Sergey Aivazian: A tribute

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I first met Sergey Aivazian in the Fall of 1999 when I took his course on Multivariate Statistical Analysis at Higher School of Economics in Moscow. After the first class, we had a discussion about my previous research where I studied robust classification methods. Aivazian invited me to attend a famous seminar series he organized at the Central Economic Mathematical Institute and later decided to supervise my work. I always admired his passion for application of statistical tools to real-life problems. He was intelligent, charismatic and had an exceptional ability to cool down heated rhetoric which sometimes arose during the seminars. Two decades later, I recognize an important role he played in shaping my academic interests and future career.

In my first research project under his supervision, I analyzed several modifications to the K-Means clustering method and applied them to assess the quality of life in Russian regions (Aivazian & Isakin, 2006; Isakin, 2006). This work developed into a model of strategic planning for a region which later became a significant part of my Candidate of Sciences thesis. To formulate the objective function of the model I used synthetic indexes of quality of life proposed by Sergey Aivazian. It is an elegant hierarchical system with five integral categories of quality of life. These categories are well-being of the population, quality of social infrastructure, quality of human capital, environmental quality, and climate. The integration of the statistical indicators within each category is based on the principal component analysis.

Looking back at Aivazian's research in quality of life, I believe that his ideas are very relevant to development stages Russia goes through today. The degree of centralization in the budgetary process and the government system of the country requires clear understanding of the standards of living in the regions. Not only does the geographic location of Russian regions vary dramatically but also the regions have different climate, access to natural resources, level of urbanization, economic and social infrastructure, and human capital. A plethora of statistical indicators that reflect these aspects is often insufficient for making informed administrative decisions because of their level of disintegration. To this end, Aivazian's model of quality of life is a promising tool of a regional policy.

Other areas where Sergey Aivazian has significant research contributions include clustering analysis, classification, factor analysis and multidimensional scaling. In clustering analysis, he has developed a generalized scheme of clustering which nests all known clustering methods. His ideas are expounded in several books which have become standard texts in Probability and Statistics.

References

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