KAUTZ CONFERENCE
ON BUSINESS AND ECONOMICS
TRANSFORMING GLOBAL
CHALLENGES INTO OPPORTUNITIES

Abstracts of the

Cybersecurity, Automation and Emerging Digital Applications

session

October 2, 2026
9:00-12:00



Session details

Track: Driving Innovation: Digital Transformation and AI in Business (4)
Session: Cybersecurity, Automation and Emerging Digital Applications
Chair: Abderahman Rejeb
Co-Chair: Dávid Fülep
Secretary: Jewel Kumar Roy

Date: October 2, 2026, 09:00-12:00, Room: MC-122

286	Alasasfah, Nour*; Horváth, Patrícia	Beyond the Classroom: Exploring AI Use, Perceptions, and Educational Impact Among Students and Teachers in Secondary and Higher Education
304	Takács, Fanni*; Dőry, Tibor	The Role of Artificial Intelligence in the Formalization of Management Control Systems in Family Businesses: A Literature Review and Research Agenda
311	Boros, József*; Kun, András István	The Impact of Technological Development on Labor Market Expectations: An Experimental Approach Among Higher Education Students
314	Simon, Sandor*	Enhancing ERP Capabilities Through Custom AL Development: A Customer Scoring Module for Microsoft Dynamics Business Central
319	Zalfani, Maroua*; Edit, Sule; Durso, Diego; Kassem Alshar, Wajiha	Explainable AI for Strategic Business Decision-Making: A Human-Centered Approach to Transparent and Trustworthy Decision Support Systems
324	Kálmán, Csenge*; Huszár, Barbara E.; Aschenbrenner, András	Artificial Intelligence in Project Management: Insights from Literature and Practice
326	Horváth, Patrícia*	Competency Expectations and AI Attitudes at the Intersection of Higher Education and the Labour Market
329	Lazányi, Kornélia*	Enhancing Managerial Decision-Making through Responsible AI: A Hybrid Leadership Support Framework
338	Szatmáry, Rozália *	Design of a Literature-Based Multidomain Fertility Burden Scoring Framework
339	Élő, Gábor*; Győri Szabó, Róbert	Algorithmic Mobbing: New Risks of Workplace Psycho-Terror in the Era of AI-Based Worker Management

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Beyond the Classroom: Exploring AI Use, Perceptions, and Educational Impact Among Students and Teachers in Secondary and Higher Education

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Artificial intelligence (AI) is rapidly transforming educational environments, influencing teaching practices, learning experiences, and access to information across secondary and higher education. The increasing use of AI tools like ChatGPT and other generative AI applications has raised concerns about academic integrity, disinformation, and reliance on technology, although these tools offer substantial opportunities for learning support and educational efficiency. Few studies have concurrently looked at the perspectives of teachers and students in secondary and higher education settings, despite the expanding corpus of literature on generative AI in education. This study examines how students and teachers in secondary schools and universities use AI tools, which AI technologies are most frequently adopted, and how their impact is perceived by different educational stakeholders. The research combines a Systematic Literature Review with a questionnaire-based exploratory study involving secondary school and university students and teachers. The exploratory phase investigates patterns of AI usage, attitudes toward AI-assisted learning, perceived benefits and risks, and differences between users and non-users. Particular attention is given to issues of trust, transparency, and responsible AI use in education. Expected findings suggest that AI can enhance accessibility, productivity, and learning support, while simultaneously creating challenges related to responsible use and critical thinking. The study provides comparative evidence on AI adoption patterns across secondary and higher education, highlights differences in perceptions between students and teachers, and provides insights for educators, institutions, and policymakers seeking to integrate AI effectively and responsibly.

Keywords: Artificial Intelligence, Education, Higher Education, Secondary Education, AI-Assisted Learning, Educational Technology

The Role of Artificial Intelligence in the Formalization of Management Control Systems in Family Businesses: A Literature Review and Research Agenda

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During the professionalization of family businesses, the effectiveness of management control systems plays a key role in transforming informal decision-making based on owners' experience into a more structured, measurable, and transparent management practice. Due to growth, generational succession, and market uncertainties, it is becoming increasingly important to examine how artificial intelligence can support the operation of control systems and contribute to improving their effectiveness in the context of family businesses. The aim of the study is to explore, based on a literature review, the role of AI-based solutions in formalizing and improving the effectiveness of management control systems, and to develop a process description that presents the main steps in the implementation and operation of AI-supported controlling. The article applies a critical review and agenda approach: by synthesizing the literature on the professionalization of family businesses, control systems, AI-based decision support, and organizational formalization, it formulates a conceptual process model. The expected findings suggest that AI supports the effectiveness of controlling primarily through the automation of data collection and data cleansing, predictive planning, the development of performance indicators, the acceleration of variance analysis, and the improvement of the evidence base for managerial decision-making. The proposed process consists of defining controlling objectives, assessing data maturity, selecting relevant AI methods, integrating them into controlling processes, evaluating the results, and continuous improvement based on feedback. The study concludes that AI does not increase the effectiveness of management control systems on its own, but only when it is aligned with the strategic goals, governance culture, and level of professionalization of the family business.

Keywords: Family Businesses, Artificial Intelligence, Management Control Systems, AI-Supported Effectiveness Assessment

The Impact of Technological Development on Labor Market Expectations: An Experimental Approach Among Higher Education Students

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Technological development globally reshapes the labor market, altering job contents, employment opportunities, and the work-life interface. This structural shift poses critical questions for young individuals planning their careers. This study investigates the labor market expectations of higher education students (N = 520) at the Faculty of Economics and Business, University of Debrecen, using an experimental design conducted in November 2024. Participants subjectively evaluated three primary labor market effects of technological development; job-creating, labor-displacing, and labor-augmenting (complementary) effects, alongside general labor market, job-specific, and work-life balance dimensions. Following randomized assignment, treatment groups received either a macro-level labor market overview or a micro-level job profile description, followed by a post-test measurement. The results indicate that students perceive the labor-augmenting effect most positively, reflecting a preference for the optimization of work processes. Job flexibility and the rising demand for higher qualifications were also highly valued. Conversely, expectations regarding job creation and employment opportunities remained pessimistic. However, exposure to professional descriptions (informational intervention) led to a slight positive shift in attitudes; for instance, the perception of job creation increased from 5.38 to 5.95 on a 1-10 scale. Regarding work-life balance, respondents exhibited optimism, particularly concerning future workplace flexibility and the role of technology in supporting social relations. Future research should focus on industry-specific analyses and socio-demographic variances. Furthermore, the findings underscore the need to develop targeted educational programs to enhance technological literacy, thereby facilitating students' adaptation to the evolving labor market.

Keywords: Technological Development, Labor Market Expectations, Experimental Design, Higher Education Students

Enhancing ERP Capabilities Through Custom AL Development: A Customer Scoring Module for Microsoft Dynamics Business Central

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Enterprise Resource Planning systems typically lack structured customer qualification mechanisms. It seems to be a notable gap from a controlling perspective, mainly when analyses require aggregating data from multiple relational tables and applying weighted computational logic. Customer scoring is rarely a built in element of ERP systems, causing a challenge for organisations that rely on complex partner relationship management. This study addresses that gap by presenting the design and implementation of a custom customer scoring module as a functional extension of Microsoft Dynamics Business Central. The primary objective is to demonstrate how AL (Application Language) programming enables the creation of a scoring subsystem that integrates transparently into the standard ERP interface, remaining indistinguishable from the platform's built-in features for the average end user. The research adopts a software engineering methodology. Custom data tables store the hierarchical structure of scoring criteria and sub-components, while dedicated list pages and input forms support intuitive data entry. All relevant tables load automatically at system startup. The AL codebase, including the logic for numerical aggregation of verbal qualitative categories, is discussed in detail to illustrate the key technical decisions made during development. The new module, which I developed, successfully translates multi-level verbal rating criteria into structured, computable scores. The newly made visual elements are embedded into the standard Business Central web interface via the customer card's menu, without modifying the core platform. The study confirms that an effective ERP customisation is achievable through native coding, without middleware. The inner logic of the development is transferable to broader scoring and qualification tasks, offering a replicable blueprint for bridging the gap between standard ERP capabilities and the analytical demands of modern business controlling.

Keywords: Microsoft Dynamics Business Central, AL Development, Customer Scoring

Explainable AI for Strategic Business Decision-Making: A Human-Centered Approach to Transparent and Trustworthy Decision Support Systems

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Artificial Intelligence is increasingly embedded in Decision Support Systems to support strategic business decision-making. Despite advances in predictive analytics, the adoption of AI-enabled DSS remains constrained by the limited transparency and explainability of black-box models, reducing managerial trust, accountability, and organizational acceptance. Although Explainable Artificial Intelligence and Human-Centered Artificial Intelligence have emerged as promising paradigms, existing research primarily focuses on individual explainability techniques or human-centered principles in isolation, providing limited guidance on how predictive analytics, explainability, human oversight, and governance can be systematically integrated within a unified decision-support architecture. This study addresses this gap by proposing the Human-Centered Explainable AI Decision Support System, a multi-layer framework developed using a Design Science Research approach. The framework combines predictive analytics with complementary explainability techniques, including SHAP, LIME, and counterfactual explanations, while incorporating human oversight and governance mechanisms to enhance transparency, accountability, and trustworthy decision-making. The relationships among these components are designed to ensure that explainable AI supports, rather than replaces, human judgment in strategic business decisions. The framework is demonstrated through an employee attrition prediction case study using the IBM HR Analytics dataset. The results show that integrating multiple explanation methods with human oversight improves the interpretability of AI-generated recommendations, strengthens managerial trust, and supports more informed and accountable decisions. The proposed framework contributes to the advancement of HCAI and XAI by providing an integrated architecture for transparent and trustworthy AI-enabled DSS, while offering organizations a practical bluprint for implementing responsible AI.

Keywords: Human-Centered Artificial Intelligence, Explainable Artificial Intelligence, Decision Support Systems, Trustworthy AI

Artificial Intelligence in Project Management: Insights from Literature and Practice

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Artificial intelligence (AI) has become one of the defining technologies of digitalisation, transforming organisational processes and improving innovation and efficiency across industries. Its growing use in information processing, analysis, prediction, and decision support has created new opportunities for project management, while also raising questions about its practical role and impact on project managers' work. The aim of this research is to examine how AI appears in project management, which industries and project life cycle stages are most associated with its use, and how it affects the role and decision-making of project managers. The study combines a systematic literature review with qualitative empirical research. The review followed the PRISMA guidelines and the PEO framework. Its results revealed a research gap, as existing studies provide limited empirical insight into the practical use of AI in project management. Therefore, semi-structured interviews were conducted with project managers. The critical incident technique was applied to explore real-life experiences in which AI supported or hindered project management processes. The interview data were analysed using thematic analysis. The findings indicate that AI is most actively applied in construction and is also gaining importance in software development, especially in agile project management, risk analysis, scheduling, and resource planning. AI applications support the main project life cycle stages. Preliminary empirical results suggest that AI primarily functions as a supportive tool in practice, especially in information processing, documentation, communication, and decision support. Its use may reduce administrative workload and allow project managers to focus more on strategic activities. Overall, the topic remains exploratory and requires further empirical research.

Keywords: Artificial Intelligence, Project Management, Critical Incident Technique, Systematic Literature Review

Competency Expectations and AI Attitudes at the Intersection of Higher Education and the Labour Market

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The rapid transformation of the labour market driven by digitalisation and artificial intelligence (AI) is reshaping competency expectations toward future employees. AI-based technologies are transforming work processes and redefining the skills required in the future labour market. Consequently, higher education institutions face increasing pressure to prepare students for changing labour market demands and AI-related challenges. Understanding how future workforce competencies and AI-related attitudes are perceived by students and employers has therefore become increasingly important. This research examines competency expectations and AI attitudes at the intersection of higher education and the labour market. It aims to identify the competencies considered most relevant in the age of AI and to explore how students and employers perceive the role of artificial intelligence in employability, work processes, and career opportunities. Attention is paid to digital competencies, adaptability, problem-solving, critical thinking, lifelong learning, and AI-related skills. The study applies a systematic literature review (SLR) using the PEO (Population–Exposure–Outcome) framework. Relevant studies will be identified from international scientific databases using predefined inclusion and exclusion criteria. The review aims to synthesise current knowledge on AI, competency expectations, and future workforce skills, identify key competency domains, and reveal existing research gaps. The findings are expected to contribute to the growing literature on AI and future workforce competencies while providing practical insights for competency-based curriculum development in higher education. Furthermore, the review will establish a conceptual and methodological foundation for an empirical study involving students and employers, supporting the investigation of similarities and differences between higher education and labour market perspectives.

Keywords: Artificial Intelligence, Competency Expectations, Higher Education, Labour Market

Enhancing Managerial Decision-Making through Responsible AI: A Hybrid Leadership Support Framework

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As organisations navigate digital transformation and increasingly complex business environments, professionals frequently move into leadership roles without formal preparation in organisational decision-making. Existing leadership development and decision-support approaches often rely either on static self-assessment tools or on rigid contingency frameworks. As a result, they may capture individual leadership tendencies or situational requirements separately, but they rarely connect the two in a dynamic and interpretable way. Current paper proposes a hybrid leadership decision-support framework grounded in the Vroom-Yetton normative decision model and a two-dimensional Decision-Motivation Fit Model (DMFM). The framework conceptualises leadership alignment through two dimensions: the extent of delegated decision authority and the dominant source of employee motivation. Generative AI is positioned as a bounded support layer for clarifying situational input, while the final recommendation logic remains deterministic and theory-based. The framework identifies potential mismatches between a leader's natural inclinations and the requirements of a given situation. It then generates two forms of recommendation. The first is behavioural adaptation, where the leader consciously adjusts their decision-making or motivational approach. The second is situational redesign, where the leader changes contextual conditions, such as information availability, employee competence, commitment or conflict. An evaluation framework is outlined to assess decision consistency, elicitation reliability, model stability and managerial interpretability. The proposed approach contributes to research on responsible AI-enabled business innovation by showing how artificial intelligence can support leadership development and managerial decision-making without replacing transparent, validated management models or human judgement.

Keywords: Contingency Theory, Decision Support System, AI, Vroom-Yetton

Design of a Literature-Based Multidomain Fertility Burden Scoring Framework

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Fertility outcomes are influenced by heterogeneous factors spanning biological, behavioural, demographic, clinical, and relational domains. Integrating these determinants into a coherent scoring framework is challenging, particularly when empirical datasets are limited and evidence is primarily literature-derived. This paper proposes a structured fertility burden scoring architecture designed to address such comparability challenges under data-constrained conditions. The framework formalises item-level evaluation using rubric-based dimensions capturing epistemic robustness and biological proximity, while answer-option-level scoring maps concrete response states onto bounded burden values. These components transform qualitative literature evidence and user responses into structured quantitative signals. The signals are aggregated within domain-specific structures and combined through a weighted composite index while preserving interpretability and monotonicity. A rule-based, answer-sensitive override mechanism ensures that clinically meaningful factor constellations are not diluted in aggregation, while a domain modifiability index separates burden magnitude from intervention potential. Structural evaluation is performed using uniform synthetic data and constraint-based scenario families that stress-test model behaviour across diverse configurations. The results indicate that the proposed architecture remains mathematically stable, supports transparent interpretation, and improves the representation of meaningful burden patterns, although further calibration is required to reduce override dependence and refine domain-level dominance. Overall, the proposed architecture provides a transparent methodological foundation for future fertility-related educational and decision-support systems.

Keywords: Fertility Burden Scoring, Reproductive Risk Assessment, Synthetic Data Validation, Decision Support Systems

Algorithmic Mobbing: New Risks of Workplace Psycho-Terror in the Era of AI-Based Worker Management

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The increasing use of artificial intelligence in corporate processes is transforming recruitment, performance appraisal, task allocation and productivity monitoring, while reshaping workplace power relations and psychosocial risks. This paper introduces the concept of algorithmic mobbing, a new form of workplace psycho-terror in which AI-based worker management systems contribute to exclusion, stigmatization, over-monitoring and employee disadvantage. The theoretical foundation draws on workplace mobbing, psychosocial risk, toxic leadership, algorithmic management and digital workplace surveillance. The central argument is that AI does not eliminate traditional mobbing but may make it less visible, more difficult to challenge and more deeply embedded in organizational routines. The study combines a literature review with an exploratory survey on workplace mobbing in Hungary. An online questionnaire was completed by 139 white-collar employees. The findings show limited awareness of mobbing, while reported cases are associated with managerial responsibility and power relations. Organizational responses are often weak: many cases remain unresolved, employers fail to intervene and perpetrators are rarely sanctioned. The findings highlight vulnerabilities that may intensify as AI is integrated into employee evaluation, monitoring and decision support. The paper argues that algorithmic mobbing may emerge through biased performance evaluation, automated exclusion, opaque task allocation, excessive surveillance and AI-supported managerial retaliation. Companies should treat AI-based worker management as both a technological and psychosocial risk. The study recommends AI governance, human oversight, explainable decision-making, complaint mechanisms and psychosocial risk assessment. The concept of algorithmic mobbing provides a framework for AI-mediated workplace psycho-terror and contributes to responsible AI.

Keywords: Algorithmic Mobbing, Workplace Psycho-Terror, Artificial Intelligence, AI-Based Worker Management, Psychosocial Risk