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" The Art of Unseen Treasure "

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4th International Conference
on
Science, Social Sciences, and Humanities
(ICOSSH2025)

"The Art of Unseen Treasure"

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PREFACE

This volume of proceedings gathers the extended abstracts presented at the 4th International Conference on Science, Social Sciences and Humanities (ICOSSH2025). In keeping with this year's theme, "The Art of Unseen Treasure," the collected works reveal how science, social sciences, and the humanities intersect to confront today's most complex global challenges.

Each contribution offers a detailed account of innovative studies and emerging trends—from breakthroughs in environmental science to nuanced analyses of social dynamics, cultural identity, and human behaviour. By bringing these perspectives together, we aim to spark interdisciplinary dialogue, inspire fresh thinking, and advance research that yields holistic solutions.

This compilation would not exist without the dedication of many. We extend our sincere gratitude to the authors for sharing their scholarship and to the reviewers for their rigorous assessments, which have upheld the academic quality and integrity of this publication.

As you delve into this proceeding, we hope it ignites new ideas, fosters collaboration across disciplines, and serves as both a definitive record of current scholarship and a springboard for future inquiry.

FOREWORD BY EDITOR-IN-CHIEF

It is with immense pleasure and professional pride that I present the Proceeding Book of the 4th International Conference on Science, Social Sciences and Humanities (ICOSSH2025). Convened at The Everly Hotel, Bintulu, Sarawak, Malaysia, on 12–13 August 2025, this year's gathering carries the evocative theme "The Art of Unseen Treasure." The phrase reminds us that the most valuable discoveries—whether molecules, memories, or musical motifs—often lie beneath the surface, waiting to be revealed through rigorous inquiry, creative dialogue, and courageous collaboration.

Scholars from more than five continents answered the call to share their work, resulting in a rich programme that bridges the natural sciences, social sciences, and the humanities. In these pages, you will find empirical studies on environmental resilience alongside nuanced critiques from digital-era identity to ethnographic portraits of indigenous knowledge for social good. Each paper is a thread; together, they weave a tapestry that celebrates both disciplinary depth and interdisciplinary synthesis.

We are equally indebted to our host institutions—the Faculty of Humanities, Management & Science, Universiti Putra Malaysia Sarawak, the Ministry of Tourism, Creative Industry & Performing Arts Sarawak, and the Tok Nan Research Centre—for their steadfast support. Our strategic partners—Universiti Malaya, Xiamen University, Universitas Diponegoro, and Universitas Negeri Semarang (UNNES)—brought global perspectives and forged new avenues for collaboration that will resonate long after the final session.

Special appreciation must also go to the remarkable organising committee for transforming months of planning into a seamless scholarly exchange. Their efforts allowed participants to focus on what matters most: the free flow of ideas and the forging of meaningful connections.

As you turn these pages, I invite you to engage with the insights, questions, and provocations contained herein. May they inspire fresh investigations, spark interdisciplinary partnerships, and illuminate the unseen treasures in your fields of endeavour. On behalf of the entire editorial board, I thank you for joining us on this intellectual journey and for contributing to the collective quest for knowledge that defines ICOSSH.

Warm regards,

Dr. Aryaty binti Alwie
Chief Editor
Programme and Proceeding Book
ICOSSH2025

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A BASELINE STUDY ON SAGO PRODUCTION AND DOWNSTREAM ACTIVITIES IN MUKAH AND BETONG DIVISIONS, SARAWAK

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Keywords: Cottage industries; lemantak; repuk; sago palm; sago starch, tebaloi

EXTENDED ABSTRACT

This baseline study provides an assessment of sago production and downstream activities in the Mukah and Betong divisions of Sarawak, Malaysia, with a particular focus on entrepreneurs involved in value-added processing and the distribution of sago-based products. Employing both quantitative and qualitative methods, along with a snowball sampling approach, the study managed to identify 370 industry participants. The findings reveal distinct regional specialization, Mukah is the principal hub for starch and food-related production, while Betong is primarily involved in animal feed processing, with 81 out of 82 producers located there. The study examines the socio-economic profiles of sago entrepreneurs, their production capacities, patterns of domestic sago starch consumption and the market dynamics shaping the industry. Key challenges are also identified, including an aging workforce, limited technological advancement and substantial data gaps that impede effective planning and development. Overall, the findings serve as a foundation for policymakers, researchers and industry stakeholders to develop targeted interventions that enhance the sustainability, productivity and competitiveness of the sago industry in Sarawak. The study also lays the groundwork for future research into the socio-economic dimensions of this traditional yet economically significant sector.

INTRODUCTION

The sago industry in Sarawak primarily caters to domestic demand for native starches in Malaysia, which according to Manan (2012) is estimated at a minimum of 300,000 tonnes annually. In 2022, Sarawak exported approximately 37,767 tonnes of dry sago starch, generating export revenue exceeding RM107 million (Department of Agriculture Sarawak, 2022a). This positions sago as the third-largest contributor to the state's agricultural export earnings, following oil palm and pepper. More than half of the exported volume was utilized by starch-based industries in Peninsular Malaysia. Sarawak remains the principal supplier of native sago starch and its distinctive physicochemical properties have attracted niche international demand. Japan continues to be Sarawak's most significant overseas trading partner for this commodity.

Sago starch production in Sarawak is predominantly undertaken by large-scale, modern processing facilities. These factories collectively produce an estimated 50,000 tonnes of dry sago starch annually. As of 2022, six such facilities are operational, five located in the Mukah Division and one in the Betong Division, with monthly production capacities ranging between 150 to 600 tonnes. These factories utilize sago palms as the primary raw material for starch extraction. Native starches such as sago play a critical role in the starch-based manufacturing sector. Through various industrial processing techniques, native sago starch can be further refined and value-added, thereby expanding its applicability across both food and non-food industries (Singhal et al., 2007; Karim et al., 2008).

METHODOLOGY

This study employs both quantitative and qualitative research methods. The quantitative approach involves structured surveys with closed-ended questions to collect statistical data on production volumes, sales and market trends. To ensure consistency, respondents selected from the industry were required to choose from predetermined responses. The qualitative approach consisted of open-ended interviews and focused group discussions (FGDs) to gather insights into industry trends, challenges and perceptions. Unlike structured quantitative surveys, this approach allows respondents to elaborate freely on their experiences, with interviewers posing follow-up questions for clarification. A key challenge in this study was the absence of a comprehensive database of sago entrepreneurs, making it difficult to establish a representative sample population. To address this issue, a two-step methodology was employed. First, a desk study was conducted to identify recognized entrepreneurs through publications and online sources. The individuals were contacted to verify their industrial involvement. Second, a snowball sampling technique was used. In this case, the identified respondents referred other industry participants. This process continued until no further contacts could be traced.

RESULTS

Distribution of Sago Industry Downstream Activities

A total of 370 sago industry participants were identified. Mukah emerged as the dominant hub for starch and food-related production, while Betong was primarily focused on animal feed production (Table 1).

Table 1: Distribution of Sago Industry Downstream Activities by Division

No.	Activity	Mukah		Betong		Total	
		n	%	n	%	n	%
1	Wet sago starch production	9	2	8	2	17	5
2	Animal feed production	1	0	81	22	82	22
3	Sago-based food production	197	53	66	18	263	71
4	Sago-based non-food production	1	0	0	0	1	0
5	Sago end-product sales	2	1	5	1	7	2
		210	56	160	44	370	100

As presented in Table 2, wet sago starch (lemantak) producers are relatively evenly distributed across the Mukah and Betong divisions. However, Kampung Tellian has emerged as a key center for the *lemantak* industry, with 42% (7 producers) located within its various zones.

Table 2: Locational Distribution of *Lemantak* Producers

Division	District/Sub-District	Village	N	%
Mukah	Mukah	Kampung Tellian	1	6
		Kampung Tellian Tengah	2	12
		Kampung Tellian Ulu	4	24
		Kampung Teh Labak	1	6
		Kampung Tabo	1	6
Betong	Pusa	Kampung Serabang	1	6
		Kampung Hulu Serabang	1	6
		Kampung Hulu Pusa	1	6
		Kampung Hulu Tambak	1	6
		Kampung Kalok	1	6
		Kampung Pusa	2	12
		Kampung Dato Godam	1	6

DISCUSSIONS

Socio-Economic Profile of Sago Entrepreneurs

The sago industry is largely composed of small-scale entrepreneurs, with a significant number of producers operating as family-run businesses. Educational attainment among entrepreneurs is generally low and many producers rely on traditional knowledge and manual processing techniques. The aging workforce and a lack of younger entrants into the industry pose challenges for long-term sustainability.

IMPLICATIONS OF THE STUDY

The study provides critical baseline data to guide the strategic development of Sarawak's sago industry. The identification of distinct regional roles, Mukah for food-based processing and Betong for animal feed, calls for location-specific development strategies. These include targeted resource allocation, such as training centers, technology transfer hubs and access to finance tailored to each division's needs.

These findings support the formulation of inclusive policies that improve access to training, credit, and institutional support, particularly for women and elderly producers, while creating incentives to attract younger participants. Policymakers can use this data to design incentive schemes, infrastructure improvements and public-private partnerships that improve efficiency and inclusivity across the value chain.

Ultimately, the study contributes to PCDS 2030 by highlighting opportunities for rural entrepreneurship, innovation and export diversification.

LIMITATION AND FUTURE RESEARCH DIRECTIONS

This study faced several limitations, including restricted access to reliable production and consumption data from modern sago mills due to confidentiality, and potential selection bias introduced by the snowball sampling method, which may have excluded undocumented or isolated operators. Additionally, limited economic data from downstream entrepreneurs hindered comprehensive profitability analysis.
Future research should prioritize time-motion and cost-benefit studies to assess labor efficiency and return on investment among small-scale operators, alongside comparisons between traditional and modern processing methods to identify scalable, cost-effective technologies. Investigations into consumer preferences, branding strategies and export readiness of sago-based products are also essential.

Furthermore, exploring youth-led innovation models and cooperative enterprise development could yield valuable insights. Finally, assessing the environmental and sustainability impacts of sago cultivation and processing is crucial for promoting sustainable industry growth.

CONCLUSION

This baseline study provides an overview of the sago industry's downstream landscape in Mukah and Betong Divisions, Sarawak. It reveals distinct regional specializations, Mukah serving as a hub for food-based sago processing and Betong focusing on animal feed production. The study highlights a heavy reliance on small-scale, family-run enterprises that operate with limited mechanization and a predominantly aging workforce.

Despite its deep-rooted cultural and economic significance, the sago industry faces structural challenges, including low youth participation, limited data transparency and market fragmentation. These constraints pose risks to the sector's long-term sustainability and growth. Nonetheless, the findings emphasize the untapped potential of the industry to contribute significantly to rural development, food security and Sarawak's broader development goals.

The study affirms the need for targeted interventions to modernize processing practices, strengthen support for community-based producers and expand value-added opportunities. With strategic investment, policy alignment and innovation, Sarawak's sago industry can evolve into a resilient and inclusive economic driver for coastal and rural communities, in line with the PCDS 2030 key objectives of economic prosperity, social inclusivity and environmental sustainability.

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INDIGENOUS USES OF LOCAL PLANTS IN SARAWAK: ORNAMENTAL AND CULTURAL SIGNIFICANCE AMONG THE BUKET ETHNIC GROUP

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EXTENDED ABSTRACT

This study explores the cultural and ornamental usage of local plants among Sarawak's Buket Ethnic, offering new perspectives for landscape architecture through the lens of Indigenous knowledge. The study examines how plants function as living cultural markers in rituals and everyday life, with an emphasis on aesthetic values that are frequently disregarded in ethnobotanical research. We discovered plants and their multimodal roles through fieldwork with researchers from Universiti Putra Malaysia Sarawak and the Buket's community leader or 'Tuai'. These include plants for everyday use like the leaves of *Musa spp*. (used to make cigarettes) and *Calamus spp*. (used for creating items like bags and baskets), ornamentals like *Ixora spp*. and *Codiaeum spp*., and *Cocos nucifera*, *Areca catechu*, and *Piper betle* (used in ceremonies). Results show that local plants serve as visual and artistic emblems, as well as tactile craft materials. For designers looking to construct landscapes with a cultural foundation, these results offer practical insights and can be used in community-co-designed public areas that respect Buket heritage. Potential programs are interpretive trails that explain plant meaning, and sensory gardens with indigenous species. Findings can further emphasize the importance of cultural preservation and landscape design connects Indigenous knowledge with modern design.

INTRODUCTION

Sarawak, located on the island of Borneo, is home to a diverse array of Indigenous communities, each maintaining unique and profound relationships with the natural environment (Abdullah et al., 2020). Among these communities is the Buket Ethnic group, who have cultivated a deep connection with the native flora.

The Buket people rely heavily on forest resources, particularly for medicinal purposes, and their knowledge of plants plays a crucial role in their daily lives and well-being (Mohamad Maulana Magiman et al., 2024).

Beyond practical uses, the Buket Ethnic community integrates plants into cultural preservation efforts. Plants function not only as sources of healing but also as carriers of cultural meaning—what some scholars refer to as "living heritage." These living elements of nature embody ancestral knowledge, shape rituals, and enrich the community's sensory and spiritual experiences (Cameron, 2022; Shepard & Daly, 2022). Despite this richness, scholarly attention to the Buket is sparse, especially in areas concerning the aesthetic and symbolic roles of plants in their traditions.

Indigenous plant knowledge is a key pillar of biocultural diversity, yet its ornamental, decorative, and aesthetic contributions remain underexplored in both ethnobotanical literature and landscape architecture research (Table 1). This study seeks to address that gap by examining the multifunctional roles of plants among the Buket, particularly their use as cultural symbols and markers of aesthetic value. By documenting these uses, the research aims to contribute to the preservation of cultural heritage and support more inclusive, culturally informed practices in landscape design that center Indigenous perspectives and place-based knowledge.

Table 1: Thematic gaps in ethnobotanical literature based on plant utilization. '√' indicates yes, '×'indicates no, and '±' indicates partially

Criteria	(Bakar et al., 2023)	(Teucher & Sayok, 2018)	(Mohd Salim et al., 2023)	(Adnan & Othman, 2012)	(Abdullah et al., 2020)	(Carstens et al., 1998)	(Mohamad Maulana	(Tharmabalan, 2023)
Biocultural diversity	√	±	±	√	±	×	√	×
Plants as cultural markers	×	±	×	√	√	×	×	±
Plants in daily life (living heritage)	×	√	×	√	√	×	±	±
Plants aesthetic value	×	×	×	√	×	×	×	×
Plants used in rituals	×	×	×	√	√	×	×	×
Plants in craft materials	×	×	×	√	√	×	×	×
Plants in cultural preservation	√	√	√	√	√	√	√	√
Landscape design applications	×	×	×	√	×	×	×	×

RESEARCH METHOD

This study employs a collaborative methodology by partnering with researchers from Universiti Putra Malaysia Sarawak (UPMS) and the Buket 'Tuai' (community leader) (Figure 1), thereby incorporating Indigenous viewpoints. Fieldwork encompasses semi-structured interviews and participative observation,

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supplemented by the documentation of plant species utilized by the Buket community. The gathered data is next examined through thematic categorization, emphasizing ritual, ornamental, and craft applications, while also investigating the possible uses of these plants in culturally informed landscape design.

Figure 1: Researchers from Universiti Putra Malaysia Serdang Campus interviewing "Tok Tuai", the Buket Ethnic community leader at Uma Ukit.

RESULTS

The Buket Ethnic are an Indigenous ethnic group residing in Sarawak, Malaysia. Historically nomadic forest inhabitants, they migrated from 'Long Aya' to a new resettlement in 1998 due to the construction of Bakun Dam. With a population of almost 400, the Buket community strives to preserve their cultural identity in the face of demographic loss and assimilation pressure. Figure 2 shows the overall Uma Ukit compound, starting from the main entrance until the long house where the Buket Ethnic resides. The compound consists of various building types including Borneo Evangelical Mission Church and a jetty. Several plants emerged as culturally and visually significant: *Musa spp.* leaves are used in cigarette-making, while *Calamus spp.* are woven into bags and baskets—illustrating tactile and utilitarian values. In parallel, species like *Ixora spp.* and *Codiaeum spp.* are cultivated for ornamental appeal, and plants such as *Cocos nucifera*, *Areca catechu*, and *Piper betle* are vital to ceremonial rituals and social customs.

Figure 2: Image showing the compound of Uma Ukit, measuring

Table 2 shows various ornamental plants found within the Uma Ukit compound. Most of the ornamental plants found within the compound does not directly reflects the culture of Buket Ethnic. The plants are simply chosen based on the preference of the community and do not carry any significant relationship with their culture.

Table 2: Various ornamental plants used within the Uma Ukit compound.

Scientific name	Common name (Malay)	Location
Heliconia spp.	Sepit udang	Entrance area
Canna spp.	Pisang sebiak	Entrance area
Ixora spp.	Jarum-jarum	Roadside
Doryanthes spp.	'Gymea lily'	Roadside
Dracaena trifasciata	Lidah mertua	House compound
Cycas revoluta	Pokok sagu	House compound
Cordyline fruticosa	Jenjuang	House compound
Allamanda cathartica	Cempaka hutan	House compound
Hibiscus spp.	Bunga raya	House compound
Alternanthera ficoidea	Pokok krokot	House compound
Cleome hassleriana	Pokok bunga labah-labah	House compound
Bougainvillea spp.	Bunga kertas	House compound
Codiaeum variegatum	Pokok puding	House compound
Agave spp.	Kelumpang telur	House compound

DISCUSSIONS

The ethnic group have distinctive traditions and their own unique lifestyle. Therefore, preserving traditional knowledge is important and passing it down to the younger generation is important especially due to rapid modernization.

The findings highlight the importance of plants for Buket Ethnic carries both practical and both visual and cultural expression. Decorative plants, such *Ixora spp*. and *Codiaeum spp.*, were chosen mostly for their visual attractiveness rather than cultural significance, indicating the personal tastes of people rather than carries cultural meaning. This provides valuable insights into the Buket's cultural landscapes and suggests the potential for incorporating Indigenous knowledge into the design of culturally responsive public spaces. This integration can enhance biodiversity awareness, facilitate cultural preservation, and encourage community engagement through sensory landscapes.

IMPLICATIONS

The study emphasizes the significance of incorporating Indigenous plant knowledge into landscape design, promoting culturally relevant public areas and collaborative community design initiatives. It addresses a gap in ethnobotanical research—the aesthetic value of plants for Indigenous communities. This study advances the domains of landscape architecture and the preservation of Indigenous knowledge.

LIMITATION AND FUTURE RESEARCH DIRECTIONS

The study indicates a selection bias in ornamental plants, predominantly chosen according to personal choice, which may distort cultural aesthetics. It also recommends that future study evaluate the application of culturally informed design solutions in practical environments.

CONCLUSION

This study emphasizes the potential of incorporating Indigenous plant knowledge into contemporary landscape design. By recognizing the beauty and cultural importance of flora within the Buket ethnic group, it establishes plants as a form of cultural expression, reinforcing the relationship between landscape design, identity, and history of Buket Ethnic in Sarawak.

This research not only aids in the preservation of Indigenous knowledge but also has ramifications for enriching ethnic-based landscape design. The results also suggest the importance for designing public spaces that honor and embody the cultural legacy of Indigenous groups, enhancing the recognition of traditional knowledge in the design methodology. This study seeks to further understand Indigenous knowledge systems and foster inclusive, culturally sensitive landscape design.

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LESSONS FROM THE BANYU PANGURIPAN TRADITION AT THE FOOTHILLS OF MOUNT SLAMET: A HISTORICAL, RESILIENCE, AND CONSERVATION PERSPECTIVE

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Keywords: Banyu Panguripan tradition; Mount Slamet; conservation; history

EXTENDED ABSTRACT

The Banyu Panguripan tradition, embedded at the foothills of Mount Slamet, stands as a longstanding cultural heritage reflecting the community's profound spiritual and ecological bond with water. This research investigates its historical importance, highlighting how it intertwines with local identity and natural resource conservation. Employing historical and ethnographic methods, the study reveals that the tradition serves dual roles: as a sacred ritual and as an effective environmental practice, particularly in managing water resources. Despite challenges from modernization and development, its resilience underscores the necessity of integrating indigenous wisdom with modern conservation efforts to sustain the Banyu Panguripan tradition and maintain ecological balance.

INTRODUCTION

The Banyu Panguripan tradition, situated at the foot of Mount Slamet, represents a crucial element of local cultural heritage, deeply intertwined with the community's reverence for water as a source of life (Hamsah, 2013; Pajriah & Suryana, 2021; Yang et al., 2018). Despite its long-standing role in maintaining both spiritual and ecological balance, the tradition faces growing challenges from modernization, environmental degradation, and pressures of development (Dahles, 2013; Franco-Castillo et al., 2021; Meytasari & Tisnawati, 2018; Ocal, 2016). As infrastructure expands and water resource management becomes increasingly commercialized, the survival of this cultural practice is at risk (Amin & Kurniawan, 2020; Aoki & Yoshimizu, 2015; Lucchi, 2018; Olick, 1999; Supriyadi et al., 2022). This calls for urgent attention to the preservation of local wisdom that has long guided sustainable environmental practices.

The theoretical framework of this study draws on cultural heritage theory (Smith, 2004) and environmental conservation principles (Upreti, 1994), emphasizing the interconnection between tradition and ecological stewardship. Cultural heritage theory highlights the role of longstanding practices, such as the Banyu Panguripan tradition, in shaping community identity and sustaining collective memory. This tradition is seen as a living heritage, continuously evolving in response to social and

environmental changes (Orr et al., 2021; Sesana et al., 2021). Meanwhile, environmental conservation theory underscores the importance of indigenous knowledge and local wisdom in natural resource management. By integrating these perspectives, the study explores how the Banyu Panguripan tradition not only preserves cultural identity but also contributes to sustainable water management (Remmington, 2018), reinforcing the idea that local traditions can play a crucial role in modern conservation efforts.

Previous studies have examined the diverse social, cultural, and environmental roles of the Banyu Panguripan tradition. One researcher noted its integration within Catholic spirituality, while another analyzed the impact of commercialization through the Wong Gunung Festival on the tradition's meaning (Hamsah, 2013). Additional scholars emphasized the importance of local wisdom in preserving water sources and highlighted community involvement as key to sustaining both the tradition and natural resources (Ilafi et al., 2024). These collective insights establish a foundation for understanding how the tradition evolves amid modernization (Siswadi & Purnaweni, 2011), portraying it as both a spiritual emblem and a conservation model with potential for incorporation into modern environmental policies (Setyowati et al., 2017). This study aims to investigate the tradition's historical and cultural value, resilience to development pressures, and community-driven conservation practices.

RESEARCH METHOD

This research employs a qualitative approach using historical and ethnographic methods to explore the cultural significance, history, and role of the Banyu Panguripan tradition in environmental conservation (Wood, 1990). Data were collected through literature reviews and participatory observations conducted at the site of the tradition in the foothills of Mount Slamet, located in Pemalang Regency, Central Java Province, Indonesia. In addition, in-depth interviews were conducted with local community leaders to gain a more comprehensive understanding of the historical and social dynamics embedded in this tradition.

Interviews were conducted with three key individuals knowledgeable about the Banyu Panguripan tradition: Mr. Sadum, a long-standing guardian of the practice; Mr. Tamat, a traditional leader involved in its rituals; and Mr. Agus Sutanto, an environmental activist engaged in water conservation efforts. Mr. Sadum elaborated on the tradition's spiritual significance and its transmission across generations. Mr. Tamat detailed the ritual procedures and emphasized community engagement as essential to preserving the tradition's sanctity. Mr. Agus highlighted challenges from development pressures and the community's efforts to incorporate conservation values into everyday life. Employing a thematic data analysis, interview findings were triangulated with observations and literature to validate insights on the tradition's historical, cultural, and environmental roles, revealing local strategies to adapt to social and ecological changes.

RESULTS AND DISCUSSION

Historical and Cultural Significance of the Banyu Panguripan Tradition

Pemalang Regency, situated at the foothills of Mount Slamet in Central Java, is distinguished for its rich local traditions and well-preserved Javanese cultural heritage, positioning it as a significant cultural center in Java. The inhabitants maintain a profound spiritual and ecological connection with their natural surroundings, exemplified by rituals such as the Banyu Panguripan. This tradition functions not only as a religious ceremony but also as an instrument for environmental conservation. It underscores how indigenous knowledge facilitates both ecological sustainability and social cohesion within the community. More broadly, Pemalang's local customs represent invaluable knowledge systems that illuminate a Javanese worldview emphasizing harmony with nature and spirituality. This cultural patrimony enhances Pemalang's identity, contributes to the safeguarding of Javanese culture, and serves as a critical point of reference for cultural scholarship and environmentally grounded local resource management.

The Banyu Panguripan ritual holds deep historical and cultural significance for communities around Mount Slamet's foothills. According to interviews with local elder Mr. Sadum, this sacred tradition dates to ancestral times and symbolizes the intrinsic relationship between humans and nature, particularly water, revered as a life-giving element. Beyond its ceremonial role, Banyu Panguripan serves as a cultural emblem that reinforces communal identity. The tradition imparts values of gratitude and reverence for nature, especially water, which have been transmitted across generations, thus fortifying the community's enduring bond with their environment. Pulosari District in Pemalang has long suffered from recurrent droughts, particularly during dry seasons. Of its twelve villages, nine—including Pulosari, Cikendung, Siremeng, and others—regularly face water shortages due to geographical constraints and limited clean water availability. Water scarcity significantly impacts daily life, compelling residents to source water from distant areas, exacerbating communal hardship. In response, the community regards the Banyu Panguripan ceremony as a spiritual supplication for abundant water provision from the divine.

The Banyu Panguripan ritual arose as a communal response to water scarcity, spiritually invoking rain and sustaining vital water resources. Each village in Pulosari developed unique variations, emphasizing deep cultural connections with nature and sustainable water usage. Traditionally performed independently, these rites merged into the Wong Gunung Festival, fostering community unity and strengthening social cohesion and cultural identity. However, commercialization and festival integration risk diluting the ritual's original spiritual significance, creating tension between sacredness and cultural tourism. Beyond social aspects, the ritual actively supports water management, including protecting and cleaning springs, reflecting an inherited conservation ethic. This tradition illustrates indigenous wisdom as a resilient environmental strategy, yet faces challenges from modernization, necessitating a balanced approach to preserve its cultural and ecological roles.

Resilience of the Tradition in the Face of Modernization

The Banyu Panguripan tradition in Pulosari District exhibits remarkable resilience despite the pressures of modernization and infrastructure development, primarily due to the community's steadfast commitment to safeguarding its cultural heritage. As elucidated in interviews with Mr. Tamat, a key traditional leader, the ritual ceremonies associated with Banyu Panguripan continue to be observed regularly, though certain elements have been adapted to accommodate contemporary social realities. However, a notable challenge lies in the declining participation of younger generations, influenced by urbanization and shifts toward modern lifestyles. Nonetheless, ongoing conservation endeavors, which emphasize education and the incorporation of traditional values into everyday practices, strive to secure the tradition's longevity.

This endurance can be comprehended through cultural heritage and environmental conservation frameworks. The Banyu Panguripan tradition, transmitted across generations, encapsulates local customs deeply rooted in spiritual beliefs and ecological knowledge. Cultural heritage theory conceptualizes such practices as "living heritage," dynamically evolving in response to social transformations while retaining their foundational essence. Thus, although ritual forms and execution methods have changed, the core ethos concerning water conservation remains deeply ingrained within the community.

Conversely, modernization—characterized by infrastructural growth and urban expansion—poses significant threats to the tradition's sustainability. From the environmental conservation perspective, physical alterations brought about by development disrupt the ecosystems sustaining these cultural practices. Additionally, the commercialization of Banyu Panguripan through its integration into the Wong Gunung Festival generates economic opportunities via tourism but simultaneously risks eroding the ritual's spiritual and ecological import. Cultural heritage theory warns that commodification may detach communities from the intrinsic values that originally underpinned these traditions.

However, modernization also presents opportunities for cultural revitalization. By incorporating the ritual into a larger cultural festival, the tradition gains wider regional and national visibility, which aids in raising public awareness about water resource conservation—a central theme of the ritual. Environmental conservation theory identifies such traditions as vital localized mechanisms for sustainable natural resource governance. The festival framework also invites external stakeholders, including governmental agencies and environmental organizations, to collaborate in preserving the region's water sources.

Mr. Tamat emphasized that despite ritual adaptations, the Banyu Panguripan remains a profound expression of communal gratitude and hope for water abundance, underscoring that evolution of form does not equate to loss of sacred meaning. This aligns with cultural heritage theory's assertion that adaptive changes are necessary for traditions to maintain relevance over time.

Ecologically, the tradition's resilience is reflected in ongoing community efforts to protect natural water springs vital to Pulosari's livelihood. Environmental advocate Mr. Agus Sutanto highlights that the community's integration of cultural wisdom with ecological stewardship plays a crucial role in tackling current environmental challenges. Even amid modernization-induced lifestyle changes, the embedded values persist as guiding principles for sustainable water resource management.

The principal challenge lies in balancing adaptation with the preservation of the tradition's original spiritual and social significance. Cultural heritage theory suggests that safeguarding a tradition's sustainability necessitates protecting both its tangible forms and intangible meanings. Consequently, continued educational outreach to youth and collaborative initiatives involving local communities, governmental bodies, and conservation organizations are essential for the enduring vitality of Banyu Panguripan amid modern societal shifts.

The Role of Tradition in Environmental and Water Resource Conservation

The Banyu Panguripan tradition, observed by residents of Pulosari District in Pemalang Regency, Central Java, holds profound spiritual significance while simultaneously functioning as a vital local strategy for environmental stewardship, especially in the management of water resources. This tradition embodies a form of indigenous knowledge that has long been utilized to uphold ecological equilibrium, particularly in a region that frequently contends with water scarcity. The principles embedded within this custom guide the community in safeguarding and conserving spring water sources, which are essential to sustaining the local ecosystem and resonate closely with contemporary environmental conservation frameworks.

As a cultural heritage, Banyu Panguripan reflects the interdependent relationship between the community and their natural environment, with water regarded as a crucial element of daily life and well-being. According to environmental conservation theories, such forms of local wisdom are often recognized as inherently sustainable methods for ecosystem management. Beyond the ritualistic prayers for abundant water, the community actively participates in practices that physically protect water springs, including regular cleaning and maintenance efforts. This tradition illustrates how indigenous knowledge and practices are instrumental in fostering sustainable environmental management.

In practical terms, the tradition's conservation impact is observed in the diligent care the community exercises over the springs, which represent their primary water resource. Mr. Agus Sutanto, a prominent environmental advocate in Pulosari, highlighted that the springs are conscientiously preserved by community members, particularly in the lead-up to the annual ritual. Before the ceremony, villagers unite to clean and safeguard the spring environment, ensuring that the water remains uncontaminated. This preparation goes beyond mere ceremony; it is a powerful form of conservation passed down across generations, reinforcing community responsibility toward natural resources.

In addition to these custodial activities, the community adheres to informal guidelines regulating the use and distribution of water. Grounded in spiritual values intrinsic to Banyu Panguripan, there is a strong communal ethic against water wastage and over-extraction. From an ecological perspective, such stewardship is critical for the sustainable management of this indispensable resource. Thus, Banyu Panguripan functions as both a behavioral code and a regulatory mechanism for the prudent utilization of water, ensuring its availability for future generations.

The tradition also acts as an educational platform, imparting environmental values to younger community members. Mr. Tamat, another local leader, emphasized that involving youth in the ritual preparation and execution promotes early acquisition of conservation ethics and local environmental wisdom. This intergenerational transmission aligns well with environmental education principles, which advocate learning through community participation and practical engagement to foster a sustainable mindset.

Despite ongoing pressures from modernization and commercialization, the Banyu Panguripan tradition remains a fundamental framework for water conservation. Incorporated into the larger Wong Gunung Festival, this tradition attracts both public attention and tourism. The local community actively endeavors to safeguard the original spiritual and ecological values amid growing commercial activities. Although commercialization offers economic benefits, the community remains attentive to balancing tourism expansion with environmental protection, adhering to sustainability principles essential for natural resource management. Adaptations include integrating traditional practices with modern ecological measures, underscoring Banyu Panguripan's enduring role as both cultural heritage and an effective environmental stewardship tool.

IMPLICATION

The findings of this study imply that local traditions like Banyu Panguripan can serve as models for sustainable natural resource management, particularly in regions facing water crises and environmental degradation. The conservation values embedded in this tradition can be adapted to modern contexts, especially in water resource management policies. Governments and environmental organizations should recognize this tradition as an asset that not only preserves culture but also offers community-based solutions to environmental challenges. Cross-sectoral support and collaboration are essential to ensure the sustainability of this tradition.

LIMITATION AND FUTURE RESEARCH DIRECTIONS

While this research has successfully explored the role of the Banyu Panguripan tradition in environmental conservation, there are several limitations that need to be acknowledged. First, the study focuses on a specific geographical area, Pulosari District, meaning the results may not be fully applicable to broader contexts. Second, the social changes brought about by modernization may impact on the continuity of the tradition in the future, which has yet to be fully measured in this study. Therefore, further research is needed to explore how this tradition adapts to

changing times and to assess its potential application in other regions facing similar conservation challenges.

CONCLUSION

The Banyu Panguripan tradition in Pulosari District, Pemalang Regency, represents a vital contribution as a form of indigenous knowledge that intricately links cultural identity with environmental stewardship. This tradition functions not merely as a ritual but as a sophisticated system conserving water resources, integrating spiritual reverence with practical ecological management. Amid modernization and urban pressures, its resilience underscores the community's commitment to sustaining both cultural heritage and natural springs. Its significance lies in demonstrating how traditional practices can inform and enrich contemporary environmental conservation, ensuring sustainable development through the preservation of local wisdom and cultural continuity.

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INTERPRETING THE PHILOSOPHY AND CULTURAL MOTIFS OF THE BUKET ETHNIC IN SARAWAK AS SYMBOLIC EXPRESSIONS OF SOCIAL DEVELOPMENT

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EXTENDED ABSTRACT

Philosophy contributes significantly to social progress by cultivating critical thinking and deeper reflection on societal issues. At the same time, cultural motifs serve as visible expressions of a community's values, beliefs, and worldview. Both elements are central to reinforcing social unity, empowering marginalized groups, and safeguarding cultural heritage. Recognizing cultural values and practices as fundamental to development beyond their aesthetic appeal helps reveal their role in shaping collective attitudes and social relationships. Despite the richness of indigenous cultures, there is often a lack of structured contexts for interpreting and integrating indigenous philosophies and symbols into broader development initiatives. In the case of the Buket ethnic in Sarawak, Malaysia, their cultural knowledge and symbolic traditions risk marginalization due to limited documentation and declining intergenerational transmission. This study aims to interpret the indigenous philosophy and cultural motifs of the Buket ethnic as symbolic representations of social development. It seeks to highlight their relevance in contributing to sustainable and inclusive development practices. The research employs a qualitative approach, combining a literature review with fieldwork methods such as in-depth interviews with members of the Buket community and a case study focused on the Hudoq belief. These methods allow for the exploration of the group's belief systems and cultural practices. The findings reveal that the Buket community's cultural symbols and indigenous philosophies are deeply tied to their social values, environmental relationships, and identity. These elements are vital in promoting cultural continuity and community resilience. Furthermore, the study highlights the role of cultural diversity in shaping inclusive development models that are both sustainable and culturally grounded.

INTRODUCTION

Philosophy plays a crucial role in social progress by fostering critical thinking and reflection on values, ethics, and societal structures. Beyond theory, it guides ethical decision-making, governance, and social transformation, helping communities interpret norms, define justice, and address moral challenges (Tarman, 2023; Jalil et al., 2024). Philosophy nurtures critical consciousness promotes equality and dignity and provides an ethical foundation for inclusive social development (Macul, 2023). Concurrently, cultural motifs expressed through symbols, patterns, and art visually embody a community's beliefs, traditions, and worldview (Tugang et al., 2021). These motifs are not mere decoration but serve as vessels of collective memory, identity, and cultural continuity, especially vital for marginalized communities. Together, philosophy and cultural motifs sustain social cohesion and guide communities through change with ethical clarity. Recent discourse highlights the close, mutually reinforcing relationship between philosophy and cultural motifs. Philosophy offers abstract values and frameworks that shape cultural meaning, while motifs translate these ideas into tangible forms embedded in daily life (Abeysekara, 2022; Macul, 2023). This interplay allows ethical concepts to become culturally resonant, visually recognizable, and practically enacted. Cultural motifs thus preserve tradition and inspire reflection, adaptation, and innovation. This synergy is crucial for communities balancing heritage with social progress. Integrating indigenous philosophies and motifs into development strategies can foster more inclusive, sustainable, and resilient societies (UNESCO, 2020). Aligned, they provide a holistic model for social transformation that embraces identity, continuity, and change, making their interdependence vital for understanding cultural identity's role in social change.

This study focuses on the Buket ethnic in Sarawak, Malaysia, with the aim of interpreting how their indigenous philosophy and cultural motifs function as symbolic expressions of social development. By examining the community's traditional beliefs, values, and practices, the research examines how these cultural elements contribute to social transformation and community resilience. The findings indicate that incorporating indigenous worldviews and symbolic traditions into development strategies can promote sustainable and culturally sensitive growth. Such integration goes beyond addressing material needs; it underscores the significance of preserving cultural identity as a core component of development. Ultimately, the study recommended for a framework development that not only advances economic and social objectives but also upholds and strengthens the unique cultural heritage of local communities, ensuring inclusive and meaningful progress.

RESEARCH METHOD

This study employed a qualitative research method to explore the philosophical significance and cultural motifs of the Buket ethnic in Sarawak. A literature review established a theoretical foundation by examining indigenous epistemologies, symbolism, and socio-cultural development. Ethnographic fieldwork was conducted in selected Buket villages through semi-structured interviews and informal conversations with elders and local leaders, focusing on collecting oral histories and

interpretations of traditional motifs. A case study of the Hudoq tradition provided an in-depth analysis of cultural artifacts and practices, revealing how symbolism supports social cohesion, identity, and spiritual continuity. Thematic analysis of data identified key themes such as indigenous worldviews, ethical values, communal roles, and spiritual ties to nature.

RESULTS

Orang Ulu" refers to a collective of indigenous ethnic groups in northern Sarawak's interior, including the Kenyah, Kayan, Lahanan, Buket, and Penan. Traditionally living in riverbank longhouses, they sustain themselves through farming, fishing, and forest gathering, with rich oral traditions and spiritual ties to their ancestral lands. The Bakun Hydroelectric Dam, one of Southeast Asia's largest infrastructure projects, has profoundly impacted these communities. Before its construction, the Bakun area housed about 15 longhouses with over 9,400 people in 1,640 families. Figure 1 illustrates a traditional Orang Ulu village, highlighting their architectural heritage, cultural practices, and natural environment.

Figure 1: Previous Orang Ulu villages in the Bakun area

Source: Photo taken by the authors at a Buket ethnic longhouse in Sungai Asap (2024)

The construction of the Bakun HEP in the late 1990s and early 2000s led to the forced resettlement of nearly 10,000 indigenous people to the Sungai Asap Resettlement Scheme, located approximately 40 kilometers from the dam site. These relocated communities comprise various Orang Ulu groups, each with unique cultural identities and traditions that have been significantly affected by displacement.

Philosophical and Symbolic Motifs of the Buket Ethnic

The Buket ethnic is one of the Indigenous communities of Sarawak, residing in the remote interior regions of Borneo. Over the years, their population has declined significantly, and their native language classified within the Austronesian language family is now critically endangered. Historically, the Buket practiced a semi-nomadic lifestyle, residing in longhouses and relying on shifting cultivation, hunting, and forest gathering. Their livelihood and belief systems were closely integrated with the rainforest and river ecosystems that sustained them. Traditionally animist, the Buket revered natural spirits, ancestral forces, and the sacred landscapes of their homeland. These traditions continue to reflect their worldview, social values, and intergenerational wisdom. However, the Buket's cultural identity and traditions face growing threats from displacement, assimilation, and intermarriage. These pressures have led to an erosion of intangible cultural heritage, prompting increasing scholarly and community-based interest in its preservation and revitalization. Today, the Buket

primarily inhabit remote settlements within the Belaga district of central Sarawak. The nearest urban center, Bintulu, lies approximately 150 kilometers away and can only be reached via long and difficult journeys through rivers and undeveloped roads (Magiman et al., 2024).

The Buket philosophy reflects a holistic worldview that emphasizes harmony with nature, reverence for ancestors, and the importance of communal ties. Central to this worldview is the concept of interconnectedness between individuals, society, the environment, and the spiritual realm. This belief system reinforces the community's moral obligations to one another and their ethical responsibilities toward nature and future generations (Karim et al., 2018). The Buket believe in a world inhabited by ancestral spirits, nature spirits, and deities that influence daily life. This spiritual worldview shapes their rituals, conflict resolution practices, and general code of conduct, ensuring that actions align with the community's moral and cultural framework (Chin, 2020). As such, Buket practices emphasize cooperation, sustainability, and mutual respect within the community and with the natural world. Their animistic beliefs and ancestral guidance inform both their worldview and daily conduct, forming a cohesive system aimed at maintaining spiritual balance and community well-being.

Figure 2: The Buket ethnic attire

Source: Photo taken by the authors at a Buket ethnic longhouse in Sungai Asap (2024)

In the same way, the cultural motifs of the Buket ethnic serve as visual and symbolic manifestations of their philosophical worldview. Embedded in daily life, artistic practices, craftwork, and rituals, these motifs function as tangible expressions of the Buket's spiritual beliefs, moral values, and communal identity. Traditional art forms such as weaving, wood carving, and painting are infused with symbolic motifs that reflect cosmological beliefs, kinship systems, and spiritual concepts. For instance, specific patterns may represent the cycle of life, the interdependence of humans and nature, or the journey of ancestral spirits (see Figure 2). These motifs frequently incorporate geometric designs, animal figures, and botanical elements, each imbued with culturally specific meanings. A bird motif, for example, may symbolize freedom, spiritual elevation, or ancestral connection, while depictions of plants or animals often signify the Buket's reverence for nature and its sacred dimension. Together, the philosophical principles and symbolic motifs of the Buket form a cohesive cultural system that underpins their social structure, ritual life, and cultural continuity.

Hudoq Philosophy and the Cultural Beliefs of the Buket Ethnic

Hudoq, also referred to as Hudog, is a traditional thanksgiving festival observed by several Orang Ulu ethnic in Sarawak. Beyond its visually captivating performances, Hudoq functions as a symbol of protection, prosperity, and cultural continuity, embodying the spiritual beliefs and core values of these communities (see Figure 3). In the context of the Buket ethnic, the philosophy associated with Hudoq and their own spiritual beliefs are deeply interconnected, reflecting a worldview rooted in the interdependence of nature, agriculture, and all forms of life. Although the Buket do not perform the Hudoq ritual in the same ceremonial form as other Orang Ulu groups, their belief systems resonate with similar ecological and spiritual principles. Despite having distinct cultural expressions, the Buket share fundamental philosophical themes with the broader Hudoq tradition especially those related to spiritual ecology, ancestral reverence, and a deep, enduring relationship with the natural environment.

Figure 3: The Hudoq image
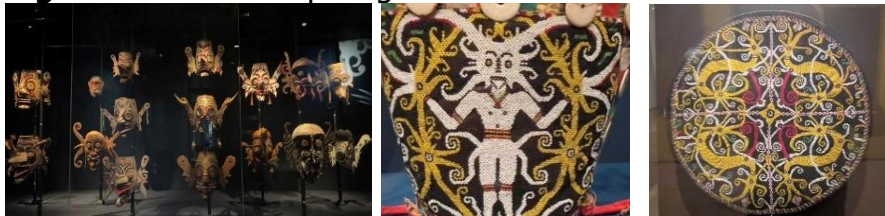
Source: Photo taken by the authors at the Borneo Cultures Museum, Kuching, Sarawak (2024)

Through rituals involving agricultural symbolism, mask-wearing, and ceremonial dance, the Buket express a worldview rooted in balance, reciprocity, and harmony with the environment. These practices are not merely performative but serve as vital expressions of spiritual beliefs and ethical values, emphasizing the interconnectedness of all living beings' humans, animals, plants, and spirits. Masks often represent ancestral or natural forces, while dances performed during agricultural cycles symbolize life's rhythms, invoking fertility, protection, and abundance. In this context, agriculture becomes more than subsistence it is a spiritual practice that connects the Buket to their land, ancestors, and communal responsibilities. In this context, Hudoq philosophy can be understood as part of a wider cultural logic that continues to shape how the Buket ethnic relate to the land, their community, and the spiritual realm. At the heart of this philosophy lie three foundational principles: 1) Interconnectedness with Nature - The Buket community holds a deep spiritual belief in the interconnectedness of humans, nature, and unseen spiritual forces a principle of spiritual ecology that permeates their daily lives and rituals. Symbols like the Hudoq masks reflect this worldview, embodying both benevolent and malevolent spirits and acknowledging nature's dual capacity to sustain and to threaten., 2) Nature as Sacred - For the Buket, the natural environment forests, rivers, and land is considered sacred, inhabited by spiritual entities that influence human life. Maintaining harmony with these forces requires ritual observance and deep respect. Agricultural ceremonies are performed to honor nature spirits, invoking blessings for fertility, protection, and the continued vitality of ecosystems, and 3) Balance and Reciprocity - Balance lies at the heart of Buket cosmology. Mirroring the mediating role of the Hudoq dance, Buket rituals aim to

sustain harmony between humans and the spiritual-natural world. This equilibrium is upheld through acts of reciprocity, where offerings and ceremonies express gratitude to spiritual beings in return for harvests, health, and protection.

The Hudoq motif embodies rich symbolic elements that express the Buket's deep interconnection with nature, ancestors, and the spiritual realm. Traditionally performed during agricultural festivals, the Hudoq masked dance seeks to ensure abundant harvests and ward off malevolent spirits, affirming a reciprocal relationship between humans, nature, and unseen forces. While the Buket may not perform the ritual exactly as other Orang Ulu groups, the core spiritual themes fertility, protection, and environmental stewardship remain deeply resonant. The Hudoq motif serves as a powerful conduit between the human and spiritual worlds, particularly 1) The Hudoq Dance - The Hudoq dance features performers wearing large, animalistic or mythical masks made from wood or bamboo, symbolizing ancestral spirits and nature deities. These masks embody spiritual forces believed to govern natural cycles like fertility, growth, and protection, 2) Sacrifices and Offerings - As part of the ritual, sacrifices and offerings such as rice, food, or small animals are made to honor and appease spiritual beings, expressing gratitude for past blessings and seeking continued prosperity, fertility, and protection, 3) Chanting and Prayers - The dance is accompanied by chanting and spoken invocations to ancestral and nature spirits, serving as spiritual communication that calls for divine intervention to ensure a fruitful harvest, protect communal health, and ward off harmful forces, and 4) Mask-Making as Sacred Craft - Crafting Hudoq masks is a sacred, ritualized process requiring artisans to combine technical skill with spiritual insight, as the mask is seen as a vessel for spiritual presence rather than just an artwork. The Hudoq ritual embodies the Buket philosophy of balance and reciprocity among humans, nature, and the spirit world, serving two key social functions that highlight its lasting significance, 1) Collective Unity: The Hudoq ritual fosters communal cohesion and shared responsibility, affirming the Buket community's interconnectedness with both spiritual forces and one another and 2) Ritual of Renewal: As a seasonal and spiritual rite, the Hudoq offers a sacred space for reflection, honoring ancestors, expressing gratitude for past harvests, and invoking blessings for ongoing prosperity, balance, and cultural vitality.

The Evolution of the Hudoq Cultural Motif

The Hudoq motif includes diverse forms such as Hudoq Sengiro, Hudoq Asok/Asu, Hudoq Pusung Tubak, and Hudoq Lino/Kelunan (Tugang et al., 2021), each embodying unique characters deeply rooted in the community's cosmology and rituals (see Figure 4). Hudoq motifs symbolize spiritual protection, ecological awareness, and collective identity, illustrating both the enduring cultural memory and creative adaptation of Buket traditions amid social and environmental change.

Figure 4: The Hudoq functions as symbolic and narrative figure

Source: Photo taken by the author at Buket ethnic longhouse in Sungai Asap (2024)

DISCUSSION

The Buket are known for their traditional lifestyle, linguistic distinctiveness, and increasingly endangered cultural heritage. Despite their small population and relative isolation, they have preserved a rich cultural system grounded in spiritual ecology, ancestral reverence, and communal harmony. Central to their way of life is a philosophical worldview that emphasizes balance with nature and respect for ancestral wisdom, expressed through symbolic motifs in art, crafts, and ritual objects. These motifs are not mere decorations but serve as carriers of ethical values, social norms, and environmental principles, reinforcing identity and continuity amid rapid change. The marginalization of Buket philosophy and symbolism highlights the need for culturally sensitive research and community-led revitalization efforts. Design-based approaches that honor indigenous knowledge are vital to preserving these traditions. The Hudoq motif exemplifies how traditional symbols can adapt while retaining cultural meaning, serving as a dynamic emblem of Buket resilience, identity, and ecological awareness.

IMPLICATIONS

Cultural diversity, particularly in the form of indigenous philosophies and symbolic traditions, offers valuable insights into alternative ways of understanding human nature relationships, social organization, and ethical responsibilities. By examining the case of the Buket ethnic, the research demonstrates that indigenous knowledge systems rooted in spiritual ecology, ancestral reverence, and reciprocity can serve as powerful tools for shaping development that is not only economically viable but also socially and culturally meaningful.

LIMITATION AND FUTURE RESEARCH DIRECTIONS

The study proposes three core components: 1) Documentation and Interpretation – Systematic recording, analysis, and interpretation of Buket beliefs, rituals, and symbolic motifs to safeguard intangible cultural heritage, 2) Community-Based Participation –Involvement of local stakeholders, and implementing cultural development initiatives, and 3) Application in Development Practice – Integration of

indigenous principles into practical strategies in education, environmental stewardship, cultural tourism, and design innovation.

CONCLUSION

The Buket ethnic group's worldview, philosophical, and cultural motifs emphasize community cohesion, ecological balance, and knowledge transmission, essential for sustainable development. Challenging dominant paradigms that marginalize indigenous perspectives, Buket traditions offer a holistic ethical framework rooted in the interdependence of society, nature, and the spiritual realm. Through rituals, storytelling, and material culture, their motifs convey ancestral wisdom and environmental ethics, reinforcing identity and empowering marginalized voices.

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TRADITION IN TRANSITION: THE TRANSFORMATION OF BUKET LONGHOUSE VERNACULAR ARCHITECTURE IN SARAWAK

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EXTENDED ABSTRACT

This paper explores the transformation of Buket longhouse architecture in Sarawak, examining how indigenous built environments respond to contemporary socio-economic, political, and cultural changes. Traditionally constructed using local materials and raised on stilts, Buket longhouses functioned as communal dwellings that embodied social cohesion, environmental adaptation, and cultural expression. Framed within Rapoport's theory of vernacular architecture—which underscores the relationship between culture, environment, and spatial form—this study analyses how modernisation, government resettlement initiatives, and shifting family structures are reshaping traditional housing models. Fieldwork and spatial mapping at two Buket longhouse sites reveal a spectrum of architectural responses: from hybrid forms retaining shared spaces like the *ruai*, to individual terrace houses and urban-style bungalows influenced by external planning standards. These transformations reflect not only practical adaptation to modern living but also deeper negotiations of identity, heritage, and community values. By tracing the continuity and change in architectural elements, this research contributes to wider interdisciplinary discussions on cultural resilience, vernacular heritage, and the evolving role of architecture in sustaining indigenous lifeways in a rapidly modernising context such as Sarawak.

INTRODUCTION

The Buket longhouse of Sarawak has undergone significant transformations over time, shaped by intricate social, cultural, and political dynamics. Central to understanding these changes is Rapoport's theory of vernacular architecture, which posits that built forms are not mere physical structures, but direct expressions of cultural values, social organization, and environmental adaptation (Rapoport, 1969). Within this theoretical framework, the evolution of the Buket longhouse becomes a

lens through which broader socio-cultural transitions are both mirrored and negotiated.

As modernization and external influences permeate indigenous communities, the longhouse's architectural shifts reflect more than just material changes, they signal evolving patterns of family life, communal interaction, and identity preservation. Rapoport's theory emphasizes that vernacular forms are deeply embedded in daily rituals, collective memory, and symbolic meaning. In the Buket context, these principles play out as traditional communal spaces adapt to new family structures, economic aspirations, and policy interventions, yet subtly retain core elements like shared spaces (*ruai*), spatial hierarchies, and sites for ritual practice.

This ongoing transformation illustrates a dynamic interplay: while architectural forms may adjust to suit contemporary needs or aspirations, they often do so by reinterpreting or maintaining key social and cultural functions (Lawrence, 1987). Thus, the Buket longhouse stands as both a product and a producer of socio-cultural transition, with Rapoport's theory elucidating how vernacular architecture acts as a medium for resilience, negotiation, and the perpetuation of communal identity amid change (Rapoport, 1969).

RESEARCH METHOD

Fieldwork was conducted in two Buket longhouses settlement in Sarawak, utilising a mixed-method approach. Spatial mapping and architectural documentation were employed to trace structural changes. Additionally, interviews with longhouse residents and local officials provided contextual insights into drivers of transformation, such as government housing policies and economic shifts.

Open-ended interviews were purposefully selected among tenants to capture a wide spectrum of personal experiences and perspectives. This qualitative method allowed participants to articulate, in their own words, how architectural changes have shaped aspects of their daily routines, social interactions, and sense of belonging. By providing space for tenants to reflect on and share their lived realities, the research uncovered nuanced impacts from shifts in communal practices to the adaptation of private and shared spaces, that might otherwise have remained invisible in more structured surveys. These interviews not only enriched the understanding of architectural transformation but also highlighted the resilience and agency of residents as they navigate evolving cultural landscapes.

RESULTS

The study revealed three architectural trajectories: (i) retention of traditional elements like the ruai in modified forms, (ii) transition to individual terrace housing while preserving some communal values, and (iii) adoption of urban-style bungalows. These outcomes illustrate the spectrum of vernacular adaptation, influenced by policy interventions and aspirational lifestyles.

In addition to Rapoport's framework, two other theoretical perspectives further enrich the analysis of Buket longhouse transformations. Firstly, Amos Rapoport's ideas find resonance in Paul Oliver's concept of "Shelter and Society," which emphasises that vernacular architecture is shaped by collective responses to environmental and socio-cultural pressures (Oliver, 2006), evolving fluidly with changing contexts. Oliver's theory underscores not only the practicality of built forms but also their embeddedness in daily life and cultural symbolism, paralleling the ways Buket communities repurpose architectural elements amid modernization. Secondly, Pierre Bourdieu's notion of "habitus" offers a lens for understanding how ingrained social practices and dispositions are reflected in spatial design and domestic arrangements (Bourdieu, 1977). As longhouse residents modify communal and private spaces, their choices reveal underlying cultural logics and adaptive strategies that reflect both persistent traditions and shifting aspirations. Together, these theories illuminate the layered processes through which indigenous architecture negotiates continuity and change, situating the Buket longhouse within a broader discourse on the dynamic relationship between people, culture, and space.

DISCUSSIONS

The transformation reflects complex negotiations between tradition and modernity. While architectural forms evolve, they often maintain core cultural principles such as communal identity. This suggests a deeper resilience embedded within vernacular frameworks. The continued symbolic relevance of certain elements—such as spatial hierarchy or ritual spaces—demonstrates this cultural anchoring.

To further illustrate these findings, consider a diagram mapping the spatial transitions within a typical Buket longhouse over three decades. The visual representation would reveal, for instance, the contraction of communal ruai (verandas) to accommodate private living rooms and bedrooms, the addition of external kitchens replacing traditional hearths, and the introduction of modular terraces reflecting individual family aspirations. Such adaptations, vividly rendered in the diagram, present clear evidence that much of the longhouse's spatial organization has shifted to suit the changing lifestyles, economic pursuits, and privacy needs of contemporary residents.

Figure 1. Cross-section of Tok Tuai's House Unit in a Buket Longhouse: This sectional diagram illustrates the spatial layout and functional zoning of a Tok Tuai's residential unit, combining traditional communal elements with modern adaptations. The design includes R (Ruai) – Communal veranda space; RTM (Ruang Tamu Keluarga) – Private family living room; BT (Bilek Tidur) – Elevated sleeping quarters; RM (Ruang Makan) – Dining space; D (Dapur) – Kitchen; BA (Bilek Air) – Toilet; RC (Ruang Cuci) – Washing area; and P (Pejabat Tok Tuai) – Administrative office of the Tok Tuai. The section reflects the integration of communal traditions with the functional needs of a contemporary indigenous leader's household.

R- Ruai (Communal Space) RTM- Ruang Tamu Keluarga (Living Room) BT - Bilek Tidur (Bed Room) RM - Ruang Makan (Dining Hall) D - Dapur (Kitchen) BA - Bilek Air (Toilet) RC - Ruang Cuci (Washing Area) P - Pejabat Tok Tuai (Tok Tuai's Office)
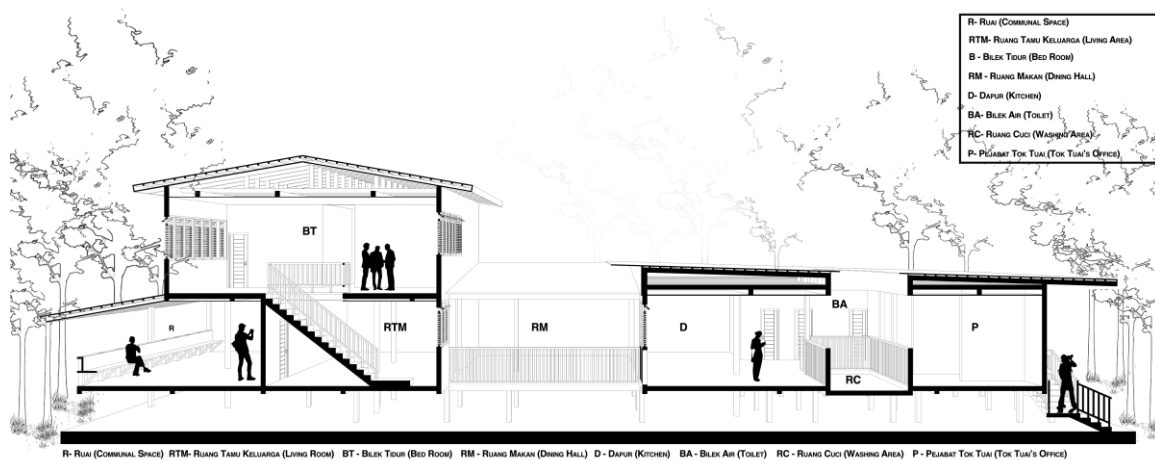
These spatial evolutions largely affirm Rapoport's and Oliver's theories: the architecture remains a direct response to cultural and environmental pressures and retains its role as a vessel of collective memory and habitus (Rapoport, 1969; Oliver, 2006) The essential communal spirit persists, albeit relocated or redefined within new architectural boundaries. However, the, increasing prevalence of private spaces and the adoption of urban forms also suggest an ongoing negotiation, and at times, a gentle tension between collective tradition and individual modernity. Thus, rather than outright disproving the theories, the evolving Buket longhouse offers a nuanced case: the adaptive changes provide robust support for the idea that vernacular architecture is both malleable and meaningful, its forms continually molded by the lived realities of its occupants while still anchored in shared cultural logics.

IMPLICATIONS

This research contributes to the discourse on indigenous architecture by highlighting the importance of cultural continuity amid modernization. Urban planners and policymakers can benefit from these findings by integrating vernacular values into contemporary housing solutions for indigenous communities. As new spatial needs such as private family rooms, modular terraces, and modern kitchens emerge within the evolving longhouse, they will inevitably shape the everyday lives of the Buket tribe. These adaptations may foster greater autonomy for individual households, shift the patterns of social interaction from shared to more intimate settings, and encourage economic diversification as homes are reconfigured to support home-based enterprises or accommodate new technologies. Over time, the introduction of

these spaces could influence generational relationships, alter communal responsibilities, and redefine how cultural traditions are practiced and transmitted, ultimately transforming both the social fabric and the economic prospects of the Buket people.

LIMITATION AND FUTURE RESEARCH DIRECTIONS

The Buket people, being a small and closely-knit community, traditionally established their longhouses deep within the jungle, particularly in areas now near the Bakun Dam. This unique geographical context, combined with their limited population size, means that existing longhouses remain secluded and relatively less accessible compared to larger settlements. While this study focused on two Buket longhouse communities, the findings may not fully encompass the breadth of spatial and cultural diversity present among different groups. To gain a more comprehensive understanding of how architectural evolution intertwines with sociocultural dynamics, future research should expand its scope both geographically and comparatively examining additional Buket settlements and drawing parallels with other indigenous communities. Such studies will be crucial to reveal the nuanced ways space, tradition, and identity continue to shape and be shaped by the lived realities of the Buket people.

CONCLUSION

The evolution of the Buket longhouse architecture exemplifies an adaptive continuum where tradition and modernity intersect in nuanced ways. Central to this transformation are three critical trajectories: first, the retention and modification of traditional elements such as the ruai, which continue to anchor communal identity even as their form and function evolve; second, the transition towards individual terrace housing, a shift that accommodates the growing desire for privacy and autonomy while still maintaining vestiges of shared cultural values; and third, the adoption of urban-style bungalows, reflecting aspirations towards modern lifestyles and external influences.

These distinct yet overlapping paths highlight the Buket community's capacity for resilience and creative adaptation. Rather than erasing their heritage, residents selectively integrate new spatial forms, balancing collective memory and contemporary needs. As a result, Buket longhouse architecture remains a living, evolving practice—one that accommodates changing socioeconomic realities, redefines the interface between private and communal life, and continues to express cultural identity in both enduring and innovative ways.

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ARTISTIC EXPRESSION OF CHINESE INK PAINTING: A CASE STUDY OF ZHANG YIMOU'S FILM SHADOW

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EXTENDED ABSTRACT

Chinese ink painting, a cornerstone of traditional Chinese art, is celebrated not only for its aesthetic elegance but also for its profound cultural and symbolic resonance. In recent years, filmmakers have explored ways to integrate this classical art form into modern cinematic storytelling. Despite its rich heritage, the application of ink painting in contemporary visual media remains underexplored, particularly in film. There is a need to understand how such integration can deepen artistic expression and enhance cultural representation. This study aims to investigate how traditional Chinese ink painting can be effectively incorporated into modern filmmaking, using Zhang Yimou's Shadow as a primary case study. A qualitative analysis of Shadow is conducted, focusing on visual style, thematic development, and symbolic use of ink painting techniques. The study draws from art theory, film analysis, and cultural aesthetics. The findings reveal that Zhang Yimou successfully fuses elements of ink painting such as monochromatic tones, brushstroke-like motion, and spatial composition into the film's cinematography. This integration enhances the film's emotional depth and reinforces a uniquely Chinese visual identity. The study recommends a conceptual framework for the interdisciplinary application of traditional ink painting in film, encouraging filmmakers and artists to explore new forms of cultural expression through this medium.

Introduction

Chinese ink painting has developed over millennia as a core expression of Chinese cultural identity. It gained prominence during the Tang Dynasty, emerging with a unique stylistic vocabulary that continues to influence Chinese aesthetics today (Xiaodong, 2019). A notable example is Wang Wei's Landscape of the Mountains and Water, which reflects the spiritual and poetic character of ink painting. According to Zou (2020), the simplicity of ink and brush techniques allows for profound literary and emotional expression, making it a powerful vehicle for conveying inner spiritual states. Moreover, ink painting often serves as a medium for transmitting traditional philosophies its brushwork embodies Confucian order, Daoist balance, and Buddhist transcendence (Bao, 2018). The art form emphasizes 'brush and ink as the

foundation of visual and emotional rhythm, with the goal of expressing the artist's feelings and capturing the "spirit" of a scene rather than its literal appearance.

Traditional Chinese ink painting is characterized by the exclusive use of ink and water, relying on subtle gradations of tone, texture, and line. Its ethereal quality and emphasis on "artistic conception" make it distinct from Western representational art. In Chinese aesthetic consciousness, the visual experience created by ink painting is multi-layered, emphasizing abstraction, emptiness, and suggestion. The aesthetic concept of "white space" intentionally left blank areas in the composition is a critical element, allowing the viewer's imagination to fill in the narrative and emotional content. Zhang Yimou's Shadow represents a deliberate and innovative application of ink painting principles in cinematic form. The film's visual identity is shaped by a limited black-and-white color palette, reminiscent of ink wash landscapes. This aesthetic is reflected not only in cinematography but also in costume design, architecture, lighting, and spatial composition. The film makes extensive use of "white space" through minimalist sets and framing, which evoke the contemplative and open-ended nature of traditional scroll paintings. Techniques such as "splash ink," layered brushstroke effects, and soft tonal transitions are translated into motion through lighting, shadow, and camera movement, resulting in a visual experience that is both painterly and cinematic.

The interplay between traditional Chinese and modern Western techniques in Shadow demonstrates a nuanced fusion of old and new. The film employs digital technology and choreographed action sequences while maintaining a visual style that is deeply rooted in Chinese heritage. Rather than simply imitating the aesthetic of ink painting, Zhang synthesizes it with narrative and symbolic elements, creating a cohesive work where form and content are inextricably linked. The ink painting-inspired visuals reinforce the film's central themes duality, identity, power, and control reflected in the use of mirrors, doubles, and the yin-yang symbolism throughout the story. Shadow is adapted from Zhu Sujin's novel The Three Kingdoms: The Killing of Jingzhou, itself based on the classical Chinese epic Romance of the Three Kingdoms. While the historical and geographic setting is rooted in ancient China, the film intentionally abstracts many of the novel's specific references. Zhang alters the names of characters and states to generalize the narrative and allow for broader symbolic interpretation. At its core, Shadow is a tale of doubles one man trained from childhood to serve as a secret replacement for a military commander. The psychological tension of dual identity, moral conflict, and the manipulation of the self becomes the film's primary focus. These themes are mirrored by the visual use of contrast light and shadow, black and white, real and illusion. Furthermore, the visual structure of the film incorporates quintessential elements of Chinese civilization, including calligraphy, yin-yang motifs, and Bagua diagrams, all of which carry deep philosophical significance. The ink painting style allows Zhang Yimou to visually represent concepts such as balance, emptiness, and spiritual transformation. "White space" is used not only as a compositional tool but also to construct a meditative atmosphere, inviting viewers to interpret the unspoken dimensions of the story. These techniques foster a uniquely Chinese visual experience, resonating with national cultural identity and artistic tradition.

Chinese ink painting, with its minimalist aesthetic, philosophical depth, and cultural symbolism, has long been regarded as one of the most profound and expressive forms of traditional Chinese art. Rooted in ancient cultural and spiritual traditions, this classical art form embodies key aesthetic principles drawn from Confucianism, Daoism, and Buddhism. In recent years, ink painting has transcended the boundaries of traditional visual art and found new avenues of expression within contemporary media particularly cinema. This study aims to explore the theoretical implications of integrating traditional Chinese ink painting into the cinematic medium. By identifying and analyzing the aesthetic and symbolic elements derived from ink painting in Shadow, the research provides deeper insight into how classical art can inform and enrich public aesthetic consciousness. It further explores how such integration supports the transmission of Chinese cultural values through modern visual storytelling. Ultimately, this paper proposes a conceptual model for the intersection of ink painting and film, offering a foundation for future interdisciplinary exploration in art, design, and media.

METHODS

This research employs a multidisciplinary qualitative approach to explore the artistic and cultural significance of Chinese ink painting as interpreted through the visual language of film, focusing on Zhang Yimou's Shadow (2018) as a central case study. Recognized for its striking monochrome palette and stylized compositions, Shadow serves as a compelling example of how traditional Chinese ink painting's visual and philosophical principles can be translated into contemporary cinematic expression.

The study involves a detailed visual analysis of Shadow, examining its use of color, composition, lighting, and symbolism to uncover the ways in which the film mirrors the aesthetic harmony, duality, and fluidity characteristic of classical ink painting. By closely analyzing key scenes and sequences, the research highlights how the film's black, white, and gray tonalities evoke the dynamic brushstrokes and tonal variations of ink wash landscapes, thereby creating a cinematic space that resonates with traditional artistic sensibilities. Complementing the film analysis, this study incorporates an examination of the documentary Zhang Yimou and His Shadow to gain insights into the director's creative process and his intentional fusion of oriental aesthetics with modern filmmaking techniques. This provides a contextual understanding of the cultural and philosophical underpinnings that inform the film's visual style (see Figure 1).

Figure 1: Tills of "Shadow"

Source by authors

From the perspective of traditional Chinese ink art communication, this research proposes a conceptual framework for innovatively combining ink painting characteristics with contemporary cinematic vision. It also investigates how ink art's transformation in the context of modern media reflects broader cultural shifts and the evolving dialogue between classical art forms and new artistic expressions.

By synthesizing film studies, art history, and cultural theory, this study aims to contribute to the discourse on the intersection of classical Chinese aesthetics and contemporary visual culture, offering new perspectives on the role of ink painting in modern cinematic storytelling.

RESULTS

The stylistic analysis reveals that the overall visual tone of Shadow is profoundly influenced by Zhang Yimou's distinctive aesthetic vision, marking a notable departure from his previous use of vibrant, solid colors. The adoption of black, white, and gray tones represents a significant breakthrough in his directing career, aligning closely with the visual language of traditional Chinese ink painting. Zhang Yimou, widely recognized as one of China's foremost directors, intentionally embraced a monochromatic palette to evoke the subtlety and fluidity characteristic of ink wash art. Prior to filming, he articulated this vision during a seminar, emphasizing that the film's tone should reflect the style of Chinese painting and adopt a black-and-white rendering. Importantly, Shadow is not a conventional black-and-white film; instead, it employs low-saturation color processing to mute the colors throughout the film. This nuanced approach maintains a delicate balance between monochrome aesthetics and the presence of subdued color, enhancing the cinematic experience while preserving the symbolic and philosophical depth inherent in traditional Chinese artistic traditions. This result underscores Zhang Yimou's innovative fusion of classical art forms with contemporary filmmaking, reaffirming his role as a pioneering figure in modern Chinese cinema.

Combination of Virtual and Real

Light and shadow form the very soul of Shadow, shaping its unique visual language. The film adopts a painterly approach to its imagery, crafting an overall, gray-toned composition that stands in stark contrast to typical films characterized by bold, saturated colors. Much of the lighting originates from outside windows, casting shafts of light into dim interiors, thereby creating a striking interplay between black and white. This naturalistic use of lighting eschews special effects, relying instead on contrast and shadow to convey mood and meaning. This technique echoes the central aesthetic principles of traditional Chinese painting, where the fusion of "reality and virtuality" is paramount. In this context, "virtual" refers to sparse brushstrokes, light touches, or blank spaces that invite imagination, while "reality" denotes the full, detailed elements within the artwork. This balance resonates with the philosophy of modern painter Qi Baishi, who advocated for an art that exists "between similarity and dissimilarity" a core principle of Chinese artistic conception.

The film opens in a rain-soaked countryside, where rain symbolically embodies femininity. In a poignant scene, the character Xiao Ai likens a woman's body shape

to a Pei umbrella, which she wields to counter Yang Cang's sword in the climactic battle. This imagery evokes the concept of "soft overcoming steel," highlighting how delicate strength triumphs over brute force and symbolically enabling the Mirror State's victory. Moreover, the film intensifies the interplay between "virtual" and "real" through its nuanced gradations of black, white, and gray. This ladder-like tonal relationship deepens the ink painting effect and amplifies the tension between the tangible and the intangible. The portrayal of the shadow character the mirror state is rendered with a cloudy, unrefined black ink texture, neither too thick nor watery, embodying roughness and casualness. Despite attempts at disguise, the double fate of this character remains inescapable. The film's ethereal conclusion unfolds within a liminal black-and-white space where truth and illusion emerge indistinguishably, reinforcing the thematic duality and philosophical depth central to both the film and the tradition of Chinese ink painting.

Combination of Yin and Yang

Throughout his career, director Zhang Yimou has been a vigorous advocate for the global promotion of traditional Chinese culture, skillfully weaving cultural elements into the fabric of his films. In Shadow, this commitment is manifested through the advanced and multidimensional application of ink painting aesthetics at the visual level. The stark contrast of black and white in the film represents two extremes and serves not merely as decorative motifs but as crucial narrative signals that drive the story's development. Zhang Yimou's mastery of color language is well established in his earlier works. Films such as Raise the Red Lantern, Red Sorghum, and Hero are remembered for their evocative use of rich colors red lanterns, golden sorghum fields, and vibrant autumnal hues that resonate deeply with audiences. American director Steven Spielberg famously remarked, "Although I can't understand Chinese, I can understand Hero because of the color of the film." However, with Shadow, Zhang Yimou boldly diverges from the vibrant palettes of his past works, abandoning high-saturation and high-contrast tones in favor of a refined black-and-white ink style. This ink painting approach strips the film of rich colors and even many intricate details, reducing its visual language to fundamental points, lines, and planes. The interplay between black and white reflects the ancient Chinese aesthetic of Yin and Yang, symbolizing the dynamic balance and unity of opposites. The film draws on philosophical concepts such as Tai Chi and the Eight Diagrams (Bagua) to interpret the essence of all things, embedding these ideas deeply within its visual and narrative structure.

Figure 2: Tills of "Shadow" 2

Source by authors

According to Figure 2, at the character level, the conflict between Yang Cang and Zi Yu vividly embodies the Yin-Yang philosophy. Yang Cang symbolizes fire, while Zi Yu represents water two elemental forces traditionally seen as incompatible within Chinese cosmology. This opposition reflects the core principles of Yin and Yang and the Bagua, highlighting the dynamic unity and tension between contrasting forces. Through this distinctive Yin-Yang aesthetic, Shadow delivers a profound expression of Eastern beauty and philosophical depth, thereby enriching the film's cultural significance and narrative complexity.

Clothing and Landscape Created by Ink Painting Style

Director Zhang Yimou's pursuit of Oriental aesthetics is characterized by exceptionally rigorous standards, evident not only in the film's overall composition but also in the meticulous design of each actor's costume, which harmonizes seamlessly with the ink painting elements (see Figure 3). Having begun his career as a photographer, Zhang brings an acute sensitivity to visual detail and composition to his filmmaking. This meticulousness invites viewers to become fully immersed in the film's monochromatic world. From the ink-inspired costumes of the characters to the carefully arranged spatial elements such as furnishings, screens, and bamboo groves the entire film unfolds like a living, flowing ink painting, embodying the essence of traditional Chinese artistry in motion.

Figure 3: Tills of "Shadow" 3

Source by authors

The Rhythm of Ink Painting and The Expression of Empathy in Clothing

In the costume design of each character, ink elements are carefully employed to reflect their distinct personalities and the duality of Yin and Yang present throughout the film. This duality is expressed on two levels, with men's and women's costumes differentiated through subtle details. The ink tones are blended with water to create a delicate dyeing effect thick, dark ink symbolizes the strength and power of the male characters, while light gray, softly diffused hues represent the gentleness of the female characters. Moreover, each character embodies a balance of light and dark, black and white aspects, underscoring the film's exploration of duality and the complex interplay between opposing forces.

Figure 4: tills of "Shadow" 4

Source by authors

The design of each actor's costume in Shadow is meticulously crafted through the manipulation of ink dissolved in water, reflecting the characters' personalities and narrative roles. Among the two prominent female characters, Xiao Ai is depicted as thoughtful and gentle. Married to Zi Yu and caretaker of his terminally ill husband, her costume embodies softness and subtlety. Xiao Ai's dress features stitched fabric at the waist, accentuating a slender silhouette and incorporates abundant "white space." The white fabric is lightly dotted with faint ink stains, flowing like running water, while the hem is adorned with darker floral patterns. This interplay of virtual and real light ink drops in clear water visually emphasizes her delicate and compassionate nature, symbolizing the feminine essence she represents.

In contrast, Qingping, the princess of Peiguo, exudes strength and rebellion, presenting a sharp foil to Xiao Ai. Her attire leans towards a more masculine aesthetic, with narrower cuffs and ink spreading from the waist in the style of a landscape painting. This design choice highlights her fierce and resolute character. Male costumes predominantly feature dark ink tones and muted grays, aligning with the film's monochrome palette and thematic depth. The emperor of Pei, a masked figure, wears a striking white gown with calligraphic characters scattered across its surface. The back of his robe is dyed with thick, ink-like markings forming a grimacing face, symbolizing his duplicitous nature outwardly indifferent and careless, yet secretly scheming to usurp the great governor's power. This costume design powerfully conveys the emperor's dual identity, underscoring the film's pervasive themes of appearance versus reality.

Ink Visual Rendering of The Building

Although the film's visual style may initially appear to employ a relatively singular ink aesthetic, it in fact possesses rich, multi-layered depth. The imagery of mountains piled high, the atmosphere thick with mist, and the persistent drizzle are all evocatively rendered through the careful use of thick ink droplets. Within the Emperor of Pei's palace, eye-catching screens decorate the darkened space, with the Ode to Taiping calligraphy adding a solemn and ceremonial tone to the environment. Zi Yu's secret room, shrouded in deep blackness, alongside the sparse arena and modest bed, visually symbolize his isolated and covert existence.

The film's color transitions fluidly between black and white through varying shades of gray, creating a pervasive tension within these "gray areas" that symbolize danger and uncertainty. The contrast between gray tones, the clarity of water-like ink washes, and the density of thick ink strokes intensifies the film's visual impact. To cultivate a distinctly Chinese aesthetic, director Zhang Yimou extensively incorporates traditional ink painting techniques into the scenery and mise-en-scène. From start to finish, Shadow unfolds like a flowing ink painting, with layers of ink wash that mirror the narrative's emotional rises and falls. The gradual unveiling of the plot resembles the dispersal of fog, revealing deeper thematic layers step by step, immersing the audience in an atmosphere rich with cultural symbolism and visual poetry.

"White Space" in Ink Painting Art

As a leading figure in Chinese cinema, director Zhang Yimou is renowned for the distinctive and powerful use of color in his films. In Curse of the Golden Flower, for example, characters are adorned in golden costumes and headdresses, with warm palace tones contrasting vividly against bright red carpets. Similarly, Raise the Red Lantern uses the stark contrast between the glowing red lanterns and somber black surroundings to create a heavy, oppressive atmosphere. However, Shadow marks a significant departure from Zhang's typically saturated palettes, opting instead for a restrained black, white, and gray scheme that evokes the traditional "white space" central to Taoist aesthetics (see Figure 5).

Figure 5: Tills of "Shadow" 5

Source by authors

In traditional Chinese art, "white space" (or negative space) is a crucial theoretical concept. The artistic conception and emotional resonance of ink painting emerge not only from brushstrokes and ink intensity but also from the imaginative potential of the blank spaces left untouched. Set against the historical backdrop of the Three Kingdoms, Shadow grants Zhang Yimou ample creative freedom to craft an "ink world." The film begins and ends with Xiao Ai gazing secretly through a window, framing a story that exists outside linear time and space. Visually, the outer landscapes employ a delicate gradation: characters' black armor contrasts with

lighter gray lakes and distant mountains that fade into white voids, emphasizing spatial depth and narrative progression.

Crucially, each shot in Shadow drives the story forward while intentionally preserving white space, inviting the audience's imagination to fill in the gaps. This use of white space sparks infinite reflection, echoing the Tai Chi pattern that runs throughout the film, symbolizing the interplay of emptiness and substance, Yin and Yang, black and white. The narrative itself navigates between truth and falsehood, a tension embodied by the character Qingping, who questions, "So what is true?" The film suggests that truth and illusion are often indistinguishable, with the consuming black abyss symbolizing the inner turmoil of the characters moments of white light offering rare but critical reversals.

DISCUSSION

Shadow invites viewers into an immersive "ink world" where visual artistry and philosophical inquiry intersect. The film transcends mere stylistic experimentation to become a profound meditation on human nature. At its core, Shadow presents characters who resist binary moral categorization; none are entirely good or evil. This moral ambiguity is visually echoed in the swirling interplay of thick ink and water, a metaphor for the duality and complexity of the human psyche. Zhang Yimou's cinematography reinforces this theme through his masterful use of light and shadow not only to sculpt the atmosphere but to reveal hidden layers of identity and truth. For instance, the moment when a shaft of light penetrates the cave to illuminate Zi Yu's face metaphorically exposes his inner self, while the strategic use of candlelight in interior settings adds psychological depth and emotional nuance to the characters.

Zhang Yimou's broader artistic vision reveals a longstanding dedication to the preservation and reinterpretation of Chinese intangible cultural heritage. His integration of traditional art forms including Beijing Opera, shadow puppetry, and large-scale national spectacles such as the 2008 Beijing Olympics opening ceremony illustrates a consistent commitment to cultural transmission. Shadow continues this legacy by weaving classical elements such as ink painting, calligraphy, guqin music, weiqi (Go), and the tea ceremony into its narrative and mise-en-scène. These cultural motifs not only enrich the film's authenticity but also lend it thematic density rooted in historical memory. Ultimately, the significance of Shadow lies not only in its aesthetic innovation but also in its cultural mission. The film functions as a cinematic vessel through which traditional Chinese artistic values are preserved, reimagined, and shared with a global audience. As Zhang Yimou himself stated, "When you see them, you will go back to a long history to review your own life." In this sense, Shadow serves as both a bridge to China's cultural past and a reflective mirror for viewers to contemplate the enduring complexities of identity, morality, and human nature.

IMPLICATION

The analysis of Shadow implies that film can serve as a powerful medium not only for storytelling but also for the preservation and reinterpretation of cultural heritage. Zhang Yimou's deliberate integration of traditional Chinese aesthetics particularly ink painting, calligraphy, and the philosophical concepts of Yin and Yang demonstrates that classical art forms can be revitalized through contemporary cinematic expression. These fusion challenges the perceived boundaries between ancient and modern art, suggesting that cultural traditions are not static relics but living, evolving forces that can speak to modern audiences.

Moreover, the film's use of visual language to explore moral ambiguity and human complexity implies that aesthetics can be deeply intertwined with ethical and philosophical inquiry. The absence of clear heroes or villains, conveyed through the metaphor of ink blending with water, prompts viewers to question simplistic notions of good and evil. This suggests that traditional Eastern philosophies, such as Taoism, can offer profound insights into contemporary human struggles and inner conflict. Finally, on a broader cultural level, the film implies a form of soft power using cinema to promote Chinese culture on the world stage. Zhang Yimou's body of work, and Shadow in particular, demonstrate how traditional cultural symbols can be made relevant in global discourse, encouraging cross-cultural understanding and appreciation.

LIMITATION AND FUTURE RESEARCH DIRECTION

While this study offers a detailed exploration of the artistic and cultural significance of Zhang Yimou's Shadow through the lens of traditional Chinese ink painting aesthetics, several limitations should be acknowledged.

First, the analysis primarily focuses on the visual and symbolic elements of the film, which, although rich and central, represent only one dimension of cinematic language. Other aspects such as sound design, editing, and narrative structure especially in relation to cultural interpretation have not been explored in depth. A more holistic analysis incorporating these components could yield a fuller understanding of how traditional aesthetics influence the entire cinematic experience.

Second, the study emphasizes a single film as a case study, which limits the generalizability of the findings. While Shadow is a unique and exemplary case, future research could benefit from a comparative approach, examining how other directors both within and outside of China engage with traditional art forms in contemporary cinema. Such cross-cultural or cross-film analyses could uncover broader patterns or distinct approaches to the fusion of heritage and modernity.

Third, the interpretation of symbolic elements and visual metaphors is inherently subjective and may vary across audiences with different cultural backgrounds. Future research could incorporate audience reception studies to better understand how viewers from diverse cultural and linguistic contexts perceive and interpret the ink painting aesthetic and traditional symbols presented in the film.

Finally, the study touches on the philosophical dimensions of Taoism and Yin-Yang theory but does not fully engage with their theoretical frameworks. Future research could integrate philosophical, semiotic, or psychoanalytic theories more rigorously to deepen the interpretation of visual symbolism and narrative duality in Shadow and similar works.

In conclusion, further interdisciplinary research bridging film studies, cultural theory, philosophy, and audience analysis could enrich and expand the understanding of how traditional Chinese aesthetics are reimagined through the cinematic medium in the global cultural context.

CONCLUSION

Chinese traditional ink art should not only be preserved and innovated but must also retain the distinctive stylistic qualities that define its heritage. Zhang Yimou's Shadow serves as a compelling case study in how traditional aesthetics can be meaningfully reinterpreted within the medium of modern film. Through its monochromatic palette, philosophical symbolism, and minimalist composition, Shadow exemplifies a unique fusion of classical ink painting with cinematic storytelling, contributing significantly to the evolution of modern Chinese visual culture. The film's embodiment of "Oriental feminine aesthetics" becomes a core expression of its stylistic identity, offering a fresh and introspective lens through which to view both gender and beauty within Chinese cultural frameworks. Moreover, the process by which a film resonates with audiences moving from surface appreciation to deep aesthetic fulfillment depends on the work's capacity to convey original meaning. In Shadow, Zhang Yimou achieves this through the interplay between visual composition, emotional depth, and narrative ambiguity. The open-ended conclusion, beginning and ending with Xiao Ai opening the window in fear, leaves a powerful impression of uncertainty and poetic "white space," a central tenet of Chinese aesthetic philosophy.

Ultimately, Shadow stands as a milestone in the cinematic application of ink art, where the symbolic use of ink becomes not only visual but also philosophical and narrative. Its success underscores a broader argument: the future of contemporary Chinese art is deeply rooted in the solid foundation of traditional culture. Rather than being a constraint, tradition becomes a source of creative regeneration, offering new pathways for expression in an era of artistic diversification. The integration of ink aesthetics in Shadow demonstrates that traditional art is not a relic of the past but a living, evolving language capable of shaping the future of visual storytelling.

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WHAT KEEPS GEN Z COMING BACK? EXPLORING DETERMINANTS OF CONTINUED USE OF BNPL SERVICES IN SARAWAK

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Keywords: ECM; Gen Z; Perceived Trust; Sarawak; UTAUT

EXTENDED ABSTRACT

INTRODUCTION

The rise of financial technology (fintech) has significantly transformed how people manage their finances, changing the way they make payments, handle transactions, and access credit. One of the key innovations in this space is the Buy Now Pay Later (BNPL) service, which has become a major player in the digital payment landscape. In 2022, BNPL users in Malaysia surpassed five million, an increase of about one million from the year before (Siddharta, 2024). Yu et al. (2024) project that the BNPL market in Malaysia will continue to grow at an annual rate of 12.9% from 2023 to 2028. Leading the market are international providers such as Atome, myIOU, hoolah, Grab's PayLater, and Shopee's SPayLater (Aji et al., 2023). In Sarawak, the state government's launch of the Sarawak Digital Economy (SDE) initiative aims to support its vision of becoming a high-income and developed state by 2030 (Ahmad et al., 2020). Sarawak's strong push towards digitalization has created a supportive environment for the growth and sustainability of BNPL services.

This study examines the factors that influence Generation Z (Gen Z) consumers in Sarawak to continue using BNPL services. This focus is timely as BNPL usage is rapidly increasing across Malaysia (Wong et al., 2025). While past research has mostly focused on why people initially adopt BNPL and other fintech solutions (Abed and Alkadi, 2024; Cheng and Huo, 2025), there is limited research on what encourages long-term usage, particularly among Gen Z in developing regions like Sarawak. Additionally, few studies have combined the Expectation Confirmation Model (ECM) with the Unified Theory of Acceptance and Use of Technology (UTAUT) to explain continued use, especially among digitally-savvy youth in a fast-developing digital landscape. Addressing these research gaps is important to understand both what attracts users to BNPL services and what keeps them engaged over time.

RESEARCH METHOD

This study used a quantitative cross-sectional survey to explore factors influencing Gen Z's continued use of BNPL services in Sarawak. Quantitative research collects numerical data to find patterns, while cross-sectional studies look at data from one point in time to understand continued BNPL usage. The study focused on Sarawak, the largest state in Malaysia (Ching et al., 2020), covering five main areas with the biggest populations: Kuching, Miri, Sibu, Bintulu, and Samarahan. These areas have growing digital access, making BNPL services popular among young people. The participants were Gen Z individuals living in Sarawak who had used BNPL services at least once. A purposive sampling method was used to select respondents meeting these criteria. The minimum sample size was set at 160, calculated using G*power software. The final number of respondents was 210.

Data was collected using a structured questionnaire with sections on demographics and constructs. Responses were measured on a 5-point Likert scale from strongly disagree to strongly agree. The online survey was shared through university emails, social media, and QR codes on digital posters. Data analysis was done using SmartPLS 4 software with Partial Least Squares Structural Equation Modeling (PLS-SEM), which handles complex models well. The study first checked that the survey items were reliable and valid, then tested the relationships between factors using bootstrapping with 10,000 resamples as recommended by Streukens and Leroi-Werelds (2016). Figure 1 below shows the conceptual framework of the study.

Figure 1: Conceptual Framework of the Study
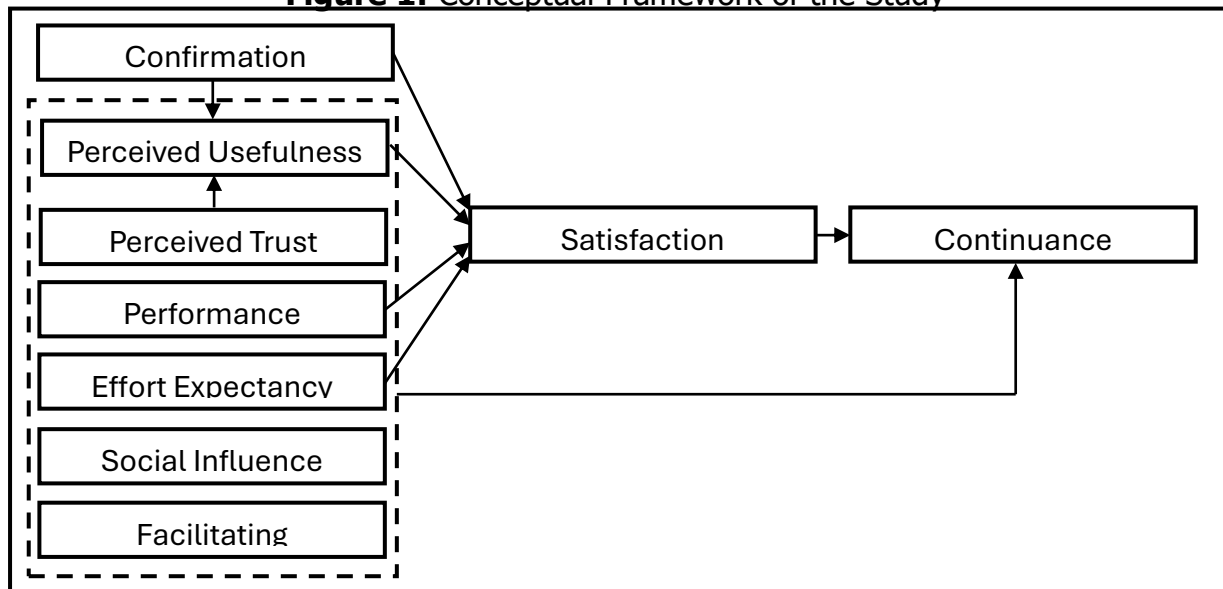
RESULTS

Measurement Data Assessment

Common method bias (CMB) was checked using the variance inflation factor (VIF) since measuring both independent and dependent variables in the same way can

cause bias. All VIF values ranged from 1.000 to 3.318, which is below the limit of 3.3 (Kock, 2015). This shows that CMB was not a big problem in this study. Next, the reliability of the study was checked using Cronbach's alpha and composite reliability (CR), where values above 0.7 are considered good (Ali et al., 2018). All constructs in this study met these standards. Next, convergent validity was checked using average variance extracted (AVE), where values above 0.5 are acceptable (Fornell & Larcker, 1981). All constructs had AVE above 0.5, confirming good convergent validity. In addition, discriminant validity was tested using the Fornell-Larcker criterion and the Heterotrait-Monotrait ratio (HTMT). The Fornell-Larcker test showed that each construct's AVE square root was higher than its correlation with other constructs. HTMT values were below 0.85, both confirming good discriminant validity. Table 1 shows the results of the measurement model assessment of the study.

Table 1: Results of Measurement Model Assessment

	Indicator	Loadings	Cronbach's alpha	CR	AVE
CE	CE1	0.970	0.931	0.956	0.880
	CE2	0.874			
	CE3	0.966			
PU	PU1	0.931	0.958	0.967	0.855
	PU2	0.936			
	PU3	0.916			
	PU4	0.936			
	PU5	0.903			
PE	PE1	0.960	0.983	0.986	0.935
	PE2	0.963			
	PE3	0.972			
	PE4	0.975			
	PE5	0.964			
EE	EE1	0.959	0.973	0.980	0.924
	EE2	0.963			
	EE3	0.969			
	EE4	0.955			
SI	SI1	0.930	0.931	0.951	0.829
	SI2	0.905			
	SI3	0.902			
	SI4	0.905			
FC	FC1	0.932	0.943	0.959	0.854
	FC2	0.938			
	FC3	0.931			
	FC4	0.896			
PT	PT1	0.927	0.885	0.929	0.813
	PT2	0.916			
	PT3	0.861			
SA	SA1	0.876	0.879	0.916	0.731

	SA2	0.876			
	SA3	0.854			
	SA4	0.813			
CI	CI1	0.885	0.868	0.908	0.711
	CI2	0.885			
	CI3	0.807			
	CI4	0.792			

Note(s): Confirmation expectation, CE; perceived usefulness, PU; performance expectancy, PE; effort expectancy, EE; social influence, SI; facilitating conditions, FC; perceived trust, PT; satisfaction, SA; continuance intention, CI

Structural Data Assessment

After testing the measurement model, the structural model was analyzed to check the proposed relationships between factors. Using bootstrapping with 10,000 resamples, the strength and significance of these relationships were measured. Eight hypotheses namely H1 (CE -> SA), H2 (CE -> PU), H5 (PE -> SA), H6 (PE -> CI), H7 (EE -> SA), H8 (EE -> CI), H11 (PT -> PU), and H13 (SA -> CI) were supported, showing significant links between variables, while five were not supported. The hypotheses H3 (PU -> SA), H4 (PU -> CI), H9 (SI -> CI), H10 (FC -> CI), and H12 (PT -> CI) were not supported. Table 2 shows the detailed results.

Table 2: Results of Hypothesis Testing

	H	β	T statistics	P values	Decision
CE -> SA	H1	0.119	2.335	0.020	Support
CE -> PU	H2	-0.131	2.023	0.043	Support
PU -> SA	H3	0.082	1.766	0.077	Not Supported
PU -> CI	H4	-0.028	0.619	0.536	Not Supported
PE -> SA	H5	0.609	8.040	0.000	Support
PE -> CI	H6	0.173	3.055	0.002	Support
EE -> SA	H7	0.209	2.429	0.015	Support
EE -> CI	H8	0.319	5.376	0.000	Support
SI -> CI	H9	0.002	0.052	0.959	Not Supported
FC -> CI	H10	0.071	1.885	0.060	Not Supported
PT -> PU	H11	0.579	10.714	0.000	Support
PT -> CI	H12	0.001	0.027	0.978	Not Supported
SA -> CI	H13	0.486	7.826	0.000	Support

DISCUSSIONS

Confirmation expectation (CE) was found to significantly increase satisfaction, indicating that when the expectations of Gen Z users are met, they feel more satisfied with the BNPL service. This finding aligns with the results reported by Septyanto et al. (2023). Interestingly, CE showed a small negative effect on perceived usefulness (PU), suggesting that when expectations are overly confirmed, users may begin to reevaluate the service as less beneficial than initially perceived. This paradoxical relationship is supported by Nguyen et al. (2024), highlighting the importance for BNPL providers to manage user expectations carefully to prevent potential disillusionment.

Surprisingly, perceived usefulness (PU) did not have a significant impact on satisfaction (SA) or the intention to continue using the service (CI). This supports findings by Kee et al. (2024) and Savitha et al. (2022), which similarly reported no significant link between PU and SA. Additionally, Budiman et al. (2023) found no significant relationship between PU and CI. These results suggest that Gen Z users may consider usefulness as a baseline requirement, rather than a key determinant of satisfaction or continued use.

In contrast, performance expectancy (PE) had a strong positive effect on both satisfaction and continued usage intention. This underscores that Gen Z is more inclined to stay engaged with BNPL services when they believe these tools enhance their financial management and purchasing power. The significant influence of PE on satisfaction and continuance is supported by Bakri et al. (2023) and Abed and Alkadi (2024).

Effort expectancy (EE) also showed significant positive relationships with both satisfaction and intention to continue using the service. This indicates that simple, intuitive, and user-friendly systems encourage Gen Z users to remain satisfied and engaged. These findings are consistent with those reported by Lalhmingthangi and Lalengkima (2025), as well as Abed and Alkadi (2024), who found that ease of use positively influences continued usage.

On the other hand, social influence (SI) and facilitating conditions (FC) did not significantly impact continuance intention. This reflects Gen Z's self-reliance and confidence in managing digital financial tools without heavy dependence on peer opinions or external support. Similar conclusions were drawn by Bakri et al. (2023) regarding the non-significant influence of SI on CI, and by Abed and Alkadi (2024) concerning FC.

Perceived trust (PT) positively influenced perceived usefulness, indicating that trust in the system's reliability and security enhances users' perception of its utility. However, PT did not directly impact continued usage. This suggests that while trust is essential, it must be accompanied by a satisfying user experience to drive long-term engagement. This result is consistent with the findings of Jagadhita and Tjhin (2023), who confirmed the significant relationship between PT and PU, and Nguyen et al. (2024), who found no direct effect of PT on CI.

Finally, satisfaction was shown to have a strong and positive influence on the intention to continue using BNPL services. This confirms that delivering a positive user experience is crucial for retaining Gen Z customers, a conclusion supported by Ginting et al. (2023) and Simbolon and Klesia (2024).

IMPLICATIONS, LIMITATIONS, AND FUTURE RESEARCH DIRECTIONS

Theoretically, this study helps build a better understanding of how people adopt and continue using digital financial services. It combines the Expectation Confirmation Model (ECM) and the Unified Theory of Acceptance and Use of Technology (UTAUT), and Perceived Trust (PT), to create a well-rounded model that explains both the thinking and feelings behind user behavior. Practically, the findings offer useful advice for BNPL service providers and businesses. To keep Generation Z students in Sarawak using their services, companies should focus on making the service simple, easy to use, and free of complications. The study also shares ways to improve BNPL services for long-term success, encouraging a balance between profits, customer satisfaction, and a healthy market. For researchers, the study adds valuable insight into how Generation Z continues to use financial technology. Marketers can also benefit by using these results to better connect with Generation Z based on the key factors identified.

However, the study has a few limitations. First, it gathered data at only one point in time, so it cannot show how users' views or behavior may change in the future. Future studies should track changes over time. Second, the study relied on self-reported surveys, which might not always reflect honest or accurate responses. Using interviews or focus groups in future research could improve reliability. Third, the study only focused on Gen Z in Sarawak, so the results may not apply to other groups or regions. Future studies should include different populations for comparison. Lastly, while factors like social influence and support were not significant here, future research should look into other possible influences on BNPL use.

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GREEN ENTREPRENEURSHIP INTEGRATES THE ENVIRONMENT WITH INNOVATION FOR SUSTAINABLE PRACTICES

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EXTENDED ABSTRACT

Green entrepreneurship integrates the environment with innovations for sustainable practices, which is increasingly seen as contributing to expanding ecotourism growth, particularly in developing countries. A surge of green initiatives within the tourism industry recently has focus on resource-efficient operations, biodiversity conservation, and active community involvement. This trend is driven by rising global awareness of environmental issues and sustainable consumption. Despite this momentum, green entrepreneurship among travel and tour services might be differ from other tourism service, such as hospitality, goods and tourism attraction services. As travel and tour services offers itinerary planning and guided tours that enable them explains its green initiatives and importance of natural conservation rather than applying a green product. Green entrepreneurs can emphasis on a unique contribution to ecotourism, a profit-driven entrepreneur or an environmentally responsible entrepreneur. This research employs content analysis to investigate and examine relevant articles on green entrepreneurship in tourism services within the ecotourism industries. The merger between green entrepreneurship and ecotourism sparks the researchers' interest, particularly in the travel and tours services sector. A conceptual sustainable practices for ecotourism management is proposed in this paper to encourage local entrepreneurship within their peripheral areas.

INTRODUCTION

Green entrepreneurship is a growing field that merges environmental sustainability and innovation to encourage sustainable development (Ibrahim et al., 2024). This field is being recognize as a crucial component in addressing urgent environmental concerns while promoting economic expansion at the same time (Wei et al., 2023). Sustainable chains, circular models, and the development and application of eco-friendly technologies are all prioritised in order to reduce the impact on the environment (Ansari, 2025; Papageorgiou et al., 2023). Green entrepreneurship also promotes ecological resilience, long-term economic advantage, and ethical innovation by incorporating sustainability into fundamental enterprise strategy (Ansari, 2025).

The importance of green entrepreneurship is significant on the travel and tour agencies, where sustainable practices have emerged as a result of growing consumer awareness of environmental degradation and the need for responsible consumption (Rahmawati et al., 2023; Xin & Chan 2014). Travel and tour services have a special and little-known function in the ecotourism value chain. Travel and tour companies provide an alternative type of participation, even if the majority of the conversation about sustainability in tourism centres on hospitality services such as green-certified hotels (Xin & Chan, 2014). Whereby travel and tour operators are in a unique position to promote sustainable practices that are both educational and transformative because of their ability to communicate, educate directly and having their own ways to contribute back to the environment (Xin & Chan, 2014).

Meanwhile sustainable tourism development is an important issue in the tourism industry (Rahmawati et al., 2023). Saari and Joensuu-Salo (2020) believe that ecotourism and green entrepreneurship may be linked to a number of industries, due to its goal to protect the natural ecosystems. Most of the tourism development are from ecotourism industry which relates back to the human resources in the industry (Rahmawati et al., 2023). The production of value for society and profit should be clearly distinguished (Saari and Joensuu-Salo, 2020), and the practice of 'green washing' is one of the drawbacks that has been identified. Making exaggerated or unsupported claims of sustainability or eco-friendliness in an attempt to gain market dominance is known as 'green washing' (Goffetti et al., 2022; Dahl, 2010). Hence, there is always a struggle between protecting the environment and embracing ecotourism.

RESEARCH METHOD

This research conducted a content analysis by using articles from the keywords 'green entrepreneurship' and 'tourism' on Web of Science and Scopus published over the past five years (2020-2025) to fully understand about the current trend of green entrepreneurship practices in ecotourism development. A total of 16 articles was identified however only a few is listed that is related to the explanation.

RESULTS

Despite the growing body of research on green entrepreneurship in the travel and tourism sector, there is still a significant lack of clarity and understanding in the literature about green entrepreneurship tactics for the ecotourism sector (Alonso-Almeida and Alvarez-Giz, 2018). As stated in Table 1, only four over 16 articles that conduct their research in ecotourism area, specifically in Indonesia. According to Rahmawati et al. (2021), the idea of green entrepreneurship can be employed as a strategy in the growth of ecotourism because of linear relationship with ecotourism development. In addition, the growth of tourism and small and medium-sized enterprise have been shown to play a crucial role in Indonesia's economy in terms of expanding employment opportunities, income distribution and rural economic development (Rahmawati et al., 2023).

Table 1: Background of Research

References	Publisher		Research Variables/Aims
	S	W	
Rahmawati et al. (2021)		/	1. Green entrepreneurship 2. Ecotourism development 3. Community involvement
Al-Azab and Zaki (2023)	/	/	1. Green entrepreneurship intention 2. Tourism and hospitality higher education student
Al-Romeedy and Alharethi (2024)	/	/	1. Green talent management 2. Green entrepreneurship 3. Tourism and hospitality industry
Momayez et al. (2023)		/	1. Hotels environmental and organizational performance 2. Green entrepreneurship 3. Managerial environmental concern
Yudawisastra et al. (2022)	/	/	1. Green entrepreneurship 2. Indonesia's culinary sector 3. Green variables
H. Yudawisastra et al. (2023)		/	1. Green variables 2. Sustainable business 3. Green entrepreneurship 4. Culinary tourism destination city
O. Jones et al. (2025)		/	1. Micro, meso and macro level 2. Young entrepreneurs 3. Green and conventional businesses
Rahmawati et al. (2023)	/		1. Green entrepreneurship characteristics 2. Culture support sustainable ecotourism
Kement et al. (2023)	/		1. Green entrepreneurship intentions 2. Relationship with environmentalism 3. Green entrepreneurial self-efficacy
Petruk et al. (2020)	/		1. Green tourism activities 2. Profit trend

S: Scopus, W: Web of Science, Green: Ecotourism Industry, Blue: Qualitative Research, Yellow: Services Sectors.

Most of the recent research tend to focus on quantitative approach rather than qualitative approach, as shown in Table 1. Hence, there is a lacking knowledge about green entrepreneurship itself and its characteristics. Due to that, most of recent researchers lean towards larger scale rather industry or respondent than focusing on small scale to get more richer data. Neummann (2022) suggested examining the local, small-scale effects of green entrepreneurship on sustainable development. Furthermore, Yin et al. (2022) contend that there is a substantial correlation between small and medium-sized enterprise achievement and green

entrepreneurship. Research on green entrepreneurship in the ecotourism industry begins with small and medium-sized enterprises.

Furthermore, only nine over 16 articles are conducted their research related with the services sectors. According to Tran (2023) recommended that future studies should concentrate on the services sector. Research on green entrepreneurship in the services industry is essential to comprehending how sustainable practices may be integrated into service sectors, given the substantial environmental impact (Tran, 2023). AlQershi et al. (2023) also demand on calling for more investigation into the connection between the service sector and green entrepreneurship. As a result, this direction is crucial for developing a fresh assessment of the feasibility of sustainable activities carried out by green entrepreneurs.

DISCUSSIONS

The findings highlight a significant lack in the literature on the use of green entrepreneurship in ecotourism, particularly with regard to small and medium service enterprises. Although green entrepreneurship has been studied extensively, ecotourism is the focus of just a small number of qualitative research. This is particularly significant in Indonesia, where the tourist industry plays a major role in employment and rural development. The majority of current research ignores the complex of travel and tour agencies in favour of large-scale research. This restricts our comprehension of the practical operational tactics that underpin models for sustainable tourism.

Furthermore, determining whether green entrepreneurship is motivated by environmental responsibility or financial gain is essential to determine the efficacy and genuineness of sustainable practices. Service-based entrepreneur like travel and tour agencies use unique sustainability tactics in the ecotourism industry, which is intrinsically linked to environmental preservation. The tactics include encouraging low-impact travel, and increasing visitor awareness of environmental concerns. In order to promote green entrepreneurship in ecotourism and improve socioeconomic development, this research suggested a conceptual framework such as Figure 1, that blends realistically on trend and concern of the literature of green entrepreneurship and tourism in ecotourism area.

Figure 1: Conceptual Framework Green Entrepreneurship in Ecotourism
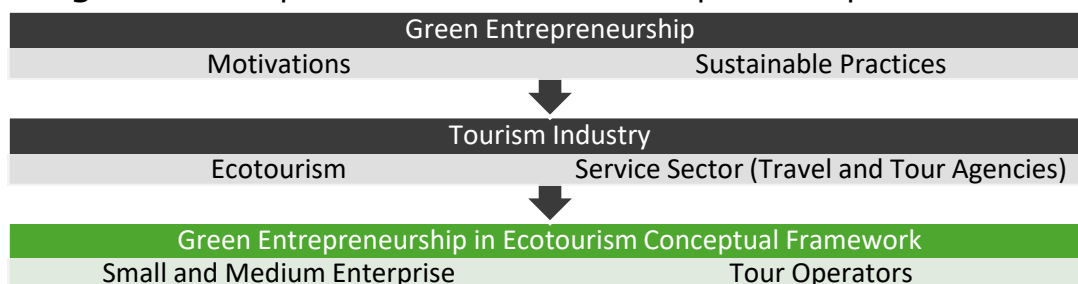
CONCLUSION

In conclusion, this research inquiry that focusses on the unfamiliar role of green entrepreneurship in small travel and tour enterprises operating in the ecotourism. Although sustainability has become a growing trend, most academic research has focused on bigger enterprises, which leaves an absence of understanding about how service-based green entrepreneurs support ecotourism. Through the perspective of green entrepreneurship, the idea presented here combines ecotourism with sustainable practices, providing a framework that could direct further empirical research. This idea is anticipated to contribute by strengthening the theoretical underpinnings of green entrepreneurship and providing useful alternatives for creating more sustainable enterprise models. By filling in gaps in the literature and promoting the growth of more inclusive and sustainability-driven ecotourism, this ultimately seeks to increase the body of knowledge.

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THE ROLE OF CULTURE IN MODERN PACKAGING: FOSTERING INNOVATION, SUSTAINABILITY AND CONSUMER ENGAGEMENT

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Keywords: Cultural packaging design, consumer engagement, heritage and identity, cultural integration, sustainability innovation and traditional symbols

EXTENDED ABSTRACT

Culture plays a pivotal role in influencing consumer perceptions, preferences, and purchasing decisions. In the realm of packaging design, the integration of cultural elements such as traditional symbols, storytelling techniques, and visual motifs serves as a powerful tool for creating emotionally resonant and locally authentic consumer experiences. However, despite growing consumer interest in sustainability and innovation, the cultural dimension remains underutilized in mainstream packaging practices. Current industry solutions often prioritize functional performance or trend-based aesthetics, overlooking the opportunity to connect products with cultural identity and meaning. This study aims to investigate the role of culture in modern packaging design and its capacity to foster innovation, promote environmental sustainability, and enhance consumer engagement. Through a mixed-methods approach combining literature review, quantitative analysis, and international case studies, the research explores how culturally infused packaging bridges the gap between tradition and contemporary consumer expectations. Findings reveal that cultural integration in packaging not only strengthens emotional connections and brand loyalty but also encourages sustainable practices by supporting reusable and heritage-preserving formats. The study concludes that culture-driven packaging can serve as a catalyst for both ecological and social innovation. The study recommends that designers and brands adopt inclusive and culturally sensitive design principles, improve the clarity of sustainability messaging, and invest in materials and technologies that align with local cultural contexts. Ultimately, culturally integrated packaging presents a strategic pathway to create products that are environmentally responsible, functionally effective, and deeply meaningful to diverse global audiences.

INTRODUCTION

In the contemporary global marketplace, packaging has evolved beyond its traditional role of protection and promotion to become a vital cultural interface. It now functions as a powerful medium for expressing identity, tradition, and shared values (Anwar et al., 2023). As consumer demographics become more culturally

diverse and globally interconnected, the strategic incorporation of cultural narratives such as folklore, heritage symbols, and indigenous aesthetics into packaging design plays a pivotal role in deepening consumer engagement and emotional resonance (Zeng et al., 2024). In many societies, especially those with strong ties to cultural heritage, packaging acts as more than a functional layer it becomes a visual and tactile representation of identity, authenticity, and even sustainability. Despite the increasing focus on sustainability and innovation in packaging design, most current approaches remain limited to material optimization, cost reduction, or sleek, minimalist aesthetics. These priorities, while valuable, often neglect the potential of culturally rooted design strategies to enhance emotional connection, ethical resonance, and consumer loyalty (Xu & Song, 2024). Studies have demonstrated that incorporating cultural cues such as region-specific motifs, symbolic colors, and traditional storytelling not only increases perceived product value and authenticity but also fosters greater environmental consciousness by connecting sustainability to local values and practices (Zaman, 2024).

Cultural packaging refers to the deliberate incorporation of culturally significant elements such as traditional symbols, indigenous languages, regional crafts, ancestral motifs, or folklore into both the visual and structural components of a product's packaging. These cultural cues serve more than just decorative or marketing purposes; they function as meaningful communicative tools that reflect a community's identity, values, and traditions (Du & Ma, 2023). From a semiotic perspective, packaging becomes a narrative medium that connects consumers with stories of origin, craftsmanship, and shared heritage, thereby transforming the product into an emotionally resonant cultural artifact (Kumar & Lee, 2022). Functionally, these elements enhance consumer perception by signaling authenticity, quality, and ethical production especially when aligned with traditional practices that emphasize harmony with nature and resource conservation (Li & Zhang, 2023). For example, using biodegradable packaging infused with indigenous textile patterns or storytelling can both reduce environmental impact and promote cultural continuity, linking sustainability with cultural relevance (Zaman, 2024). Furthermore, cultural packaging contributes to innovation by encouraging localized, creative design approaches that go beyond standardized global aesthetics. This not only differentiates products in a saturated market but also builds stronger brand identities rooted in place and meaning (Zeng et al., 2024). In today's experience-driven consumer culture, such packaging fosters deeper engagement by appealing to emotional, ethical, and aesthetic values simultaneously (Anwar et al., 2023). Studies have shown that consumers are more likely to trust and remain loyal to brands that reflect their own cultural identity or show respect for others' traditions (Xu & Song, 2024).

Cultural packaging is not only a design strategy but a multidimensional approach that integrates cultural preservation, ecological awareness, and consumer psychology making it a powerful tool for fostering innovation, sustainability, and consumer engagement in modern packaging design. This approach is increasingly relevant in today's global marketplace, where consumers seek more than just functional or eco-conscious products; they also desire culturally meaningful experiences that reflect their values and identities. As such, cultural packaging plays

a vital role in enhancing consumer identity alignment, reinforcing brand authenticity, and encouraging sustainable consumer behavior. However, despite growing awareness of sustainability and emotional branding, the cultural dimension of packaging remains underexplored in both academic literature and industry practice. Much of the existing research continues to emphasize material innovation, environmental certifications, or minimalist aesthetics focusing on efficiency and visual clarity while neglecting the rich communicative potential of cultural semiotics in packaging (Zhang et al., 2024). Furthermore, in cross-cultural or globalized markets, packaging design is often homogenized to appeal to broad audiences, overlooking the nuanced traditions, symbols, and expectations of local consumer groups. This results in a disconnect between modern packaging aesthetics and culturally sensitive user experiences, ultimately limiting the effectiveness of brand communication, emotional engagement, and sustainability education.

This study aims to address a critical research gap by investigating how culture can be strategically integrated into contemporary packaging design to foster deeper consumer engagement, drive design innovation, and promote sustainability. While existing studies often focus on material efficiency or universal branding strategies, the influence of cultural elements on packaging remains underrepresented in both academic discourse and industry practice. This research specifically explores how culturally embedded packaging enhances consumer engagement through emotional and identity-based connections, stimulates innovation by reinterpreting traditional motifs and narratives, and supports environmental sustainability through culturally resonant, low-impact, or reusable packaging formats. To achieve these objectives, the study examines three interrelated dimensions: (1) the impact of cultural design elements on consumer engagement and perceived product authenticity; (2) the role of cultural values and traditions in encouraging sustainable consumer behavior; and (3) the key challenges and strategic considerations in integrating cultural identity into modern packaging design across diverse markets. By addressing these dimensions, the research seeks to demonstrate that cultural packaging is not merely decorative or symbolic, but a purposeful design approach capable of enhancing brand relevance, environmental responsibility, and cross-cultural communication in an increasingly globalized and value-driven marketplace.

METHODS

This study adopts a quantitative, cross-sectional survey design to investigate the effects of culturally integrated packaging on consumer perception, sustainability awareness, and emotional engagement. Quantitative methods offer objectivity, scalability, and the ability to statistically measure relationships between variables (Creswell & Creswell, 2018). A structured questionnaire was developed in both English and Chinese to ensure inclusivity, maximize comprehension across demographics, and eliminate linguistic bias in multicultural sampling. The questionnaire includes both closed-ended Likert-scale items and multiple-choice questions designed to measure three constructs: perceived cultural value, consumer engagement, and sustainability perception.

The target population for this study consists of consumers aged 18 to 55 who have purchased culturally themed or eco-conscious packaged products (e.g., traditional foods, cosmetic brands, gift items). Respondents are drawn from urban centers in Malaysia and China, chosen for their diverse consumer bases and cultural awareness in purchasing behavior. A non-probability purposive sampling method was used, appropriate for targeting specific consumer segments knowledgeable about culturally relevant packaging. A minimum sample size of 385 was calculated using Cochran's formula at a 95% confidence level (Bartlett et al., 2001), and an oversample of 500 was planned to ensure statistical power and accommodate non-responses.

The questionnaire for this study consists of four sections designed to explore the influence of culture in packaging. The first section collects demographic information, including age, gender, nationality, income, and education level. The second section assesses consumer perception of cultural packaging through indicators such as symbolic authenticity, emotional connection, and familiarity, using statements like "I feel more connected to products that feature cultural symbols" measured on a 5-point Likert scale. The third section evaluates consumer engagement by examining purchase intention, sharing behavior, and brand loyalty, with items such as "I am more likely to share culturally designed packaging on social media." The final section focuses on sustainability awareness and perception, gauging eco-consciousness, perceived reusability, and environmental trust, for example, through the statement "Culturally designed packaging increases my awareness of sustainable practices," also rated on a 5-point Likert scale.

All questionnaire items were adapted and refined from validated scales (Niinimäki, 2020; Paul et al., 2016) and pilot-tested for clarity. To ensure semantic accuracy, the questionnaire was translated from English to Chinese using the back-translation method (Brislin, 1970). Pre-tests with 30 bilingual participants from Malaysia and mainland China led to minor revisions based on comprehension feedback and completion time analysis. Data collection was conducted online over four weeks through social media platforms such as WeChat, Facebook, WhatsApp, and consumer forums focused on packaging, sustainability, and cultural products. Participants provided informed consent and were screened to confirm prior experience with culturally themed packaging. The collected data were analyzed using SPSS Version 30, employing descriptive statistics (mean, standard deviation, frequency), reliability testing via Cronbach's alpha, Pearson's correlation to examine variable relationships, regression analysis to assess the predictive influence of cultural perception on consumer engagement and sustainability attitudes, and ANOVA to investigate perception differences across demographic groups such as age, gender, and cultural background.

RESULTS

A total of 500 responses were analyzed, collected from participants in Malaysia, China, and neighboring Asian countries such as Thailand and Indonesia. The study investigated the relationships among consumer engagement, emotional response, perceived authenticity, and sustainability awareness within the context of culturally

inspired packaging. Overall, across all 15 Likert-scale items, average scores ranged from 3.4 to 4.3, reflecting generally positive consumer perceptions toward cultural packaging. The key findings reveal a strong emotional and identity-based connection between consumers and culturally inspired packaging, supporting prior research that cultural packaging enhances emotional branding (Zeng, 2024; Xu & Song, 2024). Specifically, the item measuring emotional connection (Q1) received a mean score of 4.2, authenticity perception (Q3) averaged 4.1, and sustainability awareness (Q11) scored 3.9, indicating generally positive consumer responses across these dimensions (see Table 1).

Table 1: Descriptive Statistics

Desc.	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
Count	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Mean	3.52	3.41	3.55	3.45	3.58	3.57	3.51	3.50	3.47	3.53	3.50	3.53	3.52	3.56	3.46
Std	1.11	1.07	1.07	1.12	1.08	1.13	1.12	1.13	1.12	1.13	1.10	1.13	1.10	1.13	1.11
Min	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
25%	3	2	3	2	3	3	3	2	2	2.75	2.75	3	3	3	2
50%	4	3	4	3	4	4	3.5	3	3	4	4	4	3	4	3
75%	5	4	4	4	5	5	5	5	4	5	4	5	4	5	4
Max	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

A Pearson correlation analysis revealed several strong and statistically significant relationships among the key variables, highlighting the interconnected nature of emotional connection, authenticity perception, consumer engagement, and sustainability awareness in culturally inspired packaging (see Table 2).

Table 2: Correlation Analysis

Variable Pair	Correlation Coefficient (r)
Q1 (Emotional Connection) – Q3 (Authenticity)	0.73
Q1 – Q6 (Purchase Intention)	0.69
Q3 – Q11 (Sustainability Awareness)	0.65
Q9 (Brand Loyalty) – Q13 (Trust in Eco-Design)	0.62

Figure 2: Correlation Matrix Plot

Correlation Matrix of Cultural Packaging Questionnaire Items
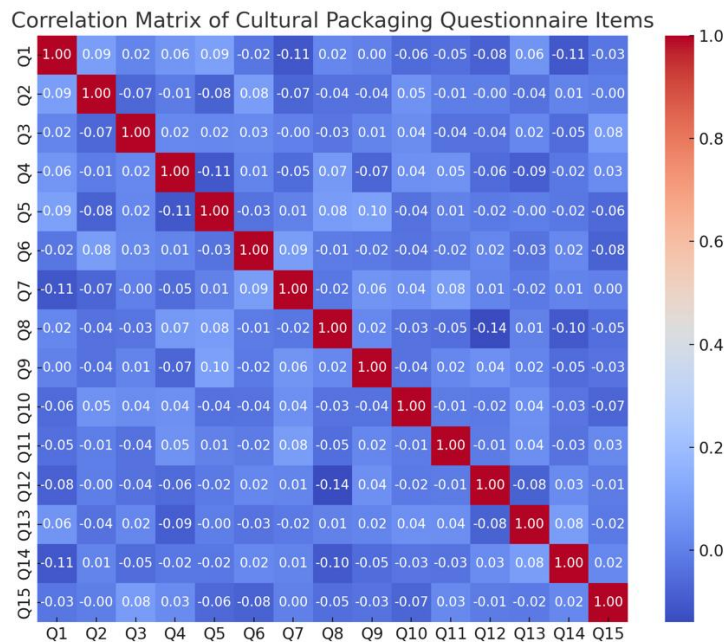
These findings support the hypothesis that emotional design elements rooted in culture significantly drive consumer trust, brand loyalty, and environmental awareness. This aligns with Barthes' semiotic theory (1977), which emphasizes how cultural signs convey deeper meanings, as well as with Rahman and Reynolds' (2016) work linking emotional branding to consumer behavior.

Figure3: Boxplot for Q1

Q1: Emotional Connection to Cultural Packaging by Nationality
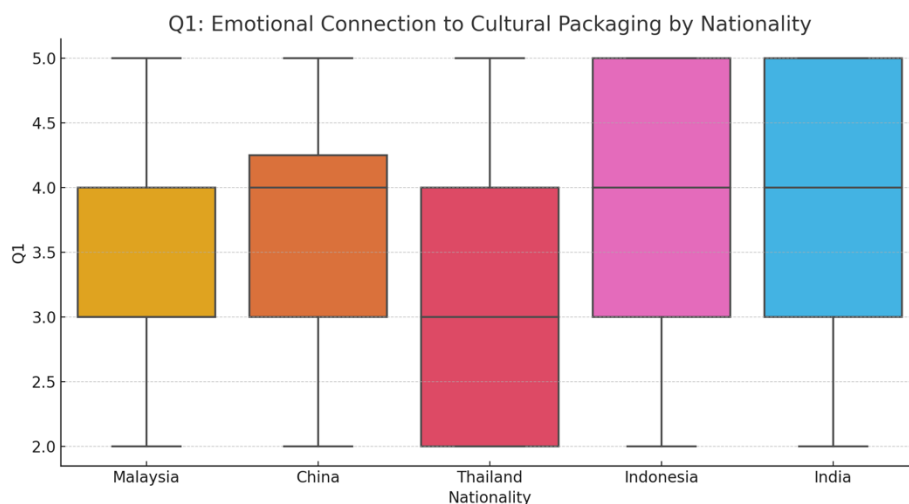
According to Figure 1, the Boxplot analysis and mean comparisons across nationalities revealed notable differences in consumer responses. Chinese respondents showed higher agreement with perceptions of authenticity (Q3) and cultural sustainability (Q11), while Malaysian respondents scored higher on purchase intention (Q6) and

social sharing behaviors (Q8). Other Southeast Asian participants demonstrated the lowest levels of consumer engagement but maintained moderate perceptions regarding environmental sustainability.

Table 3: Mean Comparison

Nationality	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
China	3.54	3.36	3.57	3.44	3.72	3.54	3.50	3.41	3.57	3.53	3.52	3.63	3.49	3.51	3.38
India	3.84	3.52	3.35	3.61	3.19	3.61	3.48	3.42	3.39	3.71	3.39	3.68	3.39	3.84	3.61
Indonesia	3.61	3.09	3.48	3.36	3.55	3.64	3.42	3.27	3.30	3.85	3.24	3.30	3.48	3.64	3.39
Malaysia	3.49	3.44	3.57	3.47	3.57	3.60	3.59	3.68	3.40	3.43	3.57	3.47	3.59	3.49	3.57
Thailand	3.28	3.75	3.53	3.42	3.31	3.56	3.22	3.33	3.50	3.64	3.31	3.39	3.39	3.94	3.25

This pattern demonstrates cultural proximity effects, where consumers tend to relate more strongly to packaging that reflects their own heritage and cultural identity (Aiolfi & Luceri, 2024). These findings confirm that culturally infused packaging strengthens emotional resonance, consistent with Barthes' semiotic theory (1977) and recent studies by Zaman (2024). It also enhances authenticity signals, supporting the work of Paul et al. (2016), and promotes sustainable behavior using cultural storytelling, as highlighted by Du and Ma (2023). Furthermore, in line with Hofstede's cultural dimensions theory, the alignment of packaging design elements such as color, texture, and symbols with local cultural values significantly influences consumer perception and engagement (Hofstede et al., 2010).

DISCUSSION

Packaging has historically evolved from simple containment to a multi-functional communication system encompassing protection, marketing, storytelling, and branding. In early forms, natural materials such as leaves, gourds, or clay vessels were used to store and transport goods (Hine, 2016). With the industrial revolution and the growth of mass production, packaging became an essential tool for product differentiation and mass consumer appeal. The late 20th century ushered in an era where packaging design was driven largely by functionality, efficiency, and visual impact (Silayoi & Speece, 2007). Today, the design of packaging reflects a shift toward sustainability, interactivity, and cultural authenticity. The growing awareness of environmental degradation and global consumer diversity has pushed designers to create packaging that is not only eco-friendly but also emotionally resonant and culturally relevant (Du & Ma, 2023).

Design is never neutral it operates within a web of cultural meanings. According to cultural semiotics, design elements such as color, typography, symbols, and form carry implicit cultural messages that consumers interpret through personal and collective lenses (Barthes, 1977). Packaging becomes a semiotic interface where products communicate values, identity, and lifestyle. In many traditional societies, packaging integrates cultural symbols that reference heritage, such as indigenous patterns, regional flora and fauna, or spiritual motifs. These embedded elements signal authenticity, quality, and respect for origin (Aiolfi & Luceri, 2024). When cultural motifs are thoughtfully applied, they enhance product storytelling, bridging

the tangible function of packaging with the intangible meaning of culture (Zeng, 2024).

Role of Culture in Consumer Decision-Making

Culture influences how consumers perceive, interpret, and react to packaging cues. Hofstede's cultural dimensions theory suggests that preferences for visual design, color use, or even material texture vary widely across cultures (Hofstede et al., 2010). For instance, red may evoke prosperity in Chinese culture but danger in Western contexts. Culturally embedded packaging fosters emotional engagement increases perceived product value and strengthens consumer-brand identification. Xu and Song (2024) found that when packaging reflects local values or traditions, consumers are more likely to form loyalty bonds with the brand. This emotional connection often leads to greater willingness to pay, product trust, and even social sharing behaviors, such as posting on social media. In addition, cultural relevance supports inclusive design, addressing the needs and values of diverse consumer groups. This is especially important in multicultural societies where one-size-fits-all strategies may alienate significant market segments.

Contemporary packaging innovation has largely concentrated on advancing material sustainability through biodegradable options, minimalist design, and waste reduction strategies (Remy, 2017). These efforts address urgent ecological concerns but often overlook the crucial role that cultural identity can play in shaping sustainable consumer behaviors and design innovation. Integrating culture into packaging is not merely decorative; it serves as a meaningful conduit for conveying values like environmental stewardship, respect for nature, and circularity, which are deeply embedded in many traditional worldviews. Wang et al. (2023) argue that when cultural narratives are woven into packaging design, they have the power to influence consumer attitudes and behaviors toward sustainability. For example, using culturally significant reusable containers or materials rooted in heritage traditions encourages consumers to see packaging as more than single-use waste instead, as objects worthy of preservation, reuse, or repurposing. This approach aligns with circular economy principles by extending product life cycles and reducing resource consumption.

Beyond sustainability, cultural integration fosters innovation by inspiring designers to draw on indigenous knowledge systems, artisanal crafts, and historical design motifs. Such culturally grounded design strategies challenge the prevailing Western-centric aesthetic norms, which often prioritize uniformity and minimalism at the expense of local relevance and meaning. By embracing decolonial design practices, packaging can become a platform for celebrating diversity, amplifying marginalized voices, and promoting authenticity in global branding (Zaman, 2024). This intersection of culture and sustainability enriches packaging innovation in several ways. It broadens the palette of materials and forms available to designers, encourages participatory collaboration with local communities, and facilitates deeper consumer engagement by resonating with identity and heritage. Furthermore, culturally infused sustainable packaging helps brands differentiate themselves in crowded markets by offering products that tell stories, reflect values,

and foster emotional connections. Ultimately, embedding cultural identity within sustainable packaging transcends environmental concerns alone; it becomes a holistic strategy that intertwines ecology, economy, and culture. This integrated approach not only contributes to planetary health but also supports cultural preservation and social equity, making packaging a powerful tool for positive transformation in a globalized world.

Reflections on Sustainable and Innovative Design

To effectively harness the benefits of culturally integrated packaging, it is essential that designers, brands, and policymakers work collaboratively, each playing a distinct but interconnected role in driving innovation, sustainability, and consumer engagement.

Designers hold a critical responsibility in embedding cultural meaning into packaging. By incorporating local symbols, traditional narratives, indigenous art forms, and region-specific visual motifs, designers evoke strong emotional responses rooted in cultural pride and identity. This emotional resonance creates a powerful connection between consumers and products, encouraging brand loyalty and positive associations. Furthermore, designing packaging with reuse or display in mind enhances its functional lifespan, transforming it from disposable waste into valued keepsakes or collectibles. Such an approach supports circular economy principles by reducing the demand for single-use packaging and fostering sustainable consumption habits.

Brands act as the bridge between design innovation and consumer experience. They can amplify the impact of culturally integrated packaging by weaving sustainability values into marketing narratives using cultural metaphors and storytelling that reflect local heritage and ecological wisdom. Emotional branding that highlights authenticity and tradition can elevate perceived product quality and build deeper, longer-lasting consumer relationships. By aligning cultural narratives with environmental responsibility, brands differentiate themselves in competitive markets and appeal to increasingly conscious consumers who seek meaningful and ethical purchases.

Policymakers play a crucial enabling role by shaping the regulatory and economic environment. Encouraging the use of regionally sourced and biodegradable materials through incentives such as subsidies, tax breaks, or grants supports the development of environmentally friendly packaging industries that honor local cultural practices. Additionally, policymakers can foster cross-cultural research initiatives that explore how cultural values and consumer behaviors intersect with sustainability awareness. These insights are invaluable for guiding industry standards, educational programs, and community engagement efforts, ensuring packaging solutions are culturally relevant and ecologically responsible across diverse populations.

Together, these strategies form a holistic framework that leverages culture as a driver of packaging innovation, promoting designs that are not only visually and emotionally compelling but also environmentally sustainable and socially inclusive.

By centering culture in the packaging conversation, stakeholders can create products that resonate deeply with consumers' identities and values, inspire sustainable behaviors, and contribute to cultural preservation in an increasingly globalized market.

DISCUSSION

This study examined how culturally integrated packaging influences consumer behavior, emotional engagement, and sustainability perceptions. Drawing on data from 500 respondents across Malaysia, China, and neighboring regions, the quantitative findings strongly support the thesis that cultural relevance serves as a powerful driver of both emotional and ecological consumer responses. Key empirical results include a high correlation between emotional connection (Q1) and authenticity perception (Q3) (r = 0.73), indicating that cultural symbols evoke deeper brand trust and product appeal. Significant associations were also found between cultural packaging and purchase intention (Q6) and brand loyalty (Q9), demonstrating that cultural semiotics motivate consumer commitment. Additionally, sustainability awareness (Q11, Q13) was elevated when packaging incorporated heritage, rituals, or regional identity, suggesting that cultural storytelling enhances environmental values. These findings reinforce long-standing theoretical perspectives such as Barthes' semiotic theory (1977) and Hofstede et al.'s cultural dimensions (2010), which argue that design is embedded with cultural meaning. This study contributes further by illustrating how cultural encoding in packaging serves not only for identity expression but also as a catalyst for sustainability transformation.

Culturally responsive packaging fosters design innovation by recontextualizing traditional symbols within contemporary formats, transforming them into conversational artifacts that resonate across generations (Zeng, 2024). Unlike the widespread adoption of Western minimalism, culturally embedded design champions aesthetic plurality, emotional resonance, and inclusivity in global markets. For instance, incorporating native scripts, textile motifs, or local mythologies adds narrative depth and encourages consumers to retain, reuse, or repurpose packaging, thereby supporting circular economy objectives. These results confirm that cultural packaging functions not merely as an aesthetic device but as a strategic emotional branding tool. Consumers who recognize reflections of their identity, heritage, or community values in packaging form stronger emotional bonds with brands and products (Xu & Song, 2024), leading to increased sharing behaviors (Q8) and repeat purchases. Brands integrating cultural cues stand to benefit from enhanced consumer-brand alignment, especially among younger demographics seeking authenticity and personalized experiences (Zaman, 2024). Designers and brand strategists should therefore adopt inclusive design frameworks that respect regional diversity, religious symbolism, and cultural narratives. Effective strategies include participatory co-design with local artisans, embedding indigenous knowledge into sustainable packaging formats, and conducting cultural audits to ensure visual and narrative consistency with local identities.

To further promote eco-consciousness, brands should pair cultural design elements with clear sustainability messaging. For example, labels can explain traditional reuse practices (such as fabric wrapping), highlight values of stewardship inherent in cultural designs, and utilize storytelling tools (QR codes, augmented reality, printed narratives) to educate consumers about both heritage and environmental responsibility. This approach aligns with Paul, Modi, and Patel's (2016) findings that consumers respond favorably when cultural and environmental values are communicated jointly. Policymakers can play a vital role by funding research and development grants aimed at cultural design innovation, offering tax incentives to companies adopting biodegradable and culturally relevant packaging, and integrating cultural design training into art and design education curricula to cultivate future practitioners.

IMPLICATION

While this study provides novel insights into the role of culture in modern packaging, several limitations should be acknowledged. First, the regional scope is limited, with the sample primarily drawn from urban areas in Asia, which may not reflect cultural perception patterns in Western, rural, or Indigenous populations. Second, the exclusive reliance on quantitative methods restricts the depth of understanding, as it cannot fully capture the rich narratives and symbolic meanings that qualitative or mixed-methods approaches might reveal. Third, like all self-reported data, the survey responses may be subject to social desirability bias or inaccuracies in participants' introspective assessments. Finally, culture is inherently dynamic and evolving; this study captures consumer perceptions at a single point in time and may not account for long-term shifts or generational differences in cultural attitudes toward packaging.

LIMITATION AND FUTURE RESEARCH DIRECTIONS

Future research should adopt a mixed-methods design, combining quantitative surveys with qualitative approaches such as interviews or focus groups to capture more nuanced and in-depth symbolic interpretations of cultural packaging. Additionally, cross-cultural comparative studies are needed to explore how cultural motifs operate within diverse design systems across regions like Africa, Latin America, and Europe, broadening the understanding beyond the current focus on Asia. Longitudinal consumer tracking would also be valuable to assess how perceptions of culturally infused packaging evolve over time and whether they result in sustained changes in consumer behavior. Finally, with the increasing prominence of e-commerce and emerging digital environments like the metaverse, future studies should investigate how cultural packaging can adapt and innovate within virtual product ecosystems, including cultural user experience (UX) design.

CONCLUSION

This study highlights that cultural packaging transcends decorative function to become a strategic design language that deeply connects with consumers on emotional and identity levels. By embedding cultural symbols, narratives, and visual

motifs, packaging communicates authenticity and heritage, fostering a sense of belonging and trust that conventional design often misses. Such emotional resonance is critical in today's saturated markets where consumers seek more meaningful interactions with brands rather than purely transactional exchanges. Moreover, cultural packaging serves as a powerful medium to promote sustainability by aligning ecological values with cultural traditions. For example, integrating culturally significant materials or storytelling around reuse and conservation can motivate consumers to adopt environmentally responsible behaviors. This dual role combining cultural preservation with ecological stewardship—positions packaging as a conduit for both social and environmental impact.

Importantly, this approach does not romanticize tradition as static or outdated; rather, it reinterprets cultural elements through a modern lens, innovating to meet evolving consumer demands and global sustainability challenges. Such innovation encourages designers and brands to move beyond generic, one-size-fits-all solutions toward context-sensitive designs that honor local identities while addressing global issues. Placing culture at the heart of packaging innovation thus offers a holistic strategy that benefits multiple stakeholders: it enhances brand differentiation and loyalty, promotes sustainable consumption, and fosters cultural continuity amidst globalizations. Ultimately, it elevates packaging design from a mere product accessory to a meaningful cultural artifact and a tool for positive social change.

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LONG-RUN AND SHORT-RUN EFFECTS OF ECONOMIC PERFORMANCE ON APPAREL DEMAND IN MALAYSIA: AN ARDL APPROACH

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Keywords: Apparel Industry; Economic Indicators; ARDL Model; Malaysia; Sustainable Consumption

EXTENDED ABSTRACT

The Malaysian apparel industry, valued at RM35 billion in 2023, plays a significant role in the economy, especially in niche areas like sportswear and lingerie. Despite advancements in technology and trade, the industry faces rising costs, heavy import reliance, and growing environmental concerns, with textile waste alone accounting for 31% of solid waste and 2 million kg of clothing discarded daily. To address these inefficiencies, this study employs the ARDL model to examine how macroeconomic factors such as GDP, CPI, exchange rate, household consumption, income, and unemployment influence apparel demand. The results show that GDP consistently drive demand in both the short and long term, while inflation and exchange rate depreciation have temporary positive effects but reduce demand over time whereas income shows weaker influence. The presence of stable long-run relationships and notable short-run fluctuations underscores the strong connection between economic conditions and apparel demand in Malaysia.

INTRODUCTION

At the global level, the apparel industry is facing growing challenges related to overproduction and overconsumption, primarily driven by fast fashion. Brands such as Zara, H&M, and Forever 21 release new collections frequently, resulting in excess inventory and significant textile waste (Ellen MacArthur Foundation, 2017). In the United States, 27 million tons of textile waste are generated annually, with 95 percent being recyclable, yet only a small portion is reused (Environmental Protection Agency, 2020). Overconsumption is further intensified by low-cost garments and social media-driven trends. McKinsey & Company (2021) projects that global spending on apparel will rise by USD 1 trillion by 2030, reflecting continued fast fashion growth and rising disposable incomes.

These global patterns are increasingly visible in Malaysia. International fast fashion retailers such as Uniqlo, H&M, and Zara are expanding rapidly, particularly in urban

centres with growing middle-class populations. This expansion has contributed to a surge in textile waste, with approximately 2 million kilograms of clothing discarded daily (Ministry of Investment, Trade and Industry, 2023). Beyond environmental harm, this trend threatens economic sustainability by encouraging inefficient resource use and unsustainable growth. Moreover, the global textile and apparel sector is estimated to contribute nearly 10 percent of total carbon emissions (World Economic Forum, 2020).

Preventing overproduction and reducing apparel waste requires a clearer understanding of how macroeconomic conditions influence demand. Insights into economic drivers such as income, inflation, and GDP can help industry stakeholders align production with actual market needs. Such alignment is essential for minimising waste, improving resource efficiency, and supporting sustainable development within Malaysia's apparel industry.

RESEARCH METHOD

This study explores how economic factors influence apparel demand in Malaysia. The independent variables are GDP, CPI, apparel price index, exchange rate, unemployment, population, household consumption, and household income. The dependent variable is apparel demand. Consumer behavior, fashion trend, and cultural influences are included as moderating factors to reflect social and lifestyle impacts on demand patterns. These elements help to provide a more complete understanding of what shapes apparel consumption in the country.

Figure 1: Conceptual framework showing the relationship between economic indicators and apparel demand, with moderating effects
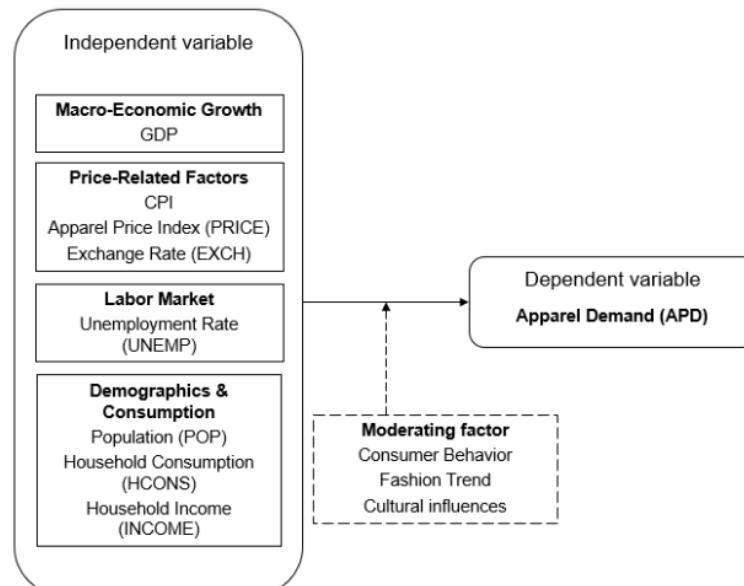
This study adopts the Autoregressive Distributed Lag (ARDL) model to investigate the long-run and short-run relationships between Malaysia's economic performance and apparel industry demand. The ARDL approach, developed by Pesaran and Shin (1999), is well-suited for time-series data where variables are integrated at different

levels, specifically I(0) and I(1). It allows for robust estimation even with small sample sizes and provides a flexible framework to model both immediate effects and long-term equilibrium relationships (Nkoro & Uko, 2016; Pesaran, Shin & Smith, 2001).

The general form of the ARDL model is represented as follows:

$$Y_t = \alpha_0 + \sum_{i=1}^{p} \beta_i Y_{t-i} + \sum_{j=0}^{q} \gamma_j X_{t-j} + \epsilon_t$$

Where:

Y_t: dependent variable

X_t: Independent variable

α_0: constant

β_i: coefficients of the lagged values of the dependent variable

γ_i: coefficients of the lagged values of the independent variable

p: Lag lengths for the dependent variable

q: Lag length for the independent variable

ϵ_t: error term

The model also includes an Error Correction Mechanism (ECM) to quantify how quickly short-run disequilibria adjust toward long-run equilibrium (Banerjee et al., 1998). Given the volatility of economic indicators such as GDP, inflation, and exchange rates, ARDL is an appropriate model to capture their dynamic impact on apparel demand.

RESULTS

Stationarity Test Results

Stationarity was tested using the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) methods. The dependent variable (ln_APD), along with ln_GDP, CPI, UNEMP, ln_HCONS, INCOME, and ln_EXCH, were non-stationary at level but became stationary after first differencing, indicating they are integrated of order one (I(1)). ln_POP and ln_PRICE remained non-stationary even after differencing, suggesting they are I(2) and were excluded from the ARDL model, as the model is not valid with I(2) variables.

Model Comparison and Robustness Analysis

The ARDL model was used to estimate both long-run and short-run relationships. Full and reduced models were compared, supported by Dynamic OLS (DOLS) and Error Correction Models (ECM) as robustness checks.

ln_EXCH (exchange rate) consistently showed a significant long-run effect on apparel demand. In the full ARDL model, other predictors like ln GDP and INCOME were weaker, likely due to multicollinearity. The reduced ARDL model improved clarity and stability of key variables.

The reduced DOLS model gave the best fit (Adjusted R² = 0.860) with the lowest residual error, confirming robust long-run estimates. In the short run, the reduced ARDL and ECM models highlighted ΔGDP, ΔCPI, and ΔINCOME as significant factors. The error correction term (ECM₁) was significant in all models, confirming adjustment toward equilibrium. Table 1 shows comparison of ARDL, DOLS, and ECM model results, including fit, significant predictors, and cointegration tests.

Table 1. Model Comparison Summary

Criterion	ARDL		DOLS		ECM	
	FULL	REDUCED	FULL	REDUCED	FULL	REDUCED
Cointegration Test	Yes (F = 6.45)	Yes (F = 7.75)	Not tested directly	Not tested directly	via ECM₁	via ECM₁
Adjusted R²	N/A	N/A	0.842	0.860	0.536	0.597
Significant Predictors	ln_EXCH	ln_EXCH	ln_EXCH, ΔCPI, ΔINCOME, ΔGDP, ΔGDP_lag1	ln_EXCH, ΔCPI, ΔINCOME, ΔGDP, ΔGDP_lag1	Δln_EXCH, ECM₁	Δln_GDP, Δln_EXCH, ECM₁
Residual Std. Error	N/A	N/A	0.076	0.072	0.083	0.077
Model Complexity	High	Moderate	High	Moderate	Medium	Low
Interpretation Strength	Long-run	Long-run	Long-run	Long-run	Short-run	Short-run

DISCUSSIONS

The ARDL model reveals both short- and long-run effects of macroeconomic factors on apparel demand in Malaysia. Key variables include GDP, exchange rate, CPI, and income.

Short-Run Effects on Apparel Demand

In the short run, GDP, exchange rate, and CPI significantly increase apparel demand. A 1% rise in GDP raises demand by 0.827%, reflecting improved consumer confidence. Similarly, a 1% depreciation of the Ringgit increases demand by 0.752%, possibly due to a shift toward local products or anticipatory buying. CPI has the strongest short-run effect; each one-point increase raises demand by 3.38%, suggesting inflation may drive early purchases. Income shows minimal impact (−0.000055), and the positive lagged demand (0.258) reflects habit persistence.

The short-run reduced ARDL model is expressed as:

$$\Delta ln(APD_t) = 11.75 + 0.258\Delta ln(APD_{t-1}) + 0.827\Delta ln(GDP_t) - 0.657\Delta ln(GDP_{t-1}) + 0.034\Delta CPI_t - 0.049\Delta CPI_{t-1} - 0.000055\Delta INCOME_t + 0.000190\Delta INCOME_t + 0.752\Delta ln(EXCH_t) + \lambda ECM_{t-1} + \epsilon_t$$

Long-Run Effects on Apparel Demand

Over time, GDP continues to support apparel demand (elasticity = 0.827), reinforcing the link between economic growth and consumption. However, the exchange rate shows a reversal: a 1% depreciation reduces demand by 0.752%, likely due to higher import costs. Inflation also reduces long-term demand (CPI = −0.034), pointing to declining real purchasing power. Income remains an insignificant driver in the long run.

The long-run equilibrium is captured by:
$$ECM_{t-1} = ln(APD_{t-1}) - 0.827\ln(GDP_{t-1}) - 0.034CPI_{t-1} - 0.000055INCOME_{t-1} - 0.752\ln(EXCH_{t-1})$$

This confirms the presence of a stable long-run cointegrating relationship, where short-term deviations are gradually corrected, aligning apparel demand with its long-term determinants.

IMPLICATIONS

The ARDL results provide useful insights for managing apparel demand in Malaysia. GDP has a consistent positive impact in both the short and long term, indicating that economic growth encourages consumption. Policies that strengthen employment and consumer confidence can support this effect. A weaker exchange rate increases short-term demand but reduces it in the long run due to higher import costs, highlighting the importance of promoting local production. Inflation drives short-term purchases but lowers long-term demand by reducing real income, making price stability essential. Income shows limited influence, suggesting that broader factors like GDP and inflation play a larger role. Sustainable policies are needed to balance growth with concerns such as overconsumption and textile waste.

LIMITATION AND FUTURE RESEARCH DIRECTIONS

This study has several limitations. First, it does not include moderating factors such as consumer behavior, fashion trends, or cultural influences, which may shape apparel demand but were excluded due to data limitations. Second, the analysis covers the years 1996 to 2023, which may be too short to fully capture structural industry changes. Third, although key economic indicators are included, other relevant factors like trade policies, supply chain issues, and environmental impact are not considered. Future research should expand the variable set and time frame to provide a more comprehensive analysis.

CONCLUSION

This study examines the link between Malaysia's economic performance and apparel demand using the ARDL model. GDP has a strong positive effect in both time frames. Exchange rate depreciation and inflation raise demand in the short term but reduce it over time. Income has minimal impact. These findings suggest that stable economic conditions, stronger local production, and sustainable consumption policies are essential to support long-term growth and reduce environmental harm.

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INDIVIDUAL ENTREPRENEURSHIP AS A CATALYST FOR TOURISM DEVELOPMENT

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Keywords: Individual entrepreneurial; family entrepreneurship; entrepreneurial transmission, tourism development

EXTENDED ABSTRACT

Tourism is unstructured and informal, making as a desirable direction of new entrepreneurs. Individual entrepreneurs play a vital role in sustaining tourism and developing sustainability strategic as the pioneers of family entrepreneurship and the driving force behind destination development. Entrepreneurial transmission illustrates that the predecessor can pass on knowledge, reputation and other resources to future. This idea demonstrates how the family can serve as an entrepreneurship incubator especially in individual adaption towards increasing the understanding and readiness for the socioeconomic perspective. A literature review and content analysis were conducted. The result showed that most of the literatures do not discuss yet about an individual entrepreneurship as a main character towards tourism development. A crucial aspect is how the individual perspective can seek a new opportunity, particularly to remain the existing business and creating new venture in tourism destination. With the continuous growth of entrepreneurial transmission for family entrepreneurship in individual preference and action where has become the most significant segment of the global. In addiction conceptual of individual entrepreneurial catalyst is proposed to preserve the natural development impact throughout the tourism destination.

INTRODUCTION

Entrepreneurial transmission is a social phenomenon that occurs in context via a process of co-participation whereby learning involves reflecting, theorising, experiencing and action (Clinton *et al.*, 2021). Despite the significance of entrepreneurial transmission, the process by which their entrepreneurial essence, through the manifestation of entrepreneurial behaviors, has been transmitted and embedded across generations of the family is a blind spot inherent in family entrepreneurship (Capolupo *et al.*, 2023). Consequently, the classical Lucas, (1978); Rosen, (1982) mention that entrepreneurial with greater managerial skills defined as the ability to extract more output from a given combination of capital and labor that will lead to entrepreneurship since running a business obtains a

higher return than wages, and family enterprise is sustained throughout generations. This can be concluded that family members perform as a resource in conducted activities together, share ideas and act upon available information and resources based on their circumstances to engage in entrepreneurship.

Furthermore, Discua Cruz *et al.,* (2021) agree that an entrepreneurial family is defined as a social unit composed of different family members intending to continue and transmit behaving entrepreneurially over time. Entrepreneurial activity is not just about discovering new opportunities ideas and possibilities, but also a relevant conceptual reference point to explain entrepreneurial attitudes and behaviors emerging at the levels of individual members. In this manner, this may be inferred that the generation as an individual that may have a crucial role in affecting the family entrepreneurial transmission process. For instance, this continuity goal will motivate family members to cultivate strong entrepreneurial transition features to maintain and develop practical innovation from which future generations can benefit (Razzak and Jassem, 2019). Otherwise, in the same understanding where individual entrepreneur is the future, highlighted by recent research on how knowledge sharing is bidirectional in family entrepreneurship and can lead to innovative and development outcomes.

Hence, entrepreneurship has received increased attention among tourism researchers, and despite its growth, the literature on the issue remains scattered (Leunbach, 2021). Recent entrepreneurship in tourism has led to new topics such as sustainable, community, institutional and social entrepreneurship (Leunbach, 2021; Ochoa Jimenez *et al.,* 2022), but there is still a lack of understanding in supply site which is an entrepreneurship perspective. On a global scale, individuals alone can be credited with triggering phase shifts in tourism (Russell and Faulkner, 2004). Tourism is new, chaotic and unregulated to be a very attractive direction for the attention of entrepreneurs. With a strong entrepreneurial transmission is always a sufficient to support the continuous renewal and rejuvenation where that is needed to sustains a family business for tourism development context. Based on the explanation above, the entrepreneurial transmission process between the individual will increase the commitment level, with helping to preserve the natural development and maintain the competitive advantage throughout the tourism development.

METHODOLOGY

A literature review methodology was performed. There are few steps in conducting this review. This section provides an in-depth discussion of the methods applied in this article, specifically aims to achieve richness in the data narrative. The search syntax 'entrepreneurship', 'family entrepreneurship', and 'tourism development' was entered separately at one time in the search field of each database thus managed to yield several pages of potentially selected literatures. After screening the abstracts of the potentially selected literatures in each database, the final included literatures consist of more than 10 documents published from the year 1934 to 2022. Furthermore, content analysis is performed to improve comprehension of individual entrepreneurial is reflection of tourism development. The purpose of

content analysis serves as a research tool to determine the identify the occurrence of specific phrases, ideas and views from the notion and perspective of entrepreneurial transmission for individuals. Thus, the goal of qualitative research is set to develop new concepts and theories by systematically describing and interpreting topics from the perspective of the examined individual entrepreneurial. This is essential to understand the individual preference context about the family entrepreneurship internal structure.

RESULTS

Based on the trend in table 1, three research gaps were identified. First, there is a lack of research on the effect of mentoring on entrepreneurial activities within family entrepreneurship across generations (Querbach *et al.,* 2020). Family support is relevant resource which means the individual makes entrepreneurial decisions. Second, there still have limitations were found in firm-level individual entrepreneurial orientation studies between generations (Wei-Loon and Mastura, 2022). For instance, family entrepreneurship failed to highlight the importance of individuals as an incubator to create continuity in a family generation. Third, in table 1 shows from 3 highlighted article below, tourism in a region is planned erratically due to a lack of coordination between individuals, that may dispel the sources upon which tourism development binges. However, there is no evidence of how entrepreneurial qualities are carried from one generation to another and how the generation influences the longevity of these enterprises and associated family tiers (Akay, 2022). Due to the limited literatures about the implication of entrepreneurial transmission, a proper framework needed to be established. In conclusion, the relationship between individual entrepreneurial and tourism context is considered understudied and demands in-depth research efforts.

Table 1: Background of Research

Year	Author	Topic
1934	Schumpeter *et al*	Entrepreneurship Tourism Entrepreneurship Tourism Development
2004	Getz & Carlsen	Entrepreneurship Succession Planning
2010	Habbershon *et al*	Family Entrepreneurship Succession Planning
2020	Ratten	Tourism Entrepreneurship Tourism Development
2020	Querbach *et al*	Family Entrepreneurship Succession Planning
2021	Clinton *et al*	Entrepreneurship Family Entrepreneurship
2021	Kavya, M B,	Entrepreneurship Tourism Entrepreneurship Tourism Development

2021	Umans *et al*	Family Entrepreneurship Succession Planning
2022	Wei-Loon and Mastura	Family Entrepreneurship Succession Planning
2022	Akay	Tourism Entrepreneurship Tourism Development
2022	Ochoa Jiménez *et al.*	Entrepreneurship Tourism Entrepreneurship Tourism Development

DISCUSSIONS

Based on the literature review, in figure 1 shows the conceptual framework was applied where to explain the entrepreneurial transmission process from the perspective of individual that can influence the development in tourism. In order to understand the entrepreneurial activity in family firms, this article utilising a succession plan where individual entrepreneurial orientation was applied as a scale development to be the best practices for an entrepreneur. In addition, individual entrepreneurial orientation will be the guideline on how personal preferences might generate an understanding that can make the development in tourism context. Moreover, succession planning is elevated from a routine procedure to a strategic opportunity for family entrepreneurship. The socio-emotional wealth, social learning theory and tacit knowledge know as a component of succession plan that was applied. Hence, the effectiveness of succession in a family firm is needed because a succession plan is often a complex and long-lasting process that play a dominant role through the individual entrepreneurial orientation when individuals think and behave the entrepreneurially. To ensure the effectiveness of tourism development, entrepreneurs are a process where individual generate new ideas and find new ways to allocate resources to engage in occupations, job creation, new business, and also a new innovative organisation. From this research, attaching much importance to the individual perceptions of tourism development and the role of individual entrepreneurs that will help support development and maximise development in the destination.

Figure 1: Proposed Conceptual Framework
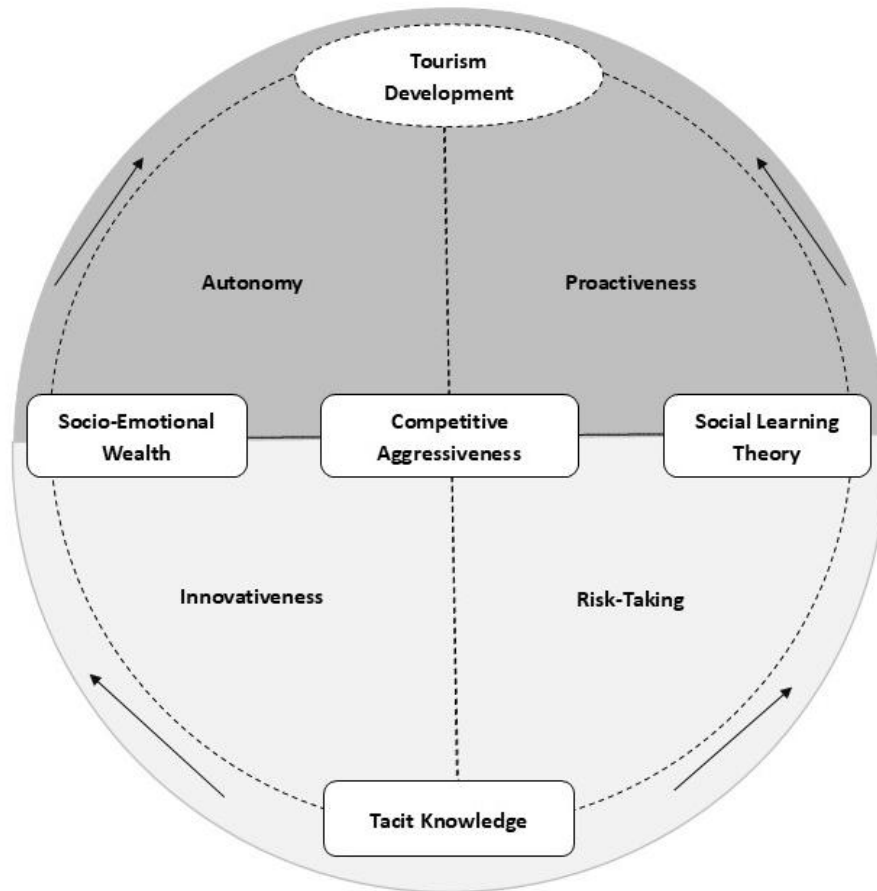
CONCLUSION

As a conclusion, theoretical implication by facilitating on creating a conceptual framework that may be key in connecting between perspective of individual towards the upgrading tourism. However, the proposed framework has not been tested yet. The individual entrepreneurial perspective towards the family entrepreneurship context in the tourism development was covered in this research. There has a potential for individual adaption towards increasing the understanding and readiness for the socioeconomic context. Individual perspective serves as the cornerstones of the changer for tourism development. In addition, the prior research shift indicated that family members were had individual preferences that fell behind in terms of their desire to carry on the firm into the future and encourage others in tourism development. Hence, understanding of individual perspective will create pioneers of family entrepreneurship and the driving force behind destination development. For future research can be suggested where this article will extend the knowledge related to an individual entrepreneurial studies that will enhance a new potential in the tourism development.

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CATALYSTS OF GENERATIVE AI ADOPTION AMONG GEN Z IN SARAWAK'S TERTIARY EDUCATION

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EXTENDED ABSTRACT

INTRODUCTION

The rapid growth of Artificial Intelligence (AI) has greatly impacted many fields, including education. Narciso (2024) notes that AI tools like ChatGPT and Claude AI are changing how teaching and learning happen. AI is reshaping how Generation Z (Gen Z) interacts with educational content (Chardonnens, 2025). In fact, 86% of young adults in the U.S. reported using Generative AI (GAI) for classwork (Statista, 2024a), showing how common its use has become among students. According to Abdullah and Zaid (2023), popular GAI tools include ChatGPT, Midjourney, Pictory, Bicasso, and CharacterGPT. Gen Z students are quick to adopt technologies like GAI because they have grown up in digital environments (Babu et al., 2024).

This study aims to identify the main factors influencing GAI adoption among Gen Z students in Sarawak's tertiary education. In Malaysia, the GAI market is expected to reach US$312.30 million by 2025 (Statista, 2024b), highlighting the rising demand for AI tools. As Malaysia pushes forward with digital innovation, Sarawak is also positioning itself to play a major role in this transformation. The state aims to become developed by 2030, and its Digital Economy Blueprint guides efforts to promote digital progress across sectors (Ashari and Farouk, 2023). GAI helps support Sarawak's digital goals by improving higher education and preparing students for an AI-driven future.

Although GAI use is growing in education, a research gap exists within the Sarawak context. Most studies focus on broader contexts in Malaysia (Mizan and Norman, 2024; Guangtian et al., 2024) or in Western settings (McDonald et al., 2025; Chen et al., 2025). Limited research has been done on how tertiary students in Sarawak use these tools. Filling this gap will provide important insights for educators, policymakers, and developers to better integrate AI into higher education in Sarawak, supporting its digital transformation efforts.

RESEARCH METHOD

This study employed a quantitative approach to explore what influences Gen Z students in Sarawak's higher education to adopt Generative AI (GAI). Sarawak, a Malaysian state on Borneo's northwest coast (Ugong, 2024), was chosen because of its diverse population, growing digital economy, and focus on technology in education. Since Gen Z students are digital natives who grew up with advanced technology, they are the focus of this study. The study used purposive sampling to select suitable respondents for this study. Participants had to meet specific criteria: categorized as Gen Z, have digital skills, internet access, and prior experience with AI tools. The sample size was calculated using G*Power software to ensure enough data for reliable analysis, with a minimum of 146 participants needed. The final number of respondents who participated in this study was 256.

Data was collected through an online questionnaire shared via university channels, email, and social media. The questionnaire used validated items from earlier UTAUT studies and a 5-point scale from strongly disagree to strongly agree. The data was analyzed with SmartPLS 4.0 using Partial Least Squares Structural Equation Modelling (PLS-SEM). Descriptive statistics summarized participant details, and reliability and validity were checked to ensure data quality. The study also used bootstrapping to examine relationships between variables and mediation analysis to understand how attitude and perceived value affect GAI adoption. Figure 1 below shows the conceptual framework of the study.

Figure 1: Conceptual Framework of the Study
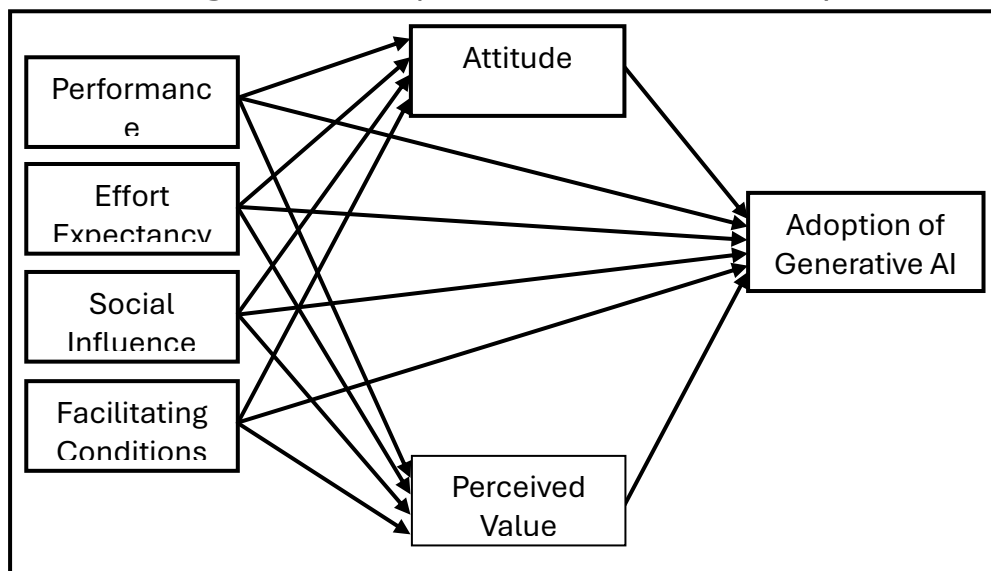
RESULTS

Measurement Data Assessment

Common Method Bias (CMB) was employed in this study to check for multicollinearity issues. Variance Inflation Factor (VIF) values below 3 are good (Hair et al., 2021), and the study's VIF values ranged from 1.114 to 2.990. Hence, this study is free from

CMB. Next, Fornell and Larcker (1981) suggest assessing convergent validity through factor loadings, Composite Reliability (CR), and Average Variance Extracted (AVE). Factor loadings should be above 0.5 (Hair et al., 2009), and the factor loadings of the study exceeded this suggested value. CR should be above 0.6 (Hair et al., 2014), and the CR values of the study were between 0.903 and 0.993. Next, AVE should be above 0.5 (Fornell and Larcker, 1981), and the AVE values of the study were between 0.752 and 0.986. Hence, convergent validity of the study was established. Furthermore, the study's discriminant validity was evaluated using Fornell and Larcker's Criterion and the Heterotrait-Monotrait (HTMT) ratio, as proposed by Khuzainey et al. (2020). Discriminant validity is confirmed when a construct explains at least 50% of the variance in its indicators (Fornell and Larcker, 1981). In this study, this was met as the Average Variance Extracted (AVE) for each construct was above 0.50. Kline (2011) also suggests that HTMT values should not exceed 0.85. All HTMT values in this study were well below that limit, confirming discriminant validity. Table 1 below presents the results of the measurement model assessment.

Table 1: Results of Measurement Model Assessment

	Indicator	Loadings	Cronbach's alpha	CR	AVE
PEX	PEX1	0.925	0.949	0.963	0.867
	PEX2	0.946			
	PEX3	0.909			
	PEX4	0.944			
EEX	EEX1	0.955	0.972	0.980	0.923
	EEX2	0.961			
	EEX3	0.969			
	EEX4	0.958			
SIN	SIN1	0.957	0.924	0.963	0.929
	SIN2	0.971			
FCN	FCN1	0.993	0.985	0.993	0.986
	FCN2	0.993			
ATD	ATD1	0.967	0.934	0.958	0.883
	ATD2	0.886			
	ATD3	0.964			
PVA	PVA1	0.886	0.891	0.924	0.752
	PVA2	0.875			
	PVA3	0.869			
	PVA4	0.839			
GAI	GAI1	0.985	0.970	0.985	0.971
	GAI2	0.986			

Note(s): Performance expectancy, PEX; effort expectancy, EEX; social influence, SIN; facilitating conditions, FCN; attitude, ATD; perceived value, PVA; adoption of generative AI, GAI

Structural Data Assessment

After checking the measurement model, the structural model was tested to see if the study's hypotheses were supported. The researcher used a bootstrapping method, running 5,000 resamples at a 0.05 significance level. Out of six hypotheses, four were supported. PEX, EEX, FCN, and ATD significantly influenced Generative AI adoption among Gen Z students in Sarawak. Two hypotheses, SIN and PVA, were not supported. Next, the mediation analysis checked if attitude (ATD) and perceived value (PVA) explain how some factors affect AI adoption. Attitude partially or fully mediated the effects of EEX and SIN on AI adoption. However, attitude did not mediate the effects of PEX and FCN. Perceived value did not mediate any relationships. Results are presented in Table 2.

Table 2: Results of Hypothesis Testing

	Hypothesis	β	Standard deviation	T statistics	P values	Result
Direct effects:						
PEX -> GAI	H1	-0.166	0.046	3.584	0.000	Supported
EEX -> GAI	H2	0.451	0.075	6.018	0.000	Supported
SIN -> GAI	H3	-0.058	0.045	1.282	0.200	Not Supported
FCN -> GAI	H4	0.235	0.094	2.505	0.012	Supported
ATD -> GAI	H5	0.327	0.054	6.087	0.000	Supported
PVA -> GAI	H6	-0.124	0.091	1.357	0.175	Not Supported
Indirect effects:						
PEX ->ATD ->GAI	H7a	0.025	0.021	1.219	0.223	Not Supported
EEX ->ATD ->GAI	H7b	0.096	0.029	3.336	0.001	Supported
SIN ->ATD ->GAI	H7c	0.078	0.022	3.624	0.000	Supported
FCN ->ATD ->GAI	H7d	0.009	0.024	0.359	0.719	Not Supported
PEX ->PVA ->GAI	H8a	0.009	0.010	0.977	0.329	Not Supported
EEX ->PVA ->GAI	H8b	-0.027	0.023	1.139	0.255	Not Supported
SIN ->PVA ->GAI	H8c	-0.005	0.007	0.806	0.420	Not Supported
FCN ->PVA ->GAI	H8d	-0.080	0.059	1.366	0.172	Not Supported
Total effects:						
PEX -> GAI		-0.131	0.055	2.368	0.018	
EEX -> GAI		0.521	0.075	6.947	0.000	
SIN -> GAI		0.015	0.048	0.313	0.754	
FCN -> GAI		0.164	0.072	2.285	0.022	

DISCUSSIONS

Performance expectancy was an important factor in whether Gen Z students in Sarawak adopted Generative AI tools. This matches other studies that show students are more likely to use Generative AI if they believe it helps improve their schoolwork and efficiency (Camilleri, 2024; Huy et al., 2024). To encourage this, schools should highlight how Generative AI can help with tasks like writing or creativity, include these tools in lessons, and offer workshops to show their benefits. Additionally, effort expectancy was also significant. This finding is in line with other studies' findings (Kim et al., 2024; Oc et al., 2024). When students think that Generative AI tools are easy to use, they are more willing to try them. Schools should make sure these tools are simple to use by providing clear guides, tutorials, and including them in daily learning activities. This reduces worries about difficulty and helps students feel confident using Generative AI.

Interestingly, social influence did not affect Generative AI adoption much. This finding aligns with the results of other studies (Huy et al., 2024; Oc et al., 2024). This means students decide to use Generative AI more based on their own views than because of friends or social groups. Schools should focus on meeting individual student needs with personalized help such as one on one support or tailored workshops to show how Generative AI can help them personally. Besides, facilitating conditions such as having good internet, compatible devices, and technical help were also important for adopting Generative AI. This finding was supported by other studies that yielded the same results (Du and Lv, 2024; Oc et al., 2024). Schools need to invest in technology infrastructure and provide support to make it easy for students to access and use Generative AI tools.

As expected, attitude plays a big role. This finding is in line with other studies' findings by Ivanov et al. (2024) and Kang et al. (2024). Positive feelings toward Generative AI encourage adoption. To build this, universities should include AI topics in classes, offer hands-on workshops, and share success stories to show how useful Generative AI can be. Surprisingly, perceived value was not significant. Febriani et al. (2022) in their study found AI as insignificant in shaping perceived value. Some students worry that using Generative AI might reduce their own thinking skills. Schools should teach students how Generative AI can support and not replace their critical thinking through awareness campaigns and activities that show Generative AI as a helpful tool.

The mediation analysis showed that attitude partly explains how effort expectancy leads to adoption and fully explains the influence of social factors. This means if students find Generative AI easy to use or feel some social pressure, their attitude improves, which helps adoption. But attitude does not explain the effects of performance expectancy or facilitating conditions because these factors influence adoption directly. Schools should build student familiarity with Generative AI through workshops and hands-on experience to create positive attitudes.

Finally, perceived value did not mediate the relationship between key factors and Generative AI adoption. This suggests students may not yet fully see the practical

benefits of Generative AI. To fix this, schools should clearly show real-life uses of Generative AI such as helping with writing or data analysis, provide tutorials, and share success stories to help students understand its value better and encourage future use.

IMPLICATIONS, LIMITATIONS, AND FUTURE RESEARCH DIRECTIONS

This study strengthens the UTAUT model by adding attitude and perceived value, which help explain how users think and evaluate when deciding to adopt new technologies like Generative AI. These factors highlight the importance of users' perceptions and the value they assign to such tools. Practically, policymakers and educational leaders can support adoption by creating policies that encourage the use of Generative AI in education. Universities should invest in reliable internet access, adequate computer facilities, and dedicated labs where students can explore these technologies. Fostering a culture open to innovation can further motivate students to engage with Generative AI.

However, the study has some limitations. It only involved Gen Z students from Sarawak, so the findings may not apply to students in other regions. Additionally, the study measured students' intentions to use Generative AI at a single point in time, without tracking actual long-term usage. Future research should include students from diverse regions to gain a broader understanding of Generative AI adoption. Longitudinal studies that follow students over time would also provide deeper insights into how their usage patterns and attitudes evolve.

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SELF-COMPASSION AS A PREDICTOR OF PSYCHOLOGICAL WELL-BEING AMONG SECONDARY SCHOOL TEACHERS IN SARAWAK: A CROSS-SECTIONAL ANALYSIS

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EXTENDED ABSTRACT

INTRODUCTION

Psychological well-being (PWB) and self-compassion (SC) are vital concepts for understanding and improving educators' emotional health and professional performance (Chan & Lim, 2023). PWB represents a person's overall mental state, encompassing aspects such as autonomy, life purpose, personal development, and healthy relationships (Ryff, 1989). Meanwhile, self-compassion is defined as being kind to oneself, recognising shared human experiences, and maintaining mindfulness during difficult moments, which has been linked to increased resilience, lower burnout rates, and better emotional regulation (Neff et al., 2023).

These attributes are especially crucial in teaching, where ongoing stress and emotional effort are the norm. Malaysia, and particularly in Sarawak, is a multi-ethnic and socio-culturally diverse state, whereby teacher well-being has become an important issue due to reports of increased workplace stress, turnover, and declining mental health (Chan et al., 2021). While there has been global progress in understanding the connection between social capital (SC) and psychological well-being (PWB), empirical research in Southeast Asian educational settings remains limited. To address this gap, this study examines psychological well-being and self-compassion among secondary school teachers through empirical data and statistical analysis.

RESEARCH METHOD

A cross-sectional quantitative study was carried out to explore the relationship between psychological well-being (PWB) and self-compassion (SC) among secondary school teachers in Sarawak, Malaysia. The study involved 826 participants recruited through stratified sampling to ensure demographic and

regional diversity. Data collection was done using a structured questionnaire featuring two validated tools: the Psychological Well-Being Scale (PWB), adapted from Ryff's multidimensional model covering six areas, which included Autonomy, Environmental Mastery, Personal Growth, Positive Relations, Purpose in Life, and Self-Acceptance, and the Self-Compassion Scale (SCS) by Neff, which measures six components such as Self-Kindness, Self-Judgment, Common Humanity, Isolation, Mindfulness, and Over-Identification.

Internal consistency for each subscale was evaluated using Cronbach's alpha, with reliability coefficients falling between 0.629 and 0.743 for PWB components and between 0.667 and 0.820 for SCS components, indicating acceptable to good reliability. Psychological well-being scores were divided into low, medium, and high categories based on the 25th and 75th percentiles. Chi-square (χ^2) tests examined the associations between these categorized PWB levels and the six SCS components. All analyses were performed using IBM SPSS Statistics version XX, with a significance threshold of $\alpha = 0.05$.

This study received ethical approval from the Ministry of Education in Malaysia. Participation was voluntary, and all respondents provided informed consent. Throughout data collection and analysis, confidentiality and anonymity were maintained in accordance with institutional ethical standards.

RESULTS

Chi-square tests showed significant links between psychological well-being (PWB) and each of the six self-compassion (SC) components. As shown in Table 1, all correlations were significant at the $\alpha = 0.05$ level, with the strongest statistic for Common Humanity (CS3), χ^2 (4, N = 826) = 239.91, p ≈ 2.11×10^{-41}. Similarly high associations were observed for Mindfulness (CS5) and Over-Identification (CS6), with χ^2 values of 235.64 and 218.23, respectively. These results suggest that teachers with higher self-compassion levels are much more likely to have greater psychological well-being, highlighting SC as an important predictor of emotional and mental resilience in educational settings.

Table 1: The Chi-Square Results for PWB and SCS Components

	Self-Compassion Components	Chi-Square Value (χ^2)	p-value	Significant
1	CS1	χ^2(4, N=826)	2.99×10^{-20}	Yes
2	CS2	χ^2(4, N=826)	4.76×10^{-27}	Yes
3	CS3	χ^2(4, N=826)	2.11×10^{-41}	Yes
4	CS4	χ^2(4, N=826)	1.2×10^{-30}	Yes
5	CS5	χ^2(4, N=826)	6.2×10^{-41}	Yes
6	CS6	χ^2(4, N=826)	2×10^{-34}	Yes

DISCUSSIONS

This study highlights the crucial importance of self-compassion in promoting psychological well-being among teachers. It acts as a vital psychological resource that boosts emotional resilience and reduces stress-related issues in schools. Significant statistical links across all six self-compassion domains, including self-kindness, mindfulness, and a sense of shared humanity, demonstrate its broad, multidimensional effects. These findings align with Ryff's Psychological Well-Being model, which focuses on self-acceptance, autonomy, and positive relationships as core aspects of healthy functioning (Ryff, 1989). Additionally, the results support the positive psychology framework, which encourages developing personal strengths and adaptive emotional skills to foster flourishing (Seligman & Csikszentmihalyi, 2000).

From a policy standpoint, these results advocate for incorporating self-compassion and mindfulness practices into teacher training and mental health programs. Integrating these elements into both pre-service and in-service education can proactively combat burnout, boost job satisfaction, and enhance teaching effectiveness. Additionally, tailoring these interventions to suit different cultural settings, such as Sarawak, with its collectivist values and high emotional labor, can be especially beneficial, highlighting the importance of organized psychological support for educators.

IMPLICATIONS

This study offers strong empirical evidence that self-compassion is markedly linked to psychological well-being in secondary school teachers, emphasizing its function as a key psychological safeguard in stressful educational settings. The findings advocate for incorporating self-compassion training into teacher development programs, like mindfulness-based practices and reflective modules, to boost emotional resilience and reduce burnout. Education policymakers and stakeholders should consider implementing structured well-being systems within institutions, which include school-wide mental health initiatives that target both individual coping skills and organizational stress factors. Considering Sarawak's diverse cultural and socioeconomic education landscape, these programs should also be adapted culturally to ensure they are accessible, relevant, and inclusive.

LIMITATION AND FUTURE RESEARCH DIRECTIONS

Several limitations need to be recognized. First, the cross-sectional design restricts the ability to infer causality. However, strong correlations were found; the exact direction of the relationship between self-compassion and psychological well-being remains uncertain. Second, using self-report measures could introduce social desirability and response biases, especially in collectivist cultures where emotional expression may be limited. Third, since the study only included secondary school teachers in Sarawak, its findings may not apply to other educational levels or regions within Malaysia or elsewhere.

Future research should utilize longitudinal or experimental designs to understand better causal links and the timing between self-compassion and well-being. Including mixed methods with qualitative insights can also enhance understanding of how teachers perceive and experience self-compassion in culturally specific contexts. Widening the sample to include teachers from different Malaysian states or various school levels, such as primary or tertiary, would boost external validity. Moreover, research could examine how variables like workload, administrative support, or school climate act as mediators or moderators, helping to develop a more detailed model of teacher mental health.

CONCLUSION

This study offers strong evidence that self-compassion is an important factor linked to psychological well-being among secondary school teachers in Sarawak, Malaysia. The significant correlations found in all six domains of self-compassion confirm its diverse contribution to teachers' emotional resilience and mental health. These results support theoretical models like Ryff's well-being framework and the broader positive psychology approach, highlighting the importance of internal emotional resources in maintaining professional effectiveness in high-stress environments. With increasing psychological pressures on educators, especially in diverse and underserved regions, incorporating self–compassion–based interventions into teacher development and mental health policies is both timely and crucial. Such strategies, by addressing individual coping skills and systemic support, can improve teacher well-being, retention, and the overall quality of education.

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PARTICIPATION OF HIGHER EDUCATIONAL STUDENTS IN VOLUNTEER ACTIVITIES IN SARAWAK

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Keywords: Higher Education Institutions' Students; Volunteer Activities

EXTENDED ABSTRACT

Volunteering is an activity that is done voluntarily without expecting anything in return. There are many benefits gained through volunteer activity. However, student involvement in volunteer activities is on the decline. This study aims to investigate the involvement of higher education students in volunteer activities and identify the significant factors that influence student participation in these activities. A total of 200 students were recruited for this study using a non-probability sampling method. Data was collected through a self-administered set of questionnaires. The analysis methods used in this study are descriptive analysis and multiple regression analysis. The study's findings show that 87.5% of respondents are involved in volunteer activities, and 47% participate in this activity 1 to 3 times. Career, social attachment, value, enhancement, and understanding were found to have a significant relationship with student involvement in volunteer activities. Volunteering provides students with the opportunity to expand their social networks and establish meaningful relationships with peers, mentors, and community members. These social interactions contribute to personal growth and can foster a sense of belonging.

INTRODUCTION

Volunteering is a service activity done sincerely. Volunteering is also an activity full of humanitarian values and is very important in helping people in need (Jasni, 2022). Volunteers are non-professional people who are eager to give their time and services without compensation for a specific task (Kwadzo, 2021). Student volunteers can be defined as students volunteering in universities, associations, and student clubs. Volunteers can also enhance their skills, including leadership abilities and a deeper understanding of social issues, through participation in volunteer activities.

However, involvement in volunteer activities, especially among university students, is declining. The decline in participation in volunteer activities is not unique to Malaysia; it is also observed in other countries, including both developed and

developing nations (Adnan et al., 2023). Several factors are causing the decline in university student participation in volunteer activities. Individuals who admitted they had not engaged in any volunteer activities because of some reasons, such as not receiving an invitation, being unaware of volunteer opportunities, being too busy with academic obligations, and believing that volunteering would take much time (Mustafa et al., 2020). The participation of university students in volunteer activities can also be caused by the individual's obstacles or their environment (Normah et al., 2022). Furthermore, the advancement of media and digital technology has changed the way students spend their free time. It causes students to be less involved in volunteer activities that require physical presence and effort. Evelyn et al. (2020) stated that students are choosing to spend their time doing indoor activities rather than engaging in beneficial social activities such as volunteering.

Recent studies about the involvement in volunteering activities among university students have been conducted by Kamarudin et al. (2020), Zainuddin et al. (2020), and Rahman et al. (2022) at Universiti Putra Malaysia (UPM), Universiti Utara Malaysia (UUM), and Universiti Teknologi Mara (UiTM) Seremban Campus, respectively. However, research on volunteering activities among higher education students in Sarawak has not yet been explored. The research is important to fill the research gap, provide understanding, and give ideas about factors influencing involvement in volunteering activities in the Sarawak context. Therefore, this study aims to investigate factors influencing the participation of university students in volunteer activities in Sarawak. Researchers adapted a conceptual framework by Wondimu and Admas (2024) to conduct this research (refer to Figure 1).

Figure 1: Conceptual framework
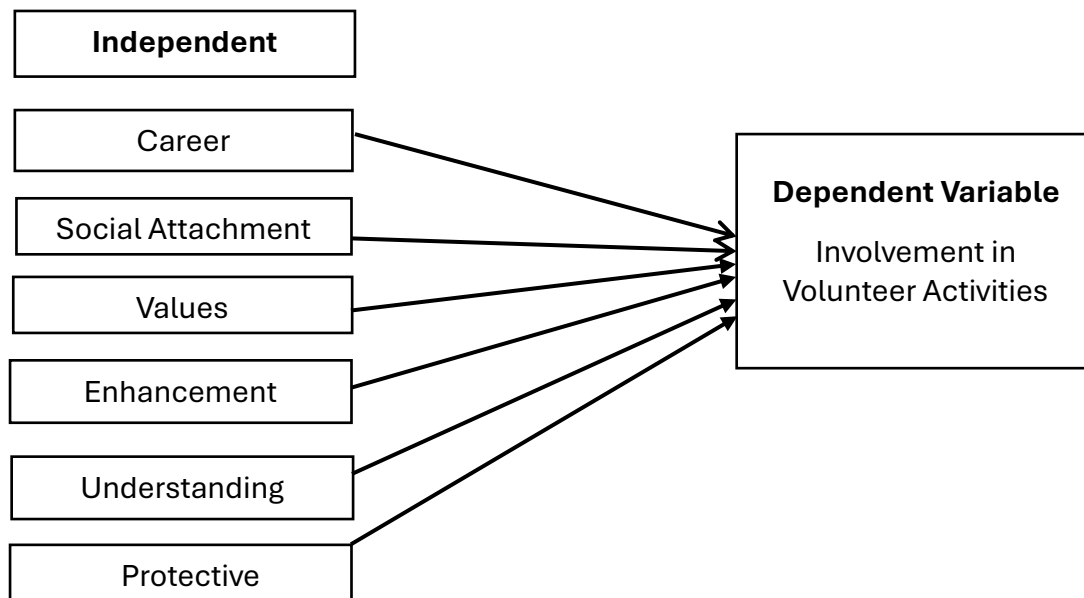
(Source: Wondimu & Admas, 2024)

RESEARCH METHOD

This study employed a quantitative approach and an explanatory design to investigate the relationship between factors influencing and involvement in volunteer activities in Sarawak. Convenience sampling and snowball sampling were used to reach respondents. The number of samplings is determined based on sample-to-item ratio criteria. The sample-to-item ratio is based on the number of questions distributed to respondents by the researcher (Memon et al., 2020). For example, if research of 30 items (questions) is used, it would need the participation of 150 respondents. This study has 37 items, excluding personal information. Thus, 185 respondents are required for this study. The research instruments used for data collection in this study are a set of questionnaires. This survey was distributed to university students through Google Forms. There are two data analysis methods for this research: descriptive and multiple regression. Both analyses utilize the IBM Statistical Package for Social Sciences version 23 (IBM SPSS ver. 23).

RESULTS AND DISCUSSIONS

Table 1 shows the number of respondents from various higher educational institutions. 29.5% of respondents who answered are from Universiti Putra Malaysia Bintulu Campus (UPMKB), followed by Universiti Malaysia Sarawak (UNIMAS), which is 17% of respondents. Next, the respondents from the University of Technology Sarawak (Uare) 15%, 11.5% from the Universiti Teknologi MARA (UiTM) Mukah C campus, and 9.5% from the Universiti Teknologi MARA (UiTM) Samarahan Campus. In addition, Sarawak Mukah Polytechnic shows 6% of respondents, and Kuching Sarawak Polytechnic is 4.5%. Furthermore, 2.5% of respondents are from Swinburne University of Technology Sarawak, 2% from Curtin University Malaysia, followed by 1.5% from i-CATS University College, and finally 1% from SEGi Sarawak College.

Table 1: Number of Respondents According to Higher Educational Institution

Higher Educational Institution	Frequency	Percentage (%)	Mean	Standard deviation
			4.25	2.735
Universiti Malaysia Sarawak (UNIMAS)	34	17		
Universiti Teknologi MARA (UiTM) Samarahan Campus	19	9.5		
Universiti Teknologi MARA (UiTM) Mukah Campus	23	11.5		
Universiti Putra Malaysia Kampus Bintulu (UPMKB)	59	29.5		
University of Technology Sarawak (UTS)	30	15		
Swinburne University of Technology Sarawak	5	2.5		
Curtin University Malaysia	4	2		
i-CATS University College	3	1.5		
SEGi College Sarawak	2	1		
Politeknik Kuching Sarawak	9	4.5		
Politeknik Mukah Sarawak	12	6		
Total	**200**	**100%**		

From a total of 200 respondents, 175 of them used to be involved in volunteering. 47% of respondents answered 1 to 3 times, followed by 54 respondents, or 27%,

who answered 4 to 6 times. In addition, 18 respondents, or 9%, participated in volunteer activities 7 to 10 times, while only nine respondents, or 4.5%, participated in the activity more than 10 times. (refer to Table 2)

Table 2: The Frequency of Students Involved in Volunteer Activities

Component	Frequency	Percentage (%)	Standard deviation
Have you ever participated in volunteer activities?			**1.13**
Yes	175	87.5	
No	25	12.5	
If yes, how often do you participate in volunteer activities?			**2.09**
1 to 3 times	94	47	
4 to 6 times	54	27	
7 to 10 times	18	9	
More than 10 times	9	4.5	

Through regression analysis (refer to Table 3), career and value factors are highly significant (0.1%) with the involvement in volunteer activities as the p-value is 0.000, below 0.001. The social attachment factor showed very significant results with the involvement in volunteer activities with a p-value of 0.009 (below 0.01), while enhancement (0.18) and understanding factors (0.04) are 5% significant (below 0.05). Therefore, all the factors show a significant relationship with the involvement in volunteer activities, except protective factors. Younger individuals are more likely to be involved in volunteer activities because of aspirations for personal growth, career development, or altruistic values, not because of a need to reduce guilt or manage emotional burdens.

Table 3: Multiple Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients		
	β	Std. Error	Beta	t	Sig.
(Constant)	.355	.254		1.396	**.164**
Career	.253	.064	.250	3.938	**.000**
Social Attachment	.110	.042	.146	2.641	**.009**
Values	.236	.062	.234	3.805	**.000**
Enhancement	.146	.061	.161	2.388	**.018**
Understanding	.136	.066	.136	2.064	**.040**
Protective	.054	.061	.058	.889	**.375**

a. Dependent variable: Involvement in volunteer activities

IMPLICATIONS

Universities, colleges, or higher institutions in Sarawak play an important role in promoting volunteerism among students. Higher institutions should integrate volunteer activities into their curricular and co-curricular programs. For example, learning modules provide students with opportunities to engage in volunteer activities while earning academic credit. Institutions should also create a culture that

values and recognizes volunteerism by organizing awards, certificates, or public recognition events for active participants. In addition, universities can collaborate with local NGOs, government agencies, and private organizations to provide a variety of volunteer opportunities that align students' career aspirations and interests. This support system can further encourage participation and ensure that students have the necessary resources to engage in volunteer activities.

LIMITATION AND FUTURE RESEARCH DIRECTIONS

This research focuses on higher education students in Sarawak; Therefore, these findings cannot be generalized to students in other regions of Malaysia. In addition, the factors studied are also limited. Although the study examines six factors that influence student involvement in volunteer activities (Career, Social Attachment, Value, Enhancement, Understanding, and Protective), other variables are not considered in this study. Therefore, future research should explore to expand the scope to explore a wider variety of factors. It can provide a more holistic understanding of the complex interplay of influences that drive students involved in volunteering.

CONCLUSION

Volunteering activities among higher education students play an important role in creating experience, forming skills, and benefiting volunteers. This volunteering can build social trust and improve community well-being. By participating in volunteer activities, students are exposed to a variety of opinions and obstacles, which enhance their perspective and develop empathy and an awareness of societal issues. Hence, this study will be instructive and a resource for future scholars who explore the issue of volunteerism.

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UNSEEN BARRIERS TO DIGITAL TRANSFORMATION IN ANTI-CORRUPTION AGENCIES: A CONCEPTUAL ANALYSIS OF NIGERIA'S PUBLIC SECTOR

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EXTENDED ABSTRACT

INTRODUCTION

Digitalization has become widely seen as a powerful means of increasing transparency and accountability in public governance, especially anti-corruption efforts. Yet digital technological adoption among anti-corruption agencies across different countries is hindered by systemic barriers to digitalization in countries such as Nigeria. This conceptual paper uncovers the 'hidden treasures' of institutional, technological, and cultural barriers to digitalization in Nigeria's anti-corruption systems by adopting a holistic review of the EFCC. Based on secondary data gathered via policy papers, literature reviews, and case studies mainly observations from EFCC Gombe Zonal Office, this study identifies major hindrances such as bureaucratic complacency, digital infrastructure shortages, cultural resistance to digital interventions, and a shortage of public participation in e-governance platforms. By drawing information through a synthesis of relevant literature, this paper suggests a model for meeting these hindrances and calls for an emphatic concentration on aligning institutions with requisite transformations and people-centric accountability measures. The findings contribute to global literature on digital governance through interlinking context-apt ideas informed by the situation in Nigeria with anti-corruption strategies. This study contributes to ICOSSH 2025 by shedding a visibility through which to view the 'hidden' obstacles to digitalization capable of being resolved through constant implementation of countermeasures and thereby realizing development potential in accountability in public sector governance. The article

provides policy recommendations to policymakers aiming to balance digital progress with effective anti-corruption efforts in both Nigeria and wider examples.

INTRODUCTION

Digital transformation plays a critical role in promoting transparency and accountability in public administration, especially in the fight against corruption. Yet, in most developing countries such as Nigeria, heavy investments in digital projects have not been producing anticipated outcomes in the war against corruption. Despite heavy investments in digital, Nigeria's low Corruption Perceptions Index (136/180 in 2023) continues to be an issue, revealing a paradox: technology cannot do it alone without overcoming inherent institutional, technological, and cultural barriers (Nwozor et al., 2022). This study explores the reasons why computerized systems within Nigerian anti-corruption agencies, such as the EFCC's NECC and Eagle Eye, fail to reduce the backlog of cases. We present a 'Hidden Barrier Thesis,' which argues that constant failures result from a complex interplay between institutional sclerosis and cultural resistance weakening solutions by technology. This research aims to deconstruct such interactions, develop an Extended Triple Barrier Framework (T-O-E-C) for LMIC ACAs, and propose context-sensitive implementation sequencing. The study aligns with the ICOSSH 2025 theme, "The Art of Unseen Treasure," by setting digital anti-corruption as an "unseen treasure" that must be unlocked through a systemic means, and viewing the sleeping institutional capacity in traditional accountability mechanisms as a "hidden asset."

RESEARCH METHOD

This study employs a conceptual analysis research design, primarily relying on enhanced secondary data synthesis to explore the complex phenomena of digital transformation barriers in anti-corruption agencies. The systematic literature review process was applied using Scopus and Web of Science databases, supplemented with Nigeria-focused databases such as NILDS and NBS. The core search query used was ("EFCC" OR "anti-corruption") AND ("digital transformation" OR "e-governance") AND "Nigeria". Data triangulation was achieved through a matrix that included policy reports (e.g., National Digital Economy Policy and Strategy [NDEPS], 2020–2030; EFCC Annual Reports), case studies (e.g., EFCC Gombe Zone), and performance indicators (e.g., EFCC conviction rates, CBN cash-based transactions) with cross-comparative emphasis on Sarawak/Borneo (Mahdi et al., 2019; Jugah et al., 2022). The analytical method was a combination of deductive coding, as per the TOE-C framework, and inductive coding to uncover emergent themes from rich case studies, maintaining rigor and breadth in combining findings (Grant & Booth, 2009).

RESULTS

Our analysis reveals an overarching and networked 'Triple Barrier System' frustrating digital transformation in Nigeria's anti-corruption agencies, encompassing institutional, technological, and cultural barriers. Institutional barriers entail a "Constitutional Trap" due to jurisdictional conflicts (e.g., EFCC Act v. Gombe State

Law) and a "Resource Paradox" where an excessive 70% of the technology budget goes to forensic technology for a low ratio of high-profile cases at the expense of broader systemic digital infrastructure (Hassan, 2021; Onwunyi & Akama, 2024). Technological challenges manifest as a "Mirage of Modernity," in the shape of rudimentary infrastructural deficits like EFCC Gombe's 4 hours of generator dependency every day and pervasive data fragmentation in 37 incompatible databases (Makanjuola et al., n.d.). Cultural challenges are a "Silent Saboteur," as exemplified in "Digital Distrust" (68% of the whistleblowers would rather use anonymous letters) and "Elite Capture," where the traditional rulers resist asset declaration portals (Bello et al., 2024). A Sarawak-Borneo counterpoint highlights the extent to which relying on established community responsibility traditions can underpin digital adoption, highlighting the importance of cultural fit (Jugah et al., 2022).

DISCUSSIONS

The findings emphasize that the failure of digital transformation in Nigeria's anti-corruption institutions is not simply a technical issue but an advanced interaction of deeply embedded barriers. Institutional fragmentation and resource misallocation are a scenario under which even highly advanced digital tools cannot operate (Rogger & Development Research Group, 2018). The illusion of technology, with its inadequate infrastructure and information silos, exacerbates all these, inhibiting information flow and efficiency (Makanjuola et al., n.d.). Above all, cultural factors such as distrust of the digital and resistance from the established order of power are a silent saboteur, thereby undermining the ground of transparency and accountability that digital strategies aim to establish (Bello et al., 2024). The comparison with Sarawak-Borneo serves to underscore the point that good digital transformation is deeply rooted in cultural context and the ability to infuse new technology with old social capital and customary accountability mechanisms (Mahdi et al., 2019; Jugah et al., 2022). This suggests that a holistic approach, addressing all three forms of barriers simultaneously, is necessary for achieving meaningful and sustainable digital transformation in anti-corruption (Ologunebi & Taiwo, 2024).

IMPLICATIONS

To address the triple barrier system needs a stepped and cautious implementation approach. Short-term interventions would involve attacking current technological and cultural challenges, such as the use of offline-enabled tools for data capture where there is unreliable internet connectivity and the integration of hybrid (digital + town hall) reporting systems to establish trust and gradually shift citizens into digital platforms. These long-term policy implications necessitate institutional thinking at its essence, e.g., constitutional amendments to delineate mandates and promote cooperative federalism between anti-corruption institutions (Onwunyi & Akama, 2024; Hassan, 2021). Strategic investments in interrelated data systems, as in the case of a pilot between EFCC-Gombe and Sarawak's MACC API standards, are also pivotal to shatter data silos and facilitate interoperability (Zakiyy & Hassan, 2015). These policy recommendations place most emphasis on an integrated approach, recognizing that technological measures will have to be supplemented by robust

institutional reform and culturally responsive intervention in order to yield sustainable and impactful anti-corruption outcomes in Nigeria (National Digital Economy Policy and Strategy, n.d.).

LIMITATION AND FUTURE RESEARCH DIRECTIONS

This conceptual paper employs secondary data synthesis, which necessarily limits the degree of empirical testing. Future research would include empirical research to apply the Triple Barrier Framework and phased implementation model in practice. System dynamics modeling to predict interactions among barriers might provide quantitative data on how changes to one category of barrier influence others (Issaka, 2023). Cross-ACA learning between Nigeria and Sarawak via practitioner exchange programs could offer critical empirical insights on best practice for overcoming cultural and institutional barriers and creating cooperative solutions transferable in similar situations (Jugah et al., 2022; Mahdi et al., 2019).

CONCLUSION

The paper has contributed to the illumination of the complex interaction of institutional, technological, and cultural barriers to digital transformation within Nigeria's anti-corruption agencies. The Expanded TOE-C model suggested is reminiscent of the fact that mere technology solutions are insufficient; they are badly disabled by institutionally fragmented structures, inadequate technological infrastructure, and cultural resistance to digital adoption and openness. The study claims that a clear understanding of socio-cultural context is imperative in order to develop suitable digital anti-corruption controls (Bello et al., 2024). Through their identification and mitigation, Nigeria can optimize the potential of digital transformation by leveraging existing technology and existing accountability frameworks in order to combat corruption more efficaciously (Ologunebi & Taiwo, 2024; Nwozor et al., 2022). This research contributes to a better-informed understanding of digital governance for LMICs and offers actionable insights for policymakers and practitioners.

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SULTANATES, PIRATES, AND COLONIAL POWERS: MARITIME DYNAMICS IN WEST KALIMANTAN IN THE 19TH CENTURY

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EXTENDED ABSTRACT

This paper investigates the identity and roots of pirate activities on the West Coast of Borneo during the colonial period. Challenging the prevailing notion that pirates in the region were primarily of Sulu Mindanao and Bugis descent. Through a critical historical approach, the study systematically examines colonial sources and primary texts from sultanates to uncover the socio-economic factors that drove indigenous people from Sukadana and Sambas to engage in piracy. The findings reveal that pirates in the West Coast of Kalimantan were led by the Sultan and Pangeran Anom from the neighboring kingdom of Sambas, who formed alliances with the Ilanun to attack merchants in Pontianak, Mempawah, and Banjar. Additionally, pirate activities were found in the area off Sukadana Bay by the Tanjung Pura community due to the collapse of the Sukadana Kingdom's sea power resulting from Dutch East Indies colonial expansion. The study highlights the complex interplay between political power dynamics and the challenge of piracy in the region, shedding light on a sensitive issue in the collective memory of the local population. The findings contribute to a deeper understanding of the maritime history of Borneo and the socio-political factors that shaped piracy during the colonial period.

INTRODUCTION

The story of pirates in the waters of Southeast Asia, particularly Kalimantan, is inextricably linked to the political constellation between the Maritime Kingdoms of the Nusantara and Europe. In modern historiography, the issue of piracy has received little attention in studies of Southeast Asian maritime history, despite the existence of numerous works on the subject, such as Adrian B. Lapian's dissertation (Lapian, 2013) or Alamsyah (Alamsyah, 2020), who wrote about the activities of pirates from Sulu, the Philippines, Bajau, and Bugis as an ethnic network of seafaring people considered as subjects of piracy in the waters of Southeast Asia, particularly West Kalimantan. James F. Warren's magnum opus (Warren J. F., 2002) also adds to the historical knowledge of Malay maritime dynamics regarding pirate groups commonly referred to as Iranun and Balangingi, stating that the Sulu region is more than just

an ethnic group but a cultural transformation from a stable Sea King, yet colonial penetration turned them into sea raiders.

Nicholas Tarling, a British historian, also highlights the maritime dynamics of pirates in the waters of the Nusantara archipelago, which cannot be separated from Dutch and British imperialism in Southeast Asia during the 19th century (Tarling, 1963). This underscores the need for a new approach in studying the maritime world of Borneo, particularly the coastal areas of West Kalimantan. In this analysis, we can see the configuration between pirates who were negatively labelled by Europeans for disrupting their trade interests and pirates created by local rulers to compete for the economy of a region (Campo, 2003).

The 19th century was a period considered the dark age of trade routes in the sea connecting the entrance to the port city of Kalimantan (Atsushi, 2010) (Warren J. F., 2007). According to Furnivall, the decline in trade volume was one indicator of the sluggish economy of the Dutch East Indies during this period under Raffles' control. (Furnivall, 2009) In his research, Alamsyah mentions that Iranun and Balangingi were two pirate groups active in the Sulawesi Sea and East Kalimantan originating from Sulu (Philippines) from the 18th century to the early 19th century. They even established bases along the coast of Mindanao and the west coast of Kalimantan (Alamsyah, 2020).

There were numerous pirate activities along both the eastern and western coasts of Kalimantan (Lapian, 2013).The instability of trade in the Kalimantan Sea led several kingdoms in Borneo to form alliances with the British and Dutch navies to combat pirate activities, which were seen as disrupting their economies (Black, 1985). However, this alliance was often seen as more detrimental to the indigenous kingdoms than beneficial. This maritime dynamic is what we consider worthy of being raised and discussed as one of the sensitive issues in the collective memory of society.

RESEARCH METHOD

The scope of this study is the maritime history of the West Coast of Kalimantan during the 19th century. The author employs the Critical History method, which includes the stages of heuristics, verification, interpretation, and historiography. (Abdurrahman, 1999; Kuntowijoyo, 2003). The research is conducted in-depth by tracing colonial sources and archives of correspondence between the King of Pontianak in West Kalimantan and the British imperialists. The data sources were obtained from the British Library Archive and the National Library, both in print and digital formats.

To strengthen the analysis of this research, we used a political history approach. Although the issues discussed here are dominated by events related to the struggle for economic space and social transformation, the author considers the factors of alliance in the struggle for territorial power to be more profound with a political history analysis. This framework examines the social structure of power relations and antagonistic groups of pirates who were considered rebels (Lloyd, 1993; Burke,

2016), and the process of resistance against the hegemony of the superstructure, namely the sultans on the west coast of Kalimantan.

RESULTS & DISCUSSION

A. Kingdoms in West Kalimantan

In several studies on pirates in Southeast Asia, particularly in the vulnerable zone between the South China Sea, the Philippines, and the West Coast of Kalimantan, the surge in trade and the increased flow of commodities between Southeast Asia, China, and Europe in the 17th century served as the backdrop (Roelofsz, 1962; Warren J. F., 2007). According to A.B. Lapian, the arrival and exploitation of Europeans, as well as slavery, had significant social impacts, including forms of resistance by the indigenous population (Lapian, 2013). The arbitrary agreements forced upon the kings of the Nusantara by the VOC had long-term detrimental effects (Alamsyah, 2020).

Speaking of the kings of the archipelago, West Kalimantan has the most Islamic sultanates or kingdoms in Borneo. In Islamic archaeological research, several of these were found in the regions of Sambas, Pontianak, Tanjungpura, Kubu, Matan, Landak, Singkawang, Simpang, Sukadana, Mempawah, and Ketapang. On the other hand, the strategic development of the West Coast of Kalimantan as a trade and shipping route is supported by hinterland areas such as Sambas, Pontianak, Tanjung Pura, and Sukadana (Alamsyah, 2020). The port of Sukadana has the busiest economic activity on the West Coast of Kalimantan, but it is quite risky in terms of security as it is often targeted by pirate attacks (Atsushi, 2010).

One distinctive feature of the Sultanate of Kalimantan is that the major sultanates fall under the category of Delta River Mouth Kingdoms (Susilowati, 2011). Sambas, as one of the Malay Maritime Kingdoms located on the West Coast of Kalimantan, has its capital in the Delta of the Sambas Kecil River. This kingdom was founded by migrants from the Malay Peninsula and Sumatra, known as a group of merchants and pirates (Ismail, 1994; Larsen, 2012). Its proximity to the South China Sea made it a strategic location for shipping and trade routes.

This contrasts with the Pontianak Sultanate, located south of Sambas. Its founder was an Arab Syarif, a scholar and merchant who established a trading port in a geographically strategic location (Firmanto, 2012). As the youngest sultanate established in 1771 on the Island of Borneo, Pontianak naturally required legitimacy and protection. This was due to the numerous acts of piracy in the coastal areas between Sukadana Bay and the West Coast of Kalimantan, as well as along the routes leading to Mempawah and Banjar (Britih Library Archive, 1814).

B. Pirates and Alliance Conflicts

The establishment of the Pontianak Sultanate attracted many Arab and Malay traders to settle in the forest land. However, economic development also caused tensions in the area off the west coast of Borneo between Sambas and Pontianak.

On 6 February 1814, Sultan Syarif Kasim Alkadrie sent a request for assistance to the then ruler of Java, T.S. Raffles, to eradicate the pirates on the west coast of Kalimantan, led by the Sultan and Prince Anom of Sambas from the neighbouring kingdom to the north (Britih Library Archive, 1814).

What was surprising was that the Sambas Sultanate had previously formed an alliance with the pirates (ilanun) to attack and plunder the wealth of merchants in the Pontianak, Mempawah, and Banjar regions. Syarim Kasim, the authority in Pontianak, threatened Raffles that if he did not act immediately, the British would suffer losses in their cooperation. However, three years later, after Pontianak had endured extraordinary external pressure from the pirates, King Syarif Kasim reported to Raffles that the region from Pontianak to Sambas was now safe and could no longer be disrupted by the pirates (Britih Library Archive, 1814).

The commitment between the alliance of the Kingdom and European authorities in the archipelago at that time proved to be quite helpful in eradicating pirate activities off the coast of Borneo and along inland trade routes. Although the situation later returned to normal, the Dutch East India Company still underestimated the British ability to eradicate pirates in Kalimantan, as they were still too focused on the eastern part of Borneo rather than the western part (Black, 1985). During the five years (1811-1816) that the British controlled the seas of the Indonesian archipelago, it was considered the most challenging period in securing shipping and trade routes from pirate or pirate activities (Thomas, 2014).

Figure 1: Letter from Sultan Syarif Kasim in Pontianak to Raffless regarding the threat of pirate activity on the West Coast of Borneo in 1814.
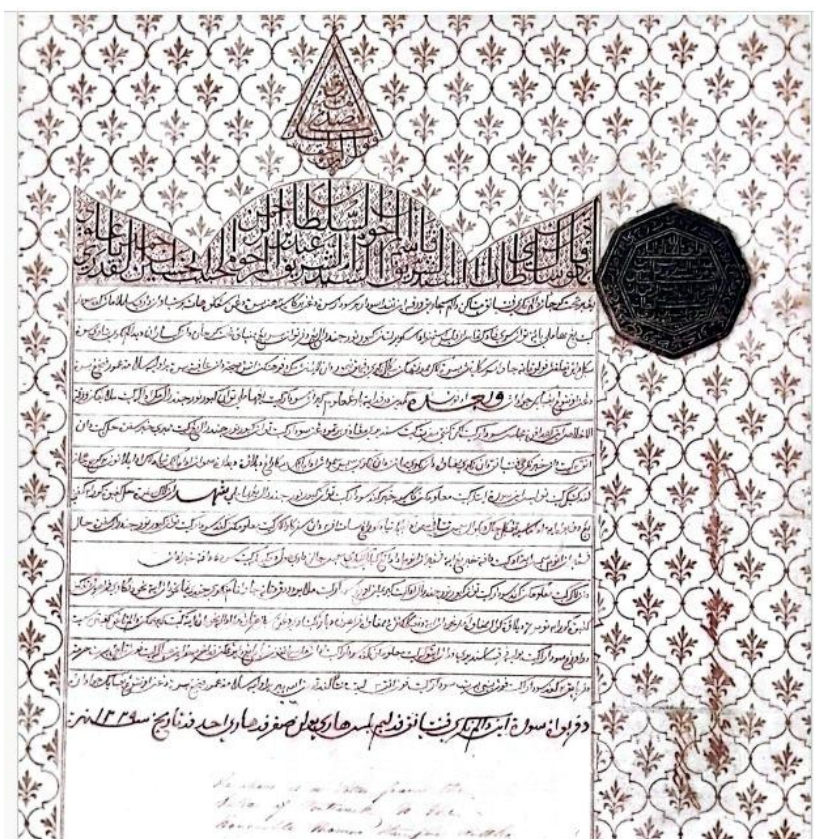
IMPLICATIONS

This study of maritime dynamics on the west coast of Kalimantan certainly has implications for our understanding of the new history of pirate identity. Pirates were often seen as the opposition, but we can see that the kingdoms of the past could collude with sea robbers for their own economic interests.

CONCLUSION

The conclusions that can be drawn from the analysis in the above article regarding pirate activities on the west coast of Kalimantan are: first, the dark economic conditions often forced certain groups, both seafarers and the kingdom, to become pirates. Second, European intervention, both Dutch and British, contributed to the growth of indigenous resistance by becoming pirates on the west coast of Kalimantan. Third, the political constellation among the kingdoms on the West Coast of Kalimantan involved competition to secure strategic positions as economic trade hubs in order to form mutually beneficial partnerships with foreign parties.

The suggestion and hope of this article is to foster awareness of the history of past internal conflicts. The aim is none other than to strengthen good relations between the kingdoms of the western coast of Kalimantan in the political, economic, social, and cultural spheres for the sake of national unity.

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PSYCHOSOCIAL SAFETY CLIMATE, TRUCK DRIVER SHORTAGE AND SOCIAL SUSTAINABILITY: A CONCEPTUAL PAPER

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Keywords: Job Demand, Job Resources, Psychosocial Safety Climate, Social Sustainability, Truck Driver Shortage

EXTENDED ABSTRACT

The Malaysian logistics industry, vital to economic growth and regional trade, is facing a severe shortage of qualified truck drivers despite infrastructure investment, technological advances, and regulatory reforms. Long working hours, low pay, limited career prospects, and stringent licensing requirements have diminished the attractiveness of the profession, particularly among younger workers. This conceptual paper focuses on examining how Psychosocial Safety Climate (PSC) and social sustainability can address driver shortages through the Job Demands-Resources (JD-R) model. The study is limited to Permit A truck drivers in the Klang Valley, exploring PSC as an antecedent, the interaction of job demands and resources, and the mediating roles of well-being and sustainable work practices in improving retention. Drawing on literature from year 2020 to 2025, it anticipates that PSC, when embedded in organizational policies, can buffer job stress, enhance social sustainability, and strengthen workforce stability. Findings are expected to advance theory, inform policy, and provide actionable strategies for reducing turnover and promoting a resilient logistics industry.

INTRODUCTION

The logistics and trucking industry are crucial to Malaysia's economy, especially with growing e-commerce and regional trade. The demand for goods transport has increased the number of Permit A and C trucks, but a major challenge remains: a serious shortage of truck drivers. Despite advancements in technology, government infrastructure spending, and new regulations promoting efficiency, the sector struggles to attract and retain drivers.

Truck drivers in Malaysia and around the world deal with challenging circumstances, such as long hours, isolation, and physical stress, which can result in health problems, frustration, and high turnover. Although nearly 400,000 trucks are registered, the industry lacks enough qualified drivers (Ministry of Transport Malaysia, 2024). Low pay, high job stress, strict regulations, and few career growth options contribute to this shortage, disrupting supply chains and economic stability

(Zahiid, 2024). Government measures like subsidies and training have helped little. The tough licensing process, negative public perception, and labor protests have damaged the job's appeal (Fong, 2024; Tay & Zainul, 2023). These structural issues discourage new drivers, especially youth, threatening long-term industry sustainability.

This conceptual study is intended to explore how Psychosocial Safety Climate and social sustainability influence truck driver retention in Malaysia's logistics sector. It examines driver perceptions and expert feedback to address workforce shortages and proposes strategies to enhance long-term sustainability and organizational practices in the industry. As such, research objectives that will be addressed are:

a) To examine the roles of a Psychosocial Safety Climate (PSC) as the antecedent in truck driver shortage in the Malaysian logistics industry.
b) To investigate the relationship of job demands and job resources in addressing challenges related to truck driver shortages.
c) To identify the mediating role of job demands and job resources in the relationship between PSC and truck driver well-being.
d) To assess on the mediating roles of the adoption of sustainable work practices among logistics companies on drivers' shortage issues
e) To propose strategies for integrating PSC with organizational policies and practices that enhance driver retention and social sustainability in the Malaysian logistics industry

This conceptual paper is significant as it will advances theory by integrating the JD-R model with the Psychosocial Safety Climate (PSC) framework to explore truck driver shortages in Malaysia. It also highlights how PSC enhances driver well-being, buffers job demands, and supports social sustainability. Practically, it provides logistics firms, policymakers, and industry stakeholders with actionable strategies to reduce turnover, improve retention, and create supportive, sustainable work environments. The findings aim to promote workforce stability, operational efficiency, and a resilient logistics sector aligned with national sustainability goals. This study is limited to Permit A and C holders in Klang Valley, restricting generalizability and omitting cultural and regional differences that may influence psychosocial safety climate perceptions and outcomes.

UNDERPINNING THEORIES

Psychosocial Safety Climate (PSC) reflects an organization's efforts to safeguard employee mental health through supportive policies. A strong PSC improves working conditions, reduces burnout, and enhances well-being by promoting fairness, support, and job control. It is a key predictor of workplace psychological outcomes (Dollard & Bakker, 2010). The Job Demands-Resources (JD-R) Model explains how job demands (e.g., workload) and resources (e.g., support) interact. High demands and low resources cause burnout, while resources boost engagement. Leadership and proactive strategies also play vital roles (Bakker & Demerouti, 2007). Conservation of Resources (COR) Theory sees stress as a response to resource loss, which is more damaging than gain. Social support and psychological capital help

buffer these effects (Hobfoll, 1988; Hobfoll, 1989). Social Exchange Theory (SET) frames workplace relationships as reciprocal. Fair treatment leads to trust and commitment, while mistreatment increases turnover risk (Shore et al., 2006). Turnover Intention involves both why and how employees leave. Dissatisfaction leads to thoughts of quitting and job search behaviors. Strong hiring and onboarding can reduce this (Allen, 2008).

RESEARCH METHOD

To develop the literature review, a structured approach was used to find relevant studies related to Psychosocial Safety Climate (PSC), truck driver shortages, turnover intention and social sustainability within the logistics industry. The aim was to identify research gaps, especially in applying the Job Demands-Resources (JD-R) model through PSC and examining the mediating role of social sustainability. Academic sources such as peer-reviewed journal articles, books, dissertations, and conference proceedings were reviewed. Searches were conducted using databases like Scopus, PubMed, JSTOR, and Google Scholar, as well as AI tools like Scite, Semantic Scholar, and Litmaps. The review focused on literature from year 2020 to 2025, with older sources used for theoretical background. Keywords such as "PSC," "JD-R model," "truck driver shortage," and "social sustainability" guided the search. A thematic approach was used to organize and critically analyze the findings, helping to highlight patterns, gaps, and connections relevant to the research focus.

RESULTS

This conceptual paper examines the expected factors contributing to truck driver shortages in Malaysia, drawing from global research, and contextualizing it within the local logistics industry. Previous studies have identified key issues such as job stress, poor working conditions, and limited support as major drivers of burnout and turnover intention (Ji-Hyland & Allen, 2022; Robinson & Bently, 2019). In Malaysia, drivers similarly report dissatisfaction due to low wages, long hours, job fatigue, and harsh work environments (Mazlan, 2019; Rahmat et al., 2021).

This study expects to find that these problems are intensified by broader socioeconomic and regulatory challenges specific to Malaysia. While research has explored the effects of job demands on turnover (Paramarta, 2024), the role of Psychosocial Safety Climate (PSC) within the Job Demands-Resources (JD-R) model remains underexplored in the logistics context. This paper anticipates that PSC, which reflects an organization's commitment to employee psychological well-being, may reduce job stress and improve retention (Bond et al., 2010; Zadow et al., 2019).

The study also anticipates that PSC and turnover intention are mediated by employee social sustainability, which includes equity, safety, well-being, and fairness. While work-life balance and employee engagement are known to aid retention (Sharari et al., 2025), their role within the JD-R framework in this sector is not yet clearly defined.

Given Malaysia's unique pressures such as long-haul demands, strict regulations, and labor shortages, this paper proposes that incorporating PSC and social sustainability into workforce strategies could help improve driver well-being and reduce turnover. The expected findings suggest a need for future research to explore how organizational justice, family demands, and emotional well-being interact with PSC to promote resilience and ethical labor practices in the Malaysian logistics sector.

CONCLUSION

This conceptual paper outlines the proposed relationship between Psychosocial Safety Climate (PSC), employee social sustainability, and turnover intention within Malaysia's logistics sector. By integrating these constructs through the Job Demands-Resources (JD-R) model, it offers a theoretical foundation for addressing truck driver shortages via psychosocial and sustainability-focused strategies. Though conceptual, the study aims to enrich academic discourse while providing valuable direction for future empirical research. It is hoped that the findings will offer practical insights for industry practitioners and policy makers in improving driver retention, promoting well-being, and enhancing long-term workforce stability in the Malaysian logistics industry.

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WHEN FLEXIBILITY DEPENDS ON KINDNESS: ORGANISATIONAL GAPS IN SUPPORTING WORKING MOTHERS OF CHILDREN WITH CEREBRAL PALSY

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Keywords: cerebral palsy; flexible work; interpretative phenomenological analysis; organisational support; working mothers

EXTENDED ABSTRACT

INTRODUCTION

Working mothers who care for children with cerebral palsy often carry a double responsibility, managing full-time employment while providing continuous, intensive care at home. Cerebral palsy is a neurological condition that affects posture and movement, which requires long-term physical support and emotional resilience from carers (Diwan et al., 2011; Mohd Nordin et al., 2019; Gabriel et al., 2024). Balancing these two demanding roles is not only exhausting but also made more difficult by the lack of formal support in their workplaces (Anuar et al., 2021; Bahry et al., 2019; Bakoč et al., 2024; Laili et al., 2021).

According to Malaysian Government regulations, workers with caregiving responsibilities are permitted to work closer to home or adjust their working hours (Jabatan Perkhidmatan Awam, 2004). However, there are disparities in how these policies are implemented. Many mothers discover that access to such flexibility depends more on their supervisor's personal understanding than on clearly stated organisational rules (Bashir et al., 2023; Wang & He, 2025). As a result, the support they receive can be unpredictable and inconsistent. Beyond policy gaps, there is also a deeper cultural silence around caregiving and disability in the workplace. Many of these mothers believe that staff wellness programmes and performance evaluations do not acknowledge their challenges. They are often expected to manage quietly, even when their caregiving responsibilities directly affect their energy, attendance, or emotional wellbeing.

Research on work-life balance and carer stress has expanded; however, there is a scarcity of studies that focus on mothers of children with cerebral palsy, particularly in Southeast Asia (Chua et al., 2023; Gopal & Rai, 2016). Most of the current research treats carers as a single, broadly defined category, neglecting the unique, long-term demands of specific disabilities such as cerebral palsy. Even fewer studies explore how mothers themselves make sense of the support they receive at work.

This study addresses that gap by exploring the lived experiences of working mothers in Malaysia who are responsible for the care of children with cerebral palsy. Using Interpretative Phenomenological Analysis (IPA), it examines how these women handle emotional and structural challenges at work, the types of formal and informal support they receive, and the ways in which leadership and workplace culture shape their ability to manage both roles. This study contributes to a more profound understanding of the intersection of caregiving, gender, and disability in the workplace by highlighting their perspectives. It also demonstrates why organisational responses must go beyond empathy and be more consistent, inclusive, and fair.

RESEARCH METHOD

This study employed a qualitative research design using Interpretative Phenomenological Analysis (IPA) to explore the lived experiences of working mothers who are responsible for the care of children with cerebral palsy. IPA is particularly well-suited to access subjective, emotionally complex experiences (Smith, Flowers & Larkin, 2009). A purposive sampling strategy was used to recruit seven working mothers who were employed full-time for a minimum of one year in the education or social sector and had children diagnosed with cerebral palsy aged between four and eighteen. Participants were recruited through professional networks, special needs support groups, and snowball referrals. This sample size aligns with the IPA's commitment to depth over breadth, enabling detailed exploration of each participant's narrative.

Before conducting semi-structured interviews that lasted 60 and 90 minutes, ethical approval was obtained, and the interviews were conducted either in person or online. A flexible interview guide was used to encourage an open conversation around topics such as work routines, organisational support, emotional challenges, coping strategies, and perceptions of leadership. All interviews were audio-recorded with consent and transcribed verbatim. Participants were assigned pseudonyms to protect their identities and ensure confidentiality. The transcripts were analysed thematically using the six-step IPA approach recommended by Smith et al. (2009). Thematic saturation was achieved when no new conceptual patterns emerged across cases.

RESULTS

Three interconnected themes emerged, which demonstrated how organisational dynamics, emotional distress, and leadership empathy shaped the participants' work and caregiving experiences. Each theme is discussed with illustrative quotes and situated within existing theoretical frameworks.

Flexibility as a Personal Favour, Not Policy

Participants repeatedly described workplace flexibility, however, not as an entitlement but as a personal favour that was granted at the discretion of individual supervisors. This situation resulted in an unpredictable and highly dependent access to accommodation that was contingent upon workplace culture or interpersonal rapport.

"My supervisor is understanding, but it's never something I can count on officially. I always have to ask with hope—not with confidence." (Participant 4)

"When I was transferred, the new boss didn't see why I needed to work near home. I had to explain everything from the start. It felt like I was begging." (Participant 6)

Some mothers were fortunate enough to receive flexible working hours or task reassignment, while others faced indifference or procedural barriers. Even those entitled to assistance were hesitant to request it due to the absence of a standard implementation.

"Even though there's a guideline, I didn't know I could ask for special leave. My HR officer said it's 'subject to approval'—which means anything." (Participant 2)

This finding reflects an organisational culture that is informal, optional, and breakable. While this discretionary support may offer temporary relief, it fails to establish a reliable system for employees who have long-term caregiving responsibilities. These inconsistencies highlight the gap between the existence of policies and their implementation, a fundamental issue in social support theory (House, 1981). Additionally, this inconsistency led to emotional uncertainty and made caregiving support contingent on the personality of the supervisor. This reflects the subtle, individualised nature of caregiving accommodations (Bashir et al., 2023).

Emotional Labour and Hidden Burnout

All participants reported emotional strain and silent perseverance. A significant number of participants described crying in their cars or bathrooms before facing their daily work routines. The pressure to appear competent while managing nighttime seizures, therapy appointments, or mobility support was tremendous.

"Some days I cry in the car before entering the office. But when I sit at my desk, I have to smile and pretend everything is fine." (Participant 5)

"My son had a seizure the night before, but I still went to work. I just couldn't afford to take another emergency leave." (Participant 1)

"They don't see what happens at home. I still show up, still deliver. But I'm breaking inside." (Participant 7)

This intensive emotional labour is invisible in workplace appraisals, wellness programmes, or human resource practices, which contribute to burnout and chronic stress. Participants shared that even when colleagues were sympathetic, organisational structures remained unresponsive. The findings support existing literature on burnout and chronic stress among carers (Bahry et al., 2019; Feizi et al., 2014; Millaku et al., 2023) and reaffirm the concept of courtesy stigma (Goffman, 1963), in which carers manage not only their tasks but also perceptions of professionalism, strength, and resilience in the eyes of others.

Empathy Is Not Enough: The Limits of Compassionate Leadership

Participants recognised and appreciated supervisors who demonstrated empathy towards their carers' challenges. Empathetic leaders frequently established a secure psychological environment and implemented informal accommodations that enabled mothers to confront crises with less guilt. However, the participants promptly identified the inconsistency and vulnerability of these arrangements.

"I was lucky that my current principal has a child with Down Syndrome, so she understood. But I always wonder, what if she retires? I'd have to start all over again." (Participant 2)

"My unit head was kind. She let me shift hours when my child had therapy. But she said to 'just don't make it official'—so 'it's like a secret favour." (Participant 5)

Empathy alone, while emotionally validating, was insufficient to safeguard mothers from structural insecurity. Participants expressed a dependence on personalities rather than policies, which led to persistent anxiety about leadership changes and inconsistencies between departments.

"One place allowed me to leave early; another didn't even let me bring my child to the office. It all depends on who's in charge." (Participant 4)

This theme highlights the difference between compassionate leadership and structural equity. Although authentic leadership theory suggests that empathetic leaders can establish inclusive environments (Avolio & Gardner, 2005; Nikolić et al., 2023), the findings show that empathy alone is unsustainable without formal policy support. Emotional endurance was a constant state for the participants, who had to negotiate support that could disappear at any moment. Their reliance on informal goodwill often discouraged them from asserting their rights, as accommodations were framed as favours rather than entitlements. This reinforced gendered caregiving burdens and exposed a deeper organisational failure to translate empathy into systemic equity. This echoes Greenleaf's (1977) call for institutionalised care as the basis for ethical leadership, as even kindhearted leaders, who lacked structured procedures, operated within fragile systems of choice, leaving caregiving employees vulnerable to inconsistency and neglect, echoing

DISCUSSIONS

This study explores how working mothers, who care for children with cerebral palsy, perceive and respond to organisational support in their professional settings. The research uncovered narratives of emotional labour, policy absence, and reliance on personal empathy within organisational contexts through the use of Interpretative Phenomenological Analysis. While some participants benefitted from empathetic supervisors, the absence of structured and enforceable workplace support mechanisms left many in risky positions, dependent on goodwill rather than institutional rights.

The three emergent themes—flexibility as a personal favour, emotional burden, and stigma—as well as the limits of empathic leadership point to a critical discrepancy between the services that organisations claim to provide and the experiences of their caregiving employees. In particular, the findings highlight the fact that support for employees with caregiving responsibilities is often non-systemic, inequitable, and inconsistent, resulting in emotional stress and reinforcing gendered inequalities in the workplace.

RECOMMENDATIONS

Based on the findings of this study, three key areas have been identified as priorities for improving organisational support for working mothers caring for children with cerebral palsy. First, it is necessary to establish policies regarding flexible employment. The mothers in this study frequently relied on the kindness of their supervisors to access flexi-hours or adjusted duties. However, this adaptability should not be considered a personal favour. Instead, they must be embedded in clear, consistent organisational policies that are readily accessible to eligible employees and standardised across departments. This will help ensure that all caregiving staff are treated fairly, regardless of their supervisor or department.

Second, empathy must be embedded in organisational systems and not left to individual discretion. The participants valued empathetic leadership; however, it was often fragile and inconsistent. To ensure that structural authority accompanies emotional understanding, organisations should incorporate disability awareness and inclusive human resource practices into their leadership development programmes. This would enable the implementation of the policies in a more sustainable and equitable manner, regardless of the leadership changes.

Third, it is imperative to strengthen psychosocial support systems that are available for employee carers. Many of the mothers in this study describe feelings of emotional fatigue and social isolation. To address this, organisations should establish carer support groups, provide access to confidential counselling services, and collaborate with NGOs that specialise in disability support. These efforts would establish more secure and encouraging environments in which employees can effectively manage their dual responsibilities without feeling alone or overwhelmed.

Taken together, these recommendations advocate a transition from informal, empathy-based approaches to more formalised systemic practices. Recognising caregiving as a legitimate part of workplace well-being is not only the right thing to do. It is also a practical investment in long-term organisational resilience and inclusive workforce development.

LIMITATION AND FUTURE RESEARCH DIRECTIONS

This study is subject to several limitations. The most significant aspect is the limited and sector-specific sample—all participants were working mothers in the public education and social service sectors. As a result, the findings may not accurately represent the experiences of carers in the private sector or blue-collar or informal employment settings, where work flexibility and entitlements may differ widely.

Furthermore, the study concentrated solely on mothers, which excluded fathers, grandparents, and other family carers who may experience distinct forms of emotional stress or organisational responses. The intentional gendered emphasis necessitates additional research that encompasses a wider range of family structures and carer duties.

The research also captured the experiences of participants at a single point. A longitudinal study could offer a more comprehensive understanding of the evolution of caregiving burdens and organisational responses, particularly as a child's requirements change over time. Moreover, integrating employer or HR manager perspectives would strengthen the analysis of institutional constraints and opportunities for policy reform.

Future research may also benefit from mixed methods approaches, which combine qualitative insights with quantitative measures such as job satisfaction, burnout, absenteeism, or retention rates. For instance, comparative research between disability categories, such as the comparison of carers of children with cerebral palsy, autism, and multiple disabilities, could offer a more profound understanding of the support structures required.

CONCLUSION

This study highlights the often-invisible struggles of working mothers who are also full-time carers to children with cerebral palsy. The absence of formal organisational support frequently undermines their ability to cope, despite their dedication to both roles. Access to flexibility and leave is often contingent upon the empathy of individual supervisors, rather than a consistent policy. This reliance on kindness creates unequal experiences, emotional strain, and professional stagnation. While compassionate leadership is appreciated, it is not sufficient. Carer support must be embedded as a basic organisational right and not treated as a favour.

The findings indicate that Malaysian organisations, particularly those in the public and social sectors, should implement a systematic, rights-based approach to support caregiving employees. It is imperative to take the following measures to create a more inclusive and compassionate workplace: organising flexibility, enabling remote work, providing mental health support, and reducing the discretionary nature of accommodations. It is not solely a matter of individual well-being to help these mothers. It is an investment in the development of the nation, organisational sustainability, and social equity.

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GASTRONOMI DALAM KEMATIAN ETNIK KEJAMAN NEH DI BELAGA, SARAWAK: MALAM DAUK [DAUʔ]

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Keywords: Etnik Kejaman; Gastronomi; Jenazah; Upacara Dauk [Dauʔ]

ABSTRAK LANJUTAN

Setiap kumpulan manusia berusaha memeperkenalkan kumpulan mereka kepada kumpulan lain dengan berbagai cara. Ada yang mengetengahkan melalui gaya berbusana khususnya pada hari-hari tertentu. Tidak ketinggalan Malaysia yang rakyatnya terdiri dari kalangan masyarakat majmuk. Dengan kemajmukan ini melahirkan kepelbagaian budaya. Antara aspek budaya yang biasa menjadi perhatian masyarakat ialah budaya gastronomi. Makanan merupakan salah satu keperluan utama bagi semua manusia. Ia memiliki makna dan nilai budaya tersendiri. Gastronomi salah satu suku etnik Kejaman di Sarawak mempunyai makna dan nilai tersendiri. Biarpun pada umumnya bahan-bahan untuk membuat makanan berasal dari bahan yang sama, tetapi apabila diadun ia memberi makna dan nilai berbeza.

Pada kesempatan ini akan memperkenalkan beberapa jenis makanan tradisi masyarakat etnik Kejaman di Belaga, Sarawak yang masih boleh di dapati hari ini khususnya pada hari-hari tertentu. Salah satunya ialah penyediaan hidangan makanan khususnya kuih tradisi pada malam terakhir yang dikenal malam Dauk bagi mengiringi pemergian jenazah salah seorang ahli mereka sebelum dikebumikan. Tulisan ini memanfaatkan kaedah kajian lapangan secara etnografi, yang merangkumi kaedah temu bual dan pemerhatian ikut serta. Data kajian diperoleh melalui temu bual dengan ketua rumah panjang dan beberapa orang penghuninya. Pengkaji akan memberi tumpuan terhadap makanan yang dihidangkan pada malam terakhir jenazah sebelum dikebumikan.

PENGENALAN

Dengan nama Allah Yang Maha Pemurah lagi Maha Pengasih
Segala puja dan puji khusus untuk Allah Yang Maha Pencipta,
Selawat dan Salam bagi junjungan Nabi Muhammad SAW, keluarga, Sahabat-sahabat, dan semua pengikut baginda SAW.
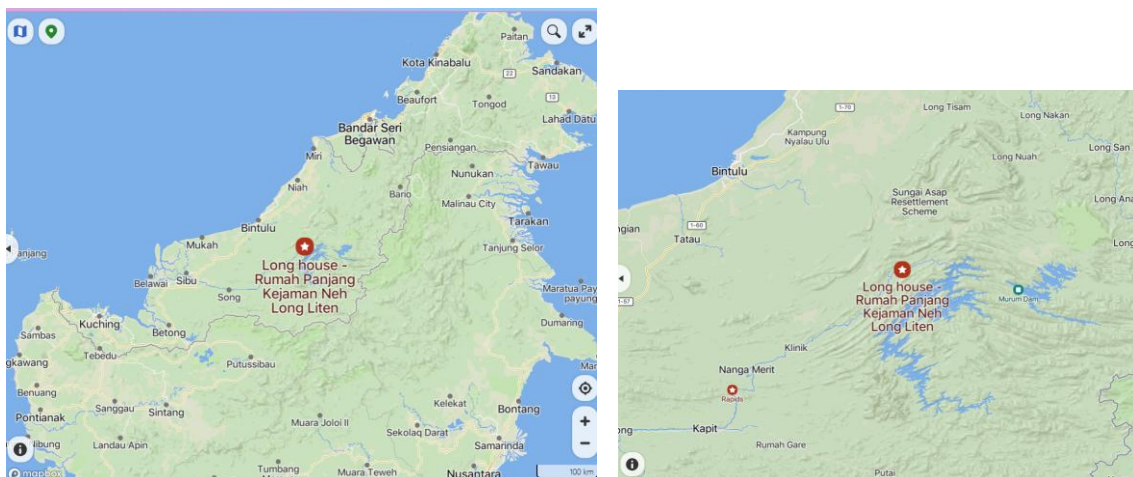
Sarawak ialah sebuah negeri yang memiliki berbagai kaum, iaitu Bumiputera, Melayu, Cina, India dan lain-lain. Dalam kalangan masyarakat bumiputeranya mereka juga

dikenal sebagai masyarakat Dayak. Dalam kalangan masyarakat Dayak, terdapat etnik-etnik kecil yang dihimpunkan dalam kategori Orang Ulu. Mereka membentuk kira-kira 27 kaum yang kecil tetapi pelbagai etnik.

Etnik Kajang adalah salah satu etnik tersebut (**ILB - AI**, 14 Mei 2022 dalam https://www.iloveborneo.my/lebih-daripada-20-etnik-jom-kenali-lebih-lanjut-mengenai-orang-ulu/). Etnik Kajang pula terdiri daripada 7 sub-etnik lain iaitu (Temu ramah dengan Tuai Rumah panjang etnik Sekapan Laja Lejau ak Sirek pada 6 Dis 2024):

i- Sekapan,
ii- Kejaman,
iii- Lahanan,
iv- Sihan,
v- Tanyung,
vi- Funan, dan
vii- Seping.

Dari 7 suku di atas, kajian ini akan melihat gastronomi dalam kalangan sub-etnik Kejaman. Etnik Kejaman yang ada hari ini berada dalam daerah Belaga, Sarawak, iaitu di kawasan hulu Sungai Rajang. Jumlah keseluruhan etnik ini seramai 1300 orang. Etnik ini terbahagi kepada dua buah rumah panjang, iaitu Etnik Kejaman Neh, Long Liten, dan Etnik Kejaman Long Segaham (https://www.iloveborneo.my/kenali-suku-kaum-kejaman-sebuah-etnik-minoriti-di-sarawak/). Berikut kedudukan Rumah Panjang etnik Kejaman Neh, Long Liten, di Belaga, Sarawak:

(https://mapcarta.com/N5152860030)

KAEDAH KAJIAN

Kajian gastronomi dalam upacara 'malam Dauk' pada masyarakat etnik Kejaman telah dilakukan pada 5 – 11 Dis 2024 lalu. Kami bersama kumpulan penyelidik dari Akademi Pengajian Melayu, Universiti Malaya, Kuala Lumpur telah ke lapangan iaitu di Rumah Panjang Kejaman Neh, Long Liten, Belaga, Sarawak. Kajian ini dalam rangka kajian "Hukum Adat Kejaman", di bawah Kursi Penyelidikan Pehin Seri

Adenan Satem. Kami melakukan kajian Etnografi pada masyarakat etnik Kejaman di Belaga, Sarawak. Kami melakukan pemerhatian dan penglibatan secara langsung dalam masyarakat mereka (Wan Abdul Kadir, 2003). Selain itu kami turut membuat temuramah dengan penduduk-penduduk di Rumah Panjang tersebut, iaitu menemuramah Tuai Rumah Panjang En Senin Neh, Setiausaha JKKK Kejaman Neh Long Liten En. Ukat ak Lusat, dan beberapa penduduk Rumah Panjang termasuk Rosemary ak Ukat.

Papan tanda dan pintu gerbang masuk ke Rumah Panjang Kejaman Neh Long Liten, Belaga, Sarawak.

Upacara 'malam Dauk [dauʔ]'

Dalam tradisi Etnik Kejaman, khususnya di Rumah Panjang Long Liten, apabila berlaku sesuatu kematian, selepas kematiannya, mayat akan diletakkan di hadapan unit rumah yang didiaminya untuk tempoh 6 hari. Kemudian pada malam ke-7 akan diadakan upacara yang dikenal Dauk [dauʔ]. Seluruh anggota keluarga terdekat, selama tempoh selepas kematian hingga waktu pengkebumian akan dikehendaki berkabung dengan memakai pakaian berwarna putih. Bagi ahli masyarakat lain yang tinggal di Rumah Panjang perlu untuk bergotong-royong melakukan kerja lain yang berkaitan dengan kematian. Seperti mengumpulkan kayu api untuk memasak. Walaupun pada masa ini sudah ada kemudahan gas memasak, tetapi dalam perkara memasak makanan tradisi, mereka masih mengekalkan tradisi memasak menggunakan kayu api. Pada masa sama juga mereka akan mempersiapkan tapak perkuburan di tanah perkuburan. Persiapan ini yang memerlukan masa lama sehingga tujuh hari. Walaupun kerja-kerja menyediakan tapak pengkebumian boleh siap awal, mereka masih mengekalkan adat yang diwarisi sebelum ini iaitu untuk mengkebumikan selepas enam (6) hari. Itu sekiranya berlaku kepada penduduk biasa. Sebaliknya jika yang meninggal itu ialah Laja (Tuai Rumah), jenazahnya akan dibiarkan untuk tempoh yang lebih lama, di antara lapan (8) hari sehingga lapan belas (18) hari.

Gambar menunjukkan tempat mayat diletakkan di bawah kelambu berwarna putih, dan keluarga simati berada di hadapan mayat

Gastronomi dalam adat Dauk [dau?] suku Kejaman

Berbagai macam upacara adat yang terdapat dalam masyarakat pada umumnya adalah pencerminan bahawa semua perancangan, tindakan, dan perbuatan telah disusun oleh nilai-nilai murni. Nilai-nilai murni tersebut diwarisi secara turun-temurun dari generasi ke generasi berikutnya. Perubahan-perubahan nilai berlaku berasaskan perkembangan zaman, yang pasti nilai yang dizahirkan melalui sesuatu adat adalah gambaran pandangan cara kehidupan masyarakat yang sangat teliti dalam melaksanakan sesuatu pekerjaan untuk mendapatkan kesejahteraan sama ada zahir juga batin.

Terlalu banyak tradisi yang ada pada masyarakat timur pada hari ini, termasuk etnik Kejaman, bermula dari tradisi merisik, meminang, bernikah, mengandung, melahirkan bayi, bahkan kematian, kerana tradisi-tradisi seumpama itu pada asasnya doleh dibahagikan kepada tiga perkara asas, iaitu adat yang berulang-ulang dalam kehidupan sesuatu masyarakat. Menurut Edy Sedyawati (Yudhiet Fajar Dewantara, mei 2018):

> "Upacara-upacara daur hidup berkisar pada tiga tahapan penting dalam kehidupan manusia, yaitu kelahiran, perkawinan dan kematian" (Sedyawati, dalam Yudhiet Fajar Dewantara, mei 2018).

Masyarakat etnik Kejaman dalam menyikapi tradisi kematian, khususnya dalam gastronominya pada malam Dauk, memiliki keistimewaan tersendiri. Mereka menyediakan makanan tradisi yang dihidangkan kepada semua penghuni Rumah Panjang Kejaman Neh Long Liten. Pada malam Dauk tersebut, semua orang akan berkumpul di sekeliling unit rumah si mati. Mereka akan mendengarkan ucapan-ucapan penting dari setiusaha JKKK Rumah Panjang, Tuai Rumah Panjang, dan wakil keluarga si mati. Selepas sahaja tamat sesi tersebut, penduduk yang berkumpul akan dihidangkan dengan kuih-kuih tradisi yang sebelumnya disediakan oleh kalangan wanita-waita secara bergotong royong.

KEPUTUSAN

Kuih-kuih tradisi etnik Kejaman yang dihidangkan pada 6 Dis 2024 iaitu pada malam Dauk ialah:
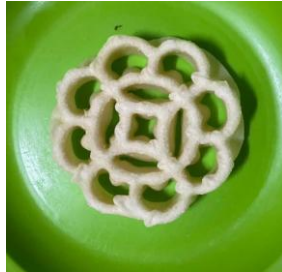
   i.   Kuih Cap:
       Bahan asas: Telur, santan, gula, dan tepung gandum;

   ii.   Kuih Sebatau Daun Ceng:
       Bahan asasnya: Daung ceng, beras pulut, dan santan (boleh guna atau tanpanya)

   iii.   Kuih Sebatau Daun Tuden:
       Bahan asasnya: Daun tuden, beras pulut, dan santan (boleh guna atau tanpanya)

   iv.   Kuih Buridig:
       Bahan asas : Marjerin, telur, gula, tepung gandum, tepung jagung

v.　Kuih Jedak:
　　Bahan asas : Telur, gula, tepung gandum, dan tepung kanji

Selain lima kuih tradisi di atas, berdasarkan maklumat yang diperolehi ada satu lagi kuih tradisi yang tidak dihidangkan kepada kami, iaitu kuih kicim. Ia dikatakan kuih tradisi yang wajib ada khususnya dalam upacara-upacara kematian masyarakat etnik Kejaman.

KESIMPULAN

Kuih tradisi dalam masyarakat etnik Kejaman, khususnya Kejaman Neh di Long Kiten, pastinya lebih banyak lagi dalam adat-adat lain. Lima jenis kuih di atas diperolehi dalam adat malam Dauk iaitu malam terakhir jenazah sebelum diletakkan dalam tempat pengkebumian di tanah perkuburan. Antara perkara yang menarik dalam penyediaan kuih-muih ini ialah semangat gotong-royong di kalangan semua penduduk Long Liten. Bukan dalam penyediaan juadah, bahkan juga dalam penyediaan tempat pengkebumian.

RUJUKAN

Aina Musa (8 Oktober2022), "Kenali Suku Kaum Kejaman Sebuah Etnik Minoriti Di Sarawak" dalam *I Love Borneo.my* dalam https://www.iloveborneo.my/kenali-suku-kaum-kejaman-sebuah-etnik-minoriti-di-sarawak/
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PLATFORM GOVERNANCE AND FLEXIBLE-WORK ARRANGEMENTS: DEVELOPMENTAL OUTCOMES FOR WORKING MOTHERS IN GUANGDONG'S "1 + 2 + 9" CONTINUING-EDUCATION MODEL

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Keywords: flexible work arrangements, mixed methods, platform governance, PLS-SEM, working mothers

EXTENDED ABSTRACT

This study explores the impact of IT platform management on the flexible working arrangements of working mothers within the "1+2+9" continuing education model. The study examines self-management skills, motivation, and time-planning abilities through a large-scale questionnaire survey and interviews. Findings reveal that remote technologies, particularly in flexible work setups, are crucial in supporting working mothers by enhancing work-life balance. Further analysis shows that flexible working arrangements improve self-management, foster motivation, and optimize time-management skills. The study provides valuable insights for policymakers, businesses, and working mothers, contributing to developing IT-supported flexible work practices in education.

INTRODUCTION

Rapid digitisation has positioned information-technology (IT) platform governance as a critical antecedent of flexible-work arrangements (FWAs). Grounded in socio-technical systems theory and work–family border theory, this study investigates how platform-management practices influence the design, adoption, and developmental pay-offs of FWAs for working mothers enrolled in Guangdong's "1 + 2 + 9" continuing-education pathway. The inquiry addresses a policy vacuum identified in recent Chinese scholarship concerning FWA diffusion and gender-segmented labour markets.

RESEARCH METHOD

A convergent-parallel mixed-methods design was employed. Quantitatively, 312 working mothers completed a validated questionnaire (Cronbach's $\alpha = 0.91$; AVE > 0.50). Partial-least-squares structural-equation modelling (SmartPLS 4.0) tested a mediation model where perceived platform usability predicts FWA quality, which in turn predicts self-management efficacy, learning motivation, and time-planning competence. Qualitatively, 22 semi-structured interviews were coded

abductively; triangulation was achieved via joint-display matrices. Ethical clearance (Ref #EDU-GZ-2025-042) mandated informed consent and anonymisation.

RESULTS

Perceived platform usability ($\beta = 0.38$, $p < 0.001$) strongly predicted the availability and quality of FWAs. Telecommuting accounted for 57 % of all FWAs reported. FWA quality partially mediated the relationship between platform governance and learning-related capabilities (indirect $\beta = 0.19$, $p < 0.01$). Multi-group analysis revealed stronger effects among mothers with children aged six or below ($\Delta\beta = 0.12$, $p < 0.05$). No common-method bias was detected (full collinearity VIFs < 2.5).

DISCUSSIONS

Findings affirm that IT-platform governance acts as a catalytic capability that amplifies the developmental value of FWAs. By synchronising organisational workflows with personal development trajectories, platforms mitigate work-family conflicts and foster self-regulated learning. The results extend socio-technical systems theory to the context of continuing education for working mothers.

IMPLICATIONS

Policy makers should articulate platform standards—such as single sign-on and micro-service architectures—that embed FWA metrics into provincial workforce policies. Employers can leverage analytics dashboards to balance schedule autonomy with productivity safeguards, while learners are encouraged to cultivate digital literacy skills and proactive time-blocking strategies.

LIMITATION AND FUTURE RESEARCH DIRECTIONS

Generalisability is limited to the education sector in South China; longitudinal platform-usage logs could enrich causality claims. Future studies should integrate objective analytics and cross-sector samples as cloud-learning ecosystems mature.

CONCLUSION

Well-managed IT platforms are instrumental in translating flexible-work policies into tangible developmental outcomes for working mothers. By enhancing autonomy, motivation, and time management, platform-supported FWAs serve as a strategic lever for both organisational performance and women's lifelong learning agendas within the "1 + 2 + 9" model.

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CULTURAL COGNITION IN CROSS-CULTURAL LITERARY RECEPTION: A PHENOMENOLOGICAL ANALYSIS OF CHINESE READERS' ENGAGEMENT WITH TRANSLATED IAN MCEWAN NOVELS

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Keywords: Cultural Cognition; Ian McEwan novels; Literary Reception; Phenomenological Analysis; Reader's Engagement

EXTENDED ABSTRACT

INTRODUCTION

The reception of translated literature is deeply influenced by the reader's cultural background, including their education, values, and societal norms. In particular, the perception and interpretation of foreign texts often vary significantly depending on the cultural lens through which they are viewed. This study investigates how Chinese readers engage with Ian McEwan's translated novels, focusing on the role of cultural cognition in shaping their reading experiences. McEwan's novels, with their complex cultural elements and Western-centric narratives, provide a valuable context to explore how cultural differences affect literary reception. Previous research has suggested that readers' cultural backgrounds significantly impact their interpretation of foreign literature (D'Egidio, 2015; Hang, 2024; Q. Liu, 2023), but few studies have applied a phenomenological approach to investigate the lived experiences of readers from non-Western cultures. This study aims to bridge this gap by analyzing how Chinese readers, through the lens of cultural cognition, navigate and interpret McEwan's works.

RESEARCH METHOD

This study employs a phenomenological approach to explore how Chinese readers perceive and engage with Ian McEwan's novels. Phenomenology allows for a deep understanding of the lived experiences of individuals, focusing on the essence of their interactions with a given phenomenon. In this case, the phenomenon under investigation is the reading of McEwan's novels by Chinese readers. The study was conducted with 10 participants, all of whom were native Chinese readers with varying levels of exposure to Western literature. Participants were selected using purposive sampling, ensuring they had read at least one of McEwan's novels in translation, such as Atonement or Enduring Love. Data were collected through semi-structured interviews, which allowed for flexibility in exploring the participants' subjective experiences and interpretations of the texts.

The data were analyzed using Van Kaam's (1966) phenomenological method. This method involves bracketing, horizontalization, clustering of themes, and thematic description. The researcher first engaged in bracketing to set aside personal biases and assumptions, ensuring a neutral stance. The transcribed interview data were then analyzed for recurring themes, which were grouped into clusters of meaning. Finally, a thematic description was developed to capture the essence of participants' experiences, focusing on how their cultural backgrounds influenced their reading of McEwan's works.

This is where your main text is. This is the first paragraph.

RESULTS

The findings from the analysis revealed that participants' cultural backgrounds and educational experiences played a significant role in shaping their engagement with McEwan's novels. A key theme that emerged was the culture shock experienced by participants upon encountering the Western cultural elements embedded in McEwan's works. Many participants initially found the novels' settings, characters, and moral dilemmas unfamiliar and difficult to relate to, due to the differences in societal values and norms between Eastern and Western cultures. Specifically, themes of individualism, complex interpersonal relationships, and moral ambiguity were particularly challenging for readers raised in a collectivist society with more rigid social structures.

Another important finding was that cultural awareness acted as a mediator in the reading process. Participants who had higher levels of cultural awareness—gained through education or prior exposure to Western culture—were better able to navigate these cultural differences and engage with the novels on a deeper level. These readers were more likely to appreciate the cultural nuances and themes in McEwan's works, while those with lower cultural awareness struggled to fully comprehend the cultural context, leading to feelings of alienation and resistance to the text.

Figure 1: Themes - Reader's cultural background
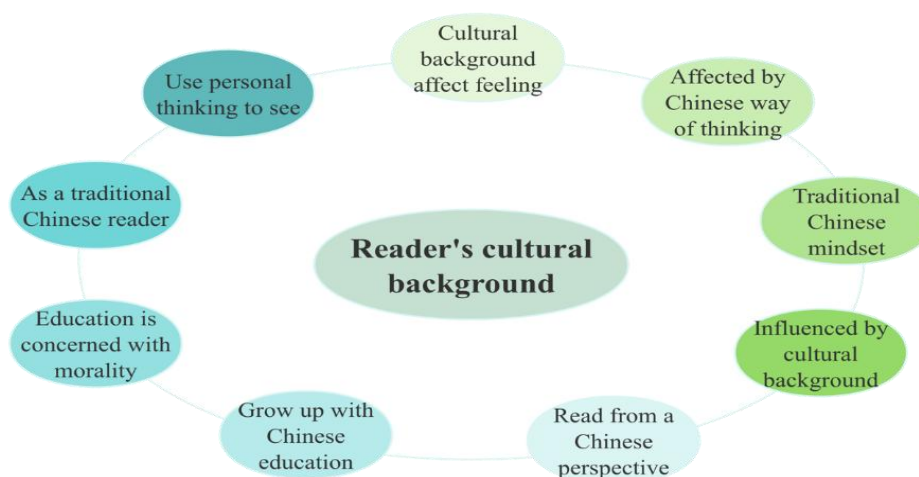
DISCUSSIONS

The results of this study align with existing literature that suggests cultural background and education shape readers' reception of foreign texts (D'Egidio, 2015; Hang, 2024). The phenomenon of cultural dissonance, where readers feel disconnected from the text due to unfamiliar cultural references, is particularly pronounced when reading literature from significantly different cultural contexts. This finding highlights the importance of cultural cognition in literary reception, suggesting that readers are not passive consumers of literature but active interpreters who draw on their cultural backgrounds to make sense of the text.

In line with reader response theory (Jauss, 2022), this study shows that readers' expectations, shaped by their education and cultural upbringing, mediate their engagement with the novel. Participants' cultural identity, influenced by collective societal values and norms, affected how they understood McEwan's portrayal of individualism, relationships, and moral complexity. Readers with higher cultural awareness exhibited more flexibility in interpreting these elements, whereas those with limited exposure to Western values faced greater challenges in understanding the cultural connotations in the text.

IMPLICATIONS

The findings of this study have significant implications for the translation and reception of foreign literature. Translators and publishers should consider the cultural backgrounds of their target audiences to facilitate a more meaningful engagement with the text. This study suggests that cultural awareness programs, or supplementary materials that provide cultural context, may help readers better understand and appreciate the cultural nuances of translated works. Additionally, educators can use the findings to guide discussions on the role of culture in shaping literary interpretation, fostering a more inclusive and culturally aware approach to literature in classrooms.

LIMITATION AND FUTURE RESEARCH DIRECTIONS

This study has several limitations that should be addressed in future research. First, the sample size of ten participants is relatively small, and the findings may not be generalizable to a larger population. Future studies could expand the sample size and include readers from different cultural backgrounds to compare how cultural cognition affects the reception of literature across diverse groups. Additionally, this study focused on a specific author and set of novels, and further research could explore how cultural cognition operates in the reception of works by other authors or genres, particularly those with different cultural contexts. Longitudinal studies could also explore how cultural cognition evolves over time as readers become more exposed to foreign literature and cultures.

CONCLUSION

This study underscores the pivotal role of cultural cognition in shaping readers' engagement with translated literature. By investigating the experiences of Chinese readers encountering Ian McEwan's novels, the study highlights how cultural background, education, and cultural awareness influence the interpretation and reception of foreign texts. The findings suggest that readers do not passively consume literature but actively engage with it through the lens of their cultural identity and experiences. This research contributes to the growing body of literature on cross-cultural literary reception, offering valuable insights into the complexities of reading and interpreting foreign works in a globalized world.

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VALUE CREATION IN NEW TOURISM BUSINESS

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Keywords: Value creation, Resource-based, new venture, Tourism business

EXTENDED ABSTRACT

INTRODUCTION

Value creation holds the leading role in business for ages. However, systematic literature reviews show that over the last two decades, research trends shift to the value co-creation theory in service, especially in tourism and hospitality, which prevails value creation theory itself in a great way (Ribeiro et al., 2023 ;John & Supramaniam, 2024). Some researchers believe consumers involvement co-creates value with companies. However, company perspective of value creation has historical evidences ever since the Aristotle stages of economic development, and it evolves through multiple stages and from conceptual to theoretical, covering an area of, economics and business. Researches on value creation have evolved from labor-creating value theory, value chain theory, to value co-creation theory, reflecting a deeper understanding on value creation mechanism from company perspective. However, how value creation interpreted through new ventures, especially new tourism ventures, articles are disjointed. Based on reviewing the historical evolution of value creation and new venture creation theory, this article focuses on exploring the value creation natures and theoretical foundations through new venture creation. The aim of this paper is to develop a unified conceptual perspective for understanding value creation, so as to assist tourism entrepreneurs for their start-ups.

RESEARCH METHOD

This article adopts the literature review method to systematically sort out the relevant theories of value creation, value co-creation, and new venture creation. Combining with the characteristics of the tourism industry, a value creation conceptual model applicable to new tourism enterprises is constructed.

Value Creation

Value creation is the process that company produces products or services via a series of activities to achieve company competitive advantage (Michael E. Porter,

1985), it contains three dimensions, namely principle (company), key factors (activities) and the aim (company competitive advantage). Principle stands for the value created by company. Key factors refer to primary activities and supporting activities, primary activities mainly are allocating resources, innovation, and supporting activities are inbound and outbound delivering. Porter has clearly stated the principle of the value creation is the company. Osterwalder & Pigneur, (2010b) support Porter's idea, summarized three key factors, ie. key resources, key activities and key partners. Among which, resources are most discussed. The tourism new ventures also use limited resources, or utilize knowledge embedded in local tradition to create value (Franco et al., 2022a). Activities include interacting with customers, partners. Application to information technology, strategizing (de Faria et al., 2021), exchanging resource with stakeholders (Orefice & Nyarko, 2021). However, topic of activities in tourism value creation are more discussed as cooperate social responsibility or sustainability. As upholding social responsibility, businesses can improve their brand image and reputation (Nadeem et al., 2021), employee satisfaction and loyalty, and competitiveness in the marketplace. Literatures of activities concerning to sustainability major discuss activities of interacting with stakeholders, so as to get resources. However, activities of digging, designing local natural and cultural tourism resources, and producing product requires further investigation. Articles of partners mainly discussed getting involvement with stakeholders, including employees, customers, and local community etc. However, most new ventures rely the partners majorly on their capital investment.

Value Co-creation

Value creation has been inevitably underpinned by value co-creation theory (Prahalad & Ramaswamy, 2004). Value co-creation theory primarily focuses on collaboration, interaction with consumer perspectives. Value co-creation describes two issues: one is creating value with stakeholders. For example, a tea culture theme hotel provides the accommodation service mainly, the local driver, transforms tourists to hotel from train station or airport, telling the story about local on the way (Franco et al., 2022a). Tourists arrived and make their hand-made tea according to skills taught by employee, with the leaves provided by the hotel, tea stories offered by local community. In which, the hotel creates value through providing major service of tea leaves in the accommodation, drivers co-create value through offering local culture knowledge, and tourists co-create value through making tea. The other issue is technology as a tool enhancing value co-creation. The same case of making tea, tourists post their finished product of hand-made tea on tiktok, rednote, facebook, even send pictures or video chat with their friends through wechat, whatsapp, or messenger. The tourists' friends, relatives are happy to know and are willing to come to have the same extraordinary experience. A steady flow of tourists attracted to this hotel to make tea, the hotel thus run sustainably. With the adoption of technology, companies obtain a constant co-creating relationship with employees, communities, tourists etc. Co-creating value from stakeholders with application of technology make tourism firm more innovative, interactive and sustainable. Thus value co-creation is another way of telling the importance of the large meaning of partners.

New Venture Creation Process

From business formation perspective, new venture creation refers to as the establishment of a new company, entrepreneurship, or the creation of a new business organization. It covers four dimensions, i.e. individual(s), organization, environment and the process (Gartner, 1985). Individuals are the entrepreneurs who do the initiating and doing activities during the new venture creation process. Individuals are driven by their dreams, seeking for natural and cultural resources supplied in the environment, positioning in the process, by which, the type of organization is realized. These four dimensions can be concluded as three stages of new venture creation, namely, preparatory stage, the gestation stage and the birth stage (Metallo et al., 2021). Preparatory stage described as the original drivers, refer to individuals and environment. The dream plus self-efficacy prepared by individuals and the resources offered by environment possess drives the new venture creation intention. The gestation stage explains the activities individuals do in the creating process. Such as locating, identifying and mobilizing resources building organization. Thus, based on the quality of the individual, natural and cultural resources the environment provides, the identifying, building and producing process, the tourism new venture is established.

RESULTS

Based on the literature review of value creation and value co-creation, a significant number of key topics were analyzed and many conceptual frameworks were developed as shown in Figure 1. There are three blocks, value creation, new venture creation and new venture. Value creation on the left explains the reason that triggers individuals' or the new venture's initial creation. The second block lies in the middle explains the stages involved in during creating new ventures. The third block on the right explains outcome as new venture.

Figure 1: Value Creation in Tourism New Venture Conceptual Work
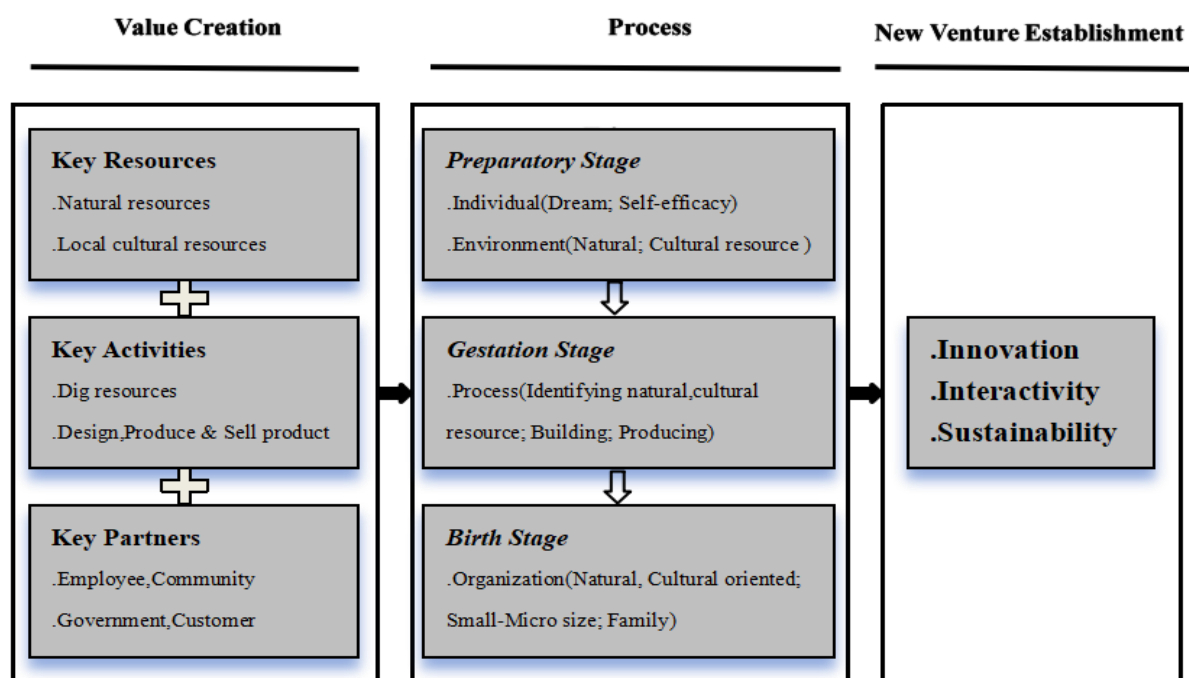
The first block of value creation is composed of three key factors, including key resources, key activities, and key partners. Key resources refer to key tangible resources and key intangible resources. Tangible resources include natural resources such as plants, animals, spring waters. Intangible resources include local culture such as tradition skills, customs. Key activities refer to primary activities and supporting activities. Primary activities mainly are offering services, employee training, marketing, and supporting activities such as social responsibility activity. Key partners include not only the agreement-based supporting partners, but also employee, community, and government and customer. The second block shows new venture creation process involves three stages, four dimensions. Three stages are preparatory stage, the gestation stage and the birth stage, and four dimensions are individuals, environment, possess and organization. Preparatory stage includes individuals and environment, describes the dream and self-efficacy of individuals, and the supporting resources environment possess. The gestation stage explains a series of activities including mobilizing resources, building, producing, responding to environment. The birth stage represents the type of organization resulting from individuals, environment and process. The third block shows the outcome with the trigger of value creation and under systematic process of establishment, the new venture. As such, the new venture shows three basic and key characteristics, innovatory, interactivity and sustainability. Innovatory mainly rely on the natural and cultural resources such as knowledge embedded in tradition, the information and technology. Interactivity comes from the interaction between enterprise and employees, partners, community, and government. Sustainability mainly relies on the innovatory and interactivity. Besides, business model and social responsibility also keeps the new tourism venture sustainable.

DISCUSSIONS AND CONCLUSION

The various approaches of value creation seem to be quite more focused on value co-creation. However, they may also be alignment since, for any kind of value creation, within the perspective of the business model canvas, is the process of transforming input resources into output product by companies, the stakeholders participate as co-creators known as value network, in the producing process (Osterwalder & Pigneur, 2010a). Thus, the key resources, activities and partners mobilized by value creation can act as a catalyst for new tourism firm creation was intended, thus, to be the first study proposing a value creation concept in its entirety and to contribute to the existing frameworks by embodying the tourism organization formation perspective and providing a more coherent and comprehensive approach to value creation, which remains unexplored within this area of research. Finally, despite the findings of some authors, it is important to bear in mind that not all tourism new venture creation will be permanently affected by value creation, nor will all actively seek them (Bugl et al., 2022). While the outcomes of value creation can be temporarily achieved during new venture creation, tourism entrepreneurs may revert to their previous patterns of value creation upon achieving new venture establishment. Nevertheless, truly value creation can contribute to innovative and sustainable tourism and promote self-efficient tourism entrepreneurs and quality of life for entrepreneurs, tourists and other stakeholders. As such, they can provide a competitive advantage for tourism firms.

LIMITATION AND FUTURE RESEARCH DIRECTIONS

This study has considered value creation as antecedents to firm's engagement on tourism firms. The current study is restricted to two results in this regard. First, only a limited articles has been processed, the study didn't take into consideration all articles published in the search period, which may affect the results of the study. Second, the study didn't incorporate other sources such as books, conference reports and articles from source except web of science, science direct. The future of value creation in tourism businesses across various subchapter project contexts are open to investigation and shaping by academic and business stakeholders. One could also examine the consequences of such a relationship of value creation and new venture creation. Another fruitful research avenue is to investigate government's interpretation of culture on value creation in tourism business.

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BEYOND PUNISHMENT: A PUBLIC HEALTH REFRAMING OF THE DEATH PENALTY

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EXTENDED ABSTRACT

INTRODUCTION

Health is a fundamental human right crucial to individual well-being and societal stability, forming the foundation for governance, development, and national security. As such, public health is a key governmental responsibility aimed at improving health outcomes through preventive and intervention measures (Beck, Adcock, and Bantimba 2020). By May 2024, 144 countries had abolished the death penalty, yet 27,687 individuals remained on death row globally by the end of 2023. That year saw 1,153 executions worldwide, a 31% increase from 2022, including a sharp rise in Malaysia, with death sentences increasing from over 16 to more than 38 (Amnesty International 2024).

More than a third of countries still enforce the death penalty for drug-related offenses, including Iran, Indonesia, Singapore, Saudi Arabia, and Malaysia (Lourtau 2019). In Malaysia, 1,337 people were on death row in early 2023, 67.5% for drug-related crimes. Among them were 141 women, 95% convicted for drug offenses—most of them non-citizens from countries like Nigeria, Indonesia, and Iran (The Death Penalty Project 2023). In 2023, Malaysia passed new laws ending the mandatory death sentence and allowing judges to choose between the death penalty or long prison terms (Human Rights Watch 2023). These changes were made possible by shifting public views and strong support from human rights groups like Amnesty International Malaysia, SUHAKAM, and the Bar Council (Chew 2022).

RESEARCH METHOD

The research uses a qualitative, interdisciplinary approach that combines policy and legal analysis with a public health framework. It relies on secondary sources and thematic analysis to explore the broader societal and health implications of the death penalty in Malaysia, particularly for marginalized populations.

RESULTS AND DISCUSSIONS

Death Penalty Through a Public Health Lens

The death penalty is increasingly seen as a public health issue because it causes trauma and serious mental health problems not only for inmates but also for their families, legal teams, prison staff, and executioners (Beck et al., 2020). Long (2016) describes it as a trauma-driven system that spreads emotional harm across generations, especially in already marginalized communities. The process causes chronic stress, grief, and shame, leading to isolation, PTSD, and long-term psychological damage for all involved (Velotti, Elison, and Garofalo 2014). Death penalty cases place heavy financial and ethical burdens on public resources and healthcare workers, many of whom leave the system due to moral conflicts with participating in executions (The Lancet 2023). In the Malaysian context, three additional dimensions highlight how the death penalty poses public health risks:

1. Extended Incarceration Of Death Row Prisoners

Death row inmates in Malaysia face long periods of incarceration, a condition often referred to as the "death row phenomenon," which can amount to psychological torture (United Nations General Assembly 2022). Prolonged isolation and uncertainty severely impact mental health, not only of inmates but also of prison staff and families (Long 2011). This exacerbates the burden on Malaysia's prison healthcare system.

2. Risk of Wrongful Convictions

Wrongful convictions and miscarriages of justice are another major public health concern. Individuals wrongfully sentenced to death often suffer long-term psychological and social consequences, including trauma, stigma, and strained family relationships (Brooks and Greenberg 2021). These experiences can lead to chronic mental health issues and erode public confidence in the justice system (Lee and Dhillon 2022).

3. Enforcement of Punitive Drug Laws

Malaysia's reliance on punitive drug laws, such as the Dangerous Drugs Act 1952, has made the death penalty a central component of its anti-drug strategy (Girelli 2019). However, evidence shows that harsh penalties do not deter drug use or trafficking (Werb et al. 2013). Instead, they contribute to prison overcrowding, deter individuals from seeking treatment, and disproportionately affect marginalized communities (Kamarulzaman and McBrayer 2015). While harm reduction efforts like needle exchange and substitution therapy exist, they are limited in reach (Reid, Kamarulzaman, and Sran 2007). A public health-oriented approach to drug policy is urgently needed.

Globally, the shift from punitive to harm-reduction strategies has proven effective. Portugal, for instance, saw significant improvements in health outcomes after

decriminalizing drug use (Hughes and Stevens 2010). The Global Commission on Drug Policy (2017) and other experts have called for decriminalization, access to treatment, and policies grounded in health and human rights rather than punishment.

Discrimination and Public Health Implications for Marginalized Groups in the Context of the Death Penalty

The death penalty disproportionately harms marginalized groups such as women, sexual minorities, and people with disabilities, worsening their mental, social, and physical vulnerabilities. The Lancet (2023) emphasizes that this discrimination is intersectional and calls for abolition efforts to be gender-sensitive and inclusive. Since 2021, the World Coalition Against the Death Penalty has focused on promoting justice for women and LGBTQIA+ individuals facing capital punishment in countries like Malaysia, Iran, Indonesia, and the U.S. (World Coalition Against The Death Penalty 2023).

Women on Death Row

Women on death row face serious challenges, including poor access to gender-sensitive healthcare, exposure to violence, and worsening mental health due to trauma and inadequate support (Greene 2021). These effects also harm their families, especially children, who often suffer emotional trauma, stigma, and long-term psychological issues like anxiety and PTSD. Most of these women come from marginalized backgrounds—many are poor, illiterate, or disabled, and have histories of gender-based violence (Lourtau and Hickey 2018). In countries like Malaysia, many are migrant women convicted of drug trafficking under coercive conditions, often without fair legal representation, which worsens their health and legal vulnerability (Lee and Dhillon 2022).

Sexual Minorities and the Death Penalty

LGBTQ+ individuals already face widespread discrimination, and the death penalty worsens their risks, with eleven countries still imposing it for same-sex relations as of 2023 (The Lancet, 2023). Incarcerated LGBTQ+ people often endure abuse and harassment in prison, leading to serious mental health issues such as depression and suicidal thoughts (Cavagnini 2021). These individuals also suffer from unequal access to healthcare and legal protections, particularly in countries like Malaysia, where the justice system reinforces these inequalities (Cain and Ellison 2022). Transgender inmates are especially vulnerable, as shown in the case of a Thai transwoman held in solitary in a male prison in Malaysia who developed hemiplegia due to lack of proper care (MalaysiaKini 2017).

Disabled Individuals on Death Row

People with intellectual or mental disabilities face severe risks in capital punishment systems, despite international standards opposing their execution (Amnesty International, 2024). Their disabilities hinder them to understand legal proceedings

or communicate effectively with lawyers, leading to unfair trials. Prolonged imprisonment and solitary confinement worsen their mental health, while prisons typically lack adequate care and support (Malone 2018). Many have no family or legal assistance, and public defenders may lack the training or resources needed to represent them properly (Bright 2014).

IMPLICATIONS

This study implies that abolishing the death penalty is essential not only for justice but for public health. It urges a shift toward health-centered, rights-based criminal justice policies, especially for marginalized groups.

LIMITATION AND FUTURE RESEARCH DIRECTIONS

While this study highlights the intersection of the death penalty and public health, limitations related to data availability underscore the need for future research that is empirical, intersectional, and regionally comparative. Bridging these gaps is essential to inform the development of evidence-based, and health-oriented criminal justice policies.

CONCLUSION

The death penalty is a serious public health concern that causes deep emotional and mental harm, especially through long death row confinement, wrongful convictions, and harsh drug laws. These harms don't only affect prisoners, but also extend to prison staff, legal workers, and the families. Countries that focus on health-based drug policies have seen better results in safety and well-being. While Malaysia's 2023 legal reforms are a good start, real progress needs bigger changes, like better legal help, mental health support, and regular checks on justice policies.

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