



# ASEAN Business, Engineering, and Technology Symposium (ABEATS)



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Scotland, UK

**Leveraging Innovation and Technology towards a  
Responsible Future**

Editors

**Salmi Mohd Isa  
Ramona Blanes  
Marianna Koukou  
Fadhilla Khansa**

Organised by

**Adam Smith Business School  
University of Glasgow**



In collaboration with



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## WELCOMING NOTE FROM THE SYMPOSIUM CHAIR AND BOARD MEMBER REPRESENTATIVE



### **Dr Ramona Blanes**

I would like to welcome you to our sixth conference on behalf of the ABEATS Organising and Scientific Committee. We are excited to host this hybrid event at the University of Glasgow Advance Research Centre. This year's theme is "Leveraging Innovation and Technology towards a Responsible Future."

We want to thank the following people:

1. Dr. Mallik Tatipamula – Chief Technology Officer, Ericsson Silicon Valley, for his keynote titled "Next Decadal Technology and Business Model Innovations for Resilient and Sustainable Futures".
2. Prof. Patricia Thornley - for her keynote titled "Sustainability of International Bioenergy Systems: Metrics and Methods".
3. Allan Barton - for his keynote titled "Moving towards a sustainable and responsible future"
4. Professor Anna Morgan-Thomas, Dr Muhammad Zubair, Dr Farhad Shafti, Dr Marianna Koukou and Dr Bakyt Tolegenov for running the paper development workshops.

We would like to thank these organisations, 5R Strategic Consultancy Sdn. Bhd. (Malaysia), the European Management Journal, the IEEE Transactions on Communications, and the International Journal of Water Resources Development for sponsoring our event.

We also want to welcome our new partner, Satbayev University, to the ABEATS family and look forward to attending next year's event in Kazakhstan.

Lastly, thank you to those who submitted their papers for our consideration, those who will present their papers on 6th and 7th December 2024, and others who have allocated their time and money to attend our conference this year. You are what this conference is about; we cannot do this without you.

I sincerely hope you will enjoy this meeting of minds and that this conference will lead to many future cooperations and collaborations.

Thank you and keep safe.

## WELCOMING NOTE FROM THE BOARD



**Robert A Paton**

**Professor of Management**

Personally, and on behalf of the ABEATS Board, Adam Smith Business School (ASBS) and the University of Glasgow I extend a warm , welcome to all participants. No matter the future scenario painted, technology is key to delivering both a sustainable and responsible outcome, however, technology alone is not enough. Harnessing technology through innovatory thought and practices, creating imaginable and achievable futures, produces world changing solutions for our, and generations to come. The ABEATS platform brings disciplines together, thought leaders, academics, practitioners and policy makers combine to leverage innovation and technology towards a brighter, responsible and engaging future. Here at ABEATS let's not ponder, deliberate and point the finger, rather, lets act together, grasping the opportunities and leveraging technology, discovering now horizons for our generation and many more to come.

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Dr. Ramona Blanes

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## Innovative Learning Experiences for Developing Entrepreneurial Skills: A Responsible Research and Innovation Approach

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### ABSTRACT

Entrepreneurship education plays a crucial role in equipping students with the skills needed to succeed in a dynamic business environment (Neck et al., 2014). This conceptual paper explores how innovative learning experiences, using just a single sheet of paper, can develop entrepreneurial skills among students through the Entrepreneurial Thought & Action® (ET&A™) theory (Sarasvathy, 2001). The process involves concrete actions, reflection, abstraction of entrepreneurial concepts, and experimentation with new approaches. The purpose of this study is to highlight the need for effective and responsible methods in entrepreneurship education that utilize minimal resources. The research problem addressed is the challenge of developing entrepreneurial skills in students in a resource-efficient manner. This is particularly important in the context of increasing educational costs and the need for sustainable practices (Kolb, 1984). Traditional methods often require significant resources, which may not be accessible to all educational institutions or students. This study proposes a more accessible approach that maintains educational quality while being cost-effective (Honig, 2004). The basic design of the study involves a conceptual framework that integrates ET&A™ principles into hands-on activities. By utilizing only a single sheet of paper, these activities exemplify resourcefulness and sustainability, key principles in responsible education (Politis, 2005). ET&A™, a theory developed by Babson College, emphasizes learning through experience and reflective action, making it suitable for implementation in creative activities. The activities are designed to be low-cost, easily accessible, and replicable in various educational settings, ensuring that a wide range of students can benefit from this approach. One of the significant aspects of this approach is its flexibility and adaptability. Educators can modify the activities based on the specific needs and contexts of their students. This customization ensures that the learning experiences remain relevant and engaging, which is crucial for maintaining student interest and motivation. Moreover, the simplicity of the materials required (a single sheet of paper) allows for easy implementation in diverse educational environments, from urban to rural settings (Brown, 2009). While this conceptual paper does not include empirical findings, it suggests significant benefits for students. These benefits include the ability to apply theory to practical situations, develop critical thinking, enhance risk-taking abilities, and increase the capacity to identify opportunities. The activities also foster collaboration and communication skills, as the entire class works together to create paper boats from single sheets of paper. Each student participates in the collective task of building and navigating the boats, facing challenges together and enhancing their collaborative and communication skills through this shared experience. By engaging in these innovative learning experiences, students can develop a deeper understanding of entrepreneurial concepts and how to apply them in real-world scenarios. This approach also allows for continuous iteration and improvement of teaching methods based on feedback and observations, aligning with the principles of responsible research and innovation (Revans, 1982; Rasiyah et al., 2019; Gaiardo, 2019). The integration of ET&A™ principles into these activities not only supports the development of entrepreneurial skills but also promotes ethical decision-making and responsible behavior. Students learn to consider the broader impact of their actions on society and the environment, aligning with the goals of responsible research and innovation. This ethical dimension is particularly important in the current global context, where businesses are increasingly expected to operate sustainably and ethically (Liedtka, 2015). In conclusion, this paper provides insights into how innovative learning experiences, aligned with ET&A™ principles and using minimal resources, can serve as an effective and responsible tool in entrepreneurship education. By integrating this activity

into the curriculum, educators can help develop ethical and responsible entrepreneurs, aligning with the goals of Responsible Research and Innovation. The proposed approach not only addresses the practical aspects of entrepreneurship education but also emphasizes the importance of ethical considerations and sustainable practices, preparing students to become responsible leaders in their future careers. Future research can explore empirical validation of the proposed methods and their long-term impact on students' entrepreneurial success and ethical decision-making.

## A Systematic Study of Artificial Intelligence and Robo-Advisors in Finance

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### ABSTRACT

This research investigates the transformative impact of automation and artificial intelligence (AI) in the finance sector. It examines the consequences of automation across various sectors within the finance industry and focuses on the surging prominence of robo-advisors in investment services. The research aims to identify the benefits and challenges faced by these advancements, both from the perspective of clients and enterprises. Moreover, the study delves into regulatory concerns that have emerged due to the surge of automation. The findings underscore the need for comprehensive regulatory frameworks to ensure responsible and secure integration of automation in the financial sector. Additionally, the research highlights the growing adoption of AI and machine learning techniques for risk management and fraud detection, emphasizing the necessity of adapting regulatory mechanisms to address emerging risks effectively. Overall, this study underscores the transformative potential of automation in finance while advocating for robust regulatory enhancements to ensure its prudent adoption. The study also compares robo-advisors and human employees. While robo-advisors driven by algorithms and artificial intelligence analyze vast amounts of data quickly and provide investment recommendations based on predefined criteria, often leading to lower fees for clients, offer cost efficiency, consistency, human employees provide personalized advice and emotional intelligence. Optimal performance depends, with robo-advisors excelling in routine tasks and humans in complex, nuanced scenarios. Overall, this study provides valuable insights into the adoption and acceptance, benefits, and challenges, influences and address ethical concerns, and evaluate the long-term performance of AI-based robo-advisory services.

### Leveraging The Pentahelix Concept for Sustainable Innovation and Global Expansion of Indonesia Culinary Heritage

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#### ABSTRACT

Kuningan Regency is located in West Java, Indonesia, and covers an area of 1,110 km<sup>2</sup> with a population of 1,201,764 people. In 2020, the region experienced a 600% growth in economic activity compared to the previous year, creating significant opportunities for Micro, Small, and Medium Enterprises (MSMEs) and the creative industry. One example is Mrs. Misrah's sticky rice business, which has become increasingly popular in Jakarta. However, her sales are still seasonal. This paper aims to investigate the factors influencing consumer repurchase intentions and explore strategies for sustainable MSME development in the region. This study uses a mixed-methods approach, combining quantitative data from an online survey of 100 respondents with qualitative insights from interviews with local government officials. The quantitative data were analysed using Partial Least Squares Structural Equation Modeling (SEM-PLS), revealing that consumer preferences and beliefs have a significant influence on repurchase intentions. The qualitative analysis delves into contextual factors, emphasising the role of government support and community engagement in sustaining MSME growth. The study highlights the importance of sustainable development for MSMEs to access global markets, guided by the Pentahelix model—a framework that promotes innovation through cross-sector collaboration. The findings are expected to inform strategic initiatives by local governments and academic institutions, aiming to foster sustainable community development and global market expansion for Kuningan's culinary heritage

## Aligning Innovation with Societal Values: The Impact of Citizen Science on Female Students' STEM Career Aspirations

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<sup>3</sup>University of Glasgow, Glasgow, United Kingdom

### ABSTRACT

This study employed a quantitative survey methodology to explore the relationships between self-efficacy, creativity, and intentions to pursue science careers among 170 female university students participating in a Citizen Science Project. The students were engaged in activities such as guiding science-related literature and films, conducting science tours, and promoting science knowledge in underprivileged areas. Structural Equation Modeling (SEM) was used to assess the direct and indirect effects, with mediation analysis revealing that creativity fully mediates the relationship between self-efficacy and career intentions. The results indicate that both self-efficacy and creativity positively predict intentions to pursue science careers. Additionally, the study examined how participation in the Citizen Science Project influenced changes in self-efficacy, creativity, and career intentions across students from science-related and non-science-related departments. The findings underscore the critical roles of self-efficacy and creativity in shaping female students' career intentions in science, offering valuable insights for initiatives aimed at enhancing women's participation in STEM fields. The study highlights the importance of integrating creativity into STEM education, fostering mentorship, improving career counseling, promoting female representation, and establishing industry collaborations. By addressing these factors, educational institutions and policymakers can create a more inclusive environment for female students in STEM. This research provides a foundation for further exploration and emphasizes the need for ongoing efforts to dismantle barriers and promote gender equity in STEM careers.

## A Responsible Approach to Disruptive Innovation in Artificial Intelligence and Future of Work

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### ABSTRACT

Artificial Intelligence (AI) is revolutionizing industries by improving efficiency and automating tasks. However, this rapid integration also presents significant risks. As AI systems take on more responsibilities from humans, there is an increasing concern that people may lose essential skills and become overly reliant on technology. This study explores a potential future scenario where, within 10-20 years, society might struggle to function without AI. To address these risks, the research emphasizes responsible AI integration, ensuring that human capabilities are preserved alongside technological advancements. Additionally, the study delves into innovations in data management that prioritize security, privacy, and ethical use, recognizing AI systems' increasing reliance on vast datasets. A key aspect of these innovations is the incorporation of Privacy by Design principles, which embed privacy and data protection into the very fabric of system development. By proposing a comprehensive framework for assessing the impacts of these innovations, including Privacy by Design, the research aims to strike a balance between progress and ethical considerations. Our research advocates for a balanced approach that maintains human resilience and adaptability while promoting secure, privacy-conscious, and ethically grounded AI practices. Ultimately, the goal is to ensure society's ability to thrive, even in the absence of advanced AI technologies, by fostering both technological and human resilience.

## Churn Prediction in An Indonesian Edtech Platform Using Data Mining

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### ABSTRACT

Edtech platforms have flourished especially during the pandemic of COVID-19. However, student churn has become a significant challenge. Student churn occurs when the student ceases the course subscription to the edtech platforms. This study aims to analyse student churn prediction in an Indonesian edtech platform. By predicting students who will likely churn, the company can perform retention action to prevent it. In this study, churn prediction was conducted using the CRISP-DM framework, including business understanding, data understanding, data preparation, model building, evaluation, and deployment. The dataset consists of 56,219 lines of virtual class attendance from 2543 registered students in 25 months. Several data attributes collected are class date, class time, meeting ID, student ID, and attendance category. Data transformation yields several new relevant attributes, including start month, end month, duration, attendance, absences, and churn category. We utilised WEKA software for churn prediction using artificial neural network, decision tree and logistic regression. The results were evaluated and compared based on accuracy, error rate, precision, recall, F-measure, and AUC score. Information gain attribute evaluation shows that the number of attendances has the highest average merit ( $0.149 \pm 0.007$ ). Based on the model comparison, the decision tree exhibits superiority in terms of the highest accuracy (89.5%), lowest error rate (10.5%), highest precision (92.3%), highest F-measure (94.0%), and lowest RMSE (28.8%). Logistic regression has the highest recall (98.0%), while artificial neural network has the highest AUC score (87.62%). The study suggests increasing student attendance through automated reminders and relationship marketing strategies to reduce churn rates.

## Noise reduction in Audio Visual Radar Speech Recognition System

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### ABSTRACT

This study focuses on noise reduction techniques within Audio-Visual Radar Speech Recognition (AVRSR) systems. AVRSR systems leverage both audio and visual inputs to enhance speech recognition accuracy, particularly in noisy environments. Noise, especially in the audio channel, poses a significant challenge to the performance of these systems. The research explores advanced noise reduction algorithms designed to minimize the impact of auditory noise on speech recognition. By integrating radar technology with audio-visual data, the system aims to improve speech detection and recognition accuracy, even in the presence of high levels of background noise. The effectiveness of these noise reduction techniques is evaluated through experimental results, demonstrating their potential to enhance the robustness and reliability of AVRSR systems in real-world applications.

## Sustainable Entrepreneurial Ecosystems – The Investigation of Inter-Ecosystem Links

Marcella Krawinkler<sup>1</sup>, Robert Breitenecker<sup>2</sup>, Johannes Gartner<sup>3</sup>, Daniela Maresch<sup>4</sup>

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<sup>4</sup>Grenoble Ecole de Management, Grenoble, France

### ABSTRACT

Sustainable entrepreneurial ecosystems (SEEs) hold the promise of fostering sustainable entrepreneurship. This special type of entrepreneurship seeks to balance positive environmental or social impacts while also generating profits. Many sustainable entrepreneurs and SEEs work on initiatives that deliver both environmental and social benefits. However, the understanding of linkages to other entrepreneurial ecosystems are not clear. The interconnections between different ecosystems have been largely unexplored. Only a limited number of scholars underscore the growing importance of cross-border relationships and transnational linkages in entrepreneurial ecosystems. They highlight the pivotal role of transnational entrepreneurs and intermediary organizations in bridging various entrepreneurial ecosystems and facilitating the circulation of actors, ideas, practices, and norms. There is a significant gap in understanding how various entrepreneurial ecosystems can collaboratively amplify their environmental and social outcomes. This research explores the enablers, drivers, and mechanisms for linking sustainable entrepreneurial ecosystems with other types of ecosystems to harness their combined strengths and enhance environmental impact. The study emphasizes the importance of inter-ecosystem links to address complex global challenges. We conducted 30 in-depth interviews with various ecosystem actors to uncover the dynamics and benefits of these links. Our novel conceptual framework categorizes these linkages and examines the actors, factors, and processes involved in their formation. Our findings confirm the presence of inter-ecosystem connections across multiple geographic levels: local, regional, national, transnational, and global. Key factors identified that drive environmental impact scaling via interconnected SEEs include: network dynamics, policy & regulation, technology & innovation, capacity building, ecosystem resilience, and socio-cultural influences.

## **Navigating Minority Stress: Understanding Insecurity in Sexual Minorities and Promoting Societal Interventions for Equity and Inclusion – A Steering Review**

Hessam Mirgolbabaie<sup>1</sup>

<sup>1</sup>University of Minnesota, Duluth, USA

### **ABSTRACT**

The persistent insecurity experienced by individuals within sexual minorities presents a profound psychological challenge, deeply influenced by complex social dynamics. This work addresses the widespread issue of insecurity among sexual minorities, linking it to entrenched social stigma, discrimination, historical marginalization, and a lack of equitable representation in mainstream society. The concept of “minority stress” is identified as a primary driver of vulnerability, exacerbating the insecurity sexual minorities often face in environments that lack inclusivity and equality. Our research hypothesizes a direct correlation between the degree of negative societal interactions and the level of insecurity felt by sexual minorities. Through an exploration of diverse experiences within the LGBTQIA+ community, we highlight the unequal distribution of insecurity across its members. The discussion emphasizes that evolving societal attitudes and greater awareness are crucial to reducing the impact of minority stress over time. To promote equity, we propose strategic interventions focused on fostering inclusivity and affirming diverse identities. These include educational initiatives, inclusive policymaking, and community support systems aimed at dismantling stigma and creating safer, more accepting environments. By addressing these inequities, we aim to alleviate the disproportionate stress experienced by sexual minorities, improving both psychological well-being and social inclusion.

## Family And State Intervention in Young People's Gaming Behaviours and Its Effect On Family Relationship

Dajun Wang<sup>1</sup>

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### ABSTRACT

In the digital age, the contradiction between mobile games between parents and children is becoming more common. Parental surveillance on mobile phones allows access to digital conversations and photos, enabling continuous contact with young people. Additionally, the emergence of applications, such as youth protection models and parental controls, legally facilitates parents in monitoring their children's online behaviour (Boyd & Hargittai, 2013). Lachace's (2019) study underscores the adaptability of teenagers to parental monitoring. Furthermore, the Chinese government published one policy about the time and money youth can spend on mobile games in 2021. This research, based on 1,800 questionnaires and 20 family interviews, addresses the following: (i) The current state of online gaming among young people, along with parental and state interventions in China. (ii) Identification of problems and their impact on family relationships. (iii) Exploration of potential solutions to enhance family relationships and establish an appropriate level of intervention in young people's gaming. Key findings from the survey and interviews include: 1. Limited understanding of the country's anti-addiction system, leading families to provide personal information for youth to play mobile games; despite this, most parents do not endorse youth gaming. 2. Parents resort to reasons like protecting eyesight or being busy with schoolwork to encourage youth gaming, resulting in conflicts with their children. 3. Parents often use short single-player game durations (10 minutes) to control their children's gaming, displaying a lack of in-depth knowledge about mobile games and insufficient communication with youth.

## Study on Logistics and Supply Change Management of Construction Project

Khun Aye Han Kyu<sup>1</sup>

<sup>1</sup>University of East London

### **ABSTRACT**

This study investigates the optimization of logistics and supply chain management in the INNO CITY construction project in Yangon, Myanmar—a significant mixed-use development. Logistics and supply chain management are essential in ensuring cost efficiency, timely delivery, and quality control in construction projects. The research focuses on identifying key logistical challenges, including procurement delays, inventory management inefficiencies, and supply chain disruptions. By examining the integration of external supply logistics and internal site logistics, the study evaluates their impact on overall project performance. Using a case-based approach with interviews and document analysis, the study develops a framework for improving material forecasting, delivery accuracy, and site logistics management. The findings offer insights into strategies for enhancing project efficiency and profitability, addressing common logistical issues faced by contractors in Myanmar's construction sector. Recommendations from this research contribute to the broader understanding of supply chain optimization in the construction industry.

## Neural Network Framework: Bubble Detection using Option Prices

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<sup>1</sup>University of Glasgow, Glasgow, United Kingdom

### ABSTRACT

The three-step approach (Fusari et al., 2020) calibrates a generalised stochastic volatility jump diffusion (GSVJD) model to daily option prices, for bubble detection. Unlike traditional methods, it overcomes joint-hypothesis related issues, and captures the forward-looking nature of bubbles. However, reliance on Monte Carlo simulations makes the high-dimensional calibration procedure highly inefficient. Practitioners are averse to such implementations, given the recurring re-computation needs for detecting bubbles during frequently changing market scenarios. Furthermore, compromises regarding the inclusion of options are made to accommodate for computational feasibility. Hence, neural networks were introduced as numerical solvers, in place of Monte Carlo simulation, in a two-step calibration procedure, inspired by Liu et al. (2019) and Horvath et al. (2021). The neural network framework allows for daily calibrations of the GSVJD model and subsequent bubble detection to be carried out within seconds, even with the inclusion of all traded options. The tractability and performance of the bubble detection method, along with overall option pricing, is improved, enabling for superior and efficient risk management. The benchmark three-step approach, along with its enhanced neural network versions are applied to the S&P 500 index between 2019 and 2022.

**Business Resilience and Innovation in Ever-Lasting Crisis**Nia Kurniati Bachtiar<sup>1</sup>

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**ABSTRACT**

We are entering an era characterized by continuous and overlapping crises—ranging from health and natural disasters to economic, financial, and geopolitical challenges. As businesses face increasingly complex transformations in this era of perpetual crises, they are compelled to become more resilient and innovative. This qualitative paper examines three rural businesses in Scotland, using interviews and document analysis to explore how organizations can navigate and overcome enduring crises. The study aims to develop a transformative business strategy, positioning organizational resilience and innovation as central pillars. It contributes to theoretical advancements through an in-depth exploration of crisis management literature and dynamic capability theory. Practically, this research seeks to offer businesses enhanced support in responding to ongoing crises.

**Socioeconomic Characteristics and Financial Access: Evidence from Developing Muslim Countries**

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**ABSTRACT**

Financial inclusion is a global priority, with countries aiming to expand access to formal financial services to boost productivity and reduce poverty. This study analyses financial inclusion in D-8 countries using microdata from the 2017 Global Findex survey, covering 8,366 respondents. A logistic regression model assesses how individual characteristics—such as gender, education, income, and employment status—influence financial inclusion, measured by formal account ownership, saving in the formal sector, and use of formal credit services. Country-level comparisons are also made. The results show that being male, having higher education, higher income, and being employed significantly increase the likelihood of participating in formal financial services. Individual characteristics are key drivers of financial inclusion across D-8 member states. Among these, Iran and Malaysia have led to expanding financial access compared to other D-8 nations. The study provides insights for policymakers to develop strategies to improve financial inclusion in D-8 countries, promoting broader social and economic benefits.

## The Role of Reverse Innovation in Internationalisation: A Systematic Review

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### ABSTRACT

In recent years, the centre of innovation has shifted from developed to emerging markets, signalling a transformation in the global innovation paradigm. Reverse Innovation (RI)—the process where innovations are initially developed in emerging economies before spreading globally—has become increasingly significant in this context. This systematic literature review investigates the critical role of RI in shaping companies' internationalisation strategies. It aims to provide a comprehensive understanding of how RI drives global expansion, particularly for firms in emerging markets. Grounded in the theories of frugal innovation, disruptive innovation, and internationalisation, this review underscores the uniqueness of RI compared to traditional innovation models, which are shaped by factors such as market constraints, regulatory challenges, and cultural nuances. By synthesising existing research, the review identifies key gaps, including a limited focus on specific emerging markets, insufficient empirical evidence on RI scaling processes, and a lack of longitudinal studies on its long-term impact on firm competitiveness. This study advances both theory and practice by offering deeper insights into RI's influence on global competitiveness and providing actionable recommendations for firms looking to leverage RI for international growth, particularly in emerging economies.

**Induction of Emotions Using Photographs: Utilizing the Nencki Affective Picture System (NAPS)**

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**ABSTRACT**

Emotion is an experience influenced by physiological, cognitive, and socio-cultural factors. The induction of emotions serves to elucidate cultural differences. This study investigates the effectiveness of photographs in inducing emotions using the Nencki Affective Picture System (NAPS) among early adult participants in Indonesia. A total of 88 participants aged 18 to 25 years were recruited for the study. Emotion induction was achieved through the presentation of 44 photographs from the NAPS, followed by measurements utilizing scales for basic emotions, valence, and approach-avoidance tendencies. Statistical analyses, including Cronbach's  $\alpha$  reliability, Spearman's correlation, and paired sample T-tests, were employed to test the hypotheses. The results demonstrated that the NAPS photographs effectively induced emotions of happiness, sadness, fear, surprise, and anger among the participants. These findings provide a valuable reference for future research on emotion induction using visual stimuli. Furthermore, the results are consistent with Islamic perspectives, which affirm that the use of photographs for emotional induction is permissible and beneficial, particularly as a medium for advancing knowledge through technology.

**Designing a Telecommunications Vendor Selection System Based on MCDM and Data Mining**

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**ABSTRACT**

In order to meet customer needs, telecommunications service companies often collaborate with several vendors based on a mutually agreed contract. Multiple criteria are usually used as the basis for selecting vendors for collaboration. One of the most frequently used methods is the Analytic Hierarchy Process (AHP), which determines the weight of criteria and order of priority in the vendor selection process. In addition, several case studies often use the Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) method to complement AHP. Interestingly, in the current era of data abundance, other methods, such as mathematical programming or data mining, are also increasingly used in the decision-making process for selecting suppliers or vendors. This research used an integrated approach, namely the MCDM method and data mining, to select telecommunications service company vendors. The MCDM method, AHP, was employed to determine the weight of criteria and sub-criteria, and the TOPSIS method was utilized to determine the priority order. The data mining approach, k-means clustering, was used to group vendors to form vendor groups/clusters and complete the vendor ranking list. Using data from a case study of a telecommunication vendor selection in Indonesia, with 18 vendors, this research produced six selected criteria and 17 sub-criteria. In addition, a vendor ranking and clustering list were also obtained.

## Adapting Dine-in Coffee Shops to VUCA Conditions: An Analysis of Business Strategies During the COVID-19 Pandemic

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### ABSTRACT

The coffee shop industry in Indonesia is rapidly expanding, encompassing both dine-in and take-away formats. However, dine-in establishments face unique challenges in a VUCA (Volatile, Uncertain, Complex, Ambiguous) environment, particularly highlighted by the disruptions caused by the COVID-19 pandemic in 2020. This research aims to analyze the business environment of dine-in coffee shops during this crisis and identify the strategies employed to sustain operations. Focusing on seven coffee shops in Bogor, Indonesia—four multi-branch and three single-location—a qualitative approach is utilized, with primary data collected through questionnaires administered to the managers. Key findings reveal that multi-branch coffee shops prioritized cash flow, employee health, and personal health, while single-location shops concentrated on employee health, cash flow, and selling prices. Success factors for multi-branch establishments included financial knowledge, business adaptation, and supply chain management, whereas single-location shops emphasized human resource management and adaptability. Significant consumer behavior changes emerged as concerns; multi-branch shops faced issues like stagnant wages and discomfort in visiting cafes, while single-location shops dealt with health-related fears and social distancing. The study concludes that financial knowledge, adaptability, and an understanding of consumer behavior are essential for overcoming crises. Recommendations include maintaining investment reserves and investing in human resource training. While dine-in coffee shops demonstrated resilience during the pandemic, they must prioritize financial preparedness and stakeholder engagement to navigate future challenges effectively.

## **Sustainable Business Model Development for Biogas from Fish Waste in Muncar, Banyuwangi District, Indonesia**

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### **ABSTRACT**

Fish waste is one of the problems in the fishery sector. Muncar Port in Muncar Sub-district, Banyuwangi District is the largest fish port in Java Island, Indonesia. The households in the coastal area of Muncar still throw the fish waste directly to the sea. This research aims to develop a sustainable business model using a social lean framework for biogas using fish waste especially its entrails as a raw material. This study addresses the environmental challenges posed by the current disposal of fish waste into coastal areas. Using qualitative research methods such as in-depth interviews and observations, this study found a strong potential for implementing a biogas system in the local community. The survey was conducted in August 2024 to several households, village officials and non-government organization in Muncar, Banyuwangi. Both local residents and the government support this initiative, recognizing its benefit in reducing the coastal pollution and providing biogas and organic fertiliser for local residents. However, the research also revealed past failures in biogas torrent operation due misconception about waste management. To ensure the success of the developed business model, it is crucial to address the misconception and educate local residents about the environmental consequences of improper waste disposal. By implementing a sustainable biogas system, this initiative can contribute to environmental conservation and create a viable economic opportunity for the local community.

## Does Gender affect the investment strategy of Private equity firms? Evidence from Impact investing

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### ABSTRACT

This study explores whether women-founded private equity (PE) firms are more likely to engage in impact investing, a strategy aimed at generating both financial returns and positive social or environmental outcomes. Grounded in imprint theory, it considers how founders' gender can influence a firm's strategy (Beckman & Phillips, 2005). In the high-risk, competitive PE industry, differentiation is key for legitimacy (Fisher, 2020). Given women entrepreneurs' inclination towards pro-social and pro-environmental approaches (Dimitriadis et al., 2017), we hypothesize that women-founded PE firms are more likely to adopt impact investing strategies. We further propose that gender effects vary across different institutional contexts. To test this, we utilize data from Crunchbase, Preqin, and Pitchbook. Our findings show that women-founded PE firms are indeed more likely to pursue impact investments. This effect is stronger when women represent over half of the founding team or are in countries with high gender equality. Further analysis reveals that syndicates with women-founded PE firms are more likely to make impact investments, particularly when these firms are from gender-equal countries or when the ventures are located in areas with strong corporate social responsibility (CSR). This research contributes to imprint theory by highlighting the role of gender in shaping investment strategies in PE. The findings suggest that policy efforts to support women as PE founders should be coupled with broader initiatives promoting gender equality and CSR.

## Digital Product Passport for Sustainable and Circular Supply Chain Management: A Structured Review of Use Cases

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### ABSTRACT

Digital product passport (DPP) is a key regulatory element of the latest European Union's Circular Economy Action Plan. By enhancing product traceability and supply chain transparency, its upcoming mandatory implementation aspires to improve resource circularity, cut emissions, and strengthen supply chain governance. However, the extant literature lacks a comprehensive understanding of DPP use cases in the supply chain and how they enable sustainable and circular supply chain management (SCM). To address this knowledge gap, this study first provides an overview of the current state of DPP in policy and practice. Based on a structured review of 82 DPP supply chain use cases in academic literature, we synthesize the functional areas that DPP can add value to improving supply chain sustainability and circularity. Informed by the review findings, we first discuss theoretical and practical implications of DPP-enabled sustainable and circular SCM, and then prioritize research needs in the emerging research domain.

## The Influence of Service Quality on Satwagia Consumer Satisfaction in Bogor City

Elai Novita Mariani Banurea<sup>1</sup>, Siti Jahroh<sup>2</sup>, Linda Karlina Sari<sup>3</sup>

<sup>1,2,3</sup>IPB University, Bogor, Indonesia

### ABSTRACT

The growing interest in pet adoption in Indonesia has given rise to various animal care industries that increase competition. Service quality and customer satisfaction are very important for businesses in the service sector. This research was conducted in Bogor City at the Satwagia veterinary clinic starting from February-June 2024, with the aim of measuring service quality and customer satisfaction and analyzing the influence of service quality on customer satisfaction. This research involved 100 respondents and used the SEM-PLS analysis tool. The research results showed that the variable with the highest score was physical evidence 85.85% in the very good category and the variable with the lowest score was reliability 81.93% in the good category. The customer satisfaction variable had a score of 86% in the very good category. The analysis showed that the attention variable had a positive and significant effect on customer satisfaction.

## Facilitating the Transition to Circular Economy Business Model: The Role of Actors and Stakeholders - A Literature Review

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### ABSTRACT

Popular concept aiming at reaching sustainability in numerous sectors is the circular economy (CE). Its aim is to concentrate recycling, reuse, and waste reduction to convert a linear system depending on the "take-make-dispose" pattern into a more circular system. The transition to CE, which is mostly seen in the fashion industry, is characterized by a radical change that requires technical innovation. The article describes the crucial role of actors in the value chain. The actors participate in creating a cooperative environment that facilitates the implementation of CE. This literature review employs bibliometric analysis to explore key concepts and the role of actors within the value chain. The findings show that consumer participation is one of the greatest obstacles to implementing CE in the fashion industry. The awareness of consumers about the sustainability of products is often not in line with their intended purchase decisions, despite a greater tendency towards environmentally friendly living. According to the literatures, successful CE implementation requires a cross-sectoral strategy involving all stakeholders. The circular economy, when properly implemented throughout the entire value chain, has the potential to create economic, social, and environmental benefits.

## Exploring The Impact of Halal Certification on The Growth of Halal Tourism Destinations: A Literature Review

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### ABSTRACT

Halal tourism has become a primary focus for many countries striving to attract Muslim travelers from around the world. Indonesia, as the country with the largest Muslim population globally, has great potential to become an attractive halal tourism destination. This study aims to explore the impact of halal certification on the growth of halal tourism destinations through a literature review. By analyzing literature related to halal certification and halal tourism, this study finds that halal certification plays a crucial role in increasing the interest of Muslim consumers in halal tourism destinations. Halal certification not only provides assurance of compliance with Islamic principles but also enhances the trust and comfort of Muslim consumers during their travels. Additionally, the increase in the number of halal-certified products in Indonesia indicates significant growth in the halal market, reflecting the needs and preferences of Muslim consumers. Cooperation between the government, tourism industry, and halal certification bodies is essential to ensure compliance with relevant standards and to effectively promote halal facilities and services. This study concludes that halal certification is a long-term investment in the development of inclusive and sustainable tourism destinations.

## **Empirical Study on Absorptive Capacity Development to Promote Sustainable Knowledge Transfer in Multinational Corporations**

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### **ABSTRACT**

Japanese companies have traditionally operated under a structure where large parent companies guarantee jobs for small and medium-sized enterprises (SMEs) under the parent umbrella, providing that a continuous business relationship creates mutually beneficial trust and improves long-term product and service quality. However, the global technological innovation race represented by CASE has prompted increasing recognition that large Japanese companies cannot maintain this structure. To survive this changing environment, SMEs under a parent company must effectively improve the ability to independently create new services and products. In other words, the SMEs must expand their own research and development capabilities. Yet very few SMEs have the capacity to do so. The presenter raised this issue in her doctoral thesis as a knowledge transfer problem for SMEs. Then, she argued for considering the role and actions of boundary workers in improving absorptive capacity, particularly to revisit the concept of boundary spanners to promote knowledge transfer in SMEs. This study aims to advance this discussion using more case studies and quantitative data. In knowledge transfer research, several studies have demonstrated how the absorptive capacity of subsidiaries affects knowledge transfer from parent companies, focusing on multinational companies. Some studies have examined resource utilization caused by inter-company relationships between parent and subsidiary companies in corporate groups. Yet few examines the subsidiary and parent company personnel responsible for bridging knowledge and information between the two. Further, the sustainable management of the multifaceted network between subsidiary and parent company has not been discussed. This study fills that gap.

## Transforming Waste into Clean Energy: Advancing Hydrogen Production via BECCUS Amid Public Perception Challenges

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### ABSTRACT

Hydrogen (H<sub>2</sub>) is often promoted as a clean energy carrier, yet it faces public scepticism due to concerns about its production methods, safety, and overall environmental impact. To address these concerns, this research investigates hydrogen production from waste materials using the Bioenergy with Carbon Capture, Utilization, and Storage (BECCUS) concept. By converting waste biomass into hydrogen through advanced gasification techniques and capturing the resulting CO<sub>2</sub> emissions, this approach produces sustainable energy and achieves negative carbon emissions. Technological innovations in gasification and carbon capture enhance efficiency and make the process more economically viable, while business models focusing on investment strategies, public-private partnerships, and market mechanisms like carbon credits are essential for scaling this technology. Despite prevailing public doubts, producing hydrogen via BECCUS from waste offers significant societal benefits, including job creation in new industries, improved energy accessibility, and public health improvements due to reduced air pollutants. The environmental impacts are also profound: this method helps reduce greenhouse gas emissions, manages waste effectively, and minimizes the ecological footprint by utilizing renewable resources. By addressing the public's reservations through transparent communication and demonstrating tangible benefits, this research advocates for a renewed perspective on hydrogen's role in sustainable energy, suggesting that waste-derived hydrogen through BECCUS could be instrumental in transitioning to a low-carbon economy and meeting global climate objectives.

## Everyday Algorithmic Resistance: A Literature Review

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### ABSTRACT

Research on resistance behaviour in work settings primarily focuses on overt resistance (such as boycotts, marches, or strikes), which is readily observable and acknowledged by both the individuals targeted and external observers. In contrast, covert resistance represents a more subtle, often unrecognised form of resistance, reflected in behaviours such as foot-dragging, non-compliance, or workaround. These actions are less visible and can occur beneath the surface of normal workplace activities, making them less commonly studied. The current study aims to shift attention on particular type of covert resistance that does not require coordination and can be performed daily ('everyday resistance behaviour'). It also introduces the concept of 'everyday algorithmic resistance' as a new construct of resistance. Building upon empirical and conceptual work on everyday resistance, as well as on algorithmic resistance, this paper posits that everyday algorithmic resistance represents a distinct category within the spectrum of work-related resistance.

## The Impact of ESG on Corporate Performance: A Systematic Literature Review

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### ABSTRACT

This study evaluates the impact of ESG on corporate performance. The research is motivated by the increasing urgency of ESG implementation that has not been supported by adequate information and data. The study aims to analyze the development of ESG practices, their impact on corporate performance, and lessons for the development of ESG in Indonesia. The research method used is a systematic literature review. Data collection for this research was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). From the literature search process in the Scopus database, 739 studies were identified. After removing duplicates, screening based on qualitative criteria, and reviewing titles and abstracts, 30 journal articles remained that were relevant to the research problem. The results indicate that the development of ESG practices can be categorized into initial exploration, intermediate, and advanced stages. The development of ESG practices in ASEAN is at the early adoption stage, while China is at an intermediate stage. In contrast, the European Union and the United States are at the advanced adoption stage, with the EU implementing strict regulations and the US integrating ESG disclosures into business strategies. ESG implementation affects financial performance by improving performance and reducing financial risk, as well as influencing investments and bonds. ESG also impacts non-financial aspects, including corporate reputation, management and governance, and sustainability. Lessons that can be adopted in Indonesia include the creation of supportive regulations, increased ESG literacy, expanded investment access, and the integration of financial goals with ESG.

**AI-Assisted Art Therapeutic Practices for Spiritual Care in Taiwan**Sih-Ying Hsieh<sup>1</sup><sup>1</sup>University of Glasgow, Glasgow, United Kingdom**ABSTRACT**

This study examines the Art for all spiritual care programme, an innovative art-health initiative in Taiwan that integrates generative AI technology with art therapeutic practices for older adults with multimorbidity. As Taiwan confronts a rapidly ageing population, non-pharmacological interventions are becoming increasingly crucial in community health improvement programmes. This research explores how art sessions incorporating AI-generated images and songwriting can stimulate conversation and body movement within the framework of spiritual care. The study employed art-based research methods, including participatory observation, to investigate the application of generative AI in art workshops. Participants, all over 65 years old, attended four consecutive workshops focused on spiritual care and self-care. Art-health practitioners utilised generative AI tools to guide participants in creating images of their daily practices, expressing emotions through composing songs and lyrics. The final session incorporated stretching and breathing exercises synchronised with participants' musical creations. Findings reveal that generative AI tools significantly enhanced engagement, verbal expression, and social interaction among participants, regardless of their prior artistic skills. The AI served as a powerful catalyst for evoking memories and emotions, enabling participants to share life stories more vividly and confidently. This study highlights the potential of AI in revolutionising art therapeutic methods for individuals with multimorbidity. It also suggests promising approaches for curriculum development in mental health and eldercare practices. Future research should explore the long-term impacts of such programmes and address potential challenges in implementing these practices across diverse care organisations.

## Digital Divide: Complexity of Highly Digitised Healthcare Provision and Health Literacy Among Somalis in Norway

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### ABSTRACT

The digital divide in healthcare poses significant challenges for Somali immigrant women in Norway, particularly first-generation settlers. This study is a systematic review of existing literature highlighting the critical digital divide and key factors contributing to the health disparities in Norway's migrant communities. While healthcare digitisation improves services, it may also exacerbate health inequalities due to language barriers, low digital literacy, and patriarchal systems. Somali women, often relying on male family members to access health information, face considerable difficulties navigating the digital healthcare system [1-3]. This dependency further restricts their access to preventive healthcare services, which remains notably low compared to emergency service usage. Additionally, the automated booking systems used in the Norwegian healthcare system present further barriers, particularly for women with limited Norwegian language skills, making it difficult to schedule appointments and access care. Furthermore, the intersectionality of social determinants, such as gender, culture, and socioeconomic status, compounds these challenges, reinforcing traditional gender roles and limiting women's autonomy in health decision-making [4]. The use of male interlocutors, often family members, exacerbates privacy concerns and communication barriers, particularly in maternal and reproductive health settings [3]. Consequently, these obstacles deepen existing healthcare disparities and result in poor health outcomes for Somali immigrant women. Addressing these technological and sociocultural barriers is crucial to improving health literacy and access to healthcare services for this marginalised group.

**Mission-Based Scholarship: Managing Corporate Social Responsibility to Build Sustainable Futures Based on Sustainable Development Goals**Dadan Ramadan<sup>1</sup><sup>1</sup>University of Glasgow, Glasgow, United Kingdom**ABSTRACT**

Scholarships have proven to be an effective way to support and expand access to education, improve talent development, and supporting research and development. While current scholarship models, such as merit-based, need-based, and subject-based scholarships, have made significant contributions, these models may not fully address the evolving needs of students and society. However, universities, students, communities, and corporations each have their own methods of contributing to society and building sustainable futures. This paper presents a new model of scholarship that fosters a collaborative approach between students, universities, local communities, and corporations. The proposed model does not solely focus on supporting students financially in their studies, but also on how the existence of this scholarship model can address emerging challenges, such as sustainable development goals, and provide a direct impact on local communities. Secondary data from relevant studies and primary data obtained from interviews with related stakeholders will be discussed. A prototype model will be used to validate this scholarship model with current scholarship recipients, the local community, and academic staff. Based on the present findings, a collaborative scholarship model could address the gaps that current popular scholarship models fail to address.

## Business-CSO Collaboration for Sustainable Supply Chain Innovation

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### ABSTRACT

With the growing awareness of sustainable development, civil society organizations (CSOs) are taking on a more significant role in sustainable supply chain management (Xu et al., 2022). Although pressure from civil society can lead to conflicts, if these conflicts are effectively managed and a collaboration is established between companies and CSOs, those companies are more likely to be perceived as socially responsible (Arenas et al., 2013; Seitanidi & Crane 2009; Pelozo & Falkenberg, 2009; Aguilera et al. 2007). To look socially responsible, some companies may choose to collaborate with CSOs. However, powerful companies tend to internalize the function of CSOs. Comparing to companies that are more powerful, those with lower bargaining power but higher investment requirements are more likely to benefit from the business-CSO collaboration (Chatain & Plaksenkova, 2019). One of the key benefits for business-CSO collaboration are that the collaboration can not only promote the corporate image but also encourage innovation. By establishing collaborations with civil society, business can achieve process innovation like process eco-innovation (Cassetta et al., 2024) and social innovation like the fair food program (U.S. Department of Labor, 2024). Innovation can build resilience of company and enhance their competitive position (Hendry et al., 2019). The innovation brought by business-CSO collaboration can be an attraction for companies to enter those collaborations and it is worth analysing what are the key elements behind the supply chain management innovation. This research aims to investigate what are the conditions under which business-CSO collaboration can drive innovation in sustainable supply chain management.

## **Addressing Watt's Legacy. Investigating The Industry, Policy and Social Transition to Textile Production and Consumption Circularity**

Lynn Wilson<sup>1</sup>

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### **ABSTRACT**

The global textile supply chain from raw materials to consumption contributes to 8 -10% of global carbon emissions. This environmental crisis was enabled by the father of the Industrial Revolution, James Watt, a technician from University of Glasgow, and inventor of 'the separate condenser' that increased efficiency of the Newcom steam engine powering the global textile industry. Textile production occurs mainly in China and Asia, impacting on air, soil and water pollution in local communities. In contrast, consumption is exponential in the global north, illustrating not only the environmental crisis, but inequality and injustice of global production and consumption. Industry, policy and social solutions are required to reduce resource consumption, inequality and carbon emissions. The transition to sustainable production and consumption requires a circular economy approach to reduce this take-make-dispose culture and enable products and resource loops. This shift requires circular design principles of quality raw materials, design for reuse, repair and recycling. This research applies a desk-based literature review of: environmental policy frameworks within the context of sustainable production and consumption, local community initiatives in Scotland and India addressing the global textile challenge and investigates how new technologies such as Digital Product Passports can reduce clothing consumption and increase clothing circularity. The paper recommends policy makers need to accelerate and prioritise action plans that support digital and social production and consumption, to reduce the overall textile environmental impact. Academic research is required that presents evidence of how digital and social textile production and consumption transformations can be achieved.

## Marketing Strategy to Increase Brand Awareness of Buna Indonesia

Azelya Odria<sup>1</sup>, Alfa Chasanah<sup>2</sup>, Siti Jahroh<sup>3</sup>

<sup>1,2,3</sup>IPB University, Bogor, Indonesia

### ABSTRACT

The COVID-19 pandemic has significantly impacted various aspects of human life, including substantial changes in how people communicate, work, and shop, particularly in Indonesia. One of the sectors that experienced significant growth is coffee consumption. Despite the overall increase in coffee consumption, Buna Indonesia, a coffee shop based in Cilegon, Banten, faces challenges in achieving its sales targets. This study aims to identify the level of brand awareness of Buna Indonesia among customers and potential customers. The approach used includes pyramid brand awareness analysis, the 4C marketing mix, and descriptive analysis. A total of 200 respondents, consisting of both customers and potential customers, were involved in this study using purposive sampling techniques. The results show that Buna Indonesia's brand awareness level is still low. Therefore, more effective marketing strategies are needed using the 4C marketing mix strategy concept to increase brand awareness and attract more customers in the future.

**Applying Responsible Innovation Framework to Tourism Technologies: A Central Asian Perspective**

Leila Shora<sup>1</sup>, Dilyara Amanbek<sup>2</sup>, Assel Baishuakova<sup>3</sup>, Saida Butinbayeva<sup>4</sup>, Kamila Kamalova<sup>5</sup>, Aisulu Shaikenova<sup>6</sup>

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**ABSTRACT**

While tourism technology transforms experiences worldwide, ensuring these advancements are responsibly innovated is essential, especially in developing regions. In Central Asia, where tourism is on the rise, questions emerge around whether tourism technologies—designed to enhance experiences across the tourist journey—align with the principles of Responsible Innovation (RI). As highlighted in the extant research studies, the concept of responsible innovation is still relatively new for developing countries, warranting the need for studies on its application. This study evaluates tourism technologies from Kazakhstan, Kyrgyzstan, and Uzbekistan using the Responsible Innovation Framework (RIF), which comprises anticipation, inclusion, responsiveness, and reflexivity as its core dimensions. To assess alignment with the dimensions of RIF, the study employs a qualitative approach, analysing secondary data from reports, online reviews, and official websites of selected technologies regarded as best practices within each country. The findings are expected to reveal gaps between the current state of these technologies and the RI dimensions, offering tailored recommendations for Central Asian countries. These insights aim to guide policymakers and stakeholders, paving the way toward a responsible future. Additionally, the results seek to enrich the concept of responsible innovation, with a specific focus on its applicability in the context of developing countries.

**Smart Surveillance: AI-Driven Radar for Vital Signs Monitoring**

Nour Ghadban<sup>1</sup>, Mostafa Elsayed<sup>2</sup>, Jonathan Cooper<sup>3</sup>, Julien Le Kernec<sup>4</sup>

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**ABSTRACT**

Monitoring vital signs is essential in healthcare to evaluate patient health and detect early signs of physiological decline. However, traditional contact-based methods can cause patient discomfort and are often unsuitable for specific clinical environments. Recently, non-contact radar technology, integrated with machine learning, has emerged as a promising alternative for the continuous, real-time monitoring of vital signs, including heart and respiratory rates. Radar sensors remotely capture subtle physiological signals, whereas machine learning algorithms enable precise extraction and interpretation, effectively distinguishing vital signs from background noise and movement artifacts. This non-invasive approach offers multiple advantages, such as improved patient comfort, suitability for infection-sensitive environments, and compatibility with long-term monitoring needs. This study develops an AI model that achieves up to 99% accuracy in vital sign monitoring, emphasizing the critical role of machine learning in enhancing accuracy and reliability in healthcare applications.

Jaylan Azer<sup>1</sup><sup>1</sup>University of Glasgow, Glasgow, United Kingdom**ABSTRACT**

Generative AI (GenAI) applications in customer-facing roles are rapidly expanding, reshaping how customers interact with services. This paper conceptualizes human-machine engagement (HME) by integrating concepts from service research, computer science, and socio-technical systems. It presents a typology of HME, identifying four forms—informative, experimenting, praising, and apprehensive—which vary in emotional (e.g., excitement) and cognitive (e.g., concern) drivers. Furthermore, this research reveals how HME types influence outcomes for both users (e.g., perceived value, affinity) and service providers (e.g., willingness to adopt, perceived value), with variations depending on competitive pressures. These insights expand engagement research to include GenAI-driven interactions, offering strategic and tactical guidance for service providers using or planning to integrate GenAI.

## How Do COIL Projects Develop Workplace Communication and Collaboration Skills: The Students' Perspectives

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### ABSTRACT

Studies have explored the benefits of integrating a Collaborative Online International Learning (COIL) projects into the curriculum. These range from educational benefits, such as COILs developing student's digital skills, to the skills developed during such projects, such as recognising COILs develop problem-solving skills. This study aims to understand how students experience building communication and collaboration work skills allows for a deeper understanding of what activities or types of participation contribute towards building these skills. The study will conduct 20 in-depth interviews with students after the project completion, which will be inductively and thematically coded. Specifically, the interviews will focus on the interactions and activities students participated in completing the required task and their perceptions of how these have contributed towards building their workplace competencies in communications and collaborations. The intended outcome of this study is to appraise the activities and experiences during a COIL project that contribute towards the development of workplace communication and collaboration skills in students. The results from this study are of interest to educators wishing to integrate COIL projects into their programmes, especially those looking to integrating COILs that will develop soft skills and not only academic skills. It is also of general interest to higher education institutions interested in developing a curriculum that build these workplace skills in a manner that is better tailored to student needs. In turn, these are skills that can support organisational efforts towards building sustainable business practises.

## Exploring Proactive Work Behaviour and Innovation in Organisations

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### ABSTRACT

Proactivity is significant in the workplace, nowadays, where there is more competition and greater pressure for innovation. Exploring proactive work behaviour and innovation is significant for creating policies and practices that focus on engaging stakeholders of an organisation in the innovation process. Scholarly work has identified both “constructive” and “destructive” proactive work behaviours. This study focuses only on the constructive proactive work behaviour of employees in the University. Proactive work behaviour in this study is defined as “taking control of and bringing about change within the internal organizational environment”. Individual innovation, problem prevention, taking charge and voice are central. This qualitative research case study focuses on the frontline staff because research remains limited. Overall, the level of proactive work behaviour of frontline employees in their work to support the students is medium to low primarily because of a recent restructuring based on neoliberal ideas and its consequences (i.e., high bureaucracy). Proactive work behaviour is not always forwarded automatically, despite its advantages, because it includes “uncertainty” for the future and initiates change which is not always accepted by others in organisations (i.e., managers, supervisors) who favour the “status quo”. Features of the workplace can interfere to stop proactive persons from being so (i.e., job control, procedural justice). Findings contribute to the literatures of innovation, proactive work behaviour and frontline staff and can be used to advance further research both in higher education and in other sectors.

## Towards an Understanding of Fintech Ecosystem Evolution: Developing a Conceptual Model through the Case of Kazakhstan

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### ABSTRACT

This study aims to critically analyse the evolution of the Fintech ecosystem in Kazakhstan in the process of its development. Furthermore, this paper will elaborate on the crucial elements that have shaped the growth of the Fintech ecosystem and delineate the inherent hurdles encountered during this evolution. By illuminating the transformative mechanisms inherent within Kazakhstan's Fintech landscape, this research aspires to propose a potential model for Fintech ecosystem evolution, thus offering a constructive framework for the comprehension and replication of similar growth patterns in other national contexts. Despite the existing interest in the topic of the Fintech ecosystem, there is a lack of in-depth research studying the historical evolution of the Fintech ecosystem. Understanding how Fintech ecosystem has developed over time and identifying the main factors that have influenced its growth can provide critical insights for policy makers, financial institutions, Fintech companies, and other stakeholders. Therefore, this study addresses this gap by exploring the trajectory of Fintech ecosystem development in Kazakhstan. The current research contributes to research in the field of Fintech and Fintech ecosystem evolution. The research findings reveal that the Fintech ecosystem in Kazakhstan has evolved through four distinct stages: Emergence and establishment of initial regulatory, Modernisation and expansion, Advancements in infrastructure and emergence of alternative financial services, Integration and harmonisation. The study concludes that the Fintech ecosystem in Kazakhstan, while having made notable strides, is significantly shaped by the country's political and economic structures.

**Transitioning To Industry 5.0: Sustainable Frugal Innovation for Malaysian Startups**Salmi Mohd Isa<sup>1</sup>, Winston Yuen<sup>2</sup><sup>1,2</sup>Graduate School of Business, Universiti Sains Malaysia, Penang, Malaysia**ABSTRACT**

Entrepreneurship plays a vital role in Key Economic Growth Activities (KEGA) and is essential to Malaysia's ambition of becoming a developed and prosperous nation by 2030. However, entrepreneurs, especially those in small and medium enterprises (SMEs), face significant challenges in transitioning from Industry 4.0 to Industry 5.0. As technological innovations accelerate, the pace of industrial revolutions is expected to increase over the next decade and beyond. This shift demands that entrepreneurs maintain agility while also reintroducing human insight and craftsmanship into the industrial landscape of Industry 5.0. This model aims to cultivate a more structured, knowledge-driven economy, enabling startup entrepreneurs to boost creativity, develop essential 21st-century skills, and digitalize their operations to thrive in an ever-changing environment. The study employs triangulation methods to investigate ways to foster collaboration among various actors in the frugal innovation process, with an emphasis on community engagement and the strategies necessary for effective diffusion and commercialisation during the industrial transition. The findings highlight the importance of collaboration between humans and technology within the context of Industry 5.0. By leveraging technological advancements, organizations can optimize resource utilization and improve performance, streamlining processes in a complex business landscape. This research contributes theoretically by underscoring the importance of knowledge as a critical asset for business success and practically by providing startup owners with insights to navigate the current turbulent environment characterized by uncertainty and challenges. Ultimately, these findings will help build a holistic ecosystem that supports Malaysia's socio-economic development agenda, advancing the nation's vision of becoming an entrepreneurial powerhouse.

## Exploring Barriers and Facilitators for Cervical Cancer Screening in Women Diagnosed with Mental Health Problems in Selected Governmental Health Facilities, In Ethiopia

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### ABSTRACT

Cervical cancer is one of the preventable cancer cases and if it is identified early in the course of the disease, the effect can be reversed. More than 1000 health facilities are providing screening services in Ethiopia and vaccination has been given two times for children aged 14. Though a lot of progress has been seen in the area, little is known if the service is accessible and utilized by women with mental health problems. Therefore, the current study will explore cervical cancer screening among women with mental illness. This qualitative study will use purposive sampling to select participants from three groups: women with mental health conditions, cervical cancer screening providers, and mental health service providers. Conducted between February and March 2025 in selected governmental health facilities and the Ministry of Health, the study will include in-depth and key informant interviews with 20-30 participants using a semi-structured questionnaire. Data will be transcribed, translated, and coded for thematic analysis, and NVivo software will be used to identify key patterns and themes. This study aims to achieve innovative insights into the experiences of women with mental health conditions in accessing cervical cancer screening, focusing on both barriers and facilitators. Additionally, the findings will contribute valuable, context-specific knowledge for Ethiopia, potentially informing the development or revision of policies to improve screening accessibility and effectiveness.

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**ABSTRACT**

The integration of artificial intelligence tools like ChatGPT into educational environments has raised questions regarding their ethical implications, highlighting differing perspectives among various educational groups. This study investigated the ethical viewpoints surrounding AI-driven tools, particularly ChatGPT, among students and academic staff at Kokshetau University in Kazakhstan. Through a comparative approach, the research identified areas where ethical considerations diverged or aligned between these groups. Employing a mixed-methods methodology, data were collected from students and faculty members across a range of academic disciplines, using both surveys and focus groups. Key areas of focus included the acceptability of AI-supported work, questions of authorship and originality, concerns around privacy and data security, and the risk of dependency on AI. The study also explored how each group perceived ChatGPT's potential to either support or detract from critical thinking and independent learning. Results revealed that students often view ChatGPT as a tool for enhancing productivity and addressing academic challenges, while faculty members tend to be more cautious, perceiving it as a potential risk to academic integrity and essential cognitive skills. These differing viewpoints underscore the need for balanced guidelines that address ethical concerns and support responsible AI use in educational contexts. This research aims to not only inform policy but also contribute to ongoing discussions on the impact of AI on future educational practices.

## **Addressing Linguistic Inequalities in Civil Service Training: A Case Study of Kazakhstan's Language Policy Implementation**

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### **ABSTRACT**

This study explores the role of language policy implementation within Kazakhstan's civil service training programs, highlighting its impact on reducing inequalities in access to educational and professional advancement. The research centres on the Academy of Public Administration under the President of the Republic of Kazakhstan, where multilingual training is offered in Kazakh, Russian, and English. The Academy's diverse language offerings aim to address linguistic inclusivity in a context where civil servants have varied linguistic competencies. Through interviews with civil servants, educators, and institutional leaders, the study investigates how language choices and instructional methods contribute to or hinder equal opportunities for civil servants in their professional development. The research considers socio-political factors, organizational practices, and individual agency, examining how these elements collectively influence policy effectiveness and access to career progression. In focusing on the dynamics of power and language within training environments, this study provides insights into the practical challenges and potential benefits of linguistic inclusivity in civil service education. Ultimately, this research seeks to inform policy improvements for reducing educational and professional inequalities in multilingual settings.

## The Role of Higher Education in Developing Academically Gifted Students as Identified by Gifted Schools in Kazakhstan

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### ABSTRACT

There have been numerous reforms aimed at upgrading the quality and structure of Kazakhstan's education system. One of such reform was an establishment of schools for gifted students with the expectancy that they would be of benefit to the whole of society. It was believed they would give positive impulse to the economic growth from a long-term perspective by nurturing highly competitive human capital. These gifted schools have demonstrated outstanding performance in educational attainment with their students having received thousands of prizes in various Olympiads and competitions. Many of those who attend gifted schools go on to study at university, and yet little is known about how academically gifted students (AGS) are supported and challenged whilst studying at university. Literature review revealed that teachers generally are poorly trained or not provided with a proper training on gifted education. Additionally, a lack of support from HE in assisting students to accept and adjust to the new environment may result in poor academic performance among AGS. Based on the present state of the literature, there is still a scarcity of research dealing explicitly with academically gifted students in a higher education setting. To help close some gaps in this area and contribute to the current knowledge it was decided to explore academically gifted school graduates' university experience. The overall research questions evolved from the literature review and are related to the pedagogy of university faculty for teaching AGS, developing AGS leadership skills and provision of targeted wellbeing support for AGS.

## **Institutional Voids and Social Capital (Trust): Exploring the Endurance of Asia SMEs Amidst a Major Disruptive Event**

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### **ABSTRACT**

The COVID-19 pandemic has exposed significant weaknesses in the global economic systems. SMEs are observed to be affected more than the MNCs. SMEs play an important role in the economy, accounting for over half of the globe's employment. This research focuses on how SMEs can ensure firm survivability while facing the challenges brought about by institutional voids (i.e. legal and regulatory, financial, normative, and cognitive-cultural) that have become apparent during this crisis. This study aims to connect with SME leaders from Singapore and Indonesia to gain insights into their experiences and reactions to these voids. By conducting in-depth interviews with 16 SMEs, this study seeks to understand how these leaders interpret their situations and make decisions that not only benefit their businesses but also resonate with their communities. This study will look at three key areas: identifying the various types of institutional voids encountered by SMEs, examining how these voids shape their strategic choices and overall performance, and exploring the essential role of trust as a form of social capital that helps them navigate these challenging times. Data will be gathered through semi-structured interviews and document analysis to uncover effective strategies that SMEs have employed throughout the pandemic. Ultimately, the goal is to highlight how SMEs can leverage trust and social connections to enhance their resilience and achieve sustainable success. By sharing these findings, this study hopes to contribute to an ongoing dialogue about responsible research and innovation that aligns business growth with societal needs in today's complex environment.

**Enhancing Accounting Education: Integrating Technology and Data Analytics into the Curriculum**

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**ABSTRACT**

Professional accountants emphasise the need for accounting students to develop technology and data analytics skills to excel in their careers. With technology and data analysis expanding in accounting, concerns have emerged that some accountants' skills are lagging. Strengthening these capabilities within accounting programmes has thus become a focus for educators and practitioners. Integrating technology and data analysis into the curriculum is essential to keep pace with industry advancements and prepare students for the digital era. This study examines technology and data analysis integration in the accounting curriculum, focusing on relevant courses, software, and tools currently offered. It employs a descriptive, qualitative approach using document analysis of academic materials from undergraduate accounting programmes in Indonesia. Findings reveal that many programmes incorporate technology-based and data analytics courses as core or elective options, with Universitas Gadjah Mada being a notable example. The university's Faculty of Economics and Business emphasises these areas due to its high accreditation and AACSB certification, which require alignment with International Education Standards (IES) for globally relevant skills. Notably, IES 1 addresses Information, Communication, and Technology (ICT) competency. This study's insights aim to inform policy and curriculum development within accounting programmes. Policies could establish minimum standards for ICT-related courses.

## **Unethical Considerations in Performance Management and Measurement in Higher Education in Kazakhstan: The Case of Business School in Public University**

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### **ABSTRACT**

This study explores the ethical challenges surrounding performance management and measurement in Kazakhstan's higher education system, with a particular focus on a Business School within a public university. Based on qualitative research, it highlights how systemic and cultural factors contribute to unethical practices that damage workplace relationships and compromise academic integrity. One notable issue is the practice of "collective spanking," where faculty members are publicly reprimanded in departmental meetings for not meeting performance targets. While these sessions are presented as motivational, they often instil fear and humiliation, leading to conflicts and strained relationships among colleagues. Another key concern is the expectation for faculty to be available on personal messenger accounts outside of working hours. Many staff members feel pressured to respond to administrative messages during evenings and weekends, blurring the line between personal and professional life. These practices foster a culture of competition rather than collaboration, adding to workplace tension. Faculty members report heightened stress, burnout, and a diminished sense of belonging. The lack of clear ethical guidelines in performance evaluation further exacerbates these issues, reinforcing inequities in workload distribution and recognition. The findings call for urgent reforms in performance management systems within Kazakhstan's universities. Establishing ethical frameworks and prioritising fairness, transparency, and employee wellbeing can help build a healthier workplace culture. Such changes would not only improve staff morale and relationships but also enhance the overall performance and reputation of these institutions

## Beyond Efficiency: A Comprehensive Framework for Ethical Decision-Making in AI-Driven Digital Management

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### ABSTRACT

As Artificial Intelligence (AI) continues to revolutionise industries with transformative efficiency and innovation, it invites a pressing inquiry: what lies beyond optimization? The convergence of AI and Big Data has elevated digital management to unprecedented heights, unlocking opportunities yet posing profound ethical challenges. This paper delves into the dilemmas arising from this technological synergy and proposes a comprehensive framework for navigating ethical decision-making in an increasingly AI-driven world. One critical concern is algorithmic bias. AI models, often trained on biased datasets, risk perpetuating systemic inequalities, particularly in high-stakes domains such as hiring, lending, and resource allocation. Evidence reveals disproportionately higher error rates among marginalized groups, exemplified by facial recognition systems that struggle with darker skin tones. Such disparities underline the urgent need for fairness and inclusivity in AI design. Equally pressing is the opacity of AI systems—frequently termed "black boxes"—which erodes trust and limits accountability. Without transparency, stakeholders cannot fully understand, challenge, or refine AI-driven outcomes. This highlights the importance of explainable AI systems to foster transparency and enable effective human oversight. Additionally, the expansive collection of data for AI applications raises significant concerns about privacy, security, and informed consent. In response, this paper presents a comprehensive ethical framework anchored in five core components: data governance, ethical AI model design, decision-making protocols, stakeholder engagement and compliance and accountability mechanisms. By integrating these elements, organizations can not only harness AI's potential but also ensure responsible development aligned with societal values.

## Technology Transfer in Micro-Multinational Enterprises: The Role of Subsidiary Entrepreneurial Competencies

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### ABSTRACT

Technology transfer is a vital driver of innovation in micro-multinational enterprises (mMNEs), often working in tandem with foreign direct investment (FDI). Despite its importance, the mechanisms of technology transfer within mMNE subsidiaries remain underexplored. This study addresses two key questions: How do subsidiaries facilitate technology transfer within the mMNE system? What entrepreneurial competencies do mMNE subsidiaries possess? Focusing on the high-tech sector, the research highlights the strategic role of subsidiaries' entrepreneurial competencies and their networks in fostering innovation and technology transfer across the firm. Subsidiary network capital and entrepreneurial competencies are central to this investigation, as they shape how local and international networks influence technology transfer and entrepreneurial capabilities in mMNE subsidiaries. The study draws on interviews with managers of 15 Icelandic subsidiaries in the UK, covering marine technology, healthcare technology, and biotechnology industries. Findings reveal that subsidiaries play an active role in technology transfer by implementing headquarters' innovations and adapting them to local market needs. They leverage strong local and international networks, including research institutions, suppliers, and universities, to acquire and share technological knowledge with both headquarters and other subsidiaries. The study underscores the bidirectional nature of technology transfer: headquarters provide core technologies, while subsidiaries contribute locally developed innovations. Practices differ across industries, with biotechnology and healthcare technology emphasising R&D driven transfers, and marine technology focusing on operational and manufacturing processes. These findings point to the necessity of tailored technology transfer strategies that address industry specific requirements.

**Beyond Compliance: Felt Accountability and Its Contribution to Tackling Inequality**Ramy Sherief<sup>1</sup>, Alvis Favotto<sup>2</sup><sup>1,2</sup>University of Glasgow, Glasgow, United Kingdom**ABSTRACT**

This study explores the interplay between felt accountability among public sector auditors and their role in promoting equity through best value auditing within local authorities in Scotland. Best Value audits of Scottish local councils aim to ensure that public resources are allocated efficiently and equitably, addressing socio-economic disparities in service delivery. However, the felt accountability can significantly influence auditors' capacity to uphold these principles. We draw on a socio-spatial theoretical framework inspired by insights from Henri Lefebvre to examine the audit practice of best-value auditors and the felt accountability originating from such practice. For this purpose, we conducted in-depth semi-structured interviews with auditors from both the public and private sectors, aiming to explore audit work associated to best value auditing and accountability originating from it. We corroborate and contextualise our evidence through additional interviews with representatives from local authorities, members of the Accounts Commission in Scotland, relevant stakeholders, and a documentary analysis of best value reports produced by the Accounts Commission and pertinent legislation. Our findings reveal that the felt accountability of best value auditors varies based on their organisational affiliations. Auditors in public organisations feel a strong connection to local communities, which influences their practices by motivating them to undertake additional workloads and focus significantly on social and ethical aspects, such as inequality. In contrast, the felt accountability of best value auditors affiliated with private audit firms is more susceptible to commercial pressures, discernible in their auditing practices.

## Strengthening Legal Frameworks for Social Media and Cybersecurity in Kazakhstan: Challenges and Comparative Insights

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### ABSTRACT

The rapid proliferation of social media platforms globally, including in Kazakhstan, has revolutionized communication, commerce, and social interaction. However, these platforms have also opened the door to significant cybersecurity threats, including data breaches, misinformation campaigns, and personal data exploitation. Legal frameworks in developing markets, including Kazakhstan, often lag behind rapid technological advances. This paper explores the evolving role of law in regulating social media platforms and addressing cybersecurity threats, with a specific focus on Kazakhstan. We examine the legal landscape, discussing data privacy, cybersecurity laws, and content regulation, while comparing these with international approaches from the European Union and the United States. We argue for a balance between free expression and cybersecurity and propose that Kazakhstan's legal framework be strengthened to ensure both platform accountability and user protection.

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**ABSTRACT**

Following a decline in clientele after the pandemic, Alam Medika Pharmacy seeks to enhance customer satisfaction, a critical driver of business success. This study examines customer satisfaction and service quality at Alam Medika Pharmacy, as these factors significantly impact customer satisfaction levels. Using the Customer Satisfaction Index (CSI), Importance-Performance Analysis (IPA), and Gap Analysis, the study analyzes key service dimensions, including Tangibles, Reliability, Responsiveness, Assurance, and Empathy, to measure customer satisfaction, identify performance gaps, and highlight priority attributes for improvement. Data collected from 100 pharmacy customers indicates a high overall satisfaction rate of 84.36%. Gap Analysis reveals positive major gaps in Reliability, Responsiveness, and Empathy, showing that these attributes exceed customer expectations and represent areas of strength. Although some Tangible attributes exhibit minor negative gaps, Reliability, Responsiveness, and Empathy are prioritized due to their significant impact on customer satisfaction. These findings suggest that Alam Medika Pharmacy should maintain and enhance these core strengths, focusing on responsiveness and tangible improvements to further increase customer satisfaction in a competitive post-pandemic pharmacy market.



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