

A Knowledge Creation Framework for a Sustainable Economy: A Case Study in the Phumuen Community, Mae Ai District, Chiang Mai Province

Paipan Thanalerdsopit^{1*}

Received: November 22, 2022

Revised: April 23, 2023

Accepted: May 18, 2023

Abstract

The objective of this research was to present knowledge creation framework through practicing based on a case study to increase income from local products in the Phumuen Community, Mae Ai District, Chiang Mai Province. This mixed method research collected qualitative data through in-depth interviews, a group discussion, a transferring knowledge framework, a community of practices model, and an after-action review among the researcher and community members. The quantitative method, a gap analysis was conducted to compare the revenues and expenses of the original product versus the proposed case-study, value-added product. The research was divided into three areas, which are processing of local herbs, creating new packaging for the dried herbs, and improving community enterprise management. The findings illustrated two main factors for success of knowledge creation framework. The first success factor was the collaboration between the academic sector, the community sector, and the private sector in community. For the second success factor was tapping into the varied knowledge and experiences of different generations combined to develop a better packaging product such as the young contributed to the design using cultural characteristics of their traditional dress colors, using online marketing while the older generation produced the packages using locally sourced material that is bamboo. Moreover, the newly developed product increased the net profit of the community enterprise by more than 34.7%. Everyone involved in the case study, from researcher and lecturers to community members, were connected through a knowledge management model for community sustainability.

Keywords: Community Enterprise, Knowledge Management, Sustainable Community

^{1*} Lecturer Dr., Faculty of Business Administration and Liberal of Arts, Rajamangala University of Technology Lanna

* Corresponding author Email: paipan@mutl.ac.th

กรอบความรู้สร้างสรรค์สำหรับเศรษฐกิจยั่งยืน กรณีศึกษาชุมชนปู้หมื่น อำเภอแม่เมาะ จังหวัดเชียงใหม่

ไพโรจน์ วัฒนโสภิต¹

บทคัดย่อ

การวิจัยนี้มีวัตถุประสงค์เพื่อนำเสนอกรอบแนวคิดการสร้างความรู้ผ่านการปฏิบัติ โดยใช้กรณีศึกษาการเพิ่มรายได้จากผลิตภัณฑ์ท้องถิ่นในชุมชนปู้หมื่น อำเภอแม่เมาะ จังหวัดเชียงใหม่ การวิจัยแบบผสมผสานนี้ เป็นการเก็บรวบรวมข้อมูลเชิงคุณภาพโดยการสัมภาษณ์เชิงลึก การสนทนากลุ่ม การสร้างกรอบแนวคิดการถ่ายทอดความรู้ชุมชนนักปฏิบัติ และการทบทวนหลังการดำเนินการของนักวิจัยและสมาชิกในชุมชน การวิจัยเชิงปริมาณใช้สำหรับการวิเคราะห์ช่องว่างเพื่อเปรียบเทียบรายได้และค่าใช้จ่ายของผลิตภัณฑ์เดิมกับผลิตภัณฑ์ที่มีการสร้างมูลค่าเพิ่ม การวิจัยแบ่งออกเป็น 3 ด้าน ได้แก่ การแปรรูปสมุนไพรในท้องถิ่น การสร้างบรรจุภัณฑ์ใหม่ และการปรับปรุงการจัดการวิสาหกิจชุมชน ผลการวิจัยแสดงกรอบแนวคิดการจัดการความรู้เพื่อความยั่งยืน โดยปัจจัยหลักสู่ความสำเร็จประการแรก คือ การทำงานร่วมกันระหว่างนักวิชาการ ได้แก่ นักวิจัยและคณาจารย์ในมหาวิทยาลัย ชาวชุมชน และภาคเอกชน ได้แก่ วิสาหกิจชุมชนในพื้นที่ สำหรับความสำเร็จประการที่สอง ได้แก่ การใช้ประโยชน์จากความรู้และประสบการณ์ที่หลากหลายของคนรุ่นต่าง ๆ ที่ร่วมกันเพื่อพัฒนาผลิตภัณฑ์บรรจุภัณฑ์ที่ดียิ่งขึ้น เช่น คนหนุ่มสาวมีส่วนร่วมในการออกแบบโดยใช้ลักษณะทางวัฒนธรรมของเครื่องแต่งกายแบบดั้งเดิมของชนเผ่า การใช้การตลาดออนไลน์ ในขณะที่คนรุ่นสูงวัยทำการผลิตบรรจุภัณฑ์โดยใช้วัสดุจากท้องถิ่น ได้แก่ การสานบรรจุภัณฑ์จากไม้ไผ่ นอกจากนี้ การสร้างมูลค่าเพิ่มให้แก่ผลิตภัณฑ์ที่พัฒนาขึ้นใหม่ยังช่วยเพิ่มกำไรสุทธิของวิสาหกิจชุมชนได้มากกว่าร้อยละ 34.7 ทั้งนี้ การดำเนินการวิจัยประชากรการวิจัยทุกคนตั้งแต่นักวิจัยไปจนถึงคนในชุมชนมีการทำงานเชื่อมโยงกันผ่านรูปแบบการจัดการความรู้เพื่อสร้างความยั่งยืนให้แก่ชุมชน

คำสำคัญ: การจัดการความรู้ ชุมชนยั่งยืน วิสาหกิจชุมชน

¹ อาจารย์ ดร., คณะบริหารธุรกิจและศิลปศาสตร์ มหาวิทยาลัยเทคโนโลยีราชมงคลล้านนา



Introduction

Although local handicrafts and artworks represent a symbolic identity to the culture and traditions of the local community there are still some challenging issues for them to attract much of an interest with visitors who see them as redundant in value consumption and foreign travelers who can easily get bored with the novelty that is massed marketed everywhere in the tour destination regions (Finne & Sivonen, 2008). Countless number of workshops provided by academic institutions have offered different concepts to promote the local products but the leadership and management of resources dealing with knowledge application, labor, capital, materials, energy, and information are still a long way of being applied efficiently and effectively towards reaching the real intentions of getting people to buy their items in large volume (Tidd & Bessant, 2020). The advancement of digital communication and social media being linked to online commercial websites were supposed to be the factoring tools to reach the targeted group as it had with other products that catered to individuals with a certain lifestyle in fashion and modern living (Dwivedi et al., 2021). However, there's a lack of initiative on part of the stakeholders involved in the network to procure the knowledge in strategy and system that would enable potential buyers to see the value of purchasing the items. The local mindset is fixated on selling a good quantity of their products to the customers in the moment while being oblivious to the changing trends and contemporary issues, such as working in a sound environment with people and their social surroundings, that have made people more aware of what types of activities that could either support their values or go against their beliefs (Andriof et al., 2017). Even in a production orientated community, the ways of collaborating with key members on their know-how, expertise, experience, and getting individuals to coordinate their insights is a must for the faction of people who share the same interest to establish a strong competitive advantage in managing knowledge by adding value to their goods over other commercial enterprises or local communities that are in direct competition with them (Ghose & Pettygrove, 2014) not doing so will only result in a cut throat competition within the community to look after their own interest instead of being part of the whole to help each other thus resulting in a sustainable economy.

The aim of this research is to determine on the best way in exchanging and managing knowledge between the university researcher and a local community to

enhance a sustainable economy. The Phumuen Community, Mae Ai District, Chiang Mai Province has been used as a case study for acquiring the following research objectives:

1. Identifying the village environment, including getting to know the local community and its requirements.
2. Using the SECI model, create knowledge among members of the local community enterprise's product development groups, namely to:
3. Discuss the efforts to create knowledge among the members engaged in a project, based on the organization's instructions.
4. Using a knowledge management framework, show how the members interact in knowledge creation, storage, retrieval, transfer, and application in a product development project.

Literature Reviews

1. Knowledge Management and Sustainable Economy in the Local Community

A local community is comprised of stakeholders who are skilled in the operation of the business process to achieve the desired outcomes. The idea of having knowledge management established in the community is to design a systematic network that taps into the intelligence, learning approach, and smart performance acting on accurate information provides the foundation for the local community to anticipate for any situations to capture the customers' attention about the value of their products (Suran et al., 2020). The interaction with buyers and non-buyers set up the data for the local community members to capture, achieve, and access leading into the best practices of applying that knowledge and how to gain more ideas to add more value to their product.

The Office of National Economic and Social Development Council Thailand's Twelfth National Economic and Social Development Plan (2017-2021) had expressed its concern with local Thais going through challenging times with regards to being faced with persistent income inequality and lacking the knowledge, skills, qualities, and attitudes needed to develop their potentials. Thailand itself still needs a better planning of resources to create a human society that aims toward achieving well-being, quality of life, and resilience across all age groups. Furthermore, Thailand still needs to improve its policies and procedures of spreading economic and social opportunities that create a new

economic and income-generating bases across the regions for the purpose of decreasing social inequality and increase competitiveness within the local community for the people to be beneficial. Consequently, national development during 2017-2021 had focused on knowledge-based development using wisdom, skills, science, technology, research and development, and innovation which is central in developing a proper knowledge creation framework for the local community to find ways of adding value to their products being marketed (Office of the National Economic and Social Development Board, 2017).

2. Knowledge Management Requirements for Developing Economically Sustainable Communities in Thailand

Thailand's higher education institutes are required to transfer knowledge by conducting research projects with local communities using the Sufficiency Economic Philosophy, which is based on the fundamental principles of Thai culture, including moderation, prudence, and social engagement. It uses knowledge and virtue as guidelines for living, and requires intelligence and perseverance, which will lead to real happiness in one's life. Decisions and activities regarding sufficiency must also rely on 1) knowledge in relevant fields and 2) prudence in bringing this knowledge to bear, including understanding the relationships with the various fields. Moreover, virtue—or the awareness of honesty, patience, perseverance, and intelligence—in leading a life of Sufficiency Economy should be promoted and applied at all levels, branches, and sectors of the economy. This philosophy is not limited to the agricultural or rural sectors alone, but can be applied to even the financial, real estate, international trade, and investment sectors by emphasizing similar principles of moderation in performance, reasonableness, and creating social engagement for oneself and society (Buranapin & Ratthawatankul, 2015).

3. Exchanging and Managing Knowledge to Enhance a Sustainable Economy amongst University Researchers and the Local Community

A sustainable economy addresses on being resilient and supporting the quality of life for people but at the same time is aware on the issue of how resources are being extracted, processed, and finally disposed of which puts a stress on the environment (Oberle et al., 2019) The idea of having a sustainable economy has to get the interest and action of other stakeholders involved to generate an outcome that benefits the wellbeing of all, otherwise any attempt to go further will only be met with uncooperative behavior to support the process and mistrust on the good intentions. Maintaining environmental

stability through the idea of a sustainable economy requires a collective effort of agents involved to share their knowledge which can be perceived as complex, extraordinary, and abstract to fully comprehend (Lainez et al., 2018) when communicating with each other. Knowledge demonstrating the know-how, anticipating for problems, offering sound solutions, or promoting innovation and creativity in operating towards sustainable economy is more effective when people are able to execute on it without any additional burden experienced (Bolz et al., 2018). Isaksen et al. (2010) provided a framework that is practically designed to assist the decision-making process for touching on areas of concern such as calculating the resource budget and life cycle data that assists on refining the design and improving methods to uphold the value of a sustainable economy. In a study done by Fissi et al. (2021) on how a university can be a model for a sustainable economy that promotes a green environment, it was mentioned that while workshops and research activities are good for disseminating the information to the public there is much more desire for a systematic coordination to get the relevant stakeholders involved in order to produce accurate details in practices and to make people be held accountable when falling short of meeting expectations. In theory, Harkavy & Puckett (2019) stated that universities influence their local communities by presenting itself as models for sustainability and playing a key role in making socio-economic contributions to their host communities with their graduates being employed in the local region or creating living laboratories in cooperation with stakeholders within their communities. Upon their conclusion from the research idea on the role of higher institutions in sustainability at the local level (Gane, 2007) asserted that resources/incentives and coordination were the factors that need to be strongly considered in performing on for the sake of getting locals to foster a cooperative attitude in support of any sustainable initiative.

4. Understanding the Local Community and its Requirements Based on the Environment of the Village

Before applying any conceptual framework or idea that involves the local community, it is best to review from the past events on how stakeholders within the community have fared overall from other projects that had been participated in. From a theoretical perspective done by Dasgupta & Beard (2007) that lead to the conclusion on why locals prefer a greater autonomy in making their own decisions, dealing with issues that only they know how to manage, and having the acumen on knowing which factors to

start with that is within their capacity and capabilities to carry out, there is a need to examine on the reasons why the local community rejected a top-down approach from the beginning whenever they are part of a social project. The requirements of the local community would help set the type of invitation space for participatory action with any outsiders. In an invited space, the local community members are offered an opportunity to partake in the decision-making process that allows the individuals or groups to be the “makers and shapers” towards their own resolution and never given the feeling that they been had as “users and choosers” from the beginning (Patel et al., 2016). Fulfilling the requirements based on the environment of the village has to take on the consideration of the capacity and capabilities of the local community in being self-dependent in meeting their aim and objectives of maintaining sustainability. A case study by Manaf et al. (2018) pointed out to a tourism village based in Indonesia that has created strategies to deal with other stakeholders’ interests within the village and have managed to do so due to the local leaders’ capacity being supported from the external environment which gave them the confidence and empowerment to succeed. Getting a united effort and coordination towards a sustainable economy becomes a challenging task due to the hidden level of interest or personal agenda that gets in the way of the process and procedures. Priatmoko (2018) believes that academics should be aware of that there will be different opinions from the local people in the community, and that there are authorized leaders as well as informal leaders who have a strong influence of power that can shape the thinking and actions of other people. It is suggested that academics be clear from the beginning on the idea of promoting a sustainable economy and what they outcome looks like for all stakeholders to agree upon in order to avoid any conflict or clash of interests.

5. Socialization, Externalization, Combination, Internalization (SECI) Model Applied to the Local Community’s Enterprise Product Development

A strategic approach that involves two or more units participating in knowledge sharing activities will require interactions that try to earn trust amongst group members and to being committed to the cause which require a lot of time and patience to see the outcome take its course (Ringel-Bickelmaier & Ringel, 2010). The SECI model is the source for developing innovation or other ideas that are a practical benefit for achieving the aim of an organization or community (Nonaka & Takeuchi, 1995) with show in Figure 1.

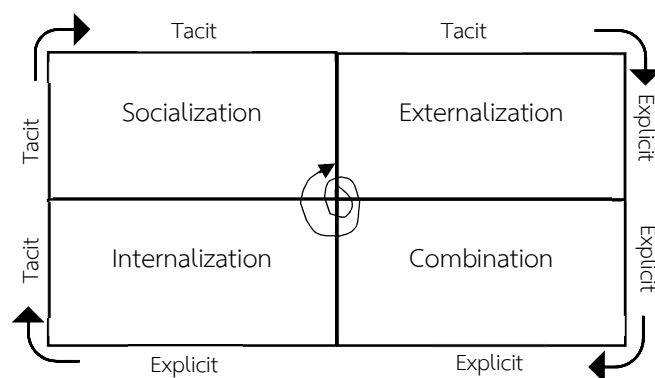


Figure 1 SECI Model (Nonaka & Takeuchi, 1995).

The process features tacit knowledge, which resides in the human mind through working experience that is difficult in transferring, and explicit knowledge, which is considered to knowledge that is codified and digitized in different format that is convenient to transfer. These two types of knowledge are transformed into organizational knowledge and innovation, which features two stages for sharing knowledge, socialization (tacit to tacit) and combination (explicit to explicit); socialization commonly needs participants to make a face-to-face interaction in a community of practice (Bosworth et al., 2016). Although the SECI model is proclaimed to be effective in application, there are not enough study on developing tools that promote a collaborative effort amongst the academic group and local community members to know if they have really achieved on establishing a sustainable economy.

5.1 Efforts to Create Knowledge with Members Engaged in a Project

Getting the knowledge to be created has to be done without any pressure to do so as the minds of people should be given space to reflect things over to see how things came about. According to a study done by Lin et al. (2019) when there is pressure to produce something in a rush it causes locals to make irrational decisions that are narrow and not taking small but important details into consideration; eventually, the ideas of others become ruled out in order to find a quick fixed solution. Stakeholders within the local community have backgrounds that are different in income, age, education, skills and abilities in using social media, and problem solving. Therefore, the activities that are either tacit or explicit in nature will need to be tested and evaluated to determine which method is more effective in getting members to utilize their knowledge that benefits everyone

involved (Bandera et al., 2017). To get local community members to work together with their key partners in the stakeholders' network, there should be just one project for a sustainable economy to focus on because if there are other hidden projects involved it will interfere with the resources that are arranged for supporting the project and confusion would be set about making people misguided and lacking focus on taking care of the important things (Li et al., 2020).

5.2 Knowledge Interaction by Local Members for Creating, Storing, Retrieving, Transferring, and Applying Product Development

Interacting amongst local members with outsiders in knowledge-based activities will be determined on the availability of time for all to participate as well as the topic of discussion which does not harm or damage the reputation of other members (Rutazibwa, 2014). It's important to take into the notice the culture and customs that is valued within the community and how people abide by them to maneuver around issues that still keep people together respecting one another and working in harmony. The phases of creating, storing, retrieving, transferring, and application of product development may not necessarily be in those procedures, therefore outsiders facilitating the workshops may have to allow for some flexibility along the process or determine if the results do contribute towards the goal of what has been set out from the beginning (Kupika et al., 2019). Sometimes individuals are reluctant to share what they know due to knowing that some of the local members are their competitors in the market or they may have certain issues that are too confidential for other people to know (Chapman & Schott, 2020). What's most critical is deciding on which information that has been provided is knowledge itself and which one may need more verification to legitimize it to be a contributing factor in the process Colombelli & Quatraro (2018). Nevertheless, it's highly important to get the key members within the local community to continuously be engaged with the knowledge interaction process.

Methodology

1. Populations and Samples

1.1 The research area was selected at a case study through economic contribution, social or cultural perspectives such as using their culture identify to apply new packaging of local herb to increase value of product. Research populations were 200 people in

Phumuen Community, Mae Ai District, Chiang Mai Province during September 2010 to August 2011.

1.2 Samples of population were selected by purposive sampling (Etikan et al., 2016) two community leaders that are the principal of the local school and the local leader, and 20 community members.

2. Methodology

This is mixed methodology research, which used both qualitative and quantitative methods.

2.1 The qualitative method involved in-depth interviews, group discussion, community of practice, practicing dry of herbs and after action review because this research illuminated the experience and interpretation of events by research samples with widely differing stakes and roles (Maxwell, 2021).

2.2 The quantitative method assessed knowledge and satisfaction, comparing the initial state with the case study results.

3. Research development

This research applied the SECI model (Nonaka & Takeuchi, 1995) as a guide to create knowledge framework for sustainability. Moreover, the sufficiency economy philosophy (Buranapin & Ratthawatankul, 2015) applied to be a guide of measurement a sustainability.

3.1 The researcher collected data through first conducted in-depth interviews among the stakeholders to know environment and requirements of research area.

3.2 Group discussion used the requirements and topic selection based on knowledge management with knowledge creation theory

3.3 The research activities included three knowledge topics. The first was to transfer knowledge in local herb processing. This was achieved through three meeting and included an after-action review (AAR) between the researcher and community members. The second topic was to develop a new packaging design for the processed herbs using basketry with the traditional colors of Lahu dresses. This was achieved through four meeting and included an after-action review (AAR) between the researcher and community members. The third topic was how to manage the transfer of knowledge within the community enterprise; this was achieved through two meeting, including an after-action review (AAR) between the researcher and community members.

3.4 A gap analysis was conducted via before and after of revenue, cost and profit.

This research collaboration between a government university and local community followed the guidelines of the International Association for Public Participation, which is composed of five parts: 1) information, including that the community must recognize the purposes and objectives of the government, 2) opinions and suggestions given by consultants, 3) involvement of the communities in decision making, 4) involvement of communities in collaboration and partnership, and 5) empowerment of communities in decision making.

4. Research analyst

4.1 The measurement of economic sustainability applied three dimensions of the theory of sufficiency, namely

- 1) Economic indicator such as increasing revenue, decreasing expenditures
- 2) Social conditions such as working at family and friend at home
- 3) The environment such as using natural material

4.2 Using the triangulation research method of Johnston et al. (1999), a group discussion among the researcher, community members, and local entrepreneurs was facilitated to review the framework and approve the project's indicators on knowledge creation framework and sufficiency theory.

4.3 The research used content analysis (Stemler, 2000) to present results

Research Results

1. Identify the village environment

Phumuen Community in Mae Ai District, Chiang Mai Province, Thailand, has 200 people. They mostly farm tea and rice. For added income, they also collect and sell a local herb called Jiaogulan. Its scientific name is *Gynostemma Pentaphyllum*. It is a dioeciously herbaceous climbing vine in the indigenous Cucurbitaceae family (Highland Research and Development Institute, 2012). The Phumuen area produces more than 1,000 kilograms of this herb per year. The villagers, who sell fresh Jiaogulan to merchants, want to know how to calculate their cost basis with both the fresh Jiaogulan and after processing. They also want to increase their income, as well as pass on their knowledge of local herbs to the community's younger generation.

Apart from their primary jobs, the villagers collect non-timber forest products to sell, albeit for little additional income. Although many valuable herbs grow in the vicinity of the community, the villagers lack the knowledge of how to process them according to food-safety standards.

The head of villager was represented of the villagers who said “In our forest, there are many fresh Jiagulan herbs. They are good quality herbs. However, we sell fresh herbs to middleman in low price. We would like to know how to increase value of our product.”

2. Using the SECI model, create knowledge framework for sustainability

2.1 Discuss the efforts to create knowledge framework

The community enterprise consisted of two groups—herb processing and basketry. The villagers selected basketry because it offered an opportunity to incorporate aspects of their cultural heritage of the Lahu ethnic group into the packaging design, use a locally sourced material which is bamboo to create the new packaging, and apply their knowledge to produce other bamboo products in the future. Each group consisted of a president, a vice president, a treasurer, and members. The SECI model based on the framework of the sufficiency economy philosophy was applied to both the herb processing and basketry.

Furthermore, the researcher presented and transferred knowledge related to the new packaging. Table 1 illustrated a comparison of local fresh herb and herb processing in Phumeun community to villagers and cooperative enterprise of Phumeun community.

Table 1 A comparison of local fresh herb and herb processing in Phumeun community

Case	Current Situation (1)	Estimated Situation (2)
Local herb (Jiaogulan)	Fresh herb: 1,000 kilograms (kg) per year	Weight loss when switching from fresh to dried herbs; Dried herb: 1,000 kg divided by five times (20%) equals 200 kg.
Estimated sales per year	THB 50,000 = 1000 kg x THB 50 per kg	1 kg = 1,000 grams (g) (Dried herb: 200 kg x 1000 g = 200,000 g 1 new dried herb package = 100 g 2,000 new packs (200,000 grams per 100 grams) THB 500 for one new packing THB 100,000 = 2,000 packs x THB 500

Table 2 A comparison of local fresh herb and herb processing in Phumeun community (Cont.)

Case	Current Situation (1)	Estimated Situation (2)
Estimated investment cost of a processing machine	-	THB 40,000; A processing machine's estimated life is ten years.
Estimated depreciation = Cost of a processing machine/lifetime	-	THB 40,000 / 10 years = THB 4,000
Estimated expenditures, e.g., workforce, marketing, overhead, and others	THB 3,000 (THB 300 x 10 Days)	THB 2,000 x 12 months = THB 24,000
Total expenditures	THB 3,000	THB 28,000
Net profit	THB 47,000 (1)	THB 72,000 (2)
Gap analysis (2) – (1)	THB 72,000 – 47,000 = THB 25,000 per year	
Remarks: This estimated revenue would be supplemental income for the Phumeun community enterprise members; their primary income is farming.		

Table 1 presents the economic output of the new product-the difference between revenue and expenses among selling the fresh Jiaogulan local herb and processed herb. Currently, people in the community sell approximately 1,000 kg of fresh herbs per year to middlemen, estimated work force for 10 days equal THB 3,000: yielding an average of THB 47,000. The fresh herbs yield 20% dried herbs by weight. To produce the dried herb requires labor, marketing, overhead, and other expenditures of approximately THB 24,000 per year. In addition, a processing machine, depreciated at THB 4,000 per year, is also required, so total expenditures to dry the herbs are THB 28,000 per year. With estimated sales of the dried product of THB 100,000 per year, that yields a profit of THB 72,000 for a gain of THB 25,000 over the fresh product—a more than 34.7% gain.

The villagers calculated the revenues and expenses for the new products with lecturers from the Faculty of Business Administration acting as mentors. Then, the Faculty of Engineering lecturer transferred knowledge to the villagers on how to process the herbs and maintain the machinery. The lecturer from the Faculty of Arts shared knowledge of

packaging with the community members. In turn, the community members shared their experience with the lecturers.

Increasing sources of income for the community, as with this herb processing and packaging project, provides more opportunities for people to remain in the community with their family. Teenagers can work and increase the value of the village's resources. They have also added value by creating a new style of packaging reflective of their cultural heritage. Older adults can use local materials (bamboo) to produce the packaging. As a natural material, the bamboo packages reduce the use of plastic bags, benefiting the environment. Also, the researcher recommends branding for villagers with storytelling and content marketing.

2.2 A Knowledge creation framework for sustainability

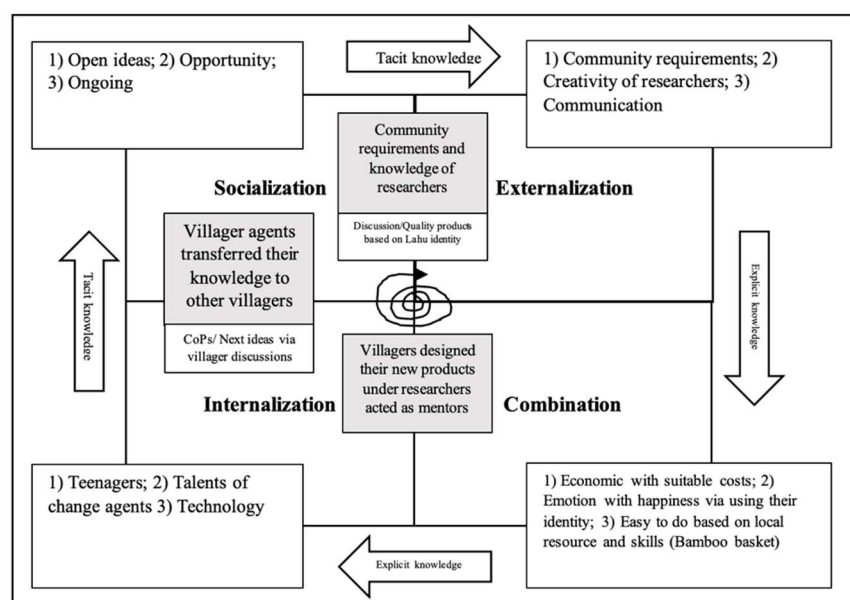


Figure 2 A Knowledge Creation Framework for a Sustainable Economy at Phumuen Community, Mae Ai District, Chiang Mai Province

Figure 2 shows the knowledge creation framework for the sustainable economy of Phumuen Community, Mae Ai District, Chiang Mai Province. Following the arrows in the diagram, the first step moved from socialization to externalization, with the lecturers and community sharing knowledge, including the community conveying their requirements. In the second step, externalization to combination, the lecturers published manuals and working papers, providing explicit knowledge to the community. In the third step, combination to internalization, the community members created the structure of their

community enterprise based on the recommendations of the lecturer. This step included a new basketry component using the newly designed local packaging derived from their Lahu identity. In the fourth step, internalization to socialization, the community shared their ideas for designing other new products and packaging from bamboo basketry.

As village teenagers have smartphones, the researcher shared knowledge with them on how to effectively use social media to collect information and share their village's content. A digital knowledge center provided a tool to promote the community through social networks, such as Facebook, Instagram, and Line. The community members must do this themselves, as they maintain their own social media.

Three leading indicators were used to evaluate the success of this project: 1) economic indicator–community members who participated in this project increased their income by THB 25,000 per year 2) social conditions–village teenagers and their families engage in community enterprise at home, and 3) the environment–community members used locally-sourced materials.

Conclusion and Discussion

1. Conclusion

Knowledge management was a fundamental principle of this research. The university provided academic services and knowledge transfer. The Phumeun community asked for assistance from the Rajamangala University of Technology Lanna. The community side included local leaders, entrepreneurs, and villagers with knowledge of the local and traditional processing of herbs. However, they lacked the opportunities and skills to add value through processing and packaging according to food-safety standards. The academic side was represented by the Rajamangala University of Technology Lanna, whose educators and researcher shared their experience in integrated knowledge with the Phumeun villagers.

2. Discussion

The research focused on integrated knowledge management among community members and the university researcher to collaborate, share, and transfer knowledge. The framework focuses on the knowledge involved in processing local herbs. To achieve the research objectives, knowledge was applied reflectively and carefully. The principle of honesty and integrity is a way of life that is based on tolerance, persistence, carefulness,

and intelligence; this is essential to creating balance and appropriately managing critical challenges arising from large and rapid social, economic, environmental, and cultural changes worldwide (Mongsawad, 2010).

The SECI model is the foundation for developing innovation or other ideas that are a practical benefit for getting the aim of villagers, community enterprises, and university staff. The achievement of research objectives should reflect research actions after-action reviews (Bray et al., 2013). The knowledge management model showed the steps of transferring knowledge from combination to internalization. Also, sharing explicit to explicit knowledge will lead to more copyrights or patents, proving the success of the project.

This research has added value with internalization to socialization, or transferring of tacit-to-tacit knowledge, which has confirmed that the project participants can continue to create tacit knowledge in the future. The research has described strategies to implement learning activities in organizations by using ideas drawn from the communities of practice literature, as COPs promote learning and, at the same time, require its members to learn new ways of behaving (Plaskoff, 2012). Furthermore, this research has engaged different groups of community members as participants, which aligns with the change agent role (Lunenburg, 2010). This research has focused on innovation for the community, which is one of the dimensions in the spinner model that includes knowledge creation, knowledge transfer, and innovation (Figueiredo & de Matos Ferreira, 2020). Therefore, in line with Thai development goals, this research has focused on enhancing entrepreneurial skills, improving the business environment, supporting business councils under various cooperation frameworks, and providing Thai entrepreneurs with in-depth business knowledge (Office of the National Economic and Social Development Board, 2020)

Research recommendation and implications

This research would like to provide the following recommendations based on the findings of the research: promote the brand vigorously and increase brand recognition. As a guideline for area development in the Phumuen Community, Mae Ai District, Chiang Mai Province, a database on business activities, such as production processes, cost calculation, setting selling prices, marketing, respectively., should exist. The present study was undertaken with the Phumuen Community, Mae Ai District, Chiang Mai Province as its focal point. The researcher would like to recommend that it would be advantageous to do a

comparable study in a different area to establish the optimal method for exchanging and managing knowledge between the university researcher and a local community in order to promote a sustainable economy (Jakubik & Mürsepp, 2021).

The research used a model of knowledge management that provides an example of action research that can benefit other research projects. Research results can be beneficial to

1) Community: Villagers and students learned how to create new packaging, calculate production costs, and manage community funds. The main advantage of this research was that it helped the villagers to form a new group—the basketry group—within their community enterprise based on a new packaging design that drew from their cultural heritage and locally-sourced materials.

2) Community Enterprise: The community enterprise benefited from a new value-added product design, both with processing and packaging the herbs.

3) Lecturers: Lecturers transferred knowledge on product design, accounting, business management, and dried tea production to the villagers.

4) University: Students could practice their skills by participating in research activities. Also, the university delivered on its mission to provide research and academic services to the community.

Acknowledgement

This research was supported by the Nation Research Council of Thailand (NRCT)/0005/519.

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