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**International Conference on
Digital Transformation,
Sustainability and AI:**

Human-Machine
Collaboration for Sustainable
Growth and Harnessing the
Potential of AI

Book of Abstracts

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International Conference on Digital Transformation, Sustainability and AI: Human-Machine Collaboration for Sustainable Growth and Harnessing the Potential of AI

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FOREWORD

The International Conference on Digital Transformation, Sustainability and Artificial Intelligence: Human–Machine Collaboration for Sustainable Growth and Harnessing the Potential of AI was convened to provide an interdisciplinary platform for scholars, practitioners, and policymakers to critically examine the rapidly evolving relationship between digital technologies, artificial intelligence, and sustainable development.

As digital transformation continues to reshape economies, institutions, and societies, the need for responsible, inclusive, and sustainability-driven approaches to AI has never been more pressing. This conference brought together diverse perspectives to explore how human–machine collaboration can be leveraged to foster innovation, enhance organizational performance, and support long-term sustainable growth across sectors and regions.

The abstracts presented in this volume reflect the breadth and depth of the discussions held during the conference. They address a wide range of themes, including - but not limited to- AI-enabled decision-making, digital innovation, sustainability strategies, ethical and governance considerations, and emerging applications of intelligent systems in business, education, and public policy. Collectively, these contributions highlight both the opportunities and challenges associated with harnessing AI in a manner that aligns technological advancement with societal and environmental responsibility.

On behalf of the organizing committee, I extend my sincere appreciation to all authors, reviewers, keynote speakers, and session chairs whose scholarly contributions and engagement ensured the success of this conference. I would also like to acknowledge the invaluable efforts of our partners and sponsors, whose support made this event possible.

It is my hope that this Book of Abstracts will serve not only as a record of the conference proceedings, but also as a catalyst for further research, collaboration, and dialogue in the fields of digital transformation, sustainability, and artificial intelligence.

Dr. Farid Abdallah, Dean,
College of Business,
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The Capability Governance Pathway of AI in Forensic Auditing

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This study investigates how auditors' knowledge and awareness of artificial intelligence and machine learning (AI/ML) enhance forensic audit outcomes and how this effect depends on the ethical and regulatory environment. Using survey data from 167 forensic, internal, external auditors and fraud examiners, we examine links among Knowledge and Awareness (KA), Process Efficiency (PE), Ethical and Regulatory Environment (ER), and Outcome and Compliance (OC). Results show that KA strongly improves PE, and that PE is the main driver of OC, with additional direct effects from KA and ER. ER also strengthens the PE–OC relationship, and mediation analysis confirms that PE partially transmits the influence of KA to OC. Overall, the findings indicate that AI/ML benefits in forensic auditing arise through enhanced efficiency supported by strong ethical-regulatory structures, offering insights for auditor training and governance policy.

How Board Digital Skills Shape Firms' AI Adoption Disclosure

Muath Abdelqader

Australian University, Kuwait

This study explores the relationship between corporate governance and the level of Artificial Intelligence (AI) adoption disclosure. It aims to fill gaps related to the effect of board digital competencies in shaping firms' communication of AI initiatives. Using the content analysis of annual reports of a sample of listed companies in Kuwait for 2021–2024, an AI disclosure index is being developed to capture the level of AI adoption disclosure, and regression analysis will be used to examine the suggested relationship. Building on the resource dependency theory and upper echelons theory, it is expected that directors with digital expertise and background promote their firms AI adoption disclosure. This study contributes to the growing literature on digital governance and corporate disclosure by highlighting the strategic role of directors' competencies in technological transparency. It also offers recommendations for practitioners and policy makers on enhancing AI-related reporting.

Transformational Leadership and Knowledge Quality in Building Ambidextrous Organizations

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Organizations today face turbulent environments driven by rapid technological change and competitive pressures, necessitating high adaptive capacity. Organizational ambidexterity, the ability to explore new opportunities while exploiting existing resources, is essential. This dual demand involves human behavior and relies on effective knowledge generation, sharing, and transformation. However, information overload can hinder employees' ability to identify valuable knowledge. This study explores the role of transformational leadership in shaping organizational ambidexterity through knowledge quality and sharing. An empirical study involving 403 employees across various Egyptian industries was conducted, revealing that transformational leadership positively influences ambidexterity via the mediating role of knowledge quality. This research underscores the significance of leadership in managing knowledge flows in today's digital environments, where the risk of overload is heightened.

Linking Algorithmic Management To Employee Innovation Evidence From The Gig Economy

Bora Yildiz

Istanbul University, Turkeye

Zekeriya Emre Erkal

Istanbul University, Turkeye

The integration of AI technologies into management processes is rapidly shaping the digital era. The need to standardise operations and minimise human-related errors has made algorithmic management a strategic tool for contemporary organisations. Drawing on social exchange theory, this study examines the mediating roles of organisational trust, trust in management, and algorithmic trust in the relationship between algorithmic management and employees' innovative workplace behaviors. The research sample consisted of 450 gig-economy workers based in Istanbul. The findings revealed that algorithmic management enhances innovative workplace behaviors through organisational trust when employees perceive high levels of autonomy. The study concludes by outlining managerial and further research directions, as well as limitations.

Translating Employee Complaints into Strategy Leveraging Generative AI for HR Intelligence

Ali El Dirani

Al Maaref University, Lebanon

The informal nature of employee feedback, with its emotional intensity and behavioral aspects represent an essential input for organizational strategic decisions and considerations. This research investigates how Generative Artificial Intelligence (GenAI), utilizing models such as GPT-4 and LLaMA-2, converts unstructured employee complaints and discussions into organized formal inputs feeding the decision-making process and shaping business strategies and plans. Our research demonstrates that GenAI can reveal key strategic business problems through emotional authenticity analysis. The implementation of GenAI technology within HR systems leads to improved operational efficiency while simultaneously enhancing HR and organizational strategic impact at large. The research also includes specific guidelines for implementing ethical GenAI solutions together with culturally appropriate prompt development.

From Ancient Street Criers to Hybrid AI Advertisers. A Historical and Critical Analysis of the Evolution of Advertising through the Ages

Faidon Theofanidis

Australian University, Kuwait

Christos Livas

University of Piraeus, Greece

Richard Rutter

Australian University, Kuwait

This article presents a conceptual and critical analysis of the evolution of advertising, tracing its development from the ancient street vendors and criers to the algorithmically driven strategies of AI-based systems. The study explores how advertising forms, media, and messages evolve with changing social, economic, and technological contexts. The study reviews literature on advertising approaches across eight eras: 1.Pre-Printing Era (Ancient to 1450s) 2.Printing Press Era (1450s–1700s) 3.Industrial Revolution & Mass Print Era (1700s–1920s) 4.Golden Age of Advertising (1920s–1950s), 5.TV era (1950s–1990s) 6.Digital and Internet Era (1990s–2010s) 7.Social Media & Mobile Era (2010s–present) 8.Artificial Intelligence Era (2022-present). Particular attention is paid to the rise of artificial intelligence as a hybrid advertising model that blends personalization, automation, and predictive analytics in ways that extend traditional paradigms of human-to-human marketing communication.

Leveraging Explainable Ai Bayesian Network Models Reveal Social Drivers Of Metro Adoption

Ahmad Aiash

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Mohamad Alahmad

Australian University, Kuwait

Urban metro systems are key to sustainable mobility, but understanding the social and demographic factors that drive their adoption remains challenging, especially in rapidly urbanizing regions. This study utilizes a Tree Augmented Naive (TAN) Bayes model within Explainable Artificial Intelligence (XAI) to investigate metro adoption in Kuwait, focusing on the impact of family and friends' commuting habits. Survey data were analyzed using TAN to model the influence of driving experience, income, age, home location, trip purpose, commuting frequency, education, and gender. Results show driving experience and income are the strongest determinants of willingness to use the metro under social influence, with age and home location also important. Females are generally more open to metro use than males. These findings provide interpretable, data-driven insights to inform targeted strategies for promoting sustainable urban mobility in Gulf cities.

Emotional Contagion in AI-generated video advertising A scoping review

Marcelle de la Roche

Australian University, Kuwait

Advertising agencies and organizations are investing heavily in Artificial Intelligence (AI) to generate advertising content. While the literature on human-machine interaction (HMI) and AI is quite extensive, little is known about how AI-generated advertising (AIGA) resonates emotionally with consumers. This scoping review examines HMI through the lens of emotional contagion (EC), focusing on consumers' responses to AIGA. The study focuses on emotions embodied in AI-generated content and how emotions are transferred to viewers. Guided by the PRISMA framework for scoping reviews, the study systematically maps existing academic research to identify current topics, tools, theoretical and methodological approaches prevalent in this field of study. The review identifies gaps in existing literature and outlines avenues for further research. The study extends EC theory in the context of AIGA by extracting a typology of concepts that could anchor future research into emotionally resonant AIGA.

Bridging Perception and Performance - Inclusive Digital Marketing Training for PwDs in an Evolving Digital Economy

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In an era of technological disruption, digital platforms are reshaping entrepreneurial ecosystems and expanding employment pathways for persons with disabilities (PwDs). This study examines how inclusive digital marketing training influences both self-assessed and objectively tested competencies, addressing well-documented gaps between perceived and actual skills. Using a quantitative design to compare online and in-person formats, the findings reveal significant improvements across all competence dimensions and a consistent reduction in the perception-performance gap. Training thus produces both cognitive (knowledge growth) and metacognitive effects, improving participants' calibration of their own abilities. By demonstrating how tailored digital skills programs strengthen employability for PwDs, the study offers evidence-based insights for inclusive workforce development in the digital economy.

Does AI Disclosure Devalue Advertising Examining How Perceived Creative Effort Signals Value and Trust in Advertising

Marcelle de la Roche

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Alper Erturk

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Global advertising agencies are investing heavily in AI infrastructure to enhance efficiency and create professional content. However, very little research has been conducted to understand how consumers respond to AI-generated advertisements. At the same time, regulators worldwide are introducing legislation mandating the disclosure of AI-created content. This study investigates how effort disclosure and the source of content (human vs AI) shape consumer attitudes towards the advertisement, perceived creativity, trust, and purchase intent. Drawing on the Effort Heuristic and Signaling Theory, perceived effort is conceptualized as a heuristic cue and a quality signal influencing authenticity and quality perceptions. The study utilizes an experimental design with disclosure and control groups testing mediation by trust and quality. The findings aim to clarify the impact of AI-disclosure on consumer attitude, offering insights for practitioners and extending theory in the context of AI.

Industry 5.0 and Human-Robot Co-Working The Impact of Robots in Organizations on Human Resource Management

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The theme of Industry 5.0 is human-robot co-working. For the Industry 5.0 era, it is envisioned that robots will handle mundane tasks, while humans will focus on more creative work in organizations that requires judgement and experience. Currently, the primary workforce in organizations consists of humans. In the Industry 5.0 era, work will be shared and distributed between humans and robots; therefore, humans will not be the primary workforce. This change in the workforce will have profound effects on human resource management in organizations. Even the name of HRM may likely need to be revised, such as, Workforce Hybrid Resource Management. In this study, we attempt to identify fundamental areas in HRM that will be affected by the organizational evolution enabled by a workforce comprising humans and robots. Furthermore, we highlight areas of HRM for future research to guide investigations into exploring the effects of the robotic workforce in organizations.

Interpretable Artificial Intelligence Empowering Economic Diversification in Smart Manufacturing

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Economic diversification in the Gulf region, including Kuwait Vision 2035, highlights smart manufacturing as a pillar of sustainable growth. However, industrial datasets are often small, heterogeneous, and incomplete, limiting conventional AI. This study presents a Scalable Random Forest (SRF) framework with an integrated Decision Path Search (DPS) to address these challenges. SRF uses a leakage-safe pipeline with mixed-type imputation and small-data augmentation for robust predictions, while DPS translates model structures into actionable operating windows specifying optimal and avoidance ranges. Case studies in investment casting and other datasets show SRF+DPS outperforming Random Forest, XGBoost, and CatBoost, while providing interpretable, practitioner-ready insights that enhance competitiveness, reduce defects, and support sustainable manufacturing aligned with regional diversification strategies

From Hype to Choice Ranking AI Sustainability Adoption Paths in Smart Manufacturing

Adel Ben Youssef

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Adelina Zeqiri

Université Côte d'Azur, France

This paper ranks AI–sustainability adoption paths in smart manufacturing using multi-criteria decision analysis. Drawing on 43 semi-structured interviews we derive criteria weights with AHP and rank three adoption paths with TOPSIS, PROMETHEE II, and ELECTRE. Results converge across methods: the sustainability-first pathway is selected as the best option; the balanced pathway ranks second, and the AI-first pathway ranks last. Sustainability-first leads because it combines stronger environmental benefits with implementation feasibility supported by technology readiness and manageable skills and data needs. The balanced pathway is feasible but delivers weaker sustainability outcomes. AI-first is penalised for increasing implementation risk through higher cost exposure and tighter constraints in skills availability and data readiness. Sequencing AI adoption through sustainability-led initiatives offers a pragmatic route to maximise sustainability gains while limiting barriers to adoption.

Reframing Supply-Chain Dynamics in the Era of Industry 5 A Meta Analytic Investigation into Technological Integration, Environmental Sustainability, and Cost Efficiency

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This study conducts a meta-analytic investigation of Industry 5.0's impact on supply-chain performance, integrating technological innovation, sustainability, and cost efficiency. As global supply chains transition from automation-focused Industry 4.0 to the human-centric & resilient model of Industry 5.0, firms—especially in emerging economies—face the challenge of aligning digital transformation with the triple bottom line. Drawing on foresight–resilience theory, synthesizing on empirical findings from 2014–2025 to quantify the effects of technologies such as AI, IoT, blockchain, & digital twins on operational, environmental, & economic outcomes. The study contributes by linking foresight capabilities to sustainable digital transformation and offers evidence-based insights for policymakers and managers pursuing resilient, adaptive supply chains in the Industry 5.0 era.

The Effect of Economic Diversification on GDP per Capita, The Cases of Saudi Arabia and Kuwait, A Multiple Regression Analysis

Rola Mourdaa

Australian University, Kuwait

The Gulf Cooperation Council (GCC) countries, heavily reliant on oil revenues, have long aimed to diversify their economies to mitigate the volatility of global oil prices and foster sustainable growth. Two countries, Saudi Arabia, representing the biggest economy, and Kuwait, the third biggest economy in the GCC, were chosen based on their promising economic visions, while being considered as the more historically conservative countries. Both countries represent case studies to reflect on the effectiveness of their diversification measures on GDP/capita as one of the main macroeconomic indicators for prosperity. The paper aims to use time series data over the period 2000-2024 for both countries to reflect the diversification efforts on GDP per capita. A straightforward multivariate regression model is employed, utilizing the value-added contributions of the three primary sectors—industry, agriculture, and services—to examine whether recent economic transformations and policy reforms have influenced GDP per capita and to identify in which country reforms exerted the greatest impact. Findings are expected to reflect a bigger impact of diversification aims on GDP/capita in Saudi Arabia due to the pace of reforms that have been implemented. This research shall provide valuable insights for policymakers, highlighting the need to promote policy reforms to foster sustainable economic growth. The research shall enrich the literature by providing an updated empirical analysis of the effect of diversification on GDP/capita for two key GCC economies, which present a benchmark that can be applicable for the other GCC economies.

AI, Research Integrity, and Sustainable Academic Systems in Higher Education

Mortadha Al Saba

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Jean El Achkar

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Artificial intelligence is reshaping research and teaching in higher education, offering faster workflows, clearer writing, and wider access to academic tools. These efficiencies support institutional sustainability by reducing resource use and expanding equitable access. At the same time, rising concerns about integrity, fabricated references, superficial scholarship, ethical misuse, and increasing AI-linked retraction cases pose risks that can weaken sustainable academic systems. This study examines how AI is influencing academic practices and how universities can integrate it responsibly to sustain quality and credibility. The approach combines a review of editorial concerns and retraction trends with a focused survey capturing the experiences and challenges of researchers. The study proposes institutional guidelines, training, and quality assurance measures that help higher education maintain sustainable, ethical, and future-ready academic ecosystems in an evolving AI landscape.

Critical Success Factors Impacting Sustainable Digital Transformation in Higher Education A Comprehensive Review of the Literature

Hania Elkanj

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In the rapidly evolving era of the Fourth Industrial Revolution, digital transformation (DT) has emerged as a strategic imperative for Higher Education Institutions (HEIs) seeking to enhance sustainability. This paper conducts a comprehensive literature review to identify critical success factors (CSFs) that influence sustainable digital transformation (SDT) in HEIs. By integrating six key theories and theoretical frameworks including Diffusion of Innovation (DOI), Technology-Organization-Environment (TOE), Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT), Theory of Planned Behavior (TPB), and the DeLone & McLean IS Success Model; the study examines the interplay of internal and external factors in shaping SDT. Findings underpin a total of fourteen CSFs impacting a successful SDT in HEIs and proposes an integrated framework based on four dimensions: technology, organization, environment, and human; offering guidance for HEIs.

Evaluating the effectiveness of AI Chatbots in University Admissions Exploring Student Assistance and Satisfaction

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University of Lahore, Pakistan

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This study investigated the effectiveness of AI chatbots in supporting students during the university admission process and evaluated their impact on student satisfaction. A quantitative survey was conducted among students who used university chatbots for admission inquiries, application assistance, and status tracking. The results indicated that chatbots improved communication efficiency and provided timely, consistent information. However, students reported lower satisfaction when chatbots failed to offer personalized or empathetic responses. The findings highlight that while chatbots enhance operational efficiency, integrating human support remains essential to ensure trust, engagement, and a positive admission experience for prospective students.

Employing Artificial Intelligence for Sustainable Renewable Energy Utilization of Machine Learning Techniques in Predictive Maintenance of Wind Energy Systems

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As industrial activities continue to strain environmental resources, ensuring energy efficiency and sustainability has become a global priority, making renewable electricity generation a central focus. Among these sources, wind energy stands out for its high-capacity factor and scalability. This study underscores the growing importance of Machine Learning (ML) applications in optimizing renewable energy systems. Specifically, it presents a case study demonstrating how ML-based predictive maintenance can enhance the reliability and efficiency of wind energy operations. By accurately forecasting component failures and optimizing maintenance schedules, the proposed approach reduces downtime, labor, and costs, contributing significantly to sustainable resource management and long-term energy security.

Assessing the Link Between Corporate Sustainability Practices and Financial Performance in Boursa Kuwait

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This paper examines the link between corporate sustainability practices and financial performance among listed firms at Boursa Kuwait. As pressure mounts on firms to adopt sustainable and responsible business strategies, understanding the dynamics whereby such practices impact profitability and market valuation has become an important issue, especially in emerging markets. The study investigates how ESG initiatives and sustainability disclosures explain firm performance variables such as ROE, stock returns, and market capitalization. Based on firm listed on Boursa Kuwait from 2015-2025, this study will exploit regression analysis to assess whether increased sustainability commitment yields better financial performance. Based on the preliminary expectations, the more efficient environmental activities and transparent sustainability reporting will have a positive effect on investor confidence and consequently firm value.

Artificial Intelligence Integration into Maritime Navigation A SWOT Analysis for Safe and Sustainable Operations

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Piri Reis University, Turkeye

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Maritime transportation, which comprises approximately 90% of global trade, contains multiple risks due to human errors and environmental conditions. To overcome those risks and reduce operational complexity, it is crucial to adopt new technologies and artificial intelligence methodologies into maritime operations. According to the EMSA report of 2024, loss of control accidents, collisions, and groundings are the most common types of accidents, and these accidents mainly occur due to navigational errors. In the era of digitalisation, with the assistance of decision-making interfaces of artificial intelligence, it is easier to achieve robust, safe navigation. Therefore, understanding of how to use AI to augment navigational safety has paramount importance. The SWOT framework is employed to identify organisational and environmental elements that constitute endogenous and exogenous factors.

The Automated Kant: Can Chatbots Enhance Critical Reasoning?

Scott Beattie

Central Queensland University, Australia

As automated information systems such as chatbots become more prevalent in the educational context, we are beginning to ask if they can serve purposes beyond searching and collation of data. Many critics argue that universities fail to instil critical thinking skills in learners and innovators are beginning to ask what role emerging technologies might play in rectifying this. Drawing specifically on Kant's ideas of critical reason, this paper explore the potential of an automated system to engage a learner in dialectical processes and to challenge them to develop better thinking and writing strategies. Rather than using generative AI to create content, this paper asks if it is possible for an automated companion to scaffold the dialectical process in order to aid the learner in developing critical thinking capacity.

AI-Enhanced Military Drones - Policy Challenges across Economic, Legal, and Ethical Frontiers

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AI-powered military drones are transforming warfare by enhancing efficiency, precision, and cost-effectiveness. However, their growing autonomy raises serious legal, ethical, and policy concerns. This study of 131 respondents in Oman—including lawyers, economists, students, and military specialists—found strong agreement that AI drones improve operations but pose risks to accountability and humanitarian law. Respondents emphasized the need for international regulation, human oversight, and ethical prioritization over economic or military gain. The study concludes that while AI drones provide clear economic benefits, their unregulated use threatens human control and legal responsibility, calling for balanced policies ensuring responsible and transparent deployment.

Understanding Public Employees' Acceptance of AI: Evidence from Selected OECD and MENA Countries

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Artificial intelligence is reshaping public sector work by automating tasks, supporting decisions, and enabling new forms of citizen engagement. Its promise spans health, education, social protection, public order, and general services, yet adoption raises questions of trust, fairness, accountability, and transparency. This study examines public employees' perceptions of AI across selected OECD and MENA countries using an expanded UTAUT that includes trust, ethics, risk, readiness, training, adaptability, and resilience. A multilingual survey in late 2025 and structural equation modeling will test links between adoption drivers, risks, and outcomes. Results should show recognition of AI's benefits and barriers tied to risk perceptions, rapid change, and uneven preparedness. Comparative findings will map shared challenges and group differences shaped by governance, capacity, and digital infrastructure, and underscore safeguards for inclusive, trusted, sustained public value.

From Algorithm to Empathy Advancing CSR Authenticity Through AI

Sa'arah Alhouti

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This research explores how artificial intelligence (AI) can be trained to generate corporate social responsibility (CSR) messages that preserve authenticity and trust. As firms increasingly automate CSR communication, concerns arise that algorithmic outputs may appear formulaic or insincere. This project develops a blueprint for training AI to produce messages that reflect sincerity, ethical intent, and creativity by embedding fairness, transparency, and emotional resonance in model design. Through literature synthesis, model training, and expert validation, the study advances understanding of how AI can scale socially responsible marketing without compromising human connection or authenticity.

From Automation to Aggravation: AI's Unintended Consequences: A Study on Well-being

Mirna Safi

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Rawa Al Wadani

Australian University, Kuwait

In a time of pandemic interruptions, work arrangements and flexible work environments are becoming more crucial in service firms. While this issue is central to the ethics of human–AI interaction, it has received limited focused attention in both research and practice. As businesses increasingly deploy AI to enhance productivity and efficiency, concerns are emerging about its potential impact on employee wellbeing resulting specifically in work-life conflict. This study investigates how AI implementation can simultaneously drive performance and contribute to burnout. Using a quantitative research design, data will be collected from employees at a university in Kuwait actively integrating AI technologies into their workflows. Guided by the IMPACT model and grounded in the Conservation of Resources (COR) theory and the Social Cognitive Theory (SCT), this study explores how organizational investment in AI influences employees' experiences of work–life conflict.

Leadership Styles and Employee Motivation in International Schools in Turkey, Mediating Role of Job Satisfaction in the AI Era

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Lebanese International University, Lebanon

Fattma ElBialy

European Global School, France

Hassan Houmani

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Australian University, Kuwait

Teaching quality is shaped by leadership styles that influence educators' motivation and job satisfaction within AI-driven and economically complex contexts. Using primary data from 439 cross-cultural staff in international schools in Turkey, this study employs descriptive statistics, correlation analysis, and structural equation modeling to examine the effects of leadership styles and workplace conditions on motivation and job satisfaction. Findings show a negative relationship between transformational leadership and motivation, a modest positive effect of transactional leadership, and no significant effect of laissez-faire leadership. Job satisfaction plays a significant mediating role. The work environment has the strongest influence, exceeding professional development and compensation. The study addresses a gap by examining how leadership interacts with economic instability and technological change to support sustainable education.

Human Resource Analytics for Sustainable and Strategic Human Resource Management An Application in Higher Education

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This research aims to empirically demonstrate the significance and benefits of human resource (HR) analytics techniques and methodologies for a more sustainable talent management through an empirical case study at a higher education institution. First, a systematic literature review regarding the utilization of HR analytics in higher education context has been conducted using a bibliometric analysis. In the empirical part, human resource related data was collected, cleansed, and analyzed through four phases, namely descriptive, diagnostic, predictive and prescriptive analytics. Our aim is to provide invaluable insights that will help senior decision makers to formulate strategies for sustainable HRM aligned with organizational key performance indicators (KPIs). This research provides a better understanding of the advantages and significant importance of data-driven decision making and digital transformation in terms of analytics and knowledge management in a university context.

Integrating Artificial Intelligence into Human Resources Management-Review of Opportunities and Challenges

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Despite the rapid advancements in artificial intelligence (AI) related technologies and associated research, scholarly attention on AI integration into human resource management (HRM) is limited and fragmented. Following PRISMA guidelines, we systematically shortlisted 53 high quality peer reviewed journal articles. We then followed a qualitative narrative review process to analyze them and synthesize. While presenting an overview of contextual, methodological, theoretical focus of the literature on AI integration into HRM, we highlight associated opportunities and challenges for HR professionals, particularly from a change management perspective. Presenting the gaps in existing literature, we present pressing areas for future research.

Ai-Enabled Student Support For Sustainable Well-Being And Academic Resilience

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While higher education institutions strive for academic excellence, they also bear the responsibility of caring for and ensuring the sustainable well-being of their students. After the Covid-19 pandemic, these institutions have transitioned to hybrid and digital education models and have begun to experience the opportunities and threats of digital learning ecosystems. With the introduction of AI technology, this transformation has moved to another dimension; while students benefit from the flexibility, instant feedback, and personalized learning methods provided by AI tools, they have also begun to encounter new conditions such as cognitive overload, digital fatigue, and social isolation. In this context, the aim of this research is to define the levels of students' overall psychological well-being and to offer a support system that promotes sustainable well-being by anticipating the psychological strain they may experience and recommending necessary precautions.

Beyond Smart Airports - Emerging AI-Driven, Hybrid, and Drone-Enabled Cyber Risks in Aviation Cyber-Physical Systems

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Advances in artificial intelligence, autonomous airport systems, and cyber-physical integration are transforming aviation security. Yet a unified review of AI-enabled cyber-attacks, autonomous-system vulnerabilities, and OT/IT convergence risks is still absent. This paper proposes a research agenda for next-generation aviation cybersecurity by synthesizing emerging threats—AI-driven intrusion, drone-based cyber operations, autonomous-system compromise, and hybrid cyber-physical attacks—across modern airport infrastructures. Drawing on global literature and Gulf/MENA developments, the review shows how OT/IT convergence creates fragilities capable of turning AI-assisted disruptions into safety-critical failures. The study maps these threats across aviation ICS/CPS layers, highlights systemic blind spots, and outlines strategic directions to support resilient, intelligence-driven defence for future airports.

Disaggregating Passenger Perceptions of AI-driven Technology Adoption to Support Strategic Approaches to Airport Technology Implementation

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Airports are increasingly adopting AI-driven technologies such as biometrics and self-service kiosks to improve safety, efficiency, and passenger experience. Traditionally, improvements are assessed through passenger surveys and industry benchmarks such as Skytrax rankings and Airport Service Quality. However, traditional surveys and benchmarks often provide aggregate information, which can make it challenging to isolate the impact of a particular technology due to concurrent initiatives or limited granular data. To address this gap, this study adopts a mixed-methods approach that combines a comparative case study of airport digital transformation with a structured passenger perception survey designed to identify the specific influence of individual technologies on passenger experience. Insights from this study will support a strategic approach to airport technology implementation, enabling data-driven decisions that balance operational efficiency with passenger satisfaction and safety

Recent advances in AI-assisted engine health monitoring for sustainable aviation

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Modern and future aeroengines, such as Ultra-High Bypass Ratio (UHBR) and Open Fan concepts will be strongly emerging to achieve a more sustainable aviation sector, by improving fuel efficiency and reducing noise pollution. These technologies lead to increased mechanical complexity and new maintenance challenges. The present study outlines the recent advances in AI approaches for engine health monitoring that enhance safety and reliability for these propulsion systems. It also includes an application using real engine data to address common engine anomalies. Based on real-time engine data, such as exhaust gas temperatures, machine learning models can detect early signs of degradations that are relevant to UHBR and Open Fan engines, and related to thermal anomalies, vibration imbalances, and blade loading deviations. These digital capabilities enhance dispatch reliability, reduce maintenance costs, and support regional goals for clean and sustainable aviation and Kuwait 2035 vision.

Aircraft Digitization The A.I Hangar of Aircraft Maintenance

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The study highlights the impact of digitization and AI integration on aircraft maintenance efficiency and flight safety. By transforming analogue data into digital formats, the Onboard Maintenance System (OMS) enables real-time monitoring, fault detection, and data exchange between aircraft and airline operations. Embedded AI enhances OMS capabilities through predictive analysis and accurate troubleshooting, minimizing human error and optimizing maintenance performance. Integrated subsystems like the Condition Monitoring System, Central Maintenance System, Data Loading and Configuration System, and Electronic Logbook System improve reliability and reduce workload. AI-processed data analyzed by CAMOs and MROs allow precise maintenance forecasting, ensuring continuous airworthiness, operational efficiency, and enhanced flight safety through intelligent, error-free maintenance under human oversight.

Emerging Propulsion Technologies for Sustainable Aviation

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Modern and future aeroengine systems, such as Ultra-High Bypass Ratio, Open Fan, and electric propulsion systems are strongly emerging to achieve sustainable and low emissions in the aviation sector. These emerging technologies aim to improve fuel efficiency and reduce noise pollution by relying on advanced aerodynamic innovations and adopting Sustainable Aviation Fuels, light materials and improved manufacturing techniques, such as additive and composite fabrication. The present study aims to outline recent advances in these propulsion concepts. The paper highlights the advances in computational fluid dynamics methods and experimental campaigns, which are used to optimize aeroacoustic performance, ensure structural integrity and develop AI models. AI-assisted approaches improve design workflows and contribute to enhanced lifecycle sustainability. These new technologies, combined with advanced tools, allow an accelerated transition of the aviation industry toward net-zero emissions.

Blockchain for Credential Verification in Higher Education Enhancing Administrative Efficiency and Knowledge Trust in Emerging Economies

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Higher education institutions (HEIs) face growing pressure to modernize administrative processes to ensure efficiency, transparency, and trust. Credential verification, a key element of knowledge management, is often slow, fragmented, and vulnerable to forgery. This study explores how blockchain can support credential verification in Kuwaiti HEIs, where adoption of frontier technologies in administration is limited. Using qualitative interviews with administrators, findings show that current processes are manual and inefficient, blockchain is viewed as a promising solution to enhance efficiency and trust, and adoption depends on regulatory alignment, readiness, and leadership. By framing credential verification as a knowledge process, the study highlights blockchain's role in resilience and sustainable digital transformation in higher education. The research provides GCC-based evidence and offers practical and policy implications for universities and policymakers in emerging economies.

To AI or Not to AI: When Synergies Collide

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Educators are often encouraged to use AI in the classroom, and HEIs tend to promote the idea that AI is here to stay. Extravagant events are consistently held to showcase the magic of AI, yet both faculty and students are continually advised against using it. This is creating a conflicting narrative for the stakeholders involved. The practical applications of such evolving technologies remain underexplored in HEIs, particularly the synergies of the numerous variables at play, which are often explored in isolation or underexplored. As such, this research uses a three-construct approach, which includes AI usage, institutional policies, and stakeholder sentiments, to explore the current state of usage of AI in Kuwait's universities from a multi-stakeholder point of view. The methodology includes a quantitative survey administered to both faculty members and students in HEIs in Kuwait. The findings will contribute to the broader literature on AI usage from a practical perspective.

Law Students and Artificial Intelligence in Education-Ethical Challenges, Institutional Readiness, and Adoption Dynamics

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This study explores law students' perceptions of artificial intelligence (AI) in education, emphasizing ethical concerns, institutional readiness, and usage trends. A survey of 103 undergraduates assessed knowledge, institutional support, awareness of misconduct, and adoption. Results show moderate to high AI knowledge but limited institutional backing, with use mostly of Grammarly and ChatGPT. Regression analysis revealed knowledge predicted awareness of plagiarism, support influenced avoidance behaviors, and cheating concerns extended to pedagogy. Gender differences shaped views on transparency and training, but neither knowledge nor support predicted usage, suggesting curriculum demands and peer norms drive adoption. The findings reveal a gap between recognizing AI's risks and using it responsibly, underscoring the need to integrate AI into curricula, provide structured training, and establish transparent policies that balance innovation with ethics in legal education.

AI-Enabled Digital Competencies of Business Students in Kuwait: An Empirical Assessment Based on DigComp 3.0

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Australian University, Kuwait

Vladimir Simovic

Australian University, Kuwait

This study explores law students' perceptions of artificial intelligence (AI) in education, emphasizing ethical concerns, institutional readiness, and usage trends. A survey of 103 undergraduates assessed knowledge, institutional support, awareness of misconduct, and adoption. Results show moderate to high AI knowledge but limited institutional backing, with use mostly of Grammarly and ChatGPT. Regression analysis revealed knowledge predicted awareness of plagiarism, support influenced avoidance behaviors, and cheating concerns extended to pedagogy. Gender differences shaped views on transparency and training, but neither knowledge nor support predicted usage, suggesting curriculum demands and peer norms drive adoption. The findings reveal a gap between recognizing AI's risks and using it responsibly, underscoring the need to integrate AI into curricula, provide structured training, and establish transparent policies that balance innovation with ethics in legal education.

