ENDOGENOUS REGIONAL DEVELOPMENT: THE CASE OF ONE TAMBOL ONE PRODUCT IN THE LOWER NORTH OF THAILAND, LOCATION QUOTIENT ANALYSIS

Abstract:
In 1997, the financial economic crisis hit Thailand; non-government organizations and social movements criticized the negative impacts arising from capitalism, including liberalization and globalization. As a solution to the restructuring performance, the regional development concept proved to be an alternative development paradigm which prioritizes community development. There are two types of regional development approaches: exogenous and endogenous regional development. While the first one depends heavily on the promotion by governments utilizing outside resources with legal controls, technical innovation, etc., the second one relies highly on the initiative of the local people using local resources based on local biodiversity, culture, traditions, and skills. Accordingly, the Thai government established the One Tambon, One Product (OTOP) project in 2001. The program is based on the successful experience of the One Village One Product (OVOP) movement in Japan which is a remarkable example of the endogenous regional development concept. While OVOP mainly highlights some local areas for the depopulation problem, the OTOP project in Thailand draws attention to alleviating poverty. Currently, OVOP or OTOP is becoming one of the most popular terms in many developing countries, especially in Asia and Africa. There have been several studies of OTOP projects in other regions in Thailand. Much of the previous work on the OTOP projects has concentrated on the performance of each enterprise using descriptive statistical tools. The purpose of this study was to contribute to knowledge and debate on describing the structure of the OTOP production. The annual data for the fiscal period in 2015 from the Community Development Division and the location quotient method of analysis were employed. The mathematical technique indexes the region’s revenue of OTOP to a larger reference (national) scale. The study points out that the location quotient of food and textile production of the OTOP scheme in lower northern Thailand was greater than one. In contrast, the LQs of crafts, beverages and herbs were 0.77, 0.35 and 0.44, respectively. The results revealed that the first two products are concentrated in the lower northern region compared to a larger geographic area. Therefore, the economic and workforce development planners should provide the right support to make the regional economy unique.

Keywords:
Endogenous regional development, One Tambol One Product, One Village One Product, Location Quotient

JEL Classification: A10
1. Introduction

Thailand is located in the heart of the Southeast Asian mainland with an area of 513,115 square kilometers. The population is about 62 million in Thailand, of which around 6 million live in the capital city, Bangkok, and about 42.7 million reside in rural areas with another 39.2 million in urban areas. Since it is ranked as a developing country having lower middle income, Thailand has applied many kinds of policies to create wealth or alleviate poverty.

A general pattern of regional development in Thailand could be seen as the central national government utilizing resources to reach the national purposes. Thailand employed the first National Economics and Social Development Plan in (1961-1969). The first National Economic with the main objectives of the promotion infrastructure to attract foreign direct investment. In the second plan (1967-1971) numbers of Universities were set in some regional parts of Thailand to support the country development. The third NESD plan (1972-1976), the sign of the word “relative poorness” began.

During the fourth NESD plan (1977-1981) Thailand experienced the oil price shocked. Fortunately, during the fifth NESD plan (1982-1986), it was the first time that the natural gas and petroleum has been extracted from “Ao Thai” to refine and consume. Consequently, The Thai government launched the Eastern Seaboard project. Apart from that, the result of the “Plaza Accord” attracted Japan to invest in the South East Asia especially Thailand. From 1985 to 1988, the country enjoyed the Golden period. In the middle of the sixth NESD plan (1987-1991) Thailand faced the insufficient of infrastructures.

In 1992, the seventh NESD plan (1992-1996), the government have paid attention to the poor distribution income and the gap between saving and investment. Thailand fell into the serious financial crisis in the beginning of the eighth NESD plan (1997-2001). Thailand has applied many kinds of policies to create wealth or alleviate poverty. Tambon is a sub-district in the countryside. There are about 58,000 Tambons all over the country. One Tambon One Product (OTOP) has been one of the most important and attractive economic policies of the Thai government since the beginning of 2000. Its main objectives are 1) to create sustainable economic growth and 2) to raise the standard of living of rural areas. The projects have used abundant local resources including raw materials, labour and social capital (such as local wisdom) and other resources.

The ninth NESD plan (2002-2006), we focused mainly on developing the human resource to be the central of development. Since the tenth NESD plan (2007-2011), Thailand have promoted the “happiness society”.

2. The beginning of OTOP

Tambon is a sub-district in the countryside. There are about 58,000 Tambons all over the country. One Tambon One Product (OTOP) has been one of the most important and attractive economic policies of the Thai government since the beginning of 2000. Its main objectives are 1) to create sustainable economic growth and 2) to raise the
standard of living of rural areas. The projects have used abundant local resources including raw materials, labour and social capital (such as local wisdom) and other resources.

Thailand, like other developing countries, has more people in rural villages than in urban areas. Rural people are obviously poorer than urban ones. The main causes of their poverty are their lack of capability and/or lack of opportunity. However Thai villagers have rural wisdom of handicrafts as their heritage. The Queen of Thailand always recognizes this fact. Rural farmers can make fine silk clothes, woodwork, ceramics, bamboo work, and other things, but they don’t know how to create money out of their talent. Opportunity does not open to them. Handicraft skills become redundant intangible property difficult to create income. Such rural experiences and wisdom were surprisingly utilized when Prime Minister Thaksin Shinawat promoted handicrafts and other village products to be their added income. He named this project “One Tambon (sub-district) One Product” or OTOP for short. He allocated a substantial budget for selling OTOP in magnificent exhibition halls, but less than one-tenth of the villages have responded to the policies. Villagers who have been doing their OTOP carefully, diligently, and wisely have finally become successful and free from poverty.

OTOP is fading as the political situation is uncertain. Currently OTOP people are managing their own marketing while production has no problem. Strong OTOP businesses can go on without difficulty because they already have a large customer base and are well known so they are invited to present and sell their goods in many good locations. OTOP is still challenging poor rural people to use village experiences and wisdom for alleviating their poverty all over Thailand.

There are two types of regional development approach including exogenous and endogenous regional development approach. While the first one depend heavily on the promotion by governments utilizing outside resources with legal controls, technical innovation, etc, the second one rely highly on the initiative of the local people using local resources based on local biodiversity, culture, traditions, and skills (Katsuaki Takai Senior Researcher, UNCRD, na). The One Village One Product (OVOP) movement are the exceptional (remarkable) example of endogenous regional development concept.

One of the most important of the Thai government’s policies in 2002 was to initiate One Tambon One Product (OTOP) to bring about economic growth in local communities. In the hope that it would promote jobs with secure and continuous income for the grassroots people who are the majority group in the countryside. It was a crucial and urgent part of policies to resolve the poverty problem.

With reference to people centered development strategy, it is usual to point out that the government should offer the poor opportunities for competitiveness in a market. Thus, it can be seen that in 2001, the government provided these opportunities to the poor such as a village fund, a four-year debt moratorium as well as One Tambon One Product (OTOP). Theoretically such kinds of policies may bring about some chances of entrepreneurship and a sense of autonomy. The beginning of the OTOP program was also a tool of politically attractive credit.

The introduction of the One Tambon One Product (OTOP) policy was an effort to encourage the rural people in every Tambon, or sub district to join together and develop
a product that represents the local wisdom and culture of the community. Therefore, it contributes additional income to local people during their free time. There are 37,840 OTOP producers of which 25,404 or 67 percent form a group and 10,913 or 27% are individual producers and also 243 form in small and medium enterprises. OTOP producers are spread out across Thailand, mostly in the northeast. Most of OTOP entrepreneurs have a close relationship with their communities. For example, they employ social capital in productions such as labor, and raw material. The programme encourages village communities to use local wisdom to improve the economy. Then it selects some superior products from each Tambon to receive branding as a “Starred OTOP product.” To further the promotion of the product, the government also provided a local and international stage. OTOP commodities include handicrafts, cotton and silk garments, pottery, fashion accessory items, and foods. OTOP draws its inspiration from Japan’s successful, One Village One Product (OVOP) of Oita province. The notable principles of this policy are as follows:

1. To lead locally yet globally. It suggests that the products must be qualified and progressively developed. While as the products are to be compatible with Thai culture, they have to be accessible to domestic and foreign markets.

2. To use self-reliant creativity. This implies that the products should represent local customs and also cultures. Therefore, they show their own identities.

3. To develop human resources. It means that the performance of productions must focus on the promotion of human resources including marketing, planning, and marketing seeking.

To obtain an idea of the total sales each year, Table 3 provides interesting information about total sales and the total sales growth. It is useful to take a brief look. In addition, OTOP empowers people to live on their own. Some of characteristics of OTOP trade include the following. The value of OTOP trade reached an all-time high of over 50,000 million baht in 2003, a 36.36 percent increase over the value of sales in 2002.

2.1 Administration

One Tambon One Product is a superior project which creates many kinds of products. The project consists of marketing, production, management and technology application in production. Consequently, the economy in the communities and the rural areas is highly developed. Then, their standard of living sharply increases. Furthermore, the project concentrates on using local resources to produce goods and services. OTOP management has many steps to reach its objectives.

First, local administration level mainly organizes public hearings to select high quality products that are compatible with local wisdom, material and the local community.

Second, a middle regional administration department take responsibility for ranking the top quality products selected from the first step.

Third, a top central administration department in a province, a sub committee of One Tambon One Product takes responsibility mainly on ranking the proficient products chosen by a middle regional administration office. The department also integrates working plans and budgets to provide financial support.

Finally, the central senior committee is responsible for setting a policy, strategy and principle plan to implement the One Tambon One Product project such as specific
regulations for selection of products and making a list of the products. Then the plan is submitted to a cabinet to authorize the budget.

2.2 Operation
The following details are included in the operation.

Step 1 Starting / Publicity
The first step, a public meeting is held between government servants and the people and also firms to reach more understanding about the OTOP project.

Step 2 The Thai government publicizes the policy
The government launches a publicity campaign about principles and philosophy of the project.

Step 3 A position operating committee is set up at provincial, Ampher and district level.

Step 4 The plan is set.

2.4. OTOP growth, success, and its real benefit to rural people
One Tambon One Product concentrates on support rather than subsidy. The Thai government doesn’t focus on subsidy to local people because they don’t want to undermine self-reliance in a community. So the assistance comes primarily through the government offer of modern techniques to enrich producing products including increase value added. Moreover, the government strongly supports the community advertising and marketing.

The government core activities for One Tambon One product are as follows:
3.1 To produce high quality products to sell in domestic and international markets.
3.2 To encourage grassroots work and brainstorming.
3.3 To develop human resources.

The significant steps in the OTOP procedure have included:
1. To support group management comprised of a committee, leader and other related members participating to plan their objectives.
2. To facilitate the community group with a government sector in terms of product development, marketing, training and OTOP product champion project.
3. To support financial management through sale of bonds. In addition, the group may earn external financial support from other sources such as local government, Department of Industrial Promotion, etc.
4. To enhance significant learning in a community. In addition, the OTOP programme may identify potential OTOP producers and help develop community enterprises into small and medium-size enterprises at a later stage.

Asst. Prof. Dr. Boonanand Piraisub and Dr. Prapran Kumpran (2006) have done research entitled “Strengthen Community Creative Procedure Empower to Community: One Tambon One Product.” The objectives of their study included:
1. To study the principle in integrated operation in the OTOP programme.
2. To study the administration mechanism of OTOP.
3. To study the determinants of the OTOP operation which led to community learning, and the procedure of strengthening the community.
4. To study the determinants that made the OTOP operation self reliant and adaptable for globalization.

The result of their studies are as follow:
(1) The principle of OTOP operation is a development programme that incorporates groups of people to operate community enterprises. In addition, some government
organization readily assist them through budget planning and also human resources. Certainly, it is seen that OTOP is the operation of the government sector together with a community. The main objectives are to stimulate these group to establish supplementary jobs for earning some money in their free time. The performance enhances close cooperation in the community. We can see that human network is the most powerful.

(2) OTOP is a significant factor in strengthening the community and creating self reliance.

Since 1961, Thailand has employed the National Economic and Social Development plans to be a guide line of National development direction.

Early 50 years of National plans, Thailand has concentrate on the state-led high economic growth contributed to the overall development of the country. However, it also brought some significant negative effects such as disparities of development

The third National plan was the initiated national plan that indicated problem of the concentration, of benefits on the urban population. As a result, rural development grew into a main concern.

OTOP project has been established by the Thai government-community partnership. The government supply only technical but not financial aid. OTOP also pool the common principles as OVOP movement including, local global, self-reliance and creativity as well as human resource development.

Since 2003, the National OTOP board mainly focus on quality and standard of product. The OTOP groups that would like to take part in the OTOP product champion contest (OPC ) must obtain the standard product community certificate especially food and drinks.

The Board of National Committee of OTOP project was accountable to National OTOP framework. The first president of this Board was Deputy Prime Minister Dr. Somkid Jatusripita. The major idea of this framework is to organize the formation of selection OTOP product Champion (OPC). Furthermore it would like to strongly support the potential OTOP producers to be local exporters. The four determining factors of this framework are as follow:

1. Using of Brand Equity of promote exportable product.

2. Controlling standardize of the products.

3. Strongly supporting the OTOP firm to produce continuously with the Consistent Quality.


There are two main criteria for OPC contest including general criteria and specific criteria emphasizing on 3 aspects, production and community strength, product feature, as well as product standard. These aspects counts 40, 30 and 30 marks respectively and thus the total scores is 100.
Each OTOP producers who would like to participate in the contest must select only one product to submit in a year.

The general measure for the competition are focused upon the two main criteria – quality and marketing

1. The product is able to export and has been a brand quality
2. The production remain sustainable with stable quality
3. The product supply customer with pleasure
4. The product has an impressive background story

There are several official steps to grade the product in the contest. Initially the local give a mark of up to 30 points for the product quality.

Next, the commit consider the period of group activities and the marketing capability measure by the number of markets face channels. The score is awarded up to 30 points. Lastly up to 40 points are granted at the national level by using the identical criteria of quality and marketing.

The product that is given more than 90 points will be awarded five-star certificate.

2.3. Relevant support policies for each classification

The star awarded is mainly pertinent to financial support in from of capital goods and other advantages. For examples, Four-star and five stars have a high opportunity to participate in the domestic and international fair arrange by the government organization, to engaged in training abroad, to access to bank loan.

As mentioned above, the great significance strategies from the Thai government includes both supply side and demand side. The national fairs for OTOP sale encourage not only the customer attracted by products varieties but also the supplier to improve their products qualities.

2.4 The future of OTOP and its OTOP Programmes are capable of earning revenue and strengthening a community economy. However, most of the OTOP producers that could get benefits from government support are those who have won 3-5 stars for their products. They are competent to manage and get hold of financial capital.

The OTOP Programme has faced some weaknesses. Obviously, they represent no more than one third of producers as a whole, to reach high quality standards set by the related government organization. Consequently, most OTOP entrepreneurs face limited access to principal support. The following are the results reported by the National Economic and Social Development board:
1. Most OTOP producers who get only a 1-2 star level do not usually form a group in doing business. As a result, it is very difficult for them to get financial support or credit from a bank. Financial institutions prefer to provide credit to a group of community entrepreneurs.
2. A group of OTOP producers more often participate actively to learn modern technology and innovation in their production than individual producers.
3. Lack of handing down local wisdom. Many of the scholars who have local wisdom and valuable knowledge don’t want to teach others. They want to keep this precious knowledge for their own families.

4. Many of the products are not accepted by consumers. They only want to purchase goods that reach top quality standard or 4-5 star position. This leads to imitation of famous goods by others. This undermines high quality products.

   1. Some of these producers employ a lower price strategy.
   2. There are some barriers to entry to both domestic and international trade fairs following government regulations.
   3. One-two 1-2 star producers could not participate in these trade fairs.

Apart from that report, most OTOP producers also have met challenges in establishing their own brand’s acceptance like products produced by domestic or multinational companies. However, there are some who try to do research marketing to get acceptable brand names.

Even with it has some weakness, I believe strongly that the OTOP programme should be continuously supported by the government as it could contribute networking opportunities, business opportunities, investment opportunities, promotion of special projects, dissemination of business information, joint venture initiatives and a range of value added goods and services.

OTOP is the most challenging project to alleviate poverty of Thai people in rural areas by the following reasons.

   a. It is the heritage capital already existing in rural areas as their production capability derived from their predecessors.
   b. The poor can do. It needs only small amount of money for running these businesses. It does not need high technology which takes time to learn.
   c. It will be the enterprise spreading over the country because many people can make such products. The benefit is then distributed to a lot of people, not only the rich.
   d. Experiences from OTOP project, the government merely manage temporary markets 4-5 times a year as marketing promotion. This is not a hard burden for the government as doing for other careers.
   e. Competition from the rich countries is impossible because it is cultural heritage business and made by hand. The rich countries have advanced way beyond this.

The OTOP project was able to gross 7,289.8 million baht in 2009. The earnings have sharply increased since then. In 2014, the earnings were 98,737 millions baht, a 12 times increase from 2009 as shown in table 1 and figure 1.
Table 1 Revenue from OTOP sale in the four regions in Thailand 2009-2014

<table>
<thead>
<tr>
<th>No.</th>
<th>Region</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Central</td>
<td>6,153,929,458.00</td>
<td>27,841,988,110.00</td>
<td>30,509,962,638.00</td>
<td>29,686,691,190.00</td>
<td>30,691,922,546.00</td>
</tr>
<tr>
<td>2</td>
<td>Northeastern</td>
<td>501,430,132.00</td>
<td>14,119,707,949.00</td>
<td>15,960,354,478.00</td>
<td>17,363,840,724.09</td>
<td>20,768,798,996.00</td>
</tr>
<tr>
<td>3</td>
<td>Northern</td>
<td>319,916,476.00</td>
<td>11,938,804,100.00</td>
<td>11,673,211,659.00</td>
<td>12,094,919,515.00</td>
<td>8,827,787,798.00</td>
</tr>
<tr>
<td>4</td>
<td>Southern</td>
<td>314,534,940.00</td>
<td>5,534,807,311.00</td>
<td>8,673,744,221.00</td>
<td>8,800,247,393.00</td>
<td>11,845,888,754.00</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>7,289,811,006.00</td>
<td>59,435,307,470.00</td>
<td>66,817,272,996.00</td>
<td>67,945,698,822.09</td>
<td>72,134,398,094.00</td>
</tr>
</tbody>
</table>

Source: the Community Development Division

In term of annual sale of OTOP enterprises in the central region earned the highest revenue account for 41.56% while the south received only 13.06% as also presented in table 1 and figure 1.

Figure 1 Revenue from OTOP sale in the four regions in Thailand 2009-2014

Sources: author

3. Methodology
To identify the regional specialization, which, in the article present the significant of the given sectors in the lower north of Thailand. The location quotient (LQ) is applied. This tool is in great demand often employed in the exploratory stage of research (Isard et
al. 1998, Miller et al., 1991). It provides the assessment of the extent to which each sector is under- or over-produced in the region compared to national economy (reference area or area based in general). In this study, variables like sale values of each products including cloth, food, craft, herb are used in calculating LQ.

Taking into account employment variable, mathematically, the equation can be expressed as:

\[
LQ = \frac{(S_{ir} / S_{r})}{(S_{in} / S_{n})} \quad (1)
\]

where:  
- \(i\) – type of OTOP products, \(i = b, c, f, t\),  
- \(r\) – region,

_Sourced of Data Used in the Analysis:_

In this study, the author compared the sale revenue of the OTOP products in the lower north of Thailand. Data are complied from The Community Development Division.

- \(S_{ir}\) – product type i’s sale values in the region  
- \(S_{in}\) – product type i sale values at the national level  
- \(S_{r}\) – all product types ‘sale values in the region  
- \(S_{ir}\) – product type i sale values at the regional level  
- \(S_{n}\) – national product sale values

_Calculation LQ of textiles_

\(S_{tr} = 1,304,335,821\) BAHT when c represent i  
\(S_{n} = 109,755,420,327\) Baht  
\(S_{tn} = 19,535,811\) Baht

\(S_{r} = 6,902,116,582\) Baht  
As a result LQ of textiles = \((1,304,335,821 / 6,902,116,582) / (19,535,811 / 109,755,420,327)\)  
= 1.061

_Calculation LQ of crafts_

\(S_{cr} = 1,142,805,948\) BAHT when c represent i
Sr = 6,902,116,582 Baht
Sn = 109,755,420,327 Baht

$Scn = 23,713,834,541$  Baht

As a result LQ of textiles $= \frac{1,142,805,948}{6,902,116,582} \div (23,713,834,541)$  \hspace{1cm} (2)

<table>
<thead>
<tr>
<th>Table 2 Revenue from OTOP sale used for calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>1.N1</td>
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<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>2.N2</td>
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<tr>
<td></td>
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<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td>3.Total for Domestic Sale</td>
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<tr>
<td></td>
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<tr>
<td>4.Total export</td>
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<tr>
<td></td>
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<tr>
<td>5.Total =4+3</td>
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<tr>
<td></td>
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<tr>
<td>6.Domestic Sale + export of N1</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>7.Domestic Sale + export of N2</td>
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<tr>
<td></td>
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<tr>
<td>8.Total sale of N1 and N2</td>
</tr>
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<td></td>
</tr>
</tbody>
</table>

Sources: : The Community Development Division
For the purposes of hypothetical Industry Q, in Table 2, the location quotient is computed accordingly:

\[ LQ = \frac{e_i}{e} \cdot \frac{E_i}{E} = \frac{900}{3,700} \cdot \frac{4,000}{19,000} = 1.16 \]  

(3)

3. 3. Empirical results and discussion

Table 2 Results of Location Quotient Analysis

<table>
<thead>
<tr>
<th>Type of OTOP products</th>
<th>location quotient 2015</th>
</tr>
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<tbody>
<tr>
<td>food</td>
<td>1.10</td>
</tr>
<tr>
<td>Textiles</td>
<td>1.061</td>
</tr>
<tr>
<td>craft</td>
<td>0.77</td>
</tr>
<tr>
<td>beverages</td>
<td>0.35</td>
</tr>
<tr>
<td>herbs</td>
<td>0.44</td>
</tr>
</tbody>
</table>

Sources: the Community Development Division and calculated by author

Table 2 Revenue from OTOP sale used for calculation

<table>
<thead>
<tr>
<th></th>
<th>Food</th>
<th>Drink</th>
<th>Cloth</th>
<th>Craft</th>
<th>Herb</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.N1</td>
<td>1,647,56</td>
<td>109,445</td>
<td>939,535</td>
<td>819,112</td>
<td>112,528</td>
<td>3,628,190</td>
</tr>
<tr>
<td></td>
<td>8,554</td>
<td>90</td>
<td>6</td>
<td>3</td>
<td>08</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>(176,934)</td>
<td>(531,500)</td>
<td>(31,719)</td>
<td>(5,176,000)</td>
<td>(1,819,600)</td>
<td>(216,180,460)</td>
</tr>
<tr>
<td>2.N2</td>
<td>1,680,81</td>
<td>70,964</td>
<td>316,327</td>
<td>850,007</td>
<td>101,621</td>
<td>3,019,740</td>
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<tr>
<td></td>
<td>9,186</td>
<td>30</td>
<td>4</td>
<td>4</td>
<td>21</td>
<td>91</td>
</tr>
<tr>
<td></td>
<td>(18,061)</td>
<td>(2,190,000)</td>
<td>(16,753)</td>
<td>(1,000,000)</td>
<td>(38,005,280)</td>
<td></td>
</tr>
<tr>
<td>3. Total for Domestic Sale</td>
<td>45,695,1</td>
<td>7,500,933</td>
<td>18,375,701</td>
<td>21,497,644</td>
<td>7,024,801</td>
<td>100,094,20</td>
</tr>
<tr>
<td></td>
<td>2,714</td>
<td>745</td>
<td>797</td>
<td>651</td>
<td>355</td>
<td>2,130</td>
</tr>
<tr>
<td>4. Total export</td>
<td>4,995,79</td>
<td>642,153</td>
<td>1,160,110</td>
<td>2,216,189</td>
<td>767,439</td>
<td>9,779,690</td>
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<tr>
<td></td>
<td>7,915</td>
<td>46</td>
<td>010</td>
<td>890</td>
<td>77</td>
<td>38</td>
</tr>
<tr>
<td>5. Total =4+3</td>
<td>50,690,9</td>
<td>8,143,086</td>
<td>19,535,811</td>
<td>23,713,834</td>
<td>7,792,241</td>
<td>9,782,890</td>
</tr>
<tr>
<td></td>
<td>18,497</td>
<td>.891</td>
<td>.807</td>
<td>.541</td>
<td>.132</td>
<td>38</td>
</tr>
<tr>
<td>6. Domestic Sale + export of</td>
<td>1,824,50</td>
<td>109,976</td>
<td>971,254</td>
<td>824,288</td>
<td>114,348</td>
<td>3,844,370</td>
</tr>
<tr>
<td></td>
<td>2,714</td>
<td>59</td>
<td>88</td>
<td>51</td>
<td>08</td>
<td>11</td>
</tr>
</tbody>
</table>

http://www.iises.net/proceedings/32nd-international-academic-conference-geneva/front-page
The mathematical technique indexes the region’s revenue of OTOP to a larger reference (national) scale. Furthermore, this research intends to provide a case specific study and some useful feedback to the rural poor enterprises and also to the policy makers. The study points out that the location quotient of food and textile production of the OTOP scheme in lower northern Thailand was greater than one. In contrast, the LQs of crafts, beverages and herbs were 0.77, 0.35 and 0.44, respectively. The results revealed that the first two products are concentrated in the lower northern region compared to a larger geographic area. Therefore, the economic and workforce development planners should provide the right support to make the regional economy unique.

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