

## **Appendix 2 Measures of the Dean No. 236/2023E Suggestions of outline Topics of dissertation thesis**

**prof. Ing. Martin Pěluča, Ph.D.**

### **Theoretical and Methodological Approaches to the Evaluation of Public Expenditure Programmes Affecting Rural Development**

From a socio-economic perspective, rural areas are supported by various public expenditure programmes, with the most significant being the EU Cohesion Policy instruments and, to a lesser extent, the EU Rural Development Policy, which is predominantly focused on the environmental aspects of the agricultural sector. The scientific community has therefore focused significantly in recent years on the assessment of synergies in the management of funding of the above mix of approaches. The PhD dissertation should primarily address the theoretical background of the management of synergistic linkages of public expenditure programmes and further deepen the methodological context and approaches, including empirical validation.

### **Management and evaluation of regional development in the digital age**

Current trends in regional development are significantly influenced by the digitalisation process. Scientific and research activities are under significant pressure in this direction in relation to exploring these contexts, including setting up approaches for evaluating relevant trends and their impacts. In practice, this often involves exploring differences in the impacts of digitisation between urban and rural areas, applying SMART approaches in both urban and rural areas, and addressing tools related to regional development management. The PhD dissertation should address the theoretical context of the above aspects and empirically verify the application of the selected approaches.

**prof. Ing. Martin Macháček, Ph.D.**

### **The Cyclical Behaviour of Firms and Industries in Post-Transition Economies**

The dissertation will be based on the current theory and empirics of the business cycle, and the research will be focused on the cyclical behaviour and sensitivity of heterogeneous firms and industries in selected post-transition economies. Research methodology will include especially the methods of correlation and regression analysis.

**doc. PhDr. Miloslav Lapka, CSc.**

### **Bioeconomic discourse and expectations of companies management, institutions and the public**

The topic is divided into two parts. A critical analysis of bioeconomic discourse in international literature, the failures and successes of this discourse and the hopes connected with the bioeconomy in terms of solving current global problems. Tensions of the universal solution and local socio-economic and natural conditions. Methodological analyzes will be used in the next section. The research part is focused on the expectation of changes in accordance with bioeconomic principles by actors: corporate management, public administration institutions and the public itself. We operate in the interpretive framework of creating supply and demand, but also in the references of the triangle of sociological representation of individual actors. This allowed it possible to formulate non-trivial hypotheses based on a real expectation of change, not just on knowledge of the theoretical concept of bioeconomics. Data sources, a highly representative set of the Czech public N = 1015 from our own research in 2021 are available for this work.

### **Socio-economic context and ethical issues of bioeconomy from the perspective of the concept of sustainability**

Can bioeconomy as a scientific concept provide answers to global problems as declared e.g. in the 17 Sustainable Development Goals? To what extent is bioeconomy a prescription for contemporary global problems? A critical look at the socio-economic implications and ethical problems associated with the real implementation of the bioeconomy.

The topic deliberately avoids further developing the traditional economic discourse of sustainability (SD) in its familiar three pillars of economic, social and environmental, and instead focuses on a critical evaluation of the discourse in terms of bioeconomy as a universal tool for further economic and social development. Does the bioeconomy need regulation?

Depending on its focus, the analytical part of the course will focus on a region or a country close to the student's interests. In the synthesis, the student will attempt to critically evaluate the economic social and ethical limits of the bioeconomy and bring a new scientific based view on the problem connecting with energy, green deal and many other issues concern Europe.

### **Energy literacy and household savings strategies**

The aim of the dissertation is to describe the level and dynamics of changes in household savings in the Czech Republic or another country in response to the energy transformation, which is based on the long-term strategy of the European Union - European Green Deal - to become climate neutral by 2050 and to external influences affecting the energy market in Europe. The thesis consists of two parts: theoretical and analytical. The theoretical part is based on a study of the literature and consists of theoretical background related to this issue, such as topics related to household saving strategies, energy literacy or pro-environmental behaviour of households.

The analytical part is based on a triangulation of methods: qualitative research, quantitative research in the form of a household-level questionnaire survey, followed by statistical analysis. The research question is what is the household savings strategy in terms of households' attitudes and expectations? What are the socially, economically and environmentally acceptable models of household strategies and how can these could be realistically influenced by individuals and the state?

The scope and level of empirical data collection will be determined in consultation with the student, including their own innovative approaches.

**doc. Ing. Jaroslav Vrchota, Ph.D.**

### **Process automation in the area of Human Resource Management**

The administrative burden on HR departments is increasing, along with the required documents. In the future, there may not be enough people willing to do this work, so it will be increasingly necessary to use digital technologies and tools to streamline these activities (Marsikova & Mazurchenko, 2019; Trivedi & Pillai, 2020). The thesis should look at everyday HR activities and compare manual, semi-automated and fully automated data processing. And consider the possibilities of using pre-programmed systems for repetitive standardised administrative tasks, leading to the automation of processes with a focus on saving HR staff time and thus impacting the financial costs of businesses. Proposals for work should be directed to the process of creating digital documents with the possibility of full automation of preliminary information, for example, about a prospective employee, through signatures to archiving.

### **Industry 4.0 and its impact on sustainability in manufacturing companies**

In light of the growing emphasis on technology's environmental benefits, integrating conventional green processes with Industry 4.0 technologies can be expected. Traditional green processes as part of Industry 4.0 provide sustainable outcomes in manufacturing. The studies summarise that technologies (big data, cyber-physical systems, industrial IoT and intelligent systems) and green processes (logistics,

manufacturing and product design) are essential to achieve higher levels of sustainability. Subsequently, the most common outcomes are energy savings, emissions reduction, resource optimisation, cost reduction, productivity, efficiency, human resource development, social welfare and occupational safety.

### **Differences in perceptions of work-life balance between Generations X, Y and Z**

The issue of work-life balance has been at the forefront of discussions over the last few decades. It is a construct directed to the applied field of human resources in the context of personnel psychology. Still, experts disagree on its definition and perceive a contradiction between older and contemporary conceptions (Kalliath et al., 2008), with current interpretations of work-life balance based on earlier images of the relationship between the work and family life domains. Although each individual is unique, each generation tends to develop a collective personality that influences how individuals live their lives. As well as the way they perceive authority, family, work, and leisure and the way these expectations are shaped (Weston, 2006).

### **Businesses' approach to ESG**

The term ESG (environment, society and governance) has recently come to the fore in corporate social responsibility (CSR). While CSR holds companies accountable for their activities qualitatively, ESG helps companies measure or at least quantify these activities in the first place. The starting point for both of these directions is John Eligton's (1994) theory focusing on the three pillars of social responsibility (TBL), discussing the three pillars (3P): profit, people and planet. He then assigns economic, social and environmental responsibility to these areas, and any company that wants to call it business sustainable should take care of these 3Ps. The aim of this paper should be to characterise and evaluate the current trends in ESG, CSR and sustainability, along with an assessment of the activities of selected companies. The subject of the practical part should be the analysis of the different strategies related to ESG and their evaluation.

### **prof. Ing. Pavol Kíta, Ph.D.**

#### **Innovative business models of retail unit formats**

The outbreak of the Covid-19 pandemic caused by the SARS-CoV-2 coronavirus was an exceptional situation that manifested itself by forced the majority of Czech consumer households to change their lifestyles to reflect the new living conditions.

Consumer practices and the growing role of digital technologies. This has led to retail sales in all types of distribution channels raising questions about managing and adapting the operation of retail unit formats to create a value proposition for the end consumer based on geomarketing data.

The aim of this paper is the art and practice of business transformation.

Models of retail unit formats based on geomarketing data and their impact on value proposition creation and food retail network in the digital era. The work will enable the development of an innovative business model based on predictive analytics combining customer and location data to identify risks and opportunities arising from trends in consumer behaviour and decision-making.

### **doc. Ing. Ladislav Beránek, CSc.**

#### **Clouds and data centers from the point of view of economic efficiency**

Clouds and data centers (DC) play an important role in many different industries at present. However, the operation of DCs is quite demanding in terms of price and energy consumption. Factors that directly or indirectly affect electricity consumption are primarily servers, air conditioning, additive infrastructure elements, running applications, etc. Currently, there are no comprehensive approaches that would

dynamically reflect the changes in energy price and that would dynamically appropriately optimize infrastructure settings and applications. The area that deals with the mentioned issues are called "Green Cloud Computing". It is one of the promising research directions of today. The dissertation will focus mainly on the processes of the development of economically and energy-efficient applications for clouds and data centers. It also will analyze different levels of processes and tools used and operated in data centers and clouds, from software to the orchestration system level. The dissertation will be focused on the analysis of the energy efficiency of instructions executed by the CPU, and on the optimization of orchestration tools of data centers from the point of view of energy consumption. The overall goal of the work will be the design of mathematical models and new system approaches to optimize the aforementioned tools and processes in data centers from the point of view of economic efficiency. The aim of the suggested dissertation is consistent with the aims of the area of Green Cloud Computing, i.e. reducing the energy consumption of physical resources in the data center while simultaneously increasing the performance of the systems.

**doc. Ing. Martina Novotná, Ph.D.**

#### **Trends in the measurement and evaluation of innovation activities**

Company innovation activities or investments are aimed not only at increasing the competitiveness of the company but also at sustainability and the application of the circularity principle. It is important to measure and evaluate the impact of these activities on the company's economy, with consideration for social responsibility (saving with limited resources). The aim of the dissertation is to propose a system of corporate indicators that takes into account all these criteria and to verify their functionality in companies in the selected sector.

#### **Macroeconomic indicators and their use in the enterprise**

The relationship between economic activity and the environment can be established at the national economic level through national accounting and environmental accounts, from which macro aggregates and other indicators relating to e.g. material flows are identified. This information can also be used appropriately at the business level to make decisions about future developments. Based on this information, the enterprise can react to changing consumer behaviour, material flows, etc. The aim of this dissertation is to define the context and use of national economic aggregates in business practice.

**prof. Dr. James Sandford Rikoon**

#### **The political ecology of sustainable development and regional development**

Sustainable development schemes have become very popular over the past two decades, though there is oftentimes disagreement on what „sustainable development“ means, how to measure it, and the costs and benefits. The approach of political ecology provides a useful lens on assessing the social, economic, and environmental impacts of sustainable development by incorporating the theoretical perspective of the political economy and placing ecology into a central and dynamic role in analysis. Most likely, the best approach to this topic will be through a regional case study of a specific effort at sustainable development and will involve the use of both qualitative and quantitative methodologies. Research must begin with assessing the debate (from local to international) over what „sustainable development“ is and what it looks like, and then carrying the analysis into the establishment of particular activities that have existed long enough so that empirical measurements of consequences can be assessed.

#### **The costs and benefits of protected areas: recent cases**

The creation of protected areas is typically today an environmental protection strategy with ecological, economic, and social consequences for both human and non-human species. With societal interest in

ecological health as well as demographic changes occasioned by the transition of rural areas from resource-extraction to amenity-extraction bases, the scope and depth of „protected areas“ is increasingly controversial and must involve analysis of the social construction of the landscape to include “protected area” as a preferred strategy. Research on “protected areas” is best pursued on a case-study analysis, including research on human and non-human actors locally, regionally, and often nationally and internationally. The cases could be based on regional government and non-governmental organization activities, but they might also involve EU or UN initiatives as well. Successful research involves both longitudinal (historical) and synchronous analyses. (I suppose this topic could focus not only on protected areas, but both other environmental issues as well that are place-based [e.g., endangered species protection] and can be pursued in suburban and urban districts as well as rural areas.)

### **Food insecurity: Trends, coping strategies, and the role of the public and private sectors**

Social, economic, and environmental turmoil are current trends that can cause large increases in food security, especially in urban and rural areas of developed nations. Eastern and Central European countries are not immune from food insecurity and climate change, Covid-19, and economic upheavals today no doubt put pressure on additional populations. Further the costs of food insecurity in terms of health status and health care costs, children, work loss, and other measures of well-being run into the billions of Euros across the EU. Research is needed on regional and national levels to address current levels of food insecurity and to look more closely how individuals and households are coping with reduced economic and physical access to food, particularly among vulnerable populations. Research is also needed on public and private sectors responses to food insecurity, participation and barriers to participation in these programs, and outcomes.

*Sub-topic:* Particular focus on the impact of covid-19 and related viral mutations both on the institutions (public and private) that provide food assistance and the households that utilize these sources for a portion of their food supply. What new challenges do current pandemics bring to the organizations charged with providing food assistance and the networks both for procuring and distributing food? How have household coping strategies changed as a result of the pandemic and how can the food assistance system best respond to household needs?

**doc. Ing. Ivana Faltová Leitmanová, CSc.**

### **Resource allocation of economic stakeholders in relation to technology development in the context of ESG principles**

The sustainable functioning of economic stakeholders is another aspect of achieving their objectives. While institutional conditions on the one hand and sectoral or industry affiliation and market power on the other provide the framework for their activities, efficiency is increasingly being explained in relation to the implementation of modern technologies and input substitution in a way that respects ESG principles.

### **Distribution and redistribution processes**

Achieving economic objectives at each level is associated with efficiency. Any inefficiency is justified by the need to maintain social peace and social justice. However, this approach and its acceptability requires a closer study of income flows and, in particular, the downstream redistribution processes and their sustainability.

**prof. Dr. Karl Bruckmeier**

Reacting to the unexpected changes and crises in the past years (2020-2022): I suggest to focus on the lasting changes and crises in the 2020s, where many social, economic and environmental problems overlap and reinforce each other. What are the consequences for regional development in the Czech Republic or in other European countries?

*Potential themes – economics in interdisciplinary and pluralistic perspectives:*

**The global Covid pandemic and its consequences**

For modes of living and economic growth (analysing the consequences in a regional development perspective, especially: how do the local, regional, national and EU-policies to manage the Covid pandemic affect regional development now and in the near future?)

**Economic consequences of the war in Ukraine for regional development and growth in European countries (examples from Central and Eastern Europe)**

The economic and connected social consequences of the war should be investigated with regard to the blocking, interrupting or retarding of regional development and growth strategies of the EU and national governments. Guiding questions can be, for example: What are immediate, what are long term economic consequences of the war in terms of social costs? Which enterprises (or sectors) relevant for regional development are most negatively influenced? How are the overarching policies and strategies of the EU and governmental policies (sustainable development, green growth, energy system transformations) influenced? If a comparative approach is chosen, it may also be possible to compare the consequences in Ukraine and in a neighbouring country.

**Energy crises and conflicts between the use of fossil and renewable energy sources**

Unexpected difficulties of energy system transformations (how to deal with them?; how much leeway is possible for regional energy strategies?)

**Problems and future perspectives of economic growth seen in different perspectives**

(mainstream economics/new neoclassical synthesis and recent concepts influenced by the sustainability discourse: green and blue growth and degrowth/zero-growth): comparing strengths and weaknesses of each approach for regional development; developing a pluralistic perspective; is experimenting with different approaches or their combination possible?

For all themes: developing an interdisciplinary perspective (which knowledge except that from economics is relevant for regional development?; for example, future research, ecological/environmental research, policy research, research on societal change and changes of ways of life).

**doc. Ing. Hana Doležalová, Ph.D.**

**The Principles of Circular Economics in Gastronomic Establishments**

The principles of circular economics are increasingly penetrating the field of gastronomy. Projects are developed at the level of cafes and procedures at the level of restaurant facilities are verified. Research should focus on the basic areas of gastronomic establishments and verify the applicability and real application of circular principles.

### **Changes in the Economy due to the COVID-19 Pandemic**

COVID-19 has had a significant impact on most business activities. For many, the impact was almost liquidating, for some it became a source of new opportunities. The research will focus on selected areas of business, how they managed to cope with government regulations, use compensation from subsidy programs and possibly grasp the new conditions as a challenge, not a limit for their business.

### **Changes in Consumer Behavior Related to COVID-19 in the Food Market**

COVID-19 also significantly changed consumer behavior, especially in the food sales segment. The subject of the research will be the retail response to new requirements (not only due to government regulations, but also consumer preferences). Attention will be focused on e-shops with food, e-shops of retail chains, new forms of food distribution (e.g. food boxes) and also the changes in sales in the normal retail environment. The work will include surveys at the level of sales units and consumers.

### **Food Waste in Terms of Food Retail Sales**

Food waste is a very current topic for production, consumption and sales. Many retail chains address this issue as part of their social responsibility, respectively. within the application of the principles of circular economics. The research will focus on various retail formats and the ways in which food waste is handled. In connection with this, the issue of cooperation with food banks will also be addressed.

### **doc. RNDr. Jana Klicnarová, Ph.D.**

### **Statistical methods in decision-making**

Due to technical development, more and more data are collected in many fields. Therefore, it is reasonable to use these data for decision-making. Classical decision-making methods use only deterministic inputs. However, recently researchers have developed methods combining decision-making methods and statistical ones. The aim of this work is to study these methods, choose a practical problem, and design a new approach that combines decision-making methods with statistical ones and is appropriate for the solution of the selected issue.

### **Measuring of Productivity**

Optimization is a widely solved topic by management in many fields. Evaluating units' efficiency and productivity is the main underlying problem in such analyses. The aim of the thesis is to introduce effectivity and productivity units' evaluation methods (also involving a development over time) and for a suitable problem design a process for such evaluation, incl. post-optimization analyses.

### **Evaluation of conditions for business in municipalities of the selected region**

Economic development is closely connected with conditions for life and business in each municipality. The aim of this research is to use suitable statistical methods and methods of operation research to identify critical needs for business development in municipalities.

The student suggests the criteria which can be used to evaluate the quality of life in municipalities and quality of conditions for business. The student gathers all necessary data about the quality of life, business conditions, and companies in studying municipalities.

The student will study appropriate operation research and statistical analysis methods – for example, Data Envelopment Analysis, Multi-criteria decision making, which help evaluate the municipalities, and statistical methods that help him identify the relationship between these conditions and placement of businesses in the region.

Based on these methods, the student will construct a model to identify which conditions are essential for new people in business and forecast the impact of possible changes.

### **Markov chains in risk measurement**

Risk measurement is a crucial problem in many companies. The student will have the task of getting acquainted with the possibilities of using Markov chains in risk management. The aim of the thesis is to introduce methods for risk management based on Markov chains and for the chosen problem to set a model, test it, and evaluate it.

doc. RNDr. Renata Klufová, Ph.D.

### **Business demography**

The term business demography is used to cover a set of variables which explain the characteristics and demography of the business population. The creation of new enterprises and the closure of unproductive ones are considered important indicators of the business dynamics. There is a large demand for information on business demography both at national and international level. At European level, demands are for coherent and comparable data across the members of the European Statistical System (ESS). The support of entrepreneurship and entrepreneurial dynamics can be revealed by the analysis of business demography statistics over time. The first task is to describe the methodology and indicators for business demography statistics such as Enterprise Births, Enterprise Deaths and Surviving Enterprises; High-Growth Enterprises etc. The analytical part of the work will consist of comparison the main business demography indicators in the EU regions, including their spatial analysis. The will serve for the explanation of business dynamics and its differences across EU.

### **Rural gentrification**

The political and economic transformation after 1989 significantly affected all social realities in rural areas. The changes of the last decades (reduction in the intensity of agricultural activity and light industry) have resulted in population decline and economic stagnation, associated with serious social problems. Large-scale changes in the socio-economic environment have led to increasing rural differentiation. These changes have had the greatest impact on small rural communities, which have replaced the decline in traditional forms of livelihood with the service sector in an attempt to halt the overall decline. The gradual transition from agriculture to service development is referred to as the so-called post-productivist transition. This gave rise to modern post-industrial rurality.

The aim of this thesis is to map the changes in the use of a chosen rural space by tourism in the context of the above-mentioned transformation. The development in the area over the last 15 years shows significant changes indicating possible manifestations of rural gentrification, the most intensive of which appears to be the development of services associated with the tourist use of the area. However, this must be examined in a broader economic and social context, which influences and intertwines with each other (the development of the destination in accordance with the destination life cycle theory, issues of the carrying capacity of the area and the authenticity of individual tourist activities, demographic changes associated with the emergence of new uses of the area, population stratification and different ideas of individual groups of inhabitants about the appropriate development of the area, migration, changes in land use, etc.), and is collectively referred to as rural gentrification. The processes of rural gentrification as a complex phenomenon have not received significant attention in the Czech Republic so far. The chosen region (intensively used by tourism) will thus serve as a model area for identifying and describing its manifestations. A combination of geographic, demographic, statistical and sociological methods will be used to investigate this phenomenon.

### **Changes in administrative boundaries and their impact on the economic development potential of regions**

The aim of the thesis is to evaluate the influence of administrative borders and their historical changes in a selected peripheral and/or border area. One of the sub-objectives is to assess the socio-economic



differences and differences in economic potential between the districts in the model area and at the municipal level, to define peripheral and problem areas using statistical and spatial data analysis methods, and to demonstrate the impact of borders on the economic development of the region. The aim is therefore to assess the impact of administrative borders, both regional and between the districts of municipalities with extended competence, especially in terms of barriers to commuting and cooperation between municipalities in the form of associations, but also the potential for business development, etc. The work will also include finding a suitable methodology for defining administrative boundaries in the Czech Republic in GIS in several chronological horizons and interpreting the cause of changes in these boundaries in the chosen period.

**doc. Ing. Milan Jílek, Ph.D.**

### **The impact of government investments on nonfinancial corporate sector productivity**

The topic departs from endogenous growth theory assuming that government investments are part of the production function. The dissertation verifies this assumption on nonfinancial corporations' sector data.

### **Fiscal Behaviour of Sub-central Government Levels**

Government finance performance is subject to numerous influences of an economic and institutional nature. However, the stabilization function of government finance accentuates the countercyclical fiscal behaviour. The dissertation thesis deals with determinants of sub-central government behaviour, where the primary function lies in resource allocation.

### **Municipal capital expenditure**

Municipal capital expenditure (CAPEX) is an essential factor of gross fixed capital formation. Therefore, obstacles in CapEx realisation negatively impact economic growth. According to the fiscal federalism theory, decentralised municipal CAPEX brings a high degree of allocation efficiency. Therefore, it is essential to understand the factors influencing municipal CAPEX.

**doc. RNDr. Josef Navrátil, Ph.D.**

### **Energy injustice in rural space**

Technological progress over several last decades enabled the rapid growth of renewable energy production. Different technologies suitable in different situations bring opportunities for environmentally friendly production of energy everywhere around the world. However, the distribution of such installations is highly uneven, and new questions regarding energy injustice rise. The aim is to reveal in the selected rural region – (i) possibilities for the development of environmentally friendly energy production, (ii) procedural, distributional, and recognition energy (in)justice, (iii) the threat of energy poverty.

### **Forces shaping responsible behavior of tourist destinations**

Tourism belongs to the industries with significant resources consumption and CO2 producers. In the context of serious and relatively rapid changes in the planet's global environment, there is increasing pressure not only from society but also from tourism participants to behave more responsibly throughout the sector. The aim is to reveal – (i) structure of the spectrum of internal and external possibilities to make the destination enable tourist sector to be more environmental, economic and social-friendly and responsible and (ii) the needs of visitors regarding responsible behavior of tourist destinations.

**doc. Ing. Kamil Pícha, Ph.D.**

### **Content marketing**

Content marketing is topical in companies' current marketing communication (promotion). Customer in the consumer markets faces an information explosion, he is inattentive and exigent. Therefore, it is more and more difficult to attract his attention and communicate important information through particular offline or online communication channels. The creation of the content has to respect the requirements of the legislation in force. The aim of the thesis is to identify particular formats of communications and assess their pertinence and performance with regard to the specific communication channel and character of the customer and a potential use of advanced technologies and technological progress.

### **Consumer research in retail**

The evolution of consumer behaviour together with structural changes in retail and the development of particular forms of retail selling represent a challenge in the field of market research continually. The aim of the thesis is to assess the applicability of methods and techniques of consumer research in the context of new and emerging technologic tools and to assess the potential of new approaches.

**prof. Dr. Doris Fetscher**

### **Remembrance Tourism in the Czech-German Border Region**

Czechs and Germans have a long common history which has left traumatic experiences on both sides. After the end of the cold war the relations between Czechs and Germans began to renew and new spaces for encounters were created. In France, for example, a very specific type of remembrance tourism, remembering world war one and world war two has been developed. In Germany a lot of initiatives have been taken to develop a tourism which remembers the Holocaust. The aim of remembrance tourism is to protect the memory of the victims of war, oppression and genocide and to prevent similar crimes in the future. In this sense remembrance tourism differs from dark tourism which has not the same ethical impact. The aim of the thesis is to find out, whether in the German Czech border region an economically stable and sustainable remembrance tourism could be developed. Which are the structural, social, political, ethical and economic requirements for such a project? The study can be conducted using qualitative and quantitative methods as well as theoretical research.