	346	36.0

Age

	Frequency	Percent
15 – 24 years	65	6.6
25 – 44	232	23.6
45 - 64	402	41.0
65 +	282	28.7

Live in

	Frequency	Percent
Urban area / city	393	40.4
Rural area / country	366	37.6
Suburban	214	22.0

Type of vehicle normally driven in this area

	Frequency	Percent
Automobile	712	72.7
Commercial (truck, bus)	81	8.3
Motorcycle	14	1.4
RV	133	13.6
Passenger only	39	4.0

Majority of vehicle travel in this area is to travel to

	Frequency	Percent
Work	173	17.7
School	14	1.4
Shopping	21	2.2
Medical	4	0.4
Recreation	543	55.6
General	221	22.6

Average miles traveled per day

	Frequency	Percent
0 – 49	168	17.2
50 – 99	114	11.7
100 – 300	391	40.1
300 +	303	31.0

Employment

	Frequency	Percent
Full – time	407	41.3
Part – time	71	7.2
Self – employed	77	7.8
Retired	358	36.3
Unemployed	30	3.0
Student	25	2.5
Other	17	1.7

Education completed

	Frequency	Percent
Less than high school	19	1.9
High school	200	20.4
Technical training	101	10.3
Some college	253	25.8
College degree	235	24.0
Graduate degree	173	17.6

Income (per household)

	Frequency	Percent
Under \$20,000	141	15.3
20,000 – 39,000	260	25.0
40,000 – 79,000	361	39.2
80,000 +	158	17.2