

# Segregation without matching

Sandra S. Ferreira<sup>1</sup>, Dário Ferreira<sup>1</sup>, Célia Nunes<sup>1</sup>  
and João T. Mexia<sup>2</sup>

<sup>1</sup>University of Beira Interior, Covilhã, Portugal

<sup>2</sup>Nova University of Lisbon, Portugal

## Abstract

Segregation and matching are techniques for estimating variance in mixed models. A question that has arise is if segregation can be applied in situations in which matching has not apply.

We discuss the structure of an important class of mixed models those with commutative orthogonal block structure and we will show an example in which segregation but not matching can be used.

## Keywords

Segregation, Matching, Mixed models.

## References

- [1] Caliński, T. and S. Kageyama (2000). Block Designs: A Randomization Approach, Volume I: Analysis. *Lecture Notes in Statist. 150*. Springer, New York.
- [2] Caliński, T. and S. Kageyama (2003). Block Designs: A Randomization Approach, Volume II: Design. *Lecture Notes in Statist. 170*. Springer, New York.
- [3] Carvalho, F.C., J.T. Mexia, and M.M. Oliveira (2009). Estimation in models with commutative orthogonal block structure. *J. Stat. Theory Practice 3*,523–533.
- [4] Fonseca, M., J.T. Mexia, and R. Zmyślony (2006). Binary operations on Jordan algebras and orthogonal normal models. *Linear Algebra Appl. 417(1)*, 75–86.
- [5] Fonseca, M., J.T. Mexia, and R. Zmyślony R. (2008). Inference in normal models with commutative orthogonal block structure. *Acta Comment. Univ. Tartu. Math. 12*, 3–16.
- [6] Houtman, A.M. and T.P. Speed (1983). Balance in designed experiments with orthogonal block structure. *Ann. Statist. 11(4)*, 1069–1983.

- [7] Mejza, S. (1992). On some aspects of general balance in designed experiments. *Statistica, anno LII 2*, 263–278.
- [8] Mexia, J.T. (1995). Introdução à Inferência Estatística Linear. *Edições Lusófonas*.
- [9] Nelder, J.A. (1965). The analysis of randomized experiments with orthogonal block structure. II. Treatment structure and the general analysis of variance. *Proc. R. Soc. Lond. Ser. A 283*, 163–178.
- [10] Nelder, J.A. (1965). The analysis of randomized experiments with orthogonal block structure. I. Block structure and the null analysis of variance. *Proc. R. Soc. Lond. Ser. A 283*, 147–162.
- [11] Silvey, S.D. (1977). *Statistical Inference*. Chapman & Hall.
- [12] van Leeuwen, D., J. Seely, and D. Birkes (1998). Sufficient conditions for orthogonal designs in mixed linear models. *J. Statist. Plann. Inference 73(1-2)*, 373–389.
- [13] van Leeuwen, D., D. Birkes, and J. Seely (1999). Balance and orthogonality in designs for mixed classification models. *Ann. Statist. 27(6)*, 1927–1947.