



**SILESIAN  
UNIVERSITY**

SCHOOL OF BUSINESS  
ADMINISTRATION IN KARVINA

## **Topics of the dissertation thesis for the academic year 2022/2023**

**Supervisor: doc. RNDr. David Bartl, Ph.D. (e-mail: bartl@opf.slu.cz)**

**Topic of dissertation: Applications of game theory in economics and business management**

**Goal:** The aim is to study the possibilities of applications of cooperative and non-cooperative game theory in modelling and finding solutions to particular situations in economics or business management.

**Supervisor: doc. RNDr. David Bartl, Ph.D. (e-mail: bartl@opf.slu.cz)**

**Topic of dissertation: Applications of non-standard analysis in economics and business management**

**Goal:** The aim is to study the possibilities of applications of non-standard analysis (hyperreal numbers, numbers with infinitesimal elements) in modelling and solving some decision-making situations in economics or business management.

**Supervisor: doc. RNDr. David Bartl, Ph.D. (e-mail: bartl@opf.slu.cz)**

**Topic of dissertation: Applications of statistical methods in multi-criteria decision making**

**Goal:** The purpose is to explore the possibilities of applications of mathematical statistics methods (the theory of multiple regression analysis) in multi-criteria decision making, namely, in the pairwise comparison method and in the subsequent calculation of the priority vector. The goal is also to investigate the consequences of the choice of the priority vector by using the method of the linear regression (hypothesis testing and related questions), and to synthesize the results in the case of the entire Analytic Hierarchy Process (AHP).

**Supervisor: doc. Ing. Jarmila Duháček Šebestová, Ph.D. (e-mail: sebestova@opf.slu.cz)**

**Topic of dissertation: Flexibility of strategy in a small and medium sized enterprises**

**Goal:** Main goal of the dissertation thesis is to evaluate strategic preparedness of a small and medium sized enterprises (SMEs) according to dynamic changes in business environment. Added value of this thesis is find a relationship between optimal resource use and strategy thinking which could affect flexible behaviour of SMEs (based on VRIO, SCP, SSP resource-based strategy models).

**Supervisor: doc. Ing. Jarmila Duháček Šebestová, Ph.D. (e-mail: sebestova@opf.slu.cz)**

**Topic of dissertation: Alternative Business Concepts**

**Goal:** Main goal of the dissertation thesis is to evaluate individual alternative "concepts" of entrepreneurship (e.g. social entrepreneurship, shared economy, business in circular economy, etc.) and then focus on one main stream concept, which will be analysed in detail. Finally, effective business management options will be proposed for businesses that operate in the given concept in financial and innovative point of view.

**Supervisor: doc. Ing. Pavla Klepková Vodová, Ph.D. (e-mail: klepkova@opf.slu.cz)**

**Topic of dissertation: Modelling the market of loans for nonfinancial companies in the Czech Republic**

**Goal:** The aim of the thesis is to apply the disequilibrium model on the market of loans for nonfinancial companies in the Czech Republic, to find out determinants of demand and supply and to estimate the level of equilibrium or disequilibrium on this market.

**Supervisor: doc. Ing. Jan Nevima, Ph.D. (e-mail: nevima@opf.slu.cz)**

**Topic of dissertation:** The evaluation of the firm's competitiveness in the regional context

**Goal:** the quantitative analysis of internal and external aspects of firm's competitiveness and defining a proposal to maintain and increase of its competitiveness. The thesis can deal with the area of supra-regional aspects of firm's competitiveness.

**Supervisor: doc. Ing. Jan Nevima, Ph.D. (e-mail: nevima@opf.slu.cz)**

**Topic of dissertation:** E-government vs. business environment

**Goal:** Performing a qualitative analysis of the concept of e-government and selected elements of smart solutions in the context of the development of the business environment. The work assumes the implementation of primary and secondary research in the Czech Republic and abroad and the resulting formulation of recommendations for setting up an effective communication between the business sector and state (public) administration.

**Supervisor: doc. Ing. Jan Nevima, Ph.D. (e-mail: nevima@opf.slu.cz)**

**Topic of dissertation:** Use of brownfields for business development in the selected region

**Goal:** The aim of the thesis is to evaluate the effects of brownfields in the concept of their potential use for business purposes and further business development in the selected region. Part of the work will be the implementation of primary research. The output of work - formulation of proposals and recommendations for the optimal use of brownfields by the private sector.

**Supervisor: doc. Ing. Iveta Palečková, Ph.D. (e-mail: paleckova@opf.slu.cz)**

**Topic of dissertation:** Assessment of Firms' efficiency using the Data Envelopment Analysis Model

**Goal:** The aim of the thesis is to assess the efficiency of the non-financial companies using Data Envelopment Analysis. The business efficiency will be evaluated in the selected companies in the aggregated business branches in the selected countries.

**Supervisor: prof. RNDr. Jaroslav Ramík, CSc. (e-mail: ramik@opf.slu.cz)**

**Topic of dissertation: Methods of multi-criteria and group decision making in the area of management**

**Goal:** Research of possibilities of application of methods of multi-criteria and group decision making in the Czech small and medium sized companies in the area of marketing and management on particular decision making problems.

**Supervisor: doc. Ing. Petra Růčková, Ph.D. (e-mail: ruckova@opf.slu.cz)**

**Topic of dissertation: Functional dependence of profitability and used financial sources in firms in selected business branches in the Czech Republic**

**Goal:** The goal of this article is to perform an analysis by means of panel regression and correlation and, based on this, to find the impact of profitability on the use of debt financial sources in selected companies in aggregated business branches in the Czech Republic. Sample of companies is aimed at large and medium size of companies. Reason for this choice such as fact it that those companies have better access to external capital. It will be interesting to find out whether the same functional dependence exists in all business branches or it is different. Opposite relation will be investigated, too. Meaning how rate of using of debt financing will impact profitability.

**Supervisor: doc. Mgr. Petr Suchánek, Ph.D. (e-mail: suchanek@opf.slu.cz)**

**Topic of dissertation:** Business intelligence as a support for effective management

**Goal:** The main objective of the dissertation is to evaluate existing and propose new business intelligence functionalities to support a management in selected types of enterprises and business areas (or in one selected enterprise) and to verify their effectiveness in practice.

**Supervisor: doc. RNDr. Ing. Roman Šperka, Ph.D. (e-mail: sperka@opf.slu.cz)**

**Topic of dissertation: Simulation models and their use for decision support in business practice**

**Goal:** The goal of the dissertation thesis is to define and design simulation models of business environment and selected business processes for decision support with emphasis given on management and marketing. Simulation models will incorporate multiagent systems. Simulation results will be verified by means of changing different parameters of simulation experiments.

**Supervisor: doc. RNDr. Ing. Roman Šperka, Ph.D. (e-mail: sperka@opf.slu.cz)**

**Topic of dissertation: Process mining and its implementation in business processes**

**Goal:** The goal of the dissertation thesis is to design a process mining visualisation method. Real data of a specific enterprise or company in the form of log files of chosen business processes will be analysed. The emphasis will be given on the presentation of process mining outputs. Process mining analysis will be conducted with the use of several algorithms and perspectives. Obtained results will be synthesised for a better performance of running business processes.