MNL8a.1 – Combinação de Variáveis TC e Viagem

- ASC

- TBA – Variável continua com a razão dos tempos médios de viagem em BUS e AUTO entre zona de Geração e Atracção

- Fm – Variável continua inicial sobre a frequência média horária de TC na hora de ponta da manhã (7h30-9h30)

- V2 – Variável continua para velocidade comercial equivalente de BUS em km/h

- d2 -Var. continua para distância + curta entre centróides (excepto pedonais 3,6km/h)
- dx1 - Var.bin distância + curta entre centróides (expto ped.3,6km/h) <=1,0km
- dx2 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >1,0km e <= 2,0km
- dx3 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >2,0km e <=5,0km
- dx4 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >5,0km (excluída)

```
DISCRETECHOICE
;Lhs=MTRP
;Choices=Bp,B,Bo,M,P,A[1]
;Rh2=ONE,D2,DX1,DX2,DX3,FM,V2,TBA$

+---------------------------------------------+
| Discrete choice and multinomial logit models|
+---------------------------------------------+
Normal exit from iterations. Exit status=0.
+---------------------------------------------+
| Discrete choice (multinomial logit) model   |
| Maximum Likelihood Estimates                |
| Model estimated: Jan 12, 2012 at 06:16:39PM.|
| Dependent variable               Choice     |
| Weighting variable                 None     |
| Number of observations            40099     |
| Iterations completed                 32     |
| Log likelihood function       -36729.20     |
| Number of parameters                 40     |
| Info. Criterion: AIC =          1.83392     |
|   Finite Sample: AIC =          1.83392     |
| Info. Criterion: BIC =          1.84250     |
| Info. Criterion:HQIC =          1.83664     |
| R2=1-LogL/LogL*  Log-L fncn  R-sqrd  RsqAdj |
| Constants only  -50751.5442  .27629  .27615 |
| Chi-squared[35]          =  28044.68163     |
| Prob [ chi squared > value ] =   .00000     |
| Response data are given as ind. choice.     |
| Number of obs.= 95426, skipped**** bad obs. |
+---------------------------------------------+

+---------------------------------------------+
| Notes No coefficients=> P(i,j)=1/J(i).      |
|       Constants only => P(i,j) uses ASCs    |
|         only. N(j)/N if fixed choice set.   |
```

```
|         N(j) = total sample frequency for j |
|         N    = total sample frequency.      |
|       These 2 models are simple MNL models. |
|       R-sqrd = 1 - LogL(model)/logL(other)  |
|       RsqAdj=1-[nJ/(nJ-nparm)]*(1-R-sqrd)   |
|         nJ   = sum over i, choice set sizes |
+---------------------------------------------+
```

Variable	Coefficient	Standard Error	b/St.Er.	P[|Z|>z]
A_BP	-.95560191	.26186798	-3.649	.0003
BP_D21	.23700497	.01467724	16.148	.0000
BP_DX11	-1.26553948	1.01795366	-1.243	.2138
BP_DX21	.30195829	.15417405	1.959	.0502
BP_DX31	.37003433	.09814253	3.770	.0002
BP_FM1	-.00509262	.00507987	-1.003	.3161
BP_V21	-.12047005	.01136408	-10.601	.0000
BP_TBA1	-1.36970725	.10303556	-13.294	.0000
A_B	1.71029707	.10737828	15.928	.0000
B_D22	.09194434	.00829872	11.079	.0000
B_DX12	-1.25749006	.24717650	-5.087	.0000
B_DX22	-.70034516	.06717529	-10.426	.0000
B_DX32	-.31342608	.04103794	-7.637	.0000
B_FM2	.02230937	.00183862	12.134	.0000
B_V22	-.10728661	.00431221	-24.880	.0000
B_TBA2	-1.05431483	.03835305	-27.490	.0000
A_BO	-5.43857103	.28473963	-19.100	.0000
BO_D23	.15836454	.01484322	10.669	.0000
BO_DX13	-28.6835150	.227493D+07	.000	1.0000
BO_DX23	1.32512811	.18451312	7.182	.0000
BO_DX33	.91532327	.10687197	8.565	.0000
BO_FM3	-.09363705	.01011371	-9.258	.0000
BO_V23	.02247865	.01047212	2.147	.0318
BO_TBA3	.54006011	.09087406	5.943	.0000
A_M	-4.00363023	.24871747	-16.097	.0000
M_D24	-.01900373	.02216274	-.857	.3912
M_DX14	-29.5294912	.193759D+07	.000	1.0000
M_DX24	1.06862354	.16052398	6.657	.0000
M_DX34	.54865660	.10306619	5.323	.0000
M_FM4	-.06725002	.00718925	-9.354	.0000
M_V24	.04215205	.00768737	5.483	.0000
M_TBA4	.38986551	.07634804	5.106	.0000
A_P	6.22983061	.41289970	15.088	.0000
P_D25	-1.35163860	.07993747	-16.909	.0000
P_DX15	-.44129464	.38311238	-1.152	.2494
P_DX25	-2.09482114	.31469573	-6.657	.0000
P_DX35	-2.95290744	.25686107	-11.496	.0000
P_FM5	.00637768	.00301138	2.118	.0342
P_V25	-.26188035	.01616998	-16.195	.0000
P_TBA5	-.12801027	.05960855	-2.148	.0318

MNL8a.2 – Combinação de Variáveis TC e Viagem

- ASC

- TBA – Variável continua com a razão dos tempos médios de viagem em BUS e AUTO entre zona de Geração e Atracção

- Fm – Variável continua inicial sobre a frequência média horária de TC na hora de ponta da manhã (7h30-9h30)

- V2 – Variável continua para velocidade comercial equivalente de BUS em km/h

- D2 - Var. continua para distância + curta entre centróides (excepto pedonais 3,6km/h)
- Dx1 - Var.bin distância + curta entre centróides (expto ped.3,6km/h) <=1,0km
- Dx2 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >1,0km e <= 2,0km
- Dx3 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >2,0km e <=5,0km
- *Dx4 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >5,0km (excluída)*

- Tia – Variável continua genérica duração média apreendida da viagem por modo (min) entre GA com a duração apreendida real qd é o modo escolhido

- *Tr2: Variável binária para viagens para o trabalho (com motivo da viagem anterior nas viagens para casa) (excluída)*
- Es2: Variável binária para viagens para a Escola (com motivo da viagem anterior nas viagens para casa)
- Lz2: Variável binária para viagens para Lazer (com motivo da viagem anterior nas viagens para casa)
- CS2: Variável binária para viagens para Compras/Serviços (com motivo da viagem anterior nas viagens para casa)

```
DISCRETECHOICE
;Lhs=MTRP
;Choices=Bp,B,Bo,M,P,A[1]
;Attr=Tia;Rhs=T1A,T2A,T3A,T4A,T5A,T6A
;Rh2=ONE,D2,DX1,DX2,DX3,FM,V2,TBA,ES2,LZ2,CS2$
+---------------------------------------------+
| Discrete choice and multinomial logit models|
+---------------------------------------------+
Normal exit from iterations. Exit status=0.
+---------------------------------------------+
| Discrete choice (multinomial logit) model   |
| Maximum Likelihood Estimates                |
| Model estimated: Jan 12, 2012 at 06:21:23PM.|
| Dependent variable               Choice     |
| Weighting variable                 None     |
| Number of observations             9275     |
| Iterations completed                 30     |
| Log likelihood function       -8345.255     |
| Number of parameters                56     |
| Info. Criterion: AIC =           1.81159     |
|   Finite Sample: AIC =           1.81167     |
```

```
| Info. Criterion: BIC =          1.85467     |
| Info. Criterion:HQIC =          1.82623     |
| R2=1-LogL/LogL*  Log-L fncn  R-sqrd  RsqAdj |
| Constants only  -11731.9006  .28867  .28781 |
| Chi-squared[51]          =   6773.29154     |
| Prob [ chi squared > value ] =   .00000     |
| Response data are given as ind. choice.     |
| Number of obs.= 95426, skipped**** bad obs. |
+---------------------------------------------+

+---------------------------------------------+
| Notes No coefficients=> P(i,j)=1/J(i).      |
|       Constants only => P(i,j) uses ASCs    |
|         only. N(j)/N if fixed choice set.   |
|         N(j) = total sample frequency for j |
|         N    = total sample frequency.      |
|       These 2 models are simple MNL models. |
|       R-sqrd = 1 - LogL(model)/logL(other)  |
|       RsqAdj=1-[nJ/(nJ-nparm)]*(1-R-sqrd)   |
|         nJ   = sum over i, choice set sizes |
+---------------------------------------------+
+--------+--------------+----------------+--------+--------+
|Variable| Coefficient  | Standard Error |b/St.Er.|P[|Z|>z]|
+--------+--------------+----------------+--------+--------+
 TIA     |     .01639380       .00224820     7.292   .0000
 A_BP    |     -.55309267      .63481710     -.871   .3836
 BP_D21  |     -.18406771      .08526307    -2.159   .0309
 BP_DX11 |    -2.02253194    .623582D+07      .000  1.0000
 BP_DX21 |     -.96867792      .39758482    -2.436   .0148
 BP_DX31 |     -.83755003      .25958808    -3.226   .0013
 BP_FM1  |     -.00666263      .02346468     -.284   .7765
 BP_V21  |     -.08632225      .02834175    -3.046   .0023
 BP_TBA1 |     -.50824093      .24159587    -2.104   .0354
 BP_ES21 |      .98031736      .17759271     5.520   .0000
 BP_LZ21 |     -.16914820      .18852502     -.897   .3696
 BP_CS21 |      .30402915      .19408149     1.567   .1172
 A_B     |     2.40272975      .25801278     9.312   .0000
 B_D22   |      .09253942      .02420238     3.824   .0001
 B_DX12  |    -1.54690969    .241699D+07      .000  1.0000
 B_DX22  |    -3.10888327      .24202887   -12.845   .0000
 B_DX32  |     -.66489702      .09446419    -7.039   .0000
 B_FM2   |     -.00936227      .00970854     -.964   .3349
 B_V22   |     -.14097186      .01075301   -13.110   .0000
 B_TBA2  |    -1.29486891      .10459020   -12.380   .0000
 B_ES22  |     1.47245364      .07653047    19.240   .0000
 B_LZ22  |     -.04833602      .07609372     -.635   .5253
 B_CS22  |      .30158546      .08347949     3.613   .0003
 A_BO    |    -3.48702542      .53058324    -6.572   .0000
 BO_D23  |      .17640349      .05576747     3.163   .0016
 BO_DX13 |     1.03680758    .461069D+07      .000  1.0000
 BO_DX23 |      .95522996      .35440651     2.695   .0070
 BO_DX33 |      .33049060      .22390124     1.476   .1399
 BO_FM3  |     -.14136450      .02811375    -5.028   .0000
 BO_V23  |     -.03654217      .02085634    -1.752   .0798
 BO_TBA3 |      .14989961      .18251878      .821   .4115
 BO_ES23 |     1.30614601      .13448242     9.712   .0000
```

BO_LZ23	-1.80705657	.29279647	-6.172	.0000
BO_CS23	-1.50839939	.33067890	-4.562	.0000
A_M	-3.28893369	.43735346	-7.520	.0000
M_D24	.08840851	.04855118	1.821	.0686
M_DX14	1.56455665	.398061D+07	.000	1.0000
M_DX24	1.26970931	.30329234	4.186	.0000
M_DX34	1.10315687	.19710820	5.597	.0000
M_FM4	-.07988108	.01742452	-4.584	.0000
M_V24	.01186468	.01746793	.679	.4970
M_TBA4	.11002848	.14197401	.775	.4383
M_ES24	-1.69326993	.24827446	-6.820	.0000
M_LZ24	-.65282756	.12262368	-5.324	.0000
M_CS24	-.89256854	.16644165	-5.363	.0000
A_P	20.0201354	1.62679268	12.307	.0000
P_D25	-4.88352308	.36156725	-13.507	.0000
P_DX15	16.3333254	.127391D+07	.000	1.0000
P_DX25	-13.0856171	1.16256723	-11.256	.0000
P_DX35	-10.6741083	.95102834	-11.224	.0000
P_FM5	-.05519095	.02689011	-2.052	.0401
P_V25	-.17413037	.05516767	-3.156	.0016
P_TBA5	1.52318180	.31036736	4.908	.0000
P_ES25	.86516244	.18408092	4.700	.0000
P_LZ25	.38601957	.18829753	2.050	.0404
P_CS25	.57038311	.22687128	2.514	.0119

MNL8a.3 – Combinação de Variáveis TC e Viagem

- ASC

- TBA – Variável continua com a razão dos tempos médios de viagem em BUS e AUTO entre zona de Geração e Atracção

- Ftl – Variável continua inicial sobre a frequência média horária de TC durante todo o horário laboral (7h30-19h30)

- V2 – Variável continua para velocidade comercial equivalente de BUS em km/h

- D2 - Var. continua para distância + curta entre centróides (excepto pedonais 3,6km/h)
- Dx1 - Var.bin distância + curta entre centróides (expto ped.3,6km/h) <=1,0km
- Dx2 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >1,0km e <= 2,0km
- Dx3 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >2,0km e <=5,0km
- *Dx4 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >5,0km (excluída)*

- Tia – Variável continua genérica duração média apreendida da viagem por modo (min) entre GA com a duração apreendida real qd é o modo escolhido

- *Tr2: Variável binária para viagens para o trabalho (com motivo da viagem anterior nas viagens para casa) (excluída)*
- Es2: Variável binária para viagens para a Escola (com motivo da viagem anterior nas viagens para casa)
- Lz2: Variável binária para viagens para Lazer (com motivo da viagem anterior nas viagens para casa)
- CS2: Variável binária para viagens para Compras/Serviços (com motivo da viagem anterior nas viagens para casa)

```
DISCRETECHOICE
;Lhs=MTRP
;Choices=Bp,B,Bo,M,P,A[1]
;Attr=Tia;Rhs=T1A,T2A,T3A,T4A,T5A,T6A
;Rh2=ONE,D2,DX1,DX2,DX3,FTL,V2,TBA,ES2,LZ2,CS2$

+---------------------------------------------+
| Discrete choice and multinomial logit models|
+---------------------------------------------+
Normal exit from iterations. Exit status=0.
+---------------------------------------------+
| Discrete choice (multinomial logit) model   |
| Maximum Likelihood Estimates                |
| Model estimated: Jan 12, 2012 at 06:27:47PM.|
| Dependent variable               Choice     |
| Weighting variable                 None     |
| Number of observations             9275     |
| Iterations completed                 31     |
| Log likelihood function       -8347.178     |
| Number of parameters                 56     |
| Info. Criterion: AIC =          1.81201     |
```

```
|   Finite Sample: AIC =          1.81208     |
| Info. Criterion: BIC =          1.85509     |
| Info. Criterion:HQIC =          1.82664     |
| R2=1-LogL/LogL*  Log-L fncn  R-sqrd  RsqAdj |
| Constants only  -11731.9006  .28851  .28765 |
| Chi-squared[51]           =   6769.44432    |
| Prob [ chi squared > value ] =   .00000     |
| Response data are given as ind. choice.     |
| Number of obs.= 95426, skipped**** bad obs. |
+---------------------------------------------+

+---------------------------------------------+
| Notes No coefficients=> P(i,j)=1/J(i).      |
|       Constants only => P(i,j) uses ASCs    |
|         only. N(j)/N if fixed choice set.   |
|         N(j) = total sample frequency for j |
|         N    = total sample frequency.      |
|       These 2 models are simple MNL models. |
|       R-sqrd = 1 - LogL(model)/logL(other)  |
|       RsqAdj=1-[nJ/(nJ-nparm)]*(1-R-sqrd)   |
|         nJ   = sum over i, choice set sizes |
+---------------------------------------------+
```

Variable	Coefficient	Standard Error	b/St.Er.	P[|Z|>z]
TIA	.01669203	.00224758	7.427	.0000
A_BP	-.58543281	.64113370	-.913	.3612
BP_D21	-.19428925	.08702100	-2.233	.0256
BP_DX11	-2.09021356	.100889D+08	.000	1.0000
BP_DX21	-1.04374039	.40727893	-2.563	.0104
BP_DX31	-.87797729	.25814730	-3.401	.0007
BP_FTL1	.00687724	.02160470	.318	.7502
BP_V21	-.08621755	.02864898	-3.009	.0026
BP_TBA1	-.47991529	.24496348	-1.959	.0501
BP_ES21	.98307067	.17765123	5.534	.0000
BP_LZ21	-.16981643	.18851377	-.901	.3677
BP_CS21	.30576395	.19411968	1.575	.1152
A_B	2.44309080	.25925571	9.423	.0000
B_D22	.09519296	.02423276	3.928	.0001
B_DX12	-1.51560454	.394043D+07	.000	1.0000
B_DX22	-3.06250957	.24296270	-12.605	.0000
B_DX32	-.65668441	.09257669	-7.093	.0000
B_FTL2	-.01614311	.00903902	-1.786	.0741
B_V22	-.14073082	.01069976	-13.153	.0000
B_TBA2	-1.31454567	.10499674	-12.520	.0000
B_ES22	1.46960041	.07654695	19.199	.0000
B_LZ22	-.04733638	.07611128	-.622	.5340
B_CS22	.29935915	.08354042	3.583	.0003
A_BO	-3.35935165	.53594581	-6.268	.0000
BO_D23	.18225534	.05581866	3.265	.0011
BO_DX13	.96741779	.763835D+07	.000	1.0000
BO_DX23	.99950928	.35724786	2.798	.0051
BO_DX33	.26211246	.22363133	1.172	.2412
BO_FTL3	-.12247477	.02416936	-5.067	.0000
BO_V23	-.03886877	.02074730	-1.873	.0610
BO_TBA3	.11458436	.18442493	.621	.5344

BO_ES23	1.30641712	.13437395	9.722	.0000
BO_LZ23	-1.80355872	.29281473	-6.159	.0000
BO_CS23	-1.50782308	.33069201	-4.560	.0000
A_M	-3.26560317	.44116420	-7.402	.0000
M_D24	.08912149	.04884957	1.824	.0681
M_DX14	1.49172592	.659333D+07	.000	1.0000
M_DX24	1.28479609	.30855390	4.164	.0000
M_DX34	1.04585972	.19702245	5.308	.0000
M_FTL4	-.06060361	.01547913	-3.915	.0001
M_V24	.01114148	.01754308	.635	.5254
M_TBA4	.11114271	.14345646	.775	.4385
M_ES24	-1.69060966	.24819295	-6.812	.0000
M_LZ24	-.65035832	.12255140	-5.307	.0000
M_CS24	-.88986608	.16637706	-5.348	.0000
A_P	20.0666573	1.62975008	12.313	.0000
P_D25	-4.91569287	.35946875	-13.675	.0000
P_DX15	17.4046361	.207604D+07	.000	1.0000
P_DX25	-13.0029076	1.15800711	-11.229	.0000
P_DX35	-10.6805401	.94693157	-11.279	.0000
P_FTL5	-.06604352	.02486725	-2.656	.0079
P_V25	-.15564285	.05577759	-2.790	.0053
P_TBA5	1.48437498	.30715905	4.833	.0000
P_ES25	.85371161	.18428294	4.633	.0000
P_LZ25	.38456925	.18881486	2.037	.0417
P_CS25	.58533218	.22686662	2.580	.0099

MNL8a.4 – Combinação de Variáveis TC e Viagem

- ASC

- TBA – Variável continua com a razão dos tempos médios de viagem em BUS e AUTO entre zona de Geração e Atracção

- Ftl – Variável continua inicial sobre a frequência média horária de TC durante todo o horário laboral (7h30-19h30)

- V2 – Variável continua para velocidade comercial equivalente de BUS em km/h

- D2 - Var. continua para distância + curta entre centróides (excepto pedonais 3,6km/h)
- Dx1 - Var.bin distância + curta entre centróides (expto ped.3,6km/h) <=1,0km
- Dx2 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >1,0km e <= 2,0km
- Dx3 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >2,0km e <=5,0km
- *Dx4 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >5,0km (excluída)*

- *Tr2: Variável binária para viagens para o trabalho (com motivo da viagem anterior nas viagens para casa) (excluída)*
- Es2: Variável binária para viagens para a Escola (com motivo da viagem anterior nas viagens para casa)
- Lz2: Variável binária para viagens para Lazer (com motivo da viagem anterior nas viagens para casa)
- CS2: Variável binária para viagens para Compras/Serviços (com motivo da viagem anterior nas viagens para casa)

```
DISCRETECHOICE
;Lhs=MTRP
;Choices=Bp,B,Bo,M,P,A[1]
;Rh2=ONE,D2,DX1,DX2,DX3,FTL,V2,TBA,ES2,LZ2,CS2$

+---------------------------------------------+
| Discrete choice and multinomial logit models|
+---------------------------------------------+
Normal exit from iterations. Exit status=0.
+---------------------------------------------+
| Discrete choice (multinomial logit) model   |
| Maximum Likelihood Estimates                |
| Model estimated: Jan 12, 2012 at 06:37:18PM.|
| Dependent variable               Choice     |
| Weighting variable                 None     |
| Number of observations            36988     |
| Iterations completed                 32     |
| Log likelihood function       -33363.73     |
| Number of parameters                 55     |
| Info. Criterion: AIC =          1.80700     |
|   Finite Sample: AIC =          1.80701     |
| Info. Criterion: BIC =          1.81967     |
| Info. Criterion:HQIC =          1.81103     |
| R2=1-LogL/LogL*  Log-L fncn  R-sqrd  RsqAdj |
| Constants only  -47347.7045  .29535  .29514 |
```

```
| Chi-squared[50]           =  27967.94833     |
| Prob [ chi squared > value ] =   .00000      |
| Response data are given as ind. choice.      |
| Number of obs.= 95426, skipped**** bad obs.  |
+----------------------------------------------+

+----------------------------------------------+
| Notes No coefficients=> P(i,j)=1/J(i).       |
|       Constants only => P(i,j) uses ASCs     |
|         only. N(j)/N if fixed choice set.    |
|         N(j) = total sample frequency for j  |
|         N    = total sample frequency.       |
|       These 2 models are simple MNL models.  |
|       R-sqrd = 1 - LogL(model)/logL(other)   |
|       RsqAdj=1-[nJ/(nJ-nparm)]*(1-R-sqrd)    |
|         nJ   = sum over i, choice set sizes  |
+----------------------------------------------+
```

Variable	Coefficient	Standard Error	b/St.Er.	P[|Z|>z]
A_BP	-.68792876	.27371746	-2.513	.0120
BP_D21	.24305377	.01545485	15.727	.0000
BP_DX11	-1.36263796	1.02015694	-1.336	.1816
BP_DX21	.21874555	.16048751	1.363	.1729
BP_DX31	.30162617	.10305535	2.927	.0034
BP_FTL1	-.00458335	.00419913	-1.091	.2751
BP_V21	-.13218451	.01196860	-11.044	.0000
BP_TBA1	-1.50670296	.10753025	-14.012	.0000
BP_ES21	.88046777	.09001726	9.781	.0000
BP_LZ21	-.13120743	.09170241	-1.431	.1525
BP_CS21	-.04589879	.10765764	-.426	.6699
A_B	1.81344593	.11369053	15.951	.0000
B_D22	.09823729	.00869738	11.295	.0000
B_DX12	-1.45856522	.26414514	-5.522	.0000
B_DX22	-.79037386	.07083422	-11.158	.0000
B_DX32	-.35325153	.04323185	-8.171	.0000
B_FTL2	.01425721	.00156841	9.090	.0000
B_V22	-.11421832	.00456039	-25.046	.0000
B_TBA2	-1.16486166	.04047830	-28.777	.0000
B_ES22	.99848011	.03824254	26.109	.0000
B_LZ22	.04627854	.03366276	1.375	.1692
B_CS22	.25191060	.03958259	6.364	.0000
A_BO	-5.06976404	.29917899	-16.946	.0000
BO_D23	.15841015	.01533414	10.331	.0000
BO_DX13	-28.4431632	.178390D+07	.000	1.0000
BO_DX23	1.09299441	.19085267	5.727	.0000
BO_DX33	.69170911	.11025847	6.274	.0000
BO_FTL3	-.07326492	.00837898	-8.744	.0000
BO_V23	.01190814	.01116884	1.066	.2863
BO_TBA3	.53234476	.09518741	5.593	.0000
BO_ES23	1.17997548	.08422898	14.009	.0000
BO_LZ23	-1.18173695	.14412575	-8.199	.0000
BO_CS23	-2.11915035	.27358504	-7.746	.0000
A_M	-3.52507933	.25608352	-13.765	.0000
M_D24	-.02357378	.02321136	-1.016	.3098
M_DX14	-29.1259145	.168683D+07	.000	1.0000

M_DX24	1.07075337	.16724912	6.402	.0000
M_DX34	.55335312	.10685740	5.178	.0000
M_FTL4	-.05417450	.00576929	-9.390	.0000
M_V24	.04110580	.00757565	5.426	.0000
M_TBA4	.38310379	.07704877	4.972	.0000
M_ES24	-1.43088020	.15451902	-9.260	.0000
M_LZ24	-.63728246	.08086652	-7.881	.0000
M_CS24	-.99730900	.11765609	-8.476	.0000
A_P	5.92461731	.42781368	13.849	.0000
P_D25	-1.27473942	.08274162	-15.406	.0000
P_DX15	-.29999166	.39590562	-.758	.4486
P_DX25	-1.98333879	.32360375	-6.129	.0000
P_DX35	-2.89869812	.26253239	-11.041	.0000
P_FTL5	.00219948	.00249624	.881	.3783
P_V25	-.27550696	.01700088	-16.205	.0000
P_TBA5	-.17575891	.06320650	-2.781	.0054
P_ES25	.85346232	.06853278	12.453	.0000
P_LZ25	.19861959	.06333785	3.136	.0017
P_CS25	.42787898	.07465978	5.731	.0000

MNL8a.5 – Combinação de Variáveis TC e Viagem

- ASC

- TBA – Variável continua com a razão dos tempos médios de viagem em BUS e AUTO entre zona de Geração e Atracção

- Fm – Variável continua inicial sobre a frequência média horária de TC na hora de ponta da manhã (7h30-9h30)

- V2 – Variável continua para velocidade comercial equivalente de BUS em km/h

- D2 - Var. continua para distância + curta entre centróides (excepto pedonais 3,6km/h)
- Dx1 - Var.bin distância + curta entre centróides (expto ped.3,6km/h) <=1,0km
- Dx2 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >1,0km e <= 2,0km
- Dx3 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >2,0km e <=5,0km
- *Dx4 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >5,0km (excluída)*

- *Tr2: Variável binária para viagens para o trabalho (com motivo da viagem anterior nas viagens para casa) (excluída)*
- Es2: Variável binária para viagens para a Escola (com motivo da viagem anterior nas viagens para casa)
- Lz2: Variável binária para viagens para Lazer (com motivo da viagem anterior nas viagens para casa)
- CS2: Variável binária para viagens para Compras/Serviços (com motivo da viagem anterior nas viagens para casa)

```
DISCRETECHOICE
;Lhs=MTRP
;Choices=Bp,B,Bo,M,P,A[1]
;Rh2=ONE,D2,DX1,DX2,DX3,FM,V2,TBA,ES2,LZ2,CS2$

+---------------------------------------------+
| Discrete choice and multinomial logit models|
+---------------------------------------------+
Normal exit from iterations. Exit status=0.
+---------------------------------------------+
| Discrete choice (multinomial logit) model   |
| Maximum Likelihood Estimates                |
| Model estimated: Jan 12, 2012 at 06:49:31PM.|
| Dependent variable               Choice     |
| Weighting variable                 None     |
| Number of observations            36988     |
| Iterations completed                 32     |
| Log likelihood function       -33324.81     |
| Number of parameters                 55     |
| Info. Criterion: AIC =          1.80490     |
|   Finite Sample: AIC =          1.80490     |
| Info. Criterion: BIC =          1.81757     |
| Info. Criterion:HQIC =          1.80892     |
| R2=1-LogL/LogL*  Log-L fncn  R-sqrd  RsqAdj |
| Constants only  -47347.7045  .29617  .29596 |
```

```
| Chi-squared[50]           =  28045.78315     |
| Prob [ chi squared > value ] =   .00000      |
| Response data are given as ind. choice.      |
| Number of obs.= 95426, skipped**** bad obs.  |
+----------------------------------------------+

+----------------------------------------------+
| Notes No coefficients=> P(i,j)=1/J(i).       |
|       Constants only => P(i,j) uses ASCs     |
|         only. N(j)/N if fixed choice set.    |
|         N(j) = total sample frequency for j  |
|         N    = total sample frequency.       |
|       These 2 models are simple MNL models.  |
|       R-sqrd = 1 - LogL(model)/logL(other)   |
|       RsqAdj=1-[nJ/(nJ-nparm)]*(1-R-sqrd)    |
|         nJ   = sum over i, choice set sizes  |
+----------------------------------------------+
```

Variable	Coefficient	Standard Error	b/St.Er.	P[|Z|>z]
A_BP	-.71240439	.27398910	-2.600	.0093
BP_D21	.24249136	.01545179	15.693	.0000
BP_DX11	-1.36030784	1.02012565	-1.333	.1824
BP_DX21	.21923618	.16046599	1.366	.1719
BP_DX31	.30068544	.10301265	2.919	.0035
BP_FM1	-.00417224	.00523019	-.798	.4250
BP_V21	-.13145008	.01193134	-11.017	.0000
BP_TBA1	-1.50038500	.10814832	-13.873	.0000
BP_ES21	.88078198	.09002225	9.784	.0000
BP_LZ21	-.13203612	.09169525	-1.440	.1499
BP_CS21	-.04463529	.10764823	-.415	.6784
A_B	1.69680596	.11343446	14.958	.0000
B_D22	.09839284	.00871330	11.292	.0000
B_DX12	-1.44080721	.26414258	-5.455	.0000
B_DX22	-.77853463	.07090131	-10.981	.0000
B_DX32	-.35609663	.04327168	-8.229	.0000
B_FM2	.02280108	.00193054	11.811	.0000
B_V22	-.11289911	.00454616	-24.834	.0000
B_TBA2	-1.12061511	.04055369	-27.633	.0000
B_ES22	1.00080108	.03827671	26.146	.0000
B_LZ22	.04518885	.03369957	1.341	.1799
B_CS22	.25322549	.03963038	6.390	.0000
A_BO	-5.10717445	.29855796	-17.106	.0000
BO_D23	.15628125	.01531748	10.203	.0000
BO_DX13	-28.4149946	.178313D+07	.000	1.0000
BO_DX23	1.11336652	.19066657	5.839	.0000
BO_DX33	.72253392	.11007289	6.564	.0000
BO_FM3	-.09454380	.01058440	-8.932	.0000
BO_V23	.01361584	.01115184	1.221	.2221
BO_TBA3	.54144498	.09565104	5.661	.0000
BO_ES23	1.18008579	.08425882	14.005	.0000
BO_LZ23	-1.18530016	.14412826	-8.224	.0000
BO_CS23	-2.12193898	.27360647	-7.755	.0000
A_M	-3.56486031	.25460957	-14.001	.0000
M_D24	-.02424101	.02307791	-1.050	.2935
M_DX14	-29.0935442	.168474D+07	.000	1.0000

M_DX24	1.09282687	.16667262	6.557	.0000
M_DX34	.58248068	.10664876	5.462	.0000
M_FM4	-.07030180	.00736835	-9.541	.0000
M_V24	.04279684	.00754138	5.675	.0000
M_TBA4	.39047737	.07722181	5.057	.0000
M_ES24	-1.43161085	.15453095	-9.264	.0000
M_LZ24	-.64049573	.08086804	-7.920	.0000
M_CS24	-.99755461	.11766548	-8.478	.0000
A_P	5.88670595	.42794875	13.756	.0000
P_D25	-1.28005813	.08258251	-15.500	.0000
P_DX15	-.30914056	.39585648	-.781	.4348
P_DX25	-1.99330626	.32352972	-6.161	.0000
P_DX35	-2.91046588	.26251839	-11.087	.0000
P_FM5	.00608008	.00313760	1.938	.0526
P_V25	-.27376798	.01694760	-16.154	.0000
P_TBA5	-.15748409	.06299912	-2.500	.0124
P_ES25	.85336876	.06853422	12.452	.0000
P_LZ25	.19701660	.06332227	3.111	.0019
P_CS25	.42770362	.07465399	5.729	.0000

MNL8a.6 – Combinação de Variáveis TC e Viagem

- ASC

- V2 – Variável continua para velocidade comercial equivalente de BUS em km/h

- D2 - Var. continua para distância + curta entre centróides (excepto pedonais 3,6km/h)
- Dx1 - Var.bin distância + curta entre centróides (expto ped.3,6km/h) <=1,0km
- Dx2 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >1,0km e <= 2,0km
- Dx3 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >2,0km e <=5,0km
- *Dx4 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >5,0km (excluída)*

```
DISCRETECHOICE
;Lhs=MTRP
;Choices=Bp,B,Bo,M,P,A[1]
;Rh2=ONE,D2,DX1,DX2,DX3,V2$
+---------------------------------------------+
| Discrete choice and multinomial logit models|
+---------------------------------------------+
Normal exit from iterations. Exit status=0.
+---------------------------------------------+
| Discrete choice (multinomial logit) model   |
| Maximum Likelihood Estimates                |
| Model estimated: Feb 11, 2012 at 02:34:16AM.|
| Dependent variable               Choice     |
| Weighting variable                 None     |
| Number of observations            89305     |
| Iterations completed                 30     |
| Log likelihood function       -91551.95     |
| Number of parameters                 30     |
| Info. Criterion: AIC =          2.05099     |
|   Finite Sample: AIC =          2.05099     |
| Info. Criterion: BIC =          2.05415     |
| Info. Criterion:HQIC =          2.05196     |
| R2=1-LogL/LogL*  Log-L fncn  R-sqrd  RsqAdj |
| Constants only  ***********  .20849  .20844 |
| Chi-squared[25]          =  48232.35048     |
| Prob [ chi squared > value ] =   .00000     |
| Response data are given as ind. choice.     |
| Number of obs.= 95426, skipped6121 bad obs. |
+---------------------------------------------+

+---------------------------------------------+
| Notes No coefficients=> P(i,j)=1/J(i).      |
|       Constants only => P(i,j) uses ASCs    |
|         only. N(j)/N if fixed choice set.   |
|         N(j) = total sample frequency for j |
|         N    = total sample frequency.      |
|       These 2 models are simple MNL models. |
|       R-sqrd = 1 - LogL(model)/logL(other)  |
|       RsqAdj=1-[nJ/(nJ-nparm)]*(1-R-sqrd)   |
|         nJ   = sum over i, choice set sizes |
+---------------------------------------------+
+--------+--------------+----------------+--------+--------+
```

Variable	Coefficient	Standard Error	b/St.Er.	P[|Z|>z]
A_BP	-3.55205983	.09234843	-38.464	.0000
BP_D21	.10673237	.00970263	11.000	.0000
BP_DX11	-.66632187	1.01091629	-.659	.5098
BP_DX21	.62062725	.10210480	6.078	.0000
BP_DX31	.25203787	.06363867	3.960	.0001
BP_V21	-.02400405	.00540930	-4.438	.0000
A_B	-.39624198	.04141762	-9.567	.0000
B_D22	.05310458	.00483356	10.987	.0000
B_DX12	-.50360636	.24118219	-2.088	.0368
B_DX22	-.44747854	.04621077	-9.683	.0000
B_DX32	-.12735267	.02655162	-4.796	.0000
B_V22	-.06629255	.00237569	-27.905	.0000
A_BO	-3.10428842	.08316797	-37.326	.0000
BO_D23	-.04109862	.00982391	-4.184	.0000
BO_DX13	-30.4845719	.233542D+07	.000	1.0000
BO_DX23	-.43523615	.11293338	-3.854	.0001
BO_DX33	.16022209	.05425556	2.953	.0031
BO_V23	.04426916	.00372841	11.873	.0000
A_M	-2.30491595	.07354067	-31.342	.0000
M_D24	-.10111109	.00929209	-10.881	.0000
M_DX14	-30.7484492	.182719D+07	.000	1.0000
M_DX24	-.23253874	.08278839	-2.809	.0050
M_DX34	.14835439	.04571428	3.245	.0012
M_V24	.04558205	.00310459	14.682	.0000
A_P	4.62753245	.30768259	15.040	.0000
P_D25	-1.33882444	.05676857	-23.584	.0000
P_DX15	1.24539825	.29966013	4.156	.0000
P_DX25	-1.35056631	.23888907	-5.654	.0000
P_DX35	-2.36432781	.19439501	-12.162	.0000
P_V25	-.17358707	.01099223	-15.792	.0000

MNL8a.7 – Combinação de Variáveis TC e Viagem

- ASC

- TBA – Variável continua com a razão dos tempos médios de viagem em BUS e AUTO entre zona de Geração e Atracção

- Ftl – Variável continua inicial sobre a frequência média horária de TC durante todo o horário laboral (7h30-19h30)

- V2 – Variável continua para velocidade comercial equivalente de BUS em km/h

- D2 - Var. continua para distância + curta entre centróides (excepto pedonais 3,6km/h)
- Dx1 - Var.bin distância + curta entre centróides (expto ped.3,6km/h) <=1,0km
- Dx2 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >1,0km e <= 2,0km
- Dx3 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >2,0km e <=5,0km
- *Dx4 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >5,0km (excluída)*

- *Rg:Variável binária para viagens de Regresso a casa (exluída)*
- Tr: Variável binária para viagens para trabalho
- Es: Variável binária para viagens para a escola
- Lz: Variável binária para viagens em lazer
- CS: Variável binária para viagens para compras/serviços

```
DISCRETECHOICE
;Lhs=MTRP
;Choices=Bp,B,Bo,M,P,A[1]
;Rh2=ONE,FTL,TR,ES,LZ,CS,D2,DX1,DX2,DX3,V2,TBA$
Maximum of   100 iterations. Exit iterations with status=1.

------------------------------------------------------------------------------
Discrete choice (multinomial logit) model
Dependent variable                Choice
Log likelihood function    -36401.06809
Estimation based on N =  40099, K =  60
Inf.Cr.AIC  =  72922.1 AIC/N =    1.819
Model estimated: May 10, 2012, 10:30:00
R2=1-LogL/LogL* Log-L fncn R-sqrd R2Adj
Constants only  **********  .2828 .2825
Chi-squared[55]           =  28700.95226
Prob [ chi squared > value ] =   .00000
Response data are given as ind. choices
Number of obs.= 95426, skipped55327 obs
--------+---------------------------------------------------------------------
        |                 Standard            Prob.      95% Confidence
    MTRP|  Coefficient       Error       z    |z|>Z*         Interval
--------+---------------------------------------------------------------------
   A_BP|    -.80025***      .26422    -3.03  .0025    -1.31811    -.28238
BP_FTL1|    -.00465         .00409    -1.14  .2554     -.01267     .00336
 BP_TR1|    -.20987**       .08421    -2.49  .0127     -.37492    -.04482
 BP_ES1|     .63438***      .11062     5.73  .0000      .41756     .85119
```

BP_LZ1	-.33801***	.11344	-2.98	.0029	-.56035	-.11567
BP_CS1	-.33851**	.14430	-2.35	.0190	-.62134	-.05569
BP_D21	.23950***	.01477	16.21	.0000	.21054	.26845
BP_DX11	-1.33472	1.01813	-1.31	.1899	-3.33022	.66078
BP_DX21	.25538*	.15467	1.65	.0987	-.04778	.55853
BP_DX31	.33668***	.09851	3.42	.0006	.14360	.52976
BP_V21	-.12468***	.01143	-10.91	.0000	-.14709	-.10227
BP_TBA1	-1.39559***	.10272	-13.59	.0000	-1.59692	-1.19425
A_B	1.89053***	.10918	17.32	.0000	1.67654	2.10452
B_FTL2	.01442***	.00150	9.60	.0000	.01148	.01737
B_TR2	-.19234***	.03259	-5.90	.0000	-.25621	-.12846
B_ES2	.69151***	.04707	14.69	.0000	.59926	.78375
B_LZ2	-.14989***	.04015	-3.73	.0002	-.22858	-.07121
B_CS2	.01055	.04991	.21	.8326	-.08728	.10837
B_D22	.09479***	.00834	11.37	.0000	.07844	.11113
B_DX12	-1.34448***	.24746	-5.43	.0000	-1.82949	-.85947
B_DX22	-.75621***	.06755	-11.19	.0000	-.88861	-.62381
B_DX32	-.33965***	.04130	-8.22	.0000	-.42060	-.25871
B_V22	-.11179***	.00436	-25.63	.0000	-.12034	-.10324
B_TBA2	-1.11569***	.03855	-28.94	.0000	-1.19124	-1.04013
A_BO	-5.27397***	.29150	-18.09	.0000	-5.84531	-4.70263
BO_FTL3	-.07082***	.00805	-8.80	.0000	-.08660	-.05505
BO_TR3	.09416	.09138	1.03	.3028	-.08494	.27326
BO_ES3	1.22035***	.10260	11.89	.0000	1.01926	1.42144
BO_LZ3	-.89010***	.17427	-5.11	.0000	-1.23166	-.54854
BO_CS3	-1.80364***	.33896	-5.32	.0000	-2.46800	-1.13929
BO_D23	.15957***	.01501	10.63	.0000	.13014	.18900
BO_DX13	-97.6638	.6382D+21	.00	1.0000	**********	**********
BO_DX23	1.16596***	.18553	6.28	.0000	.80234	1.52959
BO_DX33	.77060***	.10730	7.18	.0000	.56030	.98091
BO_V23	.01451	.01082	1.34	.1798	-.00669	.03572
BO_TBA3	.51824***	.09206	5.63	.0000	.33780	.69868
A_M	-3.97914***	.25166	-15.81	.0000	-4.47238	-3.48591
M_FTL4	-.05261***	.00566	-9.30	.0000	-.06370	-.04153
M_TR4	.39804***	.06893	5.77	.0000	.26295	.53314
M_ES4	-1.00295***	.20334	-4.93	.0000	-1.40148	-.60441
M_LZ4	-.24949**	.10655	-2.34	.0192	-.45833	-.04066
M_CS4	-.66877***	.16453	-4.06	.0000	-.99124	-.34630
M_D24	-.02217	.02248	-.99	.3239	-.06623	.02188
M_DX14	-98.4316	.6382D+21	.00	1.0000	**********	**********
M_DX24	1.06690***	.16173	6.60	.0000	.74992	1.38388
M_DX34	.53275***	.10385	5.13	.0000	.32920	.73630
M_V24	.04140***	.00755	5.49	.0000	.02661	.05619
M_TBA4	.38716***	.07580	5.11	.0000	.23860	.53573
A_P	6.36053***	.41484	15.33	.0000	5.54747	7.17360
P_FTL5	.00272	.00241	1.13	.2577	-.00199	.00744
P_TR5	-.45886***	.06452	-7.11	.0000	-.58532	-.33240
P_ES5	.25464***	.08312	3.06	.0022	.09172	.41755
P_LZ5	-.21136***	.07376	-2.87	.0042	-.35593	-.06680
P_CS5	-.03375	.09167	-.37	.7127	-.21343	.14593
P_D25	-1.32564***	.08026	-16.52	.0000	-1.48294	-1.16834
P_DX15	-.41321	.38352	-1.08	.2813	-1.16489	.33848
P_DX25	-2.06479***	.31513	-6.55	.0000	-2.68243	-1.44716
P_DX35	-2.92104***	.25704	-11.36	.0000	-3.42484	-2.41724
P_V25	-.26984***	.01629	-16.57	.0000	-.30176	-.23792
P_TBA5	-.16245***	.06017	-2.70	.0069	-.28038	-.04451

```
--------+--------------------------------------------------------------------
Note: nnnnn.D-xx or D+xx => multiply by 10 to -xx or +xx.
Note: ***, **, * ==>  Significance at 1%, 5%, 10% level.
-----------------------------------------------------------------------------
```

MNL8a.8 – Combinação de Variáveis TC e Viagem

- ASC

- TBA – Variável continua com a razão dos tempos médios de viagem em BUS e AUTO entre zona de Geração e Atracção

- Fm – Variável continua inicial sobre a frequência média horária de TC na hora de ponta da manhã (7h30-9h30)

- V2 – Variável continua para velocidade comercial equivalente de BUS em km/h

- D2 - Var. continua para distância + curta entre centróides (excepto pedonais 3,6km/h)
- Dx1 - Var.bin distância + curta entre centróides (expto ped.3,6km/h) <=1,0km
- Dx2 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >1,0km e <= 2,0km
- Dx3 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >2,0km e <=5,0km
- *Dx4 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >5,0km (excluída)*

- *Rg:Variável binária para viagens de Regresso a casa (exluída)*
- Tr: Variável binária para viagens para trabalho
- Es: Variável binária para viagens para a escola
- Lz: Variável binária para viagens em lazer
- CS: Variável binária para viagens para compras/serviços

```
DISCRETECHOICE
;Lhs=MTRP
;Choices=Bp,B,Bo,M,P,A[1]
;Rh2=ONE,Fm,TR,ES,LZ,CS,D2,DX1,DX2,DX3,V2,TBA$
Maximum of   100 iterations. Exit iterations with status=1.

--------------------------------------------------------------------------------
Discrete choice (multinomial logit) model
Dependent variable                Choice
Log likelihood function    -36359.09788
Estimation based on N =  40099, K =  60
Inf.Cr.AIC  =  72838.2 AIC/N =    1.816
Model estimated: May 10, 2012, 21:31:57
R2=1-LogL/LogL* Log-L fncn R-sqrd R2Adj
Constants only  **********  .2836 .2834
Chi-squared[55]           =  28784.89268
Prob [ chi squared > value ] =   .00000
Response data are given as ind. choices
Number of obs.= 95426, skipped55327 obs
--------+-----------------------------------------------------------------------
        |                 Standard            Prob.      95% Confidence
   MTRP |  Coefficient       Error       z    |z|>Z*         Interval
--------+-----------------------------------------------------------------------
   A_BP |    -.82304***       .26450    -3.11  .0019    -1.34145    -.30463
 BP_FM1 |    -.00432          .00509     -.85  .3958     -.01430     .00565
 BP_TR1 |    -.21036**        .08421    -2.50  .0125     -.37541    -.04532
 BP_ES1 |     .63437***       .11063     5.73  .0000      .41754     .85120
```

BP_LZ1	-.33938***	.11343	-2.99	.0028	-.56169	-.11707
BP_CS1	-.33816**	.14430	-2.34	.0191	-.62098	-.05534
BP_D21	.23897***	.01477	16.18	.0000	.21002	.26792
BP_DX11	-1.33219	1.01810	-1.31	.1907	-3.32762	.66325
BP_DX21	.25613*	.15465	1.66	.0977	-.04698	.55924
BP_DX31	.33604***	.09846	3.41	.0006	.14306	.52903
BP_V21	-.12396***	.01140	-10.88	.0000	-.14630	-.10163
BP_TBA1	-1.38998***	.10332	-13.45	.0000	-1.59248	-1.18749
A_B	1.77248***	.10895	16.27	.0000	1.55894	1.98603
B_FM2	.02306***	.00185	12.48	.0000	.01944	.02669
B_TR2	-.19285***	.03263	-5.91	.0000	-.25680	-.12890
B_ES2	.69334***	.04711	14.72	.0000	.60101	.78567
B_LZ2	-.15082***	.04019	-3.75	.0002	-.22958	-.07205
B_CS2	.01117	.04998	.22	.8231	-.08678	.10913
B_D22	.09500***	.00836	11.37	.0000	.07862	.11138
B_DX12	-1.32542***	.24745	-5.36	.0000	-1.81042	-.84042
B_DX22	-.74302***	.06763	-10.99	.0000	-.87557	-.61047
B_DX32	-.34202***	.04134	-8.27	.0000	-.42305	-.26100
B_V22	-.11044***	.00435	-25.40	.0000	-.11896	-.10192
B_TBA2	-1.07109***	.03862	-27.73	.0000	-1.14679	-.99540
A_BO	-5.31444***	.29096	-18.27	.0000	-5.88471	-4.74417
BO_FM3	-.09025***	.01012	-8.92	.0000	-.11009	-.07042
BO_TR3	.09418	.09139	1.03	.3027	-.08493	.27329
BO_ES3	1.22145***	.10261	11.90	.0000	1.02034	1.42257
BO_LZ3	-.89354***	.17427	-5.13	.0000	-1.23511	-.55198
BO_CS3	-1.80543***	.33898	-5.33	.0000	-2.46983	-1.14104
BO_D23	.15739***	.01500	10.49	.0000	.12799	.18680
BO_DX13	-97.6361	.6382D+21	.00	1.0000	**********	**********
BO_DX23	1.18433***	.18533	6.39	.0000	.82108	1.54757
BO_DX33	.79986***	.10715	7.46	.0000	.58985	1.00987
BO_V23	.01631	.01080	1.51	.1308	-.00485	.03747
BO_TBA3	.52693***	.09250	5.70	.0000	.34562	.70823
A_M	-4.01350***	.25036	-16.03	.0000	-4.50420	-3.52279
M_FM4	-.06847***	.00722	-9.49	.0000	-.08262	-.05433
M_TR4	.39828***	.06894	5.78	.0000	.26317	.53339
M_ES4	-1.00285***	.20334	-4.93	.0000	-1.40139	-.60430
M_LZ4	-.25210**	.10655	-2.37	.0180	-.46093	-.04326
M_CS4	-.66853***	.16454	-4.06	.0000	-.99102	-.34604
M_D24	-.02266	.02234	-1.01	.3104	-.06645	.02112
M_DX14	-98.4007	.6382D+21	.00	1.0000	**********	**********
M_DX24	1.08730***	.16116	6.75	.0000	.77143	1.40316
M_DX34	.56038***	.10361	5.41	.0000	.35730	.76346
M_V24	.04290***	.00752	5.71	.0000	.02817	.05763
M_TBA4	.39276***	.07602	5.17	.0000	.24377	.54175
A_P	6.32300***	.41494	15.24	.0000	5.50974	7.13627
P_FM5	.00671**	.00302	2.22	.0265	.00078	.01264
P_TR5	-.45895***	.06452	-7.11	.0000	-.58540	-.33250
P_ES5	.25436***	.08314	3.06	.0022	.09141	.41730
P_LZ5	-.21295***	.07375	-2.89	.0039	-.35751	-.06840
P_CS5	-.03442	.09167	-.38	.7073	-.21409	.14525
P_D25	-1.33055***	.08010	-16.61	.0000	-1.48754	-1.17355
P_DX15	-.42149	.38345	-1.10	.2717	-1.17303	.33005
P_DX25	-2.07378***	.31503	-6.58	.0000	-2.69123	-1.45634
P_DX35	-2.93219***	.25701	-11.41	.0000	-3.43592	-2.42845
P_V25	-.26821***	.01624	-16.52	.0000	-.30003	-.23639
P_TBA5	-.14490**	.05997	-2.42	.0157	-.26244	-.02737

```
--------+-------------------------------------------------------------------
Note: nnnnn.D-xx or D+xx => multiply by 10 to -xx or +xx.
Note: ***, **, * ==>  Significance at 1%, 5%, 10% level.
-----------------------------------------------------------------------------
```

MNL8a.7 (4Mot) – Combinação de Variáveis TC e Viagem

- ASC

- TBA – Variável continua com a razão dos tempos médios de viagem em BUS e AUTO entre zona de Geração e Atracção

- Ftl – Variável continua inicial sobre a frequência média horária de TC durante todo o horário laboral (7h30-19h30)

- V2 – Variável continua para velocidade comercial equivalente de BUS em km/h

- D2 - Var. continua para distância + curta entre centróides (excepto pedonais 3,6km/h)
- Dx1 - Var.bin distância + curta entre centróides (expto ped.3,6km/h) <=1,0km
- Dx2 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >1,0km e <= 2,0km
- Dx3 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >2,0km e <=5,0km
- *Dx4 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >5,0km (excluída)*

- *Tr: Variável binária para viagens para o trabalho (excluída)*
- Es: Variável binária para viagens para a Escola
- Lz: Variável binária para viagens para
- CS: Variável binária para viagens para Compras/Serviços

```
DISCRETECHOICE
;Lhs=MTRP
;Choices=Bp,B,Bo,M,P,A[1]
;Rh2=ONE,FTL,ES,LZ,CS,D2,DX1,DX2,DX3,V2,TBA$
 +---------------------------------------------+
| Discrete choice and multinomial logit models|
+---------------------------------------------+
Normal exit from iterations. Exit status=0.
+---------------------------------------------+
| Discrete choice (multinomial logit) model   |
| Maximum Likelihood Estimates                |
| Model estimated: Feb 12, 2012 at 04:09:54PM.|
| Dependent variable               Choice     |
| Weighting variable                 None     |
| Number of observations            20122     |
| Iterations completed                 31     |
| Log likelihood function       -18035.44     |
| Number of parameters                 55     |
| Info. Criterion: AIC =          1.79808     |
|   Finite Sample: AIC =          1.79809     |
| Info. Criterion: BIC =          1.81970     |
| Info. Criterion:HQIC =          1.80515     |
| R2=1-LogL/LogL*  Log-L fncn  R-sqrd  RsqAdj |
| Constants only  -25433.2300  .29087  .29048 |
| Chi-squared[50]          =  14795.58298     |
| Prob [ chi squared > value ] =   .00000     |
| Response data are given as ind. choice.     |
| Number of obs.= 47046, skipped**** bad obs. |
+---------------------------------------------+
```

```
+---------------------------------------------+
| Notes No coefficients=> P(i,j)=1/J(i).      |
|       Constants only => P(i,j) uses ASCs    |
|         only. N(j)/N if fixed choice set.   |
|         N(j) = total sample frequency for j |
|         N    = total sample frequency.      |
|       These 2 models are simple MNL models. |
|       R-sqrd = 1 - LogL(model)/logL(other)  |
|       RsqAdj=1-[nJ/(nJ-nparm)]*(1-R-sqrd)   |
|         nJ   = sum over i, choice set sizes |
+---------------------------------------------+
+--------+--------------+----------------+--------+--------+
|Variable| Coefficient  | Standard Error |b/St.Er.|P[|Z|>z]|
+--------+--------------+----------------+--------+--------+

+--------+--------------+----------------+--------+--------+
|Variable| Coefficient  | Standard Error |b/St.Er.|P[|Z|>z]|
+--------+--------------+----------------+--------+--------+
 A_BP     |    -.50547583       .37636909    -1.343    .1793
 BP_FTL1  |    -.01002456       .00579109    -1.731    .0834
 BP_ES1   |     .85031961       .12363346     6.878    .0000
 BP_LZ1   |    -.13273128       .12609471    -1.053    .2925
 BP_CS1   |    -.13254351       .15424167     -.859    .3902
 BP_D21   |     .23460513       .02191097    10.707    .0000
 BP_DX11  |    -.87573572      1.03605882     -.845    .3980
 BP_DX21  |     .09719536       .22277858      .436    .6626
 BP_DX31  |     .28342141       .14331867     1.978    .0480
 BP_V21   |    -.13502765       .01667998    -8.095    .0000
 BP_TBA1  |   -1.58344234       .14862097   -10.654    .0000
 A_B      |    1.71801850       .15260027    11.258    .0000
 B_FTL2   |     .01080318       .00208694     5.177    .0000
 B_ES2    |     .88355484       .05166348    17.102    .0000
 B_LZ2    |     .04853797       .04512315     1.076    .2821
 B_CS2    |     .19912388       .05401462     3.686    .0002
 B_D22    |     .11226446       .01165207     9.635    .0000
 B_DX12   |   -1.26694768       .33796506    -3.749    .0002
 B_DX22   |    -.68403516       .09449271    -7.239    .0000
 B_DX32   |    -.26867170       .05821308    -4.615    .0000
 B_V22    |    -.11304540       .00617243   -18.315    .0000
 B_TBA2   |   -1.18190448       .05456740   -21.660    .0000
 A_BO     |   -5.19253163       .40538427   -12.809    .0000
 BO_FTL3  |    -.07652931       .01140772    -6.709    .0000
 BO_ES3   |    1.12545694       .11580236     9.719    .0000
 BO_LZ3   |    -.98266307       .18206248    -5.397    .0000
 BO_CS3   |   -1.89916082       .34286286    -5.539    .0000
 BO_D23   |     .16199815       .02067805     7.834    .0000
 BO_DX13  |  -27.5783189     .158566D+07       .000  1.0000
 BO_DX23  |    1.16562681       .25721226     4.532    .0000
 BO_DX33  |     .78357164       .15034262     5.212    .0000
 BO_V23   |     .01472723       .01487855      .990    .3223
 BO_TBA3  |     .52881261       .12917431     4.094    .0000
 A_M      |   -3.52699484       .34833726   -10.125    .0000
 M_FTL4   |    -.05552324       .00785623    -7.067    .0000
 M_ES4    |   -1.39973190       .20592316    -6.797    .0000
 M_LZ4    |    -.64508524       .11089366    -5.817    .0000
```

M_CS4	-1.06723580	.16737786	-6.376	.0000
M_D24	-.01751737	.03118564	-.562	.5743
M_DX14	-28.3664546	.150775D+07	.000	1.0000
M_DX24	1.00179391	.22777812	4.398	.0000
M_DX34	.53443831	.14569602	3.668	.0002
M_V24	.03755241	.01021235	3.677	.0002
M_TBA4	.38123445	.10554669	3.612	.0003
A_P	6.15334092	.58976946	10.433	.0000
P_FTL5	.00120270	.00335839	.358	.7203
P_ES5	.71550481	.09463348	7.561	.0000
P_LZ5	.24597103	.08604784	2.859	.0043
P_CS5	.41753430	.10194646	4.096	.0000
P_D25	-1.33149481	.11581678	-11.497	.0000
P_DX15	-.60967630	.53979233	-1.129	.2587
P_DX25	-2.34793232	.44227723	-5.309	.0000
P_DX35	-3.29730318	.35498570	-9.289	.0000
P_V25	-.25105564	.02318351	-10.829	.0000
P_TBA5	-.18423566	.08587439	-2.145	.0319

MNL8a.9 – Combinação de Variáveis TC e Viagem

- ASC

- Fm : Frequencia média horária de TC potencialmente à disposição entre a zona de geração e de atracção entre as 7:30 e as 9:30 (nfreq730930/2)

- D2: Variável continua distância mais curta em Km entre os centróides ajustados das zonas de Geração e de Atracção (pares >=50 viagens) excepto para o modo Walk em que d2=tp/60*3,6km/h

- dx1: Variável binária para distâncias mais curtas D2<=1,0km
- dx2: Variável binária para distâncias mais curtas D2>1,0km e <=2,0km
- dx3: Variável binária para distâncias mais curtas D2>2,0km e <=5,0km
- *dx4a: Variável binária para distâncias mais curtas D2>5,0km (excluída)*

```
DISCRETECHOICE
;Lhs=MTRP
;Choices=Bp,B,Bo,M,P,A[1]
;Rh2=ONE,FM,D2,DX1,DX2,DX3$
+---------------------------------------------+
| Discrete choice and multinomial logit models|
+---------------------------------------------+
Normal exit from iterations. Exit status=0.
+---------------------------------------------+
| Discrete choice (multinomial logit) model   |
| Maximum Likelihood Estimates                |
| Model estimated: Feb 15, 2012 at 10:39:29AM.|
| Dependent variable               Choice     |
| Weighting variable                 None     |
| Number of observations            41329     |
| Iterations completed                 32     |
| Log likelihood function       -38518.59     |
| Number of parameters                 30     |
| Info. Criterion: AIC =          1.86545     |
|   Finite Sample: AIC =          1.86545     |
| Info. Criterion: BIC =          1.87171     |
| Info. Criterion:HQIC =          1.86743     |
| R2=1-LogL/LogL*  Log-L fncn  R-sqrd  RsqAdj |
| Constants only  -52160.0860  .26153  .26142 |
| Chi-squared[25]          =  27282.99943     |
| Prob [ chi squared > value ] =   .00000     |
| Response data are given as ind. choice.     |
| Number of obs.= 95426, skipped**** bad obs. |
+---------------------------------------------+

+---------------------------------------------+
| Notes No coefficients=> P(i,j)=1/J(i).      |
|       Constants only => P(i,j) uses ASCs    |
|         only. N(j)/N if fixed choice set.   |
|         N(j) = total sample frequency for j |
|         N    = total sample frequency.      |
|       These 2 models are simple MNL models. |
|       R-sqrd = 1 - LogL(model)/logL(other)  |
```

```
|       RsqAdj=1-[nJ/(nJ-nparm)]*(1-R-sqrd)   |
|         nJ   = sum over i, choice set sizes |
+---------------------------------------------+
+--------+--------------+----------------+--------+--------+
|Variable| Coefficient  | Standard Error |b/St.Er.|P[|Z|>z]|
+--------+--------------+----------------+--------+--------+
 A_BP     |   -4.59684149       .11977314   -38.380   .0000
 BP_FM1   |     .02492986       .00472207     5.279   .0000
 BP_D21   |     .17803246       .01230958    14.463   .0000
 BP_DX11  |     .11000280      1.01309680      .109   .9135
 BP_DX21  |    1.32253159       .13801297     9.583   .0000
 BP_DX31  |     .76385029       .09091370     8.402   .0000
 A_B      |   -1.23996329       .05915539   -20.961   .0000
 B_FM2    |     .04720260       .00171601    27.507   .0000
 B_D22    |     .03033386       .00771382     3.932   .0001
 B_DX12   |    -.12064652       .24417270     -.494   .6212
 B_DX22   |     .13864696       .06165237     2.249   .0245
 B_DX32   |     .03339668       .03800090      .879   .3795
 A_BO     |   -4.13214001       .12762613   -32.377   .0000
 BO_FM3   |    -.10249527       .00968107   -10.587   .0000
 BO_D23   |     .15426459       .01313334    11.746   .0000
 BO_DX13  |  -29.1794182     .239285D+07      .000  1.0000
 BO_DX23  |     .96398037       .16451423     5.860   .0000
 BO_DX33  |     .77403717       .09962936     7.769   .0000
 A_M      |   -2.78532193       .14145729   -19.690   .0000
 M_FM4    |    -.07974592       .00687509   -11.599   .0000
 M_D24    |     .00922787       .01865892      .495   .6209
 M_DX14   |  -30.0426005     .193218D+07      .000  1.0000
 M_DX24   |     .63188286       .14046602     4.498   .0000
 M_DX34   |     .35819868       .09264474     3.866   .0001
 A_P      |    6.46005344       .40599502    15.912   .0000
 P_FM5    |     .01734350       .00291011     5.960   .0000
 P_D25    |   -2.02674608       .06852983   -29.575   .0000
 P_DX15   |    -.95962500       .37801176    -2.539   .0111
 P_DX25   |   -2.70265085       .30663658    -8.814   .0000
 P_DX35   |   -3.49552562       .25161761   -13.892   .0000
```

MNL8a.9a – Combinação de Variáveis TC e Viagem

- ASC

- Fm0 : Frequencia média horária de TC potencialmente à disposição entre a zona de geração e de atracção entre as 7:30 e as 9:30 (nfreq730930/2) ***sem zeros***

- D2: Variável continua distância mais curta em Km entre os centróides ajustados das zonas de Geração e de Atracção (pares >=50 viagens) excepto para o modo Walk em que d2=tp/60*3,6km/h

- dx1: Variável binária para distâncias mais curtas D2<=1,0km
- dx2: Variável binária para distâncias mais curtas D2>1,0km e <=2,0km
- dx3: Variável binária para distâncias mais curtas D2>2,0km e <=5,0km
- *dx4a: Variável binária para distâncias mais curtas D2>5,0km (excluída)*

```
DISCRETECHOICE
;Lhs=MTRP
;Choices=Bp,B,Bo,M,P,A[1]
;Rh2=ONE,FM0,D2,DX1,DX2,DX3$
+---------------------------------------------+
| Discrete choice and multinomial logit models|
+---------------------------------------------+
Normal exit from iterations. Exit status=0.
+---------------------------------------------+
| Discrete choice (multinomial logit) model   |
| Maximum Likelihood Estimates                |
| Model estimated: Feb 15, 2012 at 10:42:39AM.|
| Dependent variable               Choice     |
| Weighting variable                 None     |
| Number of observations            36041     |
| Iterations completed                 30     |
| Log likelihood function       -32739.65     |
| Number of parameters                 30     |
| Info. Criterion: AIC =          1.81847     |
|   Finite Sample: AIC =          1.81847     |
| Info. Criterion: BIC =          1.82553     |
| Info. Criterion:HQIC =          1.82071     |
| R2=1-LogL/LogL*  Log-L fncn  R-sqrd  RsqAdj |
| Constants only  -44220.4226  .25963  .25950 |
| Chi-squared[25]           =  22961.53602    |
| Prob [ chi squared > value ] =   .00000     |
| Response data are given as ind. choice.     |
| Number of obs.= 95426, skipped**** bad obs. |
+---------------------------------------------+

+---------------------------------------------+
| Notes No coefficients=> P(i,j)=1/J(i).      |
|       Constants only => P(i,j) uses ASCs    |
|         only. N(j)/N if fixed choice set.   |
|         N(j) = total sample frequency for j |
|         N    = total sample frequency.      |
|       These 2 models are simple MNL models. |
|       R-sqrd = 1 - LogL(model)/logL(other)  |
```

```
|       RsqAdj=1-[nJ/(nJ-nparm)]*(1-R-sqrd)   |
|         nJ   = sum over i, choice set sizes |
+---------------------------------------------+
+--------+--------------+----------------+--------+--------+
|Variable| Coefficient  | Standard Error |b/St.Er.|P[|Z|>z]|
+--------+--------------+----------------+--------+--------+
 A_BP     |   -4.97304478       .12589128   -39.503   .0000
 BP_FM01  |     .04693017       .00497417     9.435   .0000
 BP_D21   |     .20887700       .01243538    16.797   .0000
 BP_DX11  |     .35083879      1.01463483      .346   .7295
 BP_DX21  |    1.09450406       .16080018     6.807   .0000
 BP_DX31  |     .68059182       .09543311     7.132   .0000
 A_B      |   -1.62663751       .06173964   -26.347   .0000
 B_FM02   |     .06552188       .00188197    34.816   .0000
 B_D22    |     .06845928       .00780553     8.771   .0000
 B_DX12   |    -.88349618       .36302123    -2.434   .0149
 B_DX22   |     .02046807       .06812483      .300   .7638
 B_DX32   |    -.04429165       .03946651    -1.122   .2618
 A_BO     |   -4.07055672       .13493405   -30.167   .0000
 BO_FM03  |    -.11995437       .01069796   -11.213   .0000
 BO_D23   |     .15502167       .01391084    11.144   .0000
 BO_DX13  |  -28.2536834     .178152D+07      .000  1.0000
 BO_DX23  |     .98494441       .19386045     5.081   .0000
 BO_DX33  |     .84202945       .10135759     8.308   .0000
 A_M      |   -2.51497048       .15753386   -15.965   .0000
 M_FM04   |    -.08770748       .00757184   -11.583   .0000
 M_D24    |    -.02140907       .02116116    -1.012   .3117
 M_DX14   |  -29.4247433     .147908D+07      .000  1.0000
 M_DX24   |    -.00984531       .17928055     -.055   .9562
 M_DX34   |     .30275967       .09600926     3.153   .0016
 A_P      |    9.37147328       .50330305    18.620   .0000
 P_FM05   |     .02781112       .00345244     8.055   .0000
 P_D25    |   -2.59195716       .08652285   -29.957   .0000
 P_DX15   |   -3.69951442       .45732033    -8.090   .0000
 P_DX25   |   -4.92539346       .37184852   -13.246   .0000
 P_DX35   |   -4.91174084       .29907797   -16.423   .0000
```

MNL8a.9b – Combinação de Variáveis TC e Viagem

- ASC

- Fm1 : Frequencia média horária de TC potencialmente à disposição entre a zona de geração e de atracção entre as 7:30 e as 9:30 (nfreq730930/2) ***com valores em GA muito proximas***

- D2: Variável continua distância mais curta em Km entre os centróides ajustados das zonas de Geração e de Atracção (pares >=50 viagens) excepto para o modo Walk em que d2=tp/60*3,6km/h

- dx1: Variável binária para distâncias mais curtas D2<=1,0km
- dx2: Variável binária para distâncias mais curtas D2>1,0km e <=2,0km
- dx3: Variável binária para distâncias mais curtas D2>2,0km e <=5,0km
- *dx4a: Variável binária para distâncias mais curtas D2>5,0km (excluída)*

```
DISCRETECHOICE
;Lhs=MTRP
;Choices=Bp,B,Bo,M,P,A[1]
;Rh2=ONE,FM1,D2,DX1,DX2,DX3$
+---------------------------------------------+
| Discrete choice and multinomial logit models|
+---------------------------------------------+
Normal exit from iterations. Exit status=0.
+---------------------------------------------+
| Discrete choice (multinomial logit) model   |
| Maximum Likelihood Estimates                |
| Model estimated: Feb 15, 2012 at 10:46:16AM.|
| Dependent variable               Choice     |
| Weighting variable                 None     |
| Number of observations            41329     |
| Iterations completed                 32     |
| Log likelihood function       -38124.45     |
| Number of parameters                 30     |
| Info. Criterion: AIC =          1.84638     |
|   Finite Sample: AIC =          1.84638     |
| Info. Criterion: BIC =          1.85264     |
| Info. Criterion:HQIC =          1.84836     |
| R2=1-LogL/LogL*  Log-L fncn  R-sqrd  RsqAdj |
| Constants only  -52160.0860  .26909  .26898 |
| Chi-squared[25]          =  28071.27273     |
| Prob [ chi squared > value ] =   .00000     |
| Response data are given as ind. choice.     |
| Number of obs.= 95426, skipped**** bad obs. |
+---------------------------------------------+

+---------------------------------------------+
| Notes No coefficients=> P(i,j)=1/J(i).      |
|       Constants only => P(i,j) uses ASCs    |
|         only. N(j)/N if fixed choice set.   |
|         N(j) = total sample frequency for j |
|         N    = total sample frequency.      |
```

```
|       These 2 models are simple MNL models. |
|       R-sqrd = 1 - LogL(model)/logL(other)  |
|       RsqAdj=1-[nJ/(nJ-nparm)]*(1-R-sqrd)   |
|         nJ   = sum over i, choice set sizes |
+---------------------------------------------+
```

Variable	Coefficient	Standard Error	b/St.Er.	P[|Z|>z]
A_BP	-4.85040780	.12142966	-39.944	.0000
BP_FM11	.05269079	.00425229	12.391	.0000
BP_D21	.19183335	.01237381	15.503	.0000
BP_DX11	.08946872	1.01314240	.088	.9296
BP_DX21	1.24840279	.13843004	9.018	.0000
BP_DX31	.71154028	.09142630	7.783	.0000
A_B	-1.44967403	.05966574	-24.297	.0000
B_FM12	.06299186	.00172178	36.585	.0000
B_D22	.04724894	.00768096	6.151	.0000
B_DX12	-.11788790	.24426109	-.483	.6294
B_DX22	.09330198	.06191869	1.507	.1318
B_DX32	-.00770822	.03837239	-.201	.8408
A_BO	-4.13690846	.12908133	-32.049	.0000
BO_FM13	-.10091499	.00945883	-10.669	.0000
BO_D23	.15404033	.01339957	11.496	.0000
BO_DX13	-29.0257408	.234151D+07	.000	1.0000
BO_DX23	1.11700089	.16503512	6.768	.0000
BO_DX33	.82364772	.09930811	8.294	.0000
A_M	-2.69402451	.14652690	-18.386	.0000
M_FM14	-.08375311	.00684983	-12.227	.0000
M_D24	-.00310617	.01955040	-.159	.8738
M_DX14	-29.9710382	.188388D+07	.000	1.0000
M_DX24	.70138418	.14309442	4.902	.0000
M_DX34	.37592979	.09307440	4.039	.0001
A_P	6.23039552	.40609944	15.342	.0000
P_FM15	.03355283	.00286738	11.702	.0000
P_D25	-1.99988794	.06815897	-29.342	.0000
P_DX15	-.89530680	.37694214	-2.375	.0175
P_DX25	-2.68412821	.30545782	-8.787	.0000
P_DX35	-3.50786499	.25131609	-13.958	.0000

MNL8a.10 – Combinação de Variáveis TC e Viagem

- ASC

- Ftl : Frequencia média horária de TC potencialmente à disposição entre a zona de geração e de atracção entre as 7:30 e as 19:30 (nfreq7301930/12)

- D2: Variável continua distância mais curta em Km entre os centróides ajustados das zonas de Geração e de Atracção (pares >=50 viagens) excepto para o modo Walk em que d2=tp/60*3,6km/h

- dx1: Variável binária para distâncias mais curtas D2<=1,0km
- dx2: Variável binária para distâncias mais curtas D2>1,0km e <=2,0km
- dx3: Variável binária para distâncias mais curtas D2>2,0km e <=5,0km
- *dx4a: Variável binária para distâncias mais curtas D2>5,0km (excluída)*

```
DISCRETECHOICE
;Lhs=MTRP
;Choices=Bp,B,Bo,M,P,A[1]
;Rh2=ONE,FTL,D2,DX1,DX2,DX3$
+---------------------------------------------+
| Discrete choice and multinomial logit models|
+---------------------------------------------+
Normal exit from iterations. Exit status=0.
+---------------------------------------------+
| Discrete choice (multinomial logit) model   |
| Maximum Likelihood Estimates                |
| Model estimated: Feb 15, 2012 at 10:53:30AM.|
| Dependent variable               Choice     |
| Weighting variable                 None     |
| Number of observations            41329     |
| Iterations completed                 32     |
| Log likelihood function       -38595.00     |
| Number of parameters                 30     |
| Info. Criterion: AIC =          1.86915     |
|   Finite Sample: AIC =          1.86915     |
| Info. Criterion: BIC =          1.87541     |
| Info. Criterion:HQIC =          1.87113     |
| R2=1-LogL/LogL*  Log-L fncn  R-sqrd  RsqAdj |
| Constants only  -52160.0860  .26007  .25996 |
| Chi-squared[25]          =  27130.17872     |
| Prob [ chi squared > value ] =   .00000     |
| Response data are given as ind. choice.     |
| Number of obs.= 95426, skipped**** bad obs. |
+---------------------------------------------+

+---------------------------------------------+
| Notes No coefficients=> P(i,j)=1/J(i).      |
|       Constants only => P(i,j) uses ASCs    |
|         only. N(j)/N if fixed choice set.   |
|         N(j) = total sample frequency for j |
|         N    = total sample frequency.      |
|       These 2 models are simple MNL models. |
|       R-sqrd = 1 - LogL(model)/logL(other)  |
```

```
|       RsqAdj=1-[nJ/(nJ-nparm)]*(1-R-sqrd)   |
|         nJ   = sum over i, choice set sizes |
+---------------------------------------------+
+--------+--------------+----------------+--------+--------+
|Variable| Coefficient  | Standard Error |b/St.Er.|P[|Z|>z]|
+--------+--------------+----------------+--------+--------+
 A_BP     |   -4.59445156        .11997758   -38.294    .0000
 BP_FTL1  |     .01896520        .00381034     4.977    .0000
 BP_D21   |     .17805329        .01230832    14.466    .0000
 BP_DX11  |     .11382287       1.01309347      .112    .9105
 BP_DX21  |    1.32380887        .13800265     9.593    .0000
 BP_DX31  |     .76986786        .09087366     8.472    .0000
 A_B      |   -1.22041399        .05906424   -20.662    .0000
 B_FTL2   |     .03486656        .00138709    25.137    .0000
 B_D22    |     .02992618        .00769250     3.890    .0001
 B_DX12   |    -.11440491        .24410198     -.469    .6393
 B_DX22   |     .14328876        .06145432     2.332    .0197
 B_DX32   |     .04457025        .03786738     1.177    .2392
 A_BO     |   -4.12118904        .12822524   -32.140    .0000
 BO_FTL3  |    -.08069762        .00774373   -10.421    .0000
 BO_D23   |     .15515541        .01315596    11.794    .0000
 BO_DX13  |   -29.1966663      .239731D+07      .000   1.0000
 BO_DX23  |     .95500581        .16467096     5.799    .0000
 BO_DX33  |     .74691760        .09970116     7.492    .0000
 A_M      |   -2.76838734        .14233795   -19.449    .0000
 M_FTL4   |    -.06252281        .00543286   -11.508    .0000
 M_D24    |     .00859085        .01877839      .457    .6473
 M_DX14   |   -30.0642400      .193465D+07      .000   1.0000
 M_DX24   |     .61857870        .14091117     4.390    .0000
 M_DX34   |     .33214556        .09283708     3.578    .0003
 A_P      |    6.45339743        .40584079    15.901    .0000
 P_FTL5   |     .01195510        .00230276     5.192    .0000
 P_D25    |   -2.02432940        .06850099   -29.552    .0000
 P_DX15   |    -.94086998        .37790383    -2.490    .0128
 P_DX25   |   -2.68646410        .30658033    -8.763    .0000
 P_DX35   |   -3.48002551        .25157446   -13.833    .0000
```

MNL8a.10a – Combinação de Variáveis TC e Viagem

- ASC

- Ftl0 : Frequencia média horária de TC potencialmente à disposição entre a zona de geração e de atracção entre as 7:30 e as 19:30 (nfreq7301930/12) ***sem zeros***

- D2: Variável continua distância mais curta em Km entre os centróides ajustados das zonas de Geração e de Atracção (pares >=50 viagens) excepto para o modo Walk em que d2=tp/60*3,6km/h

- dx1: Variável binária para distâncias mais curtas D2<=1,0km
- dx2: Variável binária para distâncias mais curtas D2>1,0km e <=2,0km
- dx3: Variável binária para distâncias mais curtas D2>2,0km e <=5,0km
- *dx4a: Variável binária para distâncias mais curtas D2>5,0km (excluída)*

```
DISCRETECHOICE
;Lhs=MTRP
;Choices=Bp,B,Bo,M,P,A[1]
;Rh2=ONE,FTL0,D2,DX1,DX2,DX3$
+---------------------------------------------+
| Discrete choice and multinomial logit models|
+---------------------------------------------+
Normal exit from iterations. Exit status=0.
+---------------------------------------------+
| Discrete choice (multinomial logit) model   |
| Maximum Likelihood Estimates                |
| Model estimated: Feb 15, 2012 at 10:58:04AM.|
| Dependent variable               Choice     |
| Weighting variable                 None     |
| Number of observations            36041     |
| Iterations completed                 30     |
| Log likelihood function       -32839.35     |
| Number of parameters                 30     |
| Info. Criterion: AIC =          1.82400     |
|   Finite Sample: AIC =          1.82400     |
| Info. Criterion: BIC =          1.83107     |
| Info. Criterion:HQIC =          1.82625     |
| R2=1-LogL/LogL*  Log-L fncn  R-sqrd  RsqAdj |
| Constants only  -44220.4226  .25737  .25725 |
| Chi-squared[25]          =  22762.15304     |
| Prob [ chi squared > value ] =   .00000     |
| Response data are given as ind. choice.     |
| Number of obs.= 95426, skipped**** bad obs. |
+---------------------------------------------+

+---------------------------------------------+
| Notes No coefficients=> P(i,j)=1/J(i).      |
|       Constants only => P(i,j) uses ASCs    |
|         only. N(j)/N if fixed choice set.   |
|         N(j) = total sample frequency for j |
|         N    = total sample frequency.      |
|       These 2 models are simple MNL models. |
|       R-sqrd = 1 - LogL(model)/logL(other)  |
```

```
|       RsqAdj=1-[nJ/(nJ-nparm)]*(1-R-sqrd)   |
|         nJ   = sum over i, choice set sizes |
+---------------------------------------------+
+--------+--------------+----------------+--------+--------+
|Variable| Coefficient  | Standard Error |b/St.Er.|P[|Z|>z]|
+--------+--------------+----------------+--------+--------+
 A_BP     |   -4.97525172       .12625183   -39.407   .0000
 BP_FTL1  |     .03658888       .00404718     9.041   .0000
 BP_D21   |     .20905145       .01243479    16.812   .0000
 BP_DX11  |     .35910280      1.01462906      .354   .7234
 BP_DX21  |    1.09505702       .16088174     6.807   .0000
 BP_DX31  |     .69167922       .09538325     7.252   .0000
 A_B      |   -1.60419868       .06170320   -25.999   .0000
 B_FTL2   |     .04941961       .00151083    32.710   .0000
 B_D22    |     .06764455       .00778967     8.684   .0000
 B_DX12   |    -.87150290       .36294499    -2.401   .0163
 B_DX22   |     .02871199       .06781615      .423   .6720
 B_DX32   |    -.02887516       .03926613     -.735   .4621
 A_BO     |   -4.06112791       .13570355   -29.926   .0000
 BO_FTL3  |    -.09391055       .00858290   -10.942   .0000
 BO_D23   |     .15650871       .01392245    11.241   .0000
 BO_DX13  |  -28.2785026     .178643D+07      .000  1.0000
 BO_DX23  |     .97078407       .19386421     5.008   .0000
 BO_DX33  |     .80536793       .10144781     7.939   .0000
 A_M      |   -2.50073567       .15859460   -15.768   .0000
 M_FTL4   |    -.06787041       .00597217   -11.364   .0000
 M_D24    |    -.02177119       .02128815    -1.023   .3065
 M_DX14   |  -29.4537526     .148157D+07      .000  1.0000
 M_DX24   |    -.02868012       .17971094     -.160   .8732
 M_DX34   |     .26894857       .09631660     2.792   .0052
 A_P      |    9.39362313       .50310848    18.671   .0000
 P_FTL5   |     .01971534       .00272095     7.246   .0000
 P_D25    |   -2.59467967       .08650006   -29.996   .0000
 P_DX15   |   -3.69404761       .45716325    -8.080   .0000
 P_DX25   |   -4.91838672       .37176065   -13.230   .0000
 P_DX35   |   -4.89808756       .29900151   -16.381   .0000
```

MNL8a.10b – Combinação de Variáveis TC e Viagem

- ASC

- Ftl1 : Frequencia média horária de TC potencialmente à disposição entre a zona de geração e de atracção entre as 7:30 e as 19:30 (nfreq7301930/12) ***com valores em GA muito proximas***

- D2: Variável continua distância mais curta em Km entre os centróides ajustados das zonas de Geração e de Atracção (pares >=50 viagens) excepto para o modo Walk em que d2=tp/60*3,6km/h

- dx1: Variável binária para distâncias mais curtas D2<=1,0km
- dx2: Variável binária para distâncias mais curtas D2>1,0km e <=2,0km
- dx3: Variável binária para distâncias mais curtas D2>2,0km e <=5,0km
- *dx4a: Variável binária para distâncias mais curtas D2>5,0km (excluída)*

```
DISCRETECHOICE
;Lhs=MTRP
;Choices=Bp,B,Bo,M,P,A[1]
;Rh2=ONE,FTL1,D2,DX1,DX2,DX3$
+---------------------------------------------+
| Discrete choice and multinomial logit models|
+---------------------------------------------+
Normal exit from iterations. Exit status=0.
+---------------------------------------------+
| Discrete choice (multinomial logit) model   |
| Maximum Likelihood Estimates                |
| Model estimated: Feb 15, 2012 at 11:02:03AM.|
| Dependent variable               Choice     |
| Weighting variable                 None     |
| Number of observations            41329     |
| Iterations completed                 32     |
| Log likelihood function       -38220.83     |
| Number of parameters                 30     |
| Info. Criterion: AIC =          1.85104     |
|   Finite Sample: AIC =          1.85104     |
| Info. Criterion: BIC =          1.85730     |
| Info. Criterion:HQIC =          1.85302     |
| R2=1-LogL/LogL*  Log-L fncn  R-sqrd  RsqAdj |
| Constants only  -52160.0860  .26724  .26713 |
| Chi-squared[25]          =  27878.51565     |
| Prob [ chi squared > value ] =   .00000     |
| Response data are given as ind. choice.     |
| Number of obs.= 95426, skipped**** bad obs. |
+---------------------------------------------+

+---------------------------------------------+
| Notes No coefficients=> P(i,j)=1/J(i).      |
|       Constants only => P(i,j) uses ASCs    |
|         only. N(j)/N if fixed choice set.   |
|         N(j) = total sample frequency for j |
|         N    = total sample frequency.      |
```

```
|       These 2 models are simple MNL models. |
|       R-sqrd = 1 - LogL(model)/logL(other)  |
|       RsqAdj=1-[nJ/(nJ-nparm)]*(1-R-sqrd)   |
|         nJ   = sum over i, choice set sizes |
+---------------------------------------------+
+--------+--------------+----------------+--------+--------+
|Variable| Coefficient  | Standard Error |b/St.Er.|P[|Z|>z]|
+--------+--------------+----------------+--------+--------+
 A_BP     |   -4.85448983       .12165991   -39.902   .0000
 BP_FTL1  |     .04141365       .00346701    11.945   .0000
 BP_D21   |     .19201931       .01236585    15.528   .0000
 BP_DX11  |     .09735213      1.01313362      .096   .9234
 BP_DX21  |    1.24941252       .13842920     9.026   .0000
 BP_DX31  |     .72276537       .09138764     7.909   .0000
 A_B      |   -1.43210241       .05959987   -24.029   .0000
 B_FTL2   |     .04774081       .00138062    34.579   .0000
 B_D22    |     .04665141       .00766303     6.088   .0000
 B_DX12   |    -.10755606       .24419126     -.440   .6596
 B_DX22   |     .10054954       .06169440     1.630   .1031
 B_DX32   |     .00932278       .03818305      .244   .8071
 A_BO     |   -4.12992091       .12966639   -31.850   .0000
 BO_FTL3  |    -.07892619       .00754234   -10.464   .0000
 BO_D23   |     .15518821       .01341920    11.565   .0000
 BO_DX13  |  -29.0441560      .234219D+07      .000  1.0000
 BO_DX23  |    1.10280982       .16507893     6.681   .0000
 BO_DX33  |     .79486392       .09931765     8.003   .0000
 A_M      |   -2.67940659       .14740818   -18.177   .0000
 M_FTL4   |    -.06537531       .00540764   -12.089   .0000
 M_D24    |    -.00341836       .01966305     -.174   .8620
 M_DX14   |  -29.9930502      .188226D+07      .000  1.0000
 M_DX24   |     .68254058       .14350960     4.756   .0000
 M_DX34   |     .34661966       .09327889     3.716   .0002
 A_P      |    6.23514707       .40611825    15.353   .0000
 P_FTL5   |     .02569501       .00226366    11.351   .0000
 P_D25    |   -2.00101966       .06816831   -29.354   .0000
 P_DX15   |    -.88946785       .37698047    -2.359   .0183
 P_DX25   |   -2.68024184       .30551052    -8.773   .0000
 P_DX35   |   -3.49895264       .25140725   -13.917   .0000
```

MNL8a.11 – Combinação de Variáveis TC e Viagem

- ASC

- Fm : Frequencia média horária de TC potencialmente à disposição entre a zona de geração e de atracção entre as 7:30 e as 9:30 (nfreq730930/2)

- *De1 : variável binária duracão da estadia <=60min (curta duração) (excluída)*
- De2 : variável binária duracão da estadia >60min & <=120min (média duração)
- De3 : variável binária duracão da estadia >120min & <=240min (média duração)
- De4 : variável binária duracão da estadia >240min & <=480min (longa duração)
- De5: variável binária duracão da estadia >480min (muito longa duração)

```
DISCRETECHOICE
;Lhs=MTRP
;Choices=Bp,B,Bo,M,P,A[1]
;Rh2=ONE,FM,DE2,DE3,DE4,DE5$
+---------------------------------------------+
| Discrete choice and multinomial logit models|
+---------------------------------------------+
Normal exit from iterations. Exit status=0.
+---------------------------------------------+
| Discrete choice (multinomial logit) model   |
| Maximum Likelihood Estimates                |
| Model estimated: Feb 15, 2012 at 11:08:06AM.|
| Dependent variable               Choice     |
| Weighting variable                 None     |
| Number of observations            26576     |
| Iterations completed                  7     |
| Log likelihood function       -32710.94     |
| Number of parameters                 30     |
| Info. Criterion: AIC =          2.46395     |
|   Finite Sample: AIC =          2.46395     |
| Info. Criterion: BIC =          2.47319     |
| Info. Criterion:HQIC =          2.46693     |
| R2=1-LogL/LogL*  Log-L fncn  R-sqrd  RsqAdj |
| Constants only  -33431.4187  .02155  .02133 |
| Chi-squared[25]          =   1440.94865     |
| Prob [ chi squared > value ] =   .00000     |
| Response data are given as ind. choice.     |
| Number of obs.= 95426, skipped**** bad obs. |
+---------------------------------------------+

+---------------------------------------------+
| Notes No coefficients=> P(i,j)=1/J(i).      |
|       Constants only => P(i,j) uses ASCs    |
|         only. N(j)/N if fixed choice set.   |
|         N(j) = total sample frequency for j |
|         N    = total sample frequency.      |
|       These 2 models are simple MNL models. |
|       R-sqrd = 1 - LogL(model)/logL(other)  |
|       RsqAdj=1-[nJ/(nJ-nparm)]*(1-R-sqrd)   |
|         nJ   = sum over i, choice set sizes |
+---------------------------------------------+
+--------+-------------+---------------+--------+--------+
```

Variable	Coefficient	Standard Error	b/St.Er.	P[|Z|>z]
A_BP	-3.67834831	.11248602	-32.700	.0000
BP_FM1	.02473567	.00569182	4.346	.0000
BP_DE21	.20642226	.15030786	1.373	.1696
BP_DE31	.27508574	.14110641	1.949	.0512
BP_DE41	.58747540	.13847391	4.242	.0000
BP_DE51	.78911303	.13588185	5.807	.0000
A_B	-1.40398879	.03900761	-35.993	.0000
B_FM2	.04435065	.00204433	21.695	.0000
B_DE22	.22659778	.05189828	4.366	.0000
B_DE32	.46102043	.04770959	9.663	.0000
B_DE42	.39573653	.05051715	7.834	.0000
B_DE52	.50979060	.05079575	10.036	.0000
A_BO	-3.59931422	.13560886	-26.542	.0000
BO_FM3	-.09717257	.01183844	-8.208	.0000
BO_DE23	-.04201076	.19988489	-.210	.8335
BO_DE33	.12611396	.18176354	.694	.4878
BO_DE43	.86892157	.16277472	5.338	.0000
BO_DE53	1.53258579	.15081620	10.162	.0000
A_M	-2.53702335	.08045318	-31.534	.0000
M_FM4	-.07355095	.00802897	-9.161	.0000
M_DE24	-.15626878	.11926676	-1.310	.1901
M_DE34	.01265329	.10803806	.117	.9068
M_DE44	.14499609	.10968654	1.322	.1862
M_DE54	.31340243	.10800582	2.902	.0037
A_P	-1.08085601	.03691949	-29.276	.0000
P_FM5	.02014274	.00237204	8.492	.0000
P_DE25	-.06264012	.05156329	-1.215	.2244
P_DE35	.07068127	.04764572	1.483	.1379
P_DE45	-.00376246	.05093733	-.074	.9411
P_DE55	-.67467406	.06182756	-10.912	.0000

MNL8a.11a – Combinação de Variáveis TC e Viagem

- ASC

- Fm0 : Frequencia média horária de TC potencialmente à disposição entre a zona de geração e de atracção entre as 7:30 e as 9:30 (nfreq730930/2) ***sem zeros***

- *De1 : variável binária duracão da estadia <=60min (curta duração) (excluída)*
- De2 : variável binária duracão da estadia >60min & <=120min (média duração)
- De3 : variável binária duracão da estadia >120min & <=240min (média duração)
- De4 : variável binária duracão da estadia >240min & <=480min (longa duração)
- De5: variável binária duracão da estadia >480min (muito longa duração)

```
DISCRETECHOICE
;Lhs=MTRP
;Choices=Bp,B,Bo,M,P,A[1]
;Rh2=ONE,FM0,DE2,DE3,DE4,DE5$
+---------------------------------------------+
| Discrete choice and multinomial logit models|
+---------------------------------------------+
Normal exit from iterations. Exit status=0.
+---------------------------------------------+
| Discrete choice (multinomial logit) model   |
| Maximum Likelihood Estimates                |
| Model estimated: Feb 15, 2012 at 11:13:25AM.|
| Dependent variable               Choice     |
| Weighting variable                 None     |
| Number of observations            23094     |
| Iterations completed                  7     |
| Log likelihood function       -27195.12     |
| Number of parameters                 30     |
| Info. Criterion: AIC =          2.35777     |
|   Finite Sample: AIC =          2.35777     |
| Info. Criterion: BIC =          2.36822     |
| Info. Criterion:HQIC =          2.36116     |
| R2=1-LogL/LogL*  Log-L fncn  R-sqrd  RsqAdj |
| Constants only  -28186.1872  .03516  .03491 |
| Chi-squared[25]          =   1982.13162     |
| Prob [ chi squared > value ] =   .00000     |
| Response data are given as ind. choice.     |
| Number of obs.= 95426, skipped**** bad obs. |
+---------------------------------------------+

+---------------------------------------------+
| Notes No coefficients=> P(i,j)=1/J(i).      |
|       Constants only => P(i,j) uses ASCs    |
|         only. N(j)/N if fixed choice set.   |
|         N(j) = total sample frequency for j |
|         N    = total sample frequency.      |
|       These 2 models are simple MNL models. |
|       R-sqrd = 1 - LogL(model)/logL(other)  |
|       RsqAdj=1-[nJ/(nJ-nparm)]*(1-R-sqrd)   |
|         nJ   = sum over i, choice set sizes |
+---------------------------------------------+
+--------+-------------+---------------+--------+--------+
```

Variable	Coefficient	Standard Error	b/St.Er.	P[|Z|>z]
A_BP	-3.94948211	.12668172	-31.176	.0000
BP_FM01	.04280847	.00608565	7.034	.0000
BP_DE21	.24715031	.16479655	1.500	.1337
BP_DE31	.25531062	.15670401	1.629	.1033
BP_DE41	.61374587	.15246435	4.026	.0001
BP_DE51	.90532376	.14736771	6.143	.0000
A_B	-1.68260555	.04348622	-38.693	.0000
B_FM02	.06215403	.00225940	27.509	.0000
B_DE22	.27092852	.05622818	4.818	.0000
B_DE32	.51340616	.05163447	9.943	.0000
B_DE42	.42896321	.05478228	7.830	.0000
B_DE52	.58848959	.05471629	10.755	.0000
A_BO	-3.41910272	.14022768	-24.383	.0000
BO_FM03	-.12365465	.01364388	-9.063	.0000
BO_DE23	-.08513899	.20692269	-.411	.6807
BO_DE33	.08048983	.18785569	.428	.6683
BO_DE43	.83762134	.16687677	5.019	.0000
BO_DE53	1.48562260	.15389437	9.654	.0000
A_M	-2.56659719	.08925263	-28.757	.0000
M_FM04	-.08085998	.00899904	-8.985	.0000
M_DE24	-.09134886	.12781036	-.715	.4748
M_DE34	.07143079	.11615685	.615	.5386
M_DE44	.16956874	.11861995	1.430	.1529
M_DE54	.37605937	.11503816	3.269	.0011
A_P	-1.65610571	.04431587	-37.370	.0000
P_FM05	.06039841	.00256246	23.570	.0000
P_DE25	-.09670577	.06010191	-1.609	.1076
P_DE35	.02038704	.05550157	.367	.7134
P_DE45	-.03276290	.05934129	-.552	.5809
P_DE55	-.61721418	.07098407	-8.695	.0000

MNL8a.11b – Combinação de Variáveis TC e Viagem

- ASC

- Fm1 : Frequencia média horária de TC potencialmente à disposição entre a zona de geração e de atracção entre as 7:30 e as 9:30 (nfreq730930/2) ***com valores em GA muito proximas***

- *De1 : variável binária duracão da estadia <=60min (curta duração) (excluída)*
- De2 : variável binária duracão da estadia >60min & <=120min (média duração)
- De3 : variável binária duracão da estadia >120min & <=240min (média duração)
- De4 : variável binária duracão da estadia >240min & <=480min (longa duração)
- De5: variável binária duracão da estadia >480min (muito longa duração)

```
DISCRETECHOICE
;Lhs=MTRP
;Choices=Bp,B,Bo,M,P,A[1]
;Rh2=ONE,FM1,DE2,DE3,DE4,DE5$
+---------------------------------------------+
| Discrete choice and multinomial logit models|
+---------------------------------------------+
Normal exit from iterations. Exit status=0.
+---------------------------------------------+
| Discrete choice (multinomial logit) model   |
| Maximum Likelihood Estimates                |
| Model estimated: Feb 15, 2012 at 11:20:16AM.|
| Dependent variable               Choice     |
| Weighting variable                 None     |
| Number of observations            26576     |
| Iterations completed                  7     |
| Log likelihood function       -32330.92     |
| Number of parameters                 30     |
| Info. Criterion: AIC =          2.43535     |
|   Finite Sample: AIC =          2.43535     |
| Info. Criterion: BIC =          2.44459     |
| Info. Criterion:HQIC =          2.43833     |
| R2=1-LogL/LogL*  Log-L fncn  R-sqrd  RsqAdj |
| Constants only  -33431.4187  .03292  .03270 |
| Chi-squared[25]          =   2200.98855     |
| Prob [ chi squared > value ] =   .00000     |
| Response data are given as ind. choice.     |
| Number of obs.= 95426, skipped**** bad obs. |
+---------------------------------------------+

+---------------------------------------------+
| Notes No coefficients=> P(i,j)=1/J(i).      |
|       Constants only => P(i,j) uses ASCs    |
|         only. N(j)/N if fixed choice set.   |
|         N(j) = total sample frequency for j |
|         N    = total sample frequency.      |
|       These 2 models are simple MNL models. |
|       R-sqrd = 1 - LogL(model)/logL(other)  |
|       RsqAdj=1-[nJ/(nJ-nparm)]*(1-R-sqrd)   |
|         nJ   = sum over i, choice set sizes |
```

Variable	Coefficient	Standard Error	b/St.Er.	P[|Z|>z]
A_BP	-3.88544875	.11494870	-33.802	.0000
BP_FM11	.05059067	.00523845	9.658	.0000
BP_DE21	.19997716	.15043602	1.329	.1837
BP_DE31	.26976053	.14121734	1.910	.0561
BP_DE41	.59346695	.13861639	4.281	.0000
BP_DE51	.80807037	.13606769	5.939	.0000
A_B	-1.57474870	.04015043	-39.221	.0000
B_FM12	.06221618	.00207944	29.920	.0000
B_DE22	.22574414	.05230184	4.316	.0000
B_DE32	.46110625	.04807950	9.590	.0000
B_DE42	.40244687	.05090776	7.905	.0000
B_DE52	.53056342	.05124518	10.353	.0000
A_BO	-3.53386809	.13695068	-25.804	.0000
BO_FM13	-.10246257	.01194769	-8.576	.0000
BO_DE23	-.04208475	.19990645	-.211	.8333
BO_DE33	.12501577	.18178353	.688	.4916
BO_DE43	.86497036	.16279391	5.313	.0000
BO_DE53	1.50690194	.15081418	9.992	.0000
A_M	-2.49242328	.08177621	-30.479	.0000
M_FM14	-.07565390	.00806419	-9.381	.0000
M_DE24	-.15751954	.11927647	-1.321	.1866
M_DE34	.01061831	.10804639	.098	.9217
M_DE44	.14156925	.10969487	1.291	.1969
M_DE54	.29349398	.10800531	2.717	.0066
A_P	-1.33828867	.03839307	-34.858	.0000
P_FM15	.05307421	.00225539	23.532	.0000
P_DE25	-.07218969	.05207640	-1.386	.1657
P_DE35	.06264299	.04810771	1.302	.1929
P_DE45	.00318298	.05140773	.062	.9506
P_DE55	-.65341994	.06224385	-10.498	.0000

MNL8a.12 – Combinação de Variáveis TC e Viagem

- ASC

- Ftl : Frequencia média horária de TC potencialmente à disposição entre a zona de geração e de atracção entre as 7:30 e as 19:30 (nfreq7301930/12)

- *De1 : variável binária duracão da estadia <=60min (curta duração) (excluída)*
- De2 : variável binária duracão da estadia >60min & <=120min (média duração)
- De3 : variável binária duracão da estadia >120min & <=240min (média duração)
- De4 : variável binária duracão da estadia >240min & <=480min (longa duração)
- De5: variável binária duracão da estadia >480min (muito longa duração)

```
DISCRETECHOICE
;Lhs=MTRP
;Choices=Bp,B,Bo,M,P,A[1]
;Rh2=ONE,FTL,DE2,DE3,DE4,DE5$
+---------------------------------------------+
| Discrete choice and multinomial logit models|
+---------------------------------------------+
Normal exit from iterations. Exit status=0.
+---------------------------------------------+
| Discrete choice (multinomial logit) model   |
| Maximum Likelihood Estimates                |
| Model estimated: Feb 15, 2012 at 11:23:22AM.|
| Dependent variable               Choice     |
| Weighting variable                 None     |
| Number of observations            26576     |
| Iterations completed                  7     |
| Log likelihood function       -32761.70     |
| Number of parameters                 30     |
| Info. Criterion: AIC =          2.46777     |
|   Finite Sample: AIC =          2.46777     |
| Info. Criterion: BIC =          2.47701     |
| Info. Criterion:HQIC =          2.47075     |
| R2=1-LogL/LogL*  Log-L fncn  R-sqrd  RsqAdj |
| Constants only  -33431.4187  .02003  .01981 |
| Chi-squared[25]          =   1339.43973     |
| Prob [ chi squared > value ] =   .00000     |
| Response data are given as ind. choice.     |
| Number of obs.= 95426, skipped**** bad obs. |
+---------------------------------------------+

+---------------------------------------------+
| Notes No coefficients=> P(i,j)=1/J(i).      |
|       Constants only => P(i,j) uses ASCs    |
|         only. N(j)/N if fixed choice set.   |
|         N(j) = total sample frequency for j |
|         N    = total sample frequency.      |
|       These 2 models are simple MNL models. |
|       R-sqrd = 1 - LogL(model)/logL(other)  |
|       RsqAdj=1-[nJ/(nJ-nparm)]*(1-R-sqrd)   |
|         nJ   = sum over i, choice set sizes |
+---------------------------------------------+
+--------+-------------+---------------+--------+--------+
```

Variable	Coefficient	Standard Error	b/St.Er.	P[|Z|>z]
A_BP	-3.66684568	.11268206	-32.542	.0000
BP_FTL1	.01799438	.00461649	3.898	.0001
BP_DE21	.20842073	.15029496	1.387	.1655
BP_DE31	.27518431	.14110440	1.950	.0512
BP_DE41	.58815684	.13846858	4.248	.0000
BP_DE51	.78970966	.13587684	5.812	.0000
A_B	-1.38059337	.03901089	-35.390	.0000
B_FTL2	.03246527	.00165210	19.651	.0000
B_DE22	.23119304	.05179624	4.464	.0000
B_DE32	.46144812	.04762614	9.689	.0000
B_DE42	.39691749	.05043193	7.870	.0000
B_DE52	.51017136	.05071236	10.060	.0000
A_BO	-3.59840806	.13574699	-26.508	.0000
BO_FTL3	-.07621504	.00940204	-8.106	.0000
BO_DE23	-.04237904	.19988305	-.212	.8321
BO_DE33	.12893495	.18176634	.709	.4781
BO_DE43	.86739605	.16277066	5.329	.0000
BO_DE53	1.53199359	.15081458	10.158	.0000
A_M	-2.53542135	.08051465	-31.490	.0000
M_FTL4	-.05792189	.00633839	-9.138	.0000
M_DE24	-.15672698	.11926653	-1.314	.1888
M_DE34	.01509095	.10804363	.140	.8889
M_DE44	.14377408	.10968546	1.311	.1899
M_DE54	.31251529	.10800392	2.894	.0038
A_P	-1.06839177	.03698090	-28.890	.0000
P_FTL5	.01420414	.00190674	7.449	.0000
P_DE25	-.06089757	.05154489	-1.181	.2374
P_DE35	.07098439	.04763382	1.490	.1362
P_DE45	-.00325201	.05092369	-.064	.9491
P_DE55	-.67423234	.06181597	-10.907	.0000

MNL8a.12a – Combinação de Variáveis TC e Viagem

- ASC

- Ftl0 : Frequencia média horária de TC potencialmente à disposição entre a zona de geração e de atracção entre as 7:30 e as 19:30 (nfreq7301930/12) ***sem zeros***

- *De1 : variável binária duracão da estadia <=60min (curta duração) (excluída)*
- De2 : variável binária duracão da estadia >60min & <=120min (média duração)
- De3 : variável binária duracão da estadia >120min & <=240min (média duração)
- De4 : variável binária duracão da estadia >240min & <=480min (longa duração)
- De5: variável binária duracão da estadia >480min (muito longa duração)

```
DISCRETECHOICE
;Lhs=MTRP
;Choices=Bp,B,Bo,M,P,A[1]
;Rh2=ONE,FTL0,DE2,DE3,DE4,DE5$
+---------------------------------------------+
| Discrete choice and multinomial logit models|
+---------------------------------------------+
Normal exit from iterations. Exit status=0.
+---------------------------------------------+
| Discrete choice (multinomial logit) model   |
| Maximum Likelihood Estimates                |
| Model estimated: Feb 15, 2012 at 11:28:04AM.|
| Dependent variable               Choice     |
| Weighting variable                 None     |
| Number of observations            23094     |
| Iterations completed                  7     |
| Log likelihood function       -27263.41     |
| Number of parameters                 30     |
| Info. Criterion: AIC =          2.36368     |
|   Finite Sample: AIC =          2.36368     |
| Info. Criterion: BIC =          2.37413     |
| Info. Criterion:HQIC =          2.36708     |
| R2=1-LogL/LogL*  Log-L fncn  R-sqrd  RsqAdj |
| Constants only  -28186.1872  .03274  .03249 |
| Chi-squared[25]          =   1845.56276     |
| Prob [ chi squared > value ] =   .00000     |
| Response data are given as ind. choice.     |
| Number of obs.= 95426, skipped**** bad obs. |
+---------------------------------------------+

+---------------------------------------------+
| Notes No coefficients=> P(i,j)=1/J(i).      |
|       Constants only => P(i,j) uses ASCs    |
|         only. N(j)/N if fixed choice set.   |
|         N(j) = total sample frequency for j |
|         N    = total sample frequency.      |
|       These 2 models are simple MNL models. |
|       R-sqrd = 1 - LogL(model)/logL(other)  |
|       RsqAdj=1-[nJ/(nJ-nparm)]*(1-R-sqrd)   |
|         nJ   = sum over i, choice set sizes |
+---------------------------------------------+
+--------+-------------+---------------+--------+--------+
```

Variable	Coefficient	Standard Error	b/St.Er.	P[|Z|>z]
A_BP	-3.93394322	.12694812	-30.989	.0000
BP_FTL1	.03199119	.00492927	6.490	.0000
BP_DE21	.25018059	.16477509	1.518	.1289
BP_DE31	.25456779	.15669870	1.625	.1043
BP_DE41	.61498135	.15245451	4.034	.0001
BP_DE51	.90605664	.14736052	6.149	.0000
A_B	-1.65020192	.04343504	-37.992	.0000
B_FTL2	.04597474	.00180732	25.438	.0000
B_DE22	.27704882	.05606864	4.941	.0000
B_DE32	.51303817	.05150510	9.961	.0000
B_DE42	.43061402	.05464941	7.880	.0000
B_DE52	.58845585	.05458423	10.781	.0000
A_BO	-3.41559019	.14061911	-24.290	.0000
BO_FTL3	-.09783286	.01101006	-8.886	.0000
BO_DE23	-.08475978	.20691590	-.410	.6821
BO_DE33	.08473740	.18785635	.451	.6519
BO_DE43	.83567660	.16686449	5.008	.0000
BO_DE53	1.48683643	.15388202	9.662	.0000
A_M	-2.56668479	.08939130	-28.713	.0000
M_FTL4	-.06345443	.00714044	-8.887	.0000
M_DE24	-.09148571	.12780461	-.716	.4741
M_DE34	.07457921	.11616039	.642	.5208
M_DE44	.16815890	.11861216	1.418	.1563
M_DE54	.37597880	.11502826	3.269	.0011
A_P	-1.64719526	.04446923	-37.041	.0000
P_FTL5	.04665820	.00205623	22.691	.0000
P_DE25	-.09210271	.06004564	-1.534	.1251
P_DE35	.01881342	.05546799	.339	.7345
P_DE45	-.03041134	.05930490	-.513	.6081
P_DE55	-.61543211	.07095776	-8.673	.0000

MNL8a.12b – Combinação de Variáveis TC e Viagem

- ASC

- Ftl1 : Frequencia média horária de TC potencialmente à disposição entre a zona de geração e de atracção entre as 7:30 e as 19:30 (nfreq7301930/12) ***com valores em GA muito proximas***

- *De1 : variável binária duracão da estadia <=60min (curta duração) (excluída)*
- De2 : variável binária duracão da estadia >60min & <=120min (média duração)
- De3 : variável binária duracão da estadia >120min & <=240min (média duração)
- De4 : variável binária duracão da estadia >240min & <=480min (longa duração)
- De5: variável binária duracão da estadia >480min (muito longa duração)

```
DISCRETECHOICE
;Lhs=MTRP
;Choices=Bp,B,Bo,M,P,A[1]
;Rh2=ONE,FTL1,DE2,DE3,DE4,DE5$
+---------------------------------------------+
| Discrete choice and multinomial logit models|
+---------------------------------------------+
Normal exit from iterations. Exit status=0.
+---------------------------------------------+
| Discrete choice (multinomial logit) model   |
| Maximum Likelihood Estimates                |
| Model estimated: Feb 15, 2012 at 11:33:01AM.|
| Dependent variable               Choice     |
| Weighting variable                 None     |
| Number of observations            26576     |
| Iterations completed                  7     |
| Log likelihood function       -32391.96     |
| Number of parameters                 30     |
| Info. Criterion: AIC =          2.43994     |
|   Finite Sample: AIC =          2.43995     |
| Info. Criterion: BIC =          2.44919     |
| Info. Criterion:HQIC =          2.44293     |
| R2=1-LogL/LogL*  Log-L fncn  R-sqrd  RsqAdj |
| Constants only  -33431.4187  .03109  .03087 |
| Chi-squared[25]           =   2078.91620    |
| Prob [ chi squared > value ] =   .00000     |
| Response data are given as ind. choice.     |
| Number of obs.= 95426, skipped**** bad obs. |
+---------------------------------------------+

+---------------------------------------------+
| Notes No coefficients=> P(i,j)=1/J(i).      |
|       Constants only => P(i,j) uses ASCs    |
|         only. N(j)/N if fixed choice set.   |
|         N(j) = total sample frequency for j |
|         N    = total sample frequency.      |
|       These 2 models are simple MNL models. |
|       R-sqrd = 1 - LogL(model)/logL(other)  |
|       RsqAdj=1-[nJ/(nJ-nparm)]*(1-R-sqrd)   |
|         nJ   = sum over i, choice set sizes |
```

Variable	Coefficient	Standard Error	b/St.Er.	P[|Z|>z]
A_BP	-3.87203844	.11524939	-33.597	.0000
BP_FTL1	.03850748	.00425745	9.045	.0000
BP_DE21	.20301718	.15041580	1.350	.1771
BP_DE31	.26883027	.14120680	1.904	.0569
BP_DE41	.59456843	.13860565	4.290	.0000
BP_DE51	.80909429	.13606014	5.947	.0000
A_B	-1.54707016	.04011176	-38.569	.0000
B_FTL2	.04658046	.00166147	28.036	.0000
B_DE22	.23049547	.05217129	4.418	.0000
B_DE32	.46050013	.04797089	9.600	.0000
B_DE42	.40350427	.05079677	7.944	.0000
B_DE52	.53090042	.05113054	10.383	.0000
A_BO	-3.53317743	.13714467	-25.762	.0000
BO_FTL3	-.08074826	.00955647	-8.450	.0000
BO_DE23	-.04219091	.19990206	-.211	.8328
BO_DE33	.12807317	.18178411	.705	.4811
BO_DE43	.86373888	.16278721	5.306	.0000
BO_DE53	1.50763970	.15080547	9.997	.0000
A_M	-2.49143922	.08184479	-30.441	.0000
M_FTL4	-.05972694	.00639612	-9.338	.0000
M_DE24	-.15770933	.11927361	-1.322	.1861
M_DE34	.01320366	.10804938	.122	.9027
M_DE44	.14063582	.10969139	1.282	.1998
M_DE54	.29350072	.10799887	2.718	.0066
A_P	-1.33685888	.03850791	-34.716	.0000
P_FTL5	.04160045	.00179822	23.134	.0000
P_DE25	-.06932351	.05206306	-1.332	.1830
P_DE35	.06124661	.04810432	1.273	.2029
P_DE45	.00482435	.05140373	.094	.9252
P_DE55	-.65135599	.06224148	-10.465	.0000

MNL8a.13 – Combinação de Variáveis TC e Viagem

- ASC

- TBA: Variável continua Razão tempos médios de viagem em Bus/AUTO entre as zonas de Geração e Atracção

- d2 -Var. continua para distância + curta entre centróides (excepto pedonais 3,6km/h)
- dx1 - Var.bin distância + curta entre centróides (expto ped.3,6km/h) <=1,0km
- dx2 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >1,0km e <= 2,0km
- dx3 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >2,0km e <=5,0km
- dx4 - Var.bin dist. + curta entre centróides (expto ped.3,6km/h) >5,0km (excluída)

```
DISCRETECHOICE
;Lhs=MTRP
;Choices=Bp,B,Bo,M,P,A[1]
;Rh2=ONE,D2,DX1,DX2,DX3,TBA$
+---------------------------------------------+
| Discrete choice and multinomial logit models|
+---------------------------------------------+
Normal exit from iterations. Exit status=0.
+---------------------------------------------+
| Discrete choice (multinomial logit) model   |
| Maximum Likelihood Estimates                |
| Model estimated: Feb 22, 2012 at 09:30:43AM.|
| Dependent variable               Choice     |
| Weighting variable                 None     |
| Number of observations            89305     |
| Iterations completed                 30     |
| Log likelihood function       -91708.41     |
| Number of parameters                 30     |
| Info. Criterion: AIC =          2.05450     |
|   Finite Sample: AIC =          2.05450     |
| Info. Criterion: BIC =          2.05765     |
| Info. Criterion:HQIC =          2.05546     |
| R2=1-LogL/LogL*  Log-L fncn  R-sqrd  RsqAdj |
| Constants only  ***********  .20714  .20709 |
| Chi-squared[25]          =  47919.42248     |
| Prob [ chi squared > value ] =   .00000     |
| Response data are given as ind. choice.     |
| Number of obs.= 95426, skipped6121 bad obs. |
+---------------------------------------------+

+---------------------------------------------+
| Notes No coefficients=> P(i,j)=1/J(i).      |
|       Constants only => P(i,j) uses ASCs    |
|         only. N(j)/N if fixed choice set.   |
|         N(j) = total sample frequency for j |
|         N    = total sample frequency.      |
|       These 2 models are simple MNL models. |
|       R-sqrd = 1 - LogL(model)/logL(other)  |
|       RsqAdj=1-[nJ/(nJ-nparm)]*(1-R-sqrd)   |
```

| nJ = sum over i, choice set sizes |

Variable	Coefficient	Standard Error	b/St.Er.	P[|Z|>z]
A_BP	-2.87624220	.11733188	-24.514	.0000
BP_D21	.08177185	.00851163	9.607	.0000
BP_DX11	-.59609437	1.01020825	-.590	.5551
BP_DX21	.64587730	.09869397	6.544	.0000
BP_DX31	.28102258	.06210252	4.525	.0000
BP_TBA1	-.52618068	.05264724	-9.994	.0000
A_B	.13065523	.05009806	2.608	.0091
B_D22	-.00750798	.00440547	-1.704	.0883
B_DX12	-.16259043	.24076065	-.675	.4995
B_DX22	-.23739531	.04507398	-5.267	.0000
B_DX32	-.00178026	.02594682	-.069	.9453
B_TBA2	-.66062343	.02129897	-31.017	.0000
A_BO	-2.88696827	.09871469	-29.246	.0000
BO_D23	.00173068	.00899656	.192	.8475
BO_DX13	-30.7686706	.229498D+07	.000	1.0000
BO_DX23	-.65926676	.11085704	-5.947	.0000
BO_DX33	.03997466	.05309979	.753	.4516
BO_TBA3	.11052036	.03684682	2.999	.0027
A_M	-2.25989617	.08389284	-26.938	.0000
M_D24	-.05299691	.00849065	-6.242	.0000
M_DX14	-30.9966151	.178746D+07	.000	1.0000
M_DX24	-.43103966	.08080667	-5.334	.0000
M_DX34	.03793117	.04473132	.848	.3965
M_TBA4	.20162895	.02845713	7.085	.0000
A_P	5.07437590	.31124829	16.303	.0000
P_D25	-1.81675304	.05067941	-35.848	.0000
P_DX15	.74269642	.29904839	2.484	.0130
P_DX25	-1.88525003	.23647400	-7.972	.0000
P_DX35	-2.78750100	.19292022	-14.449	.0000
P_TBA5	.02367545	.03698962	.640	.5221

MNL8a.14 – Combinação de Variáveis TC e Viagem

- ASC

- V2: Velocidade comercial equivalente por Bus em km/h (d2/T2*60)

- D2: Variável continua distância mais curta em Km entre os centróides ajustados das zonas de Geração e de Atracção (pares >=50 viagens) excepto para o modo Walk em que d2=tp/60*3,6km/h

```
DISCRETECHOICE
    ;Lhs=MTRP
    ;Choices=Bp,B,Bo,M,P,A[1]
    ;Rh2=ONE,D2,V2$
Normal exit:   9 iterations. Status=0, F=    92403.65

--------------------------------------------------------------------------------
Discrete choice (multinomial logit) model
Dependent variable                Choice
Log likelihood function    -92403.64573
Estimation based on N =  89305, K =  15
Inf.Cr.AIC  = 184837.3 AIC/N =    2.070
Model estimated: Mar 19, 2012, 12:40:04
R2=1-LogL/LogL* Log-L fncn R-sqrd R2Adj
Constants only  **********  .2011 .2011
Chi-squared[10]           =  46528.95050
Prob [ chi squared > value ] =   .00000
Response data are given as ind. choices
Number of obs.= 95426, skipped 6121 obs
--------+-----------------------------------------------------------------------
        |                  Standard            Prob.      95% Confidence
   MTRP |  Coefficient       Error       z    |z|>Z*         Interval
--------+-----------------------------------------------------------------------
   A_BP |   -3.15980***       .05286   -59.77  .0000    -3.26340  -3.05619
 BP_D21 |     .08371***       .00878     9.53  .0000      .06650    .10092
 BP_V21 |    -.03269***       .00528    -6.19  .0000     -.04303   -.02235
    A_B |    -.64990***       .02131   -30.49  .0000     -.69167   -.60813
  B_D22 |     .07126***       .00392    18.18  .0000      .06357    .07894
  B_V22 |    -.06066***       .00228   -26.62  .0000     -.06513   -.05620
   A_BO |   -3.03185***       .04407   -68.79  .0000    -3.11823  -2.94547
 BO_D23 |    -.04813***       .00803    -6.00  .0000     -.06387   -.03240
 BO_V23 |     .04518***       .00361    12.53  .0000      .03811    .05225
    A_M |   -2.21142***       .03517   -62.89  .0000    -2.28034  -2.14249
  M_D24 |    -.11082***       .00721   -15.38  .0000     -.12494   -.09670
  M_V24 |     .04630***       .00302    15.34  .0000      .04038    .05222
    A_P |    4.98901***       .05186    96.21  .0000     4.88737   5.09064
  P_D25 |   -2.21132***       .03726   -59.35  .0000    -2.28435  -2.13829
  P_V25 |    -.19017***       .01131   -16.81  .0000     -.21234   -.16800
--------+-----------------------------------------------------------------------
Note: ***, **, * ==>  Significance at 1%, 5%, 10% level.
--------------------------------------------------------------------------------
```

MNL8a.15 – Combinação de Variáveis TC e Viagem

- ASC

- V2: Velocidade comercial equivalente por Bus em km/h (d2/T2*60)

- D2: Variável continua distância mais curta em Km entre os centróides ajustados das zonas de Geração e de Atracção (pares >=50 viagens) excepto para o modo Walk em que d2=tp/60*3,6km/h

- Til – Variável continua genérica **Ln**(duração média apreendida da viagem por modo (min) entre GA com a duração apreendida real qd é o modo escolhido)

```
DISCRETECHOICE
;Lhs=MTRP
;Choices=Bp,B,Bo,M,P,A[1]
;Attr=Til
;Rhs=T1L,T2L,T3L,T4L,T5L,T6L
;Rh2=ONE,D2,V2$
Normal exit:   9 iterations. Status=0, F=    31790.31

------------------------------------------------------------------------------
Discrete choice (multinomial logit) model
Dependent variable                Choice
Log likelihood function    -31790.30778
Estimation based on N =  30559, K =  16
Inf.Cr.AIC  =  63612.6 AIC/N =    2.082
Model estimated: Mar 19, 2012, 12:51:38
R2=1-LogL/LogL* Log-L fncn R-sqrd R2Adj
Constants only  **********  .1990 .1989
Chi-squared[11]           =  15793.54108
Prob [ chi squared > value ] =   .00000
Response data are given as ind. choices
Number of obs.= 95426, skipped64867 obs
--------+---------------------------------------------------------------------
        |                  Standard            Prob.      95% Confidence
    MTRP|  Coefficient       Error       z    |z|>Z*         Interval
--------+---------------------------------------------------------------------
     TIL|    -.69230***      .02515   -27.52  .0000     -.74159   -.64300
    A_BP|   -2.26521***      .08735   -25.93  .0000    -2.43640  -2.09401
  BP_D21|     .09249***      .02217     4.17  .0000      .04904    .13594
  BP_V21|    -.02561***      .00937    -2.73  .0063     -.04398   -.00724
     A_B|    -.80277***      .04539   -17.68  .0000     -.89173   -.71380
   B_D22|     .24842***      .01070    23.22  .0000      .22746    .26939
   B_V22|    -.10848***      .00512   -21.17  .0000     -.11852   -.09844
    A_BO|   -2.61732***      .07050   -37.13  .0000    -2.75549  -2.47915
  BO_D23|    -.05231**       .02045    -2.56  .0105     -.09240   -.01223
  BO_V23|     .04302***      .00745     5.77  .0000      .02842    .05763
     A_M|   -1.94411***      .05837   -33.31  .0000    -2.05852  -1.82971
   M_D24|    -.07443***      .01803    -4.13  .0000     -.10978   -.03908
   M_V24|     .01907***      .00677     2.81  .0049      .00579    .03235
     A_P|    5.54506***      .10650    52.07  .0000     5.33632   5.75380
   P_D25|   -1.65084***      .06602   -25.01  .0000    -1.78024  -1.52145
   P_V25|    -.45590***      .02594   -17.58  .0000     -.50674   -.40507
```

```
--------+-------------------------------------------------------------------
Note: ***, **, * ==>  Significance at 1%, 5%, 10% level.
-------------------------------------------------------------------------------
```