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FROM THE EDITOR

At the outset of this issue I would like to announce some novelties in the journal, with respect to its issuing and editing. First, from this issue on, *Statistics in Transition new series (SiTns)* will be printed four times a year, just becoming a regular quarterly journal. This will give us an opportunity to be more responsive to systematically growing number of submitted papers, and to earn an extra point in certain indexation bases. Currently, in addition to several bases monitoring our publications, we are under consideration by SCOPUS. The second announcement is about preparing the journal's special issue, envisaged as a thematic collection of articles devoted to the subjective well-being, with preference given to papers presenting current research on this topic in public (government) statistics. In view of the fact that arranging for such a thematic collection of articles is a challenging task we have invited Prof. Graham Kalton (who also inspired us with this idea) to act as a *Guest (co)Editor* of such a topical collection of papers. The formal call for papers will be published in the next issue (scheduled for July).

ACKNOWLEDGEMENTS AND NOMINATIONS

With this issue some important personal changes take place. First of all, on behalf of the Editorial Office and also on behalf of the Co-Chairmen of the Editorial Board - **Prof. Janusz Witkowski**, the President of the Central Statistical Office and of **Prof. Czesław Domański**, the President of the Polish Statistical Association - I would like to express our gratefulness to the long-serving (since Autumn 2007) members of the journal's Editorial Board: Prof. Prof. **Walenty Ostasiewicz, Tomasz Panek, Jan Paradysz, Mirosław Szreder,** and Mr. **Wiesław Łagodziński.** Our excellent collaboration with each of these prominent researchers and scholars to a great extent contributed to the constantly rising recognition and overall quality of the journal. I deeply appreciate having chance to collaborate with so prominent experts, and hope to have the privilege to continue such a fruitful collaboration in the future.

At the same time, I am extremely pleased to announce nomination of the five world renowned experts - previous members of our Associate Editors panel - to resume the membership of the Editorial Board: **Sir Anthony B. Atkinson,** University of Oxford, UK, **Prof. Malay Ghosh**, University of Florida, USA, **Prof. Graham Kalton**, Westat, and the University of Maryland, USA,

Prof. Mirosław Krzyśko, Adam Mickiewicz University in Poznań, Poland, and **Prof. Janusz L. Wywiał**, University of Economics in Katowice, Poland.

We welcome new members of the Editorial Board and look forward to so exceptional opportunity to collaborate with frontiers in their fields.

AN OVERVIEW OF THE CONTENTS

As regards the contents of this issue, it starts with five papers devoted to different issues in *Sampling Methods and Estimation.* **Tomasz Bąk's** paper, ***Triangular Method of Spatial Sampling,*** presents a new adaptive method of spatial sampling, starting with developing a theory of this method, followed by discussion of the benefits of decreased size of a sample due to the employment of this method in sampling of natural area units. Initial sampling of the first three elements is described and density of sampling at the initial stage is obtained by the Monte Carlo method. The density is defined on the basis of the logarithm of inverse square of the Euclidean distance function and a simulation of the triangular method of spatial sampling is finally conducted. An example is given for sampling forest areas in research on approximating the ability of trees to absorb carbon dioxide. The triangular method of spatial sampling is used at the strata sampling stage, and density of sampling in the simulated forest is obtained using Monte Carlo method.

Ashok V. Dorugade introduces a new estimator - ***A Modified Two-Parameter Estimator in Linear Regression*** - envisaged as an alternative to the OLS estimator for the vector of parameters in the linear regression model in the case when multicollinearity is present in the data. The properties of the proposed estimator are discussed along with its performance in terms of the matrix mean square error criterion. A new two-parameter estimator (NTP), an almost unbiased two-parameter estimator (AUTP), and other well-known estimators are being discussed. A numerical example and simulation study are conducted to illustrate the superiority of the proposed estimator.

Arkadiusz Kozłowski discusses possibilities for improving ***The Use of Non-Sample Information in Exit Poll Surveys in Poland*** - the quality and overall precision of the survey - through using the non-sample information more efficiently. Statistical methods aiming at incorporating the information about the relevant variables to the survey, both at the stage of selecting the sample of precincts and at the stage of forecasting election results are proposed. The presented approach is tested by simulation on the parliamentary election 2011 data. The results confirm the possibility of a significant increase in the effectiveness of estimates by choosing a more representative sample and by applying complex estimation of parameters.

Another paper aiming at using 'external' information in a more efficient way, ***An Improved Estimator for Population Mean Using Auxiliary Information in Stratified Random Sampling*** by **Malik S., Singh V. K.,** and **Singh R.** concentrates on the development of a new estimator for population mean $\bar{Y}$ of the study variable y, in the case of stratified random sampling. Using the information based on auxiliary variable x, a formula for the mean squared error (MSE) of the proposed estimator is derived up to the first order of approximation. An empirical study (a numerical example) demonstrates the efficiency of the suggested estimator over sample mean estimator, usual separate ratio, separate product estimator and other proposed estimators.

The next paper, ***A Modified Mixed Randomized Response Model*** by **Housila P. Singh** and **Tanveer A. Tarray** is devoted to the problem arising in survey research from the fact that people wish to hide some information from others, especially on the so-called sensitive issues. These include savings, the extent of their accumulated wealth, their history of intentional tax evasion and other illegal or unethical practices leading to earnings from clandestine sources, crimes, trade in contraband goods, susceptibility to intoxication, expenditures on addictions of various forms, homosexuality, and similar issues which are customarily disapproved of by society. Authors start with briefing on some methods for dealing with this kind of problem - Warner's (1965) survey technique that is known as randomized response (RR) technique and its revised version by Greenberg et al. (1971) for qualitative variables; various further modifications given by several researchers (Chaudhuri 2011, Kim and Warde, 2005), and by Nazuk and Shabbir, 2010) who presented mixed randomized response models using simple random sampling with replacement sampling scheme improving the privacy of respondents. Authors propose a modified mixed randomized response model to estimate the proportion of a qualitative sensitive variable, along with recommendations. It has been shown that the suggested randomized response model is always better than Kim and Warde's model while it is better than Nazuk and Shabbir's model under some realistic conditions. Supporting material for these results is also given in the paper.

The 'research article' section consists of **Jacek Białek's** paper on ***Application of the Original Price Index Formula to Measuring the CPI's Commodity Substitution Bias.*** It examines the possibility of applying the original price index formula to measuring the commodity substitution bias associated with the Consumer Price Index (CPI). The CPI bias values - calculated by using the original price index formula - is compared through simulation study with those calculated on the basis of some known, superlative price indices.

In the last, methodologically oriented, 'other articles' section some papers presented at the XXXII International Conference on Multivariate Statistical Analysis 2013 in Łódź are included.

Grażyna Dehnel's paper on ***Winsorization Methods in Polish Business Survey*** is devoted to one of the major problems involved in estimating information about economic activity across small domains due to excessively small sample size and incompleteness of data sources. In view of the fact that often it is not obvious whether the implementation of traditional estimation methods meets the desired requirements (assumptions about being free from bias or about variance), and given the pressure to produce accurate estimates at a low level of aggregation, or to substantially reduce sample size, the need to develop a more sophisticated approach to estimation seems to be inescapable. The aim of this study was to test the usefulness of *winsorization* methods in such a problem context in order to estimate economic statistics from the DG1 survey in a more efficient way. One of the conclusions states that the use of the winsorized estimation reduces estimator variance and the effect of outliers. Also, the winsorized estimator nearly always outperforms the expansion estimator in terms of MSE.

Daniel Kosiorowski, Dominik Mielczarek, Jerzy Rydlewski, Małgorzata Snarska discuss the problem of ***Sparse Methods for Analysis of Sparse Multivariate Data From Big Economic Databases*.** Authors present a new approach to *sparse* high-dimensional data sets meant as data which contain many zeros among coordinates of observations. Taking jointly the selected *sparse methods* recently proposed in multivariate statistics and kernel density framework for discrete data, they outline a general perspective for bringing out useful information from big economic databases. As a framework for considerations they use the so-called functional data analysis, which originates from Ramsay and Silverman works, and particularly, the functional principal components analysis within 2D density estimation procedure proposed by Simonoff.

Dorota Pekasiewicz's paper on ***Application of Quantile Methods to Estimation of Cauchy Distribution Parameters*** focuses on using quantile methods to estimate population parameters when other methods such as the maximum likelihood method and the method of moments cannot be applied. The percentile method, the quantile least squares method and its two modifications are used for this purpose. The proposed methods allow estimators to be obtained with smaller bias and smaller mean squared error than estimators of the quantile least squares method. The proposed approach can be applied to estimation of the Cauchy distribution parameters. The theoretical considerations on the properties of the estimator are supported by results of the simulation analysis.

Margus Pihlak's presents an approach to ***Modelling of Skewness Measure Distribution***. After showing some results of matrix algebra useful in multivariate

statistical analyses, the central limit theorem on modelling of skewness measure distribution is presented. The paper concludes discussion of the idea of finding the confidence intervals of statistical model residuals' asymmetry measure. For example, by means of skewness confidence intervals it is possible to estimate the influence of outliers (which are typically present in forestry study).

Justyna Wilk and **Michał Bernard Pietrzak** discuss the issues involved in ***An Analysis of the Population Aging Phenomena in Poland from a Spatial Perspective***. The objective of this empirically-oriented demographic study is to characterize the degree of differentiation of the Polish population across subregions (66 in total) in terms of the proportion of senior citizens and its growth rate, and also determinants exerting impact on the demographic aging processes. Demographically the youngest and slowest aging population lives in south-eastern and central Poland. The most intensive population aging processes are seen in the selected subregions of south-western Poland. The latter also is characterized by extremely low fertility, old working-age population, and significant migration outflow of younger people.

The volume is concluded by **Jan Kordos'** remarks on the recently published textbook *Correlation and regression of economic qualitative features*, by J. W. Wiśniewski, which are presented in the 'book review' section.

Włodzimierz Okrasa
Editor