

WEST UNIVERSITY OF TIMIȘOARA
RESEARCH DOMAIN ECONOMIC INFORMATICS

**ERP Systems, Emerging Technologies, Data Mining and
Contextual Factors in the Transformation of Economic Processes
and Digital Behaviors**
SUMMARY OF THE HABILITATION THESIS

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Summary

The habilitation thesis synthesizes my academic, scientific and professional contributions after the completion of my doctoral studies and outlines future research directions and career objectives in the field of Economic Informatics. The thesis is structured into two main parts that systematically present the evolution of my academic profile, relevant scientific results and clear strategies for my future scientific development.

The first part of the thesis provides a comprehensive overview of my academic, professional and scientific achievements. After obtaining my Ph.D. in 2008, my academic career progressed steadily, initially as an Assistant Professor and subsequently as a Lecturer at Babeş-Bolyai University Cluj-Napoca. My teaching responsibilities encompassed fundamental and advanced courses in Economic Informatics, such as Integrated Information Systems (EAS/ERP), Advanced Integrated Systems for Business, Postmodern ERP systems, Databases and programs, Information Systems Auditing. This sustained teaching activity, conducted both at the undergraduate and graduate levels, as well as in distance and continuing education formats, allowed me to integrate cutting-edge technological and methodological developments into the educational process.

In parallel, my research activity focused on integrated information systems (ERP) and the adoption of emerging technologies such as Robotic Process Automation (RPA), artificial intelligence, cloud computing in accounting and auditing. I applied advanced analytical methods, including data mining, social network analysis (SNA), natural language processing (NLP), econometric modeling, to diverse fields such as educational data analysis, economic decision-making, digital transformation, sustainable consumption, corporate governance. My participation in several national and international research projects and grants enhanced the practical relevance and impact of these studies by aligning academic insights with real-world applications.

Throughout my career, I won a doctoral grant, an international mobility grant, and lastly two research grants for young teams awarded through competitive national processes, “Intelligent methods for stock market transaction decisions based on public information” and “eTrajectory - Professional trajectory of students”. These projects resulted in high-quality scientific publications indexed in prestigious databases (Web of Science, Scopus, other international databases), development of innovative digital platform and valuable insights into professional trajectories and decision-making frameworks. Moreover, my involvement in the PORTCultural interdisciplinary project supported sustainable rural

community development and highlighted the practical impact and societal relevance of applied research. The scientific contributions from these research endeavors have been widely cited in the research literature, as evidenced by over 750 citations on Google Scholar and a substantial h-index that reinforces the significance and recognition of my work within the academic community.

An important component of my professional development involved active participation in editorial activities and peer-review processes for internationally recognized journals such as Knowledge and Information Systems (Springer), IEEE Transactions on Systems, Man and Cybernetics, IEEE Access, PLOS One, Deviant Behavior (Taylor & Francis), Crime & Delinquency (SAGE), Electronics, Information, Applied sciences etc. These activities contributed to maintaining high academic standards and they allowed my constant engagement with scientific advances in informatics and economic applications.

In terms of institutional and infrastructure contributions, my initiatives facilitated early adoption of e-learning solutions through the implementation of the Moodle platform at Babeş-Bolyai University, which considerably enhanced the educational process well before the widespread adoption prompted by recent pandemic crisis. I was actively involved in attracting funding and resources to support research infrastructure and facilitated partnerships with key industry players such as SAP, NTT Data Romania, integrated practical experience directly into the academic curricula and to improve student employability and industry readiness.

The thesis continues with my relevant scientific contributions structured according to clearly delineated research chapters each accompanied by methodological rigor and practical impact.

Within the ERP domain, the first chapter presents my contribution to the multi-criteria selection and evaluation processes for integrated software solutions where the analysis focused on critical success factors in ERP implementations and where enhanced frameworks were proposed to measure their sustainability and performance. A portion of my research addressed the innovative applications of emerging technologies (like cloud computing, artificial intelligence, blockchain, big data, cybersecurity) in auditing, accounting and organizational efficiency. Empirical investigations and systematic reviews documented in my publications show the transformational impact these technologies have on operational practices, productivity and managerial decision-making processes for Romanian companies. Specific studies quantified the benefits and risks associated with RPA implementation in accounting practices with valuable recommendations for practitioners.

Furthermore, in the next chapter, I focused on the use of data mining and natural language processing techniques in both educational and organizational contexts. One contribution focuses on profiling IT students based on behavioral analysis and social network data, while another explores the design of a prototype platform to extract relevant events from unstructured textual sources in real time. The two cases show how analytical techniques can support a deeper understanding of user behavior and improve the processing of complex textual data in real-world scenarios.

The final chapter of the first part highlights the societal and organizational relevance of my research contributions. It includes empirical studies on mobile commerce adoption across countries, sustainable consumer behavior related to green agro-food products in Romania, and the relationship between political stability and corruption. These studies relied on advanced data analysis methods and digital tools to extract meaningful patterns and support evidence-based interpretation in economic and institutional contexts.

The second part of the thesis outlines my future academic and professional perspectives, structured around research, teaching and institutional development objectives. Regarding future research, I plan to expand my existing expertise into deeper explorations of ERP systems sustainability, digital transformation analytics, advanced RPA and NLP applications in auditing and decision-making contexts. I aim to reinforce my position within the international research community, to publish systematically in top-ranked journals, participate actively in international collaborative projects and seek strategic partnerships with industry stakeholders to further enhance the practical relevance of my research outcomes.

From an educational perspective, I intend to continuously refine my teaching methods by integrating innovative digital tools and updating curricula according to technological advances and industry requirements. A particular focus will be on the development and delivery of specialized courses and training modules centered around ERP systems (SAP S/4 HANA, Clarvision), advanced data analysis techniques and emerging technologies, to ensure students acquire highly relevant skills that align directly with current and future industry demands.

Institutionally, my efforts will concentrate to strengthen and expand the research and educational infrastructure within Babeş-Bolyai University through strategic project proposals, targeted grant applications and effective management of research groups. I will continue fostering an academic environment that encourages interdisciplinary research, innovation, practical application of scientific knowledge.

In conclusion, my habilitation thesis encapsulates a coherent and robust trajectory of academic and scientific development, clearly defined future research directions and practical contributions that reflect the contemporary challenges and opportunities within the field of Economic Informatics. Through this comprehensive and detailed presentation of my academic journey and future aspirations, I aim to show my readiness to lead advanced research initiatives and meaningfully contribute to academic development at the highest level.