# SUPPLEMENT TO "ASSESSMENT OF LOCAL INFLUENCE FOR THE ANALYSIS OF AGREEMENT"

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## Appendix A. Additional simulation results

We conducted and additional simulation experiment based on 500 datasets with sample sizes of $n = 25, 50, 100$ and 200 following a normal distribution with parameters

$$\boldsymbol{\mu} = \begin{pmatrix} 0 \\ 0 \end{pmatrix}, \qquad \boldsymbol{\Sigma} = \begin{pmatrix} 1.00 & 0.95 \\ 0.95 & 1.00 \end{pmatrix},$$

were generated. Two outliers were introduced replacing observations 1 and 10, i.e. $x_{2,1}$ and $x_{2,10}$ as $x_{2,1} + \delta$ and $x_{2,10} + \delta$, respectively, for $\delta = 0.5, 1.0, 1.5, 2.0, 2.5, 3.0$ and 3.5. A summary of the results is presented in tables below (see Section 4 of the manuscript).

Table 1. Outlier detection percentage using different influence measures: $\widehat{\rho}_c(\boldsymbol{\omega})$ as objective function.

| $n$ | Influence measure | $\delta$ | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 |
| 25 | $C$ | 2.4 | 21.0 | 58.8 | 76.8 | 85.4 | 88.6 | 90.0 |
| | $B$ | 2.4 | 21.0 | 58.8 | 76.8 | 85.4 | 88.6 | 90.0 |
| | FI | 2.4 | 14.4 | 39.4 | 53.8 | 58.2 | 59.4 | 59.6 |
| | SI | 2.4 | 21.0 | 58.8 | 76.8 | 85.4 | 88.6 | 90.0 |
| | FI and SI | 0.4 | 7.8 | 29.0 | 45.6 | 52.8 | 57.8 | 57.4 |
| 50 | $C$ | 1.8 | 23.2 | 65.4 | 87.0 | 95.8 | 99.2 | 99.2 |
| | $B$ | 1.8 | 23.2 | 65.4 | 87.0 | 95.8 | 99.2 | 99.2 |
| | FI | 3.8 | 34.2 | 74.2 | 87.8 | 92.2 | 94.6 | 94.4 |
| | SI | 1.8 | 23.2 | 65.4 | 87.0 | 95.8 | 99.2 | 99.2 |
| | FI and SI | 0.6 | 15.2 | 51.6 | 76.4 | 88.4 | 94.0 | 93.6 |
| 100 | $C$ | 3.2 | 26.0 | 59.0 | 80.4 | 93.4 | 99.6 | 99.2 |
| | $B$ | 3.2 | 26.0 | 59.0 | 80.4 | 93.4 | 99.6 | 99.2 |
| | FI | 4.6 | 48.2 | 87.0 | 96.6 | 98.4 | 99.6 | 99.2 |
| | SI | 3.2 | 26.0 | 59.0 | 80.4 | 93.4 | 99.6 | 99.2 |
| | FI and SI | 1.6 | 18.8 | 52.6 | 78.2 | 92.0 | 99.2 | 98.4 |
| 200 | $C$ | 5.8 | 32.4 | 58.2 | 71.6 | 91.6 | 99.2 | 99.0 |
| | $B$ | 5.8 | 32.4 | 58.2 | 71.6 | 91.6 | 99.2 | 99.0 |
| | FI | 6.0 | 55.4 | 92.2 | 99.8 | 99.6 | 100.0 | 100.0 |
| | SI | 5.8 | 32.4 | 58.2 | 71.6 | 91.6 | 99.2 | 99.0 |
| | FI and SI | 2.6 | 23.8 | 54.8 | 71.4 | 91.2 | 99.2 | 99.0 |

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TABLE 2. Outlier detection percentage using different influence measures: $\widehat{\psi}_c(\boldsymbol{\omega})$ as objective function.

| $n$ | Influence measure | $\delta$ | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 |
| 25 | $C$ | 2.0 | 24.8 | 62.8 | 82.0 | 91.8 | 97.2 | 98.4 |
| | $B$ | 2.0 | 24.8 | 62.8 | 82.0 | 91.8 | 97.2 | 98.4 |
| | FI | 1.8 | 16.8 | 43.6 | 61.2 | 72.0 | 78.8 | 79.4 |
| | SI | 2.0 | 24.8 | 62.8 | 82.0 | 91.8 | 97.2 | 98.4 |
| | FI and SI | 1.8 | 16.8 | 43.6 | 61.2 | 72.0 | 78.8 | 79.4 |
| 50 | $C$ | 4.0 | 38.4 | 85.0 | 95.6 | 99.4 | 100.0 | 100.0 |
| | $B$ | 4.0 | 38.4 | 85.0 | 95.6 | 99.4 | 100.0 | 100.0 |
| | FI | 4.0 | 37.8 | 78.6 | 92.4 | 97.0 | 99.0 | 99.2 |
| | SI | 4.0 | 38.4 | 85.0 | 95.6 | 99.4 | 100.0 | 100.0 |
| | FI and SI | 3.4 | 34.8 | 78.6 | 92.4 | 97.0 | 99.0 | 99.2 |
| 100 | $C$ | 3.8 | 48.4 | 92.2 | 99.4 | 100.0 | 100.0 | 100.0 |
| | $B$ | 3.8 | 48.4 | 92.2 | 99.4 | 100.0 | 100.0 | 100.0 |
| | FI | 4.2 | 54.6 | 90.0 | 97.8 | 100.0 | 100.0 | 100.0 |
| | SI | 3.8 | 48.4 | 92.2 | 99.4 | 100.0 | 100.0 | 100.0 |
| | FI and SI | 3.0 | 44.2 | 89.6 | 97.8 | 100.0 | 100.0 | 100.0 |
| 200 | $C$ | 7.6 | 63.2 | 97.2 | 100.0 | 100.0 | 100.0 | 100.0 |
| | $B$ | 7.6 | 63.2 | 97.2 | 100.0 | 100.0 | 100.0 | 100.0 |
| | FI | 6.6 | 64.2 | 95.2 | 100.0 | 100.0 | 100.0 | 100.0 |
| | SI | 7.6 | 63.2 | 97.2 | 100.0 | 100.0 | 100.0 | 100.0 |
| | FI and SI | 5.0 | 55.4 | 94.2 | 100.0 | 100.0 | 100.0 | 100.0 |

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