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Errata of the paper "The multiple Cantelli inequalities"

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This article gives errata of Ogasawara (2019).

Page 496, after (1.3): The inequality $\Pr(|Z| \geq k) \leq \Pr(Z^4)/k^4$ should be

$\Pr(|Z| \geq k) \leq \mathrm{E}(Z^4)/k^4$.

Page 496, after (1.3): The expressions "David and Barton (1962), pp.54-56)", "Laha and Rohatgi (1979), p.62)" and "Loperfido (2014), Theorem 1)" should be "David and Barton (1962, pp.54-56)", "Laha and Rohatgi (1979, p.62)" and "Loperfido (2014, Theorem 1)", respectively.

Page 496, (1.4): The first inequality of (1.4)

$$\Pr\{(\mathbf{x}^* - \boldsymbol{\mu})'\boldsymbol{\Sigma}^{-1}(\mathbf{x}^* - \boldsymbol{\mu}) \geq k\} \leq \frac{\beta_{2,p} - p^2}{k^4 - 2pk^2 + \beta_{2,p}}$$ should be

$$\Pr\{(\mathbf{x}^* - \boldsymbol{\mu})'\boldsymbol{\Sigma}^{-1}(\mathbf{x}^* - \boldsymbol{\mu}) \geq k\} \leq \frac{\beta_{2,p} - p^2}{k^2 - 2pk + \beta_{2,p}}.$$

Page 499, (2.13): $\rho_{111} = \frac{2(\alpha+1)}{(\alpha-3)}\sqrt{\frac{\alpha-2}{\alpha}} = \frac{\rho_{112}}{\alpha}$ $(\alpha > 3)$ should be

$$\rho_{111} = \frac{2(\alpha+1)}{(\alpha-3)}\sqrt{\frac{\alpha-2}{\alpha}} = \alpha\rho_{112} \ (\alpha > 3).$$

Page 502, line 2: The expression “In (2.13)” should be “In (2.19)”.

Page 504, (3.6): The right-hand side of (3.6)

$$\frac{\{1+2\rho_{12}^2+(k_1^2-1)(k_2^2-1)\}^2}{\{(k_1^2-1)^2(k_2^2-1)^2+2(k_1^2-1)^2+2(k_2^2-1)^2+8(k_1^2-1)(k_2^2-1)\rho_{12}^2}$$

should be

$$-2(k_1^2+k_2^2-2)(3+12\rho_{12}^2)+9+72\rho_{12}^2+24\rho_{12}^4\}$$

$$\Pr\{(|Z_1|-k_1)(|Z_2|-k_2)>0\}$$

$$\geq \frac{\{1+2\rho_{12}^2+(k_1^2-1)(k_2^2-1)\}^2}{\{(k_1^2-1)^2(k_2^2-1)^2+2(k_1^2-1)^2+2(k_2^2-1)^2+8(k_1^2-1)(k_2^2-1)\rho_{12}^2}.$$

$$-16(k_1^2+k_2^2-2)\rho_{12}^2+4+32\rho_{12}^2+24\rho_{12}^4\}$$

Page 504, after (3.6): $\Pr\{(|Z_1|-k_1)(|Z_2|-k_2)>0\}\geq 3/8=0.375$ should be

$$\Pr\{(|Z_1|-k_1)(|Z_2|-k_2)>0\}\geq 9/19\doteq 0.474.$$

Reference

Ogasawara, H. (2019). The multiple Cantelli inequalities. *Statistical Methods and Applications* (*Journal of the Italian Statistical Society*), *28,* 495-506. https://doi.org/10.1007/s10260-019-00452-2.