



# **Abstract Book of International Conference on Science, Technology and Society 2023 (iCon-STs 2023)**

**- Rejuvenating STS for Sustainability Transitions**

***Kuala Lumpur, MALAYSIA  
15 & 16 August 2023***



**Jointly organised by:**



**FAKULTI SAINS**  
*Faculty of Science*  
**JABATAN PENGAJIAN SAINS DAN TEKNOLOGI**  
*Department of Science and Technology Studies*



# **International Conference on Science, Technology and Society 2023 (iCon-STS 2023)**

**Universiti Malaya  
Kuala Lumpur, Malaysia**

**15-16 August 2023**

## **BOOK OF ABSTRACT**

### **Organised by**

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**International Conference on Science, Technology and Society 2023  
(iCon-STS 2023)  
Rejuvenating STS for Sustainability Transitions**

15 - 16 August 2023  
Main Programme

<b>15 August 2023 (Tuesday) – Day 1</b>		<b>Zoom Link</b>
08.45 – 09.00 am	: Arrival of participants in the Zoom platform	Link A1
09.00 – 09.20 am	: Welcome address by the Conference Chair	
09.20 – 09.45 am	: Opening Speech by <b>YM Academician Datuk Dr Tengku Mohd Azzman Shariffadeen, FASc</b> , President of Academy of Sciences Malaysia	
09.45 – 09.55 am	: Photo session and Break	
09.55 – 11.25 am	: <b>Plenary 1: Policy and Dialogue</b> Moderator: <b>Zeeda Fatimah Mohammad</b> Panelists: <b>Moneef R. Zou'bi (PhD)</b> <b>Science Advisor, Interaction Council (IAC)</b> <i>Topic: STI Policy and Dialogue for Development: An Alternative Narrative</i> <b>Prof. Dr. Derk Loorbach</b> <b>Dutch Research Institute for Transitions, The Netherlands</b> <i>Topic: Unlocking sustainability transitions research: towards transdisciplinarity</i> <b>Prof. Dr. Masaru Yarime</b> <b>The Hong Kong University of Science and Technology</b> <i>Topic: Governing Emerging Technologies for Sustainability Transitions: Opportunities and Challenges in Public Policy</i> Q&A	
11.25 – 01.25 pm	: <b>Parallel Session 1 - Science and Industry</b> Track 1A - Moderator: Fung Hon Ngen Track 1B - Moderator: Nor Aishah Abdullah	Breakout Room B1 Breakout Room B2
01.25 – 02.00 pm	: Lunch Break	
02.00 – 03.10 pm	: <b>Plenary 2 - Science Communication and Public Engagement</b> Moderator: <b>Noor Munirah Isa</b> Panelists: <b>Prof. Dr. Sujatha Raman</b> <b>Australian National University</b> <i>Topic: Rethinking Science Communication for Sustainability Transitions</i> <b>Ms. Tan Su Lin</b> <b>Science Media Centre Malaysia</b> <i>Topic: Igniting a Scientific Renaissance: Empowering Science Communication for Effective Public Engagement</i> Q&A	Link A1
03.10 – 03.20 pm	: Break	
03.20 – 05.20 pm	: <b>Parallel Session 2 - Technology Adoption and Inclusive Development</b> Track 2A - Moderator: Chang Lee Wei Track 2B - Moderator: Nurulaini Abu Shamsi	Breakout Room C1 Breakout Room C2
05.20 pm	: End of Day 1	

## 16 August 2023 (Wednesday) – Day 2

09.00 – 09.10 am	:	Opening Day 2	
09.10 – 10.20 am	:	<b>Plenary 3 - Philosophy, Law and Ethics in Science</b>	Link A2
		Moderator: <b>Mohd Zufri Mamat</b>	
		Panelists: <b>Profesor Emeritus Dato' Dr. Osman Bakar</b> <b>International Islamic University Malaysia</b> <i>Topic: Dialogue of Science in Socio-Cultural Aspects</i>	
		<b>Prof. Dr. Soraj Hongladarom</b> <b>Chulalongkorn University</b> <i>Topic: Artificial Intelligence and the Challenges in the Contemporary World</i>	
		Q&A	
10.20 – 10.30 am	:	Break	
10.30 – 12.30 pm	:	<b>Parallel Session 3 - Sustainability and Community</b>	
		Track 3A - Moderator: Suzana Ariff Azizan	Breakout Room D1
		Track 3B - Moderator: Maisarah Hasbullah	Breakout Room D2
		Track 3C - Moderator: Ng Boon Kwee	Breakout Room D3
12.30 – 01.30 pm	:	Break	
01.30 – 03.30 pm	:	<b>Forum on STS: Beyond Boundaries - How STS Contributes to a Dynamic Job Market</b>	Link A2
		Moderator: <b>Mohd Istajib Mokhtar</b>	
		Panelists: <b>Wan Azrin Izani bin Wan Mohd Zain</b> Ministry of Health Malaysia	
		<b>Mohd Noor Musa</b> Institut Masa Depan Malaysia (MASA)	
		<b>Shahnaz Shahizan</b> Kleos Technologies Sdn Bhd	
		<b>Alma Artin</b> Unilever Malaysia	
03.30 pm	:	Closing	

### Zoom Links:

Link A1	<a href="https://zoom.us/j/96086012612?pwd=VUtlejJRczR1TXRPM1BqUVI0REJxQT09">https://zoom.us/j/96086012612?pwd=VUtlejJRczR1TXRPM1BqUVI0REJxQT09</a> Meeting ID: 960 8601 2612 Passcode: 443889
Link A2	<a href="https://zoom.us/j/91689668772?pwd=c2U1a1BOUy9leGxXNXIFK0VvQ2poZz09">https://zoom.us/j/91689668772?pwd=c2U1a1BOUy9leGxXNXIFK0VvQ2poZz09</a> Meeting ID: 916 8966 8772 Passcode: 009178

\* Links for Breakout Room will be informed during the conference.

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Day 1:  
15 August 2023

Parallel Session 1:  
Science and Industry

11.25 am – 01.25 pm [UTC +8. Malaysia Time (MYT)]

Room 1A

Moderator:  
Fung Hon Ngen

## **Resilience or Resistance: Early Observations of Different Preventive Capabilities from Scientometrics Points of View**

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### **Abstract**

As the world learned the catastrophic infection of Covid-19 virus affecting public health and then economy, many countries deployed their accumulated medical related science and technological knowledge to safe guard their public health wellbeing. While many nations deployed resistant measures, there are few nations driven to develop vaccines to inoculate their populations. These nations are capable to deploy state-of-the-art technologies in the time of crisis to derive an eventual solution for a problem. In the light of this study, we generally postulate that there will be two groups of country that are committed to research useful for preventive measures in the time of epidemic crisis. There are countries endowed with resistant capability from the scientific research point of view. There are also nations endowed with resilient capability to develop vaccine candidates and achieve mass vaccination for long lasting immunity against the virus infection. In this study, we resorted to publishing data of two scientific research categories from WoS to assess the dynamics of resistant and resilient capabilities of different countries. With the publication records, we observed that there are few resistant nations and their persistent research coincided with their successes in controlling and containing the Covid-19 outbreak in 2020. Countries such as the US and China are found resilient in our analysis. They pursuit research in the field crucial for vaccine science and their patenting records are evident. They produced timely vaccine candidates and succeeded in inoculating a significant share of people in their populations.

### **Keywords**

Resistant, Resilient, Capability, Public Health, Experimental Medicine, Covid-19



## **Digital Technologies in Migration Management in Malaysia**

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### **Abstract**

This paper examines the role of digital technologies in promoting migrants' welfare and preventing forced labour at the pre-departure migration stage and post-arrival migration stage. There is an increasing understanding of the necessity of using digital technology to safeguard migrant rights, advance ethical recruitment, implement the zero-cost migration principle, and control the operations of private recruitment agencies. Since 2015, the Malaysian government started digitising the process of employing and managing foreign workers. New digital platforms such as the Foreign Workers Centralized Management System (FWCMS), Integrated Foreign Workers Management System (ePPAx), the Maid Online System (SMO), and MYXpats for expatriates were created. Direct hiring without labour intermediaries and brokers improved the well-being of foreign workers, safeguarded employers, and reduced corruption. This study is based on inter-government reports, non-governmental organisation reports, legal texts, Malaysian official publications, Hansard records, regulations, press releases of digital developers, news reports, and secondary literature. The findings show that technological interventions have the potential to address migrant-related human rights abuses.

### **Keywords**

Digital technology; forced labour; migration management; migrant welfare

## Impact of Industrial Internet of Things on Manufacturing Firms Performance

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### **Abstract**

The Industrial Internet of Things (IIoT) has emerged as a significant technological advancement in the manufacturing sector, leading to the implementation of Industry 4.0. IIoT is used for industrial purposes such as manufacturing, supply chain, and safety performance. The integration of IIoT with other technologies, such as machine learning, big data, and blockchain, can help achieve advanced schedule production frameworks and on-time delivery of products. IIoT can connect billions of industrial devices and machines, providing real-time monitoring, accurate analysis, and reporting for equipment throughout the manufacturing facility. Implementing IIoT in manufacturing has been seen as an extension of IoT services and applications to the industry, including Industry 4.0, that provides automation, reliability, and control in production and manufacturing. The relationship between IIoT and manufacturing safety performance has also been conceptualized. However, the implementation of IIoT also poses challenges, such as managing cybersecurity and data privacy risks. The role of IIoT in manufacturing firms' performance has attracted significant attention from academia, manufacturers, and plant designers. Future research directions in IIoT include requirements, architecture, and resource allocation optimization. In conclusion, IIoT has the potential to revolutionize the manufacturing sector, and its implementation can significantly improve manufacturing firms' performance.

### **Keywords**

Industrial Internet of Things, IIoT, manufacturing, Industry 4.0, productivity, efficiency, economic impact, machine learning, big data, blockchain, cybersecurity, data privacy, real-time monitoring, resource allocation optimization, manufacturing safety performance.

# **Institutional Capabilities for Technology Transfer and Research Commercialization: The Case of Public Research Institutions in Malaysia**

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## **Abstract**

Public Research Institutions (PRIs) are crucial for driving a nation's competitiveness and economic growth by engaging in various activities including knowledge creation, discovery, dissemination, and utilization. The structure and objectives of these institutions vary across countries, with some focusing on national research priorities, public welfare, and supporting domestic industries. As governments increasingly emphasize economic returns from publicly funded research, PRIs are expected to produce more market-oriented and demand-driven research and development (R&D). However, despite Malaysia's rising public R&D expenditures, the output in terms of product and technology development from PRIs remains limited, contributing only 10% to the overall R&D output. This study attempts to address the main research question of understanding the main factors influencing the R&D commercialization among PRIs and how the internal and external resources help in developing the institutional capability that contributes to the research commercialization success among PRIs. This study utilizes a case study and findings from semi-structured interviews of two PRIs in Malaysia with R&D mandates in two high-impact sectors of Electrical & Electronics (E&E) and agriculture. The preliminary findings of this study suggest that the current research, development, innovation, and commercialization ecosystem is primarily focused on supply-driven initiatives and isolated approaches. The system heavily relies on public funding, which presents challenges to PRIs in their effort to commercialize their R&D. One of the main obstacles is the absence of customized demand-driven commercialization strategies and a connection to the necessary competencies and support structure required for successful commercialization. Specifically, research in E&E and agriculture involve the use of high-end equipment, which creates the need for skilled personnel to handle and maintain these assets, adding another layer of complexity in optimizing and sustaining them. Our findings are expected to contribute to evidence-based policies and programs that strengthen PRIs' capabilities in R&D commercialization and strengthen its contributions to innovation and economic growth. These findings can be utilized to improve PRIs' management and governance, whilst the government can develop policy options and better evaluate PRIs' R&D&C&I performance in specific sectors aligning with economic planning and goals.

## **Keywords**

Public Research Institutions, Technology Transfer, Research Commercialization, Public R&D, Institutional Capabilities.

Day 1:  
15 August 2023

Parallel Session 1:  
Science and Industry

11.25 am – 01.25 pm [UTC +8. Malaysia Time (MYT)]

Room B1

Moderator:  
Nor Aishah Abdullah

## **A GPT-Generated Antecedent Framework of Knowledge Hiding Behaviour: Reflection and Extension**

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### **Abstract**

Knowledge sharing is recognised as one of the sources of innovation and sustainability as it can foster the development of science and technology. However, knowledge hiding behaviour that occurs in organisations, is deemed to be an obstacle to sustainable development. As an initial attempt in applying Generative Pretrained Transformer (GPT) models to behavioural studies in knowledge management, this study examines the capability of GPT models on explaining the antecedents of knowledge hiding behaviour. Specifically, this study investigates the GPT-4 model's output on antecedents of knowledge hiding behaviour in terms of its reflection of the framework developed by three review papers with a similar cut-off point of the GPT-4 model and the possible use in extending the existing knowledge. Thematic analysis is performed on the 130 statements generated by GPT-4, followed by a systematic validation process to examine the coded antecedents. A total of fifty antecedents are conceptualised from the output, which is categorised into four groups: knowledge characteristics, individual antecedents, team/interpersonal antecedents, and organisational antecedents. Thirty-two antecedents are the reflection of review work, eight antecedents are the new addition to the existing framework with empirical support, eight antecedents are possible extensions, and two antecedents are unsupported. Based on the GPT-4 model's output, the researchers analysed the characteristics of the framework and discussed the potential usage and concerns of GPT models in scientific research. Particularly, an example of decomposing concepts to hierarchical dimensions based on the model output is given. This study offers a significant implication for the possible research paradigm shift in future under the booming AI-empowered technology.

### **Keywords**

Antecedent; GPT 4; knowledge hiding; knowledge hiding behaviour; thematic analysis

## Technological Progress in Cultured Meat Technology

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### **Abstract**

The analysis and forecasting of new technologies have been difficult and challenging due to various factors, such as their uncertainty, namely the unknown nature of their development trajectories, their applicability to traditional technology paradigms, market hype, consumer acceptability, external policy, etc. Cultured meat technology is one such example of new technology that has received a lot of attention from the investment and R&D community. To date, several researchers in social science have analyzed and predicted the economic, social, and environmental impacts of cultured meat technology, as well as its potential problems and prospects. However, there are insufficient empirical studies on its development trajectory, paradigm transition and commercialization, which are also key issues to be considered in the analysis and prediction of the development paths of future-oriented new technologies such as cultured meat technology. The main purpose of this research is to explore the trajectory change and development of cultured meat technological convergence by using time series comparisons to analyze the relationships between target patents and their backward and forward patent citations at the patent level, and mining the factors determine the change and development of cultured meat technology.

# Entrepreneurial Intention Analysis to Open a New Business in Hot Spring Landscape in China

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## Abstract

Hot spring landscapes are natural or man-made environments that feature hot water springs, often with unique geological formations and surrounding scenery. These landscapes can be found in various parts of the world and are popular destinations for relaxation, wellness, and tourism. Opening a new business in a hot spring in China can be an exciting entrepreneurial opportunity. China is known for its rich culture of hot spring bathing and has a large market for wellness and leisure activities. Governments, non-governmental organizations, tourists, residents, and especially entrepreneurs have their particular interests that they wish to serve, such as gaining social value generated by protecting the environment and landscape, and the economic value generated by commercial development. Good governance should ensure a balance between development and protection and entrepreneurs are the main contributors for sustaining business from landscape resources. However, the governance and supervision of hot spring landscapes and natural resources in China are closely managed by the government from top to bottom.

The Theory of Planned Behavior (TPB) is a well-known social psychology theory that can be applied to understand entrepreneurial intention. It posits that an individual's intention to engage in a specific behavior is influenced by three main factors: attitudes, subjective norms, and perceived Behavioral control. These three factors interact to shape an individual's intention to become an entrepreneur. According to the TPB, stronger positive attitudes towards entrepreneurship, greater perceived social support and norms favouring entrepreneurship, and higher perceived Behavioral control over starting a business are all positively associated with higher entrepreneurial intentions. The main objective of the study to extend the TPB approach as outlined by to estimate the entrepreneurial intention to start-up business in hot spring landscapes in China.

## Keywords

Hot spring; landscape; Entrepreneurship intention; structural equation modelling; environmental sustainability

## **Technological Intensity and Greenfield Investment in Emerging Markets: Insights into German Firms in Malaysia**

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### **Abstract**

Technological intensity has a significant impact on the entry mode chosen by multinational enterprises into new and emerging markets. Based on the exploratory study on greenfield German greenfield ventures in Malaysia, the objective of this study is to investigate and describe the interdependencies between the need for full ownership of a foreign subsidiary through greenfield investment and the firm's level of technological intensity. This study adopts a qualitative case study approach and in-depth semi-structured interviews with a fitting sample of 16 cases of active German greenfield firms in Malaysia as sources of evidence. The research expands on previous studies which have mainly focused on the technological intensity and entry mode nexus in developed countries where a market economy is already established. By exploring the Malaysian market, which is a newly industrialised market economy, the research provides valuable insights into the entry mode decisions of technologically advanced firms in emerging markets. The results suggest that when technological intensity is high, foreign-invested firms prefer wholly-owned subsidiaries in order to safeguard proprietary knowledge in emerging markets. The study highlights the strategic importance of greenfield investment to ensure a firm's technological superiority and market position. Although foreign firms bring knowledge and superior technology that spillover into the local economy, they are also the source of increased competition in domestic markets and may raise the opportunity cost of entrepreneurship. From the policy perspective, this study contributes to the general understanding of protectionist strategies adopted by technologically superior firms and their entry mode decisions. It emphasizes the importance of greenfield for foreign-invested firms with high technological intensity in emerging markets and provides insights into the implications of foreign investment on local markets.

### **Keywords**

Technological intensity, greenfield investment, emerging markets, foreign direct investment, industry policy



Day 1:  
15 August 2023

Parallel Session 2:  
Technology Adoption and Inclusive Development

03.20 pm – 05.20 pm [UTC +8. Malaysia Time (MYT)]

Room 2A

Moderator:  
Chang Lee Wei

## **Blended Learning and Technological Capability: An overview of Malaysian Educational Landscape**

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### **Abstract**

The COVID-19 pandemic has caused a surge in the popularity of blended learning (BL) in science and technology studies. BL is a hybrid learning approach that combines traditional face-to-face instruction with online learning. It offers several advantages over conventional teaching methods, such as increased flexibility and accessibility. In 2012, the Malaysian government released the National Education Blueprint, which includes a goal of providing all Malaysian students with access to BL by 2025. As a result, the technological component plays a critical role in supporting the blended learning process and should be aligned with the learning goals. The Malaysian Ministry of Education (MOE) has launched a number of initiatives to support blended learning. These initiatives include the development of online learning platforms, the provision of training for teachers on how to use technology in the classroom, and the creation of BL modules for specific subjects. This review contributes to a deeper understanding of how BL and technology are shaping the Malaysian educational landscape and offers insights for policymakers and educators seeking to promote effective integration of technology in education. Overall, BL is a promising approach to education in Malaysia. It has the potential to improve student learning outcomes, reduce the cost of education, and make education more accessible to all students which supports the principle of 'leaving no-one behind' in education (United Nations' Sustainable Development Goal 4).

### **Keywords**

Blended learning, technology and Malaysian education

## **Non-scientific Tradition and Knowledge Sustainability Discourse: The Usage of Herbs and Spices as an Alternative Approach in Covid-19 Prevention and Treatment**

**Mohd Zufri Mamat**<sup>1</sup>, Maisarah Hasbullah<sup>1</sup>, Che Wan Jasimah Wan Mohamed Radzi<sup>1</sup>, Nur Anisah Mohamed@ A.Rahman<sup>2</sup>, Sujatha Ramasamy<sup>3</sup>, Noor Aini Habibah<sup>4</sup>, Ari Yuniastuti<sup>4</sup> & Nugrahaningsih<sup>4</sup>

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### **Abstract:**

Science is often associated with an objective and rational nature. In the knowledge sustainability discourse, the nature has opened up to the debate of two or more competing traditions. So the question arises as to which tradition is more superior. In a more critical analysis, question such as, is 'rational' exclusive to science to the extent that it is not possessed by other traditions? Or can we say that a tradition is superior to other traditions? This paper touches on the philosophical question in the context of the usage of herbs and spices in the prevention and treatment of Covid-19 as an alternative approach to modern science. Specifically, this paper discusses the quantitative findings of survey that has been distributed to 366 respondents in the Klang Valley, Selangor and Kuala Lumpur. The survey was conducted to obtain data from the aspects of knowledge, attitude and practice towards the usage of herbs and spices as an alternative approach to the prevention and treatment of Covid-19. This paper found that there is a significant response to the usage of herbs and spices from the aspects of knowledge, attitude and practice by the community. This finding shows the community's unique acceptance of the potential of herbs and spices as an alternative approach for Covid-19 prevention and treatment. This kind of approach should be given further attention and research in the context of the sustainability of knowledge to understand the role and contribution of the alternative approach or 'non-science tradition' to the society.

### **Keywords**

Non-scientific tradition, Knowledge Sustainability, herbs and spices, Covid-19 prevention and treatment

## **A Case Study on the Bakun Resettlement Scheme, Indigenous Resettlements and Their Effect on Social Sustainability**

Ruth Diane Ujang, Maisarah Hasbullah & **Suzana Ariff Azizan**

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### **Abstract**

Bakun Resettlement Scheme Township is considered a massive development initiative, including city development as well as new projects that involve a larger land area. The most prevalent repercussions of all construction events are the disturbance and relocation of indigenous communities. Resettlement, which is led by a physical progression, entails more than just the dispossession of land, as relocated populations might end up risking losing the social and sustainable aspects of their current lives, resources over their livelihoods, and the native culture as well as profitable resources. This study investigates the perception and opinion of the latter generation of this community, who were born during or after the resettlement, and how the concept of sustainable township and community has been successfully delivered to the latter generation. By using the qualitative method, 66 questionnaires were collected from 15 longhouse residents. The findings show that the most regressive social change process in Bakun Resettlement Scheme is in "Economics", and the most critical direct social impact is also in "Economic Impact and Material Wellbeing", which suggests a correlation that the socio-economic impact is highly profound in the community. Drastic changes are necessary to push the Bakun Resettlement Scheme forward to achieve a level where it can be recognized as socially sustainable.

### **Keywords**

Social sustainability, indigenous community, social impact, modernization

## Impacts of Technological and Psychological Factors in Smart Classroom Adoption

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### Abstract

Higher education institutions have, over the course of the past few years, implemented a variety of innovations, including improved utilization of technology, in order to cut costs, simplify the search for educational solutions, and provide assistance with decision making. One of these novel approaches to learning is the smart classroom, which has garnered increased attention from researchers in recent years. The smart classroom is one that has been decided to integrate technology with the objective of providing students with the best possible educational services. A smart classroom is a physical classroom that incorporates advanced technology in education in order to enhance teachers' ability to facilitate students' learning and students' capabilities to take part in formal educational teaching and learning experiences over the possibilities of normal classrooms. Smart classroom adoption refers to the integration of technology and digital tools into traditional classrooms to enhance the learning experience and improve educational outcomes. Smart classrooms utilize various devices, software applications, and online resources to create an interactive and engaging learning environment.

The implementation and widespread usage of smart classroom technology play a significant part in both the reduction of educational expenses and the enhancement of academic outcomes. Previous study has shown that educational institutions at the higher education level have been unusually hesitant to implement information technology, despite the value that it promises to bring to teaching and learning. In the sphere of education, a lack of general success has been contributed to by the presence of unanswered questions as well as gaps in the understanding and implementation of new advances.

A number of educational establishments at the tertiary level continue to capitulate when confronted with demands emanating from other institutions and stakeholders, which include competitors, suppliers, and the government. In order to find a solution to this conundrum, it is necessary to investigate and get an awareness of the various external influences as well as the ways in which institutional forces might affect the adoption of smart classrooms.

Keeping the preceding debate in mind, the current research takes a unique approach to provide a comprehensive model for researching the influence of technological variables and psychological forces on the adoption of smart classrooms.

### Keywords

Smart Classroom System, Smart Classroom Adoption, Internet of Educational Thing, Technology Acceptance Modelling, Psychological Factors.

Day 1:

15 August 2023

Parallel Session 2:

Technology Adoption and Inclusive Development

03.20 pm – 05.20 pm [UTC +8. Malaysia Time (MYT)]

Room 2B

Moderator:

Nurulaini Abu Shamsi

## **Challenge of m-Health APPs Adoption among Elderly People in China: Emerging Scenario and Policy Concerns**

**Luo Binbin**, Ng Boon Kwee & Hashem Salarzadeh Jenatabadi

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### **Abstract**

Applications for mobile health (m-health apps) have become a crucial tool for delivering high-quality, equitable healthcare services. Access to mHealth services for older generations is growing due to the effects of aging globally, since mHealth services are seen as a key tool for addressing the issues associated with the aging population. However, the older population in developing nations like China has been substantially underrepresented in the adoption and consumption of mHealth apps. To increase the adoption and usage of mHealth apps among older people, it is essential to understand the factors that influence app adoption. The goal of this study is to investigate the variables affecting elder generations who are tech-inclined in their behavioral intention and actual usage of mHealth apps. The widely used Unified Theory of Acceptance and Use of Technology (UTAUT2), along with four aging-related characteristics—perceived physical condition, resistance to change, technology anxiety, and need for self-actualization—have been taken into account in the research model. Participants from China who were 60 years of age and older had to provide the necessary information in order to determine their associated views and attitudes toward m-health apps, their plans to adopt, and their impressions of utilizing mhealth to maintain their everyday lives. The existing body of research on technology adoption in the socioeconomic setting of a developing economy is significantly expanded by this study. Designers of mHealth apps, governments, and institutions looking to enter and promote adoption in the Chinese healthcare industry may find the conclusions from this study useful.

### **Keywords**

mHealth, UTAUT model, SEM

## **Effect of River Care Pro Environmental Behavior by Local Community Groups on River Health of Klang River Basin: A Mixed Method Approach**

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### **ABSTRACT**

According to some researchers, the impact of people on the environment is so great that we have entered a new geological epoch termed the Anthropocene, in which humans are the primary driver of earth system processes at a planetary scale. Human activities are, in reality, the primary influencers on river health through their daily practices. Human activities derived from their behavior and pro environmental behavior is one among the field extensively studied to understand human impact on the environment. Pro-environmental behavior is defined as actions that try to minimise the negative effects of one's actions on the natural and built worlds. However, few studies have been conducted on the relationship between pro-environmental behavior and river health. Local community groups are one among the key stakeholders that reside in a river basin and have an impact on river health. Many river restoration projects in the past, particularly in Malaysia, focused on public participation but did not go as far as studying the detailed river care pro environmental behavior that is capable of bringing about the desired positive outcomes of restoration. Among the theories related to pro environmental behavior, Theory of Planned Behavior model has been the most important one in social psychology. Hence, a study is being undertaken using mixed method approach to investigate the association of river care pro-environmental behaviors (PEB) among local communities and river health as well as factors leading to the relationship using extended model of Theory of Planned Behavior Model (TPB). The study is being done in Klang River Basin, an urbanised river basin that saw many river restoration projects carried out in past. This study aims to provide a better knowledge of public engagement in Science and Technology, particularly in the field of river health science.

### **Keywords**

River health, Pro environmental behavior, Theory of Planned Behavior, Local community, Klang River Basin



## **A Case Study of Technology Adoption Through Asset- Based Community-Led Development (ABCD) In a Rice Farming Rural Community - Bario, Sarawak**

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### **Abstract**

Malaysia is a net importer of rice, with our rice self-sufficiency level (SSL) between 60% - 70%, and a growth rate of 0.03%. For Malaysia's aspirations to move towards a growing, equitable, and sustainable rice industry, one of the concerns is the empowerment of farmers by using eco-friendly paddy and rice production, technologies to promote sustainability. Nonetheless, top-down approach is commonly utilized for technology adoption, diffusion, integration, which clashes with current literature on participatory approaches in technology adoption. This study aims to explore the phenomenon of technology adoption within a community of rice farmers based in Bario, Sarawak through the lens of Asset-Based Community-led Development (ABCD) as an alternative to needs-based development. The study proposes a qualitative methodology based on participant observation and interviews, with open and semi-structured questions. The study revealed that the community has their local assets recorded both in verbal and written form and tends to get shared through communal networks and bartering services. This process has led to knowledge diffusion on farm activities among farmers which translate into locally developed assets within the community. These are the key elements identified by the local community to assess and strategize their technology adoption plans specific to their rice farming landscape and culture. The study also discussed the role of agencies and their efforts to form partnerships, and peer collaborations based on those assets identified and community strength. The study proposes that the promotion of sustainable Malaysia rice production relies on energizing existing rice farmers, through stakeholder engagement and encouraging bottom-up technology adoption, diffusion and integration in the policies. The study recommends the use of the ABCD approach as a perspective to map the assets in the community and engage stakeholders systematically, ultimately identifying gaps and potential opportunities to enhance technology adoption in the community.

### **Keywords**

Technology adoption; rice farming; rural; ABCD approach; asset; bottom- up

## **The Role of Values and Norms in Science and Technology Decision-Making: Promoting Sustainability and Social Responsibility**

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### **Abstract**

Values and norms play a critical role in shaping decision-making processes related to science and technology. The relationship between these factors is complex and multi-faceted, involving a wide range of stakeholders, including scientists, policymakers, industry leaders, and the general public. This paper explores the ways in which values and norms influence decision-making in science and technology, and how these factors can be leveraged to promote more sustainable and socially responsible outcomes. Drawing on a review of relevant literature and case studies, we examine the ethical and moral implications of technological advancements, and how these can be addressed through a better understanding of values and norms. We argue that a more nuanced and thoughtful approach to decision-making, one that takes into account the diverse perspectives and values of stakeholders, is necessary to achieve sustainable and just outcomes. We also highlight the importance of promoting transparency, accountability, and public engagement in science and technology decision-making processes. Overall, this paper contributes to a growing body of literature on the role of values and norms in science and technology, and provides insights and recommendations for policymakers, scientists, and other stakeholders seeking to promote more sustainable and equitable outcomes.

Day 2:

16 August 2023

Parallel Session 3:

Sustainability and Community

10.30 am – 12.30 pm [UTC +8. Malaysia Time (MYT)]

Room 3A

Moderator:

Suzana Ariff Azizan

## **Sustainability Consciousness Among Preschool Teachers in Malaysia – A Study of Knowingness, Attitudes and Behaviour**

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### **Abstract**

Early childhood education is crucial for a person's development and lays the foundation for physical, emotional, and cognitive growth. Preschool teachers play a vital role in promoting sustainability consciousness among the young generation, which involves being aware of and concerned about the long-term health of the planet, its ecosystems, and future generations. This mindset recognizes the interconnectedness of environmental, social, and economic issues, and emphasizes responsible decision-making that considers sustainability impacts. Given the pressing environmental challenges we face, such as climate change, biodiversity loss, and resource depletion, sustainability consciousness is increasingly important in today's world. This study aimed at assessing sustainability consciousness among preschool teachers in Malaysia through the Sustainability Consciousness Questionnaire (SCQ). Specifically, this study measured the level of sustainability consciousness among preschool teachers; analysed association between constructs of sustainability consciousness and compared sustainability consciousness between government and private schools. The study was conducted using a purposive random sampling involving 219 preschool teachers from all states in Malaysia. Normality tests (skewness and kurtosis), factor analysis, descriptive analysis, correlation analysis (Pearson's correlation) and t-test were performed with SPSS statistical program. The data was analysed using parametric statistical tests since they fitted a normal distribution. The finding showed that preschool teachers assigned very higher scores to items of sustainability knowingness, but high scores in sustainability attitudes and sustainability behaviour particularly social dimension. There is no significant difference of sustainability consciousness found between government and private schools. Sustainability knowingness shows positive association with sustainability attitudes in correlation analysis, while sustainability behaviour is positively related to both constructs, but only in the social dimension. The study emphasizes the importance of aligning preschool teachers' consciousness with sustainability agendas and suggests the need for comprehensive training and programs to embed sustainability principles in students' lifestyles.

### **Keywords**

Sustainability consciousness; sustainability knowingness; sustainability attitudes; sustainability behaviour; preschool education

## **The Development of an Innovative Gamified Platform for Community Adoption in Reuse, Reduce, and Recycle (3R)**

Nor Aishah Abdullah<sup>1</sup>, **Zati Hakim Azizul Hasan**<sup>2</sup> & Hasan Faris Ezzulddin<sup>2</sup>

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### **Abstract**

Innovation in community recycling behavior requires a combination of education, engagement, and creative approaches that make recycling convenient, rewarding, and enjoyable. Over the past few years, significant volumes of waste are being generated in Malaysia, but the reuse and recycling (3R) rates are much lower than in other countries. Previous research has shown that gamification is used in diverse domains such as fitness, health, education, commerce, learning, crowdsourcing, information retrieval, and environmental conservation to exploit the motivational element of game design. It involves motivational elements to increase user engagement such as implementing the leaderboard, badges, social space, rewards, etc. Based on previous studies on the existing 3R system in Malaysia, we found that there are some areas that need improvement such as the educational aspect of the system, and the motivation and incentives for users. These features are either absent or not really utilized in the current system. Thus, this study aims to develop a new 3R system focusing on gamification features to increase the usability of the application which will improve user's recycling behavior and sustainable lifestyle. Observed parameters will be presented together with the user's acceptance of the system and its future potential.

### **Keywords**

Waste management, gamification, community adoption, recycling, environmental conservation

## Consideration Factors to Implement Adaptive Reuse for Low-rise and Nonheritage Buildings in Jakarta

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### Abstract

The built environment industry contributes up to 40% of global greenhouse emission and more focus is needed to reuse existing buildings. Adaptive reuse (AR) is a strategy to significantly improve the environmental, financial, and social performance of existing built assets by transforming them from unused objects to ones with a new purpose. In Indonesia, AR for non-historical buildings is still a novel concept with limited literature study on this topic. With the government gradually moving the capital city from Jakarta to Kalimantan in 2024, there will be many commercial building stock that must be repurposed. Cideng area in Central Jakarta is chosen as the research case study. Cideng is currently occupied by high-density housing and commercial functions (low rise offices and shophouses). However, in the last decade, the development of MRT corridor and digital market transformation have created changes in market demand. This resulted in a decreasing vacancy rate and abandoned commercial buildings in Cideng area that need to be repurposed. Instead of focusing on new construction that requires a higher budget and carbon footprint, AR strategy will be explored. Therefore, a study of building regulations related to AR in Jakarta is needed for future development in that area. The objectives of this research are the following: 1) to understand the current condition of AR related regulations and policies in Jakarta 2) to investigate consideration factors needed to implement AR in Jakarta. Literature study on AR existing policies and regulations in Jakarta and overview of AR in several countries are conducted. Rounds of in-depth interviews are conducted with relevant stakeholders such as government agencies and real estate analyst. Early findings suggest that although AR has been regulated in building regulations, there are still specific factors to be considered to support the implementation process.

### Keywords

Building sustainability, adaptive reuse, retrofitting, sustainability policy, building repurpose

## **Delivering Care Services in Malaysia: Business Model of Healthcare Social Enterprise**

**Chin Tzeunn Yeu**, Boon-Kwee Ng and Nurulaini Abu Shamsi

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### **Abstract**

The purpose of this research aims to define and determine key components of social enterprise business model in health and care service delivery and these social enterprises role in Malaysia social capital development and health system as potential change agent. The research design as an exploratory and explanatory research that describe study results based on data from 7 healthcare social enterprises fitting establishment criteria that adopted case studies approach. Findings of the research is after abductive thematic analysis that produces theoretical framework helps demonstrating components that are reported to constitute operating mechanism of social enterprise towards people welfare and well-being development. These key components are compiled into five dimensions such as social mission, collaboration, network, fund, and human asset. The research implications are potentially transferable to depict real life phenomenon of social venture in healthcare service delivery due to the research figured out key components that contribute insights about structure of these hybrid organisations in these specific settings. Its supported with extent literatures about social innovation concept and novelty function that generate positive impact among community and society. With innovative business model social enterprise are developed to achieve social objectives and commercial goals simultaneously. Several innovative business designs that discovered among case studies are cross subsidization, community employment and engagement, revenue reinvestment, price differentiation system; strategic network and cooperation with players across diverse sectors, such as government, private corporation and the public. With enlighten on social enterprise dynamics in healthcare service delivery the significance of enabler environment for their advancement is suggested. Discussions on policies of national health system, and social enterprise development also included to justify relationship between healthcare social enterprises and value health service delivery in Malaysia.

### **Keywords**

Social enterprise, healthcare system, business model, social innovation, hybrid organisations

Day 2:

16 August 2023

Parallel Session 3:  
Sustainability and Community

10.30 am – 12.30 pm [UTC +8. Malaysia Time (MYT)]

Room 3B

Moderator:  
Maisarah Hasbullah



## **Mitigating Environmental Degradation and Climate Change: Strategic Roles and Contributions of Religious Groups**

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### **Abstract**

There is an urgent need to understand current realities, the causes and effects of unsustainability, and hence, the emergence of what is called 'sustainability science' (SS) that aims at a sustainable revolution, and in this SS there is a critical role for religion and values as a provider of a more appropriate worldview and source of values for behavioral change towards the physical as well as social environment. The unsustainability crisis (encompassing both the physical as well as the socio-economic dimension) in effect, is a civilisational crisis, as how can there be a/any civilisation, if there is no (healthy) planet to sustain it to begin with. Therefore, as recommended by the Earth Charter (2012) of the United Nations, there is a need for intercultural/intercivilisational/interfaith dialogue to achieve consensus on the responsibilities of religious adherents to carry out their responsibilities respectively so as to save the planet and ensure the future of civilisation at the same time. In reality an awareness already exists or have been achieved in dialogues held at international fora, and it is widely accepted that ultimately there is a crucial need for such dialogues to point out that the balance in the planet's social and ecological systems can only be achieved, if and when there is, fundamentally, harmony between religion (mindset and values that are in tandem with the natural systems) and economics as well as between religion and science and technology. Resuscitation of our life-support systems inevitably will call for a change in the way we perceive ourselves and nature and the meaning of our lives (the essence of civilisation); and ultimately it would be such revised perceptions that could enable our "calls for action" to come to fruition.

## **Green Bond Objectives, Evaluation Criteria and the Economic Development Stage of a Country: A Critical Pathways Towards the Green Bond Success**

**Polin Kumar Saha**

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### **Abstract**

Financing the green bonds is presently very important caused by the UN pressure to achieve the SDGs within a stipulated timeframe. Green bonds may act as a strong financial tool to overcome the current sustainability challenges globally. To evaluate the performance of green bond objectives, it is very important to examine the specific features of a project financed through green bonds, characteristics of corporate sustainability, and country level economic stability. The goal of this article is to give an analysis and goals for the green bond market in Bangladesh, based on the currency of issue, geographic structure, issue period, sectors and issue targets, as well as the major stock exchanges where green bonds are traded. The research is descriptive and exploratory in nature relying on secondary data sources. Data on the green bond market was reviewed, and the goals of issuing green debt finance in specific sectors based on the number of emissions were discovered. To facilitate low-carbon emission globally, the attempts of this need to be unique and properly coordinated in all the countries at the same time. Here many types of policy reformation are crucial in a country. But in reality, fiscal policies associated with aiming to achieve the green bonds objectives are not same regionally. However, the funding gap is observed in achieving the green objects between low- and high-income countries. More coordinated and effective approach lacks in the sustainable financing to secure finance towards green bonds initiatives. The findings suggest that a variety of social players, ranging from formal institutions like regulators and investors to informal actors like advocacy groups, can have a significant impact on the market's legitimacy.

## **Sustainable Food Practices of Conventional Food Corporations: A Case-Study Approach**

**Xueshi Li<sup>1</sup> & Jieying Zhang<sup>2</sup>**

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### **Abstract**

Based on case studies of three Chinese food corporations Wenshi, Haida, and YQSL, our study investigates the latest practices of sustainable food innovation through the lens of the actor-network theory (ANT). The corporations studied do not presuppose an ideal path to build any ideal sustainable food system model, instead, we argue that these "sustainable" practices take place in various forms based on their current organizational structures while they utilize resources from as many parties as possible and flexibly build networking and "dual carbon" policies in practice. In other words, our research shows where sustainability is enacted and sustainable futures experimented with practices of within conventional food corporations. We argue that the implementation of sustainable food system transformation is inevitably intertwined with a variety of interest-seeking processes of these stakeholders within the conventional food system.

### **Keywords**

Sustainable Food Systems, actor-network theory (ANT), food corporations, case study

## **Learning Through Engagement: Students' Perspectives on The Impact of Engagement Towards Their Learning About Sustainability**

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### **Abstract**

The increase of sustainability issues that the world is facing today have become a major threat that concerns the state of the environment and the well-being of the populace. Climate change, economic disparity, resource depletion, pandemic and social inequality are commonly reported and have been brought to the public's attention. There is a need for urgent transition towards a sustainable future and this can be done with the help of science, technology and society (STS). STS is a set-up that promotes the interactions of scientific and technological development, as well as societal norms and values for the betterment of the environment and society. Through these interactions, a sustainable future could actually be realized. While STS was mentioned to be the ideal approach in transitioning towards sustainable future, this study focuses solely on the aspect of society, looking at how informal learning could educate the students about sustainability. Serving as a cradle of knowledge that nurture potential future leaders of the world, universities are places where students could develop their awareness, values, behaviours, attitudes and competencies from the interactions they encountered. Adopting an in-depth qualitative study, purposive sampling was used for the data collection of this study. 21 students from three Malaysian universities were involved in this study, sharing their perspectives and experiences on how their engagement in campus sustainability activities have helped them in learning about sustainability. The findings from the interviews with the students showed that learning through engagement proves to be a valuable learning experience and some of the knowledge and competencies they acquired from these engagements could not be attained from learning within the four walls of the classrooms. While theoretical knowledge on sustainability is important, having the opportunity to apply their knowledge and competencies into action proves to be a treasured learning experience for these students.

### **Keywords**

Engagement, activities, perspectives, competencies, universities, experiences

Day 2:  
16 August 2023

Parallel Session 3:  
Sustainability and Community

10.30 am – 12.30 pm [UTC +8. Malaysia Time (MYT)]

Room 3C

Moderator:  
Ng Boon Kwee

## **Adolescent Health Promotion Scale (AHPS) Analysis with Best Worst Method (BWM): A Case Study in Malaysia**

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### **Abstract**

One of the major challenges of contemporary society is to balance the technical advancements and modernity of today with the acceptance of health promotion-oriented behaviours. The literature indicates that the key causes of morbidity and premature death are directly linked to modifiable risk behaviours, such as poor eating habits, inadequate physical activity, consumption of tobacco and alcohol. On the basis of the premise that encouraging healthy behaviours in young populations may help minimize the occurrence and progression of adult non-communicable diseases (NCD), accurate and effective assessment methods are needed to recognize and track adolescent health promotion behaviours. The Health-Promoting Lifestyle Profile, the Adolescent Lifestyle Questionnaire, the Teenage Lifestyle Profile, and the Adolescent Health Promotion Scale are the most widely used interventions suggested to achieve this goal in this context.

The Adolescent Health Promotion Scale (AHPS), which has been utilized in numerous communities and translated into a number of languages, has had a significant impact on health promotion efforts all over the world. According to previous sources, the AHPS consists of 40 items intended to identify healthy self-reported practices. The responder uses a 5-point Likert scale to indicate the level that most closely matches his situation (1 = "Never"; 2 = "Rarely"; 3 = "Sometimes"; 4 = "Usually"; 5 = "Always"). Six subscales related to health promotion that are specifically for teenagers can then be found, measured, and sorted after handling the scores assigned to each item: (a) nutrition behavior; (b) social support; (c) health responsibility; (d) life appreciation; (e) exercise behavior; and (f) stress management.

Therefore, it should be taken into account that the AHPS can be used in a practical and straightforward manner to promote topics of interest to academic and technical societies in the field of health education and to significantly contribute to the development and dissemination of relevant information for the formulation of new studies aimed at promoting youth health. The aim of this study is to translate and adapt the AHPS for usage with Malaysian teenagers in terms of semantic, idiomatic, cultural, and conceptual equivalence, followed by a review of the AHPS's psychometric qualities (validity and reliability factor).

### **Keywords**

Health Promotion-Oriented Behaviours; Multi-Criteria Decision Making; Adolescent Health Promotion Scale; Best Worst Method

## **Promoting Social Justice and Equity in Science and Technology for Sustainable Peace: Countering Violent Extremism through Inclusive Approaches**

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### **Abstract**

The current state of social justice and equity in science and technology for sustainability presents a critical challenge in achieving sustainable peace and countering violent extremism. Existing gaps in addressing the root causes of violent extremism perpetuate societal inequalities, exacerbate conflicts, and hinder the progress towards sustainable peace. This paper proposes a comprehensive approach to promote social justice and equity in science and technology, emphasizing the integration of inclusive strategies and interventions to address these challenges. While acknowledging the significance of social justice and equity in disciplines like sociology, peace studies, and technology ethics, the literature often fails to sufficiently explore the integration of science and technology as transformative tools for promoting social justice, equity, and sustainable peace. This paper fills this gap by highlighting the need for equal access to education and opportunities in science and technology, particularly for marginalized communities at risk of extremism. It emphasizes the importance of fostering diverse representation in research, innovation, and decision-making processes to include a range of perspectives and experiences in shaping sustainable solutions. Ethical considerations are crucial in the design and deployment of technologies to prevent their misuse for surveillance or discriminatory practices. Responsible and inclusive technological advancements, such as artificial intelligence (AI) and data analytics, can play a significant role in countering violent extremism while upholding social justice and equity principles. Collaboration and knowledge sharing among academia, practitioners, and communities are vital for developing evidence-based interventions that address the root causes of extremism, such as socioeconomic disparities, discrimination, and exclusion. By integrating social justice and equity principles into science and technology practices, this paper contributes to the advancement of sustainable peace-building efforts. It emphasizes the importance of community engagement and empowerment, recognizing the agency and resilience of affected communities in shaping their own peaceful futures. Ultimately, this paper highlights the transformative potential of inclusive approaches and their impact on countering violent extremism, promoting social justice, equity, and sustainable peace in our societies.

### **Keywords**

Social justice, sustainable peace, equity, science and technology, countering violent extremism, inclusive approaches

## Challenges of Implementing ESG in Telecommunication Industry: A Review

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### **Abstract**

ESG in Telecommunication – costs, generation and usage has been a critical consideration for Telco service provider. Considering with the current on-going upgrades of 4G networks and the development of 5G, the picture becomes much more complex. The complexity can be illustrated by the deployment of dense base stations to offset more efficient radio, the deployment of flexible and energy-efficient infrastructure that supports low latency services with edge computing, and the vast increase in the number of uses cases (the efficiencies that could be generated across different industries) is offset by the extensive data infrastructure needed to support them. In this abstract, we will take a closer look at ESG from the perspective of telecommunications operator. With Telco industries playing a crucial role in driving development of the economy and society in Malaysia, the integration of ESG principles presents both opportunities and challenges. Due to the rapid evolution of technology, the sector faces increasing energy consumption and electronic waste generation. To justify the need for expanding network infrastructure to meet growing demands of convergence subscribers and concurrently reducing the industry's carbon footprint poses a difficult challenge. Telco Service providers must invest in renewable energy sources, optimize energy usage, and adopt eco-friendly technologies to address these concerns effectively. Implementing strong governance frameworks in line with ESG principles is essential to create trust and transparency among stakeholders. The Telco industry must demonstrate ethical leadership and sound corporate governance to maintain its credibility. However, achieving compliance with ESG standards often involves significant restructuring, increased disclosure requirements, and steering complex regulatory environments. This abstract explore the factors that drive energy use, as well as the technologies and techniques that are being introduced and developed to mitigate the issue and reduce energy consumption.

### **Keywords**

ESG, energy, Radio Access Network (RAN), regulatory