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Guidelines for Managing the Organic Agriculture Industry in Organic Plant Types for Sustainable Growth

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The organic agricultural industry in Thailand is a major economic activity that involves a significant population. This study explored the necessary guidelines for effectively managing the industry in a sustainable manner. This study examines the relationship between entrepreneurship, supply chain management (SCM), knowledge management, and innovation management. The study utilized primary data collected from respondents via survey questionnaires. The study also used the smart-PLS to analyse the relationship between variables. The findings indicated a strong and positive connection between entrepreneurship, SCM, knowledge management, and innovation management. The hypothesis test indicated that the size of the industrial business attached equal significance to guidelines for managing the organic agriculture industry for sustainability. The study guides policymakers in developing policies related to enhancing knowledge management and supply chain management using effective entrepreneurial mindsets.

Keywords: Entrepreneurship, Supply Chain Management, Knowledge Management, Innovation Management, Organic Agricultural.

Introduction

Organic agriculture is of utmost importance in driving the progress of the United Nations Sustainable Development Goals (SDGs) in at least seven significant areas. It contributes to mitigating negative effects and enhancing positive effects in order to achieve a variety of objectives, such as improving local food production for communities. 2) offering enhanced nutritional benefits. 3) Improving soil quality to enhance water storage, filtration, and minimise chemical pollution in water sources. 4) Reducing chemical use leads to improved occupational health. 5) Enabling consumers to make informed decisions when selecting certified organic products that meet established standards. 6) Addressing greenhouse gas emissions and storing carbon in the soil. 7) Tackling soil degradation and the decline of natural ecosystems (Ferdous et al., 2021; Rosati et al., 2021).

An analysis of the global organic agricultural areas revealed a noticeable trend of expansion. Based on a report that surveyed 190 countries, the Organic Agriculture Research Institute and the International Federation of Organic Agriculture found that the global organic farming area saw a significant increase of 43.24 million rai, which accounted for 9.96 percent between 2017 and 2022. The organic farming area has seen significant growth, going from 434.33 million rai in 2017 to 477.57 million rai in 2022 (Gamage et al., 2023). Looking at organic agriculture from a global perspective, it's evident that there is a consistent growth trend every year. The global organic agriculture data report, presents strategies for developing a sustainable organic farming system with potential (Willer et al., 2024). Nevertheless, the production of organic agricultural products in Thailand encounters notable challenges, especially regarding the certification of production standards and the principles of organic agriculture to establish international credibility. There is a lack of a unified organisation in Thailand that certifies reliable product standards at the global level. This has resulted in variations in organic product standards across different countries, including differences in production standards, product inspection, and labelling standards for organic products. This challenge poses a barrier to the growth of the international market for organic products, leading to a consistent decrease in the value of Thai organic agricultural products in the global market (Arunrat et al., 2022; Yao et al., 2022).

Today, consumers are more aware of health and food safety, which influences their choices in agricultural products and food consumption. It is evident that health products have been experiencing continuous growth (Liao et al., 2022). Thailand is actively working to develop organic agriculture as a means of moving away from a reliance on chemical fertilizers and chemicals. The country aims to achieve self-reliance by producing organic fertilizers and biological substances, guided by the principles of the Sufficiency Economy. According to Panyasing et al. (2022), organic agriculture prioritises the well-being of farmers, producers, and local communities. Its goal is to ensure agricultural stability for farmers while also preserving and restoring the traditional way of life within the agricultural community. The production method of organic agriculture in Thai society necessitates that farmers adopt a humble approach and adjust their production techniques to align with natural methods that are in harmony with the local agricultural community (Kangogo et al., 2021; Suwanmaneepong et al., 2020).

The importance of enhancing the management of the organic agricultural industry for sustainable growth has been emphasised. The researcher aims to investigate the management guidelines for sustainable growth in the organic agriculture industry, specifically focusing on organic plants. The researcher expects that the research findings will provide useful guidance for private sector organisations in future management of their organic agriculture industry.

Literature Review

The researcher has gathered significant information on the

guidelines for sustainable growth in the organic agricultural industry. Various forms of organic farming operation and management exist, which differ across countries. The Japanese management style of farming adopts a humble approach, guided by the principle of avoiding four practices: refraining from ploughing the land, abstaining from using chemical fertilisers, minimising weeding, particularly by avoiding pesticides, and strictly prohibiting the use of chemicals. Fukuoka's natural agricultural approach is seen as having a significant influence on the Thai alternative agriculture movement in the near future (Sapbamrer & Thammachai, 2021; Uthai & Boonrahong, 2023). The Korean management style emphasizes natural agriculture and soil fertility enhancement. Utilizing local microorganisms to ferment agricultural waste, such as animal manure, enhances soil fertility and boosts economic profitability. Compared to the Fukuoka method, which requires a longer adjustment period, the natural agricultural system based on Korean methods has gained more widespread adoption and popularity (Liao et al., 2022). Thailand employs a holistic agricultural production management method that differs from modern agriculture. This method prioritises maximising production through the development of techniques for providing plant nutrients and preventing or eliminating organisms that may reduce productivity.

Farmer entrepreneurs perceive farms as agro-industrial businesses and aim to integrate the economy with the community. Farmer entrepreneurs primarily engage in value addition to agricultural products and continuous industry innovation (Deka & Goswami, 2020). Farmer entrepreneurs possess superior characteristics and behaviours compared to farmers. Farmers primarily produce agricultural raw materials and generate income from selling them (Kangogo et al., 2021). Agricultural entrepreneurs strategically manage agricultural businesses to achieve their goals, showcasing leadership and management skills. This finding aligns with previous studies that investigated the relationship between entrepreneurial behaviour and factors such as innovation, creativity, value creation, and continuous opportunity-seeking (Janker et al., 2021).

The environment has undergone significant changes within and outside organisations in the era of globalisation. Hence, organisations must avoid stagnation as it hampers their ability to compete with rivals and survive in the long run (Condor, 2020). In order to achieve a competitive advantage, entrepreneurs must consistently engage in self-development to ensure that their businesses maintain a leading position (Manyise & Dentoni, 2021). The creation of a competitive advantage involves extracting value from organisational resources, which consist of four essential elements as follows: 1) The creation of operational value through the utilisation of existing resources is a valuable resource. 2) The second strategy involves utilizing limited or rare resources. 3) Leveraging resources that are challenging to imitate or replicate (imperfectly imitable resources) 4) Implementing non-substitutable resources. These elements are essential for maintaining the organisation's sustained competitive advantage (Umar et al., 2020).

Knowledge management is essential in the organic farming industry to ensure the appropriate quality and quantity that align with the added value. According to Tindiwensi et al. (2020), a comprehensive understanding of management in organic agriculture involves familiarity with tasks such as crop selection, site suitability assessment, and consideration of key success factors. Effective weather information management and knowledge of suitable cultivation areas are crucial for achieving success in organic farming. Due to the wide range of agricultural products and geographical regions, each area necessitates specialised knowledge (Żywiołek et al., 2021). Thailand's extensive agricultural history and diverse regions contribute to its abundant agricultural knowledge, which offers a competitive edge. Knowledge management refers to the systematic management of knowledge within an organization. The process involves identifying and collecting existing knowledge, classifying it, disseminating and exchanging it, and fostering a conducive learning environment. The objective is to utilise acquired knowledge to support organisational goals (Salavisa et al., 2021).

The sustainable management of the organic agricultural industry is crucial for the advancement of both smallholder farmers and larger agricultural systems in Thailand. These practices aim to promote sustainability in terms of the economy, society, and the environment. The following factors are crucial for the sustainable management of the organic farming industry: 1) Enhancing soil quality Ensuring and enhancing soil quality is crucial for maximising crop yields. Nowadays, there are numerous organic methods available that improve soil quality without the use of chemicals. 2) utilisation of suitable technology. It is important for farmers to utilise suitable technology for organic production, as certain stages of the production process may necessitate the use of labour-saving machines to minimise human labour expenses and other factors (Anderberg, 2020) Regulating the use of chemicals. Minimising the use of chemicals in crop cultivation holds significant value in organic agriculture. Currently, certain farmer factions have successfully adopted a completely chemical-free farming approach. 4) Exploring sustainability in agricultural systems. Emphasising the significance of sustainability in food and crop production, environmental conservation, and establishing stability in the organic farming system is crucial to supporting the future generation of farmers and fostering progress in various aspects. 5) Organic agriculture is a viable option for small farmers in need of support, particularly those who currently lack access to government assistance. It is critical to improve the agricultural system's sustainability while also providing support and education to farmers about organic farming. Efforts should be made to improve the efficiency of managing the organic agricultural industry, ensuring its long-term viability, and facilitating its transfer to future generations (Lu et al., 2020) Supporting and promoting entrepreneurs in the organic agriculture industry is crucial for creating sustainability in the Thai agricultural sector. By reducing obstacles and increasing opportunities for further business expansion, we can ensure a brighter future for this industry.

They play a critical role in the production and development of the agri-food industry, which includes: 1) Organic farming methods promote safety for farmers by reducing the use of chemicals, protecting them from toxins, improving their health, and enhancing their agricultural efficiency and

continuity. Currently, there is a significant increase in the number of patients from the agricultural sector, attributed to multiple factors leading to various diseases (Mungkung et al., 2022). Using organic methods in agriculture reduces the release of toxic substances into the soil and water, which is environmentally for the environment in terms of environmental friendliness. Environmentally friendly agricultural products can enhance their value through sustainable production methods. Preserving future farmland and employing organic methods help maintain soil fertility. This study focuses on the utilisation of plants for soil nourishment after harvesting and the application of organic fertilisers to enhance the topsoil's nutrient content. As a result, farmland maintains its fertility, ensuring its suitability for future agricultural production. Organic farming has multiple benefits for farmers, the environment, and society. Therefore, we should carefully evaluate it as a viable option for expanding agricultural businesses and promoting sustainable growth (Ahmed et al., 2020).

Research Hypotheses

H1: The Entrepreneurship components directly influence Knowledge Management components.
H2: The Entrepreneurship component directly influences the components of Innovation Management.
H3: The Entrepreneurial components directly influence Supply Chain Management components.
H4: Innovation Management components directly influence Knowledge Management components.
H5: Innovation Management components directly influence Supply Chain Management components.

Theoretical Framework

The theoretical framework of this research represents the coherence between the variables in the study which can be considered as follows:

1) Entrepreneurship is indicated as the independent variable, directly influencing both Innovation Management and Supply Chain Management.
2) Innovation Management is indicated as a mediating variable, influencing both Knowledge Management and Supply Chain Management.
3) Knowledge Management and Supply Chain Management are indicated dependent variables, influenced by both Entrepreneurship and Innovation Management.

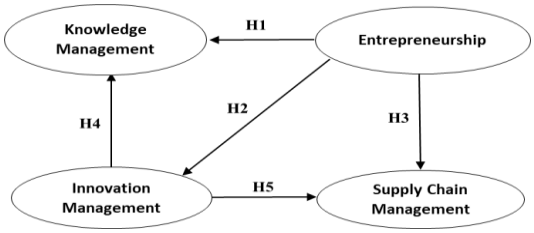

Figure 1: Theoretical Framework.

The theoretical framework represents the coherence between the variables in the study, including:

1. Entrepreneurship is the independent variable in this study, meaning it is the factor being manipulated to observe its impact on other variables.
2. Innovation Management acts as a mediating variable, impacting the relationship between entrepreneurship and other variables, such as knowledge management and supply chain management.
3. Knowledge Management is a dependent variable that is measured based on changes in entrepreneurship and innovation management.
4. Supply Chain Management is a dependent variable that is predicted based on changes in entrepreneurship and innovation management.

Research Methodology

This study examines the influence of entrepreneurship on supply chain management (SCM), knowledge management, and innovation management. Additionally, it investigates the impact of innovation management on knowledge management and SCM. The study utilized primary data collected from respondents via survey questionnaires. This study derived its questionnaires from previous research. The entrepreneurship section consists of six questions adapted from Alsafadi et al. (2020). The innovation management section includes six questions taken from Didonet & Diaz-Villavicencio (2020). The knowledge management section comprises eight items extracted from Abdulmuhsin et al. (2021). Lastly, the supply chain management section consists of four questions taken from Astuty et al. (2021). Furthermore, the employees were chosen from the organic agricultural sector. The selected employees are the respondents of the study. The employees were selected through simple random sampling. The surveys were distributed to employees through personal visits and emails. A total of 622 surveys were distributed, resulting in 357 valid responses, indicating a response rate of approximately 57.40 percent. The study also employed smart-PLS to analyse the relationship between variables. The statistical tool is effective for analysing primary data and yields excellent outcomes, even when complex models are used by researchers (Hair et al., 2017; Hair Jr et al., 2020). Finally, the study employed one independent variable, entrepreneurship (ENT), along with two mediator variables, innovation management (INM) and knowledge management (KNM), and one predictive variable, supply chain management (SCM). The variables mentioned in Figure 1 are referenced above.

Study Results

This study investigates the correlation between the items using Alpha. The results indicate that the values exceed the threshold of 0.70. The study investigates the correlation between the items using composite reliability (CR). The results indicate that the values exceed the threshold of 0.70. The study investigates the correlation between the items using factor loadings. The results indicate that the values exceed the threshold of 0.50. The study investigates the correlation between the items using average variance extracted (AVE). The results indicate that the values exceed the threshold of 0.50. The values indicate a high correlation between the items. The figures are presented in Table 1.

Table 1: Convergent Validity.

Constructs	Items	Loadings	Alpha	CR	AVE
Entrepreneurship	ENT1	0.878	0.922	0.939	0.720
	ENT2	0.799			
	ENT3	0.810			
	ENT4	0.877			
	ENT5	0.861			
	ENT6	0.863			
Innovation Management	INM1	0.831	0.860	0.896	0.591
	INM2	0.824			
	INM3	0.735			
	INM4	0.773			
	INM5	0.760			
	INM6	0.678			
Knowledge Management	KNM1	0.838	0.905	0.923	0.602
	KNM2	0.795			
	KNM3	0.794			
	KNM4	0.694			
	KNM5	0.791			
	KNM6	0.776			
	KNM7	0.764			
	KNM8	0.745			
Supply Chain Management	SCM1	0.780	0.794	0.865	0.617
	SCM2	0.810			
	SCM3	0.781			
	SCM4	0.769			

The study investigates the correlation between the variables using the Fornell Larcker method. The first value in the column is larger than the other values in the same column. The values indicate a low correlation between the variables. The figures are presented in Table 2.

Table 2: Fornell Larcker.

	ENT	INM	KNM	SCM
ENT	0.849			
INM	0.467	0.769		
KNM	0.463	0.534	0.776	
SCM	0.599	0.672	0.640	0.785

This study investigates the correlation between variables using cross-loadings. The values indicating the association with the variable itself are larger than the values indicating the association with other variables. The values indicate a low correlation between the variables. The figures are presented in Table 3.

Table 3: Cross-Loadings.

	ENT	INM	KNM	SCM
ENT1	**0.878**	0.425	0.390	0.544
ENT2	**0.799**	0.398	0.385	0.523
ENT3	**0.810**	0.354	0.440	0.447
ENT4	**0.877**	0.387	0.382	0.511
ENT5	**0.861**	0.436	0.389	0.532
ENT6	**0.863**	0.371	0.371	0.484
INM1	0.373	**0.831**	0.498	0.610
INM2	0.373	**0.824**	0.375	0.542
INM3	0.452	**0.735**	0.434	0.528
INM4	0.287	**0.773**	0.430	0.500
INM5	0.297	**0.760**	0.334	0.464
INM6	0.352	**0.678**	0.366	0.425
KNM1	0.429	0.446	**0.838**	0.593
KNM2	0.433	0.408	**0.795**	0.536
KNM3	0.309	0.459	**0.794**	0.417
KNM4	0.326	0.387	**0.694**	0.447
KNM5	0.394	0.447	**0.791**	0.567
KNM6	0.359	0.365	**0.776**	0.507
KNM7	0.263	0.422	**0.764**	0.382
KNM8	0.336	0.371	**0.745**	0.500
SCM1	0.445	0.540	0.511	**0.780**
SCM2	0.458	0.661	0.407	**0.810**
SCM3	0.521	0.450	0.561	**0.781**
SCM4	0.463	0.429	0.557	**0.769**

The study investigates the correlation between the variables using the Heterotrait Monotrait (HTMT) ratio. The results indicate that the values are below 0.90. The values indicate a low correlation between variables. The figures are presented in Table 4.

Table 4: Heterotrait Monotrait Ratio.

	ENT	INM	KNM	SCM
ENT				
INM	0.519			
KNM	0.504	0.599		
SCM	0.699	0.794	0.761	

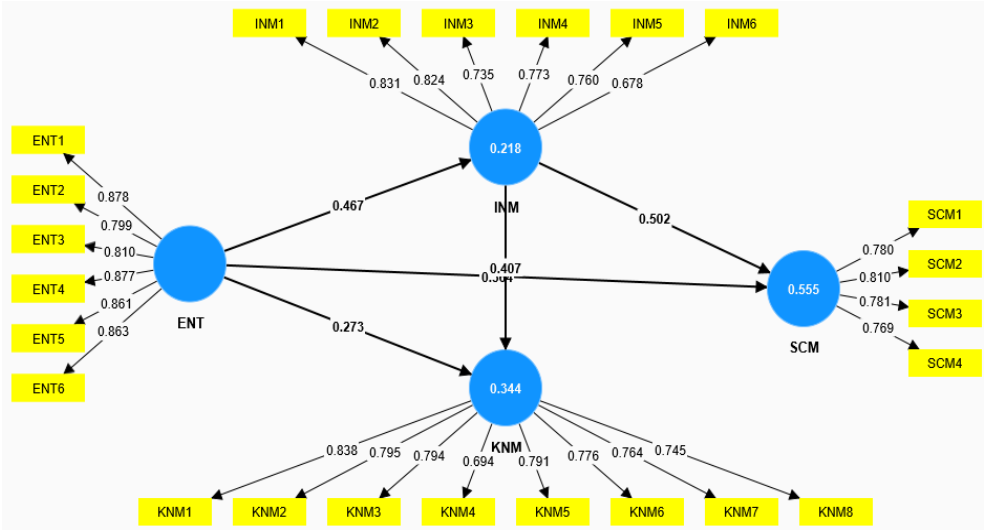

Figure 2: Measurement Assessment Model.

The results indicate a significant and positive relationship between entrepreneurship and supply chain management (SCM), knowledge management, and innovation management. This supports hypotheses H1, H2, and H3. The results indicate a significant and positive association between innovation management, SCM, and knowledge management. This supports the acceptance of hypotheses H4 and H5. Table 5 provides the relationships.

Table 5: Path analysis.

Relationships	Beta	Standard deviation	T statistics	P values
ENT -> INM	0.467	0.051	9.155	0.000
ENT -> KNM	0.273	0.051	5.387	0.000
ENT -> SCM	0.364	0.044	8.350	0.000
INM -> KNM	0.407	0.058	6.965	0.000
INM -> SCM	0.502	0.045	11.209	0.000

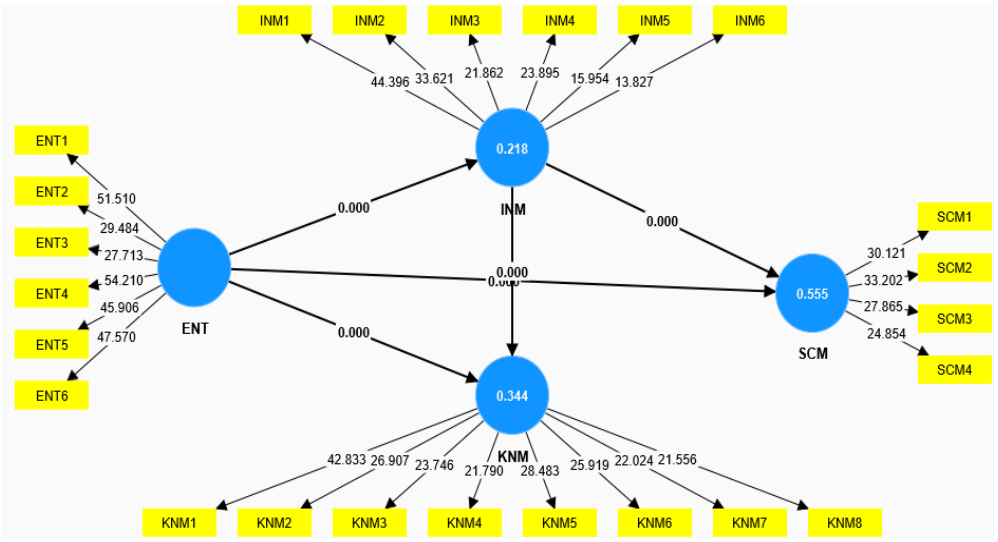

Figure 3: Structural Assessment Model.

Discussions

The analysis reveals that entrepreneurship is vital in organisational management, specifically in knowledge management, innovation management, and supply chain management. The study suggests that entrepreneurship has a direct impact on knowledge management, as indicated by H1. Li et al. (2020) conducted a prior study that underscores the crucial role of entrepreneurs in shaping and utilising knowledge within organisations. Knowledge management encompasses

key processes including knowledge search, creation, collection, and utilisation, which are crucial for enhancing organisational competitiveness and personnel growth. H2, according to a study conducted by Mokbel Al Koliby et al. (2024), it has been found that entrepreneurship has a direct impact on innovation management. The study also highlights the significant influence of entrepreneurs' ideas for product development on the success of businesses. Innovation management is the process of developing and launching fresh products or services, leveraging technology to enhance their worth and stand out from rivals. The quality of innovative products is essential for meeting customer needs and ultimately improving business success.

H3, confirms the direct influence of entrepreneurship on supply chain management, aligning with the findings of Ketchen Jr & Craighead (2020). Their research emphasizes the importance of effective logistics management and marketing strategies in order to compete in highly competitive markets. Efficient supply chain management involves utilising information technology and innovation to optimise processes and enhance cost-effectiveness and efficiency within the organisation. The study by Zhou et al. (2023) supports the notion that innovation management has a direct impact on knowledge management, specifically in relation to organisational efficiency. This finding emphasises the importance of promoting innovative management practices. Risk management and knowledge sharing are crucial for innovation management in organisations. H5 indicates that innovation management directly affects supply chain management, as supported by Adnani et al. (2023) study. This study highlights the strategic importance of supply chain management in implementing new methods and innovations to enhance process efficiency and reduce costs across the supply chain. Effective supply chain management facilitates the smooth movement of materials, goods, or services, leading to overall organisational success.

This study aimed to establish guidelines for managing the organic agriculture industry in Thailand in order to facilitate sustainable growth. The study identified four key factors that contribute to the success of sustainable organic agriculture: Supply Chain Management, Knowledge Management, Innovation Management, and Entrepreneurship. The factors were ranked based on their importance, with Supply Chain Management identified as the most critical factor. The results are consistent with prior research highlighting the significance of supply chain management in advancing sustainable agriculture. Efficient supply chain management can enhance profitability for farmers and producers by reducing costs and improving efficiency. Additionally, Knowledge management and innovation management can enhance the development of new technologies and techniques for farmers and producers, leading to improved productivity and sustainability. Entrepreneurship can contribute capital for sustainable agriculture investment. The study's findings have implications for policymakers, farmers, and producers in Thailand's organic agriculture sector. The findings can inform policymakers in developing policies to support supply chain management, knowledge management, innovation management, and entrepreneurship in the agriculture industry. Farmers and producers can utilise the results to enhance their practices, adopt new technologies, and improve productivity and sustainability.

Suggestions from the Research Results

Government organisations should implement strategies to support and enhance the operations of organic agricultural businesses, ensuring their stability and success. Develop policies and regulatory frameworks to encourage organic agricultural practices, including subsidies for organic certification, tax incentives for organic farmers, and funding for research and development in organic farming techniques. Implement support programmes to facilitate market access for organic agricultural products, including initiatives to strengthen distribution channels, establish an organic product certification standard, and promote consumer awareness of the benefits of organic farming. The study guides policymakers in developing policies to enhance knowledge management and supply chain management through effective entrepreneurial mindsets.

Organic farming entrepreneurs should prioritise enhancing the quality of organic agriculture and meeting the evolving demands of customers over time. Prioritising health-conscious consumers, who are likely to be the main customer group, can be achieved through social media distribution channels. Implement continuous training programmes for organic farming entrepreneurs to enhance their knowledge and skills in sustainable farming practices, innovative marketing techniques, and supply chain management strategies relevant to the organic agriculture industry. Promoting collaborations between organic farming entrepreneurs and research institutions or agricultural experts to utilise scientific knowledge and technological advancements for enhancing crop yields, improving product quality, and implementing sustainable farming practices.

Recommendations for Future Research

The aim is to enhance supply chain management, knowledge management, innovation management, and entrepreneurship in the sector by utilising case studies and pilot programmes. Design training programmes to enhance farmers' and producers' skills in supply chain management, knowledge management, innovation management, and entrepreneurship, aiming to improve sustainability and productivity. This study examines the influence of certification and labelling on consumer behaviour and market demand for organic products in Thailand. Facilitate collaborations and knowledge exchange among stakeholders in the organic agriculture industry to enhance supply chain management and promote innovation. This study aims to examine the social, economic, and environmental advantages of organic agriculture on local communities and the environment. The findings will be used to inform policies and programmes for sustainable development.

Conclusion

The analysis of the model based on the research hypotheses yielded the following key findings: 1. Entrepreneurship has a direct impact on knowledge management (H1), highlighting the importance of identifying essential knowledge for an organization's success. The key elements of knowledge management include searching for, creating, collecting, and utilizing knowledge. These elements are essential for entrepreneurs to effectively manage knowledge, support

competitive strategies, and facilitate personnel development. 2. Entrepreneurship has a direct impact on innovation management (H2) because entrepreneurs are crucial in developing new products to improve business success. Product innovation management entails developing and launching new products to fulfil customer demands, leveraging technology to enhance value, and distinguishing from rivals. 3. The influence of entrepreneurship on Supply Chain Management (H3) emphasises the importance of effective marketing strategies and efficient logistics management in a competitive business environment. The utilisation of information technology and innovation can provide businesses with advantages in optimising both products and processes. 4. Innovation Management (H4) has a direct impact on Knowledge Management, highlighting the significance of promoting innovative management practices to improve organisational efficiency and effectively manage business risks. 5. Innovation Management has a significant impact on Supply Chain Management (H5). By strategically implementing new methods and innovations in supply chain practices, the transfer of raw materials, goods, and services within the supply chain can be optimised. This optimisation ensures cost efficiency and timely delivery.

References

Abdulmuhsin, A. A., Abdullah, H. A., & Basheer, M. F. (2021). How workplace bullying influences knowledge management processes: a developing country perspective. *International Journal of Business and Systems Research, 15*(3), 371-403. doi: https://doi.org/10.1504/IJBSR.2021.114959

Adnani, L., Jusuf, E., Alamsyah, K., & Jamaludin, M. (2023). The role of innovation and information sharing in supply chain management and business performance of halal products in tourism destinations. *Uncertain Supply Chain Management, 11*(1), 195-202. doi: http://dx.doi.org/10.5267/j.uscm.2022.10.007

Ahmed, N., Thompson, S., & Turchini, G. M. (2020). Organic aquaculture productivity, environmental sustainability, and food security: insights from organic agriculture. *Food Security, 12*(6), 1253-1267. doi: https://doi.org/10.1007/s12571-020-01090-3

Alsafadi, Y., Aljawarneh, N., Çağlar, D., Bayram, P., & Zoubi, K. (2020). The mediating impact of entrepreneurs among administrative entrepreneurship, imitative entrepreneurship and acquisitive entrepreneurship on creativity. *Management Science Letters, 10*(15), 3571-3576. doi: http://dx.doi.org/10.5267/j.msl.2020.6.037

Anderberg, S. (2020). The contribution of organic agriculture to poverty reduction. *Vulnerability of agricultural production networks and global food value chains due to natural disasters. Jakarta, Indonesia: Economic Research Institute for ASEAN and East Asia, 6*, 42-72. Retrieved from https://www.eria.org/uploads/media/Books/2020-Jan/06_Vulnerability-of-Agricultural-Production-Networks_Chapter-3.pdf

Arunrat, N., Sereenonchai, S., Chaowiwat, W., Wang, C., & Hatano, R. (2022). Carbon, nitrogen and water footprints of organic rice and conventional rice production over 4 years of cultivation: A case study in the Lower North of Thailand. *Agronomy, 12*(2), 380. doi: https://doi.org/10.3390/agronomy12020380

Astuty, W., Pasaribu, F., Rahayu, S., & Habibie, A. (2021). The influence of environmental uncertainty, organizational structure and distribution network competence on the quality of supply chain management information systems. *Uncertain Supply Chain Management, 9*(1), 116-124. doi: http://dx.doi.org/10.5267/j.uscm.2020.11.003

Condor, R. (2020). Entrepreneurship in agriculture: a literature review. *International Journal of Entrepreneurship and Small Business, 40*(4), 516-562. doi: https://doi.org/10.1504/IJESB.2020.109013

Deka, N., & Goswami, K. (2020). Organic cultivation and farm entrepreneurship: a case of small tea growers in rural Assam, India. *Agroecology and sustainable food systems, 44*(4), 446-466. doi: https://doi.org/10.1080/21683565.2019.1646373

Didonet, S., & Diaz-Villavicencio, G. (2020). Innovation management in market-oriented SMEs: learning and internal arrangements for innovation. *International Journal of Organizational Analysis, 28*(5), 985-1003. doi: https://doi.org/10.1108/IJOA-09-2019-1885

Ferdous, Z., Zulfiqar, F., Datta, A., Hasan, A. K., & Sarker, A. (2021). Potential and challenges of organic agriculture in Bangladesh: a review. *Journal of Crop Improvement, 35*(3), 403-426. doi: https://doi.org/10.1080/15427528.2020.1824951

Gamage, A., Gangahagedara, R., Gamage, J., Jayasinghe, N., Kodikara, N., Suraweera, P., et al. (2023). Role of organic farming for achieving sustainability in agriculture. *Farming System, 1*(1), 100005. doi: https://doi.org/10.1016/j.farsys.2023.100005

Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., & Thiele, K. O. (2017). Mirror, mirror on the wall: a comparative evaluation of composite-based structural equation modeling methods. *Journal of the academy of marketing science, 45*, 616-632. doi: https://doi.org/10.1007/s11747-017-0517-x

Hair Jr, J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of business research, 109*, 101-110. doi: https://doi.org/10.1016/j.jbusres.2019.11.069

Janker, J., Vesala, H. T., & Vesala, K. M. (2021). Exploring the link between farmers' entrepreneurial identities and work wellbeing. *Journal of Rural Studies, 83*, 117-126. doi: https://doi.org/10.1016/j.jrurstud.2021.02.014

Kangogo, D., Dentoni, D., & Bijman, J. (2021). Adoption of climate-smart agriculture among smallholder farmers: Does farmer entrepreneurship matter? *Land Use Policy, 109*, 105666. doi: https://doi.org/10.1016/j.landusepol.2021.105666

Ketchen Jr, D. J., & Craighead, C. W. (2020). Research at the intersection of entrepreneurship, supply chain management, and strategic management: Opportunities highlighted by COVID-19. *Journal*

of Management, *46*(8), 1330-1341. doi: https://doi.org/10.1177/0149206320945028

Li, C., Ashraf, S. F., Shahzad, F., Bashir, I., Murad, M., Syed, N., et al. (2020). Influence of knowledge management practices on entrepreneurial and organizational performance: a mediated-moderation model. *Frontiers in Psychology*, *11*, 577106. doi: https://doi.org/10.3389/fpsyg.2020.577106

Liao, X., Nguyen, T. P. L., & Sasaki, N. (2022). Use of the knowledge, attitude, and practice (KAP) model to examine sustainable agriculture in Thailand. *Regional Sustainability*, *3*(1), 41-52. doi: https://doi.org/10.1016/j.regsus.2022.03.005

Lu, H.-l., Chang, Y.-H., & Wu, B.-Y. (2020). The compare organic farm and conventional farm to improve sustainable agriculture, ecosystems, and environment. *Organic Agriculture*, *10*(4), 409-418. doi: https://doi.org/10.1007/s13165-020-00278-3

Manyise, T., & Dentoni, D. (2021). Value chain partnerships and farmer entrepreneurship as balancing ecosystem services: Implications for agri-food systems resilience. *Ecosystem Services*, *49*, 101279. doi: https://doi.org/10.1016/j.ecoser.2021.101279

Mokbel Al Koliby, I. S., Abdullah, H. H., & Mohd Suki, N. (2024). Linking entrepreneurial competencies, innovation and sustainable performance of manufacturing SMEs. *Asia-Pacific Journal of Business Administration*, *16*(1), 21-40. doi: https://doi.org/10.1108/APJBA-09-2021-0480

Mungkung, R., Sitthikitpanya, S., Chaichana, R., Bamrungwong, K., Santitaweeroek, Y., Jakrawatana, N., et al. (2022). Measuring sustainability performance of rice cultivation in Thailand using Sustainable Rice Platform indicators. *International Journal of Agricultural Sustainability*, *20*(7), 1278-1293. doi: https://doi.org/10.1080/14735903.2022.2105008

Panyasing, S., Yongvanit, S., Purnomo, E. P., Tham, I., & Aim, S. (2022). The government policy on the organic rice farming groups embracing sustainable agricultural production: Evidence in Thailand. *AgBioForum*, *24*(1), 83-94. Retrieved from http://agbioforum.org/menuscript/index.php/agb/article/view/88

Rosati, A., Borek, R., & Canali, S. (2021). Agroforestry and organic agriculture. *Agroforestry Systems*, *95*, 805-821. doi: https://doi.org/10.1007/s10457-020-00559-6

Salavisa, I., Ferreiro, M. F., & Bizarro, S. (2021). The transition of the agro-food system: lessons from organic farming in the Lisbon Metropolitan Area. *Sustainability*, *13*(17), 9495. doi: https://doi.org/10.3390/su13179495

Sapbamrer, R., & Thammachai, A. (2021). A systematic review of factors influencing farmers' adoption of organic farming. *Sustainability*, *13*(7), 3842. doi: https://doi.org/10.3390/su13073842

Suwanmaneepong, S., Kerdsriserm, C., Lepcha, N., Cavite, H. J., & Llones, C. A. (2020). Cost and return analysis of organic and conventional rice production in Chachoengsao Province, Thailand. *Organic Agriculture*, *10*, 369-378. doi: https://doi.org/10.1007/s13165-020-00280-9

Tindiwensi, C. K., Munene, J. C., Sserwanga, A., Abaho, E., & Namatovu-Dawa, R. (2020). Farm management skills, entrepreneurial bricolage and market orientation. *Journal of Agribusiness in Developing and Emerging Economies*, *10*(5), 717-730. doi: https://doi.org/10.1108/JADEE-08-2019-0111

Umar, M. F., Nugroho, I., Darmadji, D., & Suwarta, S. (2020). The study of entrepreneurship and innovation adoption by farmer in improving lowland rice farming. *Journal of Socioeconomics and Development*, *3*(1), 16-28. doi: https://dx.doi.org/10.31328/jsed.v3i1.1290

Uthai, S., & Boonrahong, C. (2023). The Role of Civil Society Networks in Promoting Organic Food as A Path to Food Security in Chiang Mai, Thailand. *Journal of Population & Social Studies*, *31*, 417–434. doi: http://doi.org/10.25133/JPSSv312023.024

Willer, H., Trávníček, J., & Schlatter, S. (2024). The world of organic agriculture. *Statistics and Emerging Trends*, *5*, 1-356. Retrieved from https://www.fibl.org/fileadmin/documents/shop/1747-organic-world-2024_light.pdf

Yao, Y., Cao, S., Gong, X., Singh, B. P., Fang, Y., Ge, T., et al. (2022). Intensive management of a bamboo forest significantly enhanced soil nutrient concentrations but decreased soil microbial biomass and enzyme activity: a long-term chronosequence study. *Journal of Soils and Sediments*, *22*(10), 2640-2653. doi: https://doi.org/10.1007/s11368-022-03253-5

Zhou, H., Uhlaner, L. M., & Jungst, M. (2023). Knowledge management practices and innovation: A deliberate innovation management model for SMEs. *Journal of Small Business Management*, *61*(4), 2126-2159. doi: https://doi.org/10.1080/00472778.2021.1888383

Żywiołek, J., Rosak-Szyrocka, J., & Mrowiec, M. (2021). Knowledge management in households about energy saving as part of the awareness of sustainable development. *Energies*, *14*(24), 8207. doi: https://doi.org/10.3390/en14248207