

## Tableplots: Brief Description

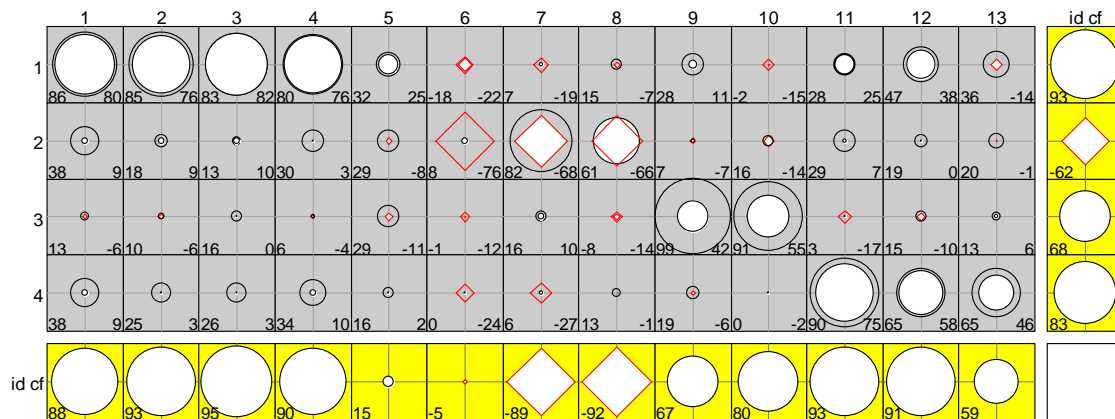
### Ernest Kwan

In factor analysis tables are always used to represent factor pattern matrices. Tables, however, are notoriously inadequate for understanding trends in numbers. For example, it is difficult to assess the degree of replication between the two estimated factor patterns from Linehan et al (2006).

| Factor | Variable |      |     |      |      |      |      |      |      |      |      |      |      |
|--------|----------|------|-----|------|------|------|------|------|------|------|------|------|------|
|        | 1        | 2    | 3   | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   |
| 1      | .86      | .85  | .83 | .80  | .32  | -.22 | -.19 | .15  | .11  | -.15 | .25  | .38  | -.14 |
| 2      | .38      | .09  | .13 | .30  | .29  | -.76 | -.68 | .61  | -.07 | -.14 | .29  | .19  | -.01 |
| 3      | -.06     | -.06 | .00 | -.04 | -.11 | -.01 | .16  | -.14 | .99  | .55  | -.17 | -.10 | .06  |
| 4      | .09      | .03  | .03 | .10  | .02  | .00  | -.27 | .13  | -.06 | -.02 | .75  | .58  | .46  |

| Factor | Variable |     |     |     |      |      |     |      |     |      |     |     |     |
|--------|----------|-----|-----|-----|------|------|-----|------|-----|------|-----|-----|-----|
|        | 1        | 2   | 3   | 4   | 5    | 6    | 7   | 8    | 9   | 10   | 11  | 12  | 13  |
| 1      | .80      | .76 | .82 | .76 | .25  | -.18 | .07 | -.07 | .28 | -.02 | .28 | .47 | .36 |
| 2      | .09      | .18 | .10 | .03 | -.08 | .08  | .82 | -.66 | .07 | .16  | .07 | .00 | .20 |
| 3      | .13      | .10 | .16 | .06 | .29  | -.12 | .10 | -.08 | .42 | .91  | .03 | .15 | .13 |
| 4      | .38      | .25 | .26 | .34 | .16  | -.24 | .06 | -.01 | .19 | .00  | .90 | .65 | .65 |

A tableplot (Kwan, 2007) is a display that supplements each cell of a table with a symbol proportionate to the |cell value|; black circles for positive values, red diamonds for negative values. This figure superimposes the tableplots of the factor patterns, greatly facilitating the assessment of replicability. The display is also augmented with a row (column) of identity coefficients that quantify the degree of replicability in the cell values for a variable (factor) across the two tables.



### References

Linehan, M. M., Comtois, K. A., Brown, M. Z., Heard, H. L., & Wagner, A. (2006). Suicide Attempt Self-Injury Interview (SASII): Development, Reliability, and Validity of a Scale to Assess Suicide Attempts and Intentional Self-Injury. *Psychological Assessment, 18*(3), 303-312.

Kwan, E. (2007). Tableplot: A new display for factor analysis. Paper submitted to the 2008 American Statistical Association Computing/Graphics Student Paper Competition.