

Implementing Design Thinking Process for Social Innovation to Preserve and Sustain Tai Khern Identity at Baan Ton Haen Noi, Chiang Mai

การใช้กระบวนการคิดเชิงออกแบบเพื่อนวัตกรรมสังคมในการทำ
และสืบสานอัตลักษณ์ไทเขิน บ้านต้นแห่น้อย เชียงใหม่

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Abstract

Social innovation is a new approach to addressing problems, deepening needs, and co-creating new ideas for solutions with social members. This research focused on implementing design thinking for social innovation, which can be utilized for new products and services, new processes and practices, and new regulations. It was aimed to investigate the deep needs, propose guidelines, create and test the social innovation prototype to maintain Tai Khern ethnic group's identity. The participants were 15 Tai Khern community members in Ton Haen Noi, Sanpatong, Chiang Mai, and 15 stakeholders; selected by purposive and snowball sampling techniques. The data collection methods comprised three phases of design thinking. In phase 1, Empathize and Define, field observation and in-depth interviews were conducted to understand the local context and define the need to preserve and sustain Tai Khern identity. In phase 2, Ideate and Prototype, group discussions were conducted for brainstorming and selecting ideas to design a prototype for preserving and sustaining the identity. In phase 3, Test, the prototype was presented to the community, and their feedback was used to revise it. The findings indicated the main problem of youth's disinterest and lack of participation in Tai Khern cultural activities, leading to the need to create career opportunities from the identity of Tai Khern community to earn supplementary income and attract younger generations to return to the community. The solutions for preserving and sustaining Tai Khern identity were then proposed as guidelines, including establishing databases and learning materials of

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หน่วยงาน: คณะบริหารธุรกิจและศิลปศาสตร์ มหาวิทยาลัยเทคโนโลยีราชมงคลล้านนา ประเทศไทย

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Tai Khern culture, cultural tour programs, merchandise of souvenirs, and social media activities. These guidelines were finally combined to design "Tai Khern Identity Center" as a prototype of social innovation to transfer Tai Khern identity and local wisdom to younger generations, enhance their engagement and inheritance, and generate supplementary jobs and incomes based on Tai Khern's identity.

Keywords: Tai Khern, Identity, Design Thinking, Social Innovation

บทคัดย่อ

นวัตกรรมเพื่อสังคมเป็นแนวทางใหม่ในการระบุปัญหาและความต้องการที่ลึกซึ้ง และร่วมสร้างสรรค์แนวคิดใหม่ๆกับสมาชิกในชุมชนในการแก้ปัญหา งานวิจัยนี้มุ่งเน้นการใช้กระบวนการคิดเชิงออกแบบเพื่อศึกษาความต้องการเชิงลึก เสนอแนวทาง ร่วมสร้างและทดสอบแบบจำลองนวัตกรรมเพื่อสังคมในการสืบสานอัตลักษณ์ไทเขิน ที่อาจจะอยู่ในรูปแบบของผลิตภัณฑ์และบริการ กระบวนการและแนวทางปฏิบัติ ตลอดจนข้อกำหนดใหม่ๆ ผู้เข้าร่วมวิจัยประกอบด้วย สมาชิกในชุมชนไทเขินบ้านต้นแห่น้อย อำเภอสันป่าตอง จังหวัดเชียงใหม่ จำนวน 15 คน และผู้ที่มีส่วนได้ส่วนเสีย จำนวน 15 คน จากการคัดเลือกแบบเจาะจงและคัดเลือกกลุ่มตัวอย่างแบบลูกโซ่ วิธีการรวบรวมข้อมูลแบ่งเป็น 3 ระยะของกระบวนการคิดเชิงออกแบบ ระยะที่ 1 เข้าใจบริบทและระบุความต้องการเชิงลึก (Empathize and Define) โดยการสังเกตการณ์และสัมภาษณ์เชิงลึก ระยะที่ 2 เสนอแนวทางและสร้างแบบนวัตกรรมสังคม (Ideate and Prototype) โดยการประชุมกลุ่มและระดมสมองเพื่อเสนอแนวทางคัดเลือก และออกแบบรูปแบบนวัตกรรมสังคมความต้องการเชิงลึกของชุมชน และระยะที่ 3 ทดสอบเพื่อประเมินรูปแบบนวัตกรรมสังคม (Test) โดยการประชุมกลุ่มร่วมกับชุมชนเพื่อแลกเปลี่ยนความคิดเห็นและปรับปรุงนวัตกรรมสังคม ผลการวิจัยพบว่า ปัญหาหลักคือเยาวชนไม่สนใจและไม่เข้าร่วมกิจกรรมสืบทอดวัฒนธรรมไทเขินจากบรรพบุรุษ นำไปสู่ความต้องการในการสร้างโอกาสประกอบอาชีพจากอัตลักษณ์ชุมชนไทเขิน เพื่อสร้างรายได้ และดึงดูดเยาวชนให้กลับมาสู่ชุมชน แนวทางสำคัญที่เสนอ ได้แก่ สร้างฐานข้อมูลและสื่อการเรียนรู้วัฒนธรรมไทเขิน โปรแกรมท่องเที่ยวเชิงวัฒนธรรม สินค้า ของที่ระลึก และกิจกรรมโซเชียลมีเดีย รวมเป็น "ศูนย์อัตลักษณ์ไทเขิน" ถือว่าเป็นรูปแบบจำลองนวัตกรรมสังคมที่ถ่ายทอดอัตลักษณ์ไทเขินและภูมิปัญญาท้องถิ่นสู่คนรุ่นใหม่ ส่งเสริมการมีส่วนร่วมและสืบทอดอัตลักษณ์ไทเขินของชุมชน ตลอดจนสร้างอาชีพและรายได้จากอัตลักษณ์ไทเขิน

คำสำคัญ: กลุ่มชาติพันธุ์ไทเขิน, อัตลักษณ์, กระบวนการคิดเชิงออกแบบ, นวัตกรรมสังคม

Introduction

Thailand is a country well-known worldwide for its outstanding and diverse cultural capitals from region to region. As one of the world's most popular tourist destinations, people from all over the world visit Thailand to experience the Thai cultures which possibly include their ways of life, food, languages, festivals, and traditions. Thus, Thailand's National Strategy 2018 – 2037 for developing urban and rural areas focuses on sustainably conserving, reviving, and developing architectural heritage, art, culture, local identity, and lifestyles. Empowerment which centers particularly on social and cultural capital development is also promoted. The strategies include highlighting the knowledge and wisdom of ethnic groups, creating local

people's pride in their roots, and improving social and cultural values to make creative economic benefits in order to support local economies.

The northern areas of Thailand, in particular, comprise a diversity of ethnicities; including Tai Lue, Tai Yai, Tai Yong, and Tai Khen, each of which has its own distinctive identity. Attempts to conserve and preserve the identities of these ethnic groups were shown in many studies. For example, Inthaniwet (2014) proposed the musical wisdom preservation guidelines of Tai Khern's folk dance and music (e.g., Krup Sern), Tai Lue's music (e.g., Krup Lue), and Lahu's musical instruments (e.g., Tessuekoy-guitar, Laekachui-bamboo flute, and Jako-drum) in Chiang Rai. The guidelines included organizing cultural conservation clubs, knowledge management and publication, and music lessons at school. Also, Kongsri et al. (2021) compared the identities of Tai Lue, Tai Yong, and Tai Yuan in Baan Thai and Lamphun and found that spoken languages and weaving patterns were different among these groups. They also revealed noticeable social and cultural changes. The spoken language as well as the previous traditions and rituals were modified by the younger generations, leading to the need to conserve traditional culture and language. In addition, in Phuwanatwichit's (2018) study, the cultural identities of Tai Yong, Tai Yuan, and Tai Kuen at Wiang Tha Kan, Sanpatong, Chiang Mai could be promoted by integrating tourism management, providing village funds, establishing homestay businesses, and creating a cultural learning center.

Tai Khern is an ethnic group with the roots of civilization in terms of language, religion, art, and culture. Tai Khern communities can be seen in the north, including Chiang Rai, Lumphun and Phayao. In Chiang Mai, Tai Khern communities include those at Baan San Kang Pla, and San Kamphaeng District; Ban Pa Pong, and Doi Saket District; as well as Ban Thung Siew, Ban Pa Sak, Baan Ton Kok, Baan Ton Ked, Ban Tha Dua, Baan Ton Haen Luang, and Baan Ton Haen Noi of Sanpatong District. Baan Ton Haen Noi, in particular, appeared to maintain their identity, way of life, and culture evident in Tai Khern's spoken and written language, local cuisine, traditional costumes, crafts, and architecture. With abundant evidence, Tai Khern Museum was established to exhibit their traditional ways of life. This so-called cultural village comprised of 23 hip-roof houses, representing a distinctive Tai Khern architecture (Sunkanaporn, 2017). In addition, Baan Ton Haen Noi has village philosophers who can pass on local wisdom, experiences, and cultural traditions which are the identities of Tai Khern.

All of the identities above are valuable learning resources for the Tai Khern ethnic community, and they are considered significant social capital for developing a lifelong learning society. However, rapid and undirected changes in global trends are inevitable; this may lead to changes in community life and the loss of the identity that has been preserved for a long time. It is essential to co-create ethnic community innovations to defend and prevent the loss of ethnic community identity for the next generation so that they become conscious of their heritage and create opportunities to express their ethnic identity. Such social innovations could be in the form of new products and services, new processes, new practices, as well as new rules and regulations on the basis of community engagement, co-creation, and implementation to meet the needs of the community, according to the Theoretical, Empirical, and Policy foundations for building Social Innovation in Europe (TEPSIE, 2014). The social innovations

in this research were designed through a design thinking process as it helps deepen understanding of the community's problems and needs, allow unlimited creative ideas for solutions, and promote social co-creation and engagement. It is anticipated that the Tai Khern ethnic community will be able to co-create and implement social innovation to maintain its identity. This research can also be a case study for public and private sectors, as well as the community and its network, to implement the design thinking process to develop ethnic communities in the future.

Objectives

1. To investigate context, problems, and deep needs for preserving and sustaining Tai Khern identity.
2. To propose guidance and to design a social innovation prototype for preserving and sustaining Tai Khern identity.
3. To assess the prototype for preserving and sustaining Tai Khern identity.

Literature Review

1) Tai Khern Identity

A wide range of Tai Khern's identities have been conserved from the past to the present and have become evident within the Tai Khern community. Firstly, distinctive Tai Khern architecture includes hip-roofed houses made from wood and high-rise floors (Ministry of Culture and National Electronics and Computer Technology Center, 2011). The house commonly comprises an outer part, an inner part, and a terrace. The outer part is used as a common area to welcome guests, rest, and work in the daytime, while the inner part functions as a bedroom, and the terrace, which is typically located in the back of the house, is used for washing. Secondly, Tai Khern has its own spoken and written language. The written language uses an Abugida writing system similar to Lanna's scripture. The spoken language is more widely used in the present. However, each Tai Khern community (e.g., in Chiang Mai vs. in Myanmar) shares similar and different sound systems, according to Borwornraksa and Hongwiangchan (2020). Thirdly, lacquerware represents a contemporary artisanal identity. With its significance deeply rooted in cultural identity, craftsmanship involves two distinctive styles: Scratch-patterned and pattern-enhanced (Princess Maha Chakri Sirindhorn Anthropology Centre, 2022). Fourthly, food represents the identity of the Tai Khern people, as most of the ingredients are obtained from nature, such as native vegetables and herbs planted around the house, along the fence, or grow naturally. Tai Khern people consume sticky rice like other Thai ethnic groups, such as the Northern Thai and Tai Lue. The renowned dishes of the Tai Khern people include "Khao Soi Noi" or "Khao Soi On," which are local specialties of the Tai Khern and Northern Thai people. Additionally, there are other distinctive dishes among the Tai Khern people, such as "Kaeng Phak Waen" (green vegetable curry), "Sai Aua" (Northern Thai sausage), "Prik Kha" (galangal chili dip), and "Khao Tom Hua Ngok" (boiled sprouted garlic rice). The culinary practices of the Tai Khern people continue to be popular in almost every household, featuring a variety of unique dishes.

Lastly, Tai Khern people's clothing is divided into men's and women's. According to Khamnoy (2022), men's clothing is light-colored (white, light brown, blue, and black), long-sleeved, cylindrical, round-necked, with buttonholes made from cotton, while the buttons themselves are either cloth or silver. A towel or cloth is draped over the shoulder, woven in a pattern. There is a turban and a dark-colored sarong with small horizontal patterns alternating at the bottom edge of the sarong. The hem of the pants or loincloth is dark, similar to the color of a shirt with a turban. Women's dress is long-sleeved, light-colored, cylindrical cotton shirts. The round neck can have a center or diagonal slit and has buttonholes made from cotton. The buttons are made of cotton or silver. A shawl or cloth is draped over the shoulder and woven in a pattern. Tai Khern dress is worn on merit-making occasions or auspicious merit-making events such as the Poy Luang ceremony, ordination ceremony, Songkran festival, housewarming ceremony, and welcoming guests.

2) Design Thinking

Design thinking is a systematic process for solving problems and fostering social innovation in collaboration with the target community (design with users). Widely used across various fields such as business, engineering, science, social sciences, economics, and education, design thinking is a crucial process for developing innovations for society. It originates from the need to address complex and challenging problems, particularly in today's ever-changing global landscape (Koh et al., 2015). The problems that arise require expertise from various disciplines to gather analytical and creative thinking to find solutions.

Design thinking can be categorized into various models, one of which is the Stanford model. The Stanford model, as shown in Figure 1, originated from Stanford University's "d.school" in the United States, divides the process into five stages:

Empathize: It involves deeply understanding the target audience by putting ourselves in their shoes. It is crucial, as creating or solving anything requires a genuine understanding of the target group. It can be achieved through on-site visits, interviews, and detailed observations.

Define: It suggests synthesizing information and formulating open-ended questions that push for creative thinking without limiting the problem-solving framework. After learning and understanding the target group, the next step is to analyze the problem, clarify the actual problem, and select possible directions.

Ideate: This stage can take various forms, such as brainstorming new ideas without limitations, or creating diagrams and prototypes to encourage the generation of diverse ideas. The focus is on finding various ideas and approaches to solving the problem, with the ideas and directions developed in response to the problems defined in the previous stage.

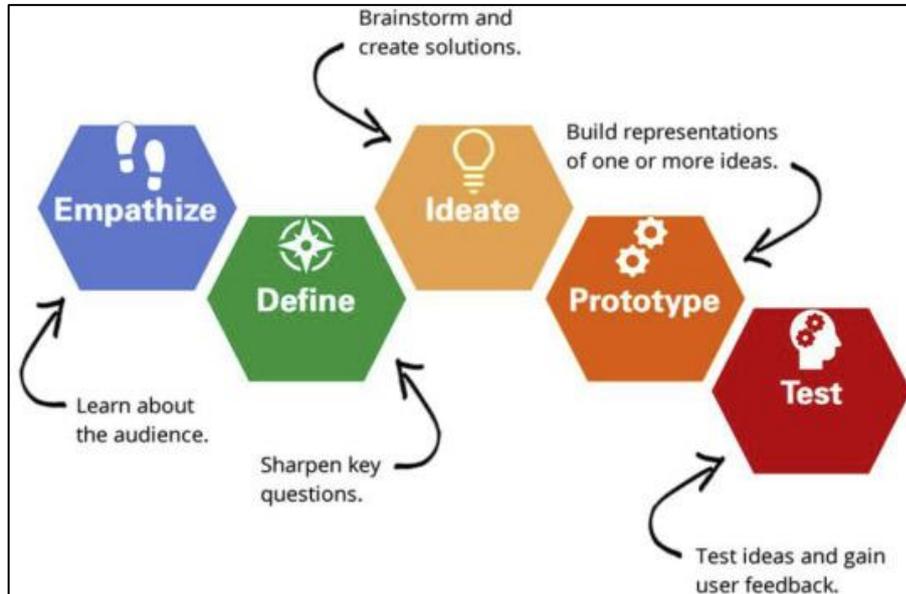
Prototype: It involves taking the most suitable ideas and creating a model or prototype. This stage allows users to test and ask questions, stimulating feedback to understand what we want to know more about. The faster we create and test, the more quickly we can identify the mistakes and learn about the ideas.

Test: Testing involves presenting the prototype to users or the target group to observe the efficiency of its use. Feedback, suggestions, and recommendations are collected and utilized in the ongoing development and improvement process.

In summary, design thinking is a comprehensive and adaptable process that combines analytical and creative thinking to address complex problems and encourage innovation.

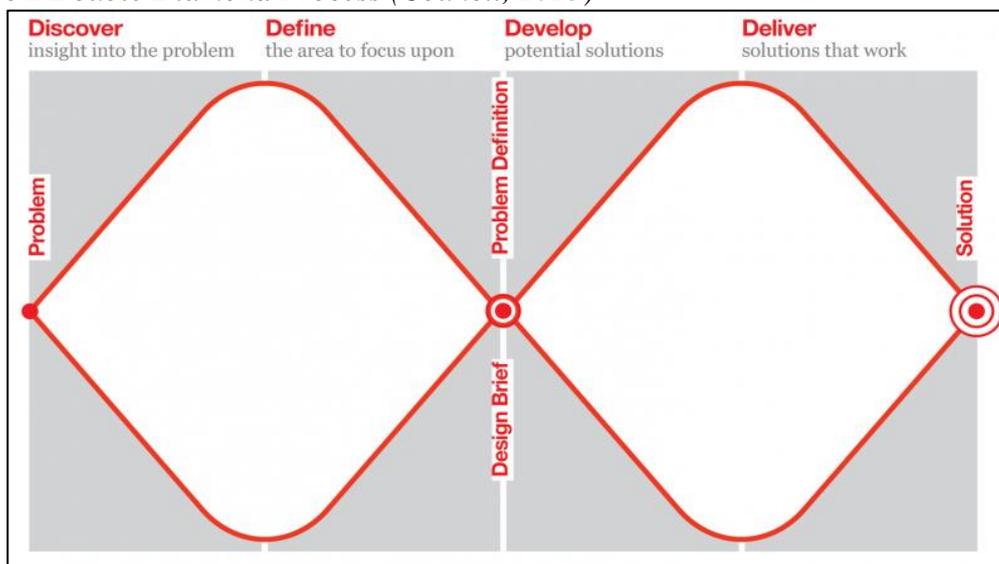
It emphasizes the importance of understanding the target audience, defining the problems clearly, generating diverse ideas, creating prototypes, and continuously testing and improving the solutions.

Figure 1 *The Stanford Model (Hasso Plattner Institute of Design)*



The Double Diamond Design Process or 4D, put forth by the Design Council of the United Kingdom, outlines a conceptual framework for design thinking in developing services and products. As shown in Figure 2, it comprises four key stages: Discover, Define, Develop, and Deliver. The process involves in-depth comprehension, rigorous problem analysis, and the generation and testing of diverse solutions. Additionally, International Business Machines Corporation (IBM) has introduced a cyclical design thinking framework involving continuous Observation, Reflection, and Making loops. This perpetual cycle includes observing real-world contexts, synthesizing thoughts through reflection, and translating ideas into tangible forms through action.

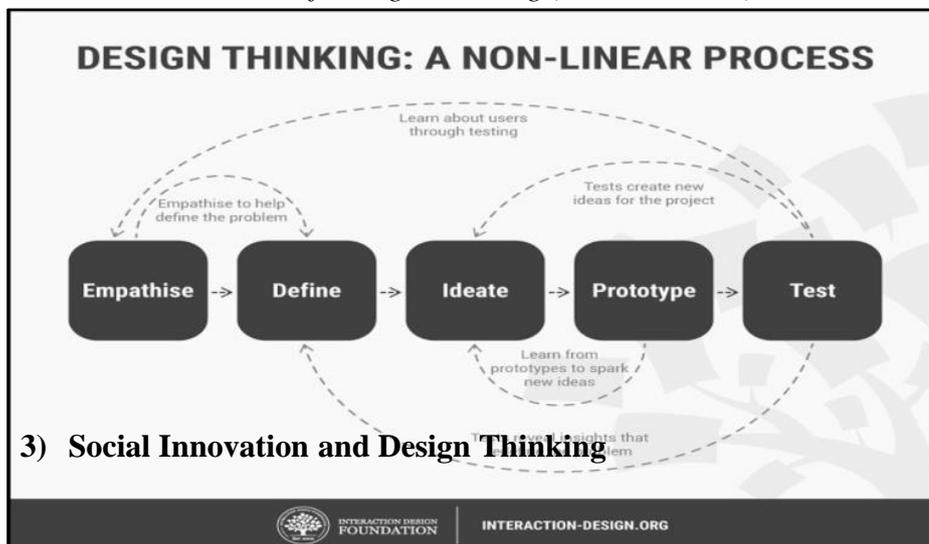
Figure 2 *Double Diamond Process (Council, 2015)*



By integrating the design thinking methodologies of Stanford University with the Double Diamond Diagram, the workflow can be broadly categorized into three phases. The initial phase focuses on establishing understanding (Understand), involving empathizing with the target group (Empathize or Discover) and defining problem scopes (Define). The second phase centers on the creative process (Create), including ideation (Ideate or Develop). The third and final phase encompasses testing and refining for user delivery or market launch (Deliver), involving prototyping (Prototype) and testing (Test or Deliver). While the diagram may imply a sequential progression, practical application involves iterative cycles, allowing teams to refine problem-solving approaches and identify optimal solutions. Quick implementation and error identification facilitate team adjustments, enhancing the thoroughness of ideation. In summary, the design thinking process is a dynamic, iterative framework involving continuous understanding, creativity, and refinement cycles. The integration of methodologies from Stanford University and the Double Diamond Diagram enhances the comprehensiveness of problem-solving approaches, ensuring a robust ideation process tailored to the target audience.

What is crucial to note is that the design thinking process is inherently non-linear, as illustrated in Figure 3 by Dam and Siang (2020). The depiction reveals that the design thinking process only sometimes commences with understanding the problem context and needs (Empathize) in a linear sequence leading up to testing modeled ideas (Ideate). Instead, the process can iterate through multiple cycles, each stage having interrelated responsibilities. For instance, understanding the problem context and needs (Empathize) may stem from learning about users through testing original ideation models (Test). Likewise, defining the problem (Define) might originate from understanding the problem context and needs (Empathize), and testing original ideation models (Test) may assist in redefining the problem. Furthermore, the creative ideation process (Ideate) to propose solutions defined earlier can arise from assessing the outcomes of designing ideation models (Prototype), and testing these ideation models (Test) determines their practicality, allowing for further development from the initial concepts. The non-linear nature of the process allows for adaptability in diverse contexts, enabling the study and development of social innovations to align seamlessly with community needs.

Figure 3 *Non-Linear Process of Design Thinking (Council, 2015)*



Social innovation may be defined as a novel approach to addressing the problems and needs of the impacted social groups. The Theoretical, Empirical, and Policy foundations for building Social Innovation in Europe (TEPSIE) propose five characteristics of social innovation (TEPSIE, 2014). Firstly, it is new in a particular social context. Secondly, it is designed to meet a social need positively. Thirdly, it involves ideas that have been put into practice and implementation. Fourthly, it requires engagement and involvement of community members to specify their problems and propose more innovation solutions. Lastly, it aims to transform social relations by empowering community members and making resources more accessible. Social innovations can be sorted into four types: new services and products (i.e., new interventions or programs that meet social needs), new practices (i.e., new services requiring new professional roles), new processes (i.e., co-production of new services), and new rules and regulations (i.e. new laws).

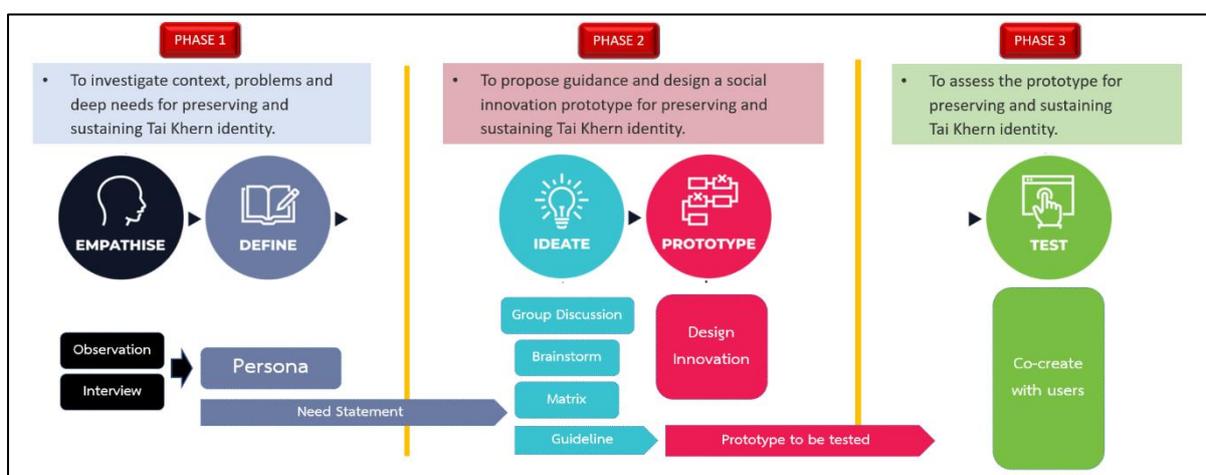
In Thailand, research has been conducted to illustrate and exemplify many forms of social innovations. Amornkitpinyo et al. (2022) provide examples of social innovation for quality of life, including social innovation for aging society (e.g., wheelchairs operated by facial movement), social innovations for improving Thailand's medicine and public healthcare (e.g., Visual Inspection with Acetic Acid (VIA) Screening Program), and social innovations for economic development (e.g., Royal Projects). Saardthia et al. (2024) conducted a qualitative study to develop community-based tourism as a social innovation for improving Grassroots Economy in Takhli, Nakhon Sawan Province. It highlighted a one-day trip route simulation by youth and senior tour guides with "Storytelling" skills, as well as local food and souvenir products to generate income. These activities were promoted via creative and safe media, and using social marketing channels. Some research uses implemented design thinking for developing social innovation. For example, Chujun et al. (2023) implemented design thinking and creative marketing to create Malaria warning and caution signs as social innovations for malaria elimination management. Such innovations brought about highly positive attitudes towards the signs regarding the delivery of pictures, messages, and colors. Further, Nuchniyom and Sinjindawong (2023) employed design thinking to create community-based learning as a social innovation network to empower elderly potential in Chedi Hak, Ratchaburi Province. The focus was on sharing and exchanging local wisdom through online platforms in terms of food and health, handicrafts, culture and tradition, agriculture, and ways of life. This study resulted in a sustainable network of social innovation for the elderly. As can be seen, these two studies have demonstrated the potential of the implementation of Design Thinking for social innovation.

Research Methodology

A qualitative case design was employed in this study in order to gain an in-depth understanding of human behaviors, feelings, thoughts, experiences, actions and relationships in the social activities of a particular group. The data were collected through field observations, semi-structured interviews, and group discussions, based on three phases of the design thinking process, as shown in Figure 4. Phase 1, Empathize and Define, involved field observation and in-depth interviews to gain insights into Tai Khern local context and define their needs for preserving and sustaining their identity. Phase 2, Ideate and Prototype, focused on group

discussions where a multidisciplinary team of lecturers and students who experienced Tai Khern culture had brainstormed some ideas from which to select and propose. This was followed by designing a prototype to meet the needs for preserving and sustaining Tai Khern identity. Phase 3, Test, dealt with a group discussion of the community where the prototype was presented, and their feedback was collected to revise it. According to Withell and Haigh (2013), design thinking is underpinned by the human-centric approach to understanding the community's context, problems, and needs. The focus is on designing social innovation "with" the community, not "for" the community, so the involvement of community members and stakeholders are required in this study. A multidisciplinary team (e.g., researchers, community, lecturers, and students) must collaborate to co-create guidance and social innovation for preserving and sustaining Tai Khern identity.

Figure 4 Design Thinking Process



1. Research Participants

There were two groups of participants. The first group of users were 15 Tai Khern community members in Ton Haen Noi, Sanpatong, and Chiang Mai. Selected by a snowball sampling technique, the key informants were the village chief, local sages, and groups of housewives, elderlies, and youths. The second group of users were 15 stakeholders that were purposively selected regarding their high commitment to preserving Tai Khern identity. This group included the representatives of Sanpatong District Cultural Council, Tawangphrao Subdistrict Administrative Organization, Non-formal education, local schools, and researchers from a public university in Chiang Mai.

2. Data Collection Methods

a) A field observation framework was adopted from Lee's (2017) POEMS framework and used in Phase 1, Empathize and Define, to gain insights into the local context. It consisted of P for People, O for Objects, E for Environment, M for Message and Media, and S for Services. Firstly, P is concerned with observing people and critical members of the Tai Khern community, their roles, duties, and relationships. Secondly, O includes observing objects used in the ceremony, their importance, and uses. Thirdly, E deals with observing environments, locations, and atmospheres. Fourthly, M involves observing messages and

media in the ceremony and their roles and significance. Lastly, S includes observing services and support systems in the ceremony.

b) Semi-structured interviews were carried out in Phase 1, Empathize and Define, to understand the Tai Khern community's deep needs for preserving and sustaining their identity. The interview consisted of three categories of guided questions. Firstly, the demographic data of Tai Khern community members included personal information, habits, and lifestyles. Secondly, personal motivation, beliefs, aspirations, inspiration, and problems were the focus. Lastly, their thoughts and feelings about Tai Khern identity, its significance, motivation, and pain points for conserving and inheriting were noted. After gaining permission and consent, the individual interviews took place in community compounds for 30-40 minutes based on the willingness and availability of each participant.

c) A group discussion of a multidisciplinary team was undertaken in Phase 2, Ideate and Prototype, to brainstorm ideas and to select the best to meet the Tai Khern community's needs for preserving and sustaining their identity. The participants, including users and stakeholders, brainstormed as many ideas as possible. Then, similar ideas were categorized and coded into themes. The design selection matrix with two design criteria, "high impact" and "user friendly," was discussed to select the best ideas. These ideas were then combined to design the prototype.

d) A group discussion with Tai Khern community was conducted in Phase 3, Test, to present a prototype to Tai Khern community and collect their feedback. The discussion focused on "What works?" "What does not work," "What could be better?" and "Additional/New ideas."

3. Data Collection and Analysis

After gaining the approval from Ethics in Human Research, informed consent was processed. Research objectives, participants' roles, and rights were acknowledged, and permission for taking photos and voice recording was also gained before data collection.

Phase 1, Empathize and Define, involved field observation and in-depth interviews to gain insights into Tai Khern local context, and to define their needs for preserving and sustaining their identity. The observation data were categorized into the POEMS framework, while the interview data were synthesized to design the Persona to represent the users. Phase 2, Ideate and Prototype, focused on group discussions where a multidisciplinary team of lecturers and students who experienced Tai Khern culture brainstormed to propose and select ideas, followed by designing a prototype to meet the needs for preserving and sustaining Tai Khern's identity. Phase 3, Test, dealt with a group discussion of the community where the prototype was presented, and their feedback was collected to revise it.

Results

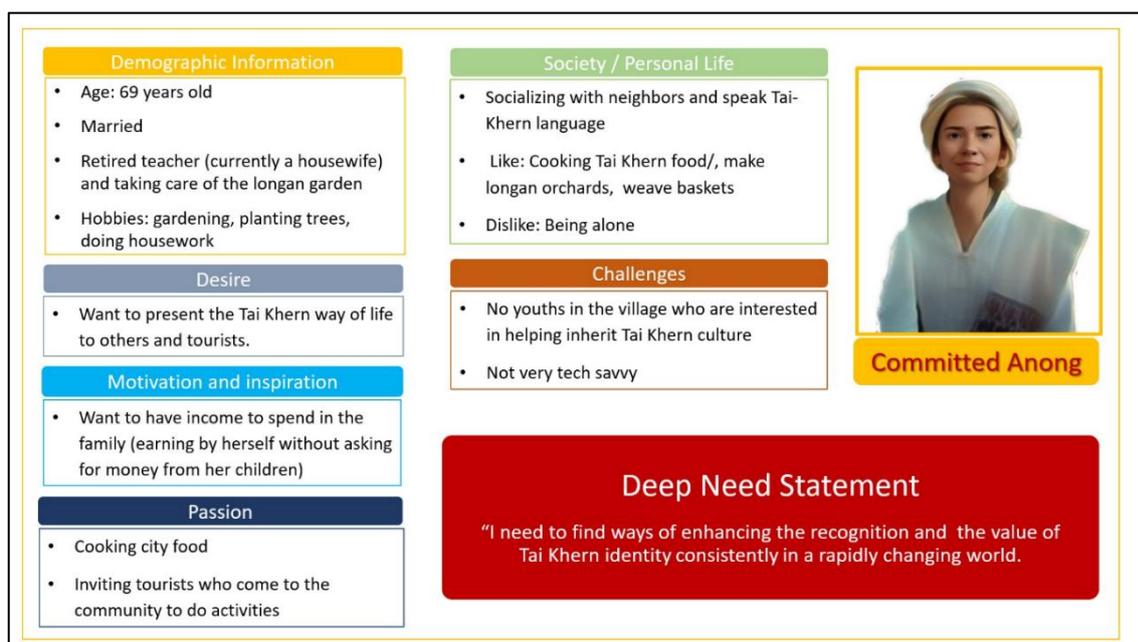
1. Context, problems, and deep needs for preserving and sustaining Tai Khern identity

1.1 To understand the local context, the data from fieldwork observation were sorted into five categories. 1) People in Tai Khern community comprised the young, active village chief who played the leading roles in cultural activities in the village under the supervision of

local sages and with cooperation from the elderly, housewives, and youth groups. Sanpatong District Cultural Council, Tawangphrao Subdistrict Administrative Organization, and Non-formal education supported many activities. 2) Objects reflected abundant Tai Khern architecture, art, and ways of life (e.g., old hip-roof houses, household and decorative items, artifacts, fishing tools, cooking and dining equipment, spirit houses, and costumes). 3) The environment was clean and peaceful, surrounded by wooden Tai Khern houses and modern concrete houses along the Nam Khan River. 4) Message and Media involved history boards, maps, and direction signs to Tai Khern’s museums, temples, ancient houses, and homestays. 5) Services included a sightseeing tram with a local guide and driver, a cooking demonstration, and a local market.

1.2 To address problems and deep needs, PERSONA of Ton Haen Noi villagers was designed based on the interview data, and supported by what was observed. As shown in Figure 5, Aunty Anong, a representative of the users, was a retired teacher committed to presenting Tai Khern identity to visitors, particularly the local food. However, her primary concern was passing down Tai Khern identity to the younger generations as the youths were less likely to engage in cultural activities. Thus, she needed to find ways to sustainably enhance its values and recognition to cope with current trends of rapid changes.

Figure 5 *Persona of Ton Haen Noi Villagers*



2. Guidelines and a social innovation prototype for preserving and sustaining Tai Khern identity

In the Ideate Phase, guidelines for preserving and sustaining Tai Khern identity were made based on the data gained from the brainstorming. A matrix was used to select the best ideas. Three main guidelines were proposed to form the prototype “Tai Khern Identity Center,” as shown in Figure 6.

Figure 6 Prototype of Tai Khern Identity



a) The database and learning materials consist of online and offline media. These included a Facebook Fan Page, a Website, an Electronic Book about Tai Khern in three languages (Thai, English, Chinese), a Tai Khern Cookbook, and a Tai Khern Course/Curriculum.

b) Tai Khern cultural tour programs were designed to share knowledge about Tai Khern identity. Focusing on local participation, appointed group members should organize the activities and financial management. However, with the limitation of regular floods during the monsoon season, the tour program should also be operated in winter and summer. Furthermore,

as many activities require detailed preparation, advance bookings and small group tours should be considered.

c) Products, souvenirs, and other activities would help increase supplementary incomes to the community. By incorporating the identity of Tai Khern and adding values to their local handiworks, the potential products and souvenirs were herbal inhalers, rice crackers, and Northern Thai Rotten beans. The first item, the herbal inhaler is stored in a container similar to “Ab Mak,” a unique lacquerware of Tai Khern made of rattan bamboo material. The exterior is coated with black lacquer resin for durability. The material may be modified into paper or plastic patterns to make it easier to produce. The second item, rice crackers or “Kao Taen” with longan juice is a souvenir that signifies the identity of Tai Khern people. It is an ancient dessert of the northern people and is usually made to entertain guests in various auspicious ceremonies such as Poi Luang ceremony, new housewarming ceremony, wedding ceremony, New Year (Songkran) ceremony, and Poi Luk Kaew ceremony (Buddhist novice ordination). Also, longan is the primary economic fruit of the community and is sold with a reasonable price. So, using longan juice would help the community. The third item, Northern Thai rotten beans (Tua Nao) is a typical food of the Tai Khern community, and its value can be increased by packaging, transformed versions of it into a form of “Rotten bean powder sprinkled with rice” and “Rotten bean flavored soup cubes.”

Additional activities could include Tai Khern local cooking classes. Housewife groups always cooked the local food, and ingredients were locally available. Sharing cooking instructions on the local cuisine would increase interest and help gain insights into local ways of life. Another activity could also be photo shoots of Tai Khern costumes with their unique patterns of cotton weaving, especially the headdress and the shoulder cloth/shawl, with backgrounds of Tai Khern architecture. Other activities may include sending postcards of the Tai Khern identity and culture when visiting to share impressive experiences. Furthermore, photo and video clip contests can be a good challenge amongst the teenagers who are commonly keen on using computers and media to publicize the identity of Tai Khern. These activities would bring about good memories and appreciation of Tai Khern identity and culture.

3. Feedback on the prototype for preserving and sustaining Tai Khern identity

In this phase, the prototype of a Tai Khern Identity Center was discussed in terms of "What works?", "What could be better?" and additional/new ideas. Feedback and additional suggestions are concluded below.

a) The database and learning materials: The community agreed that Tai Khern curriculum/courses could be in the form of textbooks, modules, online, and the practice of the Tai Khern language. Additional ideas included integrating Tai Khern identity into school subjects.

b) Tai Khern cultural tour programs: The community agreed that a cooking workshop and a photo contest would draw tourists' attention of any genders and ages. Organizing various activities could generate additional income for the community, leading to self-reliance in a sustainable manner, and cooperation of the young generation. New ideas proposed education

trips for Thai and international visitors and students, an extended cooperation network with other Tai Khern Ethnic groups, and public and private sectors.

c) Products, souvenirs, and other activities: The community liked the idea of adding value to local products. However, the size of the herbal inhaler should be more significant, because coiling bamboo is problematic for elderlies to weave. Additional ideas included adapting Tai Khern's unique pattern to design shawls, selling cracked rice crackers with longan syrup in a souvenir package, and making Tai Khern sour fermented pork (Naem Hor Tong) a unique, well-known souvenir. The community also agreed to create activities that would enhance the elderly's engagement as significant people. Other suggestions regarding the policy included using local wisdom to create a creative economy which could reinforce Sanpatong District as a culture-based tourist attraction, and encouraging all parties to participate in and organize their roles and duties to drive community action. Establishing a network to co-cost or sponsor the events would bring in-kind and in-cash support.

Discussion

1. Design Thinking as a Means to Social Innovation

This research adapted the Design Thinking process to create a social innovation for Tai Khern identity preservation. Firstly, the data from the field observation and in-depth interviews in the Empathize and Define phase indicated that younger generations in the community were less likely to participate in cultural activities in the Tai Khern community. In modern society, many families send their children to study in Chiang Mai city which they believe offers a better education. Many young graduates also choose to work in the city due to career opportunities, advancement, and high income. Such problems and needs tend to be shared among local communities. For example, Ban Si Kaeo and Roi Et Province, encountered challenges of transferring knowledge of Khan crafts due to the younger generation's lack of interest (Namsanga & Pantasri, 2023). Also, Mien ethnic community was concerned about their youth's lack of knowledge and understanding of beliefs and rituals (Taweeprawachai, 2021). Similarly, Chedi Nerng Community needed to pass on the sacred Wisdom Reed Ceremony to younger generations and raise their awareness of the significance and original process of this sacred ceremony (Boonlue & Konchiab, 2023). The design thinking process involves empathy to gain more understanding of the local context and the challenges encountered by the users, leading to insights into the needs to create job opportunities based on the Tai Khern identity to gain additional income and attract the youth to be more engaged in community activities.

Secondly, based on the group discussions of the multidisciplinary team in phase 2, Ideate and Prototype, the guidelines for preserving and sustaining Tai Khern's identity were proposed to solve the problem regarding the youth's lack of interest and participation in their cultural activities. These guidelines were databases and learning materials of Tai Khern culture, cultural tour programs, souvenir merchandise, and social media activities. These guidelines were combined to design the "Tai Khern Identity Center prototype" that can be operated and managed by the community members. For example, the seniors could provide knowledge and local wisdom while the younger generations could create databases and learning materials. The housewife group could demonstrate cooking while others help sell the souvenirs. Thus, design

thinking tends to promote co-creation for social innovation. This phase also reflects engagement and collaboration among the multidisciplinary team to create ideas from different perspectives, resulting in tangible and agreeable innovation to preserve and sustain Tai Khern's identity. In addition, design thinking appeared to be a suitable tool for designing products and services from the local community's identity (Fongkanta et al., 2024; Phunphon et al., 2023).

Lastly, group discussions in phase 3, Test, revealed some feedback from users and stakeholders to revise the prototype in order to meet the needs of the Tai Khern community. This phase reflects co-creation, where the community's engagement and participation were promoted in the development process by including their feedback and suggestions to gain an in-depth understanding of their needs and then to refine the prototype (Lee, 2017). Regarding users' and stakeholders' feedback, it is highly possible to start by integrating Tai Khern identity into local school subjects. Thailand's Local Educational Development Plan (2023-2027) highlights the promotion of religions, arts and culture, tradition, and local wisdom in local schools. Also, with abundant cultural human resources and assets, it should be easy to manage Tai Khern cultural tour programs to meet the demands for soft power trends. However, some activities require more time to prepare, as well as in-kind and in-cash support from the public and private sectors. For example, school trips of international students in Chiang Mai could be conducted with the cooperation of international schools around Chiang Mai. In addition, selling products and souvenirs require financial support for investment as well as training in design and marketing by experts from university and business sectors.

2. Innovation for Preserving and Sustaining Tai Khern Identity

In this research, the "Tai Khern Identity Center" was designed as an innovation for preserving and sustaining Tai Khern identity. It includes a database and learning material, a cultural tour package, local products, souvenirs, and other cultural activities. The center met the needs for preserving and sustaining Tai Khern identity and ways of life and creating supplementary income for the community. Thus, it could motivate the younger generations to pay more attention to the importance of sustaining their identity.

Firstly, a database and learning material could help transfer and publish knowledge regarding Tai Khern culture and identity. The community was enriched with local wisdom, and older generations were willing to share their wisdom and knowledge, including rites and rituals, traditional treatment, and handicrafts. It could be done with educational institutions to design Tai Khern's curriculum of its spoken and written language, cooking Tai Khern cuisine, and the making of handicrafts. The significance of the body of knowledge and local wisdom should be preserved as well as transferred to the younger generations for sustainable development (Chaimuang, 2015)

Secondly, the cultural tour program for the Tai Khern community would benefit the community since it has a high potential to serve the tourists. For example, many Tai Khern traditional houses could be used as homestays for tourists. Other exciting activities could include cooking classes and sightseeing trips to cultural attractions such as temples and ancient ruins. As Intakul and Tungchareonchai (2020) highlighted, the identity, such as ways of life, local wisdom, and arts, could be tourist attractions and lead to the ongoing conservation of local culture.

Lastly, local products and souvenirs were the main pathways to supplement income for the community. They could be promoted through marketing channels, such as the local market and even across popular social media. Encouraging the youth to learn about technology for marketing and public relations would help promote the local products, and represent Tai Khern identity (Chaimuang, 2018).

Conclusion and Recommendations

This study demonstrates the potential of design thinking for social innovation to address the challenges of Tai Khern cultural preservation and co-create ideas for solutions. The prototype for “Tai Khern Identity Center” offers a promising approach to engaging the younger generation and promoting cultural identity in Tai Khern community. Users and stakeholders also provide positive and constructive feedback on the center, as well as agree to take part in the activities once implemented. This study greatly reflects the community’s engagement, and encourages collaborations and networks among the community’s members, of the public and private sectors, as well as international parties for sustainable development. Thus, it is vital to put such a prototype into practice in the near future by starting with existing resources and assets. This social innovation can continuously be shaped and reshaped to meet the rapidly changing world.

These findings have significant implications for gaining some understanding and experience on how to implement design thinking to address and solve the communities’ problems and seek for ideas and solutions. However, as design thinking is a continuous process, the problems can be redefined, and ideas can be regenerated when they fail to meet the needs of the users. In addition, in this research, the design thinking was implemented in a specific community and excluded outside parties, such as visitors, as key stakeholders. In future research, the design thinking process can be applied to other social contexts to co-create social innovation for sustainable development. Some research might also include additional stakeholders, such as visitors to the community.

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