# ModeChoice Quick Reference

### Version 6.0.6

Syntax:

## ModeChoice [-flag] [control\_file]

Purpose:

1. Apply a nested-logit or multi-nomial mode choice model to zone-based trip tables.
   1. Read trip tables and one or more mode-specific skim files in TPPlus or TransCAD format.
   2. Trip tables can be subdivided by income or some other traveler attribute.
   3. Mode choice constants can vary by geographic market segments and traveler attribute.
   4. Short and long walk accessibility by origin and destination zone is used to determine mode shares by combined access markets.
   5. A user script interface is available for manipulating the skim and zonal attributes used for each origin-destination choice.
2. Apply an iterative model calibration process to match mode choice results to calibration targets.
   1. Calibration targets can be defined by mode, market segment, and traveler attribute.
   2. Exit criteria are control by a maximum number of iterations and a RMSE convergence value.
   3. Input constants with minimum and maximum constraints are used as seed values for the calibration process.
   4. The output calibration file can be used for mode choice applications or as input to additional calibration iterations.
3. Generate reports summarizing the mode shares, market segments, and calibration results.
4. Generate text files summarizing the mode shares, market segments, and calibration results.
5. Generate model results in the input format required by FTA’s SUMMIT program.
6. Generate production and attraction zone mode split summary files.

## Command Line Flags:

|  |  |
| --- | --- |
| -H[elp] | show program syntax and control keys |
| -C[ontrol] | create/update a default control file |
| -K[eyCheck] | list unrecognized control file keys |
| -P[ause] | pause before exiting |
| -N[oPause] | never pause before exiting |
| -Q[uiet] | execute without screen messages |
| -D[etail] | execute with detailed status messages |
| -X[ML] | write an XML file with control keys |
| -R[eport] | write control keys and report names |

## Execution Service Keys:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Control Key** | **Usage** | **Value Type** | **Default Value** | **Value Range** |
| TITLE | Optional | Text |  |  |
| REPORT\_DIRECTORY | Optional | Directory |  |  |
| REPORT\_FILE | Optional | Output File |  | [report\_directory]filename[\_partition][.prn] |
| REPORT\_FLAG | Optional | Boolean | FALSE | TRUE/FALSE, YES/NO, 1/0, T/F, Y/N |
| PAGE\_LENGTH | Optional | Integer | 65 | >= 0 (0 = no page breaks) |
| PROJECT\_DIRECTORY | Optional | Directory |  |  |
| DEFAULT\_FILE\_FORMAT | Optional | Text | TAB\_DELIMITED | Note #1 |

## Selection Service Keys:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Control Key** | **Usage** | **Value Type** | **Default Value** | **Value Range** |
| SELECT\_ORIGIN\_ZONES | Optional | List | ALL | e.g., 1, 2, 4..10, 100..200, 300 |
| SELECT\_DESTINATION\_ZONES | Optional | List | ALL | e.g., 1, 2, 4..10, 100..200, 300 |

## ModeChoice Control Keys:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Control Key** | **Usage** | **Value Type** | **Default Value** | **Value Range** |
| TRIP\_TABLE\_FILE | Required | Input File |  | [project\_directory]filename |
| TRIP\_TABLE\_FORMAT | Optional | Text | TPPLUS | Note #2 |
| NEW\_TRIP\_TABLE\_FILE | Required | Output File |  | [project\_directory]filename |
| NEW\_TRIP\_TABLE\_FORMAT | Optional | Text | TPPLUS | Note #2 |
| SELECT\_TRIP\_TABLES | Optional | Text | ALL | Comma separated list of trip table names |
| SKIM\_FILE\_# | Required | Input File |  | [project\_directory]filename |
| SKIM\_FORMAT | Optional | Text | TPPLUS | Note #2 |
| ZONE\_FILE | Required | Input File |  | [project\_directory]filename |
| ZONE\_FORMAT | Optional | Text | TAB\_DELIMITED | Note #1 |
| MODE\_CONSTANT\_FILE | Optional | Input File |  | [project\_directory]filename |
| MODE\_BIAS\_FILE | Optional | Input File |  | [project\_directory]filename |
| MODE\_CHOICE\_SCRIPT | Required | Input File |  | [project\_directory]filename |
| SEGMENT\_MAP\_FILE | Optional | Input File |  | [project\_directory]filename |
| ORIGIN\_MAP\_FIELD | Optional | Text | SEGMENT |  |
| DESTINATION\_MAP\_FIELD | Optional | Text | SEGMENT |  |
| TRIP\_PURPOSE\_LABEL | Optional | Text | Peak HBW |  |
| TRIP\_PURPOSE\_NUMBER | Optional | Integer | 1 | 1..100 |
| TRIP\_TIME\_PERIOD | Optional | Integer | 1 | 1..100 |
| PRIMARY\_MODE\_CHOICE | Required | Text |  |  |
| MODE\_CHOICE\_NEST\_# | Optional | Text |  |  |
| NESTING\_COEFFICIENT\_# | Optional | Decimal | 0.5 | 0.0..1.0 |
| MODEL\_NAMES\_# | Optional | Text |  |  |
| VEHICLE\_TIME\_VALUES\_# | Optional | Decimal | -0.02 | 0, -0.04..-0.01 variable = TIME |
| WALK\_TIME\_VALUES\_# | Optional | Decimal | 0 | 0, -1.0..-0.01 variable = WALK |
| DRIVE\_ACCESS\_VALUES\_# | Optional | Decimal | 0 | 0, -1.0..-0.01 variable = AUTO |
| WAIT\_TIME\_VALUES\_# | Optional | Decimal | 0 | 0, -1.0..-0.01 variable = WAIT |
| LONG\_WAIT\_VALUES\_# | Optional | Decimal | 0 | 0, -1.0..-0.01 variable = LWAIT |
| TRANSFER\_TIME\_VALUES\_# | Optional | Decimal | 0 | 0, -1.0..-0.01 variable = XWAIT |
| TRANSFER\_COUNT\_VALUES\_# | Optional | Decimal | 0 | 0, -1.0..-0.01 variable = XFER |
| PENALTY\_TIME\_VALUES\_# | Optional | Decimal | 0 | 0, -1.0..-0.01 variable = TPEN |
| TERMINAL\_TIME\_VALUES\_# | Optional | Decimal | 0 | 0, -1.0..-0.01 variable = TERM |
| DIFFERENCE\_VALUES\_# | Optional | Decimal | 0 | 0, -1.0..-0.01 variable = DIFF |
| DISTANCE\_VALUES\_# | Optional | Decimal | 0 | 0, -1.0..-0.01 variable = DIST |
| COST\_VALUES\_# | Optional | Decimal | 0 | 0, -5.0..0.0 variable = COST |
| USER\_VALUES\_# | Optional | Decimal | 0 | 0, -5.0..0.0 variable = USER |
| MODE\_ACCESS\_MARKET\_# | Optional | Text |  | SOV, SR2, SR3... |
| NEW\_TABLE\_MODES\_# | Optional | Text |  |  |
| OUTPUT\_TRIP\_FACTOR | Optional | Decimal | 1.0 | 1.0..1000.0 |
| NEW\_MODE\_SUMMARY\_FILE | Optional | Output File |  | [project\_directory]filename |
| NEW\_MARKET\_SEGMENT\_FILE | Optional | Output File |  | [project\_directory]filename |
| NEW\_MODE\_SEGMENT\_FILE | Optional | Output File |  | [project\_directory]filename |
| NEW\_FTA\_SUMMIT\_FILE | Optional | Output File |  | [project\_directory]filename |
| NEW\_PRODUCTION\_FILE | Optional | Output File |  | [project\_directory]filename |
| NEW\_PRODUCTION\_FORMAT | Optional | Text | TAB\_DELIMITED | Note #2 |
| NEW\_ATTRACTION\_FILE | Optional | Output File |  | [project\_directory]filename |
| NEW\_ATTRACTION\_FORMAT | Optional | Text | TAB\_DELIMITED | Note #2 |
| CALIBRATION\_TARGET\_FILE | Optional | Input File |  | [project\_directory]filename |
| CALIBRATION\_SCALING\_FACTOR | Optional | Decimal | 1 | 1.0..5.0 |
| MAX\_CALIBRATION\_ITERATIONS | Optional | Integer | 20 | 1..1000 |
| CALIBRATION\_EXIT\_RMSE | Optional | Decimal | 5 | 1.0..50.0 |
| NEW\_MODE\_CONSTANT\_FILE | Optional | Output File |  | [project\_directory]filename |
| NEW\_CALIBRATION\_DATA\_FILE | Optional | Output File |  | [project\_directory]filename |
| MODECHOICE\_REPORT\_# | Optional | Text |  | program report name |

## Report Options:

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| --- |
| MODE\_CHOICE\_SCRIPT |
| MODE\_CHOICE\_STACK |
| MODE\_SUMMARY\_REPORT |
| MARKET\_SEGMENT\_REPORT |
| CALIBRATION\_REPORT |
| TARGET\_DATA\_REPORT |
| MODE\_VALUE\_SUMMARY |
| SEGMENT\_VALUE\_SUMMARY |

## Notes:

|  |  |
| --- | --- |
| 1 | TEXT, BINARY, FIXED\_COLUMN, COMMA\_DELIMITED, SPACE\_DELIMITED, TAB\_DELIMITED, CSV\_DELIMITED, DBASE, ARCVIEW, SQLITE3, VERSION3 |
| 2 | TRANSCAD, CUBE, TPPLUS, TRANPLAN, BINARY, FIXED\_COLUMN, COMMA\_DELIMITED, SPACE\_DELIMITED, TAB\_DELIMITED, CSV\_DELIMITED, DBASE, SQLITE3 |