

บทความวิจัย (Research articles)

Local Policy Recommendations on Improving the Quality of Life of Local Communities Through the Egan Wheel and the Social Determinants of Health Concepts: A Case Study of Saraburi Province, Thailand

Sornpravate Krajangkantamat¹, Oam To-aj^{1*}, Michael Naglis², Weerasak Putthasri³

¹ Department of Education, Faculty of Social Sciences and Humanities, Mahidol University, Thailand

² Tourism and Hospitality Management Division, Mahidol University International College, Mahidol University, Thailand

³ WEE Health Development Foundation, Thailand

* Corresponding author: Oam To-aj

E-mail: oam.toa@mahidol.ac.th

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Abstract

Local communities make a significant contribution to achieving sustainable development goals, as they experience and solve problems every day. However, local communities in Thailand are struggling to tackle unsustainability issues. This qualitative research aimed to propose local policy recommendations to address unsustainability issues by applying the Egan Wheel for a sustainable community. Research data was collected from nine local people through in-depth interviews, and focus group discussions were conducted with nine community leaders and eight public servants. The findings suggest that policy recommendations for achieving sustainability in Thai local communities should adopt a two-phase development approach. In the first phase, three key factors (e.g., neighborhood cohesion) need to be resolved. In comparison, the second phase should focus on resolving the remaining five factors (e.g., designing in harmony with local contexts). These policy recommendations aim to strengthen Thai local communities through a sustainable community concept, ultimately enhancing the quality of life and fostering long-term sustainability.

Keywords: Egan Wheel, Sustainable Development Goals, Sustainability, Neighborhood Cohesion, Irrigation System

Introduction

A local community was a place, independent of its size, where residents shared a common sense of belonging, identity, and pride linked to being from or living in that area (Scherzer et al., 2020). Local communities significantly shaped the social determinants of health (SDH) and quality of life (QoL) in various ways. SDHs were the non-medical drivers of health outcomes. They encompassed three dimensions: social, economic, and environmental factors, while QoL was an individual's subjective perception of their position in life, focusing on their overall well-being and health status. These SDHs included economic stability, access to and quality of education, access to and quality of health care, housing, environmental conditions, and social and community context (Llorens-Ortega et al., 2024; Office of Disease Prevention and Health Promotion, 2024; World Health Organization, 2024). Given the daily challenges faced by local communities, local action was key to achieving the Sustainable Development Goals (SDGs). Moreover, the local level was uniquely positioned to address the health and well-being needs of its communities (Morgan et al., 2023).

In the global context, most white papers on local communities have highlighted the crucial role of SDH in improving health outcomes. Shannon et al. (2023) demonstrated that addressing global health issues could begin with small-scale community initiatives that are well-connected both within their local context and across broader networks. Studies conducted in the USA, UK, and Mexico showed that SDHs, such as access to healthy food sources, recreational facilities, live music, transportation, and social spaces, play a vital role in supporting the health of local communities (Blas-Miranda et al., 2022; Mattson et al., 2021; Rhubart et al., 2024; Smith et al., 2021). In addition, studies in Australia and Ireland demonstrated that community support can help strengthen local health (Darker et al., 2022; Harris et al., 2024). Similar findings were found in Asia's local communities. Studies in China, Hong Kong, and Japan indicated that SDH positively influenced health outcomes (Ng et al., 2022; Uchida et al., 2024; Xiong et al., 2024; Zhang et al., 2022). Moreover, Leuenberger et al. (2022) asserted that strengthening community-led health impact assessments in sub-Saharan African countries could effectively contribute to achieving health-related SDGs.

While many white papers demonstrated efforts to improve community health through various dimensions of SDH, research on local community development in Thailand primarily focused on economic strategies, such as community-based, low-carbon, and sustainable tourism (Bhaktikul et al., 2021; Chatkaewnapanon & Lee, 2022; Srichai et al., 2024). These efforts consistently lacked a comprehensive, integrated approach to addressing the Social Determinants of Health (SDH) across social,

economic, and environmental dimensions. his limited perspective hindered the effectiveness of interventions, resulting in persistent health challenges even in economically advanced regions. Saraburi was strategically selected because its high industrialization and economic output, coupled with its severe, high-profile SDH challenges and mental health issues, made it an ideal, urgent case study (Institute for Population and Social Research, 2023; Samana & Ketsakorn, 2019; Supasiri et al., 2019; Tuangratananon et al., 2021) This complex environment provided a robust setting to test the utility of the integrated Egan Wheel and SDG approach, prompting the following research question: What specific local policy recommendations could be developed using the integrated Egan Wheel and SDG framework to enhance community QoL in Saraburi Province holistically?

Therefore, this study primarily aimed to develop local policy recommendations for enhancing the QoL of communities in Saraburi Province, Thailand, through a strategic analysis of SDH grounded in the Egan Wheel framework. This research sought to address a gap in the literature by proposing policy recommendations to develop local communities and holistically improve their overall well-being. The study was grounded in the Egan wheel for sustainable communities, a conceptual framework that promotes community sustainability across economic, social, and environmental dimensions. It offers a holistic, visual, and person-centered framework for understanding and improving an individual's or a community's Quality of Life (QoL) and well-being. The framework comprises eight factors: social and cultural factors; governance; transport and connectivity; services; environmental factors; housing and the built environment; equity; and economy (Office of the Deputy Prime Minister, 2004). These factors were leveraged and analyzed to strengthen Thai communities through a sustainable community concept, ultimately enhancing QoL and fostering sustainability at the local level.

Methodology

This research was conducted in two phases to achieve the study aim. The first phase involved analyzing the current state of SDH and existing policies related to the three pillars of sustainable development-economic, social, and environmental-within the study area. Data were collected through in-depth interviews with key stakeholders, including community leaders, policymakers, and residents, to gain insights into the effectiveness and gaps in current initiatives. Building on the findings from phase one, the second phase focused on formulating local policy recommendations to strengthen SDH. This was achieved by applying the Egan Wheel's sustainable community framework, which emphasizes an integrated approach to building sustainable, resilient communities.

1. Study areas

This research was conducted in Kaeng Koi district, Saraburi province. Nine local communities were selected using a purposive sampling technique. The criteria for selecting the study area were as follows: experiencing notable challenges related to SDH and lacking robust local policies addressing SDH.

2. Participant and data collection

This study was divided into two phases based on the Egan Wheel for the sustainable community concept. Participants in both phases were selected using purposive sampling, as this technique enabled researchers to select key informants to gain a deeper understanding of the community's current situation (Neuman, 2014). Phase one focused on the community's current situation. Data were collected from two groups. The first group consisted of nine local people who provided rich insights into the current situation and problems in their communities. In-depth interviews were employed as a data collection tool due to their capacity to capture more detailed and nuanced information compared to other methods (Boyce & Neale, 2006). The second group consisted of nine community leaders (i.e., headmen) from each community. A focus group discussion was employed as a data collection tool, as this method often reveals unexpected aspects of a topic that would not have emerged from individual, researcher-led interviews (Babbie, 2017). Participants in this group provided information about the problems they experienced from a leader's perspective, helping the researchers better understand the situation.

In phase two, data collection centered on formulating local policy recommendations to enhance QoL in local communities through SDH. Focus group discussions were utilized as the primary data collection method to gather diverse perspectives and insights. Eight public servants who had worked for at least 3 years at the administration level in the research areas were chosen. They had extensive experience in administering local communities and provided essential information on various issues that arose during their tenure. Focus group discussions were also employed as a data collection tool. Furthermore, the researchers utilized non-informant observation and semi-structured interviews. Some of these co-occurred, while others were held individually. Triangulation was applied to ascertain data reliability using different information sources. This included local people, community leaders, and community administrators. The specific participant groups and data collection tools were demonstrated in Table 1.

Table 1 The specific participant groups and data collection tools

Phase	Participant Group	Size (n)	Data Collection Tool	Purpose/Data Collected
Phase 1: Current State Assessment	Local Residents	9	In-depth Interviews (8 questions based on Egan Wheel)	Detailed experiences on current SDH challenges and community problems.
	Community Leaders (Headmen)	9	Focus Group Discussions (8 questions based on Egan Wheel)	Leader's perspective on community problems; verification of resident data.
Phase 2: Policy Formulation & Prioritization	Public Servants (Administration Level)	8	Focus Group Discussions and Semi-structured Interviews	Validating Phase 1 findings and prioritizing the 8 Egan Wheel factors for urgent policy action.

3. Research instrument

3.1 Phase One

For the first group, an in-depth interview was used, while the second group used the focus group discussion interview form. They were asked the same eight questions as the first. This was done to verify the data collected from the first group.

The eight interview questions for both instruments (in-depth interview and focus group discussion) were explicitly and structurally derived from the Egan Wheel for Sustainable Community theoretical framework. This model, which posits eight interconnected elements (e.g., Place, People, Prosperity, and Governance) as crucial drivers of community sustainability, served as the conceptual blueprint for developing the questions. Each of the eight questions was explicitly designed to capture qualitative data corresponding to one of the eight core elements of the Egan Wheel. This direct mapping was employed to ensure the instrument's construct validity and to systematically cover all theoretical aspects required for a comprehensive assessment of community management practices.

3.2 Phase Two

The focus group discussion interview form was employed. It comprised two questions: "Do you agree with the findings from phase one?" If you do not, which factors do you need to change?

Could you please prioritize these factors in order of urgency to improve communities? (Please prioritize by putting numbers 1-8 where 1 means the most urgent factor.)”

4. Data analysis

Content analysis was used to analyze the qualitative data collected across both phases. First, the data generated from qualitative interviews and focus groups were transcribed. Next, the transcribed data were coded and analyzed to generate themes and subthemes that further dissected communities' current management practices.

Crucially, the coding and analysis process was guided by the Egan Wheel theoretical framework. The eight core elements of the Egan Wheel were adopted as initial, predefined categories for coding the data obtained in Phase One. This ensured that the emerging themes and findings were organized and presented directly in accordance with the theoretical framework's established structure. Subsequently, the participants in Phase Two were asked to prioritize the drivers of community development, focusing on those that improve QoL in local communities. The eight factors presented for prioritization in Phase Two were the eight core elements of the Egan Wheel. This step was designed to translate the qualitative findings back into a structured, quantitative ranking based on the theoretical model, allowing the research to specifically identify which elements of the Egan Wheel are considered the most urgent priorities by the community members themselves.

Results

1. Current situation of the community

The findings can be demonstrated by utilizing the Egan Wheel concept as follows:

1) Social and Culture, findings revealed that low participation in community events indicates a lack of collective action. Benefit distribution favored supporters of community leaders.

“Local authorities attempted to facilitate community-based activities; however, residents were reluctant to participate, prioritizing individual livelihoods over collective action.” Participant 1

“The community held sporting and cultural events, but we were not included in the invitation list and therefore did not attend.” Participant 3

This indicated a weak Social and Community Context and deficient Social Cohesion. The preference for individual livelihoods over collective action suggested that economic pressure (SDH: Economic Stability) was a barrier to social engagement. Furthermore, excluding some members from events violated the Egan Wheel's principle of Equity.

2) Governance, it was found that the local government was perceived as politically motivated, serving only a segment of the population. Community leaders were seen as more transparent and effective individually.

“The local government was often politically motivated, primarily serving the interests of their party. In contrast, community leaders were perceived as more effective, transparent, and consistently supportive of the local populations.” Participant 5

3) Transportation and connectivity, findings found that roads were good. However, there were few streetlights at night, discouraging safe walking/cycling. Internet coverage was incomplete across the community.

“Roads and transportation were good. However, the lighting system did not work for walking and cycling at night.” Participant 2

“The Internet signal did not cover all areas in the community. This should be developed if possible.” Participant 6

Insufficient lighting created an Environmental Condition risk, limiting physical activity and negatively impacting health outcomes. Simultaneously, incomplete internet coverage restricted Access to Education and modern Economic Stability. These deficiencies showed that the Transportation and Connectivity factor of the Egan Wheel was not fully realized, failing to provide equitable access to all necessary infrastructure.

4) Services, findings revealed that Educational institutions lacked comprehensive coverage (secondary/higher education). A lifelong learning center was non-operational due to a lack of qualified staff.

“There were kindergarten and primary schools in the community, but not included secondary schools and higher education.” Participant 4

“A lifelong learning center existed in the community. However, it was not operated properly due to a lack of qualified staff.” Participant 5

The healthcare system was reasonably well-developed (full-time doctor, satisfactory referral system). The irrigation system lacked water resources, leading to crop failures and reduced agricultural yields. Political challenges hindered installation.

“There was a full-time doctor and volunteers from local communities who worked for the local hospital. The referring system was also good. If there were critical patients in the community, they were referred to the bigger hospital nearby as soon as possible.” Participant 9

Irrigation systems lacking water resources led to crop failures, compromising agricultural yields. Political challenges hindered installation. Despite the community’s initiative to collaborate with

the irrigation department, the installation of an irrigation system was not realized due to underlying political challenges in the region.

“The community had no consistent water supply or irrigation infrastructure. Droughts or periods of low rainfall resulted in crop failures and financial hardship. Despite these difficulties, farming remained the primary occupation for the community.” Participant 7

“We used to ask the local irrigation authority to install the system, and they said they would. However, we have not had that system in our community until now.” Participant 1

These indicated that Educational gaps severely limited Access to Education, restricting future Economic Stability. The absence of an irrigation system was a critical Environmental Condition vulnerability that directly caused chronic economic instability. Conversely, the functional healthcare system was a positive SDH element (Access to Health Care). Within the Egan Wheel framework, the failure of irrigation illustrated how poor Governance blocked the delivery of essential Services, particularly vital economic services.

5) Environment, it was found that the community experienced localized air pollution from a cement plant, mainly affecting adjacent villages. The plant implemented mitigation measures and offered medical remedies to the worst-affected.

“People living near the cement plant noticed some air pollution. Most people felt little effect, but those living right next to the plant had more problems. The plant tried to fix the problem and helped the worst-affected community with things like health checkups.” Participant 6

This pointed out that the pollution constituted a direct, negative Environmental Condition that affected health. While mitigation efforts addressed immediate Health Care Access, the localized severity indicated that a significant environmental risk was unequally distributed among villages, raising a serious Equity concern. This demonstrated a failure in the Environmental Factor of the Egan Wheel, as the living environment was not conducive to the health of all residents.

6) Housing and the built environment, we found that residents were satisfied with housing and recreational facilities (football field, gym). However, a sense of place and local distinctiveness was lacking.

“We were satisfied with the community’s housing and environment. We had access to a football field and a gym, and often used the local temple’s multipurpose space for community meetings.” Participant 2

“We were too busy with our own work to engage with the community activities,”
Participant 3

This reflected that a well-built environment supported residents' physical health. However, the absence of local identity, coupled with residents prioritizing their livelihoods over community life, indicated a weak Social and Community Context. Consequently, while the basic physical infrastructure goals were achieved, the factor did not deliver the social impact necessary for robust Quality of Life (QoL) under the Egan Wheel framework.

7) Economy, findings found that national support for local businesses (e.g., handicraft cooperatives) failed due to insufficient local government support (funding, logistics, knowledge). This led to accumulated losses and the imminent closure of the business.

“Although national policies emphasized local businesses, our local government provided limited support. While we received a one-time training session in the past, we had to learn through trial and error, facing numerous challenges in marketing, logistics, and tools. As a result, we could not compete effectively with other communities.” Participant 8

“The local people who participated in the local business experienced accumulated losses. If this continued, they would soon have to shut down the business.” Participant 9

This indicated that This constituted a critical failure in Economic Stability. The insufficient support from local authorities was directly linked to deficiencies in the Governance factor. The impending business closures worsened Equity and the overall SDH crisis by increasing debt and joblessness. Within the Egan Wheel framework, the Economy factor was critically underdeveloped due to systemic issues beyond residents' control.

8) Equity/Equality, findings revealed that fluctuating incomes and annual farming losses resulted in significant social inequality. This cycle of debt precipitated the sale of agricultural land, compelling former landowners to become laborers or to migrate in search of alternative employment.

“There was a significant income gap. Many local people sold their land to landowners to pay off their debts. Some migrated to other provinces in search of work. The community saw an influx of outsiders, namely, those who had purchased land and moved in.” Participant 5

This represented a systemic breakdown in Economic Stability and Equity. The loss of land and forced migration were severe negative determinants of health, security, and power. The widening income gap and influx of non-locals disrupted the Social and Community Context. This was the most critical failure point in the entire Egan Wheel framework, demonstrating that fair life chances were not accessible to all residents.

2. Local policy recommendations for strengthening local communities in Thailand through the SDH

The group discussion revealed that the eight factors of the Egan Wheel for the sustainable community concept should be addressed in two phases. Three factors were identified as priorities for the initial phase: fostering neighborhood cohesion, installing an irrigation system, and strengthening local businesses. Neighborhood cohesion is crucial for promoting community engagement in all aspects of community life, including health and QoL. Additionally, accelerating the development of an irrigation system and agricultural facilities is essential to support agriculture, a primary livelihood for local people, and to reduce income inequality. Furthermore, strengthening local businesses will foster sustainable income generation for the community. These three factors will collectively improve individuals' socioeconomic status within the community, thereby stimulating greater focus on community development. The remaining five factors will serve as catalysts for this developmental process.

The remaining five factors were slated for management in the second phase. These included: (1) Designing in Harmony with Local Context to facilitate harmonious coexistence between local inhabitants and their natural environment; (2) Transparency for Local Authorities to foster transparency in the operations of local communities; (3) Connectivity and Accessibility to enhance mobility and business interactions between local communities and external stakeholders; (4) an Environmental Monitoring System for Local People to ensure a clean and healthy living environment; and (5) Sustaining Income Growth to bolster economic security and reduce or eliminate local indebtedness. Collectively, these five factors aimed to enhance the economic, social, and environmental well-being of local communities, thereby strengthening local capacities, improving QoL, and fostering sustainability.

Discussion

The findings suggest that local communities in Thailand still cannot reach sustainability. Therefore, local policy recommendations were formulated based on a sustainable community concept to address these sustainability issues, and they are believed to effectively enhance Thai local communities. Moreover, three of these recommendations are detailed below.

1. Neighborhood cohesion

Neighborhood cohesion is a concept that describes a sense of belonging to a community, participation in shared activities, and a neighborhood's livability. It fosters community self-reliance, facilitates access to daily necessities, and helps match demand and supply. Communities with strong neighborhood cohesion exhibit greater unity, reduced discrimination, and contribute to a more livable and sustainable society (Damurski, 2022). Moreover, strengthening neighborhood cohesion is also essential for achieving key Sustainable Development Goals that target social equity and well-being (Danquah & Ouattara, 2023;

Moss et al., 2023; Mykhailenko et al., 2024). When communities build strong social bonds and become more inclusive, they directly contribute to better health outcomes and accelerate sustainable development.

However, the study revealed a lack of neighborhood cohesion among the residents. This was evident in a low sense of belonging and civic participation, limiting collaboration in communal activities. Residents are primarily focused on individual and immediate social concerns, leading to a lack of engagement in local initiatives. This deficiency in community engagement hindered multifaceted community development, including health and QoL. Williams et al. (2020) found a strong correlation between neighborhood cohesion and mental health. Similarly, Kim et al. (2020) and Qin et al. (2024) demonstrated that neighborhood cohesion positively impacts the mental health of older adults, enhancing positive emotions, life satisfaction, financial control, and social interaction. Neighborhood cohesion can also mitigate discrimination and alleviate the symptoms of depression, hopelessness, negative affect, and loneliness among older adults. Neally et al. (2024) further highlighted neighborhood cohesion as a protective factor against adverse sleep outcomes in adolescents.

Therefore, both national and local authorities should implement robust and ongoing policies and plans to foster neighborhood cohesion. Such initiatives are crucial for creating more livable communities and promoting sustainable health and QoL.

2. Installing the irrigation system

Agriculture is often deemed a national security priority by countries, as agricultural products are necessary for existence (Beckman & Countryman, 2021). The irrigation system is a key driver of agricultural products (Kaur et al., 2023). The effective deployment of irrigation infrastructure is critical to sustainable agriculture and the fulfillment of the Sustainable Development Goals (SDGs) (McDermid et al., 2023). These systems facilitate the strategic management of freshwater, distributing sources like rainfall to areas of deficit. Consequently, they enable uninterrupted, year-round cultivation, which not only stabilizes farmers' incomes and improves their Quality of Life but also supports efficient water resource conservation, directly aligning with SDG 6 on clean water and sanitation (UNESCO, 2024).

However, the research findings revealed that local communities within the study area lacked irrigation systems and reliable water sources for agricultural activities. Consequently, farmers faced notable challenges in storing water for the dry season. Insufficient water supply resulted in reduced crop yields, impacting farmers' incomes and making it difficult for some to meet their debt obligations. To sustain agricultural production, many farmers were compelled to borrow, leading to a growing debt burden. Over time, this unsustainable situation forced farmers to sell their land to repay their debts, creating opportunities for large-scale investors to acquire land at lower prices. Deprived of their land, farmers were

transformed from landowners to agricultural laborers or even became unemployed, forcing many to migrate in search of work. These circumstances had a direct and detrimental impact on farmers' livelihoods. However, effective irrigation systems could mitigate these challenges. This finding aligns with that of Gori Maia et al. (2021), who emphasized the critical role of water resource management in reducing poverty and improving farmers' living standards.

The installation of irrigation systems by farmers has been pivotal in advancing many SDGs. Consistent with Adetoro et al. (2022), Mahdi et al. (2024) and UNESCO (2024), efficient irrigation systems can eradicate extreme poverty (SDG 1), achieve food security (SDG 2), ensure access to clean water and sanitation (SDG 6), promote decent work and economic growth (SDG 8), and reduce inequalities (SDG 10) within communities. Furthermore, such practices can contribute to health promotion by addressing SDH, particularly those related to food security, employment, and income, as highlighted by Mohammadi et al. (2024).

Therefore, relevant authorities at both the national and local levels should implement policies and plans to expedite the installation of irrigation systems in local communities. This would ensure that farmers in local communities have sufficient water for agricultural activities year-round, thereby mitigating issues affecting agricultural productivity. Consequently, it would effectively and sustainably reduce income inequality and rural exodus in the future.

3. Strengthening local businesses

The thriving of local businesses is a crucial Social Determinant of Health (SDH) by fostering economic prosperity and sustainability within communities; examples of this are evident in Serbia and Indonesia (Abueg et al., 2024; Baka et al., 2024). This improved well-being directly contributes to several Sustainable Development Goals (SDGs). A key factor in this success is the strategic involvement of local authorities, whose support-including the provision of quality training and human resource development-is vital for stimulating business growth and ensuring equitable, community-wide benefits (Harsono, 2024; Noerhalifah et al., 2023).

The study found that Thailand has a national policy supporting local businesses (Office of the National Economic and Social Development Council, 2023). Local governments in the research area have attempted to implement this policy by establishing local businesses operated by local people. However, these local businesses experienced limited financial success due to insufficient support from local governments, including inadequate annual and ongoing budget allocations, outdated equipment, and a lack of business knowledge. Consequently, these businesses lacked effective marketing plans and logistics, hindering their competitiveness. Faced with persistent challenges, local participation in these ventures gradually declined. As a result, few local businesses remain operational, and many are on the verge of

closure due to accumulated losses. Given these findings, local governments should prioritize supporting local businesses, even if these enterprises do not generate significant profits, as they can effectively improve local residents' QoL. This aligns with the research of Best & Burke (2023), Maldet et al. (2023) and Zhang (2024) which demonstrates that support from local authorities can positively impact local economies and foster sustainability.

Therefore, local authorities should enhance their support for local businesses by providing greater funding, modern equipment, and expertise in marketing and logistics. This will enable these businesses to contribute sustainably to local communities and create stable employment opportunities.

Conclusion and recommendations

Improving health through a sustainable concept can sustainably enhance the QoL of local communities. Based on the analysis results, we suggest prioritizing three areas as targets for improving health in local communities.

1. Neighborhood cohesion

National and local governments should formulate policies and plans that foster neighborhood cohesion within local communities to enhance QoL and promote health.

2. Irrigation system

National and local authorities should enact policies and plans to accelerate the installation of irrigation systems in local communities, with the long-term goal of reducing income disparities and preventing rural depopulation.

3. Local business

Local authorities should provide financial support, state-of-the-art equipment, marketing expertise, and logistical assistance to local businesses to ensure their sustainability and foster long-term employment opportunities for residents.

Limitations

Qualitative research was the sole methodology employed in this study, focusing on the selected people and policymakers in the research area. Although all key informants provided helpful information, future research should incorporate a quantitative research method and include additional key stakeholders to gather more empirical evidence and diverse perspectives, leading to a comprehensive solution and a practical policy at the local level.

Data availability

Due to the sensitive nature of the questions asked in this study, survey respondents were assured that raw data would remain confidential and would not be shared.

Research Ethical Approval

This research received ethical approval from the Committee of Research Ethics (Social Sciences), Mahidol University. The official Certificate of Approval Number was 2023/136.0808.

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Authors contributions

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