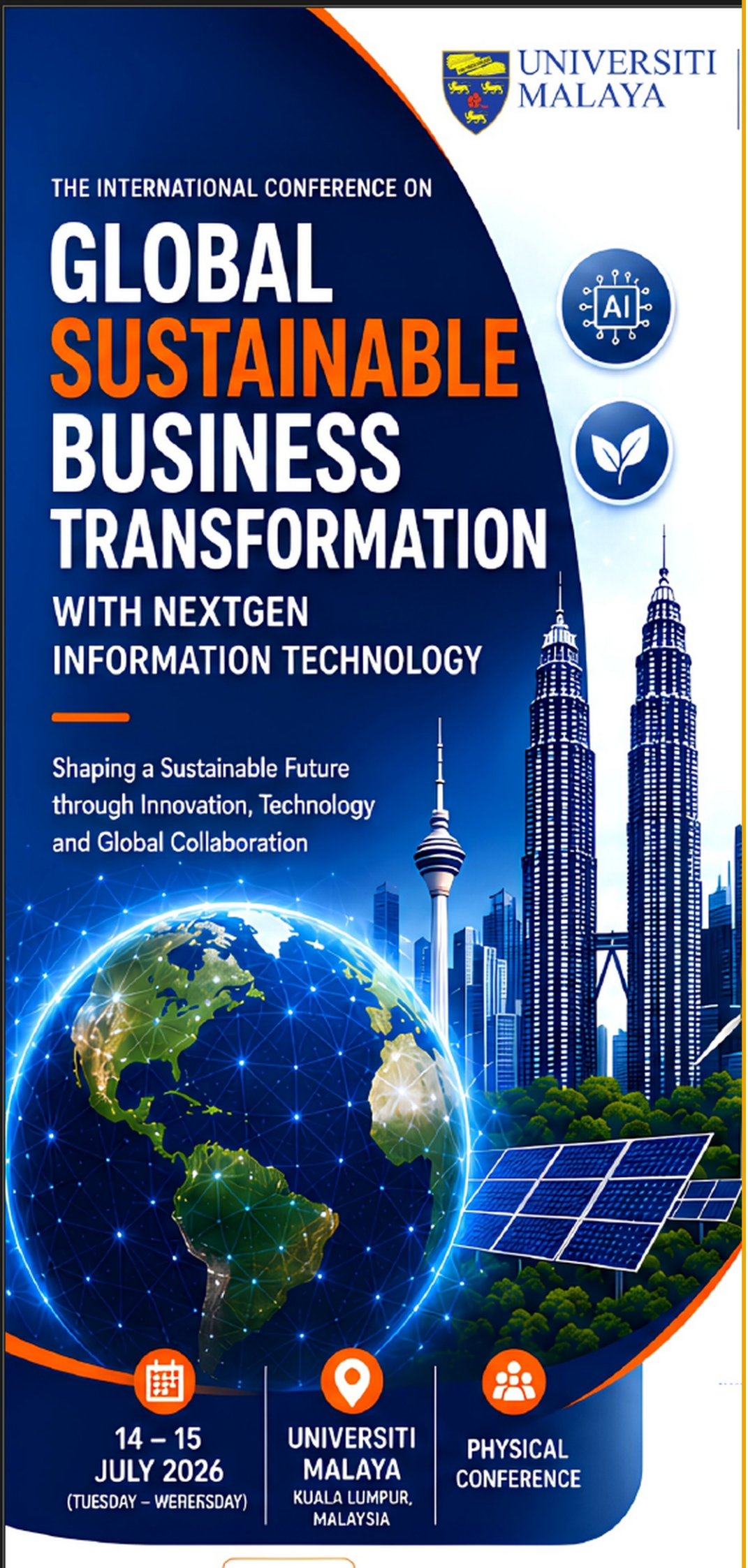


PROGRAMME BOOK

ICGSBT 2026

Director's Welcome Message

Conference Proceedings · ICGSBT 2026

Prof. Ts. Dr. Ainuddin Wahid bin Abdul Wahab

Conference Director, ICGSBT 2026

Faculty of Computer Science & Information Technology
Universiti Malaya, Kuala Lumpur, Malaysia

Bismillahirrahmanirrahim.

On behalf of the Organising Committee, I warmly welcome all of you to the **International Conference on Global Sustainable Business Transformation with NextGen Information Technology (ICGSBT 2026)**, held on 14 and 15 July 2026 at Universiti Malaya, Kuala Lumpur.

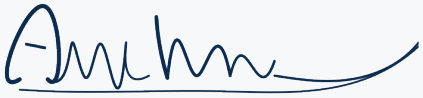
The world today moves fast. Technology is reshaping how we do business, how we govern, and how we care for our planet. This conference brings together researchers, practitioners, and leaders who are working at the heart of these changes. Our three tracks — *Sustainable Business, Green Economy and Policy Transformation*; *NextGen Digital Technologies for Sustainability*; and *Sustainable Energy, Environment and Tourism Transformation* — reflect exactly the issues that matter most right now.

We are fortunate to have four outstanding keynote speakers who will set the tone for these two days: **Professor Dr. Noor Ismawati binti Jaafar**, **Prof. Ts. Dr. Nor Badrul Anuar bin Juma'at**, **Professor Dr. Yusniza binti Kamarulzaman**, and **Datuk Lee Cheun Wei**. Their insights will challenge and inspire us.

To our authors and presenters — your research is the backbone of this conference. Thank you for your contributions and for choosing ICGSBT 2026 as your platform. My appreciation also goes to the programme committee, moderators, the organising team, and our partner journals — the *Malaysian Journal of Computer Science*, *Chinese Management Studies*, and *Platform: A Journal of Management and Humanities*.

I hope these two days are productive, thought-provoking, and rewarding for each of you.

Selamat datang. Welcome.



Prof. Ts. Dr. Ainuddin Wahid bin Abdul Wahab
Conference Director, ICGSBT 2026
Faculty of Computer Science & Information Technology, Universiti Malaya
July 2026

FACULTY OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY · FACULTY OF BUSINESS & ECONOMICS

Global Sustainable Business Transformation with NextGen Information Technology

ICGSBT 2026

14–15 July 2026 · Dewan Kuliah 1, FCSIT, Universiti Malaya, Kuala Lumpur · icgsbt.my

Programme Schedule

Venue: Dewan Kuliah 1 (DK1) / BK1, Faculty of Computer Science and Information Technology, Universiti Malaya

DAY 1 · Tuesday, 14 July 2026 — 9:00 am – 3:30 pm · DK1 / BK1

9:00 – 9:30 am	DK1	**Registration**
9:30 – 9:40 am	DK1	**Opening Ceremony — Opening Remark** *Prof. Ts. Dr. Ainuddin Wahid bin Abdul Wahab · Conference Director, ICGSBT 2026*
9:40 – 9:50 am	DK1	**Opening Ceremony — Opening Speech by Dean of FBE** *Prof. Dr. Noor Ismawati binti Jaafar · Dean, Faculty of Business and Economics, Universiti Malaya*
9:50 – 10:00 am	DK1	**Opening Ceremony — Opening Speech by Dean of FSKTM** *Assoc. Prof. Dr. Norisma binti Idris · Dean, Faculty of Computer Science and Information Technology, Universiti Malaya*
10:00 – 10:15 am	DK1	**Photo Session**
10:15 – 10:45 am	DK1	**Keynote Speaker 1** *Prof. Dr. Noor Ismawati binti Jaafar · Dean, Faculty of Business and Economics, Universiti Malaya* "Reimagining Business in the Age of NextGen IT: A Governance and Sustainability Perspective"
10:45 – 11:15 am	DK1	**Keynote Speaker 2** *Prof. Ts. Dr. Badrul Anuar bin Juma'at · Faculty of Computer Science and Information Technology, Universiti Malaya* "The Agentic Shift: When AI Stops Answering and Starts Working — And Why the Only Limit Left Is Our Imagination"

11:30 am – 1:00 pm · Morning Parallel Sessions (BK1 | DK1 | Online)

11:30 am – 1:00 pm	Session 1 — Economics, Finance & Digital Trade *Moderator: Prof. Dr. Siti Hafizah Ab Hamid · BK1*	Session 2 — Tourism, Heritage & Sustainability *Moderator: Prof. Dr. Yamani Idna Idris · DK1*	Session 3 — Tourism, Heritage & Sustainability *Moderator: Ts. Dr. Siti Nurliana binti Jamalai@Jamali · Online* *Zoom: https://zoom.us/j/98401826236*
	11:30 – 11:45 The Impact of Institutional Opening-Up in Digital Trade on Export Resilience: Evidence from Chinese Listed Firms Lv Han, Tong Jingjing	**11:30 – 11:45** Digital-Enabled Museum Education and Sustainable Visitor Experience: An Explanatory Mixed-Methods Study of Yuncheng Museum Ying Chen, SiJin Wang	**11:30 – 11:45** Does Internet-Famous Phenomena Promote the Development of Tourist Cities? An Empirical Study of Chinese Tourist Cities Junhui Yang, Zhiyan Gao
	11:50 – 12:05 A Comparative Study of Female Representation in Impact and Traditional Venture Capital and Private Equity Funds: Evidence from Europe Yanqiu Ren, Roksana Sadegh	**11:50 – 12:05** Tourism Flow Management Using Big Data, Artificial Intelligence (AI) and the Internet of Things (IoT) Yuan Ma, Rui Deng	**11:50 – 12:05** A Review of Research Progress on the Impacts of Climate Change on Tourism Wang Pengtao et al.
	12:10 – 12:25 Research on the Impact of Data Factor Marketization on Urban Green Transformation Zhang Weiliang, Gao Jingwei	**12:10 – 12:25** Climate Policy Uncertainty and Transition Risk in High-Carbon Industries: Evidence from China Cunpu Li, Chenbo Liu, Pu Wang	**12:10 – 12:25** Institutionalizing and Contesting Carrying Capacity in Yosemite National Park: A Historical-Institutional Analysis Zhiyan Gao
	12:30 – 12:45 Leader Mindfulness as a Buffer: Mitigating the Impact of Leader Narcissism on Follower Knowledge Hiding		**12:30 – 12:45** Sustainable Tourism Transformation of Cultural Heritage Sites in Xi'an Wenying Huang
			12:50 – 1:05

	Li Xiaoxuan et al.		Recognition of Tourist Traffic Guidance Signs Based on Driving Simulation and Its Implications for Sustainable Tourism Transformation Su Xiaozhi **1:10 – 1:25** NextGen Immersive Technologies for Sustainable Heritage Tourism: Temporal Folding and Tourists' Cultural Identification in Digital Heritage Experiences Dong Li, Huangjiao Cheng, Jing Wu, Moxun Liu

*Foyer / Block B · **Lunch Break** · 1:00 – 2:00 pm*

2:00 – 3:30 pm · Afternoon Parallel Sessions (BK1 | DK1)

2:00 pm – 3:30 pm	Session 4 — Economics, Finance & Digital Trade *Moderator: Prof. Dr. Siti Hafizah Ab Hamid · BK1*	Session 5 — Tourism, Heritage & Sustainability *Moderator: Prof. Dr. Yamani Idna Idris · DK1*
	2:00 – 2:15 Digital Inclusive Finance, Off-Farm Employment, and Multidimensional Relative Poverty Among Rural Households: Evidence from China Heng Wang, Meiling Ye, Jindian Liu, Hongdou Lei **2:20 – 2:35** Can Data Element Marketization Promote Digital Technological Innovation? Evidence from Double Machine Learning Jing Tian, Xiao Liu, Yongfeng Hou, Renquan Huang, Jianbo Zhao **2:40 – 2:55** The Impact of Cross-Border Data Flow Regulation on the Location Choice of Digital Multinational Enterprises Han Lyu, Zexuan Hou, Han Long **3:00 – 3:15** Government Procurement and Corporate ESG Performance: Empirical Evidence from Chinese Listed Companies Jingyi Yang, Xiuwu Zhang, Xiaoyang Guo	**2:00 – 2:15** Green Finance and Corporate Green Transformation: A "Discourse–Action–Outcome" Framework Hai Shen, Yingxin Xu, Jianbo Zhao **2:20 – 2:35** The Effect of External Knowledge on Disruptive Innovation: A Moderated Mediator Model Lin Chunpei et al. **2:40 – 2:55** The Impact of Digital Infrastructure Construction on Urban–Rural Integration and Its Spatial Spillover Effects: Empirical Evidence from the "Broadband China" Pilot Policy Meng Ying, Zhang Yanping

*Foyer / Block B · **Tea Break · End of Day 1** · 3:30 pm*

FACULTY OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY · FACULTY OF BUSINESS & ECONOMICS

Global Sustainable Business Transformation with NextGen Information Technology

ICGSBT 2026

14–15 July 2026 · Dewan Kuliah 1, FCSIT, Universiti Malaya, Kuala Lumpur · icgsbt.my

Programme Schedule

Venue: Dewan Kuliah 1 (DK1) / BK1, Faculty of Computer Science and Information Technology, Universiti Malaya

DAY 2 · Wednesday, 15 July 2026 — 9:30 am – 2:00 pm · DK1 / BK1

9:30 – 10:00 am	DK1	**Keynote Speaker 3** *Prof. Dr. Yusniza Kamarulzaman · Faculty of Business and Economics, Universiti Malaya* "Digital Transformation for Sustainable Business Ecosystems"
10:00 – 10:30 am	DK1	**Keynote Speaker 4** *Datuk Lee Cheun Wei · Chief Executive Officer, Ancom Nylex Berhad* "Strategic Leadership in Sustainable Business Transformation"
10:30 – 11:00 am	DK1	**Photo Session & Networking**

11:00 am – 12:35 pm · Morning Parallel Sessions (BK1 | DK1)

11:00 am – 12:35 pm	Session 6 — NextGen Information Technology *Moderator: Ts. Dr. Siti Nurliana binti Jamalai@Jamali · BK1*	Session 7 — NextGen Information Technology *Moderator: Dr. Nur Nasuha Mohd Daud · DK1*
	11:00 – 11:15 LightQSeaweed: A Lightweight CNN-Based Framework for a Mobile Seaweed Quality Control System Muhammad Addin et al.	**11:00 – 11:15** Intelligent Document Collection Management in the Digital Era: Exploring Human-AI Collaboration, Governance, and Trust Zulfatun Sofiyani et al.
	11:20 – 11:35 A Sequence-Based Behavioural Classification for E-Commerce Customer Journey and Cart Abandonment Faisal Fahmi et al.	**11:20 – 11:35** Assessing Lexical Alignment Between Indonesia's SDGs Roadmap and Scopus-Indexed Research Metadata Zahirah Noor Mahdiah et al.
	11:40 – 11:55 Generative AI Usage, Benefits, and Challenges among Library and Information Science Students Bernika Citra Dwi Prasetya et al.	**11:40 – 11:55** Spatial–Temporal Analysis of Shoplifting for Sustainable Retail Roziana Ramli et al.
	12:00 – 12:15 XGBoost-LightGBM for Dengue Case Prediction using Historical Dengue Cases Data Adam Arbain, Siti Hafizah Ab Hamid, Hasni Meon	**12:00 – 12:15** Natural Language Processing for Log File Anomaly Detection: A Systematic Literature Review Barah Alanazi
		12:20 – 12:35 Socio-Technical Conceptual Framework for Digital Transformation Leading to Adoption of Smart Campus in Oman Ahmed ALQASMI

*Foyer / Block B · **Lunch · End of Conference** · 12:35 – 2:00 pm*

FACULTY OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY · FACULTY OF BUSINESS & ECONOMICS

Global Sustainable Business Transformation with NextGen Information Technology

ICGSBT 2026

Book of Abstracts

14–15 July 2026 · Universiti Malaya, Kuala Lumpur

Book of Abstracts

International Conference on Global Sustainable Business Transformation with NextGen Information Technology · 27 Papers

Session 1 — Economics, Finance & Digital Trade

Day 1 · 14 July 2026 · 11:30 am – 1:00 pm · Moderator: Prof. Dr. Siti Hafizah Ab Hamid

BK1

Paper 01 · 11:30 – 11:45

The Impact of Institutional Opening-Up in Digital Trade on Export Resilience: Evidence from Chinese Listed Firms

Lv Han, Tong Jingjing

Against volatile global trade and booming digital economy, digital trade institutional opening-up acts as a core institutional driver for Chinese listed firms' high-quality foreign trade. Based on 2009–2023 panel data of listed firms across 282 Chinese cities, this paper adopts staggered DID to examine its impact on corporate export resilience. Results show institutional opening-up significantly boosts export resilience via three channels: lower institutional transaction costs, expanded corporate resource boundaries, and accelerated digital transformation. Heterogeneity tests reveal stronger policy effects in cities with underdeveloped digital economies, firms weak in digital innovation, and highly trade-dependent regions. This paper provides micro empirical evidence supporting digital institutional opening as a pillar of high-quality trade development.

Paper 02 · 11:50 – 12:05

A Comparative Study of Female Representation in Impact and Traditional Venture Capital and Private Equity Funds: Evidence from Europe

Yanqiu Ren, Roksana Sadegh

This study examines whether impact investment orientation is associated with higher levels of gender diversity within venture capital (VC) and private equity (PE) funds. Building on the literature on impact investing and gender inequality in financial institutions, the research investigates whether mission-driven investment models translate into more inclusive organizational structures, particularly in terms of female representation. The empirical analysis is based on a sample of 94 VC and PE funds operating in Spain, France, and Italy, including 32 impact funds and 62 traditional funds. Gender composition is measured at both the overall investment team level and the partner level, which serves as a proxy for decision-making authority. The findings indicate that impact funds exhibit significantly higher female representation at the overall team level compared to traditional funds. However, no statistically significant difference is observed at the partner level, suggesting that increased diversity does not extend to positions of decision-making power. These results highlight that impact investing may improve entry into investment roles without fundamentally altering existing po

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Paper 03 · 12:10 – 12:25

Research on the Impact of Data Factor Marketization on Urban Green Transformation

Zhang Weiliang, Gao Jingwei

Data factor marketization is crucial for accelerating urban green transformation. Based on panel data from 268 prefecture-level cities in China (2007-2024), this paper employs a multi-period DID model and Double Machine Learning to analyze the impact of establishing data trading platforms. In order to mitigate the sample selection bias and reverse causality stemming from the non - random location of the data trading platform, this paper employs the parallel trend test, placebo test, and PSM-DID to eliminate such biases and guarantee the robustness of the conclusion. The results show that data factor marketization significantly promotes urban green transformation, a conclusion that remains robust. Mechanism analysis reveals that the synergistic governance of pollution and carbon reduction, and industrial structure upgrading are key channels. Moderation analysis indicates that government support significantly enhances this green effect. Further analysis shows that the promoting effect is more pronounced in cities with higher levels of new infrastructure, economic development, and urbanization, and it helps narrow the green development gap between cities. This study provides theoretical and policy references for improving the data factor market system.

Paper 04 · 12:30 – 12:45

Leader Mindfulness as a Buffer: Mitigating the Impact of Leader Narcissism on Follower Knowledge Hiding

Li Xiaoxuan et al.

This study explores how the paradoxical coexistence of pride and presence shapes leadership influence. Drawing on social identity theory and leadership categorization theory, we develop and test a moderated-mediation model in which leader narcissism affects follower knowledge hiding through followers' perceptions of leader effectiveness and leader identification, while leader mindfulness buffers these effects. Using two-wave, multi-source data from 247 matched leader–follower dyads in China, results show that leader narcissism undermines followers' cognitive and relational evaluations, thereby increasing knowledge hiding, but that mindfulness attenuates these negative relationships. These findings reveal that narcissism's destructive potential is not absolute; when balanced by mindful awareness, it can be transformed into disciplined confidence that sustains legitimacy and openness. By integrating dark and bright traits within a single framework, this study advances a paradoxical understanding of leadership as the mindful regulation of ego where power and empathy coexist in dynamic tension.

Session 2 — Tourism, Heritage & Sustainability

Day 1 · 14 July 2026 · 11:30 am – 1:00 pm · Moderator: Prof. Dr. Yamani Idna Idris

DK1

Paper 05 · 11:30 – 11:45

Digital-Enabled Museum Education and Sustainable Visitor Experience: An Explanatory Mixed-Methods Study of Yuncheng Museum

Ying Chen, SiJin Wang

Against the background of cultural-tourism integration and the digital transformation of museum education, local museums are increasingly expected to provide visitor-centered, participatory, and technology-enhanced learning experiences. Drawing on constructivist learning theory, this study examines how digitally enabled museum education elements influence tourist satisfaction in Yuncheng Museum, a local comprehensive museum in China. An explanatory mixed-methods case study design was adopted. First, 220 valid questionnaires were collected from museum visitors, and SPSS and AMOS were used to conduct reliability and validity tests, confirmatory factor analysis, and structural equation modeling. Second, 20 follow-up interviews were conducted to further explain the quantitative findings. The SEM results show that learning engagement has a significant positive effect on tourist satisfaction, suggesting that visitors' active participation, reflection, and meaning-making are central to sustainable museum experiences. However, exhibition design, interactive interpretation, and digital navigation show significant negative effects on tourist satisfaction. The interview findings indicate that

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Paper 06 · 11:50 – 12:05

Tourism Flow Management Using Big Data, Artificial Intelligence (AI) and the Internet of Things (IoT)

Yuan Ma, Rui Deng

Overtourism in ecologically sensitive destinations requires proactive management systems that can predict visitor demand and detect spatial congestion before carrying-capacity thresholds are exceeded. This condensed paper presents an integrated four-layer architecture combining Internet of Things (IoT) sensing, Big Data processing, artificial intelligence forecasting, and management decision support for tourism-flow regulation. A prototype-level quantitative validation strategy is used to examine two decision-critical functions of the architecture. For temporal forecasting, LSTM, GRU, ARIMA, and Random Forest models are compared using 120 months of official international tourist-arrival data from Australia. For spatial analysis, DBSCAN is applied to 2,120 IoT-like GPS observations to identify high-density visitor hotspots. Results show that GRU achieves the lowest forecasting error, with a MAPE of 2.14%, while DBSCAN detects two major hotspots and labels 79 observations as noise. The findings indicate that combining temporal demand forecasts with spatial hotspot detection can support early warnings, dynamic rerouting, and adaptive capacity management in sustainable tourism destinat

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Paper 07 · 12:10 – 12:25

Climate Policy Uncertainty and Transition Risk in High-Carbon Industries: Evidence from China

Cunpu Li, Chenbo Liu, Pu Wang

Under the global low-carbon transition, climate policy has become an important institutional force shaping corporate production, investment, and risk management. Governments have introduced a series of climate-related policies, including carbon emission reduction targets, environmental regulation, carbon trading schemes, green finance instruments, and clean energy support policies. These policies provide direction for green transformation, but frequent changes in policy objectives, regulatory intensity, and implementation standards may also create climate policy uncertainty. For firms in high-carbon industries, this uncertainty is particularly important because their operations are closely related to energy consumption, carbon emissions, environmental compliance, and low-carbon technological upgrading. When future climate policy direction becomes difficult to predict, high-carbon firms may face greater uncertainty in compliance costs, investment returns, financing conditions, and transition strategies, which may ultimately increase their transition risk. This study examines the impact of climate policy uncertainty on the transition risk of high-carbon firms in China. Unlike previou

Session 3 — Tourism, Heritage & Sustainability

Day 1 · 14 July 2026 · 11:30 am – 1:00 pm · Moderator: Dr. Siti Nurliana Jamali

Online

Paper 08 · 11:30 – 11:45

Does Internet-Famous Phenomena Promote the Development of Tourist Cities? An Empirical Study of Chinese Tourist Cities

Junhui Yang, Zhiyan Gao

The rise of Internet-famous phenomena has become a significant issue in mobile Internet era. This study evaluates the economic impact of such phenomena on 19 major Chinese tourist cities by the Difference in Difference method, aiming to explore whether the Internet-famous phenomena can promote the development of tourist cities. The key findings are as follows: (1) The Internet-famous phenomena have significantly boosted tourist numbers, with a net growth effect ranging from 30.76% to 68.58%. This growth was influenced by the city's economy, regional openness, government scale, regional infrastructure, and regional education. (2) While the Internet-famous phenomena have led to increased city congestion, with a net effect ranging from 487% to 650%, they have generated relatively minor tourism revenue. The net effect of tourism contribution to city economy is between 4.07% and 5.68%. (3) There are notable regional differences in the tourism economic impact of Internet-famous phenomena on tourist cities, and the influence is much greater on remote cities than on developed ones.

Paper 09 · 11:50 – 12:05

A Review of Research Progress on the Impacts of Climate Change on Tourism

Wang Pengtao et al.

Global climate change has exerted profound, multidimensional, and far-reaching impacts on tourism, a sector highly dependent on natural environments and climatic conditions. At the same time, tourism itself is an important contributor to climate change, with carbon emissions accounting for approximately 4%–6% of global greenhouse gas emissions. Based on multi-source literature, this paper systematically reviews research progress on the impacts of climate change on tourism, focusing on five aspects: theoretical background, research methods, current status, challenges and controversies, and future directions. The theoretical system of this field centers on human–land relations and integrates climate adaptation theory, sustainable development theory, tourism system theory, and phenology theory to form a multidimensional analytical framework. Methodologically, this study adopts a systematic literature review approach combined with CiteSpace bibliometric analysis and keyword burst detection. A total of 209 Chinese core articles indexed in the CNKI database (1997–2025) were included, supplemented by international literature searches in Web of Science, allowing us to identify the research

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Paper 10 · 12:10 – 12:25

Carrying Capacity as Environmental Governance: A Historical-Institutional Analysis

Zhiyan Gao

Abstract not submitted.

Paper 11 · 12:30 – 12:45

Sustainable Tourism Transformation of Cultural Heritage Sites in Xi'an

Wenying Huang

Abstract not submitted.

Paper 12 · 12:50 – 1:05

Recognition of Tourist Traffic Guidance Signs Based on Driving Simulation and Its Implications for Sustainable Tourism Transformation

Su Xiaozhi

Xiaozhi Su School of Tourism & School of AI Xi’an International Studies University 6 Wenyuan South Road, Chang’an District, Xi’an, Shaanxi,710128

Paper 13 · 1:10 – 1:25

NextGen Immersive Technologies for Sustainable Heritage Tourism: Temporal Folding and Tourists' Cultural Identification in Digital Heritage Experiences

Dong Li, Huangjiao Cheng, Jing Wu, Moxun Liu

Next-generation immersive technologies are reshaping how cultural heritage is interpreted, experienced, and sustained in tourism contexts. While prior studies have mainly examined immersive digital heritage experiences through presence, authenticity, and emotional engagement, less attention has been paid to how digitally mediated encounters with the past become culturally meaningful in sustainable heritage tourism. To address this gap, this study introduces temporal folding as a key experiential mechanism through which tourists perceive the past and present as co-present within immersive digital heritage environments. Based on 580 visitor surveys in China, this study combines structural equation modelling and fuzzy-set qualitative comparative analysis to examine how scene design, narrative intensity, and technological immersion foster cultural identification. The results show that these immersive inputs enhance temporal folding, which further promotes emotional resonance and cultural identification. Emotional resonance mediates the relationship between temporal folding and cultural identification, while historical knowledge and cultural distance function as important boundary condi

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Session 4 — Economics, Finance & Digital Trade

Day 1 · 14 July 2026 · 2:00 – 3:30 pm · Moderator: Prof. Dr. Siti Hafizah Ab Hamid

BK1

Paper 14 · 2:00 – 2:15

Digital Inclusive Finance, Off-Farm Employment, and Multidimensional Relative Poverty Among Rural Households: Evidence from China

Heng Wang, Meiling Ye, Jindian Liu, Hongdou Lei

This study explores how digital inclusive finance and off-farm employment alleviate multidimensional relative poverty among rural households in China. Based on the theoretical framework consisting of digital inclusive finance, off-farm employment and multidimensional relative poverty alleviation, this paper adopts panel data from the China Family Panel Studies (CFPS) covering 2016, 2018 and 2020, matched with the Digital Financial Inclusion Index compiled by the Peking University Digital Financial Inclusion Research Team. The Alkire-Foster (A-F) method is applied to measure and decompose rural households' multidimensional relative poverty. We further construct fixed-effects and mediation effect models to identify the direct and indirect impacts of digital inclusive finance and off-farm employment on multidimensional relative poverty. The main results are summarized below. First, among all poverty indicators, the educational attainment indicator under the education dimension makes the largest contribution to multidimensional relative poverty. Its contribution rate reached 43.76% in central China in 2020, making it a dominant driver of rural poverty. Meanwhile, the per capita househo

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Paper 15 · 2:20 – 2:35

Can Data Element Marketization Promote Digital Technological Innovation? Evidence from Double Machine Learning

Jing Tian, Xiao Liu, Yongfeng Hou, Renquan Huang, Jianbo Zhao

Using Chinese A-share listed firms from 2010 to 2023, this paper examines whether data element marketization promotes firms' digital technological innovation within a double machine learning framework. The results show that data element marketization significantly enhances firms' digital technological innovation. Mechanism tests indicate that this effect is mainly achieved by strengthening firms' data integration capability and reducing institutional transaction costs. Heterogeneity analysis shows that the innovation-enhancing effect is more pronounced in regions with weaker digital infrastructure, as well as among state-owned and high-tech firms. Further analysis reveals that non-government-led and earlier-established data trading platforms generate stronger innovation effects. These findings provide firm-level evidence for understanding the innovation dividend of data element marketization and offer practical implications for improving data trading platforms and promoting the market-oriented allocation of data elements.

Paper 16 · 2:40 – 2:55

The Impact of Cross-Border Data Flow Regulation on the Location Choice of Digital Multinational Enterprises

Han Lyu, Zexuan Hou, Han Long

This study examines how cross-border data flow regulation affects the FDI location choice of digital multinational enterprises (MNEs) and its boundary conditions. Using firm-destination level data merged dataset from the OECD-DSTRI and SDC global M&A; database for 2014–2023, we find that: stricter host-country regulations significantly reduce the FDI likelihood of digital MNEs, particularly those entrenched in the ICT, internet platform, and digital content industries. Moreover, this finding remains robust after performing multiple robustness checks. Furthermore, data exposure, algorithm exposure, and artificial intelligence (AI) technology exposure serve as critical moderators, shaping the negative effect of regulations. These findings offer policy implications for governments, particularly in emerging economies, seeking to optimize cross-border data flow regulations.

Paper 17 · 3:00 – 3:15

Government Procurement and Corporate ESG Performance: Empirical Evidence from Chinese Listed Companies

Jingyi Yang, Xiuwu Zhang, Xiaoyang Guo

In the context of deepening government green procurement policies and accelerated corporate ESG, government procurement serves as a critical instrument with both demand-pull and policy-guidance functions, significantly driving corporate ESG performance. Leveraging data on government procurement orders, CSI ESG ratings, and financing constraints of Chinese listed companies from 2015 to 2023, this study employs two-way fixed effects panel models, instrumental variable (IV) methods, and mediation effect models to empirically investigate the enabling mechanism through which government procurement influences corporate ESG performance. The results reveal that government procurement significantly enhances corporate ESG performance, a conclusion that remains valid after a series of robustness and endogeneity tests. Furthermore, the effect varies across firm size, profitability, pollution attributes, ownership type, and geographic location, being more pronounced among large firms, profitable enterprises, non-heavy polluters, university- or research institute-affiliated firms, and those based in eastern China. Mechanism analyses indicate that government procurement improves ESG performance b

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Session 5 — Tourism, Heritage & Sustainability

Day 1 · 14 July 2026 · 2:00 – 3:30 pm · Moderator: Prof. Dr. Yamani Idna Idris

DK1

Paper 18 · 2:00 – 2:15

Green Finance and Corporate Green Transformation: A “Discourse–Action–Outcome” Framework

Hai Shen, Yingxin Xu, Jianbo Zhao

Against the backdrop of the sustainable development agenda and China’s “dual-carbon” targets, whether and how green finance policies shape corporate green transformation has become a widely discussed issue. A central challenge lies in how to gauge corporate green transformation, since commonly used indicators, such as environmental information disclosure and green patent applications, usually capture only one dimension of firms’ green behavior. To address this issue, this study develops a three-dimensional composite index of corporate green transformation based on the “discourse–action–outcome” framework (GTL), which incorporates a series of dynamic processes involved in corporate green transformation and thus provides a relatively more comprehensive measure. Using data on Chinese A-share listed firms from 2013 to 2024, this paper employs a difference-in-differences (DID) approach. The results show that green finance policies significantly promote corporate green transformation (GTL), with the estimated coefficient on Treat×Post equal to 0.024 ($p < 0.01$). This paper also identifies the channels through which green finance affects corporate green transformation, including green cred

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Paper 19 · 2:20 – 2:35

Sustainable Tourism Transformation of Cultural Heritage Sites in Xi'an

Huang Wenying

Abstract not submitted.

Paper 20 · 2:40 – 2:55

The Effect of External Knowledge on Disruptive Innovation: A Moderated Mediator Model

Lin Chunpei et al.

Disruptive innovation has become an important strategy for enterprises in emerging economies. However, existing theories do not provide a good answer as to the intermediary mechanism of the effect of external knowledge acquisition on disruptive innovation in emerging economies. Based on the perspective of external knowledge connection and using 349 survey data from Chinese manufacturing companies, this paper empirically researches the effect of external knowledge on disruptive innovation. We found that supply chain knowledge, competitor knowledge, and institutional knowledge positively impact a company’s knowledge integration capabilities. Also, supply chain knowledge and institutional knowledge have a significant positive impact on disruptive innovation. However, counter-intuitively, the impact of competitor knowledge on destructive innovation is not significant. In addition, knowledge integration capabilities not only directly promote disruptive innovation, but also play a partial intermediary role among supply chain knowledge, destructive innovation, institutional knowledge and destructiveness; and a complete intermediary role between competitor's knowledge and destructive innov

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Session 5 — Tourism, Heritage & Sustainability — DK1

Day 1 · 14 July 2026 · 2:00 – 3:30 pm · Moderator: Prof. Dr. Yamani Idna Idris

PAPER 21 · 3:00 – 3:15

The Impact of Digital Infrastructure Construction on Urban–Rural Integration and Its Spatial Spillover Effects: Empirical Evidence from the "Broadband China" Pilot Policy

Meng Ying, Zhang Yanping

Digital infrastructure is increasingly seen as a catalyst for breaking urban–rural divides, yet empirical evidence on its causal effects and spatial spillovers remains limited. Using the staggered rollout of China's "Broadband China" pilot policy as a quasi-natural experiment, this paper employs a multi-period difference-in-differences (DID) model and a Spatial Durbin Model (SDM) on panel data from 288 prefecture-level cities (2010–2024). We find that: (1) digital infrastructure significantly improves urban–rural integration, a result robust to various endogeneity and robustness checks; (2) the mechanism operates through expanding urban employment scale, which reduces information asymmetry and matching costs; (3) the effect is stronger in central and less-developed regions, displaying increasing marginal returns; (4) there are significant positive spatial spillovers, with indirect effects exceeding direct effects, confirming network externalities of data elements. These findings provide new evidence on the digital dividend in urban–rural relations and offer policy implications for differentiated infrastructure investment and cross-regional governance.

Session 6 — NextGen Information Technology — BK1

Day 2 · 15 July 2026 · 11:00 am – 12:35 pm · Moderator: Ts. Dr. Siti Nurliana binti Jamalai@Jamali

PAPER 22 · 11:00 – 11:15

LightQSeaweed: A Lightweight CNN-Based Framework for a Mobile Seaweed Quality Control System

Muhammad Addin et al.

Seaweed quality control is a crucial process in the commercialization of aquaculture products, traditionally done by manual inspection which can be subjective and tedious. While computer vision (CV) has shown strong potential in agricultural inspection, existing approaches often rely on computationally intensive models or specialized hardware, limiting their applicability in small-scale farming environments. To address this issue, we present LightQSeaweed, a lightweight convolutional neural network (CNN)-based framework for a mobile seaweed quality control system. The proposed framework uses CNN models designed for on-device inference with standard RGB mobile phone cameras to capture the images. Labeled datasets of fresh and dried seaweed images, both categorized into three seaweed phyla, were developed to train and evaluate the models. The proposed framework achieves a high Lightweight Suitability Index (LSI) of 0.78, reflecting strong efficiency in terms of computational, memory, and hardware requirements for mobile deployment. Experimental results further demonstrate that the system maintains real-time inference performance on common mobile devices.

PAPER 23 · 11:20 – 11:35

A Sequence-Based Behavioural Classification for E-Commerce Customer Journey and Cart Abandonment

Faisal Fahmi et al.

E-commerce platforms generate clickstream data that record how users navigate across the shopping process, from initial site entry to purchase completion. However, cart abandonment is often analyzed using a binary view of purchase versus non-purchase, which provides limited insight into where users stop progressing in the customer journey. This study proposes an interpretable funnel-depth sequence classification approach that decomposes binary abandonment into stage-specific abandonment patterns in e-commerce customer journeys. The framework transforms page-level clickstream records into session-level navigation sequences and classifies each session according to the deepest funnel stage reached. A synthetic e-

commerce clickstream dataset from Kaggle, containing 12,719 event records across 5,000 sessions, was analyzed using Python. The analysis consisted of data preprocessing, session-level sequence extraction, sequence type classification, comparative behavioral analysis, funnel transition analysis, and statistical testing. The results identified five sequence types: Homepage Only, Browse Only, Add to Cart, Begin Checkout, and Complete Purchase.

PAPER 24 · 11:40 – 11:55

Generative AI Usage, Benefits, and Challenges among Library and Information Science Students

Bernika Citra Dwi Prasetya et al.

Background: Research on students' perceptions of Generative Artificial Intelligence (GenAI) has largely focused on students from different academic disciplines, often overlooking the unique characteristics of each discipline. Library and Information Science (LIS) students remain underrepresented in this area. LIS students were selected because their academic foundational training includes information retrieval, information literacy, information management, and information ethics. As future information professionals, LIS students are also expected to play a key role in guiding the responsible and critical use of AI-based information tools. Purpose: This study aims to examine Generative AI usage patterns, perceived knowledge, benefits, and challenges among LIS students. Method: This study employed a descriptive quantitative approach. Data were collected from 230 undergraduate LIS students using a purposive sampling. Participants were undergraduate LIS students who had completed foundational LIS coursework relevant to the competencies examined in this study. The questionnaire, adapted from Chan and Hu (2023), measured GenAI use, perceived knowledge, benefits, and challenges.

PAPER 28 · 12:00 – 12:15

XGBoost-LightGBM for Dengue Case Prediction using Historical Dengue Cases Data

Adam Arbain, Siti Hafizah Ab Hamid, Hasni Meon

Dengue fever remains a critical public health challenge, requiring accurate, localized early warning systems to mitigate outbreaks. Traditional prediction models often struggle to capture the complex, non-linear interactions between weather patterns, urban density, and historical transmission rates. This paper presents a robust machine learning pipeline for dengue case prediction utilizing historical surveillance data. We propose a stacking ensemble architecture combining Extreme Gradient Boosting (XGBoost) and Light Gradient Boosting Machine (LightGBM), optimized with Poisson and Tweedie objectives to handle the over-dispersed, count-based nature of epidemiological data. The methodology integrates automated daily data ingestion, deduplication, and reverse geocoding to extract granular spatial features. Furthermore, we engineer advanced temporal and biological features, including rolling weather lags, exponential weighted moving averages, and thermal performance curve for mosquito development. To capture spatial dynamics, K-Means and DBSCAN clustering are applied to differentiate urban and rural transmission patterns. Evaluated using a strict time-series split, the proposed stacking ensemble demonstrates superior predictive performance compared to standalone tree-based models. This framework provides a scalable, automated approach for public health authorities to anticipate localized dengue hotspots and deploy targeted interventions. Keywords: dengue forecasting, machine learning ensembles, spatial clustering, gradient boosting, epidemiological modelling

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FACULTY OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY · FACULTY OF BUSINESS & ECONOMICS

Session 7 — NextGen Information Technology DK1

Day 2 · 15 July 2026 · 11:00 am – 12:35 pm · Moderator: Dr. Nur Nasuha Mohd Daud

PAPER 25 · 11:00 – 11:15

Intelligent Document Collection Management in the Digital Era: Exploring Human-AI Collaboration, Governance, and Trust

Zulfatun Sofiyani et al.

Artificial Intelligence (AI) has transformed document collection management practices in galleries, libraries, archives, and museums (GLAM) through automated document classification, metadata generation, and information retrieval. Existing studies primarily emphasize technological efficiency and AI adoption, while the mechanisms through which AI-generated outputs attain documentary legitimacy and organizational trust remain unexplored. This study investigates how document collection management practices are shaped by the interaction among information professionals, AI, and organizational governance. A qualitative case study was conducted using semi-structured interviews with information professionals from GLAM institutions who have integrated AI into their document management practices. The findings indicate that AI functions as a cognitive partner that augments the reasoning capabilities of information professionals, whereas professional validation transforms AI-generated outputs into legitimate organizational documents. This process is further reinforced by organizational governance, which ultimately establishes trusted documents.

PAPER 26 · 11:20 – 11:35

Assessing Lexical Alignment Between Indonesia's SDGs Roadmap and Scopus-Indexed Research Metadata

Zahirah Noor Mahdiah et al.

Currently, transparent and interpretable approaches for examining the extent to which research publications reflect policy priorities remain limited. This study addresses this gap by proposing a reproducible framework that combines roadmap-derived vocabularies with metadata-based indicators to compare policy priorities and research publications. Using the Indonesia SDGs Roadmap 2023–2030 as the policy reference, this study analyzes metadata-level lexical proximity between the roadmap and Indonesia-affiliated Scopus-indexed journal articles published in 2023, with the publication year chosen to minimize temporal mismatch between the two sources. SDG 2, SDG 3, and SDG 4 were selected through a rule-based prioritization procedure supported by a constrained LLM-based extraction approach, which generated roadmap-derived keywords for subsequent analysis. Publication metadata (titles, abstracts, and keywords) were then analyzed using roadmap term coverage and TF-IDF cosine similarity to quantify lexical alignment, while Scopus funding acknowledgement metadata were used to derive an indicator of acknowledged Indonesian government support.

PAPER 27 · 11:40 – 11:55

Spatial–Temporal Analysis of Shoplifting for Sustainable Retail

Roziana Ramli et al.

Retail crime is a major threat to the sustainability of the retail sector in England and Wales, costing retailers an estimated £1.76 billion a year, with shoplifting the largest component. Police recorded shoplifting reached 443,995 offences in the year ending March 2024, the highest in over two decades. Despite this scale, retailers and local decision makers lack accessible, force-level evidence on where and when it concentrates. A dataset of 17,898 incidents was obtained from the open data.police.uk platform. It was analysed in Python using exploratory data analysis, spatial and temporal aggregation, concentration metrics, and statistical testing. Newcastle upon Tyne and Sunderland together accounted for about 46% of incidents and supermarkets and shopping areas for 33.2%. These patterns support opportunity-based explanations of shoplifting. A Gini coefficient of 0.150 indicated moderate inequality at district level. An average rank correlation between months of 0.684 confirmed a stable spatial hierarchy. Temporal variation was moderate and significant differences were found between districts. Half of all cases (49.9%) ended with no suspect identified and only 21.3% resulted in a charge or summons.

PAPER 29 · 12:00 – 12:15

Natural Language Processing for Log File Anomaly Detection: A Systematic Literature Review

Barah Alanazi

Modern systems are generating large amounts of logs that are utilized for monitoring and assessing the security level of environments. They have also become essential for advanced techniques of anomaly detection in domains critical to cybersecurity and digital forensics. However, the massive volume of unstructured and complex data makes it extremely difficult to handle using existing methods such as manual or rule-based approaches. This paper focuses on anomaly detection in log files by applying natural language processing, highlighting recent papers, methodologies, and tools. Several databases were searched, including Scopus, WOS, IEEE, and Google Scholar, focusing on studies published between 2020 and 2025. 464 scientific papers were collected and analyzed, resulting in 104 eligible papers for selection. After applying the study criteria, the studies were narrowed down to 11 for in-depth analysis. This research was accompanied by a parallel bibliometric analysis to identify significant contributors, journals, and universities interested in this domain. The results indicate that NLP, combined with machine learning and deep learning, will enhance log analysis, reduce false positives, and increase the accuracy of anomaly detection. Keywords: Anomaly Detection, Log File Analysis, Natural Language Processing

PAPER 30 · 12:20 – 12:35

Socio-Technical Conceptual Framework for Digital Transformation Leading to Adoption of Smart Campus in Oman

Ahmed ALQASMI

“The greatest threat to our planet is the belief that someone else will save it.”

— Robert Swan, Polar Explorer & Environmentalist

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