

## **One Tambon One Product - Thai Strategy To Develop The Community Business Using Local Wisdom And Resources And E-Commerce Adaptation Challenges**

**Nichanant Sermsri<sup>1</sup>, Witthaya Mekhum<sup>2</sup>, Alyssa Mekkhum<sup>3</sup>**

Suan Sunandha Rajabhat University, Thailand.

<sup>1</sup>[nichanant.se@ssru.ac.th](mailto:nichanant.se@ssru.ac.th), <sup>2</sup>[witthaya.me@ssru.ac.th](mailto:witthaya.me@ssru.ac.th), <sup>3</sup>[alyssa.me@ssru.ac.th](mailto:alyssa.me@ssru.ac.th)

### **Abstract**

One Tambon One product (OTOP) program has significantly emerged in Thailand, as the government of Thailand shows much interest in implementing and initiating the program. This research paper is focused on the development of OTOP in Thailand's e-commerce market and based on the resources, local knowledge and experience. The impact of OTOP community business operations on the e-commerce market is also integral part of this research studies. OTOP program is adopted by other nations as well such as Japan for many different goals with variant approaches. However, in Thailand the OTOP program is implemented in order to alleviate the poverty. The Thai government's policy framework to expand the e-commerce market and creating opportunities is focused in order to support rural community in the country. The only available platform for the rural seller were web portals for selling the local community products, therefore the Thai government is more in developing the official website of rural areas based on the approach of One Tambon One Product i.e. same as in Japan's One village One Product program. The analysis of the data produced and presented by many researchers is part of the research paper to analyze the impact of OTOP community business operations and its impact on the e-commerce market based on the resources and knowledge of e-commerce market.

**Keywords:** One product, one district, Thailand, E-commerce, Floating Markets.

### **Introduction**

Thailand has shown the growth in GDP due to industrialization and modernization contributing in their economy; however, it also brings undesired results in form of increased gap among rural and urban communities. The solution to cover and decrease this gap between poor and rich was proposed by the Thai government by giving more attention to rural areas. Thus Thai government adopted the OTOP approach which is derived version of OVOP in Japan(Noble, 2019). The

OTOP approach served as the solution towards imbalanced economy in different sectors and geographical regions. This policy of Thai government becomes the fundamental solution for the sustainable economic development. The development of OTOP enterprises encouraged communities to manufacture standardized quality products and helped them in market the products afar from their home towns. Thai government also seen this as the opportunity to strengthen the community and encourage local harmony(Huttasin, 2008). As the enterprises became mature, they improved the quality of their products to meet the national and international standards. Local resources and knowledge about the product and its manufacturing served as the key theme of OTOP and also uniqueness in the market manufacturing. OTOP products include food and drinks, printed and embroidered cloths, embellishment, jewel ornaments, traditional spices and herbs. It is also observed by Thai government that trading OTOP products also brings development in the communities and sustains the economic situation and also skills and local knowledge is trickled down in the generations(Anh, 2013).

One Tambon One Product strategy gives a boost to economy of the rural areas and also increased the GDP of Thailand as a whole. The devastating challenge of poverty alleviation was addressed along with the filling out gap between urban and rural regions. Despite all these positives of OTOP strategy, as the market emerges it also brings some challenges and managerial issues such as marketing platforms, quality maintenance and internal management of the enterprises. Uniform standards of the products became the major concern for Thai government, for which they setup a system for quality standards based on the certifications(Wongkhamdi, Cooharajanone, & Khlaisang, 2017). These standards and government organizations involvement and governance of the product manufacturing and production, gives consumer the sense of durability, safety and usability.

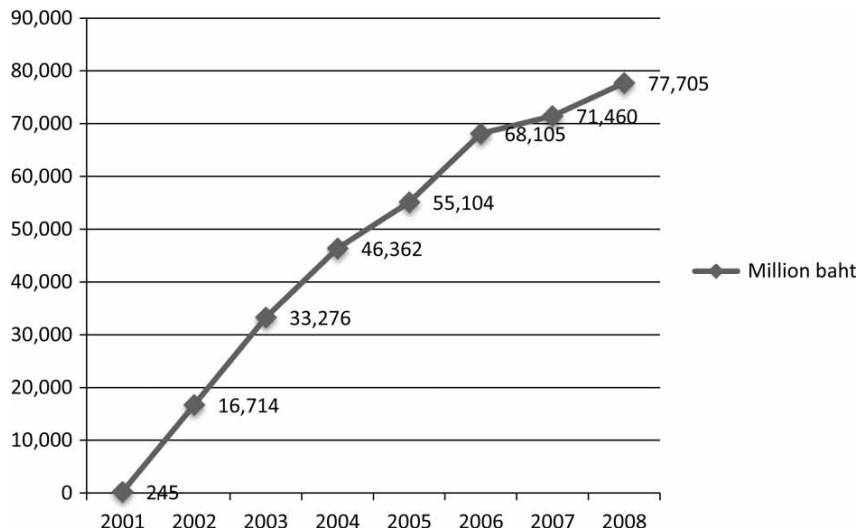
This paper is focused on the One Tambon One Product business operations in the communities based on the resources and local knowledge to the e-commerce market. E-commerce is well known and established distribution channel for doing business regardless of business location and physical infrastructure. Use of internet technology provides access to the global market and increase the customer engagement. The mature system of online transaction and fund transfers from customer-to-business, business-to-business and business-to-government is already in place and provides greater ease to do the business and accept payments globally. Among many other projects the Thai government is also much involved in the OTOP program and this program is widely encouraged and developed in last two decades. The aim of the project was to promote the local products to sell them in the global market as well as in the national market. This paper aims to reveal that how Thailand's OTOP policy is supported by the e-commerce and new distribution channels to access the global market. This paper will further discuss that how community-based business operations are helpful in making OTOP a successful move. Utilization of the local knowledge and resources is being observed as an enhancer of community business operations. This also supports the national and local economy through branding of local products and building human resources.

## **Literature Review:**

### **History of OTOP**

In the financial crises of 1997, the Asian countries redirected their economies and were struggling to sustain their economic situation, for which many Asian countries started strengthen

their local product manufacturing and other industries. The strengthening of SMEs was achieved by different countries in various ways, such as Japan implemented OVOP (one village one product) strategy in 2001 and the OTOP derived version of OVOP was adopted by the Thailand. These both approaches had same objectives but different line of action. Unlike Japan, Thailand managed to implement OTOP top-down driven scheme (Sangkhasuk, Rianthong, & Arunrat, 2018). The OTOP program flew into a rage right in its inception phase and adopted extensively by the rural communities in Thailand. It started growing from a merely over \$US7 million in 2001 to little over \$US2.2 billion by 2008 as shown in the figure.



Source: [www.core.ac.uk](http://www.core.ac.uk)

This Thai model was greatly appreciated by the world in 20-nation Asia Pacific Economic Cooperation (APEC) Ministerial SME Meeting held in Chiang Mai, Thailand. In the report it was proclaimed that One Tambon One Product was a good model to support rural community for entrepreneurial development and its contribution to the national economy (Zafar, Shahbaz, Hou, & Sinha, 2019). The Japanese and Thai models were later adopted by China, South Africa and Philippines.

Earlier, the champion product for each Tambon was selected by the Thai government department of rural community development. This department was also working as the coordinating office looking after the product manufacturing at all administrative levels, emphasizing on the product's global acceptance, quality of the product, satisfying the production standards and quantity produces etc.

The basic idea of the OTOP is focused to concentrate on the single distinct product for every district. In Thailand the OTOP is flourishing more in the northern side and more than 40% of enterprises are focusing on food and handicraft sector (Pholphirul, Charoenrat, Kwanyou, Rukumnuaykit, & Srijamdee, 2020). A research carried out in 2015 indicated that approximately 70 thousand new enterprises are registered in the country and ministry of interior affairs of Thailand said that more than 10 thousand of the enterprises are 5 stars rated. This rating indicated the eligibility to access the international market and export the product. The total

volume of the Thailand's OTOP based enterprises were more than \$US2.8 billion in 2015(Muslim, Sinaga, Bainus, & Darmawan, 2020).

Many community-based enterprises are aiming to get the international market access from their comfort zone and there is only one easiest way is to brand their product under government regulated OTOP scheme. The OTOP branded products are more like to access the international foreign market and it is growing more than 2% per year, meanwhile it also complements the large domestic market which is currently growing at the average of 13 % per year.

### **Challenges of OTOP:**

Thai Government implements the OTOP strategy in order to address the poverty in the community areas of the country. In rural areas living style of the people are different along with their skill set. The skill set in the rural areas is not same as the skill set in the urban areas, however this skill set also needs to be improved in order to contribute not only in the national economy but for regional development also. The challenge of poverty alleviation is coupled with the challenge in improving the unskilled labor and their access to vocational training institutes(Buranakarn, 2017).

In the early stages of OTOP people linked to agriculture and handicrafts have experienced numerous challenges in accessing the international market. These challenges include the customer confidence, trust on the product, branding of the product and identification(Phetcharat, 2017; Sitabutr & Pimdee, 2017). Moreover, The world Bank in 2010 indicated that for export purpose the capacity of the product production is a major challenge for developing nations, which is a driving force for quality, standard of service and scale of production(Carroll, 2010).

The OTOP strategy was introduced for not only promoting the rural products of Thailand's sub-districts but also for selling those products in the worldwide market. The products which gain access to the international market are the champion products of that particular district. Thailand's traditional products which are trademark of the local knowledge, wisdom and their cultural heritage are very valuable products. The owners of these products are rural Thai people and they produce these products as a part time work. This was a challenge in OTOP scheme and has to be addressed by the Thai government. The challenge of making part time workers a fully professional business and make them aware of conventional and electronic commerce market was a challenging task for the government. Promoting the product of OTOP scheme using advanced e-commerce technology was a must but also challenging.

### **OTOP and E-commerce**

The best tool for selling the products in the international and national market for the sellers is e-commerce. The e-business market today is very influential on the economy of the country. Selling products on the e-commerce market is beneficial but also have its own implications. The product owners have to acquire the proper online selling skills in order to increase their earning by listing their products in the biggest market. E-market place is a best marketing solution for the owners of OTOP products in order to compete in the current situation of globalized and digitized market(Rotchanakitumnai, 2019). The e-commerce market helps selling and buying without having face to face meeting rather products and services are provided over the internet. The e-commerce market unlike physical markets is open throughout the year and for 24 hours, so the

time difference constraint is no more an obstacle(Chueamuangphan, Kashyap, & Visvanathan, 2020).

The exports of the country promote by the ministry of commerce through OTOP. The champion products of the districts which are 4, 5 stars rated are selected for the export promotions and other facilities that includes international study tours of trade and subsidiary. However, the product quantity produced is quite small due to which the OTOP exports remain under 1% of country's total exports. The ministry of commerce is more concerned to address the production quantity issue because without protracting production of the products, it's nearly impossible to take part in the export trade. Due to the recent outbreak of corona virus worldwide, the tourism is the most hit sector which after all the efforts could not revive even to its half. DIPs director general, NattapolRansitpol said that the government is more anxious about OTOP business that fully depends on the tourism activity to generate revenue. However, even the lockdowns have been eased but the tourism is still on hold, so the government is decided to help community businesses to sell their OTOP products online.

It is mentioned by the DIP that extensive training courses and immediate advice is provided to the OTOP entrepreneurs, like how e-commerce platforms can be used to sell the OTOP products online, how information technology can be helpful in order to fulfill their e-commerce business requirements and products identity can be created and how international standards of quantity and quality can be met by reducing production cost(Laoethakul & Boulton, 2007).It is also mentioned by the DIP that around 1000 businesses will be selected to participate in the OTOP export project which will generate approximately Bt500 million. It is also mentioned that this under the umbrella of OTOP nationwide businesses will be included to boost the Thai economy (Sukrat, 2015). The total e-commerce market size of Thailand is worth more that US\$ 76 billion, which shows significant growth in last couple of years (Vanichvisuttikul & Jungthirapanich, 2004a). The small and medium enterprises can boost the economy of Thailand if they are internationalizing as still above 80% of Thailand's e-commerce market growth depends upon the domestic trade. This leaves a gap for the economy of the country to internationalize their SMEs in order to contribute in the e-commerce revenue. One tambonOne product act as front runner for the solution of this challenge.

Moreover, the Thai government's policy of industry 4.0 whose main goal is the digitization allow it to compete better in the global market, and Small and Medium enterprises are at the vanguard of this revolution (Jones & Pimdee, 2017). This study is focused on the importance of e-commerce for the progress of OTOP in the community businesses in Thailand which is based on local resources and local knowledge. The local knowledge of the Thai rural people about the e-commerce is a challenged issue but their knowledge about their product is unique to them. Thus, their reach to the international market is compromised and Ministry of commerce of Thai government is supporting them by introducing vocational trainings and hands-on experience. So, this study is focused to determine the awareness of the e-commerce technology among the OTOP product owners. For this purpose, different supporting researches are presented which shows that OTOP products without e-commerce does not contribute much to the country's economy but when OTOP products are sell online then the OTOP product can reach international market and hence generate more revenue for their country(Akasarakul, Cooharajanane, & Lipikom, 2017; Claymone, 2010; Sukrat, 2015). However, researchers take samples from the champion OTOP products whose owners can produce valuable and high quantity to distribute the product globally.

Researchers, in their studies measured the e-commerce awareness by measuring the percentage of their opinion in the improvement of e-commerce ranging from strongly agrees to no opinion (Marung, 2016; Vanichvisuttikul; Vanichvisuttikul & Jungthirapanich, 2004b; Wongkhamdi et al., 2017). The results of several studies shows that beside governments planning to support and educate the community businesses along with their community business operations for the use of internet technology to assess the international market for their products, even then the people still have problems on the existing OTOP project production strategy and operation of business (Jaroenwanit & Deeboonmee; Wongkhamdi, Cooharajanone, & Khlaisang, 2020). The production quantity to meet the international standard is a problem but the distribution channel is the major problem through which the sellers can expand their sale to the international market. Moreover, the local knowledge and resources are to be regularized to prevent the piracy of the product. However, the e-commerce knowledge and internet resources are also key attributes of the OTOP and the product owners who have knowledge and resources of the internet technology and e-commerce performed comparatively better. However, this digital divide will no longer be a hindrance as the next generation will experience better internet technology and infrastructure (Cooharajanone, Akasarakul, Wongkhamdi, Pruetthiwongwanich, & Atchariyachanvanich, 2017; Wang, Miao, Phelps, & Zhang, 2021).

The foremost challenge on the knowledge of internet and e-commerce technology of the product owners is the lack of knowledge and scarce resources which is the result of lack of basic technological infrastructure in the rural areas of the Thailand. Many research studies establish that how could rural people can learn the knowledge regarding development of e-commerce and also how can they distribute their product for the competition in worldwide market. To address this problem, the Thai government commences the “Internet Tambon Project” which will help the product owners to acquire knowledge about e-commerce.

### **OTOP and Community based business operations**

The community business owners engage their households in the business operations which makes them successful OTOP entrepreneurs. The community households perform different business operations which are mostly depends upon their local wisdom and local resources such as raw material collection, material processing, and crafting materials to finalized products. They are also involved in packaging and distributing the completed goods to the market. The profits are shared with all the stakeholders and members in order to raise the income of the whole community. For instance, if a business is producing the reed weaving products, the reeds are gathered and sold to the business by locals. The same pattern is observed for other industries such as baked banana snacks and processed foods etc. The OTOP enterprise is not only a part time income source but for some households it is primary source of income.

### **Local knowledge and Resources in OTOP**

The OTOP enterprises are based on the community knowledge, the people of the rural areas are skilled in unique industries, such as pottery, knitting, weaving and handicrafts and agriculture. These skills are though traditional but can be innovate if there is proper supervision and support from the government. Today the knowledge-based social and economic world, the rural people are capable of utilizing knowledge and local resources to create the innovative products. For the wide-ranging organizational enhancement, the knowledge and resource management are the leading learning challenge. The “one Tambon One Product” project was implemented by the

government to solve economic and poverty challenges at the sub-district level which emphasized the expansion and encouragement of community business for autonomous and improved value of living.

The OTOP project greatly innovates the local wisdom and resources in order to produce the innovative and modified products. In this project every champion product of the district undergoes a refinement process until it is made better and can generate profits, jobs, income for the community and strengthen it. To achieve this, the resources are enriched side by side the local knowledge and the creativity of community in product creation which fulfills the notion and attitude of business operations to reinforce the potential of community in creating its own unique product. However, it's been two decades the Thai government is running this project; it has become the interesting topic for research in recent years. However, it still has very limited research available, knowledge and resource management is still has not accepted by the researchers. However, many researchers show interest in the limitations, criticism and operational implications of OTOP project.

A study proposed by Tuamsuk, Phabu, and Vongprasert (2013) discusses the knowledge management and resource management in community business operation of Thailand region indicates that new and unique product development significantly depends upon the knowledge management and resource management. The innovative products are led by the new project development which added value to the products. However, in comparatively old studies about knowledge and resource management by Mannington (1999) stated that knowledge management can act as a competitive advantage when implemented to the company. For this purpose, he discusses the case of small tourism company and inferred the expected positive results and shows that the benefit of knowledge management is sustainable. In the similar manner, Handzic (2006) in his studies recommended that in small businesses the knowledge management depends on the organization's systematic management. The organizational development can be achieved by the enhancing the awareness of knowledge management that can be attained by setting the targeted objectives.

## **Economic Impact of OTOP e-commerce on Thailand's Rural Region**

### **Cross-Border E-commerce**

In order to increase the access of rural community businesses to sell their product in foreign market Thai government improves the infrastructure of internet in rural areas of Thailand. This improvement enhances the Thailand's economy and makes it the second largest e-commerce market in the southeast Asia and it is anticipated that it will grow around 22% annually by 2022. The Thai government for supporting the OTOP program initiated two more projects that are, "Digital Thailand" and "Tambon Internet Project" that brings the waves of opportunities for community business to revolutionize and digitized their business operations and services. The impact of these projects was great especially on OTOP products and businesses which results in cross border market opportunities observed growth of 25% which is well above the growth through traditional and conventional retail markets. Cross border e-commerce for OTOP products is estimated to be above US\$1 trillion in 2022.

### **B2B E-commerce**

Internet and mobile development in all over Thailand generally and in rural areas specifically increases the B2B e-commerce. Electronic transaction Development Agency (ETDA) indicates that the sectors which are using ecommerce platforms in order to increase their productivity by 31% in food and services, 16% in manufacturing and 15% in retail and wholesale. Interestingly the demand for OTOP products is not only coming from domestic region but also from other countries.

### E-Commerce Services

There are several deriving forces in Thailand's e-commerce market such as increased use of smartphones and extreme competition among the operators. The e-commerce activity throughout Thailand stimulated because of the key payment service "PromptPay" which is government regulated payment service. It has also been observed that in last some years the courier services in Thailand started their own payment service and e-commerce platforms which proved to be very successful in domestic transaction and delivery services. This results in significant drop in delivery costs of the products.

### Achievement of OTOP project

OTOP program brings a remarkable boost in the economy of the Thailand and changed the lives of the rural people as their products were not only being sold in domestic market but also reached to the foreign market, which brings them not only foreign reserves but also global product identification. Various industries and sectors enjoyed the increase in demand from time to time in very short time and receive the global appreciation. The table 1 below shows the six categories of OTOP products.

Product Group	Coverage of Product Groups
Food	Rice, rosella, sweet leguminous, dried fruits, dried banana, fish meatballs, honey, fried carp, banana jam, dried fish, egg, various crispy snacks, etc.
Textile, Cloth and Fabric	Various fabrics/silk and batik, hand bags made of stingray skin, jewelry, etc
Beverages	Coffee, tea, milk, fruit juices, mineral water, and wine
Ornaments	Photo frame, bamboo basket, hand bags made of local materials, such as jute, pandan, etc
Handicrafts and Souvenirs	Artificial flower, paper and pineapple fiber, hand bags made of palm leaves, various carving crafts, various carving made of zinc/tin, copper, and other metal materials
Herbs and Medical crops	Various face and body care products, including beauty powder, oil, shampoo, etc

Source: [www.thaitambon.com](http://www.thaitambon.com)

There are thousands of products registered in OTOP program but products from these six categories are progressing in all aspects i.e. quality, type and quantity. These products are star-



rated products and are selected as champion products by the Thai government. The government only allows 5-star rated products to enter the global market and are highly recommended.

Surin and Si-Saket are the two north eastern region in Thailand. During last decade Si-Skaet province have an average GDP per capita was increasing with the rate of 13.4% annually, however its poverty rate not dropped that much i.e. 55.9% from 62.2%. In the mean time the poverty rate in Surin province was remarkable and fell down to 17.5% from 73.8% in the same span of time as Si-Saket while surin having less average growth rate of 10.7%. The drop of poverty rate is an indicator to predict the economic situation of the region, the poverty fall in Surin region is due to combined efforts of policy makers and civil society leaders guaranteed that deprived households and others could obtain benefit of the development breaded by numeral small scale industrious activities which in major includes OTOP. Such program is so structured that it make sure the participation of the low-income, less educated and people of rural areas. Our research suggests that, though these activities may not generate economic output same as measured by GDP, however, the income generated from such initiatives is wound up in the pockets of low-income households.

### **Conclusion and Future Challenges**

In this paper Thailand's One Tambon One Product project was analyzed in different aspects. Different research studies were included in order to investigate that how OTOP derived from Japanese OVOP model and implemented in rural areas of Thailand to revolutionize the business community operations. In this research paper it was also established that how OTOP access the domestic and international market and e-commerce market worldwide. The study examines the issues, challenges and their solutions to use the local knowledge and resources to brand the OROP products in the global market. This research paper suggests that over the time and with continuous help of the government agencies made this program a success and have undergoes the gradual process of transformation into a faction to support the progress of SMEs and rural households with unique skills. OTOP project boosts the rural industries which have been important in rural development as employers. Office of SMEs Promotions conducted a study after the few years of the program started and concluded that OTOP project includes 1.3 million employees and stakeholders with keeping housewives and the elderly as the main point of concern who are specifically benefited from the extra income. However, in the recent statistics the sales of the OTOP products are at THB76 billion per year and it is also mentioned that there are over 30 thousand OTOP products producers are presently working. ODI conducted small scale survey which shows that activities based on OTOP project accounts for 23 to 29% of the income of households in which one or more persons from the households participate in the OTOP program (ODI, 2020). Moreover, these investigations suggest that the greater part of the recipient is women of elderly age.

Moreover, as the star rating system discussed earlier, Thai government is also monitoring the quality and quantity of the product produced from OTOP affiliates, allows 3 star rated products promoted nationally and above promoted internationally. This way government makes sure that the only the best product should reach the international market and become the identity of the sub-district. The stars are awarded in product championship in which the different products from different Tambons are rated according to the international benchmark and criteria including stability and sustainability of production and quality. The champion products receive greater help

and support from the government in form of monetary benefits, loans, more marketing and capital acquisition to augment their likelihood of accomplishment and success.

However, currently products from only six categories are rated at 5 stars, the export value of these products is approximately THB10 billion. The way Thai government is supporting the rural region in terms of Capital, loan, infrastructure, knowledge and resource management there still is room for the OTOP products to grow more and contribute in national economy. It is also evident that many businesses and enterprises in the rural areas are facing issues such as illiteracy, unawareness of e-commerce and technology and lack formal business skill limits their ability to access formal financing chances. More over many producers are unaware of the intellectual property right law which limits them to sell online in the world-wide market, however making them aware of this law can produce more OTOP products and protection of products as well. Intellectual property rights and traditional knowledge are coupled with the additional blend of resources and business skills would make the OTOP project to become an even more adequate source of rural region development.

### **Way Forward**

More surveys and interviews can outline the future area of involvement in provisos of capability and responsiveness and strategy guideline and parameters. Mekong Institute implemented the training program on e-commerce development in rural areas. The purpose of this project on rural e-commerce is to enhance the capacity of the OROP product producers, rural cooperatives, community enterprises and industry associations. This training program also encompasses the e-commerce service providers, platform providers and government officials in order to carry out helpful procedures for the rural community businesses(Yess, 2015). The main purpose of the training program is to enhance the understanding of stakeholders about e-commerce basic concepts, inclinations, expansion and government policies of the intellectual property rights, ratings and requirements of international market. It also provides the detailed insight about business line of action, trademark, marketing and stratagem. The MI training program also enhances the digital literacy of rural people and makes them aware of e-commerce platform usage and merging of new knowledge to their local wisdom to make full use of e-commerce business.

Though, the capacity building activities with the above-mentioned objective are supportive in building the skill set and knowledge of the stakeholders, additional actions are required in shape of intercessions in policy and guidelines. Moreover, supplementary procedures for the substantial and digital infrastructure and support to bucolic e-commerce service providers are also required. Such as the government must provide the facilitating atmosphere by introducing strategies and guidelines which can endorse, encourage and widen the e-commerce in the rural region. Moreover, the government must guarantee the sufficient supply of digital, monetary and physical infrastructure and other enablers, along with promoting the e-commerce literacy and training of the rural population. Rural OTOP product producers and providers of e-commerce services needs other forms of support i.e. knowledge in creating business and financial strategies, marketing, packing and advertising their products, and acquaintance along with implementation of innovative product technologies. Government and government agencies can play the vital role in addressing these needs.

## References

- Akasarakul, K., Cooharajanane, N., & Lipikom, R. (2017). A study of factors influencing intention to purchase local community product on E-Commerce website: The case of One Tambon One Product (OTOP) in Thailand. Paper presented at the 2017 18th IEEE/ACIS International Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing (SNPD).
- Anh, N. T. (2013). One village one product (OVOP) in Japan to one tambon one product (OTOP) in Thailand: Lessons for grass root development in developing countries. *Journal of Social and Development Sciences*, 4(12), 529-537.
- Buranakarn, V. (2017). SUCCESS STORY OF ONE TAMBON ONE PRODUCT (OTOP) TO THAI INTERNATIONAL AIRLINE SINCE 2016. *Social Science Asia*, 3(3), 59-64.
- Carroll, T. (2010). *Delusions of development: The World Bank and the post-Washington consensus in Southeast Asia*: Springer.
- Chueamuangphan, K., Kashyap, P., & Visvanathan, C. (2020). Packaging waste from E-commerce: consumers' awareness and concern Sustainable Waste Management: Policies and Case Studies (pp. 27-41): Springer.
- Claymone, Y. (2010). A Perspective on Culture and Technology Transfer of OTO in Thailand: A Lesson from Japan. *Thai Journal of East Asian Studies*, 15(1), 111-118.
- Cooharajanane, N., Akasarakul, K., Wongkhamdi, T., Pruetthiwongwanich, P., & Atcharyachanvanich, K. (2017). The study of the local community products (OTOP) website characteristics toward buyer decision using eye tracking. Paper presented at the 2017 12th International Conference for Internet Technology and Secured Transactions (ICITST).
- Huttasin, N. (2008). Perceived social impacts of tourism by residents in the OTO in tourism village, Thailand. *Asia Pacific Journal of Tourism Research*, 13(2), 175-191.
- Jaroenwanit, P., & Deeboonmee, S. Development of e-Commerce Competencies Among Community Enterprise and SMEs in the Northeastern Region of Thailand.
- Jones, C., & Pimdee, P. (2017). Innovative ideas: Thailand 4.0 and the fourth industrial revolution. *Asian International Journal of Social Sciences*, 17(1), 4-35.
- Laosethakul, K., & Boulton, W. (2007). Critical Success Factors for E-commerce in Thailand: Cultural and Infrastructural Influences. *The Electronic Journal of Information Systems in Developing Countries*, 30(1), 1-22.
- Marung, U. (2016). Improving the performance of the OTO online marketing. Paper presented at the 2016 International Computer Science and Engineering Conference (ICSEC).
- Muslim, A. R., Sinaga, O., Bainus, A., & Darmawan, W. B. (2020). Implementation of Rural Development Policy in Thailand through the One Tambon One Product (OTOP) Movement. *Systematic Reviews in Pharmacy*, 11(1).
- Noble, V. (2019). Mobilities of the One-Product policy from Japan to Thailand: a critical policy study of OVOP and OTO. *Territory, Politics, Governance*, 7(4), 455-473.
- Phetcharat, C. (2017). Thai SMEs need to grow beyond Kingdom's borders. *Bangkok Post*.
- Pholphirul, P., Charoenrat, T., Kwanyou, A., Rukumnuaykit, P., & Srijamdee, K. (2020). Measuring Smiling Curves in Community Enterprises: Evidence from the One Tambon One Product Entrepreneurship Programme in Border Thailand. *Global Business Review*, 0972150920967523.

- Rotchanakitumnuai, S. (2019). Measuring e-readiness of Thailand in ASEAN: Macro and micro e-commerce perspectives Developing the Digital Economy in ASEAN (pp. 217-231): Routledge.
- Sangkhasuk, R., Rianthong, S., & Arunrat, K. (2018). Automation Managed Inventory System (AMI) Creation for OTOP Distribution Center. Paper presented at the Proceedings of the 2nd International Conference on Information System and Data Mining.
- Sitabutr, V., & Pimdee, P. (2017). Thai entrepreneur and community-based enterprises' OTOP branded handicraft export performance: A SEM analysis. *SAGE Open*, 7(1), 2158244016684911.
- Sukrat, S. (2015). E-commerce Business Directions of OTOP. *University of the Thai Chamber of Commerce Journal Humanities and Social Sciences*, 35(1), 50-64.
- Tuamsuk, K., Phabu, T., & Vongprasert, C. (2013). Knowledge management model of community business: Thai OTOP Champions. *Journal of Knowledge management*.
- Vanichvisuttikul, S. Transaction and Information Management Model for the E-Commerce of Highly Valuable Traditional Products in Thailand: A Conceptual Framework.
- Vanichvisuttikul, S., & Jungthirapanich, C. (2004a). The assessment of E-commerce awareness on highly valuable traditional products in Thailand. Paper presented at the IEEE International Conference on e-Technology, e-Commerce and e-Service, 2004. *EEE'04*. 2004.
- Vanichvisuttikul, S., & Jungthirapanich, C. (2004b). A model of e-commerce for the highly valuable traditional products in Thailand. Paper presented at the Proceedings of the IADIS International Conference WWW/INTERNET 2004: Madrid, Spain, October 6-9, 2004.
- Wang, C. C., Miao, J. T., Phelps, N. A., & Zhang, J. (2021). E-commerce and the transformation of the rural: The Taobao village phenomenon in Zhejiang Province, China. *Journal of Rural Studies*, 81, 159-169.
- Wongkhamdi, T., Cooharajanone, N., & Khlaisang, J. (2017). The study of mobile learning readiness in rural area: Case of North-Eastern of Thailand. Paper presented at the 2017 International Symposium on Computers in Education (SIIE).
- Wongkhamdi, T., Cooharajanone, N., & Khlaisang, J. (2020). E-Commerce Competence Assessment Mobile Application Development for SMEs in Thailand.
- Yess, T. (2015). A Small Sea: Evaluating the Implementation of Village-scale Ecotourism in Thale Noi, Thailand and the Association of Southeast Asian Nations (ASEAN). University of Cincinnati.
- Zafar, M. W., Shahbaz, M., Hou, F., & Sinha, A. (2019). From nonrenewable to renewable energy and its impact on economic growth: the role of research & development expenditures in Asia-Pacific Economic Cooperation countries. *Journal of Cleaner Production*, 212, 1166-1178.