Erratum

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Erratum regarding "Optimizing effective numbers of tests by vine copula modeling"

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Abstract: We correct the definition of the family-wise error rate in our previous article "Optimizing effective numbers of tests by vine copula modeling".

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MSC2010: 62J15

In our recent article [2], the definition of the family-wise error rate (FWER) as provided at the bottom of page 173 is formally not entirely correct.

In multiple testing, the FWER denotes the probability (under the parameters of the statistical model at hand) of at least one type I error among the individual tests; see, e. g., Definition 1.2.(a) in [1]. With the notation introduced in Section 2.1 of [2], this definition can in our context formally be expressed as

$$\text{FWER}_{\boldsymbol{\theta}, C_X}(\boldsymbol{\varphi}) = \mathbb{P}_{\boldsymbol{\theta}, C_X} \left(\bigcup_{j \in I_0} \{\varphi_j = 1\} \right),$$

and the defining equation in the last line of page 173 in [2] has to be modified accordingly.

Namely, the event on the right-hand side of that defining equation has to be replaced by its probability (under $\boldsymbol{\theta}$ and C_X).

This correction does not affect any other material in [2].

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References

- [1] Dickhaus, T. (2014). *Simultaneous statistical inference. With applications in the life sciences*. Berlin Heidelberg: Springer.
- [2] Steffen, N. and T. Dickhaus (2020). Optimizing effective numbers of tests by vine copula modeling. *Depend. Model.* 8(1), 172–185.

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