



EWG-ORSDCE

**NEWSLETTER OF EWG ORSDCE
DECEMBER 2013**

ORSDCE - The OR in Sustainable Development and Civil Engineering Working Group of EURO
<http://www.orsdce.vgtu.lt/>

Content of the issue

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- Forthcoming Events
- Scientific events 2013
- New scientific papers
- International projects in process
- PhD Dissertations defended during 2013
- Editor's comments

Words of chairman

Dear Members of EWG-ORS DCE, dear Friends,

It is a great pleasure to address you some introductory words and present the achievements of scientific cooperation. Last year was rich in scientific events were members of EWG-ORS DCE have participated.

This year was reach of scientific papers the list of which presented in separate section. International cooperation resulted by initiation of new scientific project with partners from Warsaw University of Technology (Poland), Valencia Politechnical University (Spain), Poznan University of Technology (Poland), Vilnius Gedimino technikos universitetas (Lithuania), Minho University (Portugal), Polish Association of Building Managers (Poland), The Chartered Institute of Building (United Kingdom). In year 2013 in fields of construction, sustainable development and applied mathematics six dissertations have been defended. The Newsletter presents the short summaries of defended dissertations.

This issue of Newsletter also presents the forthcoming events, were the EWG-ORS DCE members are participating as organizers or scientific committees' members, the events that were held in 2013.

This year the EWG-ORS DCE meeting in form of 14th German-Lithuanian-Polish colloquium have been held in Vilnius, Lithuania. This Newsletter presents the brief report with pictures on this event. On behalf of coordinating board of EWG-ORS DCE I would like to express gratitude to the the EURO "Association of European Operational Research Societies" for the support provided for organization of the EWG-ORS DCE meeting in form of 14th German-Lithuanian-Polish colloquium.

The EWG-ORS DCE conventionally contributes to the organization of EURO conferences. We would like to express the gratitude to colleagues contributed to the organization of the stream of invited sessions in the field "*OR for Development and Developing Countries*" in the 26th European Conference on Operational Research (EURO XXVI), which was held in Rome, Italy, on July 1-4, 2013. Special thanks to Jana Šelih from Ljubljana Universlity (Slovenia) and Tatjana Vilutiene from Vilnius Gediminas Technical University (Lithuania) for chairing the sessions of stream.

We wish you fruitful scientific collaboration, plenty of health, happiness and prosperity in the New Year!

With my best wishes, yours sincerely,
Edmundas Kazimieras Zavadskas, Chair of EWG-ORS DCE coordinating board

Forthcoming Events

20th CONFERENCE OF THE INTERNATIONAL FEDERATION OF OPERATIONAL RESEARCH SOCIETIES

**I F O R S**

Internacional Federation of Operational Research Societies

The Art of Modeling BARCELONA 2014

13th-18th July

**20TH CONFERENCE OF THE INTERNATIONAL FEDERATION
OF OPERATIONAL RESEARCH SOCIETIES
“The Art of Modeling”
Barcelona, Spain
July 13-18, 2014**

The IFORS 2014 Triennial Conference will be held in Barcelona, Spain, **July 13-18 2014**. The Conference Organizing and Program Committees together represent many countries from all five continents, bringing the research, applications and perspectives of their areas to this international forum. The Programme Committee chaired by Stefan Nickel and the Organizing Committee chaired by Elena Fernández, are preparing a high quality Scientific programme and an exciting social programme for the Conference.

Oral presentations will be organized in parallel sessions. Authors can present only one paper at the Conference. Submission invited on, but not limited to, the following areas:

Continuous Optimization	OR Education, History, Ethics
Control Theory & System Dynamics	OR in Health & Life Sciences
Data Mining, Knowledge Discovery and Artificial Intelligence	Multiple Criteria Decision Making and Optimization
DEA and Performance Measurement	OR in Industry and software for OR
Decision Analysis, Decision Support Systems	OR in Natural Resources
Discrete Optimization, Geometry & Graphs	OR for Development and Developing Countries
Revenue Management, Pricing & Managerial Accounting	Production Management & Supply Chain Management
Energy / Environment and Climate	Emerging applications of OR
Financial Modeling & Risk Management	Scheduling, Time Tabling & Project Management
Fuzzy Systems and Soft-Computing	Soft OR and Problem Structuring Methods
Game Theory, Mathematical Economics	Telecommunication & Networks
Location, Logistics, Transportation, Traffic Simulation & Stochastic Programming and Modeling	Metaheuristics and Matheuristics

Important dates:

Abstract submissions opens:	1 November 2013
Abstract submissions closes:	31 January 2014
Early Registration:	1 November 2013- 28 February 2014
Regular Registration:	1 March - 30 April 2014
Late and on-site registration:	1 May - 13 July 2014

More information: <http://ifors2014.upc.edu/>

Registration fees:

Registration type	Early bird registration until Feb. 28th 2014	Regular registration March 1st - May 31st 2014	Late registration June 1st 2014
Regular	500 €	600 €	750 €
Students	300 €	300 €	300 €
Acompanying person	75 €	75 €	75 €

Registration fee includes: access to all scientific sessions, congress bag with documentation, admission to the trade exhibition, coffee breaks and day tour on Wednesday.

Accompanying Person Registration fee includes: admission to the trade exhibition, coffee breaks and day tour on Wednesday.

Submit your abstract (max 600 characters) and register on line:

<http://ifors2014.upc.edu/registration>

The 15th German-Lithuanian-Polish Colloquium “Rational and Sustainable Decisions in Construction and Management”

Place: Leipzig, Germany

Date: 2015, April

Chaiman

Y. Al Ghanem (DE)

Honorary Members

E.K. Zavadskas (LT),

F. Peldschus (DE),

O. Kapliński (PL)

International program comitee members

K. Holschemacher (DE)

Z. Turskis (LT)

L. Ustinovičius (LT)

J. Tamošaitienė (LT)

J. Paslawski (PL)

M. Skibniewski (USA)

V. Malienė (U.K.)

M. Radujkovic (CR)

J. Šelih (SL)

G. Girmscheid (SW)

Scientific events 2013

The meeting of EWG-ORSDCE members - The 14th German-Lithuanian-Polish colloquium

„Innovative solutions in construction technology and management“

The meeting of EWG-ORSDCE in form of 14th German-Lithuanian-Polish colloquium was held in 2013 on May 15, 2013 in Vilnius, Lithuania. Colloquium was organized together with the 11th International Conference “Modern Building Materials, Structures and Techniques”, which will held next two days on May 16-17, 2013 in Vilnius, for a reason to gather a wider audience for promoting the ideas of international collaboration in areas of operations research and sustainable development. The 14th German-Lithuanian-Polish Colloquium was organized by Vilnius Gediminas Technical University, Poznan University of Technology and Leipzig University of Applied Science.

Papers of 14th German-Lithuanian-Polish Colloquium covered these broadly defined areas: construction technology and organization; operational research, decision making, decision support system; innovative solutions; sustainable development in civil engineering; construction management. Papers in this area covered concepts of „Innovative solutions in construction technology and management“ and also researches in field of application and development of MADM methods.

The articles presented during the meeting of EURO working group “OR in Sustainable Development and Civil Engineering” members in the form of the 14th German-Lithuanian-Polish Colloquium with the main topic “Innovative solutions in construction technology and management” were compounded to the book. The publication includes 10 articles authored by the members of EURO working group “OR in Sustainable Development and Civil Engineering” who were in attendance at this international meeting. The manuscripts were presented during the colloquium, all papers were peer reviewed. The full version of book available for download is here:

http://old.vgtu.lt/upload/stf_orsdce/colloquium-2013_all%20pages_web.pdf

Technical papers available for download are here:

http://colloquium.vgtu.lt/index.php/14_ISCTM/index/pages/view/technical_articles

The meeting of EWG-ORSDCE was sponsored by the the EURO “Association of European Operational Research Societies” within IFORS, the “International Federation of Operational Research Societies”.

The logo for EURO, consisting of the word "EURO" in a stylized, blocky, blue font.

**The Association of European
Operational Research Societies**



The book of colloquium papers (the cover)

LEIPZIG UNIVERSITY OF APPLIED SCIENCE
 VILNIUS GEDIMINAS TECHNICAL UNIVERSITY
 POZNAN UNIVERSITY OF TECHNOLOGY

The 14th German-Lithuanian-Polish colloquium
 Innovative Solutions in Construction
 Technology and Management
 and
 Meeting of EURO working group
 "OR in Sustainable Development and Civil Engineering"

14 Deutsch-Litauisch-Polnisch Arbeitstagung
 "Die Anwendung von Inovativen Lösungen im Bereich der Bauwesen,
 Technologien und Vervaltnung"

14 vokiečių-lietuvių-lenkų kolokviumas
 „Inovatyvūs sprendimai statybos technologijoje ir vadyboje“

14. Niemiecko - Litewsko - Polskie Kolokwium
 "Innowacyjność technologii i zarządzaniu w budownictwie"

15 May, 2013
 Vilnius, Lithuania

The book of colloquium papers



The participants of the 14th German-Lithuanian-Polish colloquium



Reception of guests in meeting venue



“Welcome dance” Scottish folk song by Vilnius Gediminas Technical University folk group



Chairs of meeting

EWG-ORSDCE coordinator assoc. prof. dr. Tatjana Vilutienė and the chair of EWG-ORSDCE board prof. habil. dr. Edmundas Kazimieras Zavadskas



Participants of meeting



Plenary speaker prof. habil. dr. Edmundas Kazimieras Zavadskas (Lithuania)



Plenary speaker Prof. Dr.-Ing.habil.Dr.h.c. Friedel Peldschus (Germany)



Plenary speaker Prof. Dr. hab. Inż. Oleg Kaplinski (Poland)



inż

Studying the book of colloquium papers

Prof. Dr.-Ing.habil.Dr.h.c. Friedel Peldschus and Prof. Dr.-Ing. Yaarob Al Ghanem (Germany)



Coffe-break discussions

Assoc. prof. dr. Jolanta Tamošaitienė (Lithuania), Prof.dr.sc. Mladen Radujković (Croatia) and izr. prof. dr. Jana Šelih (Slovenia)



Discussing the plans for future cooperation

Prof. Dr. hab. Inż. Oleg Kaplinski (Poland), Assoc. prof. dr. Jolanta Tamošaitienė (Lithuania) and Prof.dr.sc. Mladen Radujković (Croatia)



The organizers of next EWG-ORSDCE meeting will be held in Germany
Prof. Dr.-Ing.habil.Dr.h.c. Friedel Peldschus and Prof. Dr.-Ing. Yaarob Al Ghanem (Germany)



„Tree tigers“ of EWG-ORSDCE with regards for future cooperation
*Prof. Dr.-Ing.habil.Dr.h.c. Friedel Peldschus (Germany), prof. habil. dr. Edmundas Kazimieras Zavadskas (Lithuania)
and Prof. Dr. hab. Inż. Oleg Kaplinski (Poland)*

The full album of EWG-ORSDCE meeting for download is available here:
<https://www.dropbox.com/s/nxcwa8imlnv7sf/Conference%202013%20photo%20gallery.zip>

New scientific papers

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Gajzler, Marcin. The Support of Building Management in the Aspect of Technical Maintenance Original Research Article, *Procedia Engineering, Volume 54, 2013, Pages 615-624.*

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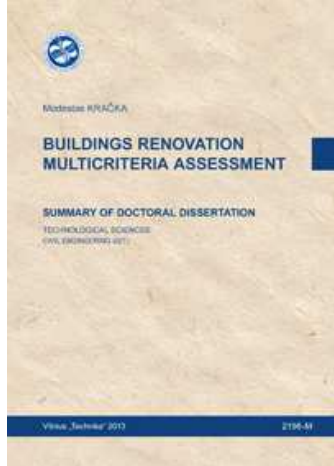
International projects in process

No.	Programme	Project	Short code	Date from - to	Responsible person (project manager)
1	Framework 7	Sustainable Zero Carbon ECO-Town Developments Improving Quality of Life across EU - ECO-Life http://www.ecolife-project.eu/	ECO-Life	2010-2015	Assoc Prof Dr Tatjana Vilotienė
2	Intelligent Energy Europe (IEE)	Initiative to boost continuing or further education and training of craftsmen and other on-site construction workers and systems installers in the building sector http://www.buildupskills.eu/	Build Up Skills - Lithuania	2012-2013	Assoc Prof Dr Tatjana Vilotienė
3	Non-state actors and local authorities programme for the Baltic sea region	Project on Introduction of Advanced European Practices on Energy Efficiency in Houses and Public Buildings in Baltic Sea Regions of the Russian Federation.	Project # 2011/263-5	2012-2014	Milena Medineckienė
4	2007 - 2013 Baltic Sea Region Theme: Environment and climate change	COOL Bricks - Climate Change, Cultural Heritage & Energy Efficient Monuments www.co2olbricks.eu	COOL Bricks	2010-2013	prof. dr. Marija Burinskienė
5	ESPON 2013 Programme	International ESPON training programme creation promoting the interest in ESPON 2013 knowledge http://www.espon.eu/	ESPON Train	2010-2013	prof. dr. Marija Burinskienė
6	Erasmus Mundus	Linking European, African and Asian Academic Networks on Climate Change http://www.climatechangeedu.eu/leancc/	LEAN CC	2011-2013	Prof. Artūras Kaklauskas
7	Erasmus	Learning Augmented Reality Global Environment	LARGE	2011-2013	Prof. Artūras Kaklauskas
8	Leonardo Da Vinci	Postgraduate European Common Studies in Construction Project Management	MBAIC	2013-2015	Assoc.prof. Arūnas Barvidas

PhD Dissertations defended during 2013

Name of doctoral student	Title of dissertation	Year	Scientific supervisor
Modestas Kračka	Buildings Renovation Multicriteria Assessment	2013	Prof. Edmundas Kazimieras Zavadskas
Jevgenija Rutė	Knowledge Model and Multiple Criteria Decision Support System for Passive Houses	2013	Assoc.prof. Audrius Banaitis
Mindaugas Staniūnas	Ecological assessment in urban comprehensive plans	2013	Prof. Marija Burinskienė
Agnė Kuzminskė	Integrated System of Students' Knowledge Assessment Using Intelligent and Biometric Technologies	2013	Prof. Artūras Kaklauskas
Ernestas Gaudutis	Complex Assessment of High-Rise Buildings Design Solutions	2013	Scientific supervisor: Prof. Juosifas Parasonis Scientific adviser: Assoc.prof. Jolanta Tamošaitienė
Askoldas Podvieszko	Evaluation of Financial Stability of Commercial Banks	2013	Prof. Romualdas Ginevičius

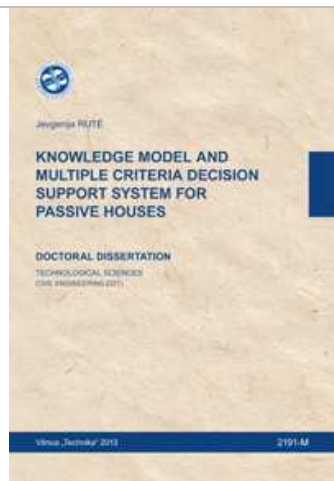
Short review of defended dissertations

	<p>Buildings Renovation Multicriteria Assessment</p> <p>Modestas Kračka 2013</p> <p>Scientific supervisor: Prof. Edmundas Kazimieras Zavadskas</p>
<p>Research object. The object of the Research is performance assessment of buildings refurbishment, using the assessment model MOORA-G and MULTIMOORA-G, when the indicator values are defined in the interval system.</p> <p>Aim and Tasks of the Work. The main aim is to improve methods of assessment of the renovation, offering a range of multicriteria systems approach, which would allow a rational justification of the building envelope, to update the engineering systems and to identify targets of the building needed to update them.</p> <p>Research methodology. The thesis is offering a newly developed multi-estimation method, where values are defined in an interval algorithm. The algorithm enables multiple criteria methods to assess the indicators and criteria specified intervals.</p> <p>Defended Statements. Three defended statements were developed by the author: 1. Building modernization carried out individually taking into account atmospheric precipitation influence, materiality of the building envelope, internal heat emissions, and building heating needs of individual users. 2. Improving energy efficiency in buildings should be based on economic, environmental, technological, social as well as legal aspects. 3. In assessing building performance and modernization across the spectrum of different profile challenge, featuring large amounts of data are appropriate to use multicriteria methods when the values and criteria are defined in the interval.</p> <p>The scope of the scientific work. The Research consists of the general characteristics of the</p>	

dissertation, 3 chapters, conclusions, references, the list of the publications and the addenda. The total scope of the dissertation is 119 pages, including 49 figures, 36 tables and 47 numbered formulas.

Approval of the thesis. Six scientific articles are published on the topic of dissertation: three articles in the scientific journals included in Thomson Reuters ISI Web of Science, one article in the journal included in ISI Master Journal list, two articles in proceedings of international and national conferences.

Practical value. The results can be applied for the modernization of building in the course of assessing the necessary structures and engineering systems upgrade. Designed for multicriteria evaluation method algorithm evaluates the uncertainty in the information and using the interval system theory it can be applied to other tasks, not only in the field of construction.



Knowledge Model and Multiple Criteria Decision Support System for Passive Houses

Jevgenija Rutė
2013

Scientific supervisor: Assoc.prof. Audrius Banaitis

Research object. The research object is a complex evaluation of passive houses knowledge and decision making, also interested parties striving to attain their goals and micro, mezzo and macro environments as integral whole. As a tool for complex evaluation of passive house knowledge and in decision making to select the most effective alternative, a multiple criteria decision support system is being suggested.

Aim and Tasks of the Work. The main task of the work is to create a passive houses knowledge model and to create a decision support system in choosing a passive house alternative using multiple criteria analysis and multiple criteria multivariant design methods.

Research methodology. The research methodology is based on the analysis of publications in this field published by Lithuanian and foreign authors. In the research data processing methods of project multi criteria analysis and multivariant design were adapted and applied, as well as methods of comparative analysis, expert evaluation, logic and synthesis.

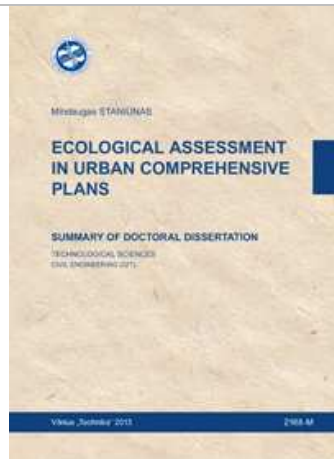
Defended Statements. Three defended statements were developed by the author: 1. Established passive houses knowledge model allows implementing complex view of passive houses, and supplements decision making process with more data, which in turn fosters a more rational and safe choice of passive house version. 2.To make an integrated analysis of alternative options of passive houses knowledge and to facilitate efficient decision-making, such methods as the multivariant design and the multiple criteria analysis may be employed. 3. The developed passive houses knowledge multiple criteria decision support system allows evaluation of passive house alternatives, composition of rational alternative selections of passive house components, establishing level of their efficacy, utility degree, market value, and eventually making the right decision.

The scope of the scientific work. The dissertation consists of an introduction, three chapters, conclusions and suggestions, and the list of references. The total scope of dissertation is 116 pages, 10 numbered formulas are used, 20 figures and 17 tables. 144 literature sources have been used while writing the dissertation.

Approval of the thesis. The material presented in the thesis was published in five scientific articles: two in scientific journals listed in the Thomson Reuters ISI Web of Science, two in the scientific journals and one in the refereed conference material. The main findings of the work were discussed

in two scientific conferences.

Practical value. The developed knowledge model and multiple criteria decision support system can be used in evaluation of passive house alternatives, composition of rational alternative selections of passive house components, establishing level of their efficacy, utility degree, market value, and eventually making the right decision. The main research findings were practically employed implementing international Intelligent Energy Europe programme projects NorthPass and IDES-EDU.



Ecological assessment in urban comprehensive plans

Mindaugas Staniūnas
2013

Scientific supervisor: Prof. Marija Burinskienė

Research object. Object of the work is the ecology of city being understood as a part of general (not social) ecology, which operates and is being operated in the urban environment. In the dissertation the possibilities and peculiarities of selecting the main components of city ecology, forming and quantitatively assessing the principal structure are investigated. The ecological parameters, 1) which are fundamental / indispensable, i. e. those whose replacement is related to essential changes, and 2) can be applied in preparing urban comprehensive plans, are analysed.

Aim and Tasks of the Work. The aim of the the work is to improve the quality of urban comprehensive plans, encompassing the assessment of ecology of city.

Research methodology. The main focus, with reference to which the research has been intended, is to assess the possibility of applying quantitative parameters of ecology description in preparing urban comprehensive plans. At present the mostly applied practice – descriptive, qualitative assessment; however, in this way one obtains ambiguous, objectively incomparable results. Furthermore, the results obtained mainly depend on the specialists preparing plans. Therefore the research deal with two basic questions: 1. to investigate whether the concept of ecology of city is properly defined, both scientifically and legally, i. e. whether there exist quantitative parameters of ecology of city? 2. Whether it is possible to apply the existent parameters of ecology of city in preparing comprehensive plans, i. e. whether adaptation of quantitative indicators is indispensable to the practice of planning? Three methods of the research work have been applied: theoretical analysis, generalisation and probation.

Defended Statements. Three defended statements were developed by the author: 1. The ecology of city, according to the impact trend, is two-sided: external and inner. Processes of external ecology are equal to towns, i. e. global ecological processes that have the essential impact beyond administrative boundaries, whereas processes of innerecology can be various as these are local processes that have the essential impact within a city. 2. The ecological processes being only on the verge of exposure limits are significant in urban planning. Urban planning is a legal procedure, so external ecological critical boundaries shall be equalised at most and juridically confirmed. 3. In Lithuania, the beginning of the reference of critical boundaries shall be treated as the beginning of planning procedures for an affective integration of ecology of city into preparation of urban comprehensive plans as well as for the progress assessment.

The scope of the scientific work. The scientific work consists of the introduction, three chapters, conclusions, list of literature and list of author's scientific publications on the topics of the dissertation. The total scope of the dissertation is 136 pages, 20 figures and 30 tables. 187 references were used writing the work.

Approval of the thesis. The material presented in the thesis was published in four scientific articles. The main findings of the work were discussed in three scientific conferences.

Practical value. The concept of ecology of city being worked out in writing the dissertation and especially a quantitative system of assessing the external ecology of city can be applied in practice while preparing urban comprehensive plans. This is a means allowing planners in the aspect of external ci

ty ecology to mathematically assess the impact of a comprehensive plan and / or compare different variants of urban development. The calculations established do not require additional primary information nor is it used simply in working out the documents of territorial planning. According to the author of the dissertation, there is no such model practically functioning in Lithuania. The research work is valuable at national level as 1) a self-study means 2) as well as due to a clearer impact of Lithuanian towns on the world's ecological processes. Although the model focuses on Lithuanian towns, the theoretical framework, however, was worked out with reference to the EU documents concerning planning and ecology; therefore, one can modify the model and try to apply it in the territories of other EU member states.



Integrated System of Students' Knowledge Assessment Using Intelligent and Biometric Technologies

Agnė Kuzminskė
2013

Scientific supervisor: Prof. Artūras Kaklauskas

Research object. The dissertation examines students' knowledge assessment process and students' knowledge assessment problems. Object of the research – the students' knowledge assessment – is decisive factor for higher education institutions and the management sciences dealing with the problem of objectivity in decision making. The author's conducted research object analysis allowed the identification of the students' knowledge evaluation process elements, highlighting key challenges and propose new solutions to these problems.

Aim and Tasks of the Work. The central aim of this research is to develop an integrated system of students' knowledge assessment using intelligent and biometric technologies more advanced than any existing conventional assessment methods, a system with a self-assessment algorithm that makes it possible to assess students and give recommendations to both teachers and students. The dissertation addresses following key challenges: based on nontraditional students' knowledge assessment methods and their importance to perform analysis of feasibility study of these methods, develop and offer the necessary elements for integration to system of students' knowledge assessment using intelligent and biometric technologies system.

Research methodology. The research makes use of statistical methods, decision-making techniques and biometric methods.

Defended Statements. 1.Unconventional assessment methods may also be effective tools in student assessment. 2.Student self-assessment is sufficiently reliable to become part of student assessment processes. 3.The reliability of student assessment may be improved by integrating decision support techniques and biometric methods. 4.The developed system for student assessment with the help of intelligent and biometric technologies facilitates reliable assessment of knowledge acquired by students.

The scope of the scientific work. The scientific work consists of the general characteristic of the dissertation, three chapters, conclusions, list of literature and list of publications. The total scope of the dissertation – 136 pages excluding annexes, 17 figures, 14 tables and 9 formulas.

Approval of the thesis. The main findings were discussed at three scientific conferences. The main research results are presented in seven scientific publications.

Practical value. The prime practical goal of this research is to improve the accuracy, speed and objectivity of student assessment, to eliminate the random factor that impairs the end result of student assessment, or to minimise its impact to an acceptable degree. Making student assessment less labour-intensive may also be considered of practical value in this research. The research findings were employed in the teaching processes at Vilnius Gediminas Technical University to examine postgraduate (MSc) distance students in the Department of Construction Economics and Property Management. The main findings of the dissertation were implemented for practical use during the project "Setting up the Simulation Training Centre for Construction and Real Estate Professionals" (No. VP1-2.2-ŠMM-07-K-01-050; period: 2010–2012) financed by the ESF. In 2012 the project won in the category "Innovative Idea" during the contest Best Project Financed by the European Social Fund.



Complex Assessment of High-Rise Buildings Design Solutions

Ernestas Gaudutis
2013

Scientific supervisor: Prof. Juosifas Parasonis
Scientific adviser: Assoc.prof. Jolanta Tamošaitienė

Research object. Research object is complex assessment of high-rise building design solutions in initial high-rise buildings location during special plan preparation stage and at high-rise buildings structural system design stage. High-rise buildings were selected for their significant effect on city skyline, panoramic views, cityscapes, plan and spatial structure, urban environment physical quality, buildings compositions, internal spaced design structural solutions which directly depend on building high and internal space organisation peculiarities, design and construction costs.

Aim and Tasks of the Work. The main aim of thesis is to create complex multi-stage assessment model for high rise buildings design solutions substantiated by different decision making and assessment methods.

Research methodology. In dissertation used modeling, analysis, different assessment methods, expert judgement SAW COPRAS-G, game theory, MOORA, MULTIMOORA, „TOPSIS grey“, SAW-G and received results synthesis.

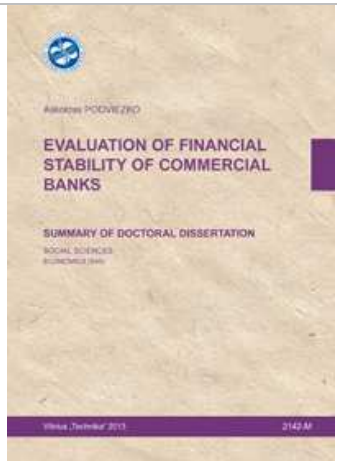
Defended Statements. 1. According literature sources analysis it can be created multi-stage complex decision making model for buildings design solutions selection and assessment, based on various decision making methods. 2. Using developed multi-stage complex assessment model it's possible to select high-rise buildings place during special plan preparation stage and to assess building structural system on initial building structural system design stage.

The scope of the scientific work. The dissertation consist of introduction, three chapters, general conclusions and a list of references. The total scope of dissertation – 140 pages, without annexes, 24 figures, 22 tables and 195 references.

Approval of the thesis. The main findings were discussed in six scientific articles and six reports of the topic of the dissertation were published in the proceedings of national and international conferences.

Practical value. A complex multi-stage decision making model can be applied during territory planning process for special plan of high-rise buildings location preparation based on sustainability principles and territory planning solutions monitoring. It can be applied for architectural and structural solutions assessment on building design stage. The model can be applied for specific parcel detail plan preparation, for finding right place for high-rise building from several alternatives on

goals setting stage. For selecting building architectural and structural solutions assessment during building design stage and solutions monitoring.

	<p>Evaluation of Financial Stability of Commercial Banks</p> <p>Askoldas Podviezko 2013</p> <p>Scientific supervisor: Prof. Romualdas Ginevičius</p>
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Research object. Research object is financial stability of commercial banks.

Aim and Tasks of the Work. The main aim of thesis is to create and validate by the empirical testing a methodology of evaluation of financial stability of commercial banks.

Research methodology. The research, choice and creation of new concepts were based on the following methods: deduction, extrapolation, comparative and historical analysis of the literature, induction, mathematical statistics, hypothesis testing, synthesis, systems and empirical analysis, methodological triangulation, expert evaluation, multiple criteria evaluation, modelling, data triangulation.

Defended Statements. Seven defended statements were developed by the author: 1. Financial stability of a bank depends on different factors, its evaluation is complex. Multiple criteria decision aid evaluation methods are perfectly acceptable for quantitative evaluation of financial stability of commercial banks. The proposed methodology serves the task of quantitative evaluation and analysis of financial stability of commercial banks and is required for increasing financial stability of a country. 2. Financial stability increases as the financial system approaches the general economic equilibrium model, when information asymmetry in the financial sector decreases, competition between financial intermediaries in terms of financial stability increases. This is achieved by prompt delivery of results of quantitative evaluation of financial stability of commercial banks using the proposed methodology. Promptness of the evaluation is accelerated by using the proposed method of absolute multicriteria evaluation of a single bank by comparing it with the best and the worst hypothetical banks. 3. Financial liberalization has direct impact on the frequency of financial crises and magnitude of their effects. Analysis of processes of financial liberalisation reveals that the following factors have crucial effect on financial stability: institutional supervision of the financial sector, its transparency and lowering information asymmetry. 4. In consequence of particularities of financial stability data, an advanced multiple criteria evaluation method PROMETHEE II was applied and enhanced in this dissertation. 5. For the purpose of differentiation of evaluation results among the groups of decision-makers, and for monitoring dynamics of financial stability of commercial banks the proposed in this dissertation absolute multiple criteria evaluation method should be used along with traditional multiple criteria decision aid methods. 6. Financial stability of Lithuania is closely related to the financial stability of commercial banks, since the Lithuanian financial system is of the banking type with a scarce market component. 7. The proposed methodology of financial stability of commercial banks can be recommended to financial supervisory institutions and to management of commercial banks.

The scope of the scientific work. The scientific work consists of the introduction, three chapters, general conclusions, list of literature (354 sources), list of author's publications and annexes (in the electronic storage). The total scope of the dissertation – 140 pages (without annexes), 14 pictures, 22 tables and 27 annexes.

Approval of the thesis. The main findings were discussed in five scientific articles and six reports of the topic of the dissertation were published in the proceedings of national and international conferences.

Practical value. The methodology promptly provides results of evaluation of financial stability of commercial banks, in contrast to methodologies of rating agencies. The feature of evaluation of financial stability of a single alternative allows to promptly evaluate a bank even if financial statements of other banks are not yet available. Features of the methodology allow making both relative and absolute evaluations (independent of performance of peer commercial banks), differentiating evaluation results between different groups of decision-makers, and to observe dynamics of financial stability. The feature of delivering results of evaluation in different formats makes the results understandable by different groups of decision-makers: depositors, supervising institutions, bank managers, and financial consultancy firms. This feature allows to reduce financial instability by lowering information asymmetry in the market of commercial banks and by making influence on depositors' behaviour, to remedy some market imperfections and consequently to make financial system closer to the ideal Arrow-Debreu perfect market, to foster competition between commercial banks in terms of financial stability, and to use the methodology in prevention of financial crises. The feature of gauging influence of values of each criteria of financial performance of a bank and of their categories on financial stability allows monitoring financial stability of the bank in more detail. The quick adoption feature of the methodology to changing environment allows to react promptly to regulatory and market changes. Small costs of using the methodology contrast to rating agencies' costs, which methodologies require permanent participation of high-qualified experts. Proposed methodology requires such participation only at initial or altering stages. The proposed quantitative criterion, which determines the type of a financial system, allows making better decisions on controlling financial stability.

Editor's comments

Dear EWG-ORSDCE members, dear fiends,

Thank you for all valuable contrubutions to EWG-ORSDCE activities, common initiatives and research papers.

Next year all members of EWG-ORSDCE are welcome to participate in the IFORS 2014 Triennial Conference that will be held in Barcelona, Spain, July 13-18 2014. You are also invited to participate in next meeting of EWG-ORSDCE (colloquium), which will be held on April, 2015 in Leipzig, Germany.

On behalf of the Editorial Board of EWG-ORSDCE Newsletter
Tatjana Vilutienė

EWG-ORSDCE Newsletter
Editorial Board: Tatjana Vilutienė, Edmundas Kazimieras Zavadskas