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VILNIUS UNIVERSITY INSTITUTE OF DATA SCIENCE AND DIGITAL TECHNOLOGIES
LITHUANIAN ACADEMY OF SCIENCES



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Survival With Random Effect

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The presentation focuses on mortality models with a random effect applied in order to evaluate human mortality more precisely, which could be used in life insurance when compiling mortality tables. Such models are called frailty or Cox models. The main assertion shows that each positive random effect transforms the initial hazard rate (or density function) to a new absolutely continuous survival function. In particular, well-known Weibull and Gompertz hazard rates and corresponding survival functions are analysed with different random effects. These specific models are presented with detailed calculations of hazard rates and corresponding survival functions. Six specific models with a random effect are applied to the same data set of Baltic countries mortality. The results indicate that the accuracy of the model depends on the data under consideration.