

Strategy for Educational Administration in Southern Vocational Colleges for Foster Social Entrepreneurs

Pratoomtong Trirat¹ & Piyanun Klaichun^{1,*}

¹Educational Management and Leadership, School of Education, Panyapiwat Institute of Management, Nonthaburi, Thailand

*Correspondence: Educational Management and Leadership, School of Education, Panyapiwat Institute of Management, Nonthaburi, Thailand

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Abstract

Vocational education plays a crucial role in driving sustainable economic development. Integrating social enterprise concepts into education management serves as an essential mechanism for nurturing social innovation entrepreneurs who can generate income independently while maintaining social responsibility. This process contributes directly to sustainable economic growth. The present study, therefore, aimed to examine the management of southern vocational colleges as a model for developing social entrepreneurs nationwide. The research objective was to propose management strategies for southern vocational colleges that promote social entrepreneurship. This was a future-oriented research study employing the Ethnographic Delphi Future Research (EDFR) technique. Data were collected using unstructured interviews and questionnaires from 21 experts selected through purposive sampling. Data analysis utilized median, mode, and interquartile range (IQR) statistics, along with content analysis.

Findings revealed that expert opinions were consistent across all four indicators and sixteen components (Mdn ≥ 3.50 , Q3-Q1 ≤ 1.50). The results led to the development of three main strategies and seven sub-strategies as follows: (1) Curriculum and learning development for nurturing social entrepreneurs, including (1.1) competency-based curriculum design for solving social and sustainability issues, (1.2) creation of interdisciplinary learning mechanisms with local social enterprise partners, and (1.3) establishment of a comprehensive measurement and evaluation system for social enterprise success; (2) Enhancing personnel competency to become coaches and incubators of local social enterprises, including (2.1) strengthening business incubation expertise and (2.2) developing local innovation experience; and (3) Building ecosystems and partnership networks to promote local social enterprises, including (3.1) establishing communication systems and joint decision-making mechanisms within partner networks, and (3.2) promoting collaboration in resource allocation and operational space for social enterprises.

Keywords: management strategy, entrepreneur, social enterprise, vocational education

1. Introduction

1.1 Introduce the Problem

The current Thai government's educational policy emphasizes "human capital" as the cornerstone of national development. The government seeks to promote the development of Thai people at all ages to their fullest potential, identifying and supporting out-of-school children and youth, and reforming vocational and higher education to meet future labor demands and foster lifelong learning. This direction aligns with Section 54 of the Thai Constitution (MOE 360° 2024). Thailand faces major challenges, including digital transformation, international cooperation on greenhouse gas reduction, an aging population, geopolitical conflicts, food and energy security risks, and emerging diseases. The 13th National Economic and Social Development Plan (2023–2027) aims to implement structural transformation to overcome current limitations, enhance national capacity, and create opportunities from global changes across economic, social, and environmental dimensions, driving Thailand toward a progressive society and a sustainable value-based economy (Bangkok Biz News, 2022).

The establishment of the National Social Enterprise Promotion Committee and the 2010–2017 Master Plan for Social

Enterprise Promotion laid out strategies for enhancing awareness, knowledge, models, capacity, and resource accessibility, leading to the emergence of social entrepreneurs (Chadin Rojananont, 2015). Thailand has promoted awareness and values regarding social enterprises through two main approaches: (1) developing learning content and educational media for large-scale dissemination; and (2) incorporating social enterprise topics into curricula, enabling Thai students to gain early exposure to social enterprise concepts, fostering interest and foundational thinking for future careers (Change Fusion, 2010).

Social enterprises (SEs) represent a continuously evolving business model that integrates financial sustainability with social and environmental impact. SEs aim to address and solve societal and environmental problems through self-sustaining business models based on product and service revenue. Products and services are designed to be socially and environmentally friendly, emphasizing innovation for efficient, sustainable problem-solving (Business Maker, 2024).

Social enterprises can be profit-oriented or non-profit organizations, both contributing to sustainable social development (Martin & Osberg, 2007). Somporn Pandam (2019) found that vocational education for social innovation entrepreneurship (Innopreneur for Social Enterprise) is vital for cultivating new entrepreneurs. Entrepreneurial activity stimulates economic growth and enhances global competitiveness, supported by inclusive mechanisms and collaborative frameworks across sectors.

Vocational education thus serves as a key driver of national development across economic, social, and quality-of-life dimensions. It focuses on practical learning to equip students with skills that match labor market demands while promoting inclusive education opportunities. The Ministry of Education's 2025 vision, "Learn Well, Be Happy," under Minister Pol. Gen. Permpoon Chidchob, emphasizes academic, professional, and life skills, integrating AI and digital technologies into teaching, and fostering collaboration with industries to ensure employability (Matichon, 2024).

1.2 Research Objectives

To propose management strategies for southern vocational colleges to enhance social entrepreneurship under the concept of social enterprises.

2. Research Methodology

2.1 Research Design

This study is a form of future-oriented research (Future Research) employing the Ethnographic Delphi Futures Research (EDFR) technique. The total duration of the research was one year (December 2024 – December 2025).

The research employed the Ethnographic Delphi Futures Research (EDFR) technique, which involved a single sample group. The study consisted of a review of relevant documents, literature, and theories, interviews with experts, and a non-experimental case study (The One Shot, Non-Experimental Case Study). The two steps of the research implementation are as follows:

Step 1: Documentary Review and Conceptual Framework Development

This step focused on establishing a conceptual foundation for the study through a systematic review and synthesis of relevant documents and prior research. The results were then drafted into interview issues concerning academic administration, budget management, personnel management, and general administration in the context of social enterprises: 1) having the primary objective of creating social, community, and environmental value; 2) engaging in continuous production or service activities that are environmentally friendly and income-generating; 3) reinvesting profits from product sales to expand business operations and benefit the community, society, and environment; 4) creating and developing innovations to solve problems and promote social development; 5) ensuring good governance in entrepreneurship and management; and 6) fostering collaboration and building networks among the government, civil society, and the private sector for joint decision-making.

Step 2: Research Implementation Procedures

The research implementation was conducted in two main phases, applying the Ethnographic Delphi Futures Research (EDFR) technique through three iterative rounds, as illustrated in Figure 1.

Phase 1: Documentary Review and Framework Development

Relevant literature, policies, and prior studies related to educational administration, social entrepreneurship, and social enterprises were systematically reviewed and synthesized. The synthesized findings were used to develop

interview guidelines focusing on academic administration, personnel administration, budget management, and general administration within the social enterprise context.

Phase 2: EDFR Process for Strategy Development

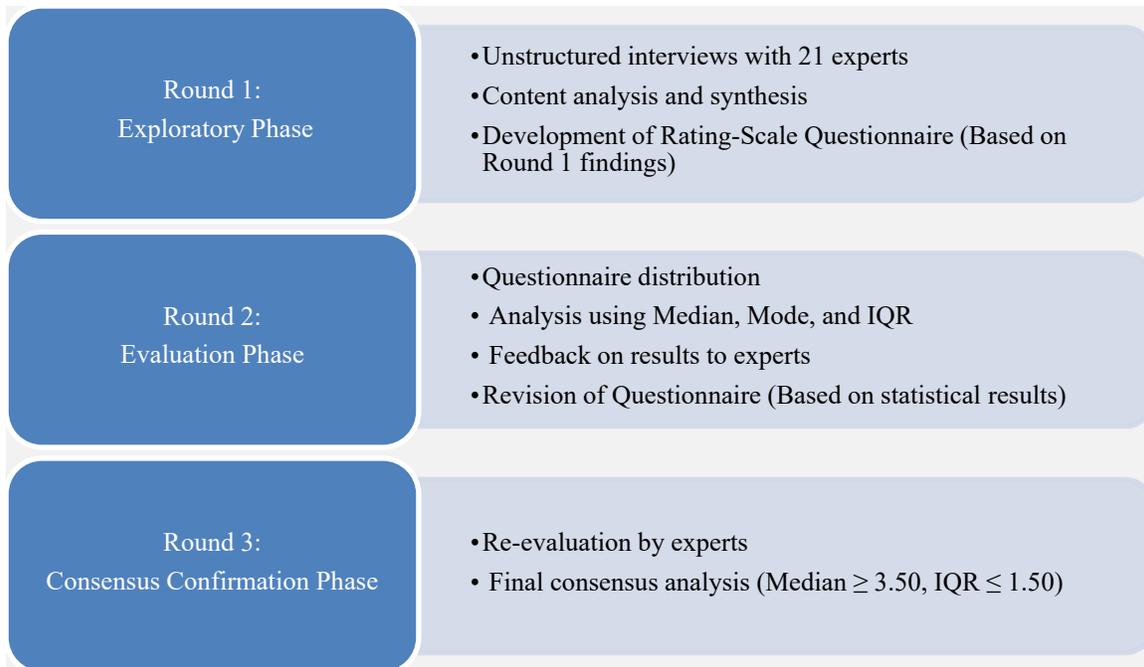


Figure 1. Flowchart of the Research Process Using the Ethnographic Delphi Futures Research (EDFR) Technique

Round 1 (Exploratory Phase):

Unstructured interviews were conducted with 21 experts selected through purposive sampling. The experts consisted of three groups: educational administration experts (7), social enterprise practitioners (7), and academic scholars (7). Qualitative data were analyzed using content analysis and synthesis to identify potential management strategies.

Round 2 (Evaluation Phase):

Findings from Round 1 were transformed into a five-point Likert-scale questionnaire. The questionnaire was distributed to the same group of experts. Responses were analyzed using Mode, Median, and Interquartile Range (IQR) to examine trends and consistency.

Round 3 (Consensus Confirmation Phase):

A revised questionnaire, based on the statistical results from Round 2, was administered to confirm expert consensus. Final consistency was determined using predefined EDFR criteria.

2.2 Data Collection and Data Analysis

All statistical results from each EDFR round were summarized and fed back to the experts in the subsequent round to support reflection and reassessment, in accordance with the Delphi technique principles. The response rate was 100% across all three EDFR rounds, as the same group of 21 experts participated continuously throughout the research process.

1. Round 1 Data Collection: Experts were contacted and interviewed in person using unstructured interviews to obtain possible or desirable strategies for managing southern vocational colleges in fostering social entrepreneurs based on the social enterprise concept. The data obtained were analyzed and synthesized using content analysis.

2. After collecting the data, the information was analyzed and synthesized according to the issues discussed by the group of experts and specialists. These issues were then used to construct a five-level rating scale questionnaire for data collection in EDFR Round 2. The questionnaires were distributed both in person and online for the same group

of experts to evaluate the likelihood or desirability of each issue. The scoring scale was defined as follows:

Level 1: Indicates that the expert agrees the least with the management strategies for southern vocational colleges in fostering social entrepreneurs based on the social enterprise concept — weighted score = 1 point.

Level 2: Indicates that the expert agrees slightly — weighted score = 2 points.

Level 3: Indicates that the expert agrees moderately — weighted score = 3 points.

Level 4: Indicates that the expert agrees strongly — weighted score = 4 points.

Level 5: Indicates that the expert agrees the most — weighted score = 5 points.

3. The data collected from the five-level rating scale questionnaires in Round 2 were analyzed using statistical methods to verify the consistency of responses through the calculation of Mode, Median, and Interquartile Range (IQR). The analyzed data were then used to prepare questionnaires for experts in EDFR Round 3.

4. The data obtained from Round 3 were analyzed to examine the consistency of responses through statistical methods, determining the minimum and maximum values, Mode, Median, and Interquartile Range. The researcher then evaluated whether the experts’ responses had reached a sufficient consensus on the study topics.

5. The experts’ questionnaire responses were analyzed according to predetermined criteria, considering trends with relatively high feasibility — specifically, when the Median value was 3.5 or higher. The consistency of the responses was determined when the absolute difference between the Median and Mode was not greater than 1, and the Interquartile Range (IQR) did not exceed 1.5.

The statistics used for data analysis included the Median, Mode, and Interquartile Range (IQR).

3. Results

The research findings on the management of southern vocational colleges in fostering social entrepreneurs based on the social enterprise concept were analyzed in the context of academic administration, which is a core component of educational management for learner development.

Table 1. Analysis Results of Feasibility Trends and Consistency According to Expert Opinions

Model for Educational Administration for Foster Social Entrepreneurs	Median	Trend Interpretation	Q3-Q1	Consistency
Academic Administration				
1. Establishing standards/indicators for curriculum development that promote social entrepreneurship	5.00	Most Feasible	1.00	Consistent
2. Designing and determining learning content that builds knowledge and understanding of social problems and their impacts	5.00	Most Feasible	1.00	Consistent
3. Organizing curriculum-based activities to develop capabilities in sustainable business management	5.00	Most Feasible	0.00	Consistent
4. Creating supplementary programs that bring successful entrepreneurs from southern Thailand to serve as mentors in developing business models	5.00	Most Feasible	1.00	Consistent
5. Developing a knowledge repository on product and/or service production, including understanding of laws and policies related to social enterprises	4.00	Feasible	1.00	Consistent
6. Implementing Triple Bottom Line (TBL) assessment: requiring that student entrepreneurship projects evaluate impacts on Social, Environmental, and Financial dimensions	4.00	Feasible	1.00	Consistent
7. Certifying entrepreneurial competencies by establishing graduation criteria that include obtaining certificates of competency or qualification in business operations	4.00	Feasible	1.00	Consistent
Personnel Administration				

Table 1. Analysis Results of Feasibility Trends and Consistency According to Expert Opinions(continued)

Model for Educational Administration for Foster Social Entrepreneurs	Median	Trend Interpretation	Q3-Q1	Consistency
Academic Administration				
8. Promoting knowledge and skills for personnel to become coaches/mentors in business incubation and to transfer business management skills with good governance	5.00	Most Feasible	0.00	Consistent
9. Encouraging participation in community development activities or projects in southern Thailand to understand local social issues and apply real-world challenges in learning design	5.00	Most Feasible	0.00	Consistent
10. Promoting study visits or internships with social enterprise organizations in the South to adapt real SE business models for teaching applications	5.00	Most Feasible	0.00	Consistent
11. Defining Key Performance Indicators (KPIs) for personnel that align with student SE outcomes, such as the number of students establishing SE businesses, the social impact level of projects, and the amount reinvested in social causes	4.00	Feasible	1.00	Consistent
12. Fostering a social entrepreneurial mindset among personnel through continuous internal communication and engagement activities	4.00	Feasible	1.00	Consistent
13. Structuring staff collaboration between vocational instructors and business administration or social innovation advisors	5.00	Most Feasible	1.00	Consistent
General Administration				
14. Allocating a clear annual budget specifically to support SE activities — e.g., seed funding for student business projects or social innovation research grants.	4.00	Feasible	1.00	Consistent
15. Establishing practical learning spaces (Co-working Spaces) or dedicated SE laboratories where students can produce products/services and conduct real marketing activities	4.00	Feasible	1.00	Consistent
16. Signing Memorandums of Understanding (MOUs) with SE organizations, government/private agencies, and local southern communities to serve as training sites and funding sources	5.00	Most Feasible	0.00	Consistent

From Table 1, it can be seen that experts expressed consistent opinions regarding the strategic trends in managing southern vocational colleges to promote social entrepreneurs based on the social enterprise concept. All four indicators and sixteen components were consistent ($Mdn \geq 3.50$, $Q3-Q1 \leq 1.50$). Therefore, all indicators of management strategies for southern vocational colleges in fostering social entrepreneurs under the social enterprise concept achieved consensus. The synthesized strategic framework for managing southern vocational colleges to foster social entrepreneurs comprises 3 main strategies and 7 sub-strategies.

Beyond statistical consistency, the findings indicate that academic administration functions as the structural foundation for fostering social enterprise-oriented competencies in vocational education. High median values across curriculum design, learning activities, and assessment components reflect experts' shared recognition that social entrepreneurship development requires an integrated academic framework rather than isolated entrepreneurial activities. Moreover, the low interquartile ranges suggest strong convergence among experts from diverse professional backgrounds, reinforcing the robustness of the proposed management strategies.

4. Discussion

From the research results on the management strategies of southern vocational education institutions in fostering entrepreneurs based on the social enterprise concept, the issues that experts agreed were most feasible in the area of academic administration consisted of three main aspects: Establishing standards or indicators for curriculum development that promote social entrepreneurship; Designing and determining learning content that builds

understanding of social problems and their impacts; and Organizing curriculum-based activities to develop sustainable business management capabilities. These findings indicate that improving academic administration forms the foundation for developing entrepreneurs who understand social issues and their impacts. It also lays the groundwork for establishing vocational education policies that emphasize outcomes beyond technical skills (hard skills), focusing instead on social entrepreneurial attributes. Therefore, it is essential to clearly define Program Learning Outcomes (PLOs) that reflect the intended outcomes for social enterprise education. These findings are consistent with Pinpasinee Phothin et al. (2020), who studied the impact of social entrepreneurship on the perceived performance of social enterprises and found that: (1) Social entrepreneurship positively influences social enterprise business networks, competitiveness, and innovation; (2) Social enterprise networks positively influence competitiveness, innovation, and perceived organizational performance; (3) Competitiveness positively influences innovation and performance perception; and (4) Social enterprise innovation positively affects performance perception. Regarding personnel administration, the most feasible issues identified by experts include: Promoting knowledge and skills for personnel to become coaches or mentors in business incubation and transferring business management skills with good governance; Encouraging personnel to participate in community development projects in the southern region to understand local social problems and apply real issues in designing learning activities; Promoting study visits or internships with social enterprise organizations in the South to adapt real business practices to teaching; and Structuring collaboration between vocational instructors and business administration or social innovation teachers. This aligns with Dispanadda Diskul (2022), who proposed the concept of “Catalyze”, emphasizing policy advancement related to social enterprises through activities, learning, information sharing, and collaboration to effectively and sustainably solve social problems. From these expert perspectives, the resulting strategies can be summarized as follows: Main Strategy 1: Curriculum and learning development for cultivating social enterprise entrepreneurs. Similarly, Phenlada Thoopairoh (2021) studied curriculum development to enhance socially responsible entrepreneurial competence among high school students and found that socially responsible entrepreneurial competence includes knowledge, skills, abilities, and attitudes relevant to one’s work. These competencies can be classified into three aspects: 1) Knowledge — including understanding the importance and functions of entrepreneurs and entrepreneurial analysis; 2) Skills — such as problem-solving, decision-making, creative thinking, and communication; 3) Attributes — including self-confidence, risk-taking, discipline, and social responsibility. For Sub-strategy 1.1, designing competency-based curricula to address social problems and sustainability aligns with Pepperdine University’s Graduate School of Education and Psychology, which designed programs combining diverse learning methods, on-campus and online experiences, and intensive field projects. These programs aim to prepare socially conscious entrepreneurs to create a positive social impact. For Sub-strategy 1.2, creating interdisciplinary learning mechanisms with local social enterprise networks corresponds with the Office of the Education Council (2020: 21–31), which proposed active learning strategies that engage learners physically, intellectually, emotionally, and socially. Such teaching promotes deeper learning through a variety of instructional models, teaching methods, and techniques that can be strategically applied to specific learning contexts and foster collaboration and network building in the learning process. For Sub-strategy 1.3, developing assessment and evaluation systems that cover multiple dimensions of social enterprise success supports the main academic management strategy by linking PLOs focused on social problem-solving to outcome-based assessments. This aligns with the Office of the Education Council (2020: 28), which stated that summative assessment should measure holistic competence — including knowledge, skills, attitudes, and attributes — through performance-based and authentic assessment using observable evidence of learning progress. It also corresponds with the study by Kittikantakorn Karunpracha and Wichian Thamrongsothisakun (2021) on developing a co-curricular program “Entrepreneurship” based on cognitive apprenticeship for high school students, which found that curriculum development should emphasize active participation, practical learning, and authentic assessment.

For Main Strategy 2, enhancing personnel competency to become coaches and local social enterprise incubators, two sub-strategies were identified: Sub-strategy 2.1: Strengthening expertise in business incubation; Sub-strategy 2.2: Creating hands-on experiences from local contexts for innovation development. These align with Sutthida Khattiya and Narong Puomlakthong (2019), who concluded that social enterprises operate similarly to traditional businesses but have a social mission as their core goal—to use business as a tool for solving and improving social issues. Profits are divided into two parts: one reinvested to sustain the business, and the other returned to society in monetary or non-monetary forms, measurable by indicators such as improved quality of life and social well-being.

For Main Strategy 3, building environments and collaborative networks to drive social enterprises, two sub-strategies were outlined: Sub-strategy 3.1: Establishing communication systems, shared awareness, and joint decision-making mechanisms among network partners; Sub-strategy 3.2: Promoting collaboration in resource allocation and

operational spaces for social enterprises. This aligns with Dispanadda Diskul's (2022) concept of "Connect", emphasizing the importance of cooperation and linkages among social enterprises and organizations to create positive social and environmental impact, and "Communicate", which highlights the creation and dissemination of new knowledge within the Thai context to foster understanding and awareness among both internal SE communities and external stakeholders.

5. Conclusion

The research results clearly indicate that improving academic administration as the foundation for developing social enterprise (SE) entrepreneurs is the most feasible and plays a crucial role in advancing educational management. The three main strategies and seven sub-strategies derived from this study integrate institutional management principles with the core attributes of social enterprises, aiming to develop vocational education toward becoming "Innopreneur for Social Enterprise." This approach emphasizes shifting from technical-skill-focused curricula toward nurturing entrepreneurs who understand social issues and their impacts. Therefore, "Community Problem Analysis and Resolution" should be defined as a core competency, with PLOs enabling learners to apply vocational skills to address local southern issues — such as waste management and sustainable tourism. Active learning approaches should be promoted to support interdisciplinary and network-based learning mechanisms, aligning with the concept of creating physically, intellectually, and socially engaging learning experiences. Integrating diverse learning methods and embedding social innovation content into all fields of study is essential to empower learners to create and develop innovations that solve social problems — particularly those relevant to southern Thailand. Moreover, combining various learning approaches, such as practical field projects, plays a key role in preparing socially conscious individuals for entrepreneurial careers.

From an international theoretical perspective, the proposed strategies align with the Triple Bottom Line (TBL) framework and the concept of entrepreneurial ecosystems, which emphasize the integration of economic viability, social value creation, and environmental sustainability (Barraket et al., 2017; Martin & Osberg, 2007). The findings also correspond with global vocational education trends that advocate competency-based curricula, experiential learning, and cross-sector partnerships as essential mechanisms for nurturing socially responsible entrepreneurs in complex socio-economic contexts.

6. Research Limitations and Future Research Directions

This study was limited to expert perspectives within the context of southern vocational colleges in Thailand; therefore, the findings may not be fully generalizable to other regions or educational systems. In addition, the research relied primarily on expert judgment rather than empirical implementation outcomes.

Future research should examine the practical implementation of the proposed strategies through longitudinal or experimental studies and explore comparative analyses across different regional or international vocational education contexts to further validate and refine the proposed management model.

References

- Bangkok Business. (2022). NESDC promotes the 13th National Economic and Social Development Plan to restructure the economy and raise Thais' average income to 300,000 baht per year. Change Fusion. (n.d.). Retrieved from <https://change fusion.org/>
- Barraket, J., Douglas, H., Eversole, R., Mason, C., & Morgan, B. (2017). Classifying social enterprise models in Australia. *Social Enterprise Journal*, 13(4), 345-361.
- Department of International Trade Promotion. (n.d.). Report on international trade promotion. Retrieved from https://www.ditp.go.th/contents_attach/709462/709462.pdf
- Dispanadda Diskul. (2022). How Thai social enterprises adapt for sustainable growth. Retrieved from <https://www.sethailand.org/resource/ml-dispanadda-diskul/>
- Ekachai, N. (2020). Development of a small-sized school management system according to the concept of social enterprise. *Faculty of Education Journal*, 48(4).
- Graduate School of Education and Psychology, Pepperdine University. (n.d.). Key characteristics of successful social entrepreneurs. Retrieved from

- <https://gsep.pepperdine.edu/blog/posts/key-characteristics-of-successful-social-entrepreneurs.htm>
- Matichon. (2025). OVEC aims to upgrade Thai vocational education in 2025 through 8 strategies: “Do good, do it, do it now.” Retrieved from https://www.matichon.co.th/local/education/news_4877764
- Ministry of Education 360 Blog. (2024). Government education policy by Prime Minister Paetongtarn Shinawatra. Retrieved from <https://moe360.blog/2024/09/10/government-education-policy/>
- Office of the Education Council. (2020). *Learning management based on proactive competency*. Bangkok: Office of the Education Council.
- Office of the Secretary-General of the House of Representatives. (2015). *Special reform agenda 1: Social enterprise*. Bangkok: Parliament Printing House.
- Office of Vocational Education Commission. (2024). Annual report 2024. Retrieved from [https://bme.vec.go.th/Portals/30/Ln231067/%202567%20\(e-book\).pdf](https://bme.vec.go.th/Portals/30/Ln231067/%202567%20(e-book).pdf)
- Office of Vocational Education Commission. (2025). Policy for the development of vocational education for fiscal years 2025-2026.
- Penladda Thoopairoj. (2021). *Curriculum development to enhance social responsibility entrepreneurial competence among upper secondary school students*. Bangkok: Srinakharinwirot University.
- Phinpasinee Phothin, Meejaichue, P., Phupattanaphong, K., & Jinandech, N. (2020). The impact of social entrepreneurship on social enterprise performance perception. *Srinakharinwirot Business Administration Journal*, 11(2), 62-74.
- Samaphon Pandam. (2021). Entrepreneurial colleges for creating innovative social entrepreneurs. *Journal of Central Vocational Education*.
- Social Enterprise Promotion Office (TSEO). (2014). Meaning and characteristics of social enterprise. Retrieved from <http://www.tseo.or.th/about/social-enterprise/means>
- Social Enterprise Thailand. (n.d.). What is a social enterprise and how does it benefit society? Retrieved from <https://www.cimbthai.com>
- Sutthada Khattiya, & Narong Puomlaktong. (2019). Social Enterprises and Sustainable National Development. *Journal of Management Review*, 21(1), 145-154.
- Thaksin University. (2025). TSU and MHESI launch a program to train social enterprise coaches. Retrieved from <https://www.tsu.ac.th/home/details.php?id=4914>
- Wanasra Jankamon. (2020). *Success conditions for operating social enterprises of community enterprises in Suphan Buri Province* (Master’s thesis). Silpakorn University, Thailand.

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Authors contributions

Asst. Prof. Dr. Pratoomtong Trirat and Dr. Piyanun Klaichun were responsible for study design, revising, data collection, and manuscript. All authors read and approved the final manuscript.

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