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Tokyo Japan 2026

International Conference on Smart Engineering, Applied Sciences, and Technological Innovations 2026

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- Promoting the academic and research ethics
- Promoting the individual rights to learning, growth, opportunity and privacy
- Compliance with higher standards of research ethics
- Nurturing and sponsoring positivity in all areas of conduct
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Dr. Sennay Ghebreab

"International Scientific Research Conference" is a platform that thrives to support the worldwide scholarly community to analyze the role played by the multidisciplinary innovations for the betterment of human societies. It also encourages academicians, practitioners, scientists, and scholars from various disciplines to come together and share their ideas about how they can make all the disciplines interact in an innovative way and to sort out the way to minimize the effect of challenges faced by the society. All the research work presented in this conference is truly exceptional, promising, and effective. These researches are designed to target the challenges that are faced by various sub-domains of the Society for Business, Economics, Social Science & Humanities, Society for Engineering & Technology, Computer, Basic & Applied Sciences, Medical, Medicine & Health Sciences.

I would like to thank our honorable scientific and review committee for giving their precious time to the review process covering the papers presented in this conference. I am also highly obliged to the participants for being a part of our efforts to promote knowledge sharing and learning. We as scholars make an integral part of the leading educated class of the society that is responsible for benefitting the society with their knowledge. Let's get over all sorts of discrimination and take a look at the wider picture. Let's work together for the welfare of humanity for making the world a harmonious place to live and making it flourish in every aspect. Stay blessed.

Thank you.

Dr. Sennay Ghebreab
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THE X BACKWARD DREDGING METHOD IN SEA MINING USING A BUCKET DREDGER MAKES CASSITERITE MINERAL PRODUCTION MORE EFFICIENT

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Mining Dredgers at Sea using a pressure digging system, forward digging, and side digging to the left or right has been implemented to date; however, excavation using these systems still leaves behind layers rich in mineral content in the form of tin-bearing sand (SnO_2 or cassiterite). The suboptimal performance of bucket excavation is caused by the spillage of tin-bearing sand during digging, while the bucket is being lifted, and when highly enriched layers are not completely excavated and remain in place. The X Backward Dredging method enables excavation and mining activities to become significantly more effective and efficient in terms of both cost and time, as the bucket dredger or similar vessels no longer need to re-excavate the same location. The application of Method X has resulted in a substantial increase in production. Production in a year could increase 162% & 250 % compared to plan for the Karimata Dredger. Method X is formulated as follows: $X = y_1 + y_2 + y_3 + y_4 + y_5$

Keywords: Offshore mining, Backward dredging, Bucket dredger, Cassiterite mineral

REDIRECTING PATH DEPENDENCE: A PROCESS MODEL OF SECOND-CURVE DEVELOPMENT IN A MATURE MANUFACTURING SME

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How can path-dependent small and medium-sized enterprises (SMEs) achieve strategic renewal without radical rupture? While prior research emphasizes lock-in and structural inertia, less is understood about how mature firms redirect inherited trajectories under resource constraints. This study examines a family-owned PCB manufacturing SME undergoing generational succession to explore how organizational renewal unfolds within conditions of core rigidity. Drawing on longitudinal qualitative data, we develop a process model of trajectory redirection. The findings reveal that environmental pressure initially reinforced exploitation and deepened path dependence. However, generational transition functioned as a cognitive inflection point that expanded interpretive frames. Through partial decoupling from commoditized segments and capability recombination, the firm reconfigured its business model and gradually consolidated a second growth curve. Rather than breaking from its past, renewal emerged through layered reweighting of strategic emphasis. This study contributes to path dependence and organizational renewal theory by reconceptualizing trajectories as redirectable rather than deterministic. It further clarifies how business model transformation operationalizes second-curve development in mature manufacturing SMEs. The findings advance a process-based understanding of how traditional firms achieve sustained transformation without abandoning their historical capability foundations.

Keywords: Manufacturing, SME, Path dependence

THE PHILOSOPHICAL COMPARISON BETWEEN VEDĀNTA DARŚANA AND KRAMA TANTRICISM

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The Krama tradition's reconfiguration of temporality invites broader philosophical comparison, particularly with other Indian and non-Indian systems that have struggled to articulate the nature of time, consciousness, and becoming. While Krama emerges within the Śaiva tantric universe, its insights resonate far beyond it, revealing an implicit philosophy of time that rivals the most sophisticated metaphysical systems of the medieval world. Classical Indian philosophy often approaches time with suspicion. In Advaita Vedānta, kāla is relegated to the domain of māyā, a superimposition upon the changeless reality of Brahman. Temporality, from this perspective, belongs to ignorance (avidyā), and liberation requires the transcendence of time-consciousness altogether. Buddhism, particularly in its Abhidharma and Madhyamaka articulations, offers a different critique: time is reduced to momentariness (kṣaṇikatva), with each moment arising and perishing without enduring substance. Though this analysis dismantles substantialist metaphysics, it often culminates in an ontology of emptiness (śūnyatā), where temporality lacks affirmative sacred value. Krama Tantricism departs decisively from both trajectories. Rather than negating time or dissolving it into analytical abstraction, Krama affirms temporality as the very texture of divine manifestation. Time is neither illusion nor mere succession but the self-articulation of consciousness, experienced as rhythm, intensity, and sequence. This position allows Krama to reconcile permanence and change without subordinating one to the other. Consciousness remains non-dual and self-identical, yet it reveals itself dynamically through successive phases. Temporality thus becomes the language of the Absolute rather than its negation. From a comparative standpoint, this view anticipates certain strands of Western process philosophy, particularly those of Henri Bergson and Alfred North Whitehead. Bergson's concept of durée—lived, qualitative time irreducible to spatial measurement—bears striking affinity with Krama's insistence on experiential temporality. Similarly, Whitehead's notion of "actual occasions," in which reality unfolds through momentary events saturated with value, parallels Krama's understanding of the kṣaṇa as a site of divine plenitude. Yet Krama surpasses these frameworks by grounding temporality explicitly in ritual, embodiment, and goddess-centered theology, rather than abstract metaphysical speculation. Thus, Krama offers a rare example of a philosophy of time that is simultaneously metaphysical, phenomenological, ritualistic, and soteriological. Time is not merely understood—it is practiced, embodied, and worshipped.

Keywords: Vedānta, Krama, Tantricism

THE INFLUENCE OF ENVIRONMENTAL EDUCATION AND PUBLIC MOTIVATION ON PUBLIC PARTICIPATION IN TOURISM ENVIRONMENTAL CONSERVATION (SURVEY IN SIMALUNGUN REGENCY AND SAMOSIR REGENCY)

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Lake Toba is a world tourist destination that has been widely known by the international community. It should be the desire of international tourists to come and enjoy tourism in Lake Toba. The role of the community is very much needed in empowering Lake Toba so that through their participation in protecting the environment and increasing public knowledge, they can maintain the ecosystem.The results of the study explain that public education will affect the sustainability of the tourism environment by 0.1394 or 13.94%. Then the motivation to influence public participation in preserving the tourism environment is 0.1299 or 12.99%. The government in the Lake Toba area must work together in providing education and motivation to the community living around the Lake Toba area so that the sustainability of Lake Toba can be maintained properly. Conservation of the Lake Toba environment will provide benefits for the community in the Lake Toba area and the Regional Government around Lake Toba because it can create jobs and income for the community and region.

Keywords: Environmental education, Community motivation, Community Participation

AI-POWERED PERSONALISATION IN OPEN BANKING ECOSYSTEMS: A COMPREHENSIVE SYSTEMATIC REVIEW

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Open banking, through API-driven data portability and user-consented access, has significantly advanced the development of hyper-personalized financial services. Artificial Intelligence (AI) activates this potential by converting transactional records, behavioral patterns, and contextual data into dynamic customer profiles, tailored recommendations, predictive analytics, and enhanced fraud detection mechanisms. This paper offers a systematic review of AI applications within open banking ecosystems, combining a comparative synthesis of literature from the UK/EU, Asia, and Africa. It further delivers a structured SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis, with particular attention to governance considerations such as privacy protection, fairness, explainability, and cybersecurity. Additionally, the study proposes a reference architecture for responsible personalization and outlines a forward-looking agenda that includes cross-border interoperability, multilingual and culturally adaptive personalization, embedded financial literacy nudges, and IoT-aware contextual integration. The findings underscore that sustainable and effective personalization depends on consent-by-design data infrastructures, robust model risk management, transparent explain ability mechanisms, and continuous oversight aligned with regulatory frameworks such as PSD2/GDPR in the UK/EU, the OBIE standards, Australia's CDR regime, and India's Account Aggregator framework. This study (1) consolidates and organizes recent research on AI-driven personalization in open banking; (2) aligns specific techniques with their corresponding applications and data inputs; (3) evaluates key strengths, limitations, and associated risks; and (4) introduces an implementation-ready architecture along with a forward-looking research agenda that adheres to regulatory requirements.

Keywords: Open Banking, API's for Open Banking

QUALITATIVE STUDY OF ORGANIZATIONAL AND BEHAVIORAL BARRIERS TO AI ADOPTION AMONG MALAYSIAN SMES

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Despite a generally favorable policy landscape and widely available AI tools, Malaysia's small and medium-sized enterprises (SMEs) persistently have low adoption of AI technology. This study aims to explore the frictions around this tension by interviewing leaders in the manufacturing, technology and professional services sectors. Findings reveal that the constraints are more cognitive and cultural rather than technological or financial, knowledge deficits, collectively termed "AI illiteracy", and organizational inertia far outweigh the resource constraints. The most effective adoption enablers were localized training initiatives and an "AI-first" leadership mindset, not large-scale infrastructure investments. Value creation was primarily operational efficiency, speed, and quality, while strategic innovation remained unrealized. Through incorporating a human capital factor, this study reported that workforce literacy is a more significant factor in AI adoption than capital investment. Policymakers should shift from infrastructure subsidies to capability grants, while SME leaders should treat employees' upskilling as a prerequisite, not an afterthought for AI procurement.

Keywords: Artificial intelligence, Malaysian SMEs, Mindset, Knowledge management

BEYOND THE CHATBOT: A SYSTEMATIC SURVEY OF AUTONOMOUS EDUCATIONAL AGENTS (AEAS) AND STATEFUL ORCHESTRATION IN 2026 ECOSYSTEMS

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The rapid evolution of Large Language Models (LLMs) has shifted the paradigm of educational technology from passive retrieval systems to Autonomous Educational Agents (AEAs). These systems have transitioned from reactive prompting to proactive agentic workflows (AWs) capable of reflection, planning, and multi-step reasoning. This paper presents a systematic survey of the educational AI landscape as of 2026, synthesizing breakthroughs in multi-agent collaboration and learner simulation. We analyze three pivotal frameworks: Agent4Edu, which uses generative agents to simulate learner-response data; the Teaching Assistance/Student Support taxonomy, which provides a task-centric map of classroom applications; and the Multi-Agent Scoring System (MASS), which employs specialized sub-agents for objective assessment. Building on these foundations, we evaluate the shift toward stateful orchestration as a unified development paradigm. A primary focus of this survey is how graph-based architectures enable deterministic control over pedagogical paths, thereby mitigating the risk of "cognitive dependence" by enforcing Socratic scaffolding rather than direct answer generation. We further analyze the technical utility of durable state management for maintaining persistent learner profiles and educational continuity across discrete sessions. Finally, we address critical challenges, including the technical hurdles of memory pruning and the requirement for session-aware persistence. This work provides a roadmap for researchers aiming to build the next generation of transparent, agent-driven learning environments.

Keywords: Agentic AI, Educational technology, Autonomous agents

DYNAMIC HEALTH BELIEF CYCLE MODEL FOR HEALTH SUPPLEMENT LOYALTY AND PRECISION MARKETING STRATEGY DEVELOPMENT

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This study develops the Dynamic Health Belief Cycle Model (DHBCM) to elucidate loyalty formation mechanisms in Taiwan's health supplement industry. Integrating the Health Belief Model and Expectation Confirmation Theory, it investigates how perceived health threats, post-consumption belief revision, and opinion leader typology collectively determine long-term repurchase behavior and brand commitment among health supplement consumers. A constructivist qualitative design was employed using purposive sampling. Thirty semi-structured in-depth interviews were conducted with health supplement marketing professionals and moderate-to-heavy consumers in Taiwan. Verbatim transcripts underwent three-stage grounded theory coding (open, axial, and selective), supplemented by systematic content analysis of Key Opinion Leader communications across Instagram, YouTube, and Facebook. Thematic analysis identified three core loyalty-governing mechanisms: post-consumption expectation confirmation triggered cyclical belief revision that recursively reshaped repurchase cognition; expert-type KOLs (physicians, dietitians) predominantly augmented consumer self-efficacy, whereas consumer-type KOLs (influencers, bloggers) primarily reinforced perceived product benefits; and perceived health threat intensity significantly moderated long-term repurchase commitment formation. Findings are applicable to health supplement marketing strategy, preventive health communication, digital health platform optimization, and evidence-based public health policy. Results enable health enterprises to design differentiated consumer lifecycle strategies and assist policymakers in developing targeted KOL-leveraged interventions promoting sustained preventive supplement consumption, particularly within Taiwan's rapidly aging population demographic. This study presents the first empirically grounded DHBCM integrating the Health Belief Model and Expectation Confirmation Theory within a health supplement loyalty context. It advances existing literature by introducing post-consumption belief revision as a dynamic feedback mechanism, empirically differentiating KOL influence typologies, and addressing a critical gap in longitudinal health consumer behavior research.

Keywords: Dynamic Health Belief Cycle Model, health supplement loyalty, precision marketing, Key Opinion Leaders, consumer health behavior, Taiwan

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