



Οδηγίες για το Ministeps

Η φοιτητική έκδοση
του Winsteps

Θάνος Βέρδης

ΠΜΣ «ΘΕΩΡΙΑ ΠΡΑΞΗ ΚΑΙ ΑΞΙΟΛΟΓΗΣΗ ΤΟΥ ΕΚΠΑΙΔΕΥΤΙΚΟΥ
ΕΡΓΟΥ»

1. Επιλέξτε 75 μαθητές και 5 μεταβλητές τυχαία από το αρχείο Δεδομένα Winsteps και φτιάξτε ένα δικό σας αρχείο

| Student | Gender | V3 | V4 | V5 | V6 | V7 | V8 | V9 | V10 |
|-------------|--------|----|----|----|----|----|----|----|-----|
| 26617334524 | M | 3 | 3 | 1 | 3 | 4 | 4 | 4 | 2 |
| 12040715885 | F | 3 | 5 | 1 | 4 | 4 | 4 | 4 | 5 |
| 26097043365 | F | 1 | 1 | 1 | 3 | 4 | 4 | 4 | 2 |
| 26449244835 | M | 3 | 3 | 1 | 3 | 4 | 2 | 4 | 2 |
| 18095013325 | M | 3 | 3 | 1 | 3 | 4 | 2 | 4 | 2 |
| 23208641412 | F | 4 | 3 | 1 | 3 | 4 | 5 | 4 | 2 |
| 24253116982 | F | 1 | 3 | 1 | 4 | 4 | 4 | 2 | 1 |
| 23859609335 | M | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 2 |
| 24258116915 | M | 3 | 3 | 1 | 3 | 4 | 5 | 4 | 2 |
| 22861420005 | M | 3 | 5 | 1 | 3 | 4 | 4 | 4 | 0 |
| 22094043355 | M | 3 | 3 | 1 | 1 | 4 | 4 | 4 | 2 |
| 23251644985 | M | 3 | 3 | 1 | 3 | 4 | 4 | 4 | 2 |
| 18296127345 | M | 3 | 3 | 1 | 3 | 4 | 4 | 4 | 2 |
| 22096023335 | F | 3 | 3 | 1 | 3 | 4 | 4 | 4 | 2 |
| 25618836525 | M | 3 | 3 | 1 | 3 | 4 | 5 | 4 | 3 |
| 25606847445 | M | 3 | 3 | 1 | 3 | 3 | 2 | 4 | 2 |
| 18297123345 | M | 3 | 5 | 1 | 4 | 4 | 4 | 4 | 2 |
| 18008016455 | M | 3 | 5 | 1 | 4 | 4 | 3 | 4 | 4 |
| 27436703295 | M | 3 | 3 | 1 | 3 | 4 | 4 | 4 | 2 |
| 26442230875 | M | 3 | 3 | 1 | 3 | 4 | 4 | 4 | 2 |
| 23490733345 | M | 3 | 3 | 1 | 3 | 4 | 4 | 4 | 2 |
| 24038021705 | M | 3 | 3 | 1 | 3 | 4 | 4 | 4 | 5 |
| 22472221105 | M | 3 | 3 | 1 | 3 | 4 | 4 | 4 | 2 |
| 24807404415 | F | 3 | 5 | 1 | 4 | 4 | 3 | 4 | 2 |
| 26441211825 | M | 3 | 3 | 1 | 3 | 4 | 4 | 4 | 2 |
| 22622349005 | M | 3 | 3 | 1 | 3 | 4 | 4 | 3 | 2 |
| 26047007825 | M | 3 | 3 | 1 | 3 | 4 | 4 | 4 | 2 |
| 22665343215 | M | 3 | 3 | 1 | 3 | 4 | 4 | 4 | 2 |
| 27880945205 | F | 3 | 3 | 1 | 3 | 4 | 4 | 4 | 2 |
| 24289127265 | M | 3 | 5 | 1 | 2 | 4 | 2 | 4 | 2 |
| 25010546545 | M | 1 | 4 | 1 | 2 | 4 | 4 | 4 | 4 |
| 22236120725 | M | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 2 |
| 22076026155 | M | 3 | 3 | 1 | 3 | 4 | 4 | 4 | 2 |
| 21837908705 | M | 1 | 3 | 1 | 3 | 4 | 4 | 4 | 2 |

Βρείτε επίσης το κλειδί (key) για τις σωστές απαντήσεις για τις ερωτήσεις που επιλέξατε

https://docs.google.com/spreadsheets/d/1i4JCdG8Gy

Εφαρμογές Εθνικό και Καποδ... Ινστιτούτο Εκπαιδε... G Goc

Δεδομένα Ministeps 2019

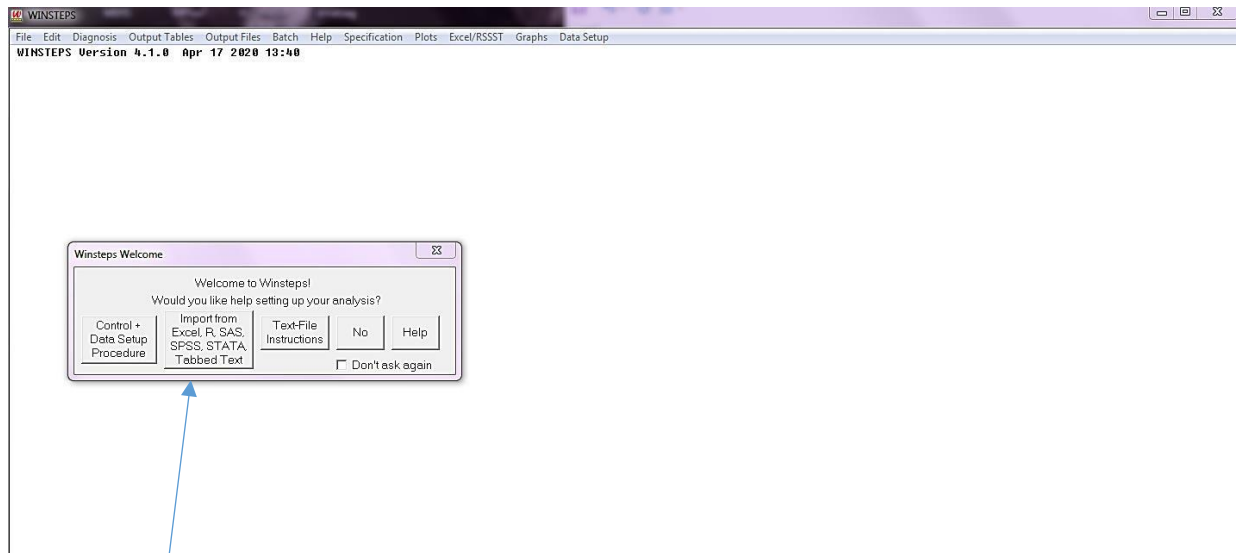
Αρχείο Επεξεργασία Προβολή Εισαγωγή Μορφή Δεδο

V3

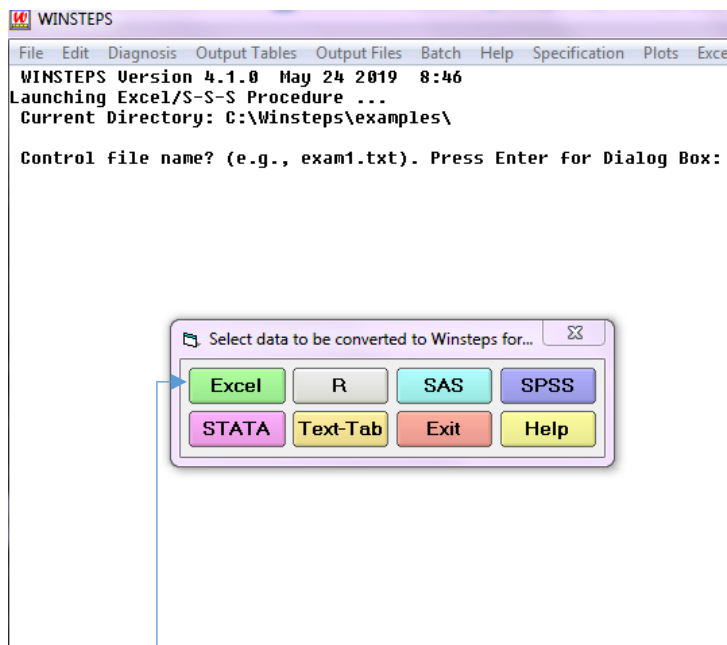
| A | B | C | D |
|----|----|----|----|
| V3 | V4 | V5 | V6 |
| 3 | 3 | 1 | 3 |

Απαντήσεις Σωστές απαντήσεις

2. Εισαγάγετε στο *Winsteps* (*Ministeps*) τα δεδομένα από το αρχείο Excel που εντωμεταξύ φτιάξατε

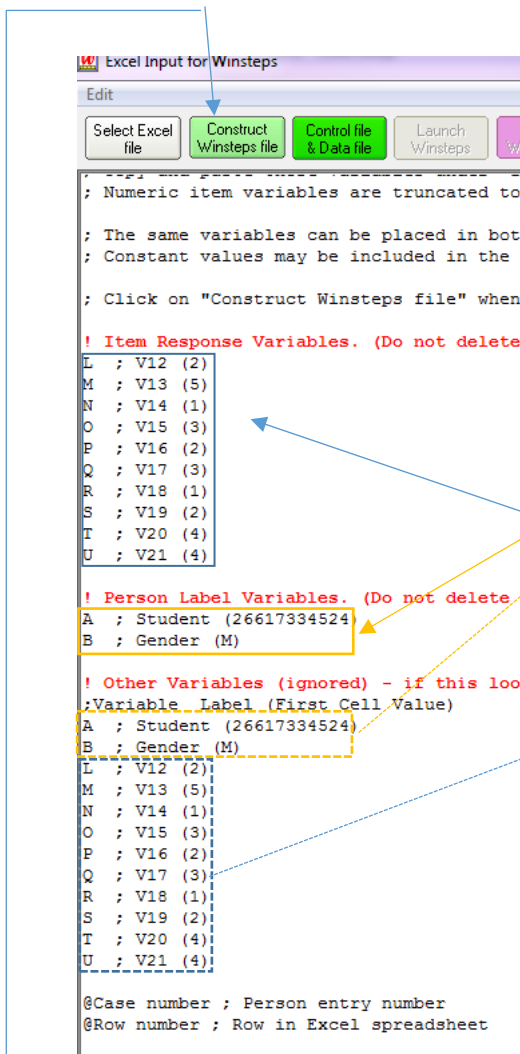


Πατήστε εδώ για να εισαγάγετε ένα εξωτερικό αρχείο



Πατήστε εδώ για να εισαγάγετε το εξωτερικό αρχείο αν το έχετε σε Excel

3. Κάντε copy-paste τις μεταβλητές με τις απαντήσεις και τα ονόματα και το φύλο στις κατάλληλες θέσεις...



Προσωπικά στοιχεία όπως ονόματα, φύλο κτλ. πηγαίνουν με copy-paste εδώ, λίγο πιο πάνω

Οι μεταβλητές σας μεταφέρονται με copy-paste εδώ.

...και πατήστε *Construct Winsteps file*. Δώστε ένα όνομα στο αρχείο σας.

Ανοίξτε το αρχείο σας με το όνομα που του δώσατε στο *Data Setup* του Winsteps

The image shows the Winsteps Control File Set-Up window. The window title is "Winsteps Control File Set-Up". The main area contains various settings for the control file, including:

- TITLE= Report title is: $\Delta\delta\omicron\mu\epsilon\nu\alpha$ Ministeps 2019.xlsx
- PERSON= A data row is a: Person
- ITEM= A data column is a: Item
- NAMEI= First person label column: 12
- ITEMI= First item column: 1
- NAMELEN= Person label length: 14
- NI= Number of items: 10
- Number of data rows: 127
- Number of data columns: 25
- XWIDE= columns per response: 1
- CODES= Valid codes: 012345
- Item Labels: Enter/Edit
- Rating scales & partial credit: 3680

Below the settings, there is a table with columns for Column (1-25) and rows for Person (1-11) and Item No (1-11). The table contains numerical data representing the response patterns for each person and item.

Other specifications in control file:

- Excel file created or last modified: 24/5/2019 8:32:50 AM
- Αδελφία
- Excel Cases processed = 127
- Excel Variables processed = 35
- GROUPS = 0 ; Partial Credit model: in case items have different rating scales

Calculating Fit Statistics

Time for estimation: 0:0:0.687

Processing Table 0

$\epsilon\delta\omicron\mu\epsilon\nu\alpha$ Ministeps 2019.xlsx

| PERSON | TOTAL | INPUT | COUNT | MEASURE | REALSE | INNSQ | ZSTD | OMNSQ | ZSTD | OUTFIT |
|-----------|-------|---------|-------|------------|--------|--------------------|------|-------|------|--------|
| MEAN | 27.6 | 10.0 | 1.16 | .58 | .99 | -1.2 | 1.04 | -1.01 | | |
| P.SD | 1.6 | .0 | .40 | .21 | 1.80 | 2.7 | 2.08 | 2.7 | | |
| REAL RMSE | .62 | TRUE SD | .00 | SEPARATION | .00 | PERSON RELIABILITY | .00 | | | |

| ITEM | TOTAL | INPUT | COUNT | MEASURE | REALSE | INNSQ | ZSTD | OMNSQ | ZSTD | OUTFIT |
|-----------|-------|---------|-------|------------|--------|------------------|------|-------|------|--------|
| MEAN | 358.9 | 127.0 | .00 | .28 | 1.34 | -1 | 1.29 | -4 | | |
| P.SD | 147.8 | .0 | 2.66 | .12 | 1.15 | 6.4 | 1.13 | 6.0 | | |
| REAL RMSE | .23 | TRUE SD | 2.65 | SEPARATION | 11.42 | ITEM RELIABILITY | .99 | | | |

Output written to C:\Users\UoA\Documents\ΕΑΠ 4η Εργασία 2019\20U792US.TXT

ODES= 012345

asures constructed: use "Diagnosis" and "Output Tables" menus

Εισαγάγετε τα key (τις σωστές απαντήσεις) και τις πιθανές απαντήσεις (πχ. 1,2,3,4 αν έχετε 4 πιθανές απαντήσεις στα ερωτήματά σας).

Winsteps Control File Set-Up

TITLE= Report title is Δεδομένα Ministeps 2019.xlsx

PERSON= A data row is a Person
 NAME1= First person label column 12
 NAMELEN= Person label length 14
 Number of data rows 127
 Number of data columns 25

ITEM= A data column is a Item
 ITEM1= First item column 1
 NI= Number of Items 10
 XWIDE= columns per response 1
 CODES= Valid codes 012345

UIMEAN= Set item mean
 UPMEAN= Set person mean
 UIMEAN= Mean of items
 USCALE= Units per logit
 UDECIM= decimal places

Item Labels: Enter/Edit

Refresh Data Display | Data entry direction: | Remove excess rows and columns | Scan data for codes | Category labels CLFILE= | MCQ Scoring KEY1= | Rating scales & partial credit ISGROUPS= 3.68.0

| Column: | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
|----------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Person: | | | | | | | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | | |
| Item No: | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | | | | | | | | | | | | | |
| Label: | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | | | | | | | | | | | | | | |
| 1 | 2 | 5 | 1 | 3 | 2 | 3 | 1 | 2 | 4 | 4 | | 2 | 6 | 6 | 1 | 7 | 3 | 3 | 4 | 5 | 2 | 4 | | | M |
| 2 | 2 | 5 | 1 | 3 | 2 | 2 | 1 | 1 | 4 | 4 | | 1 | 2 | 0 | 4 | 0 | 7 | 1 | 5 | 8 | 8 | 5 | | | F |
| 3 | 2 | 5 | 1 | 3 | 2 | 2 | 1 | 1 | 4 | 4 | | 2 | 6 | 0 | 9 | 7 | 0 | 4 | 4 | 3 | 6 | 5 | | | F |
| 4 | 2 | 5 | 1 | 3 | 2 | 3 | 1 | 2 | 4 | 4 | | 2 | 6 | 4 | 4 | 9 | 2 | 4 | 4 | 8 | 3 | 5 | | | M |
| 5 | 2 | 5 | 3 | 3 | 2 | 3 | 1 | 2 | 4 | 4 | | 1 | 8 | 0 | 9 | 5 | 0 | 1 | 5 | 3 | 2 | 5 | | | M |
| 6 | 3 | 5 | 5 | 3 | 4 | 3 | 1 | 2 | 5 | 2 | | 2 | 3 | 2 | 0 | 8 | 6 | 4 | 1 | 4 | 1 | 2 | | | F |
| 7 | 5 | 2 | 3 | 2 | 2 | 1 | 2 | 4 | 4 | 4 | | 2 | 4 | 2 | 5 | 3 | 1 | 1 | 6 | 9 | 8 | 2 | | | F |
| 8 | 2 | 5 | 1 | 3 | 2 | 5 | 1 | 1 | 4 | 4 | | 2 | 3 | 8 | 5 | 9 | 9 | 4 | 0 | 9 | 3 | 5 | | | M |
| 9 | 0 | 1 | 2 | 4 | 4 | 1 | 4 | 2 | 2 | 4 | | 2 | 4 | 2 | 5 | 8 | 1 | 1 | 6 | 9 | 1 | 5 | | | M |
| 10 | 0 | 5 | 1 | 3 | 2 | 1 | 1 | 2 | 4 | 4 | | 2 | 2 | 8 | 6 | 1 | 4 | 2 | 0 | 0 | 0 | 5 | | | M |
| 11 | 2 | 5 | 1 | 3 | 2 | 3 | 1 | 2 | 4 | 4 | | 2 | 2 | 0 | 9 | 4 | 0 | 4 | 4 | 3 | 5 | 5 | | | M |

Other specifications in control file: [Help for Specifications](#)

```

; Excel file created or last modified: 24/5/2019 8:32:50 &l
; Α&α&ι&ι&Υ&ι&α
; Excel Cases processed = 127
; Excel Variables processed = 35
; GROUPS = 0 ; Partial Credit model: in case items have different rating scales
  
```

Εισαγάγετε τα key (σωστές απαντήσεις) και τις πιθανές απαντήσεις

Winsteps Control File Set-Up

TITLE= Report title is testfinal.sav

PERSON= A data row is a Person
 NAME1= First person label column 35
 NAMELEN= Person label length 14
 Number of data rows 127
 Number of data columns 48

ITEM= A data column is a Item
 ITEM1= First item column 1
 NI= Number of Items 33
 XWIDE= columns per response 1
 CODES= Valid codes 12345

UIMEAN= Set item mean
 UPMEAN= Set person mean
 0 UIMEAN= Mean of items
 1 USCALE= Units per logit
 2 UDECIM= decimal places

Item Labels: Enter/Edit

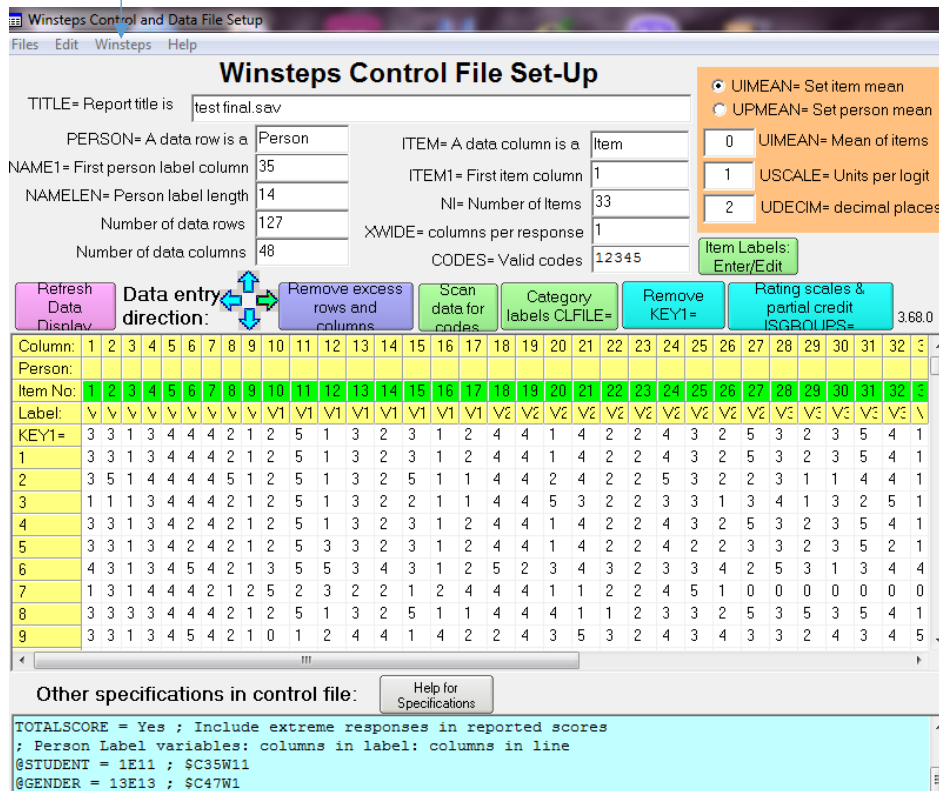
Refresh Data Display | Data entry direction: | Remove excess rows and columns | Scan data for codes | Category labels CLFILE= | Remove KEY1= | Rating scales & partial credit ISGROUPS= 3.68.0

| Column: | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | | |
|----------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|--|
| Person: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Item No: | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | | |
| Label: | V | V | V | V | V | V | V | V | V | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V2 | V2 | V2 | V2 | V2 | V2 | V2 | V2 | V2 | V2 | V3 | V3 | V3 | V3 | V3 | V3 | | |
| KEY1= | 3 | 3 | 1 | 3 | 4 | 4 | 4 | 2 | 1 | 2 | 5 | 1 | 3 | 2 | 3 | 1 | 2 | 4 | 4 | 1 | 4 | 2 | 2 | 4 | 3 | 2 | 5 | 3 | 2 | 3 | 5 | 4 | 1 | | |
| 1 | 3 | 3 | 1 | 3 | 4 | 4 | 4 | 2 | 1 | 2 | 5 | 1 | 3 | 2 | 3 | 1 | 2 | 4 | 4 | 1 | 4 | 2 | 2 | 4 | 3 | 2 | 5 | 3 | 2 | 3 | 5 | 4 | 1 | | |
| 2 | 3 | 5 | 1 | 4 | 4 | 4 | 4 | 5 | 1 | 2 | 5 | 1 | 3 | 2 | 5 | 1 | 1 | 4 | 4 | 2 | 4 | 2 | 2 | 5 | 3 | 2 | 2 | 3 | 1 | 1 | 4 | 4 | 1 | | |
| 3 | 1 | 1 | 1 | 3 | 4 | 4 | 4 | 2 | 1 | 2 | 5 | 1 | 3 | 2 | 2 | 1 | 1 | 4 | 4 | 5 | 3 | 2 | 2 | 3 | 3 | 1 | 3 | 4 | 1 | 3 | 2 | 5 | 1 | | |
| 4 | 3 | 3 | 1 | 3 | 4 | 2 | 4 | 2 | 1 | 2 | 5 | 1 | 3 | 2 | 3 | 1 | 2 | 4 | 4 | 1 | 4 | 2 | 2 | 4 | 3 | 2 | 5 | 3 | 2 | 3 | 5 | 4 | 1 | | |
| 5 | 3 | 3 | 1 | 3 | 4 | 2 | 4 | 2 | 1 | 2 | 5 | 3 | 3 | 2 | 3 | 1 | 2 | 4 | 4 | 1 | 4 | 2 | 2 | 4 | 2 | 2 | 3 | 3 | 2 | 3 | 5 | 2 | 1 | | |
| 6 | 4 | 3 | 1 | 3 | 4 | 5 | 4 | 2 | 1 | 3 | 5 | 5 | 3 | 4 | 3 | 1 | 2 | 5 | 2 | 3 | 4 | 3 | 2 | 3 | 3 | 4 | 2 | 5 | 3 | 1 | 3 | 4 | 4 | | |
| 7 | 1 | 3 | 1 | 4 | 4 | 4 | 2 | 1 | 2 | 5 | 2 | 3 | 2 | 2 | 1 | 2 | 4 | 4 | 4 | 1 | 1 | 2 | 2 | 4 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 8 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 2 | 1 | 2 | 5 | 1 | 3 | 2 | 5 | 1 | 1 | 4 | 4 | 4 | 1 | 1 | 2 | 3 | 3 | 2 | 5 | 3 | 5 | 3 | 5 | 4 | 1 | | |
| 9 | 3 | 3 | 1 | 3 | 4 | 5 | 4 | 2 | 1 | 0 | 1 | 2 | 4 | 4 | 1 | 4 | 2 | 2 | 4 | 3 | 5 | 3 | 2 | 4 | 3 | 4 | 3 | 3 | 2 | 4 | 3 | 4 | 5 | | |

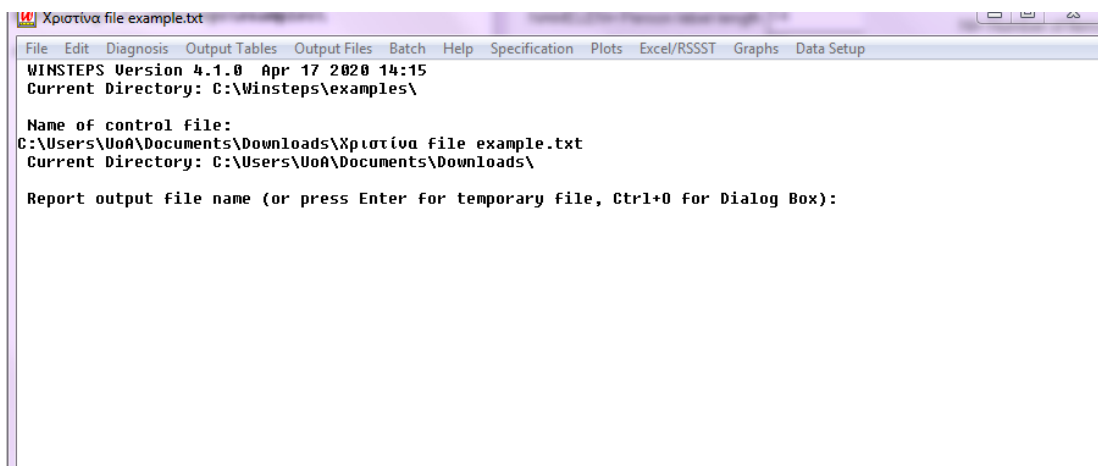
Other specifications in control file: [Help for Specifications](#)

```
TOTALSCORE = Yes ; Include extreme responses in reported scores
; Person Label variables: columns in label: columns in line
@STUDENT = 1E11 ; $C35W11
@GENDER = 13E13 ; $C47W1
```

Στο μενού Winsteps πατήστε Save control and data file and exit to Winsteps analysis



Σώστε το αρχείο σας ξανά, αν χρειάζεται.



Όταν εμφανιστεί μια τέτοια οθόνη πατήστε δύο φορές Enter.

Από το Output Tables ζητήστε διαδοχικά τον Πίνακα 14 (Items: entry) και τον Πίνακα 12 (Item: map).

```

File Edit Diagnosis Output Tables Output Files Batch Help Specification Plots Excel/RSSST Graphs Data Setup
| PROX ACTIVE COUNT EXTREME 5 RANGE MAX LOGIT CHANGE |
| ITERATION Person Item CATS Person Item MEASURES STRUCTURE |
>=====
| 1 75 10 2 1.87 3.31 -3.6532 |
>=====
| 2 72 9 2 3.31 3.61 -1.3422 |
>=====
| 3 72 9 2 3.53 4.02 -.4704 |
Probing data connection: to skip out: Ctrl+F - to bypass: subset=no
Processing unanchored persons ...
>=====
Consolidating 4 potential subsets pairwise ...
>=====
Data fully connected. No subsets found
|Control: \Χριστίνα file example.txt Output: \Downloads\ZOU928WS.TXT
| JMLE MAX SCORE MAX LOGIT LEAST CONVERGED CATEGORY STRUCTURE |
| ITERATION RESIDUAL* CHANGE Person Item CAT RESIDUAL CHANGE |
>=====
| 1 -4.29 .7354 67 2* |
>=====
| 2 -1.72 -.2128 10 3* |
>=====
| 3 -1.20 -.1717 10 3* |
>=====
| 4 -.89 -.1236 2 3* |
>=====
| 5 -.67 -.1000 2 3* |
>=====
| 6 -.52 -.0786 2 3* |
>=====
| 7 -.41 -.0626 2 3* |
>=====
| 8 -.32 -.0499 2 3* |
>=====
| 9 -.26 -.0399 2 3* |
>=====
| 10 -.21 -.0321 2 3* |
>=====
| 11 -.17 -.0258 2 3* |
>=====
| 12 -.13 -.0209 2 3* |
>=====
| 13 -.11 -.0169 2 3* |
>=====
| 14 -.09 -.0137 2 3* |
>=====
Calculating Fit Statistics
>=====

```

Ο σχολιασμός των πινάκων ακολουθεί σε άλλο κείμενο

TABLE 14.1 Δεδομένα Ministeps 2019.xlsx ZOU133WS.TXT Jun 4 2019 23:30
 INPUT: 127 Person 10 Item REPORTED: 127 Person 10 Item 2 CATS WINSTEPS 4.1.0

Person: REAL SEP.: .24 REL.: .05 ... Item: REAL SEP.: 3.24 REL.: .91

Item STATISTICS: ENTRY ORDER

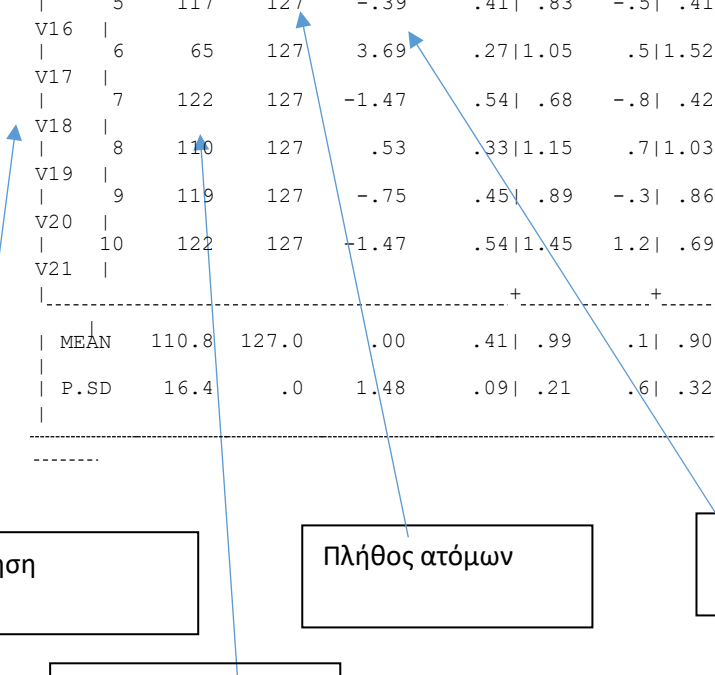
| ENTRY NUMBER Item | TOTAL SCORE | TOTAL COUNT | MEASURE | MODEL S.E. | INFIT MNSQ ZSTD | OUTFIT MNSQ ZSTD | PTMEASUR-AL CORR. | EXP. | EXACT MATCH OBS% EXP% | |
|-------------------------|----------------|----------------|---------|---------------|-----------------------|------------------------|----------------------|------|-----------------------------|-----------|
| V12 | 114 | 127 | .05 | .36 | .99 | .1 | 1.15 | .5 | .52 .53 | 89.0 88.4 |
| V13 | 121 | 127 | -1.20 | .50 | .75 | -.6 | 1.06 | .3 | .49 .44 | 96.3 93.8 |
| V14 | 102 | 127 | 1.25 | .28 | 1.09 | .6 | 1.07 | .4 | .56 .59 | 74.4 78.7 |
| V15 | 116 | 127 | -.23 | .39 | 1.02 | .2 | .78 | -.4 | .53 .51 | 86.6 89.8 |
| V16 | 117 | 127 | -.39 | .41 | .83 | -.5 | .41 | -1.4 | .58 .50 | 90.2 90.6 |
| V17 | 65 | 127 | 3.69 | .27 | 1.05 | .5 | 1.52 | 1.2 | .65 .69 | 75.6 75.5 |
| V18 | 122 | 127 | -1.47 | .54 | .68 | -.8 | .42 | -.6 | .50 .41 | 96.3 94.8 |
| V19 | 110 | 127 | .53 | .33 | 1.15 | .7 | 1.03 | .2 | .52 .56 | 82.9 85.1 |
| V20 | 119 | 127 | -.75 | .45 | .89 | -.3 | .86 | .0 | .51 .47 | 91.5 92.0 |
| V21 | 122 | 127 | -1.47 | .54 | 1.45 | 1.2 | .69 | -.1 | .34 .41 | 91.5 94.8 |
| MEAN | 110.8 | 127.0 | .00 | .41 | .99 | .1 | .90 | .0 | | 87.4 88.4 |
| P.SD | 16.4 | .0 | 1.48 | .09 | .21 | .6 | .32 | .7 | | 7.3 6.3 |

Ερώτηση

Πλήθος ατόμων

Δυσκολία σε μονάδες logit

Σκορ απαντήσεων



Item CATEGORY/OPTION/DISTRACTOR FREQUENCIES: ENTRY ORDER

| ENTRY NUMBER | DATA CODE | SCORE VALUE | DATA | | ABILITY | | S.E. MEAN | INFT MNSQ | OUTF MNSQ | PTMA CORR. | Item |
|--------------|-----------|-------------|-------|----|---------|------|-----------|-----------|-----------|------------|------|
| | | | COUNT | % | MEAN | P.SD | | | | | |
| 1 | 0 | 0 | 2 | 2 | -.03 | 1.83 | 1.83 | 1.1 | .6 | -.24 | V12 |
| | 3 | 0 | 4 | 3 | .28 | .74 | .43 | .5 | .3 | -.31 | |
| | 5 | 0 | 7 | 6 | .92 | 2.27 | .93 | 1.8 | 1.9 | -.32 | |
| | 2 | 1 | 114 | 90 | 3.43 | 1.36 | .13 | .9 | .8 | .52 | |
| 2 | 1 | 0 | 2 | 2 | -2.31 | .44 | .44 | .1 | .0 | -.41 | V13 |
| | 2 | 0 | 1 | 1 | -1.24 | .00 | | .3 | .1 | -.23 | |
| | 3 | 0 | 1 | 1 | -.69 | .00 | | .5 | .1 | -.21 | |
| | 4 | 0 | 1 | 1 | .37 | .00 | | 1.4 | .4 | -.15 | |
| | 0 | 0 | 1 | 1 | 3.12 | .00 | | 10.0 | 6.0 | .00 | |
| | 5 | 1 | 121 | 95 | 3.32 | 1.43 | .13 | .6 | .7 | .49 | |
| 3 | 3 | 0 | 10 | 8 | .49 | 2.01 | .67 | 1.2 | 1.0 | -.46 | V14 |
| | 5 | 0 | 4 | 3 | .90 | .71 | .41 | .5 | .4 | -.24 | |
| | 2 | 0 | 11 | 9 | 2.07 | 1.39 | .44 | 1.6 | 1.6 | -.20 | |
| | 1 | 1 | 102 | 80 | 3.60 | 1.27 | .13 | 1.0 | .9 | .56 | |
| 4 | 4 | 0 | 4 | 3 | -.01 | 1.17 | .67 | .7 | .3 | -.34 | V15 |
| | 2 | 0 | 6 | 5 | .38 | 1.93 | .86 | 1.2 | 1.1 | -.37 | |
| | 5 | 0 | 1 | 1 | .99 | .00 | | 1.1 | .5 | -.11 | |
| | 3 | 1 | 116 | 91 | 3.41 | 1.40 | .13 | 1.1 | 1.0 | .53 | |
| 5 | 4 | 0 | 2 | 2 | -1.02 | .84 | .84 | .3 | .1 | -.32 | V16 |
| | 1 | 0 | 4 | 3 | -.79 | 1.33 | .77 | .5 | .2 | -.43 | |
| | 3 | 0 | 4 | 3 | .90 | .71 | .41 | 1.2 | .6 | -.24 | |
| | 2 | 1 | 117 | 92 | 3.42 | 1.36 | .13 | .9 | .9 | .58 | |
| 6 | 2 | 0 | 13 | 10 | .86 | 1.74 | .50 | .8 | .6 | -.46 | V17 |
| | 1 | 0 | 9 | 7 | 1.23 | 1.73 | .61 | .9 | .7 | -.32 | |
| | 0 | 0 | 1 | 1 | 1.81 | .00 | | .3 | .5 | -.07 | |
| | 4 | 0 | 14 | 11 | 2.59 | .73 | .20 | 1.1 | 1.3 | -.12 | |
| | 5 | 0 | 25 | 20 | 2.61 | .69 | .14 | 1.1 | 1.3 | -.16 | |
| | 3 | 1 | 65 | 51 | 4.20 | 1.11 | .14 | 1.1 | 1.7 | .65 | |
| 7 | 4 | 0 | 3 | 2 | -1.77 | .84 | .60 | .3 | .1 | -.46 | V18 |
| | 2 | 0 | 1 | 1 | -1.24 | .00 | | .4 | .1 | -.23 | |
| | 5 | 0 | 1 | 1 | 1.81 | .00 | | 7.5 | 1.7 | -.07 | |
| | 1 | 1 | 122 | 96 | 3.31 | 1.44 | .13 | .5 | .7 | .50 | |
| 8 | 4 | 0 | 4 | 3 | -.72 | 1.64 | .95 | .5 | .3 | -.42 | V19 |
| | 3 | 0 | 2 | 2 | -.16 | .53 | .53 | .2 | .2 | -.25 | |
| | 1 | 0 | 11 | 9 | 1.74 | .97 | .31 | 1.4 | 1.3 | -.26 | |
| | 2 | 1 | 110 | 87 | 3.48 | 1.40 | .13 | 1.3 | 1.5 | .52 | |
| 9 | 2 | 0 | 1 | 1 | -1.86 | .00 | | .1 | .0 | -.27 | V20 |
| | 5 | 0 | 2 | 2 | -1.46 | 1.29 | 1.29 | .4 | .1 | -.35 | |
| | 1 | 0 | 1 | 1 | -.69 | .00 | | .3 | .1 | -.21 | |
| | 3 | 0 | 4 | 3 | 1.10 | 1.35 | .78 | 1.6 | 1.6 | -.22 | |
| | 4 | 1 | 119 | 94 | 3.36 | 1.41 | .13 | .9 | .8 | .51 | |
| 10 | 3 | 0 | 1 | 1 | -.69 | .00 | | .6 | .1 | -.21 | V21 |
| | 1 | 0 | 1 | 1 | -.18 | .00 | | 1.0 | .2 | -.18 | |
| | 2 | 0 | 1 | 1 | -.18 | .00 | | 1.0 | .2 | -.18 | |
| | 0 | 0 | 1 | 1 | .99 | .00 | | 3.3 | .8 | -.11 | |
| | 5 | 0 | 1 | 1 | 1.81 | .00 | | 7.5 | 1.7 | -.07 | |
| | 4 | 1 | 122 | 96 | 3.25 | 1.59 | .14 | 1.9 | 1.7 | .34 | |

Ερώτηση

Πιθανές απαντήσεις
 πολλαπλής επιλογής
 (από λάθος δεν έχω
 αφαιρέσει το μηδέν
 (0))

Η σωστή απάντηση
 παίρνει μία μονάδα. Οι
 λάθος παίρνουν μηδέν (0)

Ποσοστό

Συχνότητα