**Introduction:**

The dataset examined represented personality test results for 3 celebrities. This assignment contains figures representing inter-rater-agreement calculated using two methods: RWG andADM. It also contains calculations for the combined measure of inter-rater-reliability and inter-rater-agreement ICC(1). Finally, it interprets the results.

**Process:**

First, I used SPSS to recode the data, grouping results by celebrity. Next, I unsuccessfully attempted to use R to perform the analyses using both the multilevel package rwg() function and plain syntax.

I returned to SPSS to complete assignment in reasonable time frame. I modified LeBreton & Senter (2007) Sample Syntax using “Copy & Paste” and “Find & Replace.” Syntax included after results.

**Results:**

1. RWG Levels of agreement for each dimension for each celebrity, using a uniform distribution:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Dimension N | Dimension E | Dimension O | Dimension A | Dimension C |
| Celebrity 1 | .69 | .69 | .69 | .88 | .80 |
| Celebrity 2 | .77 | .80 | .87 | .67 | .84 |
| Celebrity 3 | .76 | .80 | .77 | 1.00 | .78 |
| Celebrity 4 | .80 | .78 | .95 | .88 | .77 |

Using the RWG benchmark, only Dimension C can be used to create and aggregated score. All other dimensions contain RWG figures below .70.

1. ADM levels for each dimension for each celebrity:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Dimension N | Dimension E | Dimension O | Dimension A | Dimension C |
| Celebrity 1 | .68 | .70 | .70 | .42 | .48 |
| Celebrity 2 | .66 | .48 | .46 | .70 | .36 |
| Celebrity 3 | .78 | .58 | .60 | .00 | .50 |
| Celebrity 4 | .42 | .40 | .18 | .46 | .62 |

Using the ADM benchmark, all dimensions can be used to create and aggregated score. None of the dimensions contain ADM figures above .80.

1. ICC(1) For each measured dimension:

|  |  |
| --- | --- |
|  | ICC(1) |
| Dimension N | .328 |
| Dimension E | .355 |
| Dimension O | .465 |
| Dimension A | .855 |
| Dimension C | .351 |

Most values of ICC(1) are below the benchmark of .5, and so indicate a poor combination of reliability and agreement. Dimension A is the only one that has an ICC(1) indicating good reliability and agreement.

**Conclusion:**

1. Our ADM figures indicate inter-rater-agreement good enough to aggregate the scores. The RWG levels do not, however they are very close, and the affirmation of the ADM scores leads me to conclude that these scores can be aggregated.  
     
   However, the ICC(1) figure indicates that the combined reliability and agreement do not meet psychometric standards – low absolute agreement.  
     
   Without conducting further examination, I am inclined to conclude that while inter-rater-agreement meets psychometric standards, the reliability of the measures is questionable.

**Syntax in SPSS:**

\* Encoding: UTF-8.

\*Restructuring the Data

SORT CASES BY Celebrity.

CASESTOVARS

/ID = Celebrity

/GROUPBY = VARIABLE.

EXECUTE.

\*Recoding Variable Names

RECODE ITEM1.1 to ITEM2.5 (MISSING = 999).

MISSING VALUES ITEM1.1 to ITEM2.5 (999).

EXECUTE.

\*Estimate rWG

COMPUTE obs\_N = var(N.1,N.2,N.3,N.4,N.5,N.6,N.7,N.9,N.9,N.10).

EXECUTE.

COMPUTE N\_un = 1-(obs\_N/2).

COMPUTE N\_ss = 1-(obs\_N/1.34).

EXECUTE.

COMPUTE obs\_E = var(E.1,E.2,E.3,E.4,E.5,E.6,E.7,E.9,E.9,E.10).

EXECUTE.

COMPUTE E\_un = 1-(obs\_E/2).

COMPUTE E\_ss = 1-(obs\_E/1.34).

EXECUTE.

COMPUTE obs\_O = var(O.1,O.2,O.3,O.4,O.5,O.6,O.7,O.9,O.9,O.10).

EXECUTE.

COMPUTE O\_un = 1-(obs\_O/2).

COMPUTE O\_ss = 1-(obs\_O/1.34).

EXECUTE.

COMPUTE obs\_A = var(A.1,A.2,A.3,A.4,A.5,A.6,A.7,A.9,A.9,A.10).

EXECUTE.

COMPUTE A\_un = 1-(obs\_A/2).

COMPUTE A\_ss = 1-(obs\_A/1.34).

EXECUTE.

COMPUTE obs\_C = var(C.1,C.2,C.3,C.4,C.5,C.6,C.7,C.9,C.9,C.10).

EXECUTE.

COMPUTE C\_un = 1-(obs\_C/2).

COMPUTE C\_ss = 1-(obs\_C/1.34).

EXECUTE.

\*Estimate ADM

\*Burke and Dunlap (2002) suggested a critical value of .80 or less for establishing agreement

when using a 5-point scale.

COMPUTE MEAN\_N = mean(N.1,N.2,N.3,N.4,N.5,N.6,N.7,N.9,N.9,N.10).

COMPUTE AD\_N = mean(abs(N.1-MEAN\_N),abs(N.2-MEAN\_N),abs(N.3-MEAN\_N),abs(N.4-MEAN\_N),abs(N.5-MEAN\_N),

abs(N.6-MEAN\_N),abs(N.7-MEAN\_N),abs(N.8-MEAN\_N),abs(N.9-MEAN\_N),abs(N.10-MEAN\_N)).

EXECUTE.

COMPUTE MEAN\_E = mean(E.1,E.2,E.3,E.4,E.5,E.6,E.7,E.9,E.9,E.10).

COMPUTE AD\_E = mean(abs(E.1-MEAN\_E),abs(E.2-MEAN\_E),abs(E.3-MEAN\_E),abs(E.4-MEAN\_E),abs(E.5-MEAN\_E),

abs(E.6-MEAN\_E),abs(E.7-MEAN\_E),abs(E.8-MEAN\_E),abs(E.9-MEAN\_E),abs(E.10-MEAN\_E)).

EXECUTE.

COMPUTE MEAN\_O = mean(O.1,O.2,O.3,O.4,O.5,O.6,O.7,O.9,O.9,O.10).

COMPUTE AD\_O = mean(abs(O.1-MEAN\_O),abs(O.2-MEAN\_O),abs(O.3-MEAN\_O),abs(O.4-MEAN\_O),abs(O.5-MEAN\_O),

abs(O.6-MEAN\_O),abs(O.7-MEAN\_O),abs(O.8-MEAN\_O),abs(O.9-MEAN\_O),abs(O.10-MEAN\_O)).

EXECUTE.

COMPUTE MEAN\_A = mean(A.1,A.2,A.3,A.4,A.5,A.6,A.7,A.9,A.9,A.10).

COMPUTE AD\_A = mean(abs(A.1-MEAN\_A),abs(A.2-MEAN\_A),abs(A.3-MEAN\_A),abs(A.4-MEAN\_A),abs(A.5-MEAN\_A),

abs(A.6-MEAN\_A),abs(A.7-MEAN\_A),abs(A.8-MEAN\_A),abs(A.9-MEAN\_A),abs(A.10-MEAN\_A)).

EXECUTE.

COMPUTE MEAN\_C = mean(C.1,C.2,C.3,C.4,C.5,C.6,C.7,C.9,C.9,C.10).

COMPUTE AD\_C = mean(abs(C.1-MEAN\_C),abs(C.2-MEAN\_C),abs(C.3-MEAN\_C),abs(C.4-MEAN\_C),abs(C.5-MEAN\_C),

abs(C.6-MEAN\_C),abs(C.7-MEAN\_C),abs(C.8-MEAN\_C),abs(C.9-MEAN\_C),abs(C.10-MEAN\_C)).

EXECUTE.

\*Estimate ICC(1) and ICC(K)

RELIABILITY

/VARIABLES = N.1,N.2,N.3,N.4,N.5,N.6,N.7,N.9,N.9,N.10

/SCALE(ALPHA) = ALL/MODEL = ALPHA

/ICC = MODEL(ONEWAY) CIN = 95 TESTVAL = 0.

EXECUTE.

RELIABILITY

/VARIABLES = E.1,E.2,E.3,E.4,E.5,E.6,E.7,E.9,E.9,E.10

/SCALE(ALPHA) = ALL/MODEL = ALPHA

/ICC = MODEL(ONEWAY) CIN = 95 TESTVAL = 0.

EXECUTE.

RELIABILITY

/VARIABLES = O.1,O.2,O.3,O.4,O.5,O.6,O.7,O.9,O.9,O.10

/SCALE(ALPHA) = ALL/MODEL = ALPHA

/ICC = MODEL(ONEWAY) CIN = 95 TESTVAL = 0.

EXECUTE.

RELIABILITY

/VARIABLES = A.1,A.2,A.3,A.4,A.5,A.6,A.7,A.9,A.9,A.10

/SCALE(ALPHA) = ALL/MODEL = ALPHA

/ICC = MODEL(ONEWAY) CIN = 95 TESTVAL = 0.

EXECUTE.

RELIABILITY

/VARIABLES = C.1,C.2,C.3,C.4,C.5,C.6,C.7,C.9,C.9,C.10

/SCALE(ALPHA) = ALL/MODEL = ALPHA

/ICC = MODEL(ONEWAY) CIN = 95 TESTVAL = 0.

EXECUTE.

\*Estimate rWG(J)

COMPUTE obs\_var2 = var(item2.1,item2.2,item2.3,item2.4,item2.5).

COMPUTE avg\_var = mean(obs\_var1,obs\_var2).

EXECUTE.

COMPUTE rwgj\_un = (2\*(1-avg\_var/2))/((2\*(1-avg\_var/2)) + avg\_var/2).

COMPUTE rwgj\_ss = (2\*(1-avg\_var/1.34))/((2\*(1-avg\_var/1.34)) + avg\_var/1.34).

EXECUTE.

\*Estimate ADM(J)

COMPUTE MEAN2 = mean(item2.1,item2.2,item2.3,item2.4,item2.5).

COMPUTE AD2 = mean(abs(item2.1-mean2),abs(item2.2-mean2),abs(item2.3-mean2),

abs(item2.4-mean2), abs(item2.5-mean2)).

COMPUTE ADJ = mean(AD1,AD2).

EXECUTE.