FROM THE EDITOR

With this issue of our quarterly – which is the last for the previous year 2018 – we successfully conclude the systematically intensified activities towards upgrading the Statistics in Transition new series' position in terms of its overall quality assessment, visibility and recognition. Indeed, the SiTns has significantly progressed recently, both as regards the number of new international bases and systems of indexation – amounted to 22 currently – and of the points which count for the impact factors of some of the most prestigious systems/bases, such as Scopus or Index Copernicus, RePec, and others. Such achievements are actually reported on the current basis in the column "Indexing and Abstracting" in the e-SiT-bulletin (on the journal's website: http://stat.gov.pl/en/sit-en).

Since authors of the articles published in the SiTns, as well as reviewers of all the submitted papers, constitute the core of contributors to the journal's achievements, we would like to honour them for their generous input through publishing in this issue their names, respectively, in the "Index of authors" (of all articles published over the past year) and in the "Acknowledgements to reviewers". On behalf of the whole Editorial Office and myself, I would like to express my gratitude and appreciation to all collaborators and supporters, including members of the Editorial Board and the panel of Associate Editors, who provide us with assistance and guidance both in strategic and practical matters on the continuous basis.

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This issue starts with sampling and estimation section containing three papers. The first one, by **G. N. Singh, Amod Kumar** and **Gajendra K. Vishwakarma** entitled ***Development of chain-type exponential estimators for population variance in two-phase sampling design in presence of random non-response*** presents the results of an investigation aimed at dealing with a unified approach of estimation procedures of population variance in two-phase sampling design under missing at random non-response mechanism circumstances. Using two auxiliary variables, the authors have developed different chain-type exponential estimators of finite population variance for two different set-ups and studied their properties under the different assumption of random non-response. The comparisons of the proposed estimators have been made with some contemporary estimators of population variance under the similar realistic conditions. Numerical illustrations are presented to support the theoretical results. The proposed estimation procedures may be recommended to the survey statisticians for their practical application whenever they intend to deal with the sensitive or stigmatizing attributes such as drinking alcohol, gambling habit, drug addiction, tax evasion, history of induced abortions, etc.

M. R. Irshad's and **R. Maya's** paper ***On a less cumbersome method of estimation of parameters of Lindley distribution by order statistics*** presents U-statistics derived as suitable from a sample of any size exceeding a specified

integer to estimate the location and scale parameters of Lindley distribution. No evaluation of made of means, variances or co-variances of order statistics of an equivalent sample size arising from the corresponding standard form of distribution. The exact variances of the estimators have been also obtained. For practising statisticians the results derived in the paper seem to be helpful, when they look for estimators of parameters of Lindley distribution using ordered random variables.

In the next article, ***Extended exponentiated power Lindley distribution*** by **Vahid Ranjbar, Morad Alizadeh, Gholamhossein Hamedani** a new model, the Extended Exponentiated Power Lindley distribution is introduced, which extends the Lindley distribution and has increasing, bathtub and upside down shapes for the hazard rate function. It also includes the power Lindley distribution as a special case. Several statistical properties of the distribution are explored, such as the density, hazard rate, survival, quantile functions, and moments. Estimation using the maximum likelihood method and inference on a random sample from this distribution are investigated. A simulation study is performed to compare the performance of the different parameter estimates in terms of bias and mean square error. A real data set is applied to illustrate the applicability of the new model as well. Empirical findings show that the proposed model provides better fits than other well-known extensions of Lindley distributions.

The next section, research articles, also contains three articles. **Hikaru Hasegawa's** and **Pink Gao's** paper ***Bayesian spatial analysis of chronic diseases in elderly Chinese people using a STAR model*** addresses the problem of analysing chronic diseases affecting the health of elderly Chinese people, concentrating on the spatial aspect of these diseases and the respective risk factors. A structured additive regression model is applied using the R2BayesX package and data from the Chinese Urban and Rural Elderly Population Surveys for years 2000, 2006, and 2010. The major findings are as follows: (i) the covariates of considerable importance for chronic diseases are gender, smoking, drinking, province, time, age, cultural activities, years of education, and sports activities; (ii) the effect of marital status is negligible; (iii) province is a critical factor, with the highest spatial effect appearing in two types of provinces: economically developed provinces, and economically backward provinces; time also has considerable effects. Authors recommend the need for policies towards further strengthening investment in rural areas and economically backward provinces, and better education of the population on the harmful effects of smoking and drinking alcohol on health.

In the next paper, ***Lindley Pareto distribution***, **Nouara Lazri, Halim Zeghdoudi, Djabrane Yahia** introduce a new Lindley Pareto distribution which offers a more flexible framework for modelling lifetime data. Some of its mathematical properties like density function, cumulative distribution, mode, mean, variance, and Shannon entropy are established. Following a simulation study carried out to examine the bias and mean square error of the maximum likelihood estimators of the unknown parameters, three real data sets are also used. They illustrate the importance and the flexibility of the proposed distribution. According to the authors, the Lindley Pareto distribution can be used quite effectively in analysing real lifetime data and actuarial science.

Marek Walesiak's paper *The choice of normalization method and rankings of the set of objects based on composite indicator values* starts with observation that normalization methods lead to different rankings of the set of objects based on composite indicator values. Author considers 18 normalization methods and 5 aggregation measures (composite indicators) showing which of the methods lead to identical rankings of the set of objects, and reducing their number to 10 normalization procedures. A way of separation of groups of normalization methods leading to similar rankings is proposed (using Kendall's tau coefficient and cluster analysis). The simulation results for five composite indicators are complemented by an empirical example.

In the other articles section, the paper by **Dominika Marta Urbańczyk** and **Joanna Małgorzata Landmesser** entitled *The comparison of income distributions for women and men in Poland using semiparametric reweighting approach* presents the results of a comparison of the income distributions for women and men in Poland. The gender wage gap can only be partially explained by differences in men's and women's characteristics. The unexplained part of the gap is usually attributed to the wage discrimination. The authors employed the Oaxaca-Blinder decomposition procedure for the pay gap along the whole income distribution and a semiparametric reweighting approach to describe differences between the two income distributions. The reweighting factor was computed for each observation by estimating a logit model for probabilities of belonging to men's or women's group. In effect, the inequalities are decomposed into the explained and unexplained components using data from the EU-SILC for Poland, 2014.

The last section, research communicates and letters, contains the paper by **Urszula Ala-Karvia, Marta Hozer-Koćmiel, Sandra Misiak-Kwit,** and **Barbara Staszko** entitled *Is Poland becoming Nordic? Changing trends in household structures in Poland and Finland with the emphasis on people living alone*. A comparative analysis of the household structure and its dynamics between post-economic-transformation Poland and Scandinavian-welfare-state Finland is presented with focus on one-person households (OPH). Two interrelated hypotheses concerning similarity-dissimilarity between the household structure in Finland and Poland with suggestion that the differences will be diminishing. At a glance, the analyses based on data for 2005–2015 seemed to confirm that while one- or two-person households are the dominating household structure in Finland, in Poland this structure was more balanced. For instance, the share of OPH among all households in 2015 was noticeably larger in Finland (42%) than in Poland (24%) and the difference between the countries was not diminishing. A simple extrapolation leads to prediction that under the currently observed trend the shares of OPH in the two countries will go further apart (e.g., in 2030, 46 percent of Finnish households and 22 percent of Polish households will be one-person households). In general, the position of people living alone is still different between Poland and Finland, and Poland has not gone Nordic in this respect.

Włodzimierz Okrasa
Editor