

PROFESSOR EDMUNDAS KAZIMIERAS ZAVADSKAS:
HIS ACADEMIC RESEARCH, SCHOOL OF THOUGHT, AND MOST EMINENT
RESULTS OF HIS WORK

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INTRODUCTION

Multiple Criteria Decision Making (MCDM) substantially evolved during the past decades and became one of the most important areas in Operational Research in Civil Engineering and Management Science. In Europe, this area is closely related to research

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performed by Professor Edmundas Kazimieras Zavadskas. The paper presents a review of extensive scientific work of Professor E.K. Zavadskas on the occasion of his 70th birthday. The paper also highlights his research carrier, and lists some of his fields of activity and research results including monographs, books, prized publications, memberships in various associations and other areas.

BIOGRAPHY AND GENERAL DATA

Edmundas Kazimieras Zavadskas was born on May 12, 1944 in Vilnius, Lithuania. He graduated from an elementary school in Vorkuta, USSR and secondary school in 1962, Dūkštas, Lithuania. E. K. Zavadskas studied at the Faculty of Construction Economics in Vilnius, then a branch of Kaunas Polytechnic Institute (VISI) (1962–1967) (now – Vilnius Gediminas Technical University, VGTU). In 1968 he became an assistant, 1969–1972 he was a PhD student at VISI, a lecturer – in 1974, an associate professor in 1977 and became a professor in 1988. The Professor became a Rector of Vilnius Civil Engineering Institute (VISI) in 1990. During the period between February-October 1990, he successfully reorganized the Institute, which became the Vilnius Technical University, and was nominated its Rector for period of 1990–1996. Later, the University was renamed as Vilnius Gediminas Technical University (VGTU) and Prof. E. K. Zavadskas became a Rector for the period of 1996–2002. In 2002–2011, he was a Deputy Rector of VGTU. At this time, he worked towards making the University one of the largest universities in Lithuania, taking a leading position in technical and engineering education and research. Since 1986 till now Professor Zavadskas has been a Head of the Department of Construction Technology and Management, Civil Engineering Faculty, VGTU. His impressive academic carrier started in 1973 when he became a PhD student at the Vilnius Civil Engineering Institute (VISI, now VGTU) and defended his Post-Doctoral (Habilitation) Thesis at Moscow Civil Engineering Institute in 1987 (on Multi Attribute Decision Making in Construction). In 1993, he won laureate doctoral habilitation at Technical Sciences at VGTU. Professor E. K. Zavadskas was an Expert Member (1991–1993), Corresponding Member (1993–2011) and in 2011, became a Full Member of the Lithuanian Academy of Sciences. Furthermore, he has been granted a title of Honorary Doctor of three universities: Poznań, Kiev, and St. Petersburg (2001–2003) and the Honorary International Professor of the National Taipei University of Technology. He presides and participates in a number of scientific corporations and editorial boards of scientific publishing houses. He is a member of two Russian Academies, the Ukrainian Academy of Cybernetics, and many (17) scientific and research organisations, from Melbourne to Brussels. He also represents the Baltic States in international organisations. The Professor was a President of Operational Researchers Society in Lithuania and the Baltic States in 2001–2012, [1].

RESEARCH INTEREST FIELD AND SCIENTIFIC RESULTS IN NUMBERS

The Professor's E. K. Zavadskas research and teaching includes the fields of construction materials, materials resistance, construction technology and management, operational research methods, decision support systems, life cycle analysis, etc., [2].

Professor is still a very active scientist. His published over 50 books, including 5 textbooks and 16 monographs as single author, or in collaboration with other authors, 10 popular science books, over 400 research articles as well as several hundreds of articles on various social and cultural topics. He has edited over 20 collective volumes, [1].

Nowadays, general information about the scientist is presented in different types of databases. In Table 1 presents general information about Professor E. K. Zavadskas.

Table 1.

General data about individual achievements of Professor E. K. Zavadskas in different types of databases (update: April 2014)

Title of scientific database	Number of publications	Number of citations	H – index
<i>ISI WEB of Knowledge</i>	233	3400	36
<i>SCOPUS</i>	204	3626	36
<i>GOOGLE SCOLAR</i>	493	6506	44
<i>Publish or Perish</i>	664	6911	43

Professor E. K. Zavadskas has set up three famous international scientific journals: “Technological and Economic Development of Economy”, “Journal of Civil Engineering and Management” and “International Journal of Strategic Property Management”. Since 2008 all three journals have been referred in Thomson Reuters Web of Science database, and since 2010 – have impact factor (IF). Furthermore, since 2010 these journals are published by VGTU publishing house “Technika” in collaboration with a famous publishing house – Taylor & Francis. During the 20 year period these journals have achieved the highest quality level between this type journals.

In 2011 “Technological and Economic Development of Economy”, a journal present in the engineering field in Thomson Reuters database was nominated in the “Rising Star” category. In that year, Professor E. K. Zavadskas was nominated in “Rising Star in the Scientists” category in the Thomson Reuters database.

The University announced preliminary Shanghai's most influential and most cited scholars in 21 scientific research areas: engineering, space technology, microbiology, economics and business, computer science, biology and biochemistry, chemistry and physics, clinical medicine, social sciences and others. Professor E. K. Zavadskas has

found himself in engineering sciences rankings, which contains 266 of the most influential names of engineering science. He became the first Lithuanian scientist included in this ranking. Scientific results of Professor E. K. Zavadskas in academic year 2012-2013 were impressive (c.f., [3]).

The Professor is also a member of editorial boards of 16 international journals referred in Thomson Reuters Web of Science database and 17 other journals. On various occasions special issues of journals and collective volumes were dedicated to Professor's works, i.e. *Journal of Management and Decision Making* (2007), *International Journal of Environment and Pollution* (2007, 2008), *Automation in Construction* (2010), *Informatica* (2001), *Ecology* (2007). Professor E. K. Zavadskas was a chairman and member of organizing committees of numerous international conferences, as well as editor of conference proceedings. Among Polish participants, the most popular is an International Conference on "Modern Buildings, Materials and Structures", [4].

Professor E. K. Zavadskas was one of the main initiators of international German – Lithuanian – Polish colloquium dedicated to Operational Research (OR) in Civil Engineering. The first one was held in 1986, Leipzig, Germany. The Colloquia are organized every two years, [5, 6]. Since the first one, 14 colloquia have already been organized. On the basis of collaboration during 11th and the 12th colloquia, the idea of setting up of a new EURO working group "OR in Sustainable Development and Civil Engineering (EWG-ORS DCE)" was presented. On the initiative of professor E.K. Zavadskas, the Working Group was established during the 23rd European Conference on Operational Research, which took place in Bonn, Germany 5–8 July 2009. Prof. E. K. Zavadskas is a Chairman of this working group, [7].

The Professor has set up a school of scientific thought. The foundation of the school is built, first of all, on the methods of selection of variants, further developed as Multiple Criteria Decision Making and Multiple Criteria Decision Aiding, as a sub-discipline of operations research. He supervised his first Ph.D. student in 1990. All in all, He supervised 36 Ph.D. students in civil engineering, informatics and social science; from Lithuania, Germany, Denmark, Belarus. The Professor has 28 research and scientific grandchildren and one great-grandchild (in Great Britain, 2012). Four of his former students were awarded the title of Full Professor: L. Ustinovicus, A. Kaklauskas, S. Mitkus, Z. Turskis. The professor's school has been described in [2]. Monograph [2] constitutes a set of his students who summarised his research heritage. In Poland, an attempt of describing the heritage of the Professor's research heritage is [8].

CONCLUSION AND FINAL REMARKS

Professor Edmundas Kazimieras Zavadskas is an active participant of public life. His activities have been noted not only in Lithuania, but also internationally. This paper

quotes numerous examples of those activities. Moreover, The Professor is a foreign member of Civil Engineering Committee of Polish Academy of Sciences (PAN). He is one of the founders of the Adam Mickiewicz Foundation, supporting the Lithuanian – Polish relations. He is active in such international bodies as UNESCO, UICEE, and CIB.

Professional and scientific success was the basis of granting the Professor such awards as: Grade IV of the Lithuanian Grand Duke Gediminas (1996). He is also a laureate of the Polish and Lithuanian Parliamentary Assembly Prize (2004).

His input in research collaboration in the Lithuania, Germany, Poland is impressive. The achievements and scientific results of collaboration in this scientific triangle resulted in the emergence of next trend of OR and Civil Engineering science development, including sustainability. The main result of this activity was establishment of new EURO Working Group OR in Sustainable Development and Civil Engineering (EWG-ORSDC). The collaboration which lasts 33 years, has resulted in significant achievements. The results have a positive impact on the participants in the world of science. Many of us could move up and become promoted as a result of this collaboration. We were able to conduct shared research and create joint publications.

On the day of his jubilee, we would like to congratulate a scientist of the greatest format, a proven friend of our nations, a person whose merits and contributions to the development of international collaboration of academic communities in the spirit of integral humanism are numerous. Professor Zavadskas is an icon of construction, research, and international collaboration.

On his Jubilee, we wish him all the best, lots of success and, most of all, satisfaction from witnessing the success of his alumni, and of many of his colleagues from abroad.

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