

Community Development Innovation to enhance the potential and competitiveness of SME entrepreneurs with the help of youth volunteer students at Nakhon Phanom University, Thailand

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Abstract

The objectives of this research were: First, to develop the process of enhancing the potential and competitiveness of SME entrepreneurs with the assistance of youth volunteers. Second, to design and develop products, packaging and an innovative product. Lastly, to study the level of satisfaction of the youth volunteers and the SME entrepreneurs during this project. The questionnaire and the group interview instruments were designed to clarify participants' attitudes, and used a five-point Likert scale. Surveys and qualitative research design were developed using Google Form, which is an online research survey tool that can be used for a whole range of data gathering purposes applicable to Higher Degree Research. The samples included students in university (10 youth volunteers) and members of the community enterprises group (39 members), a total of 49 people. A statistical computer program, for example quantity (N), the sum ($\sum X$), the percentage (%), and the average (\bar{X}) was employed.

The results included the following: 1) Youth volunteers completed a SWOT analysis and design research models to help the community. 2) Youth volunteers used their knowledge to develop 3 new products, namely mother-son bags, cushion covers, and pillowcases, through the process of experts and consumers selecting to meet market demands from 7 products to 3 products. 3) Satisfaction levels of youth volunteers, the skills learnt in how to process and organize activities that were of interest to the community enterprise group. This project also taught the students to develop a moral consciousness and to work without expecting anything in return. The youth volunteers

(90%) felt they had learnt how to build good relationships with other students when working together.

Keywords : Product development, Packaging, SMCEs, Community Development Innovation

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Introduction

The coronavirus pandemic also known as, COVID-19 pandemic. It caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The symptoms are including fever, dry cough, and fatigue, which range from undetectable to deadly. It can transit when people breathe in air. The transmission can occur via contaminated surfaces as well as if contaminated fluids reach the eyes, nose or mouth (WHO, 2022). Due to the global impact of the COVID-19 situation, many community enterprise groups in Thailand that rely on the organization of important events held by the government in order for the groups to display and sell products have been affected at the local level. In Thailand, the effects of COVID-19 have been felt by small to medium businesses which rely on tourism, particularly small and micro community enterprises (SMCEs). COVID-19 has meant that many of these businesses, which are often located in rural areas, have experienced difficulties with product development and market share, and the loss of much needed income (Yujejwattana, 2021; Parks, Chatsuwana, & Pillai, 2020). Research studies have been conducted since the 1990s to understand how rural enterprises can be more effectively managed to increase productivity and improve micro economies (Arghiros & Moller, 2000). The development of Community Enterprise Development Guidelines (CEDG) and strategies to create sustainable local economies was used pre-COVID-19 as a way to help solve local

poverty problems (Ouengdet & Wongsurawat, 2010; Kumchuen, 2021). The Guidelines encourage communities to use local resources, which allows them to be self-sufficient in the long term, for example the Community Agricultural Enterprise Development Group. The Guidelines enable the set-up of small and micro community enterprises (SMCE). SMCEs mean that community affairs related to the production of goods, services, or others are operated by a bonding party. Participants have a common way of life and come together to operate such businesses. These businesses may be in the form of a formal legal entity or a non-legal entity and they generate income and help to foster and sustain family self-reliance. This form of entrepreneurship fosters the creative management of community capital and develops self-reliance within and between communities. Community capital includes local resources, agricultural products, knowledge, wisdom, culture, and the traditions of the local area. Community businesses and SMCEs need to adapt, reduce their dependence on traditional niche markets and the showcase events organized by the government. SMCEs can accomplish change by embracing self-development and relying on group members, as well as educational institutions with specialized knowledge to upskill, reskill and develop new skills (Thailand Institution of Scientific and Technological Research, 2021). The impact on SMCEs during the COVID-19 pandemic has changed the way these businesses advertise their products and conduct their business. Previous opportunities to market their product through government organized events is no longer viable as SMCE groups and community enterprises will be selling only in rural areas. Hence, customers will no longer attend large scale events to see and buy product. This situation has led to a change in consumer behavior. Marketing on internet platforms such as Google Ads, Facebook, Line, Lazada and Amazon reaches customers who currently use online media to find information before making a purchase, as well as expanding marketing opportunities for many different groups of customers. Using these virtual platforms provides access to an expanded customer base that is not limited to geographic or geopolitical borders. Being able to respond to customers' needs clearly, is important, as well as including products that attract buyers. Using a variety of communication strategies is a key factor in creating business expansion opportunities through e-Commerce. For SMCEs in Nakhon Phanom Province to be strong and sustainable, personnel must have the appropriate knowledge

and abilities to be successful in this online environment. Nakhon Phanom University (NPU) is an educational institution that has the appropriate knowledge and the facility to develop skills and training, as well as raising awareness among youth volunteers about the importance of taking part in community enterprise development and using this youth volunteer power to enable the reduction of social inequality. The development of strong partnerships between educational institutions and communities assists in the creation of integrated communities and strengthens the capacity of educational institutions to work together with communities to create a society that is constantly striving for an end to inequality and poverty. This study marks the beginning of an ongoing connection between NPU and local communities to improve local enterprise and economies, particularly when face-to-face interaction between the supplier and the customer is not a viable option, for example during a pandemic.

Literature Review

The role of the University and the community

The Universities has increasingly important to the commercial. As the new knowledge created and teach to students can be, one of the key opportunities through commercialization. Especially, During Covid-19 It may generate threats and as well as opportunities to enhance the enterprise system to prepare for potential future emergencies (Hayter, Nelson, Zayed, & O'Connor, 2018; Secundo, Rippa, & Cerchione, 2020). The role of universities as communication and engagement facilitators with local communities is an area of research that requires greater investigation, particularly the role universities can play in local community development. A study by Pereira & Franco found that many people think academics and people from SMEs come from different working cultures. Universities are important players in the innovation system whereas SMEs are important actors in economic development. When these two organizations cooperate each other, both sites will gain benefits Pereira and Franco (2022). This new knowledge is valuable for student participants (volunteers) who participate in delivering the project as they learn how to communicate and manage interactions with the local communities. University academics' can also use this new knowledge to improve their teaching and research, where the university is not an

isolated tower, but actively involved with business and real-world problems at the community level. Research by Dada and Fogg (2016), Bruneel and Cock (2016) and Rosli et al. (2018) found that active engagement of SM(C)Es and academics has directly led to new knowledge, new business opportunities, new market creation, new project engagement, new venture creation and new strategic network development. These opportunities for engagement in proactive research between universities, students and local community groups may also help in the development of a new breed of local businesses, managers and youth entrepreneurs.

Product development and Innovation

Product development was a key development strategy of this research. Product development can be defined as the change of a product to promote a market opportunity into a product that is available for sale. Normally, we start with research of the process required to develop the product; thinking about a new design, how to modify and improve an existing design to achieve a good product or maybe a new product (Filho, 2015). The creation of new product begins with the process of brainstorming new product ideas in order to get a lot of product ideas to screen for products that have the probability of success in the market (Simms & Trott, 2014). Research by Ferreras-Méndez, Llopis, and Alegre (2022) as well as Woo and Nam (2020) concluded that elements of design, product development and innovation are widely accepted and used in current business models, especially during the Covid-19 pandemic that we now know as a “new-normal”. Many businesses need to consider new issues and apply new product development processes that are critical and challenging for SMCE entrepreneurs. There are 7 steps associated with product development which usually starts with Ideation by doing market research about an idea and concept. This is followed by a business plan and developing a prototype of the product. This step may then be followed by crowdfunding or raising capital to finance the product development. Finance is raised by describing the potential market and the product, showing the prototype and suggested price. Once finance is achieved, design, production, and marketing are followed by distribution (Marxt & Hacklin, 2005; Hånell, Nordman, & Tolstoy, 2017). These steps were all considered and adopted as part of the processes for product development by the volunteer students and the local communities that made up the MCEs in this project.

Packaging Design

Packaging plays an important role in product success by increasing consumers' purchasing decisions at the point of sale and distribution. A product without suitable packaging can also make handling the core product and marketing it to the consumer difficult. Thus, packaging is both pervasive and essential for the success of the product. However, packaging activities are often perceived as an added cost rather than a value added. The communities and SMCEs in this project needed to be aware of both aspects of packages (Azzi, Battini, Persona, & Sgarbossa, 2012).

Verschoor, Ten, Korhonen, and Ylipoti (2019) found It is clear that packaging's ability to communicate with the consumer. As a result, packaging design for the SMCEs products in this project should be not too expensive, however the packaging used can still communicate to the consumer about the product, as well as encouraging consumers to purchase the product.

Innovation

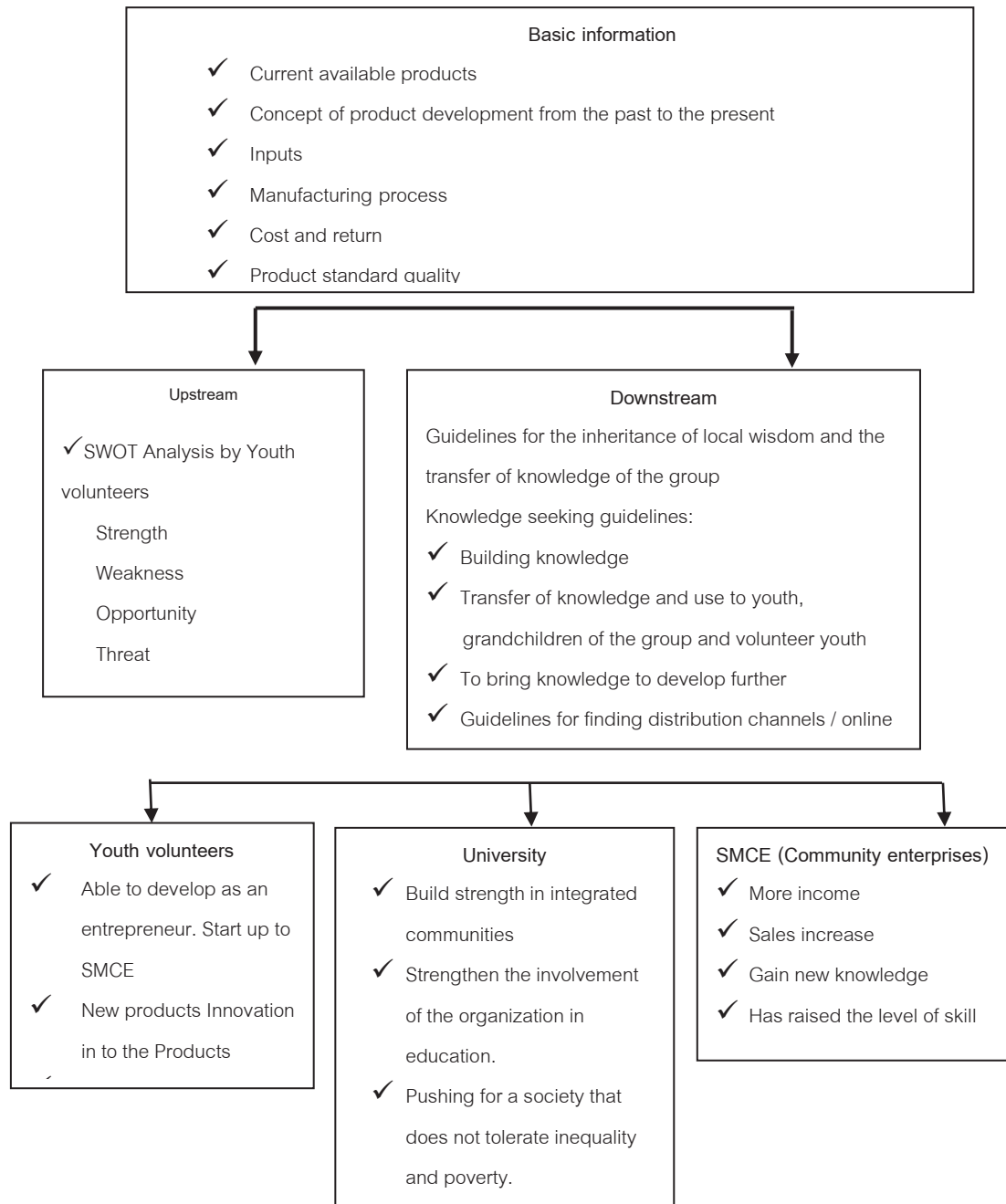
Guerrero, Urbano, and Herrera (2019) and Maisont, Taiphapoon, Chandrachai, and Sinthupinyo (2020) suggest that product innovation can be defined as a development of new technologies based on a product which employs both internal/external flows of knowledge in order to understand and develop the new product's potential uses. Hence, universities can play a significant role in the provision of rich knowledge-intensive environments to support the exploration of innovative and entrepreneurial ideas, especially in the emerging economies around the SMCE communities.

In developing countries, a sustainable approach to the communities' traditional skills and tools are important to improve work conditions and implement production. A sustainable approach allows for the ongoing growth of knowledge and new ideas using existing skills, tools and resources. Through this process, new information obtained by communities and the university researchers may transform new or alternative product development into innovation (Matsuzaki, Shigeno, Ueki, & Tsuji, 2021). All these considerations were necessary when planning and working with the student volunteers and the SMCEs in the development of new local products.

Conceptual framework

This research explores the condition of problems and needs of community products, the process of enhancing the potential and competitiveness of SMCE entrepreneurs with the assistance of youth volunteers, the design and development of products, packaging and an innovative approach, and the satisfaction of youth volunteers and the SMCE entrepreneurs when working on the project. The research framework and process can be summarized as shown below in Figure 1.

Figure 1 Conceptual Framework



Research Methodology

Participants

Today, knowledge and innovation are essential resources for survival and growth in a knowledge-based economy. A number of academics, such as Edenius, Keller and Lindblad (2010), Maaninen-Olsson, Wismen and Carlsson (2008) and Carlile (2004), argue that most innovation takes place where there are different disciplines together, because the creation of innovation requires different and diverse perspectives that arise from collaborations between groups of people from different disciplines. Therefore, participants in this research study included 10 students across 5 fields of study at NPU: Information Technology; Digital Communication Arts; Hospitality and Tourism; Computer Education; and English Languages. There were 2 youth volunteers from each of the five faculties. Student volunteers included 70% female and 30% male, with 80% of the student participants aged between 20-22 years. Participating members from the community enterprises group numbered 39. In the community enterprises group 95% were female and 5% male. Simple random sampling technique was used to select the participants from the community enterprise group by asking the community head to use a lottery with their group, while purposive sampling was used to select the student volunteers who were enrolled in the fields of Information Technology, Digital Communication Arts, Hospitality and Tourism, Computer Education and English Language Department in that semester.

Research Instruments

This research used both quantitative and qualitative methods in the form of a questionnaire and follow-up interview. The qualitative method is the process of collecting, analyzing, and interpreting non-numerical data such as a follow-up interview. The qualitative methods used a structured format for interview for the purpose of consistency and quality assurance, particularly for the novice interviewer. Interviews are valuable tools for providing rapid, immediate responses and very good for capturing on the spot, direct feedback for the researcher. Interviews also provide personal attitudes and reflections and more in-depth answers that may lead to deeper questions and answers (Brenner, Brown, &

Canter, 1985; Brown, 2006; Lorence & Park, 2007). In-depth interviews are a qualitative research technique which provides excellent opportunities to ask open-ended, discovery-oriented questions that fully explore the research questions (Guion, 2006). Interviews help researchers to find out more information from the sample population that cannot be directly observed, such as feelings, thoughts and intentions. A group forum with the members of the community enterprise group and the youth volunteers was also included. The group forum focused on attitudes towards the project, the benefits gained and feedback about being involved in the project. The qualitative method used in this research was designed to clarify participants' attitudes, to provide a more holistic picture of how the youth volunteers' felt about the project and what the members of the community enterprise group felt they had gained from joining this project.

Surveys were used to gather quantitative data in this research. There were six groups of questions in the student volunteers' survey in the following categories: demographics; learn from the project and benefits of joining this study. The surveys used a five-point Likert scale. Google Form surveys, which is an online research survey tool that can be used for a whole range of data gathering purposes was used in this research. Survey questions were close-ended, with respondent data fed into a common database for analysis. Survey research is one of the most important areas of measurement in applied social research. Survey research involves the collection of information from participants, those who are involved in or have information of relevance to the research. The questionnaire and the interview instruments were designed to clarify participants' attitudes and the entire reliability value is 0.79.

Data Analysis

The research used both quantitative and qualitative methods to gather data about attitudes toward the project and knowledge gain from joining this project (Pickard, 2007; Williamson, 2000). Using both types of approaches allows for the triangulation of findings, so the researcher can be more confident of the results as a representation of a snapshot in time of human behavior (Jick, 1979; Thurmond, 2001). Results using the quantitative method are reported in this paper and used web-based questionnaires (Wang & Doong, 2010; Greener, 2011). The data was analyzed using SPSS software and the data sets

discussed here include the descriptive statistical analysis only. The data from the questionnaire was analyzed using quantity (N), the sum ($\sum X$), the percentage (%), the average and (\bar{X}).

Findings

Using SWOT (Strengths, Weaknesses, Opportunities, Threats) Analysis to find out the condition of problems and needs of community products by brainstorming with the community group leaders and youth volunteers, enabled the researchers to summarize the issues experienced by the community enterprise groups as follows.

1. Find distribution channels / online.
2. Product design and development, to produce a variety of products that meet the needs of the new target market and expand the original target market
3. Packaging design, the product package is attractive to the target market/s.
4. Knowledge Management Media for sustainable succession and inheritance to the next generation.
5. Basic communication in English for dealing with foreigners.
6. Add new innovations to the product range.

The facts of SWOT analysis of each youth volunteer's team are represented fully below in Figure 2.

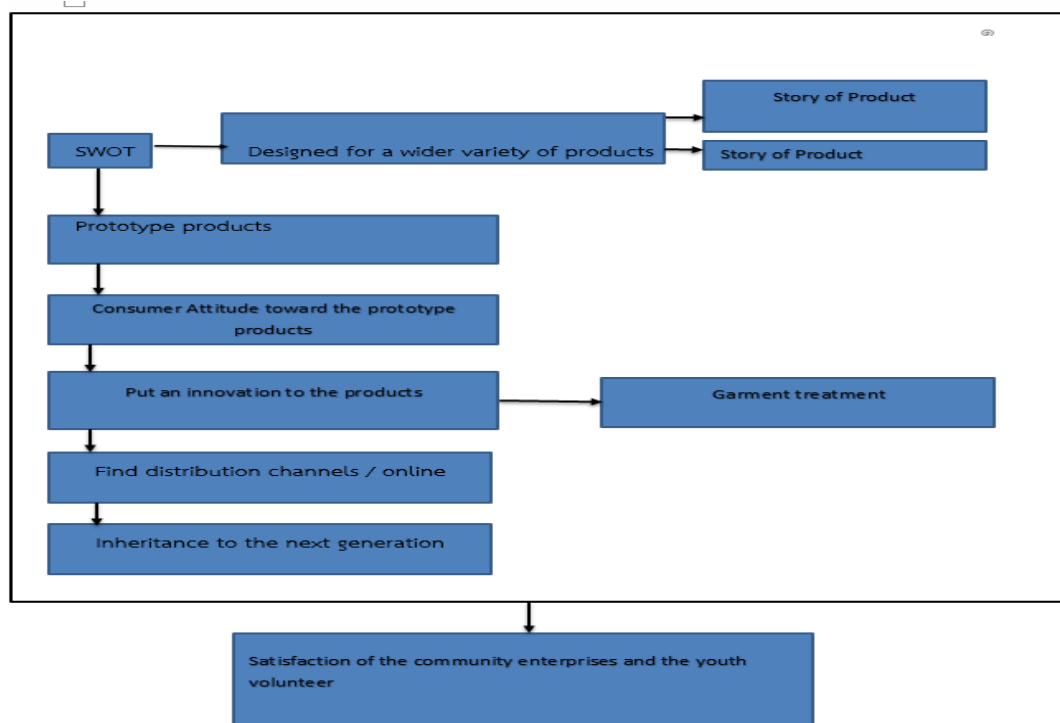
Figure 2 SWOT Analysis of the Condition of Problems and Needs of Community Products



Research Model

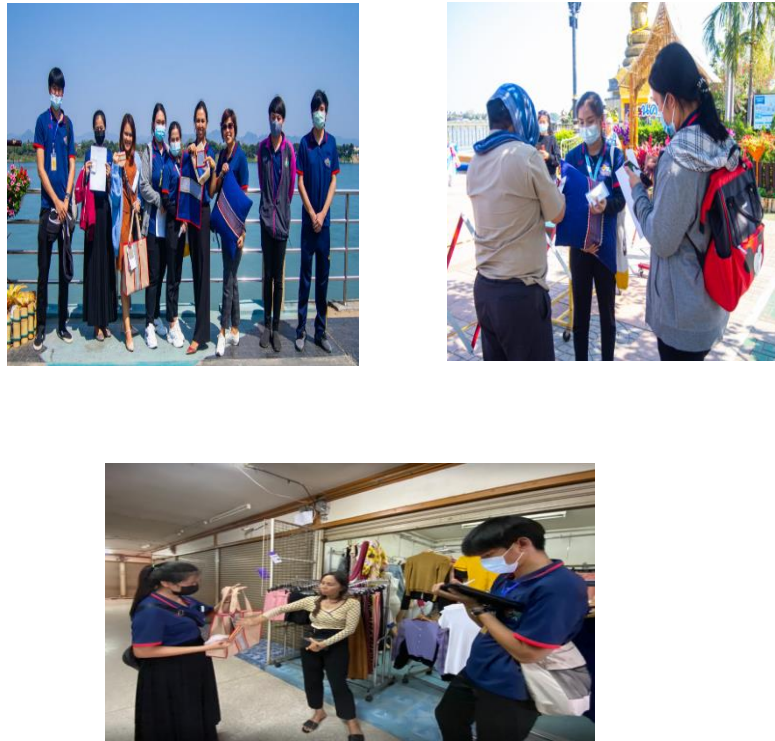
After the research team refined the types of problems, needs of the community enterprise groups and potential products, they brainstormed the results with the youth volunteers and the supervisor to create a research model of the process to be used to enhance the potential and competitiveness of SMCE entrepreneurs with the help of youth volunteers. This model is displayed below in Figure 3.

Figure 3 Research Model



During the process of prototyping products, youth volunteers from each group created a product prototype and asked the community enterprise members for ideas. This information was then used to create packaging drawings in accordance with the prototype product. They then designed the draft package which was sent for consideration by a group of experts from the university. Each group used the information gained from the review to revise their product models before proceeding to create the prototype packaging. An evaluation of personal satisfaction levels was then collected for every product and included elements such as pricing, usefulness, and souvenir and easy sewing (Figure 4).

Figure 4 Consumer attitudes toward the prototype products



Our team went to the town hall to ascertain consumer attitude

The final products were chosen from all the participant, entrepreneur and consumer surveys. Figure 5 includes the chosen products: a bag with small cup wallet, pillow and dinning sets.

Figure 5 Final Chosen Products



The next process included the creation of an improved version of the product by using garment treatments. This encouraged lateral thinking by the local producers to value-add to their product, making it more interesting. The garment treatment process chosen is a natural aromatherapy treatment designed to reduce stress and anxiety. It uses natural plant extracts to promote health and well-being and is sometimes called essential oil therapy. Aromatherapy uses aromatic essential oils medicinally to improve and enhance both physical and emotional health. The process has illustrated in Figures 6 -7.

Figure 6 Garment Treatment Process: Add Essential Oils to the Fabric

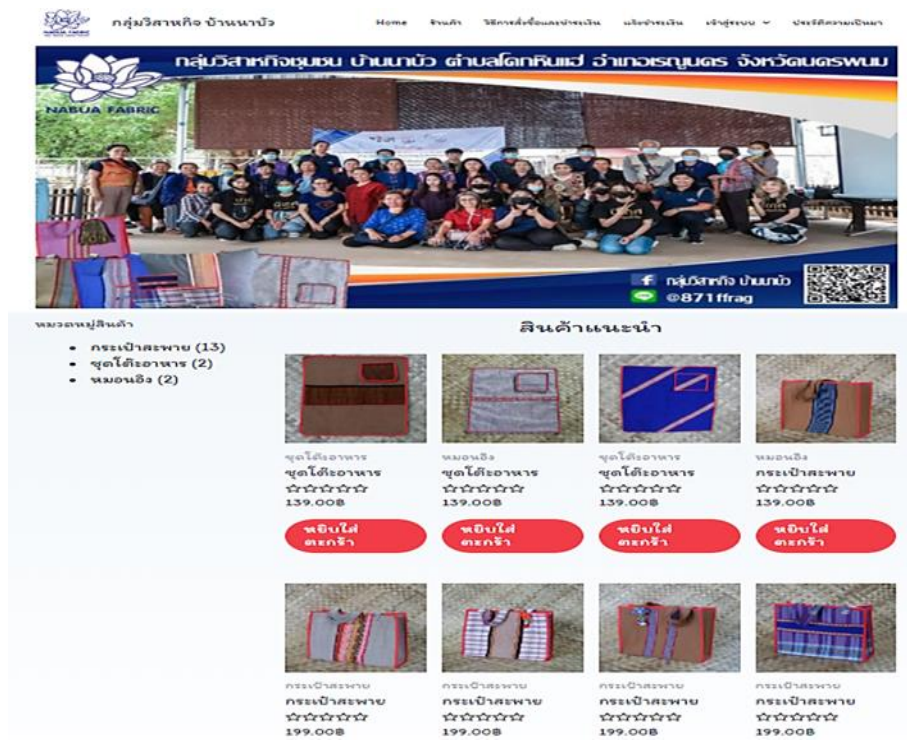


Figure 7 Garment Treatment Process: Preparing Steaming Process



In this step essential oils were added to the medicinal Thai herbs such as Cinnamon, Lemongrass, Plai, Basil, Ylang Ylang, Bergamot, Kaffir Peel and Lemongrass to the product. These essential oils inhibit the growth of certain groups of bacteria. Moreover, they also have properties help to relieve anxiety, reduce stress, and headaches. The youth volunteers and the advisor used equipment that was readily available to the community and allowed for the easy treatment of the garment. The final step in the process was to transfer all the knowledge gained to the community members. This part of the process provided knowledge management media to help ensure the sustainable succession and inheritance of knowledge to the next generation of producers in the SMCEs. This included the transformation of the knowledge to the community (new products / garment treatment / online media making for online sales) as shown in Figure 8. The youth volunteers' team also created a website for the community enterprise group which acts as an online business channel at <http://nabua.npu.ac.th/>. An example from the website appears in in Figure 8 below.

Figure 8 The Website for Online Business for the Communities

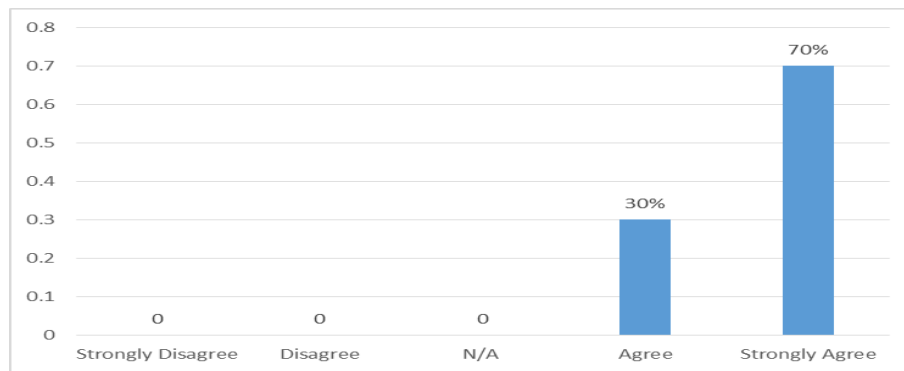


Satisfaction levels of youth volunteers and the SMCE entrepreneurs

Youth volunteers

In this part of the research the student volunteers were asked to reflect on how they felt about the project and what they had learnt using both a survey and structured interview. All students either strongly agreed (70%) or agreed (30%) that they learnt valuable skills in how to process and organize activities that were of interest to the community enterprise group. These results are shown in Figure 9 below.

Figure 9 Students learn the process of organizing activities that are of interest to the community enterprise group



The results reported in figure 10 indicate that this project also taught the students to develop a moral consciousness and to work without expecting anything in return. The youth volunteers gave up their time and knowledge to help the community enterprise groups on the understanding that they would not be paid. The results below indicate that they were very happy to join in this project.

Figure 10 Students develop a moral consciousness to work without expecting compensation.

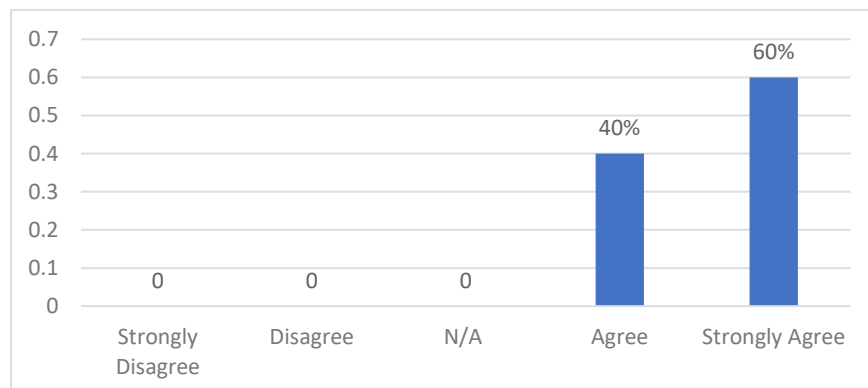
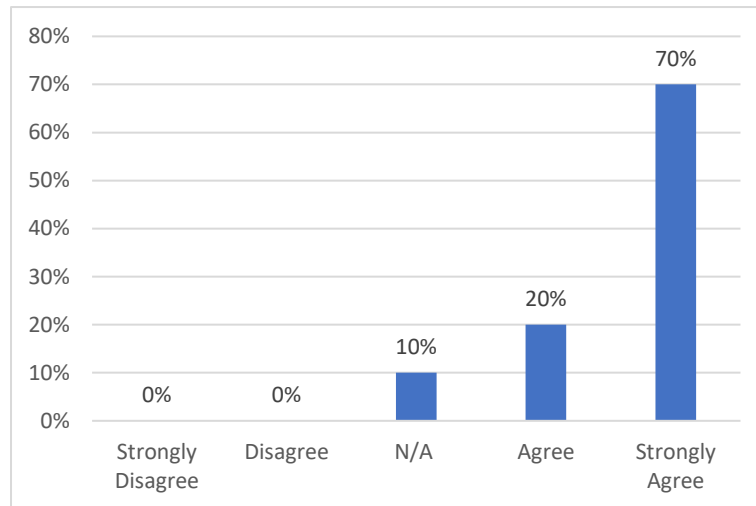


Figure 11 shows 90% of the youth volunteers felt they had learnt how to build good relationships with other students when working together.

Figure 11 Learn how to build good relationships with other students



Figures 12 and 13 show that 100% of the youth volunteers completed their assigned work and all volunteers reached the goal of a finished product. 90% of the volunteers experienced a level of satisfaction and enjoyed being involved in the project.

Figure 12 Response work that have been assigned until the goal is achieved

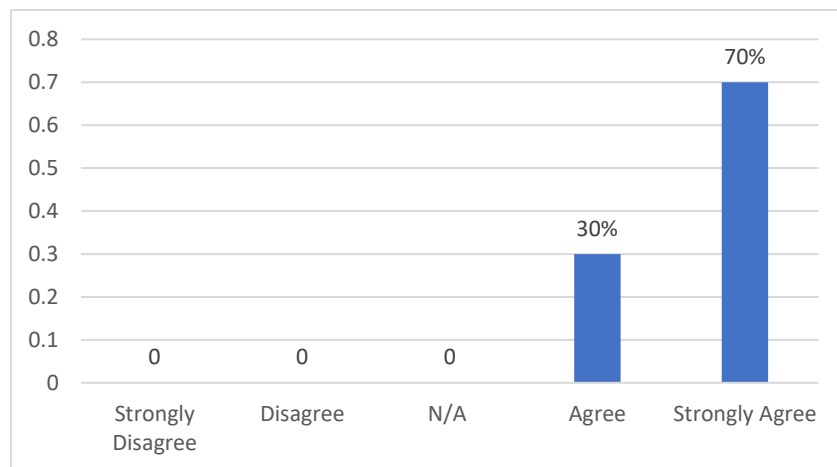
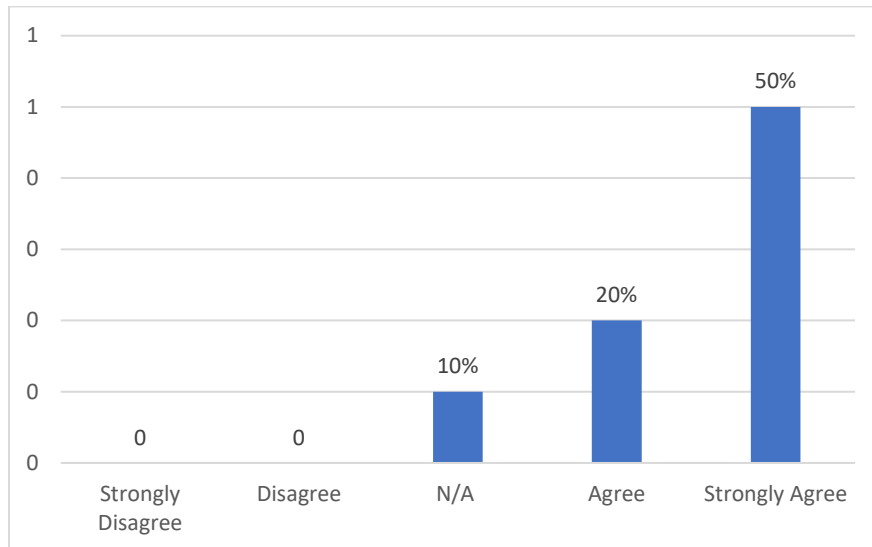


Figure 13 Satisfaction with participating in this project



Comments from the student volunteers about their experiences identified teamwork, new skills and extra skills training, communication and making new relationships as key elements of their learning.

Comments from the student volunteers

Y1 "I learnt how to work together with my team".

Y2 "I can use my knowledge from my class in real world situations".

Y3 "I am so happy to be able to help the community".

Y4 "I gained more knowledge from the project".

Y5 "I know how to do business".

Y6 "I think I need to improve myself in some skills to solve problems better".

Y7 "I learnt how to build good relationships with other students when working together".

Y8 "I am so happy to be part of this project".

Y9 "I learned how to work with our people".

Y10 "I have more friends in different faculties".

Community enterprise members

A structured interview format was used initially to ascertain how the members of the community enterprise group felt about the project. The following issues were found to dominate in this initial feedback when developing products. It was found that the producers lacked sewing skills; a knowledge and understanding of product design; and how to develop a product to meet up-to-date standards and quality in line with market demands. Also, the products did not show a variety of formats. In addition, packaging problems were experienced. Packaging is important to create a brand for the products which needed more online marketing.

As a result of the initial interviews, the student volunteers, the research supervisor and the community enterprise group worked together to develop a project model as mentioned above. At the end of the project a follow-up structured group interview found that the community was very happy with the results and felt they learnt a lot from the project.

Comments from the Community Enterprise Group identified further participation, new business models and thinking creatively to produce improved product, communication with the university and using management models and processes as key elements of their experiences.

The community enterprise group

P2 "I would like to participate in more projects like this".

P4 "During Corvid 19 I need to learn more online business".

P7 "It is a good project for the community especially during Covid-19".

P8 "This project helped us to improve our products and new innovation in the products".

P13 "This project is a good project".

P12 "This helps us to earn more".

P17 "This project helps the community to build on the community enterprise".

P19 "I learned how to think for the new product management".

P23 "I learned how to take a nice photo for my online products".

P25 "This project helps our next generation to continuing the business".

P26 “would like the local university to have more projects similar to this one to help the community”.

P30 “It will be nice to have more projects like this”.

P31” This help me to build on my woven fabric products”.

P34 “Online business for me now it is touch able”.

P39“Thank you the university and the youth volunteers for the hard work for us”.

Members of the SMCEs will all keep producing the new products and using online business models to reach more customers. The community also mentioned that they would like the local university to have more projects similar to this one to help the community to further improve skills and knowledge. However, the marketing and advertising of product to urban areas will need to be included in the development of processes in the next project.

Conclusion

The study found that the whole community produced the same product which is a woven fabric product inherited from their ancestors. This woven fabric is similar to that produced in many other communities, but the difference is in the fabric pattern. This fact meant that sales and demand for product was very low, because there are similar products available. As a result, the community SMCEs needed to provide new products which used their woven fabric and cultural designs that were attractive to consumers. While, the new products are not too hard to tailor for a wider consumer base, the capacity of the community SMCEs to develop new ideas was limited. As a result, the potential products developed by brainstorming with the youth volunteers and the research supervisor, were chosen from all the participant SMCEs. These products included a bag with small cup wallet, pillow and dining sets. The youth volunteers also helped to develop the process of enhancing the potential and competitiveness of SMCE entrepreneurs by helping them to use their knowledge to manage media for the sustainable succession and inheritance of knowledge to the next generation of producers in the SMCEs. This included the transformation of the knowledge to the community (new products / garment treatment /

online media making for online sales). To design and develop products, packaging and developing innovation, the youth volunteers designed draft packaging which was sent for consideration by a group of experts at the university. Each group used the information gained from the review to revise their product models before proceeding to create the prototype packaging which included information such as pricing, suggestions for usefulness and the product story. From the work of youth volunteers and the members of the community enterprise group, it was found that the project benefited both groups participating in the project and both groups were very satisfied with the project. Youth volunteers are most satisfied with participating in the project. They found that they developed themselves and used the knowledge they had learned to help the community. They also learned how to problem-solve and analyze problems seriously in a real situation. Personal development in multiple skills learned in this project cannot be learned in the classroom. One of the most important strategies in learning reform is to give students the opportunity to switch from classroom learning to hands-on practice, real-life and situational learning, Students explore how to integrate the knowledge learned in solving poverty problems, reduce inequality and improve the quality of life of people in the community.

This study is a learning reform that is suitable for the 21st century classroom that focuses on enabling learners to apply their knowledge in practice. It brings a range of knowledge in higher education institutions to integrate problems, develop communities in various dimensions, create new knowledge gained from research and creating social innovations that are valuable to the development of the country. Such practical research supports the implementation of the national strategy and long-term higher education plan, and plans to reform the higher education system to achieve the vision of a more equitable Thailand. It is also a project that works with the community and students from various branches down to an analysis of community processing. In order to plan the project and bring a variety of knowledge in higher education institutions to integrate and work with the community in tackling poverty, reduce inequality and improve the quality of life of people in the community. On the other hand, the members of the community enterprise group found they learned new sewing techniques for the development of new products. They learned

new skills in photography and online media, to help them to increase their marketing channels. These skills offer incredible new opportunities for businesses, helps the community enterprise groups to build brand awareness, develop customer relationships and even make sales directly within social platforms. Most of the participant SMCEs agreed that the project was very good for the community enterprise group.

More interviews and project summaries can be accessed at
<http://youthvolunteer.npu.ac.th/>.

Barriers and suggestions of the study

1. Difficulties in the community to develop a mindset to improve collaboration between the SMCEs and the research team.
2. A community with a strong leader and young membership group will strengthen the project.
3. Time management issues to ensure the youth volunteers participation occurs at the same time.
4. This project is appropriate for further research and a longevity study over 5 years to ascertain how much the SMCEs develop.

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