



**RIGA TECHNICAL
UNIVERSITY**

RIGA TECHNICAL UNIVERSITY
Faculty of Engineering Economics and Management

“SCIENTIFIC CONFERENCE ON ECONOMICS AND ENTREPRENEURSHIP SCEE’2020”

Organized within the 61th International Scientific
Conference of Riga Technical University

14 – 16 October 2020

Riga, Latvia

BOOK OF ABSTRACTS

RTU Press

Riga – 2020

Organized within the 61th International Scientific Conference of Riga Technical University “Scientific Conference on Economics and Entrepreneurship SCEE’2020”. Book of Abstracts. Riga: RTU Press, 2020

Editor-in-Chief

Prof. Elīna Gaile-Sarkane, Riga Technical University, Latvia

Managing Editor

Prof. Tatjana Tambovceva, Riga Technical University, Latvia

International Editorial Board

Prof. Ineta Geipele, Riga Technical University, Latvia
Prof. Natalja Lāce, Riga Technical University, Latvia
Prof. Inga Lapiņa, Riga Technical University, Latvia
Prof. Tatjana Polajeva, Euroacademia, Estonia
Prof. Remigijus Počas, Riga Technical University, Latvia
Prof. Leonid Melnyk, Sumy State University, Ukraine
Prof. Asta Savanevičienė, Kaunas University of Technology, Lithuania
Doc. Iveta Šimberova, Brno University of Technology, Czech Republic

Technical Editor

Maksims Smirnovs, Riga Technical University, Latvia

Contacts:

Faculty of Engineering Economics and Management
Riga Technical University
Kalnciema iela 6-213
LV-1048, Riga, Latvia
Phone: +371 67089394
E-mail: SCEE2020@rtu.lv

ISBN: 978-9934-22-510-9

ISSN: 2256-0866

Authors are responsible for the correctness of the publications.

All rights are reserved. No part of this publication may be reproduced, stored, transmitted or disseminated in any form or by any means without prior written permission from Riga Technical University represented by RTU Faculty of Engineering Economics and Management to whom all requests to reproduce copyright material should be directed in writing.

© Riga Technical University, 2020

Published by RTU Press, Riga Technical University, Kaļķu iela 1, Riga LV-1658, Latvia

CONTENTS

SECTION

“Economy, Entrepreneurship, Safety and Real Estate Management”

SUBSECTION

“Business Engineering, Economics, Finance and Management”

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| CONFLICTS OF STEWARDSHIP AND COMPETING INTERESTS: A WEAKNESS IN GOVERNANCE? <i>Bancroft J., Lāce N.</i> | 7 |
| OMNICHANNEL USER EXPERIENCE IN ONLINE RETAIL <i>Januševska G.</i> | 8 |
| CREATING FINANCIAL EFFICIENCY INDEX FOR HIGHER EDUCATION INSTITUTIONS <i>Kuzmina J., Natrins A., Ziemele A., Kivrina E.</i> | 9 |
| IMPACT OF THE IMAGE ON SOCIO-ECONOMIC DEVELOPMENT OF ENTREPRISE <i>Linde N.</i> | 10 |
| EQUITY GAP IN FUNDING FOR HIGH GROWTH BUSINESSES IN LATVIA <i>Matisone A., Lāce N.</i> | 11 |
| ECONOMIC TENDENCIES OF THE EUROPEAN MEDICAL DEVICE MARKET <i>Semjonova N.</i> | 12 |
| INSIGHT INTO VALUES IN THE CONTEXT OF BRAND POSITIONING <i>Strausa E., Ence E.</i> | 13 |
| E-COMMERCE: ACTIVITY OF USE AND MAIN BENEFITS IN LATVIAN BUSINESS <i>Štāle S., Ogorceva L.</i> | 14 |
| BUILDING AGILITY RESILIENCE AND PERFORMANCE OF SMALL AND MEDIUM SIZED ENTERPRISES IN CRISIS <i>Pokromoviča I.</i> | 15 |
| THE LINK BETWEEN GREEN CONSCIOUSNESS AND GREEN BRAND DEVELOPMENT <i>Us Y., Tambovceva T., Pimonenko T., Lyulyov O.</i> | 16 |
| GOOD GOVERNANCE – UTOPIA OR REALITY IN A PANDEMIC <i>Vanags J., Linde N., Lejniece I.</i> | 17 |
| INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) DEVELOPMENT IMPACT ON CONSUMER LENDING MARKET IN LATVIA <i>Verdenhofs A., Tambovceva T.</i> | 18 |
| ASSESSMENT OF THE CAPITAL ADEQUACY AND EFFICIENCY OF INSURERS: THE CASE OF BALTIC NON-LIFE INSURANCE MARKET <i>Zariņa-Cīrule I., Voronova I., Petere G.</i> | 19 |

| | |
|-----------------------------------------------------------------------------------------|----|
| DOES DIVERSITY DRIVE SUSTAINABILITY IN THE BALTICS? <i>Zumente I., Lāce N.</i> | 20 |
|-----------------------------------------------------------------------------------------|----|

SUBSECTION

“Innovation and Quality Technologies”

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| UNDERSTANDING OF THE QUALITY OF HIGHER EDUCATION: STUDENTS VS. REGULATIONS <i>Degtjarjova I., Lapiņa I.</i> | 22 |
| EXTRA CURRICULAR ACTIVITIES AS A COMPLEMENTARY ELEMENT OF STUDY PROGRAMMES – PROBLEMS AND CHALLENGES <i>Doniņa A., Lapiņa I., Gaile-Sarkane E.</i> | 23 |
| THE ROLE OF LEAN MANAGEMENT: REDUCING WASTES IN PROFESSIONAL COMPETENCE ASSESSMENT PROCESS <i>Kavosa M., Lapiņa I.</i> | 24 |
| USING KNOWLEDGE MANAGEMENT FOR UNIVERSITY STRATEGIC DECISIONMAKING PROCESS <i>Medne A., Lapiņa I., Zeps A.</i> | 25 |
| IT GOVERNANCE AS A PRECONDITION FOR INCREASING COMPANIES` COMPETITIVE ADVANTAGE <i>Meijere S., Tambovceva T.</i> | 26 |
| COMPETENCES FOR STRENGTHENING ENTREPRENEURIAL CAPABILITIES IN LATVIA <i>Ņikitina T., Lapiņa I., Ozoliņš M., Irbe M.M.</i> | 27 |
| “IMPRESS” - IMPROVING MANAGEMENT COMPETENCES ON EXCELLENCE BASED STRESS AVOIDANCE AND WORKING TOWARDS SUSTAINABLE ORGANIZATIONAL DEVELOPMENT IN EUROPE <i>Novoksonova V., Benito B., Berger R., Spiess R., Mazais J., Dalluege A., Schinner H.D., Villalba E., Nolan D., Bērziņa-Andračņikova E.</i> | 28 |
| THE IMPORTANCE OF DEVELOPING COMMON TERMINOLOGY IN STANDARDIZATION <i>Pilēna A., Mežinska I., Lapiņa I.</i> | 29 |
| IMPROVEMENT OF THE INTEGRATED MANAGEMENT SYSTEM IN A CONSTRUCTION COMPANY <i>Rudakova R., Kavosa M.</i> | 30 |

SUBSECTION

“Internal Security and Civil Protection”

| | |
|---------------------------------------------------------------------------------------------------------------------------------|----|
| CHANGES IN THE STRUCTURE OF WORK ENVIRONMENT RISKS IN LATVIA AND THEIR IMPACT ON EMPLOYEES <i>Bazone G., Ievins J.</i> | 32 |
| CRIMINALIZATION OF ILLICIT INTERNATIONAL CIRCULATION OF GOODS: NECESSITY AND IMPLEMENTATION <i>Čevers T.</i> | 33 |

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| FLEXIBLE WORK ARRANGEMENTS AND WORK ENGAGEMENT OF OLDER EMPLOYEES <i>Korsakienė R.</i> | 34 |
| IMPROVEMENT OF THE SAFETY METHODOLOGY FOR THE USE OF HAZARDOUS SUBSTANCES <i>Latņikovs S., Malahova J., Jemeljanovs V.</i> | 35 |
| TECHNICAL BASE OF STATE FIRE AND RESCUE SERVICE REPAIRS: JUSTIFICATION OF NECESSITY AND OPTIMUM SOLUTIONS <i>Mašarovs R., Ziemelis M., Bazone G.</i> | 36 |
| HEALTH CARE SYSTEM PERFORMANCE EVALUATION FOR VALUE-BASED HEALTH CARE: LATVIA APPROACH <i>Pētersone M., Ketners K., Eriņš I.</i> | 37 |
| CUSTOMS CLEARANCE OPTIMIZATION IN PORTS <i>Rudzītis N., Berzina A., Ceveris A., Gulbis A.</i> | 38 |
| USE OF THE FAULT TREE WHEN DRAWING UP THE RIGA CITY CIVIL PROTECTION PLAN FOR RISK ASSESSMENT <i>Urbans M., Malahova J., Jemeljanovs V.</i> | 39 |

SUBSECTION

“International Business and Logistics”

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------|----|
| EU TRADE OF COVID-19 RELATED PRODUCTS <i>Auzina-Emsina A.</i> | 41 |
| ANALYSIS AND EVALUATION OF POSSIBLE KEY PERFORMANCE INDICATORS (KPI) FOR LOGISTICS CENTRE <i>Moroza N., Jurgelane-Kaldava I.</i> | 42 |
| PEST ANALYSIS OF TRANSPORT SYSTEM OF LATVIA <i>Ozolins V.</i> | 43 |
| TAXATION STRATEGY FOR ECONOMIC RECOVERY FROM COVID-19 CRISIS <i>Šmite-Roķe B., Jurušs M., Alķe L., Drunka M.</i> | 44 |

SUBSECTION

**“BUSINESS ENGINEERING, ECONOMICS,
FINANCE AND MANAGEMENT”**

CONFLICTS OF STEWARDSHIP AND COMPETING INTERESTS: A WEAKNESS IN GOVERNANCE?

Justin BANCROFT¹, Natalja LACE²

^{1,2}*Riga Technical University, Riga, Latvia*

Corresponding author e-mail: justin.bancroft@rbs.lv

Abstract. The entry of international, professional services firms and global corporations and their brands into emerging and growth markets has created numerous instances of internal conflicts of stewardship within these groups. Understanding the genesis of these conflicts will support future managers and those charged with governance in avoiding them.

The authors, building upon a widely accepted definition of stewardship and stewardship governance, use a reflective, case study approach to identify conflicts of stewardship and provide several real-life examples of how different groups within the same professional accounting firm, and a global FMCG brand, when entering into the Central and Eastern European markets, competed against themselves. While nominally operating under a steward governance framework, this internal competition worked to the detriment of the global brand, customer relationships and long-term profitability.

The authors conclude that this internal competition and conflict of stewardship was not caused by a weakness in the stewardship governance model itself, but a lack of clearly defined boundaries of conduct at both the global and operating unit level, and performance standards that incentivized dysfunctional behaviour.

Keywords: *Corporate governance, Partnership, Stewardship, Stewardship governance, Corporate conflict*

JEL Classification: L20, Q16

OMNICHANNEL USER EXPERIENCE IN ONLINE RETAIL

Guna JANUSEVSKA

Riga Technical University, Riga, Latvia

Corresponding author e-mail: guna.janusevska@edu.rtu.lv

Abstract. In today's conditions of uncertainty, when a lot of companies transform digitally, online retailing becomes challenged more than ever. Being present in multiple channels offers greater exposure and market reach. Although if the customer is the same, company has to consider the continuity of customer experience when switching from one channel to another. Research focus is on omnichannel user experience in online retailing.

Aim of the research is to find out what impact omnichannel user experience has on development of online retailing companies. Both primary and secondary data are analysed, e.g., expert interviews and direct observation of online omnichannel. Qualitative research methods are applied. First, interviews with e-commerce managers of companies applying omnichannel user experience; second, qualitative content analysis of interviews' transcripts, to identify impact on online retailing company's KPIs; third, direct observation of companies' omnichannels.

Results show that omnichannel user experience has impact not only on user experience metrics but also on brand equity's elements - brand awareness, brand loyalty and brand associations – as well as on online retailing KPIs – conversion rate, average conversion value and retention rate.

Main conclusion is that omnichannel user experience is one of the most important innovations in e-commerce to provide enhanced value in customer's shopping process and online retailing growth.

Recommendation for further research is to explore how customer's habit to switch among several devices impact omnichannel user experience.

Keywords: *Omnichannel, Online retailing, E-commerce, User experience, Brand equity, Innovation*

JEL Classification: L81, M30, O33

CREATING FINANCIAL EFFICIENCY INDEX FOR HIGHER EDUCATION INSTITUTIONS

Jekaterina KUZMINA¹, Andris NATRINS², Anda ZIEMELE³, Ennata KIVRINA⁴

¹⁻⁴ BA School of Business and Finance, Riga, Latvia

Corresponding author e-mail: jekaterina.kuzmina@ba.lv

Abstract. Decision-making process as well as general management of the higher education institution is nowadays becoming more and more complex and complicated, therefore, management of the higher education institution requires modern tools and methods. Being aware of the importance of performance management in the higher education sector the authors have performed literature review in order to identify research gap. Based on the extended research the authors are able to claim that, on the one hand, there is an extensive research on the field of efficiency measurement and management of the higher education institutions, while on the other hand, the topic of financial health within this discussion is less covered. The objective of the current paper is to cover the existing gap and to provide the management of the higher education institution with an acceptable financial efficiency measurement tool useful in the process of setting the institution's strategic goals, developing and implementing strategies, as well as performance measurement. The paper is limited to the description of the concept of the model, while the implementation of it is going to be discussed in the coming publications. In order to achieve the research goal, the authors are using the methodology of ratio analysis in higher education developed by KPMG in cooperation with Tahey et al. (2015), adjusting it to the current situation in Latvia – selecting necessary and potentially sound financial criteria, determining their weight in the model by applying approach developed by Becker et.al. (2017) on the field of composite indexes.

Keywords: *Higher education institutions, Financial health, Efficiency measurement*

JEL Classification: G30, I23

IMPACT OF THE IMAGE ON SOCIO-ECONOMIC DEVELOPMENT OF ENTREPRISE

Nina LINDE

Institute of Economics of the Latvian Academy of Sciences, Riga, Latvia

Corresponding author e-mail: nina.linde@lza.lv

Abstract. The motivation of choosing the topic of the research was driven by the desire to conduct a psychological analysis of the impact of the image of the organization on its socio-economic development and to show the contribution of psychological science in economics. Aim of the research is to study the impact of the priority image of the organization selected by the organization as the central logo and brand of the company on socio-economic indicators and dynamic of development of the organisation.

The main methods of the research: 1) analysis of theoretical literature about image as the unite of information, its impact on economic indicators and development of entrepreneurship; 2) collecting and analysis of statistical data, 3) comparative analysis and correlation of socioeconomic results of the enterprise, for a concrete development period, in relation to the dominating image in this development period, 4) expert analysis.

The main results: the analysis of such economic indicators of companies as turnover, profitability assets, net profit, company value before and after changing the image of the company showed a direct dependence of the dynamics of growth or decline in economic activity of the enterprise depending on the change in image.

The main conclusions:

1. the image of the organisation influences socio-economic development and competitiveness;
2. changing the image of the organisation, it is possible to change the social economic indicators on micro and macro level;
3. the more effective and successful the image of organization, the higher the level of trust of customers.

Keywords: *Dynamic of development, Economics, Image of organisation, Impact of the image, Psychological analysis, Social economic indicators*

JEL Classification: A12, D00, D22, M21, M30

EQUITY GAP IN FUNDING FOR HIGH GROWTH BUSINESSES IN LATVIA

Anita MATISONE¹, Natalja LACE²

^{1,2}*Riga Technical University, Riga, Latvia*

Corresponding author e-mail: anita.matisone@edu.rtu.lv

Abstract. The paper examines how complementary are government equity schemes and do they make a finance escalator for funding of high growth enterprises in Latvia.

Venture Capital (VC) industry in Latvia was developed with public support. Notwithstanding to professionalization of local VC managers, the funds still mostly depend on public resources. Therefore, local VC managers can provide only investments in amount and for companies defined by governmental schemes.

The analysis using mixed research methods shows that with each subsequent period the stages of companies allowed for financing broadened. Still, there is a gap of available funding between periods. Also, because of the small market and few VC managers each with different specialization, there is a problem with follow-up investments in companies. The problem was deepened because of COVID-19 adverse effect on foreign investors availability and interest to support companies abroad.

The paper provides suggestions on how to address high growth enterprises finance gap better.

Keywords: *Equity gap, Finance escalator, Public policy, Venture capital*

JEL Classification: G23, G24, H54, L10

ECONOMIC TENDENCIES OF THE EUROPEAN MEDICAL DEVICE MARKET

Nadezda SEMJONOVA

Riga Technical University, Riga, Latvia

Corresponding author e-mail: nadezda.semjonova@rtu.lv

Abstract. Medical devices (MD) industry is the fast-growing businesses worldwide due to increasing demand for healthcare. Manufacturing of MD does not require much natural resources; thus, MD business is attractive for countries, poor in natural resources. The objective of the present paper is to analyse the tendencies of the economic growth in MD sector in Europe and compare it to one in Latvia. The methodology of the research is based on the analysis of economic figures (turnover, number of employees etc.) for the period 2014–2018 in MD sector, obtained from open sources. The study of economic trends showed that EU MD sector demonstrates sustainable growth at average 3.5% per year. The MD market is highly innovative and is attractive for small and medium enterprises, that provides up to 95% of all MD sector turnover. This indicates that MD sector manufacture products with high added value and not always required sound capital investments. The key players on the EU MD market does not changes much, nevertheless, Ireland showed good example: the investment in the development of human capital is an important condition for the successful development of the MD sector in the country. Unfortunately, development of MD industry in Latvia is very slow, the growth is around 0.7% per year only, that is much less, comparing to the average EU figures. The reason of such slow development could be the lack of information on MD industry among both Latvian entrepreneurs and society.

Keywords: *Medical device market, Turnover, Employment, Europe*

JEL Classification: O14

INSIGHT INTO VALUES IN THE CONTEXT OF BRAND POSITIONING

Evita STRAUSA¹, Enno ENCE²

^{1,2}*Riga Technical University, Riga, Latvia*

Corresponding author e-mail: evita.strausa@edu.rtu.lv

Abstract. Finding out the human values helps to understand and describe society and individuals, to explain attitudes and behaviours, motivational basis for action. Over time, definitions of values become more and more complex, and nowadays human values play an important role not only in the brand development, but also for a company strategy development, as well as internal and external marketing communication. Values-based decisions require to brands not only emotional involvement, but also truthfulness – compliance of actions with the defined values and offer to society.

Historical development of values reflects: the importance of values in the perception of the brand becomes more and more personal, emotional, focused on the brand identity through personality features. With the rapid growth of competition in all areas, the development of communication tools and information-saturated environment, as well as the development of brand management, at the end of the 20th century, brand positioning became more and more important. In the last decade, the emotional aspects of marketing have been put at the forefront of positioning to reach and retain the consumer. And common values most effectively relate to emotions. In order to achieve consumer attention, it is crucial to define which positioning elements are included into brand positioning – and how values are linked with each element of brand positioning.

Scientific aim of the research is to determine the significance of values in brand positioning; object of research is values; subject – brand positioning. In order to achieve the objective of the study theories a summary of scientific literature on the historical study of values are set, and development of values of brand positioning are collected and elements of positioning are defined using two methods: Systematic review and Qualitative content analysis.

Results of the study are compared, defined and values meaning is analysed from the point of view of brand positioning. Analysing the results of the research, the authors concludes that values are crucial not only for purposefulness of brand positioning, but also for customers loyalty and long-term relations. At the end of the paper, further steps are taken to develop the research, focusing on brand positioning strategies, how positioning affects business development efficiency focusing on common values with customers, and how to increase positioning impact on business development.

Keywords: *Brand positioning, Values, Brand elements, Brand, Marketing*

JEL Classification: M31

E-COMMERCE: ACTIVITY OF USE AND MAIN BENEFITS IN LATVIAN BUSINESS

Svetlana ŠTĀLE¹, Laura OGORCEVA²

¹*Riga Technical university, Liepaja, Latvia*

²*University of Latvia, Riga, Latvia*

Corresponding author e-mail: svetlana.stale@rtu.lv

Abstract. The aim of the research is to analyse the importance of e-commerce in business environment in Latvia. The focus of this research is on benefits – what e-commerce can give to companies in Latvia. The research methods include analysis, synthesis, descriptive method and analysis of statistical data – time rows. For the study, different sources of literature were used to define and analyse content, meaning, tools and development of e-commerce. List of literature includes official statistics, books, articles and scientific studies about internet and communication technologies (ICT), e-commerce and e-marketing. To understand current situation, we analysed statistical data to see how the urban population and businesses are using the Internet and different social platforms. Internet technologies and e-commerce can be used to analyse market situation, company performance, as well as to promote products in the market. One of the most important benefits of e-commerce tools is time and cost saving. We can conclude that e-commerce is becoming a very important part of business and its importance and impact continues to grow and to bring more value to businesses. The businesses of Latvia should take an advantage of the opportunities that e-commerce offers and include it more into their practices.

Keywords: *E-commerce, Latvia, Business, Social platforms*

JEL Classification: L81, L86, M31

BUILDING AGILITY RESILIENCE AND PERFORMANCE OF SMALL AND MEDIUM SIZED ENTERPRISES IN CRISIS

Iveta POKROMOVIČA

Rīga Tehnical University, Latvia

Corresponding author e-mail: iveta.pokromovica@rtu.lv

Abstract. In a modern word often use the combination “global crises”, “local crisis”, “financial crisis”, “crisis management”, “crisis resilience”, “agility and resilience enterprises in crisis”. To understand precisely the definition, it is first necessary to define concepts. After the financial crisis of 2008 or global health crisis COVID-19 is to assess building agility resilience and performance of small and medium sized enterprises in crisis. In today’s changing business environment, a variety of deliberately managed processes that can analyse the crisis resilience of small and medium sized enterprises. These processes serve as tools for evaluating various kind of activities. In the result of all these processes, it is possible to get acquainted with and evaluate true financial and economic position of enterprises. It should be noted that these processes serve as tools for evaluating various financial instruments in small and medium sized enterprises, building agility resilience and performance in crisis. The aim of the study is to identify the factors that affect the agility resilience and performance small and medium sized enterprises in crisis. The identification of these factors will allow to identify their positive or negative impact on crisis resilience of enterprises. Within the framework of the study, by using the quantitative research methods, the regulatory framework was analysed, publicly available data on the economic situation with small and medium sized enterprises in crisis, related financial data were collected, analysed and compared. The subject of the research is the economic problems related to the crisis. The literature analysis, comparative analysis, observations methods were used.

Keywords: *Financial crisis, Crisis management, Crisis resilience, Agility and resilience enterprises in crisis*

JEL Classification: H12, N14, N64

THE LINK BETWEEN GREEN CONSCIOUSNESS AND GREEN BRAND DEVELOPMENT

Yana US¹, Tatjana TAMBOVCEVA², Tetyana PIMONENKO³, Olexiy LYULYOV⁴

^{1,3,4}*Sumy State University, Ukraine*

²*Riga Technical University, Latvia*

Corresponding author`s e-mail: y.us@fem.sumdu.edu.ua

Abstract. This paper summarizes the arguments and counterarguments within the scientific discussion on the linking between green consciousness among society and green brand development in the view of its competitiveness. Given that, the environmentally-friendly demand growth allows considering the green brand positioning as a strong competitive advantage in providing green development and strengthening company competitiveness. According to the open statistical data, in 2015, the global environmental footprint increased by more than 30% compared to 2000. Consequently, the rushing negative climate changes result in the necessity to implement the decisive preventing actions on the international level. Thus, in 2015, all state members of the United Nations accepted the Concept of Sustainable development submitted by the United Nations World Commission on Environment and Development. It is considered to be a strategic solution to prevent environmental crisis growth.

It worth emphasizing that scientific research review has indicated that the high level of society green consciousness is one of the crucial factors in gaining the mentioned above goals. Herewith, it allows using the people potential completely to develop effective instruments for environmental crisis resolution. The green consciousness is considered to have a decisive role in succeeding in preventing the negative anthropogenic impact on the environment.

On the other hand, advanced in green issues society is interested in cost-effective goods and services with green reliability and appearance without any environmental damage. In turn, companies are to distinguish how consumers weight ecological and economic benefits in decision-making on purchasing the products. It results in the direct relationship between green awareness growth and green brand development. The higher level of society green consciousness is the more onrush of green brand development. Thus, the formulation of the green brand isn't possible without popularizing green behaviour. Therefore, modernization of education systems should include more principles, knowledge, skills, values related to providing the sustainability in environment, society and economy.

Keywords: *Green consciousness, Green brand, Sustainable development, Competitive advantage*

JEL Classification: O44, I25

Funding: *This research was funded in the frame of the National Research Foundation of Ukraine project "Stochastic modelling of road map for harmonizing national and European standards for energy market regulation in the transition to a circular and carbon-free economy" and the grant from the Ministry of Education and Science of Ukraine (№0120U102002).*

GOOD GOVERNANCE – UTOPIA OR REALITY IN A PANDEMIC

Janis VANAGS¹, Nina LINDE², Ilona LEJNIECE³

¹ Riga Technical University, Riga, Latvia

² Institute of Economics of the Latvian Academy of Sciences, Riga, Latvia

³ Institute of Economics of the Latvian Academy of Sciences,
EKA University of Applied of Sciences, Riga, Latvia

Corresponding author e-mail: ilona.lejniece@eilza.lv

Abstract. The emergence of the concept of good governance is largely due to the shortcomings and weaknesses of democratic governance, its inability to address the global challenges that today increasingly threaten the people of both developed and less developed countries. In the fight against the COVID - 19 pandemic, the authors of the research will focus on the nature of good governance principles and its compliance or non-compliance with practice. The object of the research is governance during a pandemic, the economic development results of which are studied in the context of the principles of good governance declared by the United Nations (UN) and the European Union (EU). Research methods used: analysis and synthesis; observation and comparison; the method of the logical approach-interpretation and extrapolation of the results obtained in the research. Results: the UN defines the content of the concept of good governance, focusing mainly on reducing corruption and the current and future needs of the world's citizens, while the EU is transforming the content of the concept of good governance into efficiency, regulation and transparency for EU citizens in the long term. The main conclusions: the lack of a common theory of the principles of good governance encourages a broad and subjective interpretation of these principles. Citizens/taxpayers do not have the opportunity to measure the efficient use of resources and make sure that the principles of good governance are in place.

Keywords: *Good governance, COVID-19 pandemic, Resource efficiency, Economic development*

JEL Classification: K0, O1, H5

INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) DEVELOPMENT IMPACT ON CONSUMER LENDING MARKET IN LATVIA

Atis VERDENHOFS¹, Tatjana TAMBOVCEVA²

^{1,2}*Riga Technical University, Riga, Latvia*

Corresponding author e-mail: atis@enkurs.org

Abstract. Financial sector globally has been affected by development of ICT during last 30 years. Same applies for Latvia where internet user penetration is above average in Europe. Internet access and rapid development of ICT has caused increasing number of established ICT based companies in financial sector that is known as *Fintech* companies. In Latvia most widely known area for *Fintech* companies is connected with consumer lending that is alternative to traditional bank lending products. Authors of research are performing data analysis of consumer lending market performance in Latvia and performing financial sector expert interviews. Results of the research are showing that there are increasing number of *Fintech* companies in general, that traditional banking institutions are willing to cooperate with such companies and data shows that traditional physical accessibility of financial sector products is decreasing and more focusing on online presence.

Keywords: *Fintech, Consumer lending, Online lending, ICT development, Non-bank lending*

JEL Classification: M48, O17

ASSESSMENT OF THE CAPITAL ADEQUACY AND EFFICIENCY OF INSURERS: THE CASE OF BALTIC NON-LIFE INSURANCE MARKET

Ilze ZARIŅA-CĪRULE¹, Irina VORONOVA², Gaida PETERE³

^{1,2} *Faculty of Engineering Economics and Management, Riga Technical University, Riga, Latvia*

³ *Faculty of Computer Science and Information, Riga Technical University, Riga, Latvia*

Corresponding author e-mail: ilzezarina@inbox.lv

Abstract. The effect of pandemic on the overall insurance industry (including Baltic) is unknown. However, there are clear certainties: the importance of the insurance market for financial stability and importance of further capital and risk management improvements have been increased. The study gives an overview of the Baltic non-life insurance market since 2016 when Solvency II framework has been in force. Overview provides first key performance indicators' changes and signs of Baltic non-life insurance market due to pandemic as well – less loss ratios and strong capitalisation. Afterwards, this study measures technical and capital efficiency of the Baltic non-life insurance market by using matrix forecasting and regression analysis. Results show that authors' assessment may improve the decision-making considering capital efficiency and how to implement in such assessment the main balance sheet position – technical provisions.

Keywords: *Capital management, Non-life insurance, Risk management, Technical efficiency*

JEL Classification: G22, G32

DOES DIVERSITY DRIVE SUSTAINABILITY IN THE BALTICS?

Ilze ZUMENTE¹, Natalja LĀCE²

^{1,2} Riga Technical University, Riga, Latvia

Corresponding author e-mail: natalja.lace@rtu.lv

Abstract. More and more companies worldwide choose to perform environmental, social and governance (ESG) disclosures in order to improve their financial and reputational performance. The disclosure volume and quality across companies, however, still varies greatly. Several recent studies suggest that board diversity in addition to other factors as company size and financial strength can have a material role in explaining the ESG disclosure differences. This article aims at providing the first descriptive evidence on the board composition of the companies listed on the NASDAQ Baltic Stock Exchange prime list as well as to evaluate the relationship between the board diversity and the ESG disclosures of the public Baltic companies.

Firstly, the diversity metrics of the public companies in Lithuania, Latvia and Estonia are derived and compared to a sample of listed companies in other Central and Eastern European countries to provide a relative comparison with respect to the current degree of the board diversity. Next, by performing content analysis of the publicly available reports and statistical analysis of the retrieved data, the authors obtain a database of the ESG disclosure scores of the sample companies. Finally, a correlation analysis is performed to evaluate the extent of the board diversity's influence on the ESG disclosure scores.

The results shall shed a light on the current stance of the board diversity of the listed Baltic companies as well as to contribute to the growing academic literature trying to derive the sustainability drivers in the corporate set-up.

Keywords: *ESG, Sustainability reporting, Diversity, Non-financial disclosure*

JEL Classification: G30, G32, Q56

SUBSECTION

“INNOVATION AND QUALITY TECHNOLOGIES”

UNDERSTANDING OF THE QUALITY OF HIGHER EDUCATION: STUDENTS VS. REGULATIONS

Irina DEGTJARJOVA¹, Inga LAPIŅA²

^{1,2}*Riga Technical University, Riga, Latvia*

Corresponding author e-mail: irina.degtjarjova@rtu.lv

Abstract. Many factors affect the understanding of the quality of higher education. The purpose of the research is to compare the students' view on factors with the factors regulating universities according to external requirements – European and Latvian quality regulations and international standards. The research was conducted in three stages. As a result, 32 factors that affect the students' understanding of the quality of higher education were identified. The most important factors are related to the quality of the study process (SP); less important factors are related to the quality of support and resources (SR) as well as external factors and results (EFR). Factors with the largest number of statistically significant correlations and the highest correlation index are teaching methods, student-centred learning, strict accreditation requirements, competition among universities, funding of higher education. Factors with the largest number of statistically significant correlations, but lower correlation index, are friendly administrative staff, equipment and infrastructure relevant to the needs of the study. Analysis of the regulations shows high similarity between those introducing SP and SR factors; however, it shows the lowest similarity between regulations introducing management aspects of higher education. In regulatory acts, where requirements for management are set, little attention is paid to the quality factors. Research shows a high importance of the quality factors, according to the students. University often has to provide the “quality” according to the requirements of the regulatory acts where conformity is often misconceived as quality. As a result, the gap between students' and staff understanding of quality could widen.

Keywords: *Factors, Quality of higher education, Regulatory acts, Students' point of view*

JEL Classification: I210, O320

EXTRA CURRICULAR ACTIVITIES AS A COMPLEMENTARY ELEMENT OF STUDY PROGRAMMES – PROBLEMS AND CHALLENGES

Agita DONIŅA¹, Inga LAPIŅA², Elīna GAILE-SARKANE³

¹⁻³ Riga Technical University, Riga, Latvia

Corresponding author e-mail: agitadonina@gmail.com

Abstract. Today, providing a diverse education is on the agenda of many of the world's leading educational institutions. Modern and high-quality education, including higher education, is no longer based solely on academic studies. In addition to traditional academic studies, opportunities are sought to enable students to develop their skills in a diverse and inclusive way. This paper explores the role of extra-curricular activities as a complementary element of studies and reveals its importance in the development of students' employability. This paper aims to: 1) discover the nature of extra curriculum activities and 2) analyse students' perceptions on the importance of particular activities. The research is based on students' survey results. The research results highlight extracurricular activities as an important complementary element of academic studies. Moreover, the results of the survey revealed that students do not necessarily assess the importance of non-study activities in their employability development.

Keywords: *Employability, Extra curriculum activities, Higher education*

JEL Classification: I23

THE ROLE OF LEAN MANAGEMENT: REDUCING WASTES IN PROFESSIONAL COMPETENCE ASSESSMENT PROCESS

Maija KAVOSA¹, Inga LAPIŅA²

^{1,2} Riga Technical University, Riga, Latvia

Corresponding author e-mail: maija.kavosa@rtu.lv

Abstract. The aim of the study is a practical demonstration of visualization and rationalization of the persons` competence assessment process in order to reduce losses and wastes in the certification process.

Research is focused on the professional competence assessment process performed by the Latvian Association of Power Engineers and Energy Constructors Certification Centre.

Identification of the performance of the competence assessment process of construction specialists was made using Value Stream Mapping in order to visualize the activities creating value, as well as difficulties and challenges in each of the process stages.

The implementation of the Lean approach provides effective ways to improve the performance of processes in different industries. In order to assess the opportunities for improving the procedures for certification of persons in the future, especially in the field that is related to potential risks to human health and life, it is necessary to identify the role of certification in ensuring compliance of persons professional competence with the requirements laid down in the industry.

On the basis of the conclusions made from the review of Lean management and Value Stream mapping results, it could be observed that the professional competence assessment process of persons contains activities which are non-value-added and do not ensure compliance of the professional competence assessment procedure to the requirements laid down in the professional sphere. Accordingly, it is necessary to continue research with an in-depth analysis of the main impact factors related to the competence assessment activities in order to obtain information about the main barriers to professional competence assessment in the certification process of persons.

Keywords: *Competence assessment, Professional competence, Lean methodology, Certification of persons*

JEL Classification: L84

USING KNOWLEDGE MANAGEMENT FOR UNIVERSITY STRATEGIC DECISION-MAKING PROCESS

Aija MEDNE¹, Inga LAPIŅA² Artūrs ZEPS³

¹⁻³ Riga Technical University, Riga, Latvia

Corresponding author e-mail: aija.medne@rtu.lv

Abstract. A crucial part of the university strategic decision-making process and performance evaluation is a stable Knowledge Management system. That integrates an evidence-based approach with defined performance indicators. The main problem analysed in the research is the increased demand for universities to submit their performance results externally for compulsory reasons, such as government monitoring systems and voluntary reasons, such as rankings for benchmarking or reputation purposes. As the demand of the data and needed information varies and more universities are relying on these evaluations, there is an increased need for stable and sound Knowledge Management system for universities. The purpose of the research is to understand what Knowledge Management elements are linked and give positive impact to the university strategy development and performance evaluation. The research paper consists of literature review on defining Knowledge Management elements in higher education, by analysing them as part of university main processes and as part of university strategic decision-making. From the literature review there have been identified four most mentioned positive outcomes for universities which have implemented and continues to develop their Knowledge Management system. These outcomes are thriving innovation, operational and process effectiveness, strategic advantage, organisational sustainability. Further research is focused on using Knowledge Management for analysing the university performance indicators.

Keywords: *University, Performance measurement, Performance indicators, Strategic knowledge management*

JEL Classification: I20, I23, O31

IT GOVERNANCE AS A PRECONDITION FOR INCREASING COMPANIES` COMPETITIVE ADVANTAGE

Sanita MEIJERE¹, Tatjana TAMBOVCEVA²

^{1,2}*Riga Technical University, Riga, Latvia*

Corresponding author e-mail: sanita.meijere@rbs.lv

Abstract. The focus of the research is aimed at determining the most efficient models for information technologies` (IT) governance, including decision making, IT projects` portfolio management in the organizations. Research is based on the extensive literature review of the topic, qualitative (primary) – interviews with the representatives of the organizations, focus groups, and quantitative (secondary) surveys. The findings reveal different models used for IT governance and decision making and their impact on organizations` efficiency and effectiveness – how with the help of IT organizations increase their competitive advantage. It can be concluded that the most efficient models of IT governance are the ones where business leaders are fully engaged and have the final word for the IT decision making or IT top managers do it together with business top managers. It is recommended for the organizations to set up the most suitable IT governance models, so it supports reaching of their strategic goals.

Keywords: *IT (information technologies), Management, Decision making, Governance, Prioritization, Portfolio, Project*

JEL Classification: O32

COMPETENCES FOR STRENGTHENING ENTREPRENEURIAL CAPABILITIES IN LATVIA

Tatjana NIKITINA¹, Inga LAPIŅA², Modris OZOLIŅŠ³, Madara M. IRBE⁴

¹⁻⁴Riga Technical University, Riga, Latvia

Corresponding author e-mail: tatjana.nikitina@edu.rtu.lv

Abstract. In the scope of the ERASMUS+ funded study the authors analysed the correlation between the market demand for competences to launch new businesses and competences that are trained in higher education institutions (HEIs) and business supporting institutions (BSIs). The authors questioned whether the entrepreneurial competences demanded by the domestic market are aligned with the business educational and business supporting policies in the country. To gather information about the topic the authors conducted focus groups and semi-structured interviews with start-up entrepreneurs, HEIs, and BSIs. Then importance-performance analysis was applied for the data analysis. As the main research findings, it was identified that ethical and sustainable thinking competence and financial and economic literacy were evaluated as the less important competence while motivation and perseverance competence was considered as the most important by the sample of entrepreneurs. Additionally, the major disagreement was detected between Latvian entrepreneurs' expectations and Latvian entrepreneurship education activities conducted by HEIs and BSIs. This research implication fills the gap in knowledge about the entrepreneurial competences developed by HEIs and BSIs and were demanded (considered as important) by the market. Output of the study might contribute to the entrepreneurship training methodology for transdisciplinary students to enhance entrepreneurial competence dissemination and development across education programs and beyond.

Keywords: *Business supporting institutions (BSIs); Competence; Entrepreneurial competences; Higher education institutions (HEIs); Managerial competence, Open innovation*

JEL Classification: I23, I25, J24, L26, M13, O36

“IMPRESS” - IMPROVING MANAGEMENT COMPETENCES ON EXCELLENCE BASED STRESS AVOIDANCE AND WORKING TOWARDS SUSTAINABLE ORGANIZATIONAL DEVELOPMENT IN EUROPE

Vanda NOVOKSONOVA¹, Begoña BENITO², Rita BERGER³, Erika SPIESS⁴, Jānis MAZAIŠ⁵, Andreas DALLUEGE⁶, Hans-DIETER SCHINNER⁷, Edurne VILLALBA⁸, Donal NOLAN⁹, Evija BĒRZIŅA-ANDRAČŅIKOVA¹⁰

¹ Biedriba EUROFORTIS, Riga, Latvia

² GAIA, Bilbao, Spain

³ University of Barcelona, Barcelona, Spain

⁴ Ludwig Maximilians University, Munich, Germany

⁵ Riga Technical University, Riga, Latvia

⁶ IBK Management Solutions, Wiesbaden, Germany

⁷ IIC Industrial Consult GmbH, Frankfurt, Germany

⁸ Mutua Mutua Colaboradora Con La Seguridad Social, Bilbao, Spain

⁹ Waterford Chamber of Commerce, Waterford, Ireland

¹⁰ Riga East University Hospital, Riga, Latvia

Corresponding author e-mail: vanda@eurofortis.lv

Abstract. The intention of the project is to develop and validate an innovative toolset allowing identifying and dealing with stress-related issues in the organizations and to support them with new coaching and training materials in solving the identified problems. To achieve the project aims, there was conducted a needs analysis, which has been carried out by consulting a great number of surveys, academic literature and working documents. The preparation phase consolidated existing studies on this topic, adding to them through own surveys and design and implementation of a complimentary survey to be used during all project phases for closing identified knowledge gaps. Survey results show that there is a lack of expertise and specialist support. This shows the need for better identification and avoidance of stress and the need of solutions to manage these problems. To solve the situation the project developed teaching modules and self-evaluation tools which allows managers, employees and worker representatives to identify risk factors, preventive practices, individual and organisational solutions for stressors at organisational, team and individual level. IMPRESS is innovative in joining the different strands of stress measurement, integrating both individual and personal assessment parameters, and developing prevention approaches and training that address the combined factors for a better removing of the stressors, thus minimising the negative impact of stress on individual, group organisational level. The IMPRESS project is carried out with the support of the European Community.

Keywords: *Innovative management toolset, IMPRESS (Improving management competences on Excellence based Stress avoidance and working towards Sustainable organizational development in Europe), Stress resilience, Stress factors, Stress management, Quality management*

JEL Classification: M10

Co-funded by the
Erasmus+ Programme
of the European Union



THE IMPORTANCE OF DEVELOPING COMMON TERMINOLOGY IN STANDARDIZATION

Arta PĪLĒNA¹, Iveta MEŽINSKA², Inga LAPIŅA³

¹⁻³ Riga Technical University, Riga, Latvia

Corresponding author e-mail: arta.pilena@edu.rtu.lv

Abstract. International standardization covers a wide range of industrial, social and environmental areas as standards provide universally applicable and replicable solutions, requirements, methods and approaches to ensure the compliance of products, services, processes and systems to a defined level of quality and safety worldwide. Given that a wide range of industry experts are involved in the development of standards, maintaining up-to-date, common terminology within the industry can be considered essential to ensure common understanding among the parties involved in standardization and related activities. The paper focuses on identifying the aspects that characterize the importance of developing common terminology in standardization. The methodology is based on a literature review of research articles that address the issues of terminology in various fields of standardization. Following, qualitative content analysis through the application of open coding is performed to identify the aspects that describe the importance of developing common terminology in standardization. Main conclusions and results: A variety of aspects that characterize the importance of developing common terminology in standardization are identified, including ensuring common understanding, facilitating the exchange of knowledge, ordering knowledge and ensuring correct interpretation of terms, as well as eliminating variability, confusion and differential use of terms. The study reveals that a strong focus should be put on defining the terms to be used within the fields covered by standardization as common terminology based on a common understanding ensures that both the developers and users of standards are able to develop, communicate and understand the terms of the industry correctly.

Keywords: *Common terminology, International standardization, Standardization, Standards development, Terminology, Terms*

JEL Classification: L15, Z13

IMPROVEMENT OF THE INTEGRATED MANAGEMENT SYSTEM IN A CONSTRUCTION COMPANY

Rasma RUDAKOVA¹, Maija KAVOSA²

^{1,2} Riga Technical University, Riga, Latvia

Corresponding author e-mail: maija.kavosa@rtu.lv

Abstract. The aim of the research is to evaluate the integrated management system in the construction company in order to develop a solution for the improvement of the integrated management system. Research is focused on the transition to a newer standard that is expected to significantly reduce the bureaucratic burden on documents and allow for a better integration of this standard with ISO 9001: 2015 Quality Management Systems. Requirements. and ISO 14001: 2015 Environmental Management Systems. Requirements for the use of guidelines ", thus improving the overall performance of the system.

The study uses widely used risk management methods - company internal audit to identify possible non-compliances, Ishikawa cause-effect analysis for audit non-compliance, expert assessment method - employee survey, Delphi method analysing the reasons for insufficient supervision, and FMEA analysis method the main faults and the factors affecting them.

It is expected that the improvement of the Integrated Management System in the company will help increase productivity and efficiency of the company's resources, and, of course, will also increase the level of occupational safety in the company, resulting in a reduction in occupational diseases and accidents.

When using risk management techniques, companies can be aware not only of the adequacy of the integrated management system, but also of the safety-related risks and factors that may adversely affect human health and life, which may affect the company's financial performance and image in society.

By conducting the internal audience of integration management systems, it is possible to identify compliance, as well as applying risk management methods, study the reason for their occurrence and identify potential causes, which makes it possible to make better proposals for improving the system and to support accidents and occupational diseases.

Keywords: *Quality Management Systems, Integrated Management System, construction industry, occupational health*

JEL Classification: L84

SUBSECTION

“INTERNAL SECURITY AND CIVIL PROTECTION”

CHANGES IN THE STRUCTURE OF WORK ENVIRONMENT RISKS IN LATVIA AND THEIR IMPACT ON EMPLOYEES

Guna BAZONE¹, Jānis IEVIŅŠ²

^{1,2}*Riga Technical University, Riga, Latvia*

Corresponding author e-mail: guna.bazone@rtu.lv

Abstract. The gradual shift of work from relatively dangerous production which dominated in the 20th century, in this century has been dominated by digitalization and robotization which undoubtedly has improved the working environment and the safety of the working environment as a whole, as well as reduced the number of occupational diseases and accidents. However, recently there are new trends that affect the occupational health of employees. The aim of this article is to clarify what changes in the structure of the risks to the working environment have happened in recent years and what is their impact on employees.

Occupational hazards are usually measured by the number of accidents or occupational diseases within one year. Statistics on occupational diseases in recent years show that most newly confirmed occupational diseases are nerve system diseases, such as burn-out syndrome, depression, anxiety, sleep disorders, etc. This could indicate that physical load is no longer predominant as the structure of work is changed and more attention should now be paid to psycho-emotional risk factors.

Keywords: *Work environment risks, Psycho-emotional risks, Occupational health*

JEL Classification: J28, K32

CRIMINALIZATION OF ILLICIT INTERNATIONAL CIRCULATION OF GOODS: NECESSITY AND IMPLEMENTATION

Toms ČEVERS

University of Latvia, Riga, Latvia

Corresponding author e-mail: toms.cevers@gmail.com

Abstract. Legislator of the Republic of Latvia has long considered a persona shall be held criminally liable for smuggling, which has been recognized as the most typical violation of the illegal international circulation of goods. Nevertheless, the fact of the illicit movement of goods across the customs border per se has never been assessed sufficient to impose the most severe form of legal liability. The article analyses the changes of the threshold of criminal liability and the severity of punishment, which determines the classification of a criminal offense, taking historical perspective in relation to the principles of criminalization. At the same time, the article reflects the problems of determining the harmfulness of the illegal international circulation of goods on conditions of free international circulation of them. Also, the attention is paid to the impact of the international legal framework on the criminalization of certain behaviour. It is concluded that in case of the smuggling of economic character, the primary factor to determine its harmfulness is the amount of taxes evaded as harmful effects. Legislator shall strengthen its attitude towards violations of the lawful international circulation of special objects imposing proportionate punishment.

Keywords: *Principles of criminalisation, Harmfulness of the offence, Harmful effects, Object of the offence, International circulation of goods, Smuggling*

JEL Classification: K14

FLEXIBLE WORK ARRANGEMENTS AND WORK ENGAGEMENT OF OLDER EMPLOYEES

Renata KORSAKIENĖ

The General Jonas Žemaitis Military Academy of Lithuania, Vilnius, Lithuania

Corresponding author e-mail: renata.korsakiene@lka.lt

Abstract. A shortage of qualified workers, impacted by aging population and emigration, requires to consider older employees as key source of various organizations. Subsequently, new measures require to be developed aiming to increase their work engagement. Older employees are seen as less engaged in work, less familiar with lifelong learning and also coping with deteriorating health issues. Therefore, flexible work arrangements appear to be the measure, which help employers to cope with aforementioned issue. This research focuses on older employees working in public organizations of Lithuania. Being grounded on the prevailing theories in this regard, the research aims to investigate interrelationships between flexible work arrangements and work engagement around this problem. The data was collected through survey of older employees. The results revealed that flexible work arrangements have statistically relevant impact on the work engagement of older employees. The study let us develop insights for managers and recommendations for future investigations in the same field.

Keywords: *Work engagement, Older employee, Flexible work arrangements, Flexible human resource management.*

JEL Classification: M10, M12

IMPROVEMENT OF THE SAFETY METHODOLOGY FOR THE USE OF HAZARDOUS SUBSTANCES

Sergejs LATŅIKOVŠ¹, Jeļena MALAHOVA², Vladimirs JEMELJANOVŠ³

¹⁻³ Riga Technical University, Riga, Latvia

Corresponding author e-mail: sergejs.latnikovs@gmail.com

Abstract. The study is related to the improvement of the safety methodology for the application of dangerous chemical substances and the development of binding action and response algorithms for officials of the State Fire and Rescue Service, who first arrive at the sites of the event with the presence of dangerous chemical, biological, radioactive and explosive substances. The safety methodology is intended to quickly provide the primary information needed to the rescue team in the context of action at the site, which will allow for the possible negative effects and risks to the environment to be minimized as soon as possible and more effectively. Events with the presence of dangerous substances can potentially lead to major human casualties, significant material losses and also irreversible risks to the environment, since the elimination of the consequences of pollution can take several hours to a few months and even years.

The examination of the regulatory enactments determining the responsibility of the services and the regulatory documents governing action, revealed the limits of the cooperation and responsibility of the services, as well as the division of functions in response to events with the HS, as well as the assessment of the internal regulatory enactments of the services involved in cooperation, allowing a better assessment of their resources and capacity in the event of an emergency. Also, the manuals, instructions and action algorithms of the European services were also evaluated, which were taken into account, tested and used in cooperation between different services in the event of an emergency with dangerous substances.

Based on the results of the study, an instruction was developed which included primary information necessary for the head of rescue works, in the context of action at the site, which will allow for the earliest and more efficient reduction of the potential adverse effects and risks to the environment caused by the event. An instruction will be included in the training course programme for the preparedness of fire rescuers and future rescue managers, which will significantly facilitate not only the implementation of the work process but also improve the quality of the training process of the College of Fire Safety and Civil Protection according to modern competencies.

Keywords: *Human rescue, Hazardous chemical, Hazard*

TECHNICAL BASE OF STATE FIRE AND RESCUE SERVICE REPAIRS: JUSTIFICATION OF NECESSITY AND OPTIMUM SOLUTIONS

Renats MAŠAROVŠ¹, Māris ZIEMELIS², Guna BAZONE³

¹⁻³ Riga Technical University, Riga, Latvia

Corresponding author e-mail: mail_b@mail.com

Abstract. The purpose of the work is to provide a successful solution for the repair works of the fire-fighting vehicles and equipment in the State Fire and Rescue Service (Service) in Latvia, improving the quality of works and repairs, thus increasing the safety level of the repaired vehicles and readiness of the structural units of the service to perform operational measures. The study uses analytical, comparison and grouping methods for analysing statistical data. The existing repair system of the fire-fighting vehicles and equipment was analysed in the paper, establishing its advantages and deficiencies, calculating the manufacturing parameters of the repair procedure, setting requirements for the technical base of repair works, analysing the obtained results and determining the optimum solutions for further activities. The study concluded that the existing technical maintenance and repair system only complies with the actual requirements partially as regards the technical readiness of the fire-fighting vehicles and equipment. The service operates a large amount of outdated fire-fighting equipment in a technical condition that does not comply with modern requirements and with expired service life determined by manufacturers, which significantly reduces the efficiency of the existing repair system, increases downtime of the equipment and complicates the control of its operation. The paper provides specific recommendations for improving the repair technical base of the service, which would ensure the continuous technical readiness of fire-fighting vehicles and equipment, as short as possible intervals of maintenance and repair, as a result of which the operational readiness of the service structural units would be increased.

Keywords: *Fire safety, Fire-fighting, Machinery, Fire-fighting machinery and equipment*

JEL Classification: R48, L62

HEALTH CARE SYSTEM PERFORMANCE EVALUATION FOR VALUE-BASED HEALTH CARE: LATVIA APPROACH

Māra PĒTERSONE¹, Kārlis KETNERS², Ingars ERINŠ¹

¹ Riga Technical University, Riga, Latvia

² BA School for Business and Finance, Riga, Latvia

Corresponding author e-mail: mara.petersone@rtu.lv

Abstract. In the world, particularly in the European Union, efforts are increasingly being made to improve the healthcare systems by increasing additional value from the resources already available for the healthcare funding and by increasing the efficiency of the healthcare systems. To measure their healthcare systems, countries shall develop the Health Care System Performance Assessment (HSPA). In Latvia, HSPA has created as a set of indicators that describe four health care dimensions – resources, process, short-term results, long-term results. The HSPA approach provides possibilities for benchmarking of indicators at international, national, regional, local and health service providers level. However, only the indicator benchmarks do not create a mechanism to improve the functioning of the health system, particularly at the level of Clinical University hospitals.

At the same time, the European Union Member States are introducing Value-based health care (VBHC) to improve individual health conditions. VBHC Outcome Measures Hierarchy provides three assessment levels for the system: Tier 1 is the health status that is achieved or, for patients with some degenerative conditions, retained; Tier 2 outcomes are related to the recovery process. Tier 3 is the sustainability of health. For evaluation of the patient's view of them provided health services - Tier 4 is proposed. Also, HSPA is proposed to structure VBHC Outcome Measures Hierarchy and to add the necessary indicators.

Keywords: *Assessment of the functioning of the healthcare system, Health policy, Value-based health care, Outcome measures hierarchy*

JEL Classification: H51, H83

This work has been supported by the European Regional Development Fund within the Activity 1.1.1.2 "Post-doctoral Research Aid" of the Specific Aid Objective 1.1.1 "To increase the research and innovative capacity of scientific institutions of Latvia and the ability to attract external financing, investing in human resources and infrastructure" of the Operational Programme "Growth and Employment" (No.1.1.1.2/VIAA/2/18/330).

CUSTOMS CLEARANCE OPTIMIZATION IN PORTS

Normunds RUDZITIS¹, Arita BERZINA², Aldis CEVERS³, Aivars GULBIS⁴

¹⁻⁴ *Riga Technical University, Riga, Latvia*

Corresponding author e-mail: normunds.rudzitis@rtu.lv

Abstract. The increasing globalisation of international trade processes poses significant challenges for countries to ensure the flow of goods within supply chains through their transport infrastructure, thus providing countries with competitive advantages and consequently faster economic growth in the region.

In order to achieve an increase in the flow of goods, it is necessary to ensure systematically investment in transport infrastructure and in the development of logistics technologies, since any operator involved in international trade will seek the cheapest and most cost-effective ways of transporting goods. Maritime transport is particularly suitable for generating supply flows of goods, as it is cheap and provides a high level of efficiency and safety in the movement of goods.

There are many stakeholders involved in the implementation of maritime transport, such as the customs authority, port authority, food, veterinary and sanitary services, licensing authorities, banks, shipping companies and their agents, terminal operators, forwarders, etc. Customs are one of the parties involved, but it plays one of the significant role in promoting trade processes and strengthening the competitiveness of ports. This is done by continuously reviewing and simplifying customs clearance procedures and processes, avoiding ineffective cargo controls and reducing cargo clearance time, thereby reducing business costs and accelerating the speed of international trade.

The time needed for customs clearance of imported and exported goods is increasingly becoming a major factor in the speed of goods and has a major impact on the efficiency of supply chains in ports. Faster clearance procedures allow companies to plan cross-border shipments to comply with strict production schedules and deliveries just in time.

The study presented in the publication provides solutions for optimising customs clearance processes and reducing the clearance time for goods, thereby increasing the efficiency of supply chains and increasing national competitiveness and economic growth.

Keywords: *Ports, Supply chain, Customs authority, Customs clearance process, Efficiency*

JEL Classification: H11

USE OF THE FAULT TREE WHEN DRAWING UP THE RIGA CITY CIVIL PROTECTION PLAN FOR RISK ASSESSMENT

Mihails URBANS¹, Jeļena MALAHOVA², Vladimirs JEMELJANOVŠ³

¹⁻³ Riga Technical University, Riga, Latvia

Corresponding author's e-mail: jelena.rtu@inbox.lv

Abstract. A new civil protection law was adopted in Latvia in 2016, which provides for a framework based on disaster risk assessment. In August 2020, a civil protection plan for the State of Latvia has been developed, which determines the competence of disaster management entities and action in the implementation of disaster management measures - prevention, preparedness, response and mitigation measures. Local governments shall, in accordance with the Civil Protection and Disaster Management Law, develop a civil protection plan for the co-operation area, which combines several local government territories together, thereby reducing the number of civil protection commissions in Latvia, as well as increasing the liability area of one commission.

A civil protection plan shall be developed in each area of local government cooperation where information on risk assessment, including risk scenarios, risk matrices and risk cards, is included in one of the sections. There is currently no formally adopted methodology in Latvia to assess the risk of disaster management, but the material issued by State Fire and Rescue Service, which refers to the risk assessment, is based on qualitative risk assessment and the use of a risk matrix that is practically useless for disaster risk assessment.

The study was carried out in order to look at the possibilities of using the fault tree within the framework of the Riga City civil protection plan, creating the event risk scenarios for disaster risk assessment and assessing possible causes for the following disasters: collapse of buildings and structures, accident in the heating, water supply, waste water or sewage system. The civil protection commissions of the local government cooperation area are responsible for the management of these disasters in Latvia, so this risk assessment approach may be appropriate in the development of civil protection plans for the co-operation area, so it is very important that the risk assessment be professional and comprehensive. As part of the article, possible risk scenarios have been analysed and the risk scenario drawing up algorithm is proposed to draw up a civil protection plan for the Riga cooperation area.

Keywords: *Civil protection, Accidents, Disasters, Risk assessment*

SUBSECTION

“INTERNATIONAL BUSINESS AND LOGISTICS“

EU TRADE OF COVID-19 RELATED PRODUCTS

Astra AUZINA-EMSINA

Riga Technical University, Riga, Latvia

Corresponding author's e-mail: astra.auzina-emsina@rtu.lv

Abstract. Global trade was shocked by COVID-19 restrictive measures, demanding additional medical supplies and safety procedures. The aim of the research is reveal general long-term trade trends in pre-COVID-19 era and detect short-term shock caused directly by COVID-19 measures. In the first two quarters of 2020, the value of imported COVID-19 products increased by 34% (reached 83.3 billion EUR) compared to the first two quarters of 2019. The research apply the concept of COVID-19 related products used by Eurostat that is based on indicative list elaborated by the Commission Decision No C(2020) 2146 and WCO/WHO list for medical supplies; it contains seven major groups. Medical consumables accounted for 32% of the EU COVID-19 products' imports value in the first two quarters in 2020; Protective garments (29%); Diagnostic testing equipment (19%); Medical devices (13%); Oxygen therapy equipment (3%) and Medical vehicles and furniture (3%) and Sterilization products (only 1% as these products were mainly produced in the EU countries). The analyses of pre-COVID-19 era (2015-2018) revealed that these medical supplies had stable annual growth rates. Imports grew by 5.3% in 2016, 10.0% (in 2017), and 11.6% (in 2019), a minor decline of 0.3% in 2018. Major import partners are China, USA, Switzerland, and the United Kingdom (UK). The EU maintains its global exporter's positions of manufactured products (especially high-tech, high value added products), the COVID-19 products exports were accounted for 109.8 billion EUR in the first two quarters in 2020; in result the EU trade balance of COVID-19 products is positive with USA, the UK, Russia, and Japan.

Keywords: *International trade, Import of medical supplies, Export, COVID-19 products, COVID-19 crisis*

JEL Classification: F15, F53, I18

ANALYSIS AND EVALUATION OF POSSIBLE KEY PERFORMANCE INDICATORS (KPI) FOR LOGISTICS CENTRE

Nadina MOROZA¹, Inguna JURGELANE-KALDAVA²

^{1,2} Riga Technical University, Riga, Latvia

Corresponding author's e-mail: nadina.moroza@gmail.com

Abstract. Road freight transport is an integral part of modern logistics, without which it is impossible to organize transportation process, because land freight transport allows to deliver the product to its final consumer, reaching a full-fledged network of logistics stages, which provides every consumer with the necessary goods on a daily basis. Key performance indicators (KPIs) are frequently used in general business to give possibility to evaluate the success of everything from a specific department to an entire enterprise.

Authors classified main KPI factors for logistics centre to give an overview of logistics system. The methodological approach was used in this study to identify and evaluate specific KPI for logistics complex. This system of classification gives possibility to evaluate each logistics centre and expand specific KPI sets. These KPIs may be limited by different transport mode developments. In further research it is possible to define factors which gives common influence on these KPIs.

Keywords: *Logistics centre key performance indicators (KPI), Transportation*

JEL Classification: O18

PEST ANALYSIS OF TRANSPORT SYSTEM OF LATVIA

Velga OZOLIŅA

Riga Technical University, Riga, Latvia

Corresponding author e-mail: velga.ozolina@rtu.lv

Abstract. The paper aims to present factors, which are to be taken into consideration in the planning process of transport system both from the government and private sector point of view. In political environment Latvia has to follow the decisions of Russia, Belorussia and China, use EU funds wisely and fight with corruption. Economic environment provides opportunities from increased economic activities, welfare of people and the use of foreign labour among others, however notable wage convergence with the EU level and scarce qualified labour pose threats. In social environment e-commerce and tourism development facilitate the development of transport system, but distant work, shorter supply chains and learning trends hinder it. Technological environment shows a lot of investments in technologies, which facilitate decrease of prices of vehicles, safer environment on roads and more convenient traffic, but the need for different emissions control and cybersecurity threats provides risks. Only progress towards the solutions to adjust to the positive and negative factors can provide opportunities to develop.

Keywords: *Factors, Latvia, PEST (Political, Economic, Social, Technological) analysis, Transport System*

JEL Classification: L92, O11, O18

TAXATION STRATEGY FOR ECONOMIC RECOVERY FROM COVID-19 CRISIS

Baiba ŠMITE-ROKE¹, Māris JURUŠS², Liene ALĶE³, Megija DRUNKA⁴

¹⁻⁴*Riga Technical University, Riga, Latvia*

Corresponding author e-mail: baiba.smite-roke@edu.rtu.lv

Abstract. The world economy in 2020 is in an unprecedented situation from the pandemic caused BY COVID-19 which has negative consequences for the economy. At this stage, the country's strategy and governments response to the crisis are the most important aspect, not just the ability of individual companies to react. It is essential to develop a strategy, including on tax policy matters, to encourage the exit of the economy from the crisis while at the same time laying the foundations for sustainable economic growth.

This research aims to identify the potential effects of alternatives to growth through changes in tax structures and by promoting cash flow to economic movements, accelerating economic recovery and sustainable growth. The analysis uses the latest evidence of the impact of the tax structure on economic growth, assessing which changes to the growth-enhancing tax structure can contribute to a faster recovery by protecting those with low incomes.

The conclusion of the study is that the country's recovery following the COVID-19 crisis depends on the government's response, the speed of setting up strategies, and on all actors in the economic circle.

Solutions could be considered in two directions. In short term, immediate measures are needed to ensure that cash is channelled into the economy, consumption and labour taxes are reduced, as well as urgent state aid to entrepreneurs in the form of various bonuses. In the long term it should be considered how to reduce existing inequalities and how to rise tax compliance.

Keywords: *Tax, Tax strategy, Economic recovery*

JEL Classification: H21