



TOPICS FOR THE PHD STUDY FOR THE ACADEMIC YEAR 2026/2027

Topic: **Competencies of Ethics Managers**
Supervisor: **prof. Mgr. Anna Lašáková, PhD.**
Form of study: **Full-time**

Annotation:

In response to recurrent corporate scandals and increasing stakeholder expectations, organisations are adopting a growing array of ethical instruments, i.e., formal mechanisms designed to implement and regulate ethical conduct in the workplace. Empirical findings, however, indicate a high degree of homogeneity of these instruments across organisations and a tendency to reduce their practical effectiveness to legal compliance, thereby weakening substantive moral reasoning. Given that the design and implementation of ethical instruments are, in practice, primarily the responsibility of ethics managers, these findings naturally raise questions regarding their professional preparedness and competencies. The literature lacks a systematically elaborated and empirically grounded competency model for the role of ethics manager. The aim of this doctoral dissertation is therefore to identify the key competencies necessary for the professional performance of this role and, based on empirical research, to propose a comprehensive competency model applicable in practice, particularly in the areas of recruitment, evaluation, and development of ethics managers. Current regulatory and societal developments, including the growing prominence of the ESG agenda, suggest that the significance of this role will continue to increase in the context of the Slovak Republic. The dissertation responds to these challenges and seeks to identify the competencies that enable ethics managers not only to ensure compliance with legal norms and internal regulations but also to foster the development of ethical decision-making within organisations. By taking into account the influence of the institutional environment that shapes expectations toward this position, the study contributes to advancing knowledge in the field of business ethics and to its professionalisation within the Slovak context.

Topic: **ESG Implementation and Social Legitimacy of Companies**
Supervisor: **prof. Mgr. Anna Lašáková, PhD.**
Form of study: **Part-time**

Over the past decade, the implementation of ESG (environmental, social, governance) principles has become a significant component of corporate strategic management, primarily as a result of increasing regulatory pressure, investor demands, and evolving societal expectations. The ESG agenda is framed not only as a risk management instrument but also as a mechanism for strengthening corporate social legitimacy. Nevertheless, it remains unclear to what extent ESG implementation genuinely contributes to the perception of the firm as a legitimate actor and which mechanisms mediate this relationship. Empirical evidence suggests that firms frequently approach ESG in a formalistic manner, emphasizing reporting and



regulatory compliance, which may result in symbolic adoption. While such an approach may enhance reputational capital in the short term, it may, over time, erode stakeholder trust and thereby weaken corporate legitimacy. Concurrently, there has been an expansion in the deployment of advanced artificial intelligence systems, including agentic AI – autonomous or semi-autonomous systems capable of independently initiating and executing decision-making processes within predefined objectives. These systems are increasingly utilized in ESG-related domains, such as supply chain monitoring, risk assessment, processing of non-financial data, and the automation of reporting. Their implementation may enhance the efficiency, transparency, and consistency of ESG processes; however, it also raises concerns regarding accountability, algorithmic bias, and the potential transfer of decision-making authority from managerial actors to technological systems. The objective of this doctoral dissertation is to analyze the relationship between the extent and quality of ESG implementation and corporate social legitimacy, to identify the factors that shape this relationship, and to empirically examine the mechanisms through which ESG contributes to the construction or erosion of legitimacy, with particular emphasis on the role of AI as a potential moderator or mediating mechanism. The research will account for the institutional environment, including the regulatory framework and the expectations of key stakeholders that shape ESG strategies. The study aims to advance understanding of whether ESG implementation functions primarily as an instrument of institutional conformity or as a strategic mechanism for building long-term social legitimacy, particularly within the broader European regulatory context.

Topic: **Generative Artificial Intelligence and Cybersecurity Management**
Supervisor: **doc. Mgr. Peter Madzik, PhD.**
Form of study: **Full-time**

Annotation:

The dissertation focuses on the impact of generative artificial intelligence on cybersecurity management in organizations and on the identification of principles, tools, and managerial mechanisms through which organizations can effectively manage the security risks associated with its use. The aim of the study is to analyze how the implementation of generative artificial intelligence transforms risk management processes, decision-making mechanisms, control systems, and organizational responsibilities in the field of cybersecurity. From a managerial perspective, generative artificial intelligence represents a dual challenge. On the one hand, it provides new tools to support security management, such as the automation of security event analysis, support for incident response processes, and the creation of security procedures and training materials. On the other hand, it creates new categories of risks that increase the complexity of cybersecurity management, including more effective social engineering, deepfake attacks, leakage of sensitive data, prompt injection, and the expansion of the attack surface associated with the integration of generative tools into organizational processes. The dissertation will aim to develop a managerial framework for cybersecurity management in the context of generative artificial intelligence that integrates risk identification, organizational processes, control mechanisms, and metrics of security performance. The outcome of the research will be the proposal of a “GenAI-aware cybersecurity management” model that may serve as a practical tool for organizations when integrating generative artificial intelligence into their management and security systems.



Topic: **Human–AI Collaboration in Smart Manufacturing**

Supervisor: **doc. Mgr. Peter Madzík, PhD.**

Form of study: **part-time**

Annotation:

The dissertation focuses on examining human–artificial intelligence collaboration in the environment of smart manufacturing and on identifying managerial principles, tools, and mechanisms through which artificial intelligence systems can be effectively integrated into production processes while maintaining a high level of performance, safety, and employee acceptance. The aim of the study is to analyze how the implementation of artificial intelligence transforms decision-making processes, work organization, competency requirements for employees, and the management of production systems within the context of smart manufacturing. The development of artificial intelligence in industry enables the automated processing of large volumes of production data, support for operator decision-making, predictive process management, and real-time optimization of manufacturing operations. Within the concepts of Industry 4.0 and Industry 5.0, however, increasing emphasis is placed on the need for synergistic collaboration between humans and intelligent systems, where artificial intelligence enhances workers' decision-making and performance rather than fully replacing them. From a managerial perspective, this creates a need to identify optimal forms of interaction between humans and artificial intelligence systems, establish appropriate management processes, and create an organizational environment that supports effective collaboration between human operators and intelligent technologies. The dissertation will aim to develop a conceptual and empirically validated model of human–AI collaboration in smart manufacturing that integrates technological factors, organizational conditions, workforce competencies, and performance outcomes of production systems. The outcome of the research will be the proposal of a managerial framework titled “Human–AI Collaboration in Smart Manufacturing,” which may serve as a practical tool for organizations implementing artificial intelligence in manufacturing processes.

Topic: **Energy Transition Policies, Multinational Competitiveness, and Structural Transformation in OECD Economies**

Supervisor: **doc. PhDr. Marian Šuplata, PhD.**

Form of study: **Full-time / Part-time**

Annotation:

This dissertation examines the economic and strategic implications of policies supporting the transition from fossil fuel-based energy systems to low-carbon and renewable energy sources in advanced economies. The study focuses on the member states of the Organization for Economic Co-operation and Development, where governments are implementing ambitious climate and energy policies in response to global environmental challenges, technological change, and increasing concerns about energy security. From a methodological perspective, the dissertation is expected to combine quantitative and qualitative research approaches. The expected contribution of the dissertation is to provide a better understanding of how climate and energy policies interact with multinational business strategy and long-term structural



transformation in advanced economies. The results may contribute to the academic literature in international business, energy economics, and political economy, while also offering policy-relevant insights for governments seeking to design energy transition strategies that support environmental sustainability without weakening industrial competitiveness and economic resilience. The findings may help identify policy approaches that allow OECD countries to achieve decarbonization goals while maintaining innovation, productivity growth, and strong participation in the global economy.

Topic: **China's Economic Development and its Investment Strategy - the Reaction of Slovakia and the European Union's Neighboring Country**
Supervisor: **doc. PhDr. René Pawera, PhD.**
Form of study: **Full-time**

Annotation:

China is today a significant element not only in the East Asian region, but in the whole world. There is no doubt that it is a strong actor in many respects and an exceptional investor. It is a country that has significantly accelerated its growth over the past 30 years and has become the world's second largest economic power, and its economy today accounts for more than 18% of the world economy. With a population of more than 1.4 billion people, it competes with India for the position of the most populous country in the world. In terms of its territory, it is fourth in size after Russia, Canada and the United States. China is also one of the founders of the theory of knowledge of international management - global problems related to many topics from international business, international security to environmental protection.

Topic: **Inclusiveness of Smart Technologies in the Context of Community Adaptability**
Supervisor: **prof. Ing. Anna Vaňová, PhD.**
Form of study: **external**

Annotation:

The doctoral dissertation examines how the implementation of smart technologies affects the social resilience of urban communities. It focuses on digital participation platforms, intelligent early warning systems, and the issue of digital inclusion versus digital inequality. The aim is to identify the conditions under which smart technologies contribute to inclusive and resilient urban development. The key research question is whether smart solutions supported by EU policies strengthen the adaptive capacity of communities or, conversely, reproduce social inequalities and weaken social cohesion. Methodologically, the dissertation combines quantitative and qualitative approaches, including a comparative analysis of selected cities within the EU, a questionnaire survey, and expert interviews.



Topic: **Artificial Intelligence in Marketing: Legal Liability, Regulation and Consumer Trust in the Digital Ecosystem of the European Union**

Supervisor: **prof. Mgr. Peter Štarchoň, PhD.**

Form of study: **Full-time / Part-time**

Annotation:

The dissertation thesis focuses on the use of artificial intelligence in marketing in the context of legal liability, regulation and consumer trust within the digital ecosystem of the European Union. The theoretical foundations of the study are based on the concepts of digital marketing, artificial intelligence and legal liability in the data-driven economy, with an emphasis on the allocation of responsibility among actors within the digital ecosystem and on regulatory challenges associated with automated decision-making, personalization, and data usage. The aim of the dissertation is to analyse the impact of legal regulation and liability in the use of artificial intelligence in marketing on consumer trust and behaviour and, on this basis, to propose a conceptual model explaining these relationships. The work also seeks to formulate recommendations for more effective marketing strategies in compliance with legal requirements and for the development of public policies in the regulation of digital marketing. The empirical part is based on a combination of quantitative and qualitative methods, including a survey conducted via an online questionnaire (CAWI) focusing on consumer perceptions of artificial intelligence in marketing, complemented by experimental testing of the impact of selected marketing tools on consumer trust and behaviour.

Topic: **Impact of AI-based Personalization on Consumer Decision-Making**

Supervisor: **doc. Ing. Gabriela Pajtinková Bartáková, PhD.**

Form of study: **Full-time / Part-time**

Annotation:

The topic focuses on evaluating the possibilities of using selected artificial intelligence models to predict changes in consumer preferences and behavior over time. The solution will involve the use of large-scale data (transactional data, social networks, geolocation and mobile data) and their integration into predictive models. The goal is to identify factors that influence changes in consumer behavior and create models that enable accurate predictions for marketing practice.

Topic: **Impact of AI-based Personalization on Consumer Decision-Making**

Supervisor: **doc. Ing. Gabriela Pajtinková Bartáková, PhD.**

Form of study: **Full-time / Part-time**

Annotation:

The dissertation investigates how AI-driven personalization influences consumer decision-making, customer loyalty, conversion rates, and trust in brands and digital platforms. It includes an assessment of ethical risks related to privacy, transparency, and manipulation.



Topic: **Impacts on the Regulation of the Marketing Activities on Increasing Marketing Literacy and Consumer Protection**

Supervisor: **Assoc. Prof. JUDr. PhDr. Katarína Gubíniová, PhD.**

Form of study: **Full-time / Part-time**

Annotation:

Dissertation thesis deals with a view that reveals the connections related to the interdisciplinary relationships between the regulation of marketing activities and consumer protection, i. e. more vulnerable compared to organizations. The main goal of the future dissertation should be to examine the effects of various regulatory decisions in the field of marketing activities (for example, analysed on elements of the marketing mix). The topic of the future dissertation is crucial from the point of view that its elaboration will contribute to the formation of an important branch of law – marketing law. The dissertation with such a focus is a rare example of expanding the perspectives of current marketing management. It is assumed that in the future dissertation will be used various qualitative research strategies, emphasis should be placed on identifying the specifics of the researched phenomenon of the topic of marketing law, by focusing on the details, differences and capture of the plurality and diversity of consumer protection strategies used. As the inductive type of cognition is characteristic within qualitative research strategies, the formulation of such hypotheses (and possibly research questions) is expected, which will sufficiently cover the legislative level of marketing reality.

Topic: **Theoretical and Legal Aspects of the Regulation of Marketing Activities at Present**

Supervisor: **Assoc. Prof. JUDr. PhDr. Katarína Gubíniová, PhD.**

Form of study: **Full-time / Part-time**

Annotation:

The dissertation thesis is focused on interdisciplinary questions concerning the marketing activities and the law. The partial objective of the dissertation thesis is to examine the effects of selected regulations on organizational and consumer behavior.

The topic of the dissertation thesis is crucial from the point of view that by its processing it contributes to the formation of an important branch of law – marketing law. The dissertation thesis with such a focus is a rare example of expanding the perspective of current marketing management.

It is assumed that the PhD. student in his/her future dissertation thesis will use quality research strategies, emphasis can be placed on understanding the specifics of the researched phenomenon, i. e. the topic of marketing law, by focusing on the details, differences and capture of the plurality and diversity of marketing strategies used.

As the inductive type of cognition is characteristic within qualitative research strategies, it attempted formulation of such research questions that will further cover the legal level of marketing reality.



Topic: **The Importance of the Product Scarcity in Marketing from the Point of View of the Marketing Strategy of the Organization and from the Point of View of the Customer**

Supervisor: **Assoc. Prof. JUDr. PhDr. Katarína Gubíniová, PhD.**

Form of study: **Part-time**

Annotation:

Dissertation thesis will analyse the marketing dimension of the key economic concept – scarcity. It creates a number of marketing opportunities by combining knowledge from the field of solving a basic economic problem – limited resources and limitless wants. Organizations implement various tools in their marketing strategies through which they can stimulate the enthusiasm of (potential) customers. The goal of the dissertation thesis is to find answers to the questions: “What is the content of theories that emphasize the use of the category of scarcity in marketing? What factors need to be taken into account when managing the scarcity of different products? How effectively can the various tools used to manage product scarcity improve the (marketing) performance of organizations? ”

It is assumed that in the dissertation thesis quantitative research strategies will be used, the emphasis should be on examining the marketing performance of the organization. From the perspective of customer, it is possible to use qualitative methods of scientific work. The formulation of such hypotheses (and possibly research questions) is expected, which will not sufficiently cover the examination of product scarcity categories from the point of view of organizations as well as from the point of view of the end customer.

Topic: **Marketing Specifics of the Process of Building and Managing Brands in the Luxury Apparel Segment**

Supervisor: **Assoc. Prof. JUDr. PhDr. Katarína Gubíniová, PhD.**

Form of study: **Full-time**

Annotation:

This dissertation focuses on the scientific examination of the specific characteristics of marketing management in the dynamic environment of the fashion and luxury industries. The aim of the study is to identify the key determinants of success in brand management within these segments and to analyze differences in consumer behavior compared to that of general consumer goods. The thesis addresses a research gap in the Central European region, where a systematic academic approach to the intersection of fashion and luxury marketing is lacking, thereby contributing to the expansion of perspectives in contemporary marketing management. The study will employ qualitative research strategies (case studies, in-depth interviews) in combination with an analysis of the proposed educational concept's impact on the development of competencies among students and creatives.



Topic: **Management of the Digital Communication Infrastructure of Monuments as a Factor in Shaping the Visitor Experience**

Supervisor: **Assoc. prof. Dr. Michal Lukáč, PhD., Ed.D.**

Form of study: **Part-time**

Annotation:

Currently, monuments are in an environment of social and technological changes that fundamentally affect the way they communicate with the public. Modern digital technologies and online platforms represent an important tool not only for the presentation of cultural heritage, but also for the sustainable management of visitor traffic. In the conditions of growing competition on the leisure market, the strategic management of communication infrastructure becomes one of the important factors in increasing the attractiveness of monuments. Digital communication infrastructure includes a wide range of tools, which mainly include web platforms, social media, mobile applications, virtual tours, digital exhibitions, and interactive technologies. Their systematic and well-thought-out use can significantly contribute to strengthening the quality of the visitor experience, increasing interest in monuments and at the same time supporting sustainable visitor management. Effective use of digital communication tools enables monuments to reach different audience segments, adapt the content of marketing communication to specific target groups and build long-term relations with visitors. At the same time, it provides valuable information about the behavior and preferences of the audience, thus enabling monuments to respond more flexibly to the changing needs and expectations of contemporary society. The aim of the dissertation is to propose a model for the management of the digital communication infrastructure of monuments, which will consider the use of modern communication tools in shaping the visitor experience and the principles of sustainable visitor management. The proposed model will have a multiplier effect, as its application will be transferable to several monuments and institutions, thus enabling synergy between the protection of cultural heritage, its sustainable access and strengthening of the quality of the visitor experience.

Topic: **The Impact of Communication Infrastructure Management on Increasing Museum Attendance**

Supervisor: **Assoc. prof. Dr. Michal Lukáč, PhD., Ed.D.**

Form of study: **Part-time**

Annotation:

Today, marketing communication is an integral part of effective museum management, playing a key role in creating and consolidating their position in the cultural heritage market. In addition to contributing significantly to increasing the attractiveness of the products offered, it has the potential to create a powerful influence that not only drives the marketability of museum products but also increases the brand awareness of the heritage site, thus promoting its identity and distinctiveness in the eyes of visitors. Effective marketing communication is not just a tool to attract visitors but plays a key role in creating a sustainable relationship between museums and their visitor base. To achieve the actual marketing and communication goals, it is essential to set up a proper communication infrastructure that is



able to effectively reach different target segments of visitors. Because each group has specific needs, preferences and expectations that require personalized approaches. In addition to traditional marketing tools, it is also important to consider the dynamics of social change and technological innovations that shape the behaviour of contemporary museum audiences in the management of the communication infrastructure. The aim of this dissertation is to propose a communication model for museum audience development that will methodically serve museums to increase attendance. The model itself should address the proper setup of communication tools to reach a wide range of visitors, including the younger generation, seniors, families, as well as discerning cultural consumers. The implementation of the proposed model into practice will lead to building long-term relationships with visitors, support the improvement of the museums' reputation and contribute to their sustainable development.

Topic: **Artificial Intelligence in Marketing: Challenges of Automation and the New Role of Human Capital in Managerial and Executive Functions**
Supervisor: **doc. Ing. Andrej Miklošík, PhD.**
Form of study: **Part-time**

Annotation:

The dissertation analyzes the impacts of artificial intelligence (AI) on marketing activities and the transformation of human capital over a 5–10-year horizon. It examines which functions—such as planning, segmentation, content creation, or personalization—will be replaced by AI, and where the key human role remains essential: in creativity, ethics, and strategy. The methodology includes literature analysis (Scopus, Web of Science), trends from Gartner/McKinsey reports, and 15–20 interviews with top marketing managers from SR/EU. The output is a conceptual framework for human-AI collaboration in managerial functions (leadership, decision-making) and executive functions (campaign management, data analysis). It identifies key competencies for marketers, recommendations for education, and optimization of firm structures. The dissertation addresses the 30% annual growth of AI in marketing by 2030, promoting a sustainable balance between automation and human capital for SR competitiveness.

Topic: **The Role of Brand Marketing Activities in the Process of Building Brand Equity**
Supervisor: **doc. JUDr. PhDr. Katarína Gubíniová, PhD.**
Form of Study: **Full-time**

Annotation:

The dissertation focuses on the analysis of the role of brand marketing activities in the process of building brand equity from the consumer's perspective. Brand equity represents a significant intangible asset of a brand that influences the perceived value of products, customer loyalty, and the competitiveness of companies in the market.



The aim of the dissertation is to identify the brand marketing activities that contribute most significantly to the development of brand equity and to examine the mechanisms through which these activities shape consumers' perception of the brand. The empirical part of the dissertation will focus on examining the relationships between brand marketing activities and the process of building brand equity. The expected contribution of the research is the identification of key marketing activity factors that influence the development of brand equity, as well as the formulation of recommendations for marketing practice in the field of brand management.

Topic: **Transformation of Search Engine Optimisation in the Age of Artificial Intelligence: The Impact of Generative AI Tools on SEO Strategies, Visibility, and the Information Ecosystem**

Supervisor: **doc. Ing. Andrej Miklošík, PhD.**

Form of study: **Part-time**

This doctoral dissertation explores how artificial intelligence tools (ChatGPT, Perplexity, Gemini, and other generative models) are transforming the principles of search engine optimisation (SEO) and user information-seeking behaviour. The aim is to identify how the shift from traditional SERPs (Search Engine Results Pages) to AI-generated answers and semantic overviews affects website visibility, authority evaluation, and content creation. The methodology combines content and metadata analysis of selected websites, a comparative study of AI search outputs (ChatGPT, Perplexity) versus Google results, a survey among SEO specialists, and semi-structured interviews with content creators. The main outcome is a conceptual model of AI Search Optimization (AIO), defining strategies for adapting SEO to generative AI ecosystems and practical recommendations for marketing and education sectors. The dissertation addresses the ongoing transformation of digital search behaviour and anticipates a new phase of SEO based on human-AI collaboration in content curation and verification.

Topic: **Design of a Framework for Autonomous Agile Management and Predictive Analytics Using Generative Artificial Intelligence.**

Supervisor: **doc. RNDr. Michal Greguš, PhD.**

Form of study: **Full-time / Part-time**

Annotation:

The current dynamic development of Artificial Intelligence (AI) is fundamentally changing the paradigm of project and organizational management. While previous efforts toward agile transformation focused primarily on process flexibility and team collaboration, the integration of generative AI and predictive analytics paves the way for a new level – **autonomous agile management**. This topic responds to the need of modern enterprises to not only react to changes but to proactively anticipate them based on data. An agile approach combined with cognitive technologies is no longer just about delivery speed, but about the intelligent optimization of the entire value chain. Generative AI can synthesize information from various



sources in real-time, automate the preparation of strategic documents (backlog refinement), and propose optimal decision-making scenarios. Predictive analytics, in turn, enables managers to identify risks and process bottlenecks before they occur. The focus of this dissertation will be to explore the synergies between agile methodologies and advanced AI tools to create a comprehensive methodological framework. This framework should define how autonomous elements can support agile teams in the areas of strategic planning, prioritization, and project execution. The goal of the research is to examine the possibilities of integrating generative AI into decision-making processes and to propose a model that incorporates predictive functions into daily agile ceremonies. The result will be a set of recommendations for leaders and managers on how to transform a traditional agile environment into an intelligent, partially autonomous management system that enhances competitiveness in the digital era.

Topic: **The Impact of Agile Management Practices on Innovation Performance and Process Efficiency in Non-IT Domains.**

Supervisor: **doc. RNDr. Michal Greguš, PhD.**

Form of study: **Full-time / Part-time**

Annotation:

In the volatile business environment of 2026, traditional hierarchical management models in sectors such as marketing, human resources, logistics, and manufacturing face unprecedented pressure for speed and adaptability. The concept of Business Agility represents a strategic response to these challenges by applying agile values and practices beyond their original home in the IT sector. This dissertation focus on analyzing and quantifying the benefits of introducing agile management forms into non-technical corporate departments. Agility in non-IT domains requires more than just a change of tools; it demands a deep transformation of organizational culture and process design. The research will explore how iterative cycles, visual management (Kanban), and cross-functional teams influence the ability of non-technical departments to innovate and reduce process waste. Special attention will be paid to decision-making dynamics and the organization's ability to deliver customer value more efficiently than in traditional "waterfall" business operation models. The goal of this dissertation is to examine the correlation between the level of agile maturity in non-technical teams and their actual innovation performance. The outcome of the research will be a set of recommendations for managers in the non-IT sphere, a proposal for specific metrics to measure the effectiveness of agile processes in these domains, and the identification of critical success factors for transforming traditional organizational structures into agile ecosystems.



Topic: **Management and Integration of Artificial Intelligence Components in Enterprise Architecture with a Focus on Internal Data Protection**
Supervisor: **Prof. Dr. Kryvinska, PhD.**
Expert Guarantor: **Ing. Peter Balco, PhD.**
Study Form: **Full-time / Part-time**

Annotation:

The use of artificial intelligence has become a trend and its deployment will continue intensively in various areas of industry, services and the public sector. From the entertainment industry, individual artificial intelligence solutions are gradually becoming established in areas of critical infrastructure. However, there is a problem here. What the creators of individual AI solutions perceived as "FUN" until recently is becoming a risk. A poorly designed enterprise architecture presents a set of vulnerabilities and opens up space for threats from the external environment. Such an architecture creates a destructive environment for the organization, an environment that is unstable, risky and that can be easily infected and abused. What we were perceived as help a few years ago, today appears as a threat that needs to be eliminated by existing or new approaches to the design of enterprise architecture. The aim of the dissertation research is to analyze existing approaches to the creation of enterprise architecture with a focus on the use of artificial intelligence solutions, identify possible risks and propose solutions or. modify the enterprise architecture in order to protect the internal environment.

Topic: **Smart City IoT Device Security: A Business Systems Vulnerability Analysis Framework**
Supervisor: **Prof. Dr. Kryvinska, PhD.**
Form of study: **Full-time / Part-time**

Annotation:

The integration of IoT devices into smart city infrastructures introduces complex security challenges, particularly in safeguarding sensitive business systems. This research proposes a comprehensive vulnerability analysis framework tailored for IoT devices within smart cities, focusing on identifying and mitigating potential security threats that could impact business operations. Traditional security models often fall short in addressing the unique vulnerabilities of IoT ecosystems, such as device heterogeneity and large-scale deployment. By employing a multidisciplinary approach that combines cybersecurity principles with urban infrastructure management, this study aims to develop a robust framework that enhances IoT device security, ensuring the resilience of business systems against evolving cyber threats. The anticipated outcome is a set of actionable guidelines and best practices for securing IoT devices, contributing to the sustainable and secure development of smart city initiatives.



Topic: **Covert Data Transmission Channels: Digital Forensic Analysis for Business Systems Security**

Supervisor: **Prof. Dr. Kryvinska, PhD.**

Form of study: **Full-time / Part-time**

Annotation:

The existence of covert data transmission channels poses a significant threat to business systems security, enabling unauthorized data exfiltration and malware communication. This research aims to uncover and analyze these hidden channels within corporate networks, employing digital forensic techniques to identify methods used by attackers to bypass traditional security measures. The study will explore various types of covert channels, including steganography, network protocol manipulation, and side-channel attacks, developing a comprehensive framework for their detection and mitigation. By advancing the capabilities of digital forensic analysis, this research seeks to enhance the security posture of business systems, providing organizations with the tools to detect and neutralize covert threats effectively.

Topic: **Artificial intelligence in Digital Forensics: Automating Data Analysis for Business Information Integrity**

Supervisor: **Prof. Dr. Kryvinska, PhD.**

Form of study: **Full-time / Part-time**

Annotation:

The application of artificial intelligence (AI) in digital forensics represents a transformative approach to ensuring business information integrity. This research explores the potential of AI technologies, including machine learning and natural language processing, to automate the analysis of vast amounts of digital evidence. Current digital forensic processes are often time-consuming and require extensive manual effort, making them ill-suited to the pace of modern cyber threats. This study aims to develop AI-driven methodologies that can rapidly and accurately analyze digital evidence, identify security breaches, and trace malicious activities. By automating forensic analysis, this research promises to significantly enhance the efficiency and effectiveness of investigations, safeguarding business information integrity in an increasingly digital world.

Topic: **Secure and Governed Agentic Business Process Automation: A Formal Framework for LLM-Driven Multi-Agent Workflows**

Supervisor: **Prof. Dr. Kryvinska, PhD.**

Form of study: **Full-time / Part-time**

Annotation:

This doctoral research topic addresses the emerging challenge of integrating agentic, LLM-driven artificial intelligence into business process automation while maintaining formal rigor, security, and organizational control. Traditional Business Process Management approaches



are grounded in deterministic workflows and predefined decision logic, which are increasingly insufficient for modeling adaptive, goal-oriented agent behavior. The proposed research invites the candidate to develop a formal framework for representing and governing agentic multi-agent workflows within established process and decision modeling paradigms. The focus lies on extending existing modeling approaches to incorporate AI-driven tasks in a manner that preserves analyzability, auditability, and compatibility with formal verification techniques. In parallel, the candidate is expected to conceptualize governance mechanisms, such as constraints, risk controls, and approval structures that regulate agent autonomy without undermining process flexibility. A key aspect of the research will be to analyze how such mechanisms influence fundamental process properties, including soundness, liveness, and compliance with security and organizational policies. The project combines conceptual modeling with formal analysis and aims to produce both theoretical contributions and practical validation approaches for pre-deployment assessment of agentic process models. It is positioned at the intersection of Business Process Management, artificial intelligence, and information systems governance, offering a rigorous and relevant foundation for advancing controlled and accountable intelligent automation.



Topic: **Enterprise-Grade Agentic Process Automation: Designing Secure, Observable, and Scalable AI-Driven Business Workflows**

Supervisor: **Prof. Dr. Kryvinska, PhD.**

Form of study: **Full-time / Part-time**

Annotation:

This doctoral research topic addresses the challenge of operationalizing agentic, LLM-driven artificial intelligence within enterprise-grade business process automation. While organizations increasingly experiment with AI agents in domains such as customer service, compliance, and transaction processing, the transition from experimental prototypes to secure, scalable, and governed production systems remains limited. Existing process automation approaches provide insufficient guidance on how to embed adaptive AI components into core workflows while ensuring transparency, reliability, and control. This research invites the candidate to investigate how agentic systems can be systematically integrated into enterprise processes in a manner that meets the demands of security, observability, and scalability. The study focuses on identifying architectural and process modeling patterns that enable the safe incorporation of AI-driven agents into business workflows without compromising governance or operational oversight. Particular emphasis is placed on the role of process constructs and control mechanisms in supporting observability, auditability, and recovery strategies, especially in scenarios where agent behavior is uncertain or prone to failure. The research further examines how these design choices influence both business performance indicators, such as cycle time and cost efficiency, and operational risk metrics, including incident rates and response effectiveness in managing AI-related failures. Methodologically, the project adopts a design-oriented and empirical approach, combining the development of reference architectures with their evaluation in realistic enterprise scenarios. This includes the use of representative business cases and the application of mixed methods, integrating quantitative process data with qualitative insights from industry practitioners. The goal is to derive actionable knowledge grounded in both technical implementation and organizational practice.

The expected contributions include a structured catalog of design patterns for secure and controlled agentic process orchestration, guidelines for implementing observability and monitoring mechanisms in AI-driven workflows, and an empirically validated framework to support organizations in scaling agentic automation from pilot initiatives to production environments. The research is positioned at the intersection of Business Process Management, enterprise architecture, and applied artificial intelligence, offering both practical relevance and theoretical advancement in the governance of intelligent automation systems.



Topic: **Secure-by-Design Agentic Orchestration: Cybersecurity Architectures, Threat Models, and Controls for LLM-Driven Business Processes**

Supervisor: **Prof. Dr. Kryvinska, PhD.**

Form of study: **Full-time / Part-time**

Annotation:

This doctoral research topic addresses the emerging cybersecurity challenges associated with the integration of agentic, LLM-driven artificial intelligence into business process automation. The introduction of autonomous, tool-using agents into organizational workflows significantly expands the attack surface, exposing processes to novel threats such as prompt injection, tool-chain manipulation, identity spoofing, data exfiltration, and vulnerabilities arising from external AI dependencies. While current process management approaches emphasize governance and auditability, they lack systematic methods for incorporating cybersecurity considerations directly into the design and execution of agentic workflows. This research invites the candidate to develop a secure-by-design framework that embeds cybersecurity principles into process modeling and orchestration. The study focuses on identifying and formalizing dominant threat scenarios affecting agentic business processes and translating them into process-level representations. A central objective is to explore how process modeling constructs can be extended to function as a “secure workflow” language, enabling the explicit encoding of security controls, risk assessments, and escalation mechanisms within agentic processes. The research further examines the effectiveness of various technical and organizational controls, including identity management, authorization policies, auditing mechanisms, anomaly detection, and adversarial testing, in mitigating security risks while preserving the operational benefits of agent autonomy. Methodologically, the project combines conceptual modeling with experimental evaluation. It involves the development of security-aware process models that integrate threat vectors and control mechanisms, followed by systematic validation through security-focused experiments, including adversarial testing and simulated compromise scenarios. This approach enables the assessment of both the effectiveness of security controls and their impact on process performance and usability. The expected contributions include a comprehensive threat model and attack taxonomy tailored to agentic process automation, a structured set of secure-by-design modeling patterns that map cybersecurity controls to process constructs, and empirical evidence on the effectiveness and trade-offs of different security strategies. Positioned at the intersection of Business Process Management, cybersecurity, and artificial intelligence, this research aims to provide a rigorous foundation for building resilient and trustworthy agentic business systems.



Topic: **Liability of the Statutory Body of a Company with Share Capital for Damages - legal and Managerial Aspects**

Supervisor: **doc. JUDr. PhDr. Tomáš Peráček, PhD.**

Form of study: **Full-time / Part-time**

Annotation:

A characteristic feature of every entrepreneur's business is the so-called entrepreneurial risk. It is evident from the wording of the legal regulation of entrepreneurship that it is an activity with which a certain risk is associated because one of the defining features of entrepreneurship is its own responsibility. As an entrepreneur, a business must also face situations in its business dealings where it is not possible to clearly assess in advance the success of, for example, a particular investment or business project. The outcome of such an activity may be uncertain and in the event of failure, the entrepreneur faces adverse consequences. A company with share capital shall be liable for its obligations arising from such activity with all its assets. Thus, the managing director not only acts on behalf of the company externally, but his powers also include the management of the company's day-to-day business activities or its business decisions. Business decisions made by the managing director on behalf of the company can also be subsumed under the business management of the company - e. g. decisions on concluding purchase contracts or other commercial and legal obligations in connection with the company's business, purchase of receivables, investment in the financial market, marketing, etc. Given the risky nature of such business decisions in commercial dealings, it is not excluded that the actions of the statutory body may cause damage to the company. The question of liability for risky business decisions of the statutory body is therefore often discussed in legal practice, and it is important to focus on the examination of legislation and case law that together define the limits of liability of statutory bodies, as well as on the identification of the factors that influence the decision-making on liability. Particular attention must be paid to the managerial aspects that play a key role in risk management and decision-making within capitalised companies. Taking managerial approaches into account will allow for a better examination of how effective governance and strategic decision-making can minimise the risk of harm.

Topic: **Position and Scope of Authority of the Managing Director in the Management of a Company**

Supervisor: **doc. JUDr. PhDr. Tomáš Peráček, PhD.**

Form of study: **Part-time**

Annotation:

The management of a commercial company is a complex set of activities that ensure the management of business activities, the achievement of set goals, and the sustainable development of the company. In capital companies, management is closely linked to the position of the managing director as a statutory body with decision-making powers and responsibility for the proper functioning of the company. The managing director acts not only as the legal representative of the company externally, but also as a key figure ensuring the day-to-day business management and strategic direction of the company. Business activities



are inextricably linked to risk, and it is the managing director's role to identify, assess, and manage these risks as part of the company's management. The decisions made by the managing director affect a wide range of areas, such as investments, contractual relationships, human resources management, financing, and the setting of internal processes. Given the complexity of these decisions and their potential consequences for the company, there is a need to examine the legal definition of the position and powers of the managing director in the context of the management of a commercial company. In legal practice, there is often discussion about the limits of an executive's powers in the exercise of management, as well as the relationship between their decision-making powers and responsibility for the consequences of decisions made. Special attention must therefore be paid to the interconnection between corporate law rules and management principles, which together form the framework for the performance of the function of executive director.

Topic: **Artificial Intelligence as a Tool for Improving Communication and Collaboration between Generations in the Workplace**
Supervisor: **Assoc. Prof. JUDr. PhDr. Silvia Treľová, PhD.**
Form of study: **Full-time / Part-time**

Annotation

The dissertation focuses on the use of artificial intelligence (AI) as a tool for improving communication and collaboration between different generations in the workplace. Modern organizations increasingly operate in multigenerational environments where employees from Generation X, Millennials (Generation Y), and Generation Z work together. Each generation has been shaped by different technological, social, and economic conditions, which influence their work habits, communication styles, expectations, and attitudes toward technology. These differences may lead to misunderstandings, communication barriers, or conflicts within work teams. At the same time, multigenerational teams offer significant potential for innovation, creativity, and effective problem solving. Artificial intelligence and AI-based digital tools can play an important role in bridging generational gaps, for example through intelligent communication platforms, collaboration tools, personalized learning systems, or analysis of workplace communication patterns. The aim of the dissertation will be to analyze the possibilities of using artificial intelligence to support communication and collaboration between generations in the workplace. The author will focus on identifying the main barriers in intergenerational communication, examining the potential of AI tools to overcome these barriers, and proposing a model or recommendations for the effective use of AI in multigenerational teams. The research will combine qualitative and quantitative research methods and aims to contribute to more effective management of multigenerational teams in the digital economy.



Topic: **Artificial Intelligence and Generational Differences in the Search for Work–Life Balance**

Supervisor: **Assoc. Prof. JUDr. PhDr. Silvia Treľová, PhD.**

Form of study: **Full-time / Part-time**

Annotation

The dissertation focuses on the impact of artificial intelligence on the search for work–life balance in the context of generational differences. Modern workplaces are increasingly influenced by digital technologies and artificial intelligence systems that significantly affect the organization of work, work processes, and communication within organizations. Contemporary work teams often consist of employees from multiple generations, particularly Generation X, Millennials (Generation Y), and Generation Z. Each generation has different expectations regarding work environment, flexibility, technology use, and work–life balance. While older generations may prefer stability and clearer boundaries between professional and personal life, younger generations tend to seek greater flexibility, digital tools, and autonomy in managing their work time. Artificial intelligence can play a significant role in supporting work–life balance through the automation of routine tasks, intelligent scheduling of work activities, personalized workload management, and digital tools supporting flexible work arrangements. At the same time, the intensive use of digital technologies may also blur the boundaries between work and private life. The aim of the dissertation is to analyse the impact of artificial intelligence on work–life balance in the context of generational differences. The research will focus on identifying differences in attitudes of individual generations towards AI tools used in work organization, analysing their impact on job satisfaction, and proposing recommendations for organizations implementing AI technologies in order to support sustainable work–life balance for employees.

Topic: **Integration of Environmental Costs into Management Accounting with an Emphasis on Sustainability and Improved Reporting Quality**

Supervisor: **prof. Ing. Jana Kajanová, PhD.**

Form of study: **Full-time / Part-time**

Annotation:

Reporting and the quality of the decision-making process represent key issues in a dynamic business environment, as they are essential for maintaining the required level of corporate performance. Emerging trends in reporting create significant scope for research into the integration of environmental costs into management accounting, while also strengthening the role of reporting as an important source of information for both entrepreneurs and investors. The dissertation topic is focused on the identification and incorporation of environmental costs within corporate reporting, as well as on the development of a model for integrating environmental costs into management accounting and business reporting. Particular emphasis will be placed on sustainability and on enhancing the quality and relevance of disclosed information. The widely discussed ESG and GHG reports still lack clearly defined parameters, while the obligation to disclose them continues to be postponed due to



inconsistencies and fragmentation in the legislative framework. In this context, a model for the integration of environmental costs, understood as a tool for improving reporting and simultaneously as an indicator of higher-quality managerial decision-making, represents a highly relevant and promising area for research.

Topic: **Accounting Transformation Towards an Autonomous Data Processing Paradigm Supported by Artificial Intelligence**

Supervisor: **prof. Ing. Jana Kajanová, PhD.**

Form of study: **Full-time / Part-time**

Annotation:

Digitalisation and artificial intelligence are increasingly transforming a broad range of business processes. In the field of accounting in particular, there is a growing interest in identifying and analysing those processes and activities that artificial intelligence can simplify, accelerate, or substitute through automated and autonomous solutions. Beyond its technical dimensions, the topic also explores the procedural, control, and ethical implications of the use of artificial intelligence, including its effects on internal control systems, liability for algorithmic errors, regulatory challenges, and the changing competency requirements for accountants operating in an environment shaped by autonomous tools. The dissertation will aim to identify the conditions under which the paradigm of autonomous data processing may be implemented safely and effectively in practice, and to formulate recommendations for its application in accounting entities, auditing, and regulated reporting.

Topic: **Analysis of the Impact of ESG Disclosure on Firm Financial Performance: Evidence from European Firms**

Supervisor: **doc. RNDr. Mária Bohdalová, PhD.**

Form of study: **Full-time / Part-time**

Annotation:

ESG disclosure has become a fundamental aspect of modern corporate reporting. As sustainability becomes increasingly important to investors and regulators, understanding the financial implications of ESG reporting is essential, as many companies are investing significant resources in sustainability initiatives, but the direct financial benefits of such investments are still a matter of debate among academics and practitioners. However, the extent to which ESG disclosure affects corporate profitability, firm value and investor confidence is still uncertain. Some studies suggest a positive relationship between ESG performance and financial performance, while others report a weak or insignificant relationship. The proposed research seeks to address this gap by examining the impact of ESG disclosure on the financial performance of European listed companies. Using quantitative analysis and panel data techniques, the study provides empirical evidence on whether ESG disclosure contributes to improved financial performance.



Topic: **ESG and Sustainable Working Capital Budgeting: A Comparison Between Corporations and Small and Medium Enterprises**

Supervisor: **prof. RNDr. Darina Saxunová, PhD.**

Form of study: **Full-time / Part-time**

Annotation:

The dissertation focuses on the analysis of the link between ESG (Environment, Social, Governance) principles and sustainable working capital budgeting processes in companies of different sizes. The aim is to identify how large corporations integrate environmental, social and governance criteria into working capital decisions – especially in the areas of inventory, receivables, payables and liquidity – and to compare these practices with practices in small and medium-sized enterprises. The work examines the degree of transferability of corporate ESG-oriented financial techniques to the SME environment, including barriers, costs, benefits and adaptation options. The research combines a qualitative approach (corporate case studies, in-depth interviews) with a quantitative analysis based on financial indicators, ESG metrics and the length of the cash conversion cycle in SMEs. Special attention is paid to sustainable practices in the supply chain, green financing, ethical business relations and digitalization, which can significantly affect working capital and its stability. The output of the work is a comparative framework of ESG-oriented working capital management, identification of key differences between corporations and SMEs and the design of an implementation model of sustainable working capital suitable for SMEs. The work contributes to the development of knowledge on sustainable financial management and shows how ESG approaches can strengthen financial stability, reduce risks in the supply chain and improve the overall resilience of enterprises, regardless of their size.

Topic: **A Sustainable Working Capital Model for Small and Medium-sized Enterprises Inspired by the Practices of Global Corporations**

Supervisor: **prof. RNDr. Darina Saxunová, PhD**

Form of study: **Full-time / Part-time**

Annotation:

The dissertation focuses on creating a scientifically based working capital management model for small and medium-sized enterprises (SMEs), which is based on proven financial tools, processes and key indicators used in large corporations. The aim of the thesis is to examine which elements of corporate working capital management – such as cash pooling, S\&OP (Sales & Operations Planning), centralized treasury, standardized processes in O2C, P2P and I2P cycles or advanced forecasting techniques – are truly adaptable to the conditions of SMEs and at the same time contribute to their financial stability and sustainable growth. The research, combining qualitative (corporate case studies, interviews with financial managers) and quantitative methods (analysis of SME financial indicators, impact modeling, statistical hypothesis testing), identifies the most effective practices of large enterprises and evaluates their transferability to smaller organizational structures. Special attention is paid to implementation barriers, differences in process complexity, technological readiness and cultural factors affecting liquidity management in SMEs. The output of the dissertation is a new “adaptive framework for sustainable working capital for SMEs”, which offers a practical



and theoretically anchored working capital management model based on “corporate best practices” adapted to the conditions of smaller companies. This model has the ambition to improve their cash-flow stability, shorten the cash conversion cycle, support effective decision-making and increase the financial resilience of SMEs in a dynamic business environment. Objective: To create a scientifically validated working capital management model for SMEs, based on tools, processes and KPIs common in large corporations (e.g. cash pooling, S&OP, centralized treasury). Output: A new adaptation framework for transferring "corporate best practices" to SME conditions.

Topic: **Real time Consumption Indicators from Transaction Microdata: Evaluating LLM Classification Models and Consumption Nowcasting**

Supervisor: **doc. Mgr. Ing. Urban Kováč, PhD.**

Form of study: **Full time**

Annotation:

The rapid availability and high granularity of transaction microdata represent significant potential for constructing real-time indicators of economic activity. This study explores the use of anonymized transaction data to estimate household consumption dynamics through nowcasting approaches. A key step is the classification of individual transactions into economic consumption categories, for which large language models (LLMs) are employed. The study evaluates the accuracy and efficiency of various LLM-based classification strategies and analyzes their impact on the quality of real-time consumption estimates. The results contribute to a better understanding of the potential of modern machine learning methods in processing alternative data sources and their application in economic monitoring and macroeconomic analysis.

Topic: **Adaptive Multi Agent Systems for Macroeconomic Forecasting under Uncertainty and Structural Change**

Supervisor: **doc. Mgr. Ing. Urban Kováč, PhD.**

Form of study: **Full time**

Annotation:

Macroeconomic forecasts are significantly affected by uncertainty and the presence of structural changes, which often lead to the failure of traditional models based on stable parameters. This dissertation examines the potential of adaptive multi-agent systems as a flexible framework for macroeconomic forecasting. The proposed system consists of multiple agents, each implementing a different predictive model or working with different data sources. A key component is an adaptive mechanism that dynamically adjusts the weights of individual agents based on their historical performance and current economic conditions. This approach enables the system to respond effectively to regime changes and structural breaks in the data. The study will explore various adaptation strategies, including reinforcement learning, Bayesian approaches, and online learning algorithms. Special attention will be given to the integration of large language models (LLMs) as tools for processing unstructured data and generating additional predictive signals. The empirical analysis will be based on real macroeconomic and alternative data (e.g., transaction data, textual data, Google Trends) and



will include a systematic comparison with benchmark models. The results will contribute to a better understanding of adaptive systems in dynamic economic environments and to the development of more robust tools for macroeconomic forecasting.

Topic: **Macroeconomic Model of an Economy with Technologically Improving Robots**

Supervisor: **Prof. Ing. Vladimír Gazda, PhD.**

Form of Study: **Full-time / Part-time**

Annotation:

The dissertation aims to design a macroeconomic agent-based model of an economy including an additional production factor – robots – allowing macroeconomic analysis of the evolutionary improvement and increasing utilization of robotics. The model will include multiple types of agents: households, firms, the government budget, and pension funds.

Topic: **Entrepreneurial Exit: Determinants of Successful Startup Exits and the Role of Sustainability**

Supervisor: **Assoc. Prof. PhDr. Marian Holienka, PhD.**

Form of study: **Full-time / Part-time**

Annotation:

Entrepreneurial exit, i.e. the process in which (co)founders leave the management and ownership structures of the business they (co)created, is an important part of the entrepreneurial process. At the same time, it is one of the key mechanisms through which (co)founders harvest the value of their work based on the value they were able to create through their business. While abroad, it is a relatively established topic in both academia and practice, in the Slovak entrepreneurial environment and in entrepreneurship research, the phenomenon of exits from innovative startups is only gradually becoming established. It is one of the manifestations of a mature startup ecosystem, which supports the dynamics of capital flows, reinvestment effects, or serial entrepreneurship. From the point of view of effects, both at the level of individual startups and at the level of the economy, the ratio between the number of emerging startups and the number of successful exits with high valuation is important. To increase it, systematic knowledge of the factors that increase the probability of a successful exit is key, especially in startups that have been built from the start with the goal of early sales. One of the factors that requires special attention in this context is the orientation towards sustainable business in accordance with the concept of Sustainable Development Goals (SDGs), in line with the growing importance of ESG criteria and sustainable investing. However, current research, and especially research in our environment, lacks attention to strategies for building and managing startups from the beginning with the conscious goal of entrepreneurial exit and with a connection to sustainability. The dissertation should therefore focus on analysing successful startup exits, identifying key success factors of startups that were built from the beginning with the goal of early exit, examining the relationship between strategic sustainability orientation (SDGs) and exit valuation, comparing



global trends with the context of the Slovak startup ecosystem, and conceptualising the findings into a model of startup exit readiness.

Topic: **Psychological Determinants of Entrepreneurs' Actions at Key Moments in the Enterprise Life Cycle**

Supervisor: **Assoc. Prof. PhDr. Marian Holienka, PhD.**

Form of study: **Full-time / Part-time**

Annotation:

Entrepreneurship and the emergence of new entrepreneurial activities represent a significant source of economic growth, innovation and job creation. International research initiatives, such as the Global Entrepreneurship Monitor, regularly confirm that the dynamics of entrepreneurial activities are one of the key factors of the competitiveness of economies. Since the bearers of entrepreneurial activities are humans, whether individually or as members of entrepreneurial teams, the individual entrepreneur is one of the key subjects of research in the effort to understand the determinants of successful entrepreneurial creation and development. Current research, therefore, increasingly emphasises the importance of behavioural and psychological approaches to entrepreneurship, which examines how various psychological phenomena, cognitive processes or personality characteristics influence the thinking, actions and strategic decision-making of entrepreneurs. While in the past, researchers' attention was often focused mainly on factors influencing an individual's entry into entrepreneurship, current research also focuses on other phases of the entrepreneurial life cycle. It turns out that the importance of individual psychological factors changes depending on the phase of the entrepreneurial process, as each phase requires different decision-making strategies and forms of behaviour. However, systematic research into the psychological determinants of decision-making across the entrepreneurial life cycle is still limited, not only in the Slovak environment but also in the international context. The dissertation should therefore focus on identifying the impact of selected psychological determinants (such as cognitive biases and heuristics, resilience and stress coping, imposter syndrome, grit, obsession, or selected personality characteristics) on the thinking and actions of entrepreneurs in key moments and phases of the entrepreneurial life cycle (e.g. the pre-startup phase, start-up, growth and scaling phase, transformation phase, entrepreneurial exit), and formulate strategies ensuring the effective use of individuals' entrepreneurial potential as well as their personal well-being.

Topic: **Intergenerational Entrepreneurship and Family Business Succession**

Supervisor: **Assoc. Prof. PhDr. Marian Holienka, PhD.**

Form of study: **Part-time**

Annotation:

Intergenerational exchange within the framework of succession is a situation in a family business that must occur sooner or later if it is to be successful. However, rather than a phenomenon, it is necessary to talk about a long-term process, and the success of intergenerational exchange depends on many factors. Abroad, research on succession in



family businesses is relatively extensive and established, which is related to the significantly longer continuous history of family business. However, in Slovakia, there is still a need for more thorough research. Moreover, the environmental conditions in which the exchange takes place are gradually changing, and the representation of generations in family businesses is also evolving (with individual generations being characterised by different specificities), which has significant implications for the entire process of preparing and implementing succession. A key aspect that is not sufficiently explored in this context is intergenerational cooperation in the conditions of the changing nature of generations. Also, research to date falls short in balancing a generational, generalising perspective and taking into account individual characteristics and factors.

Topic: **Gaining Knowledge from GEM Data as a Basis for Defining Entrepreneurship Paradigms**

Supervisor: **Prof. Ing. Anna Pilková, PhD, MBA**

Form of study: **Part-time**

Annotation:

Entrepreneurship is a multidimensional complex system that is influenced by, but also flexibly responds to, changes and stimuli from the external environment. Current economic, social and trends, such as fair sustainability of economic growth, digitalization and the emergence of industry 4.0 and 5.0, aging and the growth of the silver economy, bring many stimuli for entrepreneurs. Support for how to respond to them is provided by the knowledge currently being acquired from entrepreneurship research. An important and necessary condition for acquiring knowledge is data. The Faculty of Management of Comenius University Bratislava has a 15-year history of data collected in Slovakia through participation in the Global Entrepreneurship Monitor (GEM) project. GEM is the world's most significant study on individual entrepreneurship and the entrepreneurial environment. The collection of data focuses on individual entrepreneurial activity throughout the entire entrepreneurial process (entrepreneurial potential, nascent and new entrepreneurs, established entrepreneurs, business exits, as well as business and demographic characteristics of entrepreneurs). The project also responds to data related to the latest challenges, such as entrepreneurship and sustainability, as well as the impact of digitalisation and, within its framework, the impact of artificial intelligence on entrepreneurship. As explained above, GEM data is an important source of knowledge about entrepreneurship in Slovakia, as well as in the international context. These data can also be linked to other publicly available databases that are important for revealing knowledge about entrepreneurship. The core of the dissertation solution is to find this knowledge with a potential use of a wide range of different methods are multidimensional research techniques or symbolic machine learning methods. The analysis of the revealed knowledge can be used for formulating business strategies and policies, identifying key areas that need to be addressed at macro, meso and micro levels, including modifications of business models, if we want to fulfil the visions and goals of sustainable and competitive entrepreneurship in Slovakia, as well as in the world.



Topic: **Process Mining and Task Mining as a Part of Business Process Improvement**

Supervisor: **Assoc. Prof. Zuzana Papulová, PhD.**

Form of study: **Full-time**

Annotation:

Currently, increasing emphasis is being placed on the systematic improvement of business processes-based data. The digitalisation of business processes enables the collection of process data that provides a realistic representation of actual process execution and creates space for identifying inefficiencies and opportunities for optimisation. As a result, companies increasingly face the need to utilise analytical tools that support effective business process management and continuous business process improvement. This dissertation will focus on examining the use of process data and the methods of process mining and task mining in identifying opportunities for business process improvement. It will include an overview of the existing development and current state of knowledge in this area. The research will involve the analysis of data from selected companies as well as the verification of the applicability of the proposed data-driven process improvement model.

Topic: **Artificial Intelligence as a Tool for Managerial Decision Support: Benefits, Risks, and Determinants of Effective and Safe Use in the Business Environment**

Supervisor: **Assoc. Prof. Zuzana Papulová, PhD.**

Form of study: **Part-time**

Annotation:

Increasing attention is being paid to the use of artificial intelligence (AI) as a tool for managerial decision support in companies. The development of digital technologies and the availability of AI tools enable companies to use these systems for information analysis, the evaluation of alternatives, and the support of decision-making processes at the strategic, tactical, and operational levels. At the same time, however, their use also entails a number of risks, particularly in relation to output quality, algorithmic bias, managers' excessive reliance on AI systems, as well as data protection and information security. The dissertation will focus on examining the benefits, risks, and determinants of the effective and safe use of artificial intelligence in managerial decision-making in companies. The outcome of the dissertation will be a proposed model or a set of recommendations for the effective and safe use of artificial intelligence as a tool for managerial decision support in companies.



Topic: **Use of Artificial Intelligence in Business Process Management**
Supervisor: **Assoc. Prof. Zuzana Papulová, PhD.**
Form of study: **Part-time**

Annotation:

Over the past decades, the business environment has undergone radical changes driven by technological progress and innovation. Technological progress directly affects approaches to business process management, with artificial intelligence currently attracting particular attention. The development of digital technologies, the availability of data, and the growing capabilities of analytical tools create conditions for the broader application of artificial intelligence in identifying, analysing, improving, and automating business processes. The use of artificial intelligence in business process management has considerable potential across several of its areas, particularly in identifying opportunities for process innovation, processing process data, and designing new process solutions. The dissertation thesis will focus on examining the possibilities, existing experience, and current trends in the use of artificial intelligence in business process management. In preparing the dissertation, it will be necessary to provide an overview of previous developments and the current state of knowledge in this field and, within the conducted research, to analyse the approaches and experience of selected companies in applying artificial intelligence to business process management. The research will be based primarily on interviews with business managers and a questionnaire survey with appropriately formulated hypotheses derived from the objectives of the dissertation thesis.

Topic: **ESG Aspects of Business Management: Compliance and Building Trust with Business Partners**
Supervisor: **Prof. Ing. Ján Papula, PhD.**
Form of study: **Full-time / Part-time**

Annotation:

The dissertation topic examines the ESG aspects of management as a component of strategic management through which an organisation ensures compliance with external requirements, manages risks, strengthens its credibility, and builds stable relationships with business partners. The dissertation focuses on a critical analysis of the implementation of environmental, social, and governance factors (ESG) into the strategic management of an organisation, with particular emphasis on compliance mechanisms and their impact on trust-building in B2B relationships. The research analyses the transformation of traditional management models into models of sustainable performance that reflect modern global standards and legislative requirements for transparent reporting. The dissertation investigates the processes of auditing and verifying supply chains at multiple levels (L1, L2, and L3), while identifying the key parameters used to assess partner integrity. Particular attention is devoted to the integration of information security into the Governance pillar as an essential prerequisite for digital trust. The aim of the dissertation is to propose a theoretical-empirical model of managerial decision-making that, through systematic risk mapping and precise



measurement of sustainability parameters, enhances reputational capital and the competitiveness of organisations within global supply networks.

Topic: **Process Mining and Lean Six Sigma as Tools for the Optimisation and Innovation of Digitalised Business Processes**

Supervisor: **prof. Ing. Ján Papula, PhD.**

Form of study: **Full-time / Part-time**

Annotation:

The digitalisation of business processes presents new opportunities for process analysis, optimisation, and innovation, with the integration of process mining and Lean Six Sigma offering a systematic approach to process improvement. Process mining enables precise mapping, visualisation, and analysis of actual process execution based on data, providing a foundation for data-driven decision-making in process management. Lean Six Sigma, as a structured methodology for process improvement, focuses on eliminating waste, reducing variability, and enhancing decision-making efficiency. The aim of this dissertation is to explore the synergistic effects of these two approaches in optimising and innovating digitalised processes, develop a methodological framework for their integration, and analyse their managerial implications for organisational performance. Special attention will be given to predictive analytics, which facilitates the identification of behavioural patterns within processes, detection of inefficiencies, and initiation of innovation processes based on data insights. Furthermore, this research will focus on practical applications of process mining and Lean Six Sigma in the business sector, assessing their impact on the innovation potential of organisations through continuous process improvements.

Topic: **Integration of Artificial Intelligence into Data Quality Assurance Processes in ERP Systems**

Supervisor: **prof. Ing. Ján Papula, PhD.**

Form of study: **Part-time**

Annotation:

Digital transformation, the digitalization of business processes, and the deployment of intelligent process automation in business practice are critically dependent on the integrity of input data. Poor data quality representing a primary barrier to the success of digitalization projects. Traditional Data Quality Assurance (DQA) methods in ERP systems often fail to handle high data volumes and eliminate manual errors, leading to the failure of subsequent intelligent automation and AI implementation projects. A transition from reactive data cleansing to a proactive "Compliance-by-Design" approach is essential.

This dissertation focuses on a critical analysis of data quality assurance processes and investigates the possibilities of integrating advanced artificial intelligence and machine learning algorithms into ERP system environments. The aim of the research is to propose a methodological framework for proactive data quality assurance that utilizes AI for automated anomaly detection, semantic validation, and predictive error correction. The study analyzes



the impact of intelligent DQA on the success of digital innovations and the enhancement of overall organizational performance and decision-making capabilities.

Topic: **Community Energy and Its Role in Regional Development – Innovative Tools for Energy Utilization**

Supervisor: **prof. Ing. Beáta Gavurová, PhD.**

Form of study: **Full-time / Part-time**

Annotation:

The subject of the work is research and development focused on an innovative solution supporting the energy transition of a territory, with an emphasis on a community-based approach and the promotion of renewable energy sources as a spatially specific form of territorial capital. The aim is to map and expand the possibilities for applying innovative approaches to the energy transition of territories based on the community principle, using the concept of Positive Energy Districts and other approaches as one of the areas of smart transformation of cities and municipalities. The expected outcome is a study/model of a community energy system utilizing the full range of innovation domains (technical, technological, social, organizational, planning, etc.), with model testing under the conditions of local self-government in the Slovak Republic. The topic of the work follows the international scientific research project STICS.

Topic: **Approaches and Tools for Efficient Management of the Development of Innovative Territorial Ecosystems**

Supervisor: **prof. Ing. Beáta Gavurová, PhD.**

Form of study: **Full-time / Part-time**

Annotation:

The aim of the work is research and development of approaches, methods and tools for effective management of innovative territorial ecosystems at the level of functional urban areas, micro-regions and regions, including cross-border regions, with an emphasis on supporting the emergence and synergies of various types of technical, technological, institutional, environmental, social or economic innovations. The expected result is an adaptive integrative concept of effective management of the development of innovative territorial ecosystems using various approaches, methodologies and tools as a basis for substantive and locally based strategies for the economic transformation of municipalities, cities and regions and the integration of the activities of the Comenius University incubator into this concept. The topic of the work follows the international scientific research projects STICS and 2CFIMH



Topic: **Management of Regional Innovation Ecosystems in Cross-Border Metropolitan Regions**

Supervisor: **prof. Ing. Beáta Gavurová, PhD.**

Form of study: **Full-time / Part-time**

Annotation:

The dissertation focuses on research and development of approaches and tools for the management of regional innovation ecosystems in cross-border metropolitan regions. Particular attention will be paid to mechanisms of cooperation among public authorities, academia, businesses, and civil society within the quadruple helix framework. The research will explore how cross-border innovation ecosystems can enhance regional competitiveness, support technological and non-technological innovation, and facilitate the integration of research and innovation capacities in metropolitan areas. The expected outcome is the development of an adaptive management model for cross-border regional innovation ecosystems, including recommendations for their integration into regional development and spatial planning strategies. The topic of the work follows the international scientific research project 2C FIMH.

Topic: **Leadership, Cognitive Diversity and Retention of High-Potential Generation Z Employees in Knowledge-Intensive Organizations**

Supervisor: **doc. Ing. Jiří Koleňák, Ph.D., MBA**

Form of study: **Part-time**

Annotation:

The doctoral study topic focuses on examining the factors influencing the recruitment, engagement, and long-term retention of high-potential Generation Z employees in knowledge-intensive organizations. In such environments, a relatively small group of highly capable individuals can generate disproportionate value through innovation, complex problem solving, and the development of new organizational approaches. The research will particularly explore the role of leadership, organizational culture, and cognitive diversity within teams. The study aims to analyze how different leadership approaches, work environments, and organizational structures influence the motivation, engagement, and long-term retention of talented Generation Z professionals. The research will employ a mixed-methods approach combining quantitative and qualitative methods and will be conducted across knowledge-intensive sectors such as technology firms, consulting organizations, research institutions, and creative industries. The findings will contribute both theoretically and practically to the fields of leadership, talent management, and knowledge-work management in the context of the contemporary digital economy.



Topic: **The Impact of Artificial Intelligence on Strategic Decision-Making of Marketing Leaders**

Supervisor: **doc. Ing. Jiří Koleňák, Ph.D., MBA**

Form of study: **Part-time**

Annotation:

The doctoral study topic focuses on examining the impact of artificial intelligence on the strategic decision-making processes of marketing leaders in organizations operating within the digital economy. With the increasing availability of advanced analytics and generative AI tools, marketing decisions are increasingly supported by algorithmic analysis, predictive models, and automated data processing. The research will explore how the use of artificial intelligence influences the way marketing leaders analyze information, formulate strategic decisions, and manage marketing strategies within organizations. Particular attention will be given to the interaction between human managerial judgment and algorithmic decision support, including issues related to trust in AI systems, interpretation of analytical outputs, and the impact of AI tools on the quality of strategic marketing decisions. The study will employ a mixed-methods approach combining quantitative and qualitative research methods and will focus on organizations actively using AI-based tools in marketing decision-making. The findings will contribute to a deeper understanding of how the role of marketing leaders is evolving in an environment characterized by increasing data complexity and technological automation, while also providing practical recommendations for the effective integration of artificial intelligence into strategic marketing management.

Topic: **Determinants of the Behavioral Effectiveness of Artificial Intelligence in Referral Marketing**

Supervisor: **doc. JUDr. Ing. Jana Majerová, PhD. MBA**

Form of study: **Part-time**

Annotation:

The development of artificial intelligence applications in corporate marketing activities is significantly changing traditional concepts of market interaction. While in many areas it is primarily a matter of its procedural overlap with individual business management functions, there are also areas of application for artificial intelligence where it is used directly to influence the market. One such area is referral marketing, which in its traditional form is based on consumer recommendations as a tool to stimulate purchasing decisions in favor of the company and its products. To a large extent, marketing practice exploits the importance of source credibility in the communication process. However, it is precisely this aspect that can contribute to the variability of consumer attitudes towards recommendations generated on the basis of artificial intelligence. This creates a discrepancy between the arguments in favor of using artificial intelligence in referral marketing and the reality of consumer response. However, this is not universal, but results from the specifics of markets and the subjective perceptions of consumers influenced by their level of consumer-technological literacy and the compatibility of their value settings and the benefits of incorporating artificial intelligence into referral marketing.



Topic: **Strategic Transformation of Marketing Management in Small and Medium-sized Enterprises in the Context of Artificial Intelligence**

Supervisor: **doc. JUDr. Ing. Jana Majerová, PhD. MBA**

Form of study: **Part-time**

Annotation:

The transformation of marketing management under the influence of artificial intelligence is currently a highly topical area of research, especially in the context of small and medium-sized enterprises. While expert discussions often focus on changes in the content of marketing activities, less attention is paid to the transformation of management processes, organizational structures, and the competency requirements of managers. In the context of small and medium-sized enterprises, which are characterized by limited resources and varying levels of digital readiness, the integration of artificial intelligence represents not only a technological challenge, but also an organizational and strategic one. In this context, the impact of artificial intelligence on the individual phases of marketing management, on the competency profile of managers, and on the strategic orientation of companies appears to be a relevant subject of research. The issue is compounded by the variability of digital literacy and readiness of small and medium-sized enterprises across sectors.

Topic: **The Role of Hybrid Professionals in Overcoming Implementation Barriers and Integrating Intelligent Technologies into Human Resource Management**

Supervisor: **doc. Ing. Lenka Ližbetinová, PhD.**

Form of study: **Part-time**

Annotation:

The thesis deals with the emergence of a new category of employees - the so-called hybrid professionals - who combine technological literacy with unique human cognitive abilities such as intuition, creativity, and ethical judgment. It examines their role in bridging barriers and interaction gaps between automated systems and humans.

Topic: **The Impact of Algorithmic Fairness on Artificial Intelligence Maturity in Strategic Human Resource Management of Small and Medium-sized Enterprises**

Supervisor: **doc. Ing. Lenka Ližbetinová, PhD.**

Form of study: **Part-time**

Annotation:

The dissertation focuses on the intersection of ethics and artificial intelligence implementation in human resource management. It responds to the need to investigate algorithmic fairness as a key mediator between process maturity and strategic performance, utilizing structural equation modeling to quantify these relationships.



Topic: **The Relation Between Motivation and Corporate Culture**

Supervisor: **prof. Ing. Miloš Hitka, PhD.**

Form of study: **Full-time / Part-time**

Annotation:

If a company wants to be successful and wants to achieve its goals and develop further, it is necessary to focus on managing and retaining human resources. According to current trends, these are considered the most important capital that a company has. The human resource management system itself consists in creating conditions for the effective implementation of the business concept of the company based on maximizing the performance of personnel. However, the individual areas of human resource management are closely interconnected and interrelated. A useful tool that significantly and unmistakably distinguishes one company from another is corporate culture. It provides companies with the opportunity to gain a competitive advantage and also has a direct impact on their performance. In this regard, it is a tool that can increase the willingness of employees to commit to corporate goals. It is generally considered to be a relatively closed and specific cultural system formed by the values that organizations profess, as well as the norms or rules that are followed in achieving previously set goals. Corporate culture can work synergistically for the benefit of a particular company and unite its employees by creating a working environment that helps improve the company and its sustainability and helps in its innovation and change. Employee motivation is another important element that leads to high employee commitment, efficiency, quality, success and development of the company. The role of managers is to know the needs of their employees, which motivate them to work throughout their working lives. Many managers are convinced that motivation comes from their personal qualities, but good motivation lies primarily in the correct treatment of the manager with employees, remuneration and creation of working conditions. Motivated employees are more productive, more active, they make sufficient investment in work, create higher work value, which leads them to higher work performance. We can say that motivation is an element of business success with higher productivity. The aim of the thesis is to define the dependence of the above areas of human resource management (employee motivation and corporate culture).