



RIGA TECHNICAL UNIVERSITY  
Faculty of Engineering Economics and Management

**“SCIENTIFIC CONFERENCE ON ECONOMICS  
AND ENTREPRENEURSHIP SCEE’2023”**


Organized within the 64th International Scientific  
Conference of Riga Technical University  
12 – 14 October 2023  
Riga, Latvia

**BOOK OF ABSTRACTS**



**RTU Press**

**Riga – 2023**



Organized within the 64th International Scientific Conference of Riga Technical University “Scientific Conference on Economics and Entrepreneurship SCEE’2023”. Book of Abstracts. Riga: RTU Press, 2023

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### **ISSN: 2256-0866**

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Published by RTU Press, Riga Technical University, 6A Kipsalas Street, Riga LV-1048, Latvia

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**SECTION**

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

# CONTEMPORARY STATISTICAL TRENDS OF EXPORTS FROM GEORGIA TO LATVIA

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**Abstract.** Despite the improvement of the indicators of Georgia's export relations with the European Union, the balance of foreign trade with many countries, including Latvia, is negative, which compared to the previous year, it has increased by 27%. The aim of the paper was to analyze the main trends of exports from Georgia to Latvia. Statistical research methods were used in the research process. In general, export relations with Latvia are characterized by an increasing trend. During the study period, during the last ten years, exports grew by an average of 8.8% annually and were characterized by a rather diverse commodity structure. The range of growth rates varied between 77.6%-135% and its magnitude varied at different stages of the study period. In 2022, Georgia's exports to Latvia increased by 31.2% compared to the previous year and by 35% compared to 2019. During the research period, there were no significant changes in the product structure, and the main export products are: Wine of fresh grapes, Petroleum and petroleum oils, Undenatured ethyl alcohol, spirits, liqueurs and other spirituous beverages, Waters, natural or artificial mineral and aerated waters, etc. The volume of local exports to Latvia is increasing. In 2014-2022, it grew by an average of 3.7% annually, although the share of local exports in total exports to Latvia fell from 92% in 2014 to 67.7% by 2022. Instead, the volume of re-exports increases. In the same period, the re-export volume increased by 28.3% annually. The commodity structure also changed slightly.

**Keywords:** *Export, Analysis, Trend, Commodity structure*

**JEL Classification:** CO

# IDENTIFYING AND ASSESSING DIGITIZATION RISKS AND THEIR IMPACT ON THE COMPANY'S VIABILITY

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**Abstract.** Digitalization, as a process of transformation of business activities, facilitates increasing operational efficiency, developing innovations and rapid covering of the market. The process of transforming information and daily operations into digital formats benefits competitiveness, productivity and innovations of businesses, on one hand. On the other hand, it poses various risks, such as cyberattacks, data breaches, privacy violations, legal and ethical issues, technological incompatibility and obsolescence. These risks can threaten the sustainability and viability of a business in the long term. This study focuses on the process of identifying digitalization risks. To accomplish a study objective, case studies will be applied. This study aims to provide an overview of the main types of digitalization risks in the business environment.

**Keywords:** *Digitalization risks, Risk assessment, Business viability, Cybersecurity, Digital regulation*

**JEL Classification:** D81, G32, L86, M15, O32



# EVALUATION OF CONSUMER BEHAVIOUR OF MILLENNIAL AND GEN Z GENERATIONS IN LATVIAN RETAIL INDUSTRY

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**Abstract.** The decrease of the older generations and dawn of the Millennials and Gen Z generations have shifted the customer base of every industry, substituting the consumer behavior with more modern ideologies. Therefore, a necessity has arisen to understand the cognitive process of the Millennials and Gen Zs and their consumer behavior in the market. This study was conducted to evaluate the consumer behavior of Millennials and Gen Zs in Latvia in the context of the retail industry of the country. The research was conducted as a quantitative and qualitative study in the form of an investigation of the consumer behavior in retail shopping using an online survey. 456 valid responses were captured and analyzed. Five distinct segments of Millennials and Gen Zs; namely, Solo buyers, Deal Prone, Wellness Lifestyle-ers, Influential Wanderers and Premium Pioneers, along a spectrum of three behavioral attributes; Value conscious, Health & Fashion conscious, and Image & Quality conscious, were identified through the research which provides valuable insights to the retail industry of Latvia regarding their prospective market. Authors believe that studying consumer behavior with respect to generations should be a continuous process as the industries in the world have become dynamic and complex.

**Keywords:** *Consumer behavior, Gen Z (Generation Z), Millennials, Retail industry, Market segmentation*

**JEL Classification:** D40, L10

# ADAPTIVE HYBRID MODELS OF ECOSYSTEM FOR IMPROVEMENT OF ACCELERATION OF INNOVATION

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**Abstract.** In the contemporary and dynamic realm of business, the imperative nature of fostering innovation for organizational success is unequivocal. The flourishing of the innovation process is intricately tied to environments that champion collaboration, creativity, and experimentation. This thesis embarks on a meticulous examination of the pivotal role played by innovation ecosystems in catalyzing synergy within these environments. It seeks to comprehensively explore various hybrid models within innovation ecosystems, delving into an understanding and analysis of their applicability across diverse sectors. The research is firmly anchored in fundamental economic and management theories, with a particular focus on the potential expansion of Resource-Based View (RBV) principles from single organizations to open innovation ecosystems. This exploration is vital for deciphering the intricate dynamics at play within these ecosystems. Methodologically, the research employs a judicious blend of qualitative and quantitative methods, complemented by advanced data processing techniques. This methodological framework ensures a robust and comprehensive analysis grounded in rigorous academic principles. The investigation is poised to unravel how innovation ecosystems can flourish through the seamless integration of participants from diverse sectors such as startups, academia, policymakers, NGOs, and emerging industries like space technologies and the metaverse. This inclusive approach aims to uncover synergies that contribute to a holistic and sustainable innovation landscape.

**Keywords:** *Ecosystem; Innovation; Open innovation; Resource-Based View (RBV) - A strategic management theory that suggests a firm's resources and capabilities are key sources of sustained competitive advantage; Synergy*

**JEL Classification:** O30, O31, O36, O38

# A NEW ASSESSMENT METHOD FOR CRISIS ANALYSIS IN SME'S

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**Abstract.** Businesses in the 21<sup>st</sup> century are facing unexpected crisis on daily basis. Therefore, to overcome these issues of unexpected crisis, it is crucial to be ready all the time with new strategies so the business will continue to operate and never to fail. Looking at this, the aim of the research was to identify the new assessment method for crisis analysis in SME's. In order to attain the aim of the research, the report involved the mixed approach i.e., qualitative and quantitative. There were two sources of data used in this research, the primary data and secondary data. In the primary data we conducted an online questionnaires in which 100 respondents took participated and it involves 14 questions. The secondary data was gathered through sources like articles, blogs, previous literatures and other internet sources. In order to do the analysis three different methods were used descriptive analysis, SMART PLS and P model. We discovered that factors like Inadequate Leadership, HR strategies, lack of technology adoption are some of the cause that makes harder for the businessmen to cope with the unexpected crisis. Moreover, the research discusses different types of problems entrepreneur have faced in their business arena. In conclusion, the two best new assessment method we identified from the research were Entrepreneurial Orientation and coping strategies (pivoting and preserving) to cope with unexpected crisis. Finally, a few recommendations were made, such as creating some strategies in advance for coping with the unexpected situation, keep following the market trends and using bench marketing techniques to overcome the crisis.

**Keywords:** *Entrepreneurship, Assessment method, Crisis analysis, Marketing technique, SME*

**JEL Classification:** G17, A12, Q56

# THE IMPACT OF THE CHANGE IN THE REFINANCING RATE ON THE BANK CREDIT INTEREST RATE

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**Abstract.** One of the most important problems for Georgia in recent years is the unstable exchange rate of the national currency, which, in turn, has a negative impact on other economic parameters and significantly affects public expectations. Although the National Bank is actively trying to stabilize the devalued exchange rate through interventions, these efforts alone cannot bring the desired result. Because the interventions are a short-term mechanism of stabilization of the GEL and it cannot affect the real factors affecting the devaluation. That is why, the purpose of the current paper, based on observation, correlational analysis of operating factors and the study of the decisions of the National Bank, is to determine the relationship between the refinancing rate and the exchange rate, and whether it is possible to include the refinancing rate in the regulation of the exchange rate. Based on the results of the research, it appeared that among the factors affecting the exchange rate of the lari, the refinancing rate occupies an important place. The analysis showed us that the refinancing rate can be used by the National Bank not only when the pressure from currency devaluation is transferred to inflation but also when the exchange rate fluctuation reaches a certain limit.

**Keywords:** *Refinancing rate, Exchange rate, National Bank*

**JEL Classification:** E, E5, E58, G21, G24

# EFFECTIVENESS OF USING PRODUCT MARKETING IN COMPANIES

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**Abstract.** This paper examines “Effectiveness of Using Product Marketing in Companies”. Today, the management of companies has completely changed. Compared to the past centuries, we can see new structural units that help companies become more competitive, fast, flexible, customer-oriented and scalable. It is worth noting that all this had an impact on marketing, and a change took place in marketing departments, such a unit as product marketing appeared, which had a great and positive effect on the development, creation and sales of new products. The purpose of this research article is to develop recommendations and suggestions for companies that do not know the benefits of product marketing and the guarantees that this strategic function promises to companies. By using product marketing, companies will be able to produce more accurate and targeted marketing campaigns, create a product that the customer needs, and have a smooth structure from idea to launch. Based on the purpose of the research, the following types of tasks were defined. Determining the using efficiency of using product marketing in a technological enterprise. The paper is important for countries where product marketing direction is not yet developed, Georgia is a good example for this. By observing the companies in Georgia, at the same time based on the experience of international countries, based on the analysis of their interviews, the effectiveness of using product marketing is well presented in the paper.

**Keywords:** *Product marketing, Marketing effectiveness, Technological enterprise, Strategic function*

**JEL Classification:** M3, M31, M11, M13, P42, P23

# DETERMINATION OF FACTORS INFLUENCING CLOTHING PURCHASE INTENSIFICATION - IN CASE OF LATVIA

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**Abstract.** This paper evaluates the factors which are playing a crucial role in purchasing the will of people on the clothing market in Latvia. In the topic of investigation factors intensification, a questionnaire was used as a data collection tool. In the survey, sentences related to factors and purchasing were developed and the degree of participation of respondents to these sentences was measured with the Likert scale. A Chi-square test was used to determine the statistical relationship between the factors affecting purchasing behaviour, and respect and behaviour related to fashion and factors. Results significance level was evaluated as  $p < 0.05$ . Incorporating results from study shows that the most important factors which affect the purchasing intention are: Brand name, Quality and supportive factors are information about product advantages and Design of the shops has positive impact on consumer buying interest. Eco friendliness products and specially designed products with symbols which fulfill the unique perception of the consumers in Latvia. The research paper offers valuable insights into the clothing market, benefiting new brands or entrepreneurs and researchers interested in the factors influencing customer purchasing behavior. The empirical findings indicate that Latvian consumers are inclined to invest in new brands at shopping centers, particularly among the younger generation. However, the research's limitations are evident, primarily involving young individuals from Generation Z, mostly students and young graduates. Future research should expand its scope by incorporating open-ended questions and a broader participant base to ensure unbiased results.

**Keywords:** *Latvia, Influencing factors, Clothing market, Purchase intensification, Consumer behavior*

**JEL Classification:** M3, D1

# THE IMPLEMENTATION OF ADAPTIVE PROJECT MANAGEMENT APPROACH IN THE PUBLIC ADMINISTRATION: CASE OF LATVIA

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**Abstract.** The public administration in Latvia is characterized by citizens and representatives of the business environment as inflexible, when decisions are made slowly, their relevance is out of date and they are explained in official official language, which is not easy to understand. The need for change in the public sector is evident as societies around the world face many challenges. Within the framework of the study, an analysis of the operation of the public administration organization is carried out, the change project planned by the public administration organization and examples of "good practice" in the use of the adaptive project management method in Latvian and foreign public administration organizations are analyzed. Based on the analysis of scientific articles, the results of the survey and the conducted case analysis, it is concluded that changes are necessary in the work processes, decision-making and way of thinking in the state administration organizations, which can be facilitated by the use of the adaptive project management method. The conducted research showed that Agile project management methods should initially be applied to small-scale projects using the SMART method. Pilot projects can promote a change in the way of thinking, as well as provide experience and provide confidence in the effectiveness of using the Agile method in public administration organizations as well.

**Keywords:** *Public administration, Adaptive project management, Agile method, CRM (customer relationship management)*

**JEL Classification:** H11, H83, O22, O30

# ENHANCING PATIENT SAFETY THROUGH LEADERSHIP: THE VITAL ROLE OF HEAD NURSES IN HOSPITAL SETTINGS

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**Abstract.** Patient safety is a paramount concern in healthcare, and leadership plays a pivotal role in shaping the culture and practices that underpin it. Head nurses, positioned at the intersection of clinical care and management, wield significant influence over patient safety outcomes. This study outlines a comprehensive exploration of head nurses' roles and contributions to patient safety within diverse hospital departments. Systematic review encompasses electronic database searches, including PubMed, Scopus, Cinahl, ProQuest, Web of Science, and Ebsco, without time limits. It also conducts manual searches of key journals in the field of hospital care. Cross-referencing from retrieved articles and consultation with librarians ensures search comprehensiveness. Analysis reveals the multifaceted nature of head nurses' responsibilities in safeguarding patient safety, including their influence on safety culture, error prevention, and interdisciplinary collaboration. Through synthesizing international literature, this systematic review addresses critical questions about head nurses' involvement in developing safety culture, preserving patient safety, and preventing errors in hospital care. Findings shed light on the competencies and knowledge required for head nurses to excel in their roles, as well as the potential for role expansion and development to enhance patient safety outcomes. Understanding the pivotal role of head nurses in patient safety is essential for healthcare organizations aiming to improve the quality of care and minimize adverse events. By shedding light on the contributions and challenges faced by head nurses, this research informs strategies for enhancing patient safety and shaping the future of nursing leadership in healthcare.

**Keywords:** *Head nurse, Safety culture, Patient safety, Medical error, Hospital settings*

**JEL Classification:** J13



# NON-TRADITIONAL METHODS FOR ASSESSING THE FINANCIAL SITUATION OF A FARM

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**Abstract.** The research method used in this study is Economic Value Added (EVA). EVA is a financial performance metric that measures the value a company generates in excess of its cost of capital. The study focuses on identifying the problems, strengths, and weaknesses of agricultural businesses, as well as predicting their future economic and non-economic development. Financial analysis is crucial for preparing the necessary data for decision-making. The study also emphasizes the importance of predictive models tailored to the specific needs of each country for ensuring the sustainability of agriculture. The research methods used in this study include literature review, analysis of financial data, and the application of EVA. The results show that EVA can be a useful tool for assessing the financial sustainability of agricultural businesses. The study concludes that the use of EVA and predictive models can help agricultural businesses survive in a changing environment and recommends that such models be tailored to the specific needs of each country.

**Keywords:** *Agricultural businesses, Economic Value Added (EVA), Financial analysis, Predictive models, Sustainability*

**JEL Classification:** G17

# STRESS AS A METHOD OF INCREASING PERFORMANCE AND STIMULATING INNOVATION

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**Abstract.** Constantly changing environment, rapid pace of technological development and increased competition have a significant impact on the working environment and the psycho-emotional state of employees. Stress, a human response to unpleasant environmental factors, is one of the most common problems. It affects the physiological and psychological states, and a long-term stressful environment may even cause irreparable damage. From an organizational point of view, it affects performance, job satisfaction, motivation, social relationships, and overall success and goal achievement. The aim of the paper is to present organizational stress in a positive context, which stimulates new ideas and methods, increases performance and professionalism of employees. To explore the issue recent literature and research papers are discussed. Based on these main conclusions and recommendations are that coping with stress depends on the management, as well as, on the employee's personality. if appropriately managed, and on time, it can become a stimulator of innovation and new ways of dealing with various challenges, moreover, it can increase performance. Organizations must have pre-defined approaches and methods, as well as relevant knowledge, to respond in a timely manner and promote both employee and organizational development.

**Keywords:** *Innovation, Job satisfaction, Performance, Stress, Stressors*

**JEL Classification:** O15

# DIVERSITY MANAGEMENT THROUGH THE LENS OF THE UPPER ECHELONS THEORY

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**Abstract.** This article explores the link between diversity management strategies and company performance, drawing upon the theoretical framework provided by Hudson and Mason's Upper Echelons Theory, introduced in 1984. The central focus of this research strives to find links through which companies can improve their success using diversity management of the Top management teams. It strives to find out the critical elements that impact companies' performance and highlights the meaning of promotion of organization success, impact on financial performance, the impact of networking as well as educational background of the firm leaders, and professional backgrounds, sharpening the outcomes of diversity management attempt impacting companies' performance. The primary research approach undertaken in this study involves a systematic, inductive literature review, examining and synthesizing a diverse array of academic publications and reports, all directed through the conceptual lens of the Upper Echelons Theory. The overarching aim of this study is to discover the connection between diversity management and its consequential effects on company performance, using characteristics of the Upper Echelons Theory. This research underscores the strategic obligation for companies to prioritize diversity management initiatives as a strategic aim, rather than social inclusion. By exploring the potential of financial benefits, the aspect of diversity management of top management teams should be seen as a business management tool rather than a social initiative.

**Keywords:** *Company finances, Diversity management, Financial performance, Organizational performance, Top management teams, Upper echelons theory*

**JEL Classification:** M5

# SUSTAINABLE BUSINESS MANAGEMENT TRANSFORMATION THROUGH A SYSTEMS-BASED APPROACH ACROSS LARGE CORPORATIONS

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**Abstract.** The economic and geopolitical effects on the global economy, climate change, resource scarcity, and inequality have transformed the business world's previous strategies and business models to align its operations with environmentally friendly and socially responsible governance practices. These transformations are based on Systems-based theory as businesses are complex systems embedded within larger social ecosystems. The article analyses successful case studies across a number of global corporations having implemented sustainable business practices across the entire value chain and involving all stakeholders with the aim to transform the business management in a sustainable way. The article contains a literature review of sustainable business transformation and practical recommendations on the key steps that corporations must adopt to achieve a successful outcome.

**Keywords:** *Circular economy, Corporations, Sustainability, Systems-based theory, Business transformation*

**JEL Classification:** M10, M20

# A MANAGEMENT FRAMEWORK FOR THE SELECTION OF AN ECO-INNOVATION STRATEGY IN THE DEVELOPMENT OF THE FIRM'S INTERNATIONALIZATION

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**Abstract.** In recent decades, international trade relations have changed significantly due to rapid globalization, popular environmental trend, growing consumer demand, and world-wide regulatory requirements for eco-friendly products and processes. Consequently, in contemporary business practice, due to the popular environmental trend, one of the most important strategic tools in gaining sustainable competitive advantage is eco-innovation. However, approaching eco-innovation from a non-strategic perspective, as well as failure to select and to effectively manage eco-innovation strategy may result in long-term negative consequences. Therefore, it is important to the develop of an integrated approach to model decision-making in selecting eco-innovation strategy that is oriented towards strategic transformation of products or processes of a firm in order to enhance firm's competitiveness in international markets.

**Keywords:** *Eco-innovation strategy, Decision-making, Green transformation, Internationalization, Management framework*

**JEL Classification:** M10, M16

# SECTOR-SPECIFIC ESG IMPLEMENTATION: A STUDY ON BALTIC ENERGY COMPANIES

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**Abstract.** This research explores the integration of Environmental, Social, and Governance (ESG) components within energy companies operating in the Baltic region. Given the sector's pivotal role in contributing to climate change, it is important to understand how these companies are adopting and leading ESG initiatives for more sustainable operations and environmental conservation. Through an analysis of ESG strategies, practices, and disclosures, this study aims to provide insights into the level of the ESG implementation. The methods employed include document content analysis followed by interviews to solidify the understanding. Initial findings hint at a growing acknowledgment and incorporation of ESG components, with varying levels of maturity and commitment across companies. The study serves as a critical resource for stakeholders, offering a nuanced understanding of the energy sector's progress in ESG implementation and its implications for sustainable development in the Baltic states.

**Keywords:** *Disclosure, ESG, Energy sector*

**JEL Classification:** G30, G32, Q56

**SECTION**

**“INNOVATION AND QUALITY TECHNOLOGIES”**

# QUALITY IMPROVEMENT SOLUTIONS FOR MARKETING PROJECTS

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**Abstract.** Marketing projects are unique however they consist of similar processes. The quality of marketing project processes refers to quality assurance in the organization and management of the project during the entire project life cycle, as a result of which the outcome of the project is acceptable or not. Using quality management principles in the project management process (below – PMP), it is possible to ensure continuous improvement through projects. Value stream mapping was used to analyze PMP and identify wastes. Using cause-effect analysis was determined the most significant groups of causes influencing the quality and their factor significance was set by Delphi method. Marketing PMP improvement proposals include reduction of people amount, workload and time, elimination of repetitive activities, standardization of documentation and increase of competence.

**Keywords:** *Marketing project, Quality management principles, Quality improvement, Project management process, Value stream mapping, Cause-effect analysis, Delphi method*

**JEL Classification:** M19, M31, L15, O22



# USING OF THE DRY METHANE REFORMING PROCESS FOR TRANSFORMATION OF CARBON DIOXIDE AND METHANE INTO SYNGAS AND NANOSTRUCTURED CARBON DEPOSITS

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**Abstract.** The authors analyzed the problem of atmospheric air pollution with greenhouse gases associated with the development of the Technosphere and industrial activity and its impact on climate changes. The advantages and disadvantages of various methods of processing of methane and carbon dioxide in technological processes are determined. Experimental studies of the use of various types of catalysts to increase the efficiency of conversion of methane dioxide to carbon and methane have been carried out. It was determined that Ni/Al<sub>2</sub>O<sub>3</sub> and Co/Al<sub>2</sub>O<sub>3</sub> can be defined as the most active catalysts for reducing CO<sub>2</sub> and CH<sub>4</sub> emissions.

**Keywords:** *Greenhouse gases, Climate changes, Air pollution, Technosphere, Methane, Reforming*

**JEL Classification:** L23, M11, O31, Q55

# THE CHALLENGES OF LAUNCHING A NEW SERVICE

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**Abstract.** Tourism is an integral part of the world. Tourism is no longer just a leisure activity, it is a broad business sector. Tourism has many sub-sectors, but the focus of this thesis will be on active tourism - active recreation and event organisation. Active leisure and recreational activities are relevant for almost all citizens, and these types of services bring income, tourism inflows and higher levels of prosperity to the city and the country. The paper analyses the activity of active recreation and event organisation, and studies one of the leading companies in the sector in Latvia. The work includes the development of a project for the expansion of the company's activities by identifying trends and customer needs. The result of the work is a new, innovative service that will enter the active leisure and events market and set trends. The work used analysis and descriptive methods in the analytical part, quantitative methods in the research part of the interview process, qualitative methods in direct observation, document and situation analysis, empirical - data collection and data analysis methods. Concluding that the leisure and events sector lacks full-service interactive activities that provide entertainment, safety and valuable content, and discovering the most valued customer requirements as interactivity, easy perception and clear communication, a company extension project was developed - an interactive adventure game. In correlation with other company efficiency, profit and reputation objectives.

**Keywords:** *Active tourism, Events, Pandemics, Product development, Game design*

**JEL Classification:** O3

# MEASURING EXCELLENCE: DOES INSTITUTIONAL RANKINGS TIE UP WITH RESEARCH BASED UNIVERSITY STRATEGIES

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**Abstract.** Institutional university rankings such as Times Higher Education (THE) World University Rankings and QS World University Rankings use defined set of indicators to evaluate and compare universities. The same set of indicators are used to measure performance for different university types. Both ranking methodologies have recently undergone changes to enhance precision, with a greater emphasis on research excellence. The research aims to analyze the performance indicators included in institutional rankings in comparison with research focused university strategic priorities. Authors used literature review and comparative analysis to determine the main gaps for measuring university performance and research excellence. The research includes analysis of key performance indicators identified in institutional strategies of Latvian universities.

**Keywords:** *University, Quality, Strategy, Performance indicators, Rankings*

**JEL Classification:** I20, I28, I23

# AGILE TOOLS FOR KNOWLEDGE MANAGEMENT AND SYSTEMIC STAKEHOLDERS ANALYSIS IN HIGHER EDUCATION INSTITUTIONS

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**Abstract:** The current research investigates whether the agile approach produces the outputs of the self-assessment giving a holistic view of the system and enhancing knowledge management in higher education institutions (HEIs). The research aims to recognize the main elements for evolving a systemic approach to knowledge management and decision-making in accordance with stakeholders' needs. The authors proposed a Higher Educational Institutions (HEI) Essence Improvement conceptual model as an integrated model for knowledge management and decision-making in educational institutions that provides a framework to describe the HEI as a holistic system including Stakeholders, Changes in the External Environment, the HEI, Competences, the Academic Staff, the Study process, and Methodology as essential elements. The theoretical research methods encompass the review of secondary sources. The methodology was tested in HEIs in Latvia and Poland.

**Keywords:** *Business education, Higher education institutions (HEIs), Agile approach, Organization agility, Systemic thinking, Systemic decision making, Essence approach, Knowledge management*

**JEL Classification:** C89, D29, D81, D89, I21, I23, I25, I29, M15

# UNIVERSITY DECISION-MAKING PROCESSES ON INNOVATION IN STUDY PROCESS

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**Abstract.** Innovation has a wide and important role in the university study process. Innovation opens new ideas, teaching methods and approaches to the teaching force in terms of lecturing students to create greater engagement. Innovation is a continuous process that requires courage. It's about experimenting, evaluating, and adapting to today's dynamic everyday life, which requires quick adaptation to change and flexibility. For the university to move in the direction of innovation, one of the ways is to put innovation as a priority in the university strategy, therefore the organizational culture of the university plays an important role, which can contribute to a more successful implementation of innovations. It is precisely the right decision-making processes that can ensure getting closer to the development plan included in the university's strategy. Adaptation to change and flexibility are closely related to innovation. It is during the study process that the university must be able to react quickly and think one step ahead. Response to numerous world events, technological advancements, and other external elements to maintain the consistency of learning processes and boost student engagement. How do university decision-making processes affect the ability to innovate and implement in the study process? To answer this question, a literature review and qualitative content analysis will be conducted.

**Keywords:** *Higher education, Organizational culture, Decision making*

**JEL classification:** I23; I25

# EFFECTIVE BUSINESS IN THE DIGITAL ART: BUSINESS MODEL, PLAN AND STRATEGY

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**Abstract.** Business plan, business model and business strategy. The research analyses their meaning and necessity for starting a business, as well as their common and different features and their effective application in digital arts. The focus of the research is the effective entrepreneur in digital arts. The research includes an analysis of theory sources, expert interviews, content analysis and in-depth, semi-structured interviews with creative professionals. The examples given in the research show that the refusal to write business plans is mainly characteristic of entrepreneurs with experience or reluctance to prepare one, taking risks. A business plan would also be redundant for potential young entrepreneurs who do not need external funding or partners to realise their idea. If successful, however, it would be necessary to work on a strategy. In order to make the business as efficient as possible and to achieve the goal of profit, the model will be exactly what will allow to identify problems from the start, to discard the unnecessary and to look for effective solutions in the context of the whole. The research concludes that new entrepreneurs, not only in the creative industries but also in business, need to make in-depth research on competitors, sales channels, financial planning and other measures to minimise risks, forecast finances and operate effectively in a new business environment. The authors of the study therefore recommend the development of a business plan, model and strategy.

**Keywords:** *Business Administration, Management, Marketing, Product Strategy*

**JEL Classification:** M1

# IMPROVEMENT OF NATIONAL STANDARDS DEVELOPMENT AND DISSEMINATION PROCESSES THROUGH STAKEHOLDER INVOLVEMENT

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**Abstract.** The national standardization system is formed by the interaction of different requirements, stakeholder groups and processes. A key role in improving national standardization processes, including standards development and dissemination, is played by quality management mechanisms that ensure continuous, evidence-based improvement. The aim of the paper is to evaluate the importance of involving different stakeholder groups in the determination of improvement measures for standards development and distribution processes. The methodology is based on a literature overview of research articles that focus on the aspects of stakeholder involvement in standardization. Following, a case study of stakeholder involvement measures, including an analysis of the results of surveys for customers and standardization experts of the national standards body of Latvia, is performed. Main conclusions and results: it is essential to identify stakeholder groups involved in standardization and to implement targeted measures for their involvement in the improvement of standardization processes in order to meet the needs of the national standards body and its stakeholders, as well as to promote the improvement of the national standardization system as a whole. The study reveals that, by basing improvement measures on stakeholder feedback, it is possible to purposefully improve standardization processes, contributing to the increase of customer satisfaction.

**Keywords:** *National standardization system, Stakeholder involvement, Standardization, Standards development, Standards dissemination*

**JEL Classification:** L15, L30, O19

# STANDARDS-BASED MANAGEMENT SYSTEMS AND TECHNOLOGIES IMPLEMENTATION IN MANUFACTURING COMPANIES

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**Abstract.** The research aims to investigate the advances of new technology adoption for production and control in manufacturing companies in Latvia and Finland. How this impacts the quality and customer satisfaction and to analyse whether the companies already using production management methods such as standardization, certification, and process improvement are more prone to adapt and implement advanced technologies in manufacturing. For the current study, the regression analysis technique was applied based on data from 71 manufacturing companies in Latvia and 123 manufacturing companies in Finland corresponding to the Latvian and Finnish sub-samples of the European Manufacturing Survey 2022 (EMS 2022) edition data collection. The adoption of advanced digital technologies for control and management of production processes positively impacts the quality of products and customer satisfaction; however, the benefits take time to come. Manufacturing companies using traditional methods and tools for quality and production management have a higher degree of new technology adoption. The limitations of this research are the relatively small number of responses and the data used corresponding to two countries. Further research could be conducted using the data from other countries that had participated in EMS 2022. The research contributes to a body of knowledge on the interrelations between the application of well-known production management and control methods and the adoption of innovative digital technologies. By understanding the relationship between traditional production management methods and the adoption of advanced digital technologies, companies can better navigate their transformation process and optimize their operations to benefit their customers, employees, and the environment.

**Keywords:** *Digital Technology, Management System, Manufacturing, Standard*

**JEL Classification:** L23, M11, O32



# INDICATORS FOR ASSESSING PROCESS QUALITY IN THE PHARMACEUTICAL MANUFACTURING

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**Abstract.** The primary purpose of this paper is to determine the most effective process quality indicators for pharmaceutical manufacturing, both from theoretical and practical points of view. Qualitative content analysis with interpretative coding of the selected scientific literature was applied to determine the theoretical basis of this study. The compiled results were afterwards presented to the employees to identify a consensus view across the opinions using the Delphi method. The research has identified that the most effective process quality indicators based on the results of qualitative content analysis are deviation metrics, manufacturing performance metrics, and quality system effectiveness metrics. Based on the empirical research results, the most effective indicators are manufacturing performance, CAPA, and human resource metrics. The study has shown no substantial uniformity between the theoretical and empirical results. The research results are based on employees' opinions of only one pharmaceutical manufacturing company specializing in sterile parenteral drug injection manufacturing. This study could benefit pharmaceutical manufacturing company management seeking to implement quality measurements to provide an objective view of the quality system's effectiveness and overall performance. This study determines the effectiveness ranking of different process quality indicators specifically intended to measure the systems and processes in pharmaceutical manufacturing objectively. The study demonstrates the difference between theoretical findings and field experts' opinions.

**Keywords:** *Drug manufacturing, Performance measurement, KPIs (Key Performance Indicators), Effectiveness, Quality metrics, Pharmaceutical industry*

**JEL Classification:** L15, L65, M11

**SECTION**

**“INTERNAL SECURITY AND CIVIL PROTECTION”**

# CHALLENGES OF THE SELF-DECLARATION SYSTEM OF THE UNIFIED FIRE SAFETY AND CIVIL PROTECTION PLATFORM

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**Abstract.** The aim of the study was to establish a self-declaration system of the state of fire safety and civil protection platform in Latvia. The introduction of the system would make it possible to determine the level of fire safety in the country more effectively. The main benefits of the introduction of the self-declaration system would be the acquisition of quantitative data on the fire safety of objects at national level, as well as efficient communication with customers, also providing preventative solutions. In performing the work, a monograph research method was used – literature and sources data analysis, secondary data analysis, as well as a graphical study method – for data analysis and visualisation. The process of preparing the study included the examination of available literature and data sources, analysis of data from various laws and regulations, etc., as well as graphic compilation of the data obtained in tables and images, also, the analysis of secondary data was used. The study analyses available published and unpublished literature, compiles and analyses Estonian, US (Boston) and Finland experiences. An analysis of the newly created information system has been performed, as well as the content of the required State Fire and Rescue Service Unified fire Safety and Civil Protection Platform fire safety state self-declaration system has been established. The information analysed and the data obtained show that self-declaration solutions would provide an opportunity to obtain information on a wider range of objects, thus creating a more accurate assessment of the fire safety status. As problematic issues for the implementation of the self-declaration system, it should be noted that the State Fire and Rescue Service should strengthen its capacity to conduct targeted information campaign for target groups that will not be achieved with the introduction of the self-declaration system – children, the people with low income and the elderly people. These target groups should also be considered during the development of the system and more emphasis should be put on the implementation of safety classes.

**Keywords:** *Fire safety, Civil protection, Information analyse, Assessment*

**JEL Classification:** Q01

# WHAT IS THE NEW NORMAL IN SOCIETAL SECURITY?

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**Abstract.** Recent events, such as the Covid-19 pandemic, when the country declared a state of emergency, have had an impact on society as a whole. These changes raise questions such as: When does a crisis begin and when does it end? How has it affected the security of society as a whole? How do we define when a crisis begins and ends? Is society ready for change? What new risks are affecting society? In the pre-pandemic era, despite the advances in information technology, remote working was either non-existent or minimal. During the Covid pandemic, society had to adapt to the current situation and remote working became the norm. In practice, remote working is the "new normal" in society, even after the pandemic. It is therefore important to identify risks in the working environment, not only in person but also when working remotely.

**Keywords:** *Societal security, Remote work*

**JEL Classification:** J28, K32

# OPPORTUNITIES TO ENHANCING LATVIA'S CIVIL MILITARY COOPERATION SYSTEM

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**Abstract.** This paper presents the outcomes of a comprehensive research study aimed at offering practical recommendations for Latvia's Ministry of Cabinet concerning the Unified Logistics Center. Employing various research methods, including legal document analysis, expert interviews, focus group discussions, and case studies, this study has identified crucial insights. The research reveals significant challenges, including equipment deficiencies and suboptimal technical conditions in Ministry of Interior warehouses. Additionally, it highlights the absence of a legal foundation for specific operations conducted by the National Armed Forces. To address these issues, the study proposes an integrated logistics management concept, advocating for the establishment of a Unified Logistics Information System (ULIS) to harmonize operations across all Ministry of Interior warehouses, with a particular emphasis on the united warehouse. The research estimates a total investment with phased allocations for equipment, security systems, and ICT infrastructure development. Legislative changes are also recommended to facilitate the National Armed Forces' responsibilities. In conclusions the research provides a comprehensive analysis of crisis management structures, regulatory frameworks, and international practices. The main recommendations include optimizing storage capacities, fostering integrated logistics management, and enacting legislative amendments to enhance the operational capabilities of Latvia's civil protection institution. These findings contribute significantly to strengthening the nation's preparedness and response capabilities in times of crisis and disaster.

**Keywords:** *Civil Protection, Integrated Logistics Management, Unified Logistics Center, Unified Logistics Information System*

**JEL Classification:** H56, H76, K23

# ANALYSIS OF THE RISKS OF THE WORKING ENVIRONMENT AND MITIGATION POSSIBILITIES FOR THE TRACKSIDE FITTER OF THE SSC “LATVIJAS DZELZCEĻŠ”

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**Abstract.** SSC Latvijas Dzelzceļš is a Latvian state-owned company that provides railway transport and infrastructure. Track fitters are subject to various risk factors, because they work with a variety of tools and machines, and their working conditions always include increased risks for workers working in dangerous areas. In addition, work responsibilities include physiological loads using a variety of instruments, equipment, chemicals and mixtures. Employees must also be able to cope with work intensity, increased responsibility, concentration and attention that can cause stress. In order to ensure the safety of the working environment, all working conditions should be thoroughly examined and all responsible representatives should be informed of the description of the position, the responsibilities of the work and the nature of the risk factors. The employer must ensure that workers are adequately instructed and trained on safety measures, equipment and the correct use of tools. Labour protection professionals should be aware of each work process and take the necessary safety measures to reduce the risks to workers. In addition, all staff must be aware of the potential risks and comply with safety rules to prevent possible accidents. The purpose of the authors' study was to create measures that will reduce the risks of the working environment in the work of railway track fitters of the SSC “Latvijas Dzelzceļš”. The authors offer the company a complex of measures: to buy machines or robots that could help track fitters do grass mowing jobs, to buy orthotic belts that would provide back support and could help reduce the number of aches and occupational illnesses among track fitters, to introduce a health training program to educate employees about a person's spinal structure, protection and illnesses that can result from misposture and back load while working, to buy health insurance for employees. It is also recommended that the LDz company purchase a new locomotive warning system available to each track worker to prevent accidents involving the human factor.

**Keywords:** *Safe working environment, Risk analysis, Working conditions, Complex of measures*

**JEL Classification:** A12, Q56

# THE ROLE OF RISK MANAGEMENT IN THE IMPLEMENTATION OF TASKS SET FOR CUSTOMS

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**Abstract.** Effective customs risk management is an essential condition for the successful performance of customs tasks and the achievement of the goals set for customs, including ensuring the economic and security interests of countries and facilitating international trade. Along with providing customs control, the task of customs is to facilitate cross-border trade, making the process of border crossing and customs clearance as simple and fast as possible for honest companies and travelers. Changes and uncertainty in the Customs operating environment, together with the growth of trade and travel volumes, have affected the way customs administrations manage and approach their tasks. As a result of technological development, the role of customs in border control has changed dramatically - the huge volume of goods and the way they are traded around the world, and the speed of such transactions create additional fiscal, security, and safety risks, which in turn affect the resources available to customs services. The current geopolitical situation has significantly affected the role of customs services. The topic is relevant, because to simultaneously ensure both the quality of the services provided by the customs and compliance with the requirements set in the framework of limited resources, the customs services must continuously improve customs work methods, including forcing to look for a more structured and systematic way to manage customs risks. Effective customs risk management is one of the basic conditions for achieving the goals set for the customs service and ensuring the fulfilment of tasks. The object of the research is the risk assessment system in customs operations, thus the aim of the research is to study and analyse the current practices and methodologies used by customs authorities around the world to manage and assess risks related to international trade. Scientific news and practical application related to the fact that the study will focus on identifying the main challenges and opportunities in customs risk management and will offer a comprehensive framework for effective risk assessment. As a result of the research, a customs risk assessment methodology will be developed, offering a model and indicator system to be used in customs risk management. The study will identify several key factors contributing to effective customs risk management, including the use of advanced technologies such as data analytics and machine learning, collaboration and information sharing between customs authorities, and the alignment of risk management strategies with international standards and best practices. The findings of this study are expected to have significant implications for customs authorities, policy makers and those involved in international trade. The proposed risk assessment methodology will provide a practical tool for customs authorities to improve risk management practices and improve the efficiency and effectiveness of their operations. Overall, the thesis will contribute to the field of customs risk management by providing a comprehensive analysis of customs operational processes and proposing a methodology for risk management in international trade to improve the security and facilitation of global supply chains.

**Keywords:** *Chains, Control, Cross-border, Customs, Facilitating, Management, Risk, Supply, Trade*

**JEL Classification:** H11

# DEVELOPMENT OF A NEW METHODOLOGY FOR COMPLYING WITH LABOUR PROTECTION REQUIREMENTS BY TAKING MEASURES IN CASE OF LEAKAGE OF DANGEROUS CHEMICAL SUBSTANCES

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**Abstract.** As part of his research, the author conducted questionnaires, surveys and interviews of the officials of the State Fire and Rescue Service (hereinafter - SFRS) in relation to labour protection issues, when carrying out decontamination work in case of leakage of hazardous substances. The author chose the above-mentioned methods for obtaining information from respondents with the aim of gathering and analysing it. The experiment to be performed was divided into the following phases: Questionnaire - before listening to the theoretical block; Survey - after the theoretical block; Interview - after familiarization with the course of the training scenario, a target briefing on labour protection issues was carried out in relation to the training tasks. Summarizing and analysing the results of the conducted questionnaire, it was concluded that the competences of SFRS officials in the field of labour protection regarding the performance of rescue work at the scene of events with the presence of dangerous substances are insufficient. Analysing the information obtained during the survey, it was concluded that the majority of respondents (73% of respondents) did not have enough information that the respondents had obtained by listening to the block of theoretical lessons. By summarizing the results obtained in the interview, it was concluded that 32% of the respondents have more than five years of service. Analysing the results of the questionnaire, survey and interview, it was concluded that for the purposes of the training process of SFRS officials, it is necessary to develop Methodical recommendations "Occupational protection requirements during decontamination work" in addition to organized practical training. Based on the results of the analysis of the data collected as part of the study, it was concluded that when developing the practical learning scenario and integrating it into the learning process, more attention is paid to compliance with the requirements of Labour protection. The author's proposals regarding the use of the developed Methodological Recommendations in the learning process are the following: the possibility of increasing knowledge regarding labour protection, compliance with requirements, which in turn will reduce the probability of accidents. Labour protection specialists of SFRS structural units need to use developed Methodical recommendations, which will increase compliance with labour protection requirements, when conducting briefings.

**Keywords:** *Dangerous chemical substances, Decontamination, Labour protection, Leakage, State fire and rescue service*

**JEL Classification:** Q01



# MANAGEMENT OF STATE FIRE AND RESCUE SERVICE TECHNICAL RESOURCES: DIRECTION TOWARDS EFFICIENCY

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**Abstract.** The topic of the study is based on the need to efficiently manage technical resources at the State Fire and Rescue Service, offering a new, innovative solution. This solution is designed to overcome the limitations of the existing technical management system, taking into account longevity and efficiency. The current geopolitical situation clearly demonstrates the need to assess the effectiveness of existing technical management models in order to fully meet modern requirements and not to create obstacles to the effective performance of the State Fire and Rescue Service. The main goal of the study is to create an absolutely unique management system that will be fully tailored to the needs of the State Fire and Rescue Service in the future. The establishment of this system will involve a thorough compilation and analysis of scientific articles, taking into account the requirements of the public Procurement Act and other relevant legislation. It is planned that the new management system will also be developed taking into account the impact of national measures to strengthen internal security on the management of technical resources and will be oriented towards efficient use of public funding. The necessity of this study is directly linked to state support to the State Fire and Rescue Service for the purchase of new machinery, including fire tankers and other special machinery. The planned amount of funding will allow for the modernisation of the existing machinery, which is an essential aspect of the execution of firefighting and rescue operations. The topic of this study is relevant because, after the purchase of new machinery, it will require regular maintenance and repair in order to maintain the performance of the machinery and ensure its lasting use. It is therefore essential to carefully assess the current situation, explore optimal solutions in the field of resource management and, based on the results of the study, develop an optimal model that will allow efficient use of resources, reducing losses and ensuring the longevity and efficiency of the State Fire and Rescue Service's machinery. The methodology of the study will be designed to allow a comprehensive assessment of processes from different perspectives, including management of technical resources, human resources and organisational processes.

**Keywords:** *Efficiency of technical service, SFRS, Fire-fighting and rescue machinery and equipment, Fire-fighting and rescue services technical resources*

**JEL Classification:** Q01

# NEW TRENDS IN GARMENT INDUSTRY IN ESTONIA AND LATVIA

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**Abstract.** The globalization of the world industry brought about de-industrialization in developed countries. Job losses in manufacturing continued between 2001 to 2011. Nowadays, the production towards less developed but low labour-cost countries continues. Therefore, in Latvia, Estonia etc., innovation in manufacturing like the garment industry, is needed. In the current paper, the possibilities for developing small enterprises (mini-factory) are presented. The focus of the study is directed to the working environment conditions in the printing of textiles. In the preliminary study for declaring the ventilation conditions in the printing room, the microclimate, noise, and physical conditions of workers were investigated in a Latvian garment laboratory. The appropriate room dimensions were settled. After that, in an Estonian laboratory, the printing of textiles using water-based dyes was used. The chemicals in the working environment air were measured using a portable FTIR-NIR spectrometer. The lighting of workplaces, noise, humidity and temperature level during printing of the chemical CH<sub>2</sub>BrCl from the dye correspond to the norms. The most important in garment printing is to follow the local ventilation, not allowing the chemical pollution into the area of the breathing zone of the worker. Add the additional lights if needed, check the local and overall ventilation system, place adjustable chairs with 5 wheels near the sewing machines, get rid of unnecessary wires, and organize an ergonomic workplace.

**Keywords:** Safety, Health, Printing of textiles, Hazardous factors

**JEL Classification:** J115

# USE OF THE PATHFINDER SIMULATION PROGRAMME FOR TRAINING FIRE SAFETY SPECIALISTS

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**Abstract.** This article will explore and collect information about the “PATHFINDER” simulation program for training fire safety specialists. Each year, the training programmes of the higher education institutions are developed and improved, including Riga Technical University, which aims to prepare high level specialists. Important issues for training of fire safety specialists are the use of up-to-date data and accurate information, which enables students to acquire necessary knowledge based on the latest scientific advances in the training process. Overall, the training process for safety professionals should be based on the acquisition of competitive knowledge, which will enable prospective professionals to have better jobs and better pay in the labour market. It is important to train fire safety specialists to know what is topical in 21st century, so the benefits of training students through the “PATHFINDER” computer simulation programme will be considered as part of the work. As part of the work, the benefits of PATHFINDER will be explained. Mathematical modelling of the emergency situation and comparison with previously applied methods in the training process will be performed. The results of the study may be used for the implementation of further improvements in the training process, as well as for the preparation of a more effective training programme related to the training of fire safety specialists. Achieving the goal will provide an opportunity to prepare the specialists needed for the labour market, who can use modern tools and effectively plan fire safety measures in objects of any complexity.

**Keywords:** *Pathfinder, Fire, Training specialists, Explore*

**JEL Classification:** A12

**SECTION**

**“INTERNATIONAL BUSINESS AND LOGISTICS“**

# GRAIN EXPORTS, MARITIME TRANSPORT AND EXTERNAL SHOCKS: THE CASE OF LATVIA

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**Abstract.** Grain exports, food products accessibility, supply-chain security have a growing interest from numerous economic agents. Grain exports depend on agriculture activity, weather conditions, external shocks. Supply vulnerability has a growing interest from numerous stakeholders, including producers, transportation companies, insurance, finance, government, aid and support agencies. Grains are consumed hundreds and mostly thousands of kilometers away from being cultivated. The aim is to investigate the stability of major grains exports destinations of Latvia's grains. Foreign trade statistics according to Common Nomenclature (CN) in 4-digit level is selected, and group 10 is analyzed in more detail. Latvia from net importer gradually has changed into grain net exporter with major markets in Africa, the Middle East and Europe. Wheat and meslin is main Latvia's grain exports group with Nigeria as main exports destination in past years. External factors have an impact on exports value and geography caused by production interruptions and supply-chains disruptions. The findings are valuable for policy makers, however, the arguments are linked to food and hardly can be allocated to other manufacturing products exports due to agriculture specifics.

**Keywords:** *Grain exports, Foreign trade, Distance, Gravity, Maritime transport*

**JEL Classification:** F14, F15, F40, Q17, R40

# MILITARY LOGISTICS – FUTURE CHALLENGES

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**Abstract.** As the situation in the world is unstable, the security and defense considerations are essential. Managing logistics for military operations is incredibly difficult. The research is focused on the development of military logistics and to its relevance, trends and challenges in worldwide scope. This article presents the military logistics definitions; perspectives of military logistics professionals; recently implemented defense strategies from different countries, as well as future challenges, possibilities, and trends. The main contribution of this article is that it summarizes and analyses previously uncollected information in the academic literature, all of which were discovered independently in armed forces manuals and operational papers that are not commonly accessible in the published scientific literature. The literature review was conducted and the study results serve as a starting point for further research on the development, strategies and challenges of the military logistics.

**Keywords:** *Defense logistics, Military forces, Military logistics, Strategies, Challenges*

**JEL Classification:** H56, H57, N40

# DATA SECURITY TRENDS ANALYSIS IN THE SUPPLY CHAIN

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**Abstract.** Data security trends in the supply chain have increased over the past two decades. The study identifies the recent trends in data security in the transport and storage industry. Data security measures should be applied to all supply chain processes. Thus, a digital supply chain should improve customer service and security. The aim of the research is to study and identify the recent trends in data security in Transport and Storage industry to develop recommendations for improving data security in the supply chain. The research focuses on studying data security in the supply chain in Latvia. The theoretical literature review was used to learn the main aspects of the supply chain concept and the data security measures applied. Statistical and content analysis shows the industry's primary data security trends and issues. The results of the research concluded that in Latvia enterprises providing supply chain operations are not focusing on mandatory education about the data security of their employees; thus, they need to apply sophisticated measures to protect data through all supply chain stages.

**Keywords:** *Data protection, Data security, GDPR, Supply chain, Supply Chain Management*

**JEL Classification:** R41, R49

# IMPACT OF SEA CONTAINER WEIGHT ON THE CARRIAGE OF GOODS

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**Abstract.** The future outlook for containerized cargo movements is characterized by uncertainty, depending on factors such as fluctuations in demand, the efficiency of port operations, and disruptions in the supply chain. Nevertheless, stakeholders such as shipping lines, classification associations, port authorities, and port operators remain committed to prioritizing security both at sea and onshore. Consequently, regulations governing weight limitations play a pivotal role. The primary objective of this research was to investigate the impact of the sea container weighing process on the smooth handling of goods at sea terminals and during road transportation. The study encompassed the perspectives of various stakeholders, including vessel operators, port terminals, and others. While crew safety remains the paramount concern, the challenges associated with Verified Gross Mass (VGM) lie in the additional layer of complexity it introduces to intra-European transportation, making it less competitive when compared to road haulage. To accomplish this goal, the authors employed a range of scientific methods, including monographic analysis and synthesis methods. Furthermore, statistical techniques were utilized to compare discrepancies in weight between CMR and the actual weights recorded at the port. The study delved into the field using empirical research methods, encompassing interviews, document analysis, case studies, and a thorough review of existing literature.

**Keywords:** *Legislation, Maritime, Terminals, Transport, Verified Gross Mass (VGM)*

**JEL Classification:** J01



# CHANGES AND DEVELOPMENT OF LOGISTICS PROCESSES DUE TO VARIOUS FACTORS

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**Abstract.** The global logistic market changed in the last few years and is trying to adapt in new environment. we can see that it is mostly disrupted due to widespread of the coronavirus pandemic (COVID-19). Most of entrepreneurs are looking for eligible strategies for changing deliveries routes, partners and to find best solution to continue the business. The COVID-19 pandemic has brought chaos and unstability of the most of transportation links and distribution routes between productions, suppliers and customers. This paper delves into the multifaceted landscape of operations and supply chain perspectives, focusing on the strategic integration of three key elements: 3PL (Third-Party Logistics) warehousing providers, pallet rentals, and Control Towers for transportation management. In today's dynamic business environment, where agility and efficiency are paramount, organizations are seeking innovative solutions to optimize their supply chains. The utilization of 3PL warehousing providers allows companies to outsource their logistics functions to experts, resulting in cost savings, improved scalability, and streamlined operations. Efficient pallet management not only reduces transportation costs but also enhances warehouse operations and minimizes product damage. By evaluating pallet rental options, this study offers practical guidance on achieving cost-effective and sustainable pallet strategies. Integration of Control Towers into transportation management is discussed as a means to gain real-time visibility and control over the supply chain. Control Towers serve as centralized hubs for monitoring and managing transportation activities, enabling proactive decision-making, mitigating risks, and ensuring on-time deliveries.

**Keywords:** *Logistics processes; Development; Warehouse; Control tower, 3PL (Third-party logistics); Rental pallets*

**JEL Classification:** O18

# TRADE FACILITATION: IMPROVING THE OPERATION OF THE AEO MODEL

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**Abstract.** The increase in the level of European security risks, the aggression launched by the Russian Federation against the statehood and independence of Ukraine, has significantly affected the impact of the control and monitoring activities implemented by the customs services of the European Union (EU) on business. Customs services ensure the application of economic sanctions set by the EU, as a result of which international trade is significantly affected and slowed down. Restrictions have been set on the import and export of certain groups of goods, and economic cooperation with a number of persons, and companies related to them is prohibited. The performance of the mentioned functions prolongs the application of customs procedures, which in turn negatively affects international business. In this situation, the development of the operating model of Authorized Economic Operators (AEO) becomes even more important, regardless of the current circumstances. The WCO adopted the AEO operating model in 2005, while the EU implemented it in 2008. It should be noted that with the introduction of the Union Customs Code in 2016, significant changes in the operation of the AEO model were not implemented, therefore it must be recognized that during the 15 years of operation, a certain stagnation has developed in the existing practice of applying the AEO operation model. In order to search for the most appropriate solution for today's situation, a study was conducted in which a comparative analysis was carried out of the conditions and results of the application of the AEO operating model in the most developed economies of the world, such as the European Union, China, Brazil, Japan and Switzerland. As a result of the research, conclusions and proposals have been developed on how to improve the AEO operating model and activate the involvement of companies in trade facilitation programs, thus promoting the development of international trade.

**Keywords:** Trade facilitation, Authorised Economic Operators, Security risks

**JEL Classification:** F13

# ALTERNATIVE FUELS INFRASTRUCTURE FOR ROAD TRANSPORT AND ITS FUTURE PERSPECTIVES IN EU

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**Abstract.** Nowadays, a huge attention is paid to global climate change and air pollution. According to the observations, approximately 25% of net greenhouse gas emissions in the European Union caused by the transport sector, and 71% of this pollution belongs directly to road transport. In recent years, the European Commission has been working on a package of regulatory documents, the main aim of which is to help in achieving the goals set by the Climate Law, to reduce net greenhouse gas emissions by at least 55% by 2030 compared to the 1990 level. As a result, in July 2023, the Council of Europe adopted the Alternative Fuel Infrastructure Regulation, based on which, within the next 7 years, the European Union member states will create sufficient infrastructure for the use of alternative fuel powered vehicles. Part of the established national targets in the regulation refers to the determined coverage of electric recharging and hydrogen refuelling infrastructure in road transport, thereby increasing the percentage of the use of alternative fuel vehicles from the current 5.4% to 50% by 2050. In Latvia, the number of electric light-duty vehicles has been gradually increasing in recent years, while, the majority, approximately 90%, in the total structure of registered heavy-duty vehicles or trucks belongs to diesel-powered vehicles. In addition, almost 80% of all vehicles are older than ten years, that affects the amount of emissions due to increased fuel consumption. Taking into account the requirements of the European Parliament and the European Union to stop the sale of new cars with internal combustion engines from 2035, it is important to plan and organize the transition of transport vehicles to alternative fuels in time, without long queues at recharging and refuelling stations. Increasing in the amount of use of electric trucks could be achieved by paying attention to the such factors as the charging power output, that affects the total delivery time, as well as the number of charging points and their locations, for instance, in logistics centres and warehouses. Attracting the private sector to the creation of alternative fuel infrastructure will significantly speed up the achievement of the set goal, while the main task for the public sector is to offer entrepreneurs economically acceptable conditions that would motivate the use of alternative fuels in international freight transport.

**Keywords:** *Alternative fuels, Road transport infrastructure, Light-duty and heavy-duty vehicles, Electric recharging stations, Hydrogen refuelling stations*

**JEL Classification:** R42

## **SECTION**

# **“Territorial and Regional Development, Construction Management“**

# CHARACTERISTICS OF SUSTAINABLE INFRASTRUCTURE FOR FUTURE-PROOF URBAN PLANNING

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**Abstract.** The United Nations Sustainable Development Goals include several goals that are related to the necessity of developing sustainable, climate neutral and resilient infrastructure. That specifically refers to urban environment where the density of population and thus intensity of traffic, energy use, water consumption and demand for other infrastructure is higher. In practice, these goals and requirements are very general and do not provide answers to the owners, managers, and planners of public infrastructure what criteria specifically they need to consider to be able to call urban infrastructure sustainable. The authors have conducted literature review and content analysis of selected papers to extract a list of characteristics for sustainable infrastructure that can further be used to develop a decision-making model for urban infrastructure planners. Overall, the authors have identified 43 categories that characterise sustainable infrastructure. The 20 most frequently identified categories refer to mitigation of pollution and diverse external impacts on the infrastructure, highly emphasise use of smart technologies, existence of green and open spaces, stakeholder engagement and community empowerment, data-based design and operations of an infrastructure, contribution to mobility and connectivity, ability to address climate change, and other aspects characterising sustainability of infrastructure. To develop a practically applicable decision-making model for sustainable urban infrastructure development, the characteristics described above need to be tested with policy makers and industry experts, cross-checked with additional indices and tools related to urban development, and defined in even more detail – through indicators that would enable decision-makers to use the model based on clear criteria.

**Keywords:** *Smart cities, Sustainable development, Sustainable infrastructure, Urban planning*

**JEL Classification:** O18, O21, Q01, Q58

# COMPETITIVENESS OF THE FOREST SECTOR IN THE EU COUNTRIES: A COMPARATIVE ANALYSIS APPROACH

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**Abstract.** The article presents an approach for studying of the forest sector development. Based on ten secondary calculated relative indicators, the ranking of EU countries was done. The set of used indicators was mainly macroeconomic linked to forestry and logging such as Gross value added per employed, Output per employed, Consumption of fixed capital per employed, Relative share of the Gross value added in forestry and logging compared the country's Gross value added; Relative share of the Gross fixed capital formation in forestry and logging compared the country's Gross fixed capital formation; Relative share of the Compensation of employees in forestry and logging compared the country's Compensation of employees and etc. The final index also includes indicators such as Relative share of forests and other wooded lands in comparison to the country's area; Relative share of protected forests in comparison to the country's total area of forests and other wooded lands. The approach was tested with data for the 2020 year, obtained by the Eurostat. An integrated final index, called the Forest Sector Competitiveness Index (FSCI) and showed the distance of the country from the hypothetical best country, was calculated. The EU countries were divided into 5 groups, according to the FSCI 2020 score. The ranking list of the Top 6 countries with the most competitiveness forest sector, according to FSCI 2020, includes Finland, Sweden, Slovenia, Estonia, Slovakia and Latvia.

**Keywords:** *Competitiveness, Forest sector, Forest Sector Competitiveness Index (FSCI), Macroeconomic indicator*

**JEL Classification:** O11, O13, O52

# DIFFERENCES BETWEEN LATVIA AND SWEDEN IN MASS EVALUATION METHODS

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**Abstract.** The aim of the paper is to analyse and compare the different approaches in the cadastral valuation of apartment buildings in Sweden and Latvia. Initially, the valuation methods and different approaches were identified. The results show several differences between the two countries - the frequency of cadastral valuation, the data collection methodology and the differences in tax collection institution. For example, in Latvia property tax is collected in municipal level, while in Sweden in national. Sweden has a different approach to data collection, by sending out general information about cadastral value to the real estate owners who may potentially object to the assessment, in Latvia there is no such approach. Analyzing the different approaches in two countries, several significant factors were identified that should be taken into account in the cadastral valuation methodology in Latvia

**Keywords:** *Mass valuation methods, Cadastral valuation, Tax calculations, Appraisal systems*

**JEL Classification:** Q56

# THE RESPONSIBILITY OF FOREST MANAGEMENT: A SURVEY APPROACH OF FOREST LAND OWNERS AND MANAGERS

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**Abstract.** The article presents an approach for studying of the responsibility of stakeholders—owners and managers of forest lands – in the management of forests for their ecological, socio-economic and political development. A questionnaire, created by the BIOCOSSENT Project (Decision-making Support for Forest Biodiversity Conservation and Restoration Policy and Management in Europe: Trade-offs and Synergies at the Forest-Biodiversity-Climature-Water Nexus), was tested for applicability. The answers of respondents from Teteven municipality and Velingrad municipality showed their attitudes and opinions on 32 questions, grouped into four sections – Introductory questions about the forest; Current and future forest management practices in field of: cutting regime, thinning regime, tree species selection, regeneration methods, biodiversity improvement method and post-disturbances management; Behavioural responses to current and future drivers by evaluation of influence of the policy, economic, social, technological and ecological factors; Basic characteristics of respondents. The decision-making principles 'The right thing to do', 'The legally appropriate thing to do' and 'The thing I have been taught and know how to do' were found to be very important to most of the respondents. The results made it possible to establish management practices and attitudes in the field of biodiversity.

**Keywords:** *Behavioural responses, BIOCOSSENT Project, Biodiversity, Decision-making principles, Forest management*

**JEL Classification:** Q01, Q23, Q57



# REGIONAL DIVISION OF COASTAL AREAS FOR THE ASSESSMENT OF THEIR ECONOMIC GROWTH

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**Abstract.** It is important to determine the geographical division of the regions in which the study will be conducted. A region can be considered both small territories or microregions, and associations of large territories or macroregions, which have common features. Assuming that the coastal regions are united by the sea coast, they are also divided into both smaller territorial associations and larger ones. The aim of the study is to analyze the different geographical divisions of the coastal areas, which can be used in future economic growth assessment studies. The study was conducted as a qualitative analysis of the content of research articles, justifying the research questions about (1) what is a coastal region, (2) what are the divisions of coastal regions. It has been observed that studies of coastal regions basically use different geographical divisions of regions with common features – geographical, economic and political, which can substantially impact future studies. Research methods: monographic or descriptive method to research and gather information about the theoretical aspects of the regional division of coastal areas and the regional division of coastal areas in EU and Latvian regulatory acts; Analysis to analyze the scientific literature on the regional division of coastal areas and to identify and analyze the most characteristic features of the regional division of coastal areas; Synthesis to summarize various factors affecting the regional division and to define the regional division of coastal areas in Latvia for the assessment of economic growth.

**Keywords:** *Blue economics, Coastal economics, Economic geography, Location economics, Regional economics*

**JEL Classification:** R1