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LOGISTICS MANAGEMENT OF COCONUT-SHELL PRODUCTS MANUFACTURING: A CASE STUDY OF SAMUT SONGKRAM PROVINCE, THAILAND

The purpose of this research is to study the logistics patterns in coconut-shell products manufacturing by focusing on 3 main processes which are inbound logistics, production process, and outbound logistics in Samut Songkram province, Thailand. The results of the research reveal 4 main conclusions. Firstly, most of manufacturing points are owned by single owners and the quantity of finished products is quite low, the main labor group are local people. Secondly, production processes could be divided into 4 stages which are pre-production, production, packaging and distribution. Thirdly, all 3 logistics processes may cause potential problems to business, the most problems has production itself because it urgently needs skilled labor whereas both quantity and quality labor do not match with customer demand. Lastly, the factors affecting production from coconut shell could be founded in almost every step of the logistics process such as production design, packaging design, supply, and distribution management.

Keyword: coconut shell; logistic management; production management.

Ванні Сутхачайді

УПРАВЛІННЯ ЛОГІСТИКОЮ У ВИРОБНИЦТВІ ТОВАРІВ З КОКОСОВОЇ ШКАРАЛУПИ: НА ПРИКЛАДІ ПРОВІНЦІЇ САМУТ СОНГКРАМ, ТАЇЛАНД

У статті досліджено логістичні процеси у виробництві товарів з кокосової шкаралупи та виділено найбільш очевидні їх тренди. Аналіз проведено за 3 групами логістичних процесів: вхідна логістика, логістика безпосередньо виробництва та вихідна логістика. У результаті дослідження зроблено 4 головні висновки: 1) більшість точок з виробництва товарів з кокосової шкаралупи знаходяться в одноосібній власності, при цьому якість товарів зазвичай низька, оскільки виробництвом займаються місцеві працівники без особливих навичок; 2) процеси досліджених виробництв можна розділити на 4 стадії – підготовка, саме виробництво, пакування та дистрибуція; 3) всі логістичні процеси, пов'язані з даним виробництвом, несуть у собі певні ризики через те, що ні якість, ані обсяги виробництва не відповідають очікуванням споживачів; 4) головні фактори впливу на успішність досліджених виробництв – це дизайн пакування, питання постачання сировини та управління дистрибуцією.

Ключові слова: кокосова шкаралупа; управління логістикою; управління виробництвом.

Рис. 2. Літ. 10.

Ванні Сутхачайді

УПРАВЛЕНИЕ ЛОГИСТИКОЙ В ПРОИЗВОДСТВЕ ТОВАРОВ ИЗ КОКОСОВОЙ СКОРЛУПЫ: НА ПРИМЕРЕ ПРОВИНЦИИ САМУТ СОНГКРАМ, ТАИЛАНД

В статье исследованы логистические процессы в производстве товаров из кокосовой скорлупы и выделены наиболее очевидные их тренды. Анализ проведён по 3 группам логистических процессов: входящая логистика, логистика непосредственно производства и исходящая логистика. В результате исследования сделаны 4 главные выводы: 1) большинство точек по производству товаров из кокосовой скорлупы находятся в единоличной собственности, при этом качество товаров обычно низкое, т.к. производством занимаются местные работники без особых навыков; 2) процессы исследуемых производств

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можно разделить на 4 стадии – подготовка, само производство, упаковка и дистрибуция; 3) все логистические процессы, сопряжённые с данным производством, несут в себе определённые риски, связанные с тем, что ни качество, ни объёмы производства не соответствуют ожиданиям потребителей; 4) главные факторы влияния на успешность исследуемых производств – это дизайн упаковки, вопросы поставки сырья и управление дистрибуцией.

Ключевые слова: кокосовая скорлупа; управление логистикой; управление производством.

Introduction. Samut Songkram province has a clear vision to be "the city of organic food and fruit, the center of national canal ecotourism, and the land of inhabitants who love their homeland and preserve nature and culture". On the Eastern side of the province is the Mae Klong Bay (the Thai Gulf). The Southern side is bordering with Petchaburi province. The Western side is bordering with Ratchaburi province, and the Northern side is bordering with Ratchaburi and Samutsakorn provinces. The population number in Samut Songkram is around 206,452 people. The capital income of population in the province is 57,817 THB a year. Samut Songkram's economic potential relies mostly on agriculture, fishery, and ecotourism. The common career for most people in this province is agriculture and fishery. There are also some industries, which are considered as small business, such as fish sauce manufacturing, processed food and seafood, processed fruits. There are 12 Tambons (districts) in Amphawa, a small district in Samut Songkram. There are many coconut farms in the area, and there are plenty of coconuts to be used as raw materials for other businesses. A career group to produce goods from coconut shells is created and supported by the local center. Coconut-shell products are promoted as one of OTOP of this region. This career group is expected to be part of community's development to make this district strong enough economically to support the country on its way to the ASEAN Economic Community (Wongleedee, 2012). We are interested in taking a closer look at the logistics management of coconut-shell products manufacturing in Amphawa. The result from this study is expected to benefit manufacturers in Amphawa, to improve their production, thus to make the community overall stronger, and to get ready for tight competition in the AEC business environment.

Methodology. There are two objectives in this study: 1) to study the patterns in logistic processes of coconut-shell products manufacturing in Amphawa, Samut Songkram; 2) to study the factors affecting logistics management of coconut-shell products manufacturing in Amphawa, Samut Songkram.

The research framework includes:

1. Population: 2 sample groups in this research were coconut-shell product manufacturers in Amphawa. The first group was from Wat Pradu Sub-district managed by Mr. Ulom Boonprasert, consisting of 10 members. The second group was from Bangkae Sub-district run by Mrs. Wipa Panklueb, consisting of 20 members.

2. Content: This study focuses on career skills of OTOP coconut-shell product groups in Amphawa and how they apply logistics management under the current business scheme to gain the most benefit of it.

The framework for this research concentrates on the logistics variables which can affect business of coconut-shell products groups in Amphawa in 4 aspects:

1. Materials: the processes of selecting and preparing materials before the actual production.

2. Manufacturing: the processes of using materials to produce or decorate before purchasing.
3. Transportation: the processes of delivering either material to factories or finished products to customers.
4. Consumers: customers who buy these products.

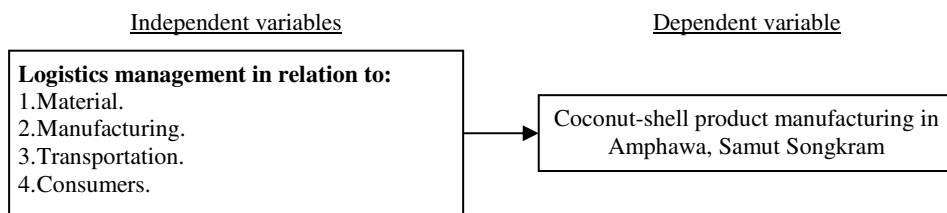


Figure 1. Research framework, author's

Logistics management can influence manufacturing in terms of business design and increase the effectiveness by lowering costs during production process. Furthermore, it can add more value to products. Since coconut-shell products are considered handicraft, skilled labors are very essential. Thus, effective recruiting and well-prepared production process will reduce risks and also wastes. In this study, qualitative research method was applied as a research tool. Data collection was done through observations and indepth interviews in the sample groups. Then, evaluation of logistics management processes was done, and then the sample groups were provided with recommendations on how to improve their business. Indepth interviews allow all the interviewed to give free opinions. The interviews were divided into 2 parts: general questions and logistics management specifically. All data would be analyzed by qualitative method, namely, content analysis to integrate all data for the study.

Findings. In general, the coconut-shell product career group is the gathering of farmers who have free time during the seasonal farming period and want to earn more income during their spare time. They have found that they can make use of the wasted coconut shells in their neighborhood. There are 2 groups of coconut-shell production in Amphawa: one group consists of 10 members from Wat Pradu subdistrict and it is managed by Mr. Ulom Boonprasert. His full-time job is selling sugar-palm juice. He sees the opportunity in making more money from coconut shells wastes, so he tried to create new things from shells and then sells them. He got a very good feedback from his friends, customers and neighbors. His coconut-shell products have drawn people's attention and encouraged Mr. Ulom to reconsider this as a business. He started this business in 2003. He has been demonstrating how to transform coconut shells into goods to students in local schools and government institutes. Ulom's coconut-shell collections are lamps, necklaces, bracelets, keychains etc.

The second group is from Bangkae district, the group is run by Mrs. Wipa Panklueb. There are 20 members in this group, founded by the gathering of female members who wanted to earn more money from the OTOP concept. The major market for this group are tourists in Amphawa. And the products are mostly souvenirs and ornaments.

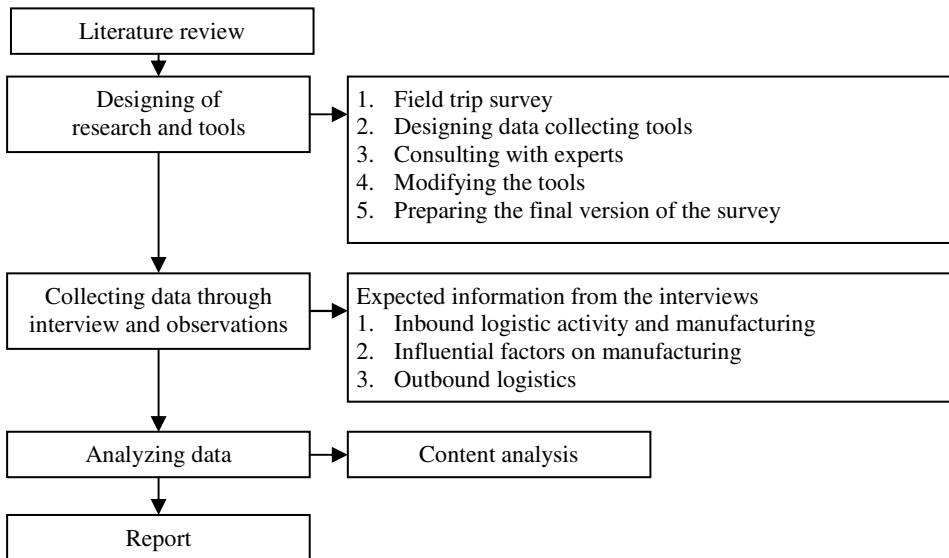


Figure 2. Study process, author's

Conclusions. The results from this study show the relationship between logistics management and production quality. Coconut-shell products manufacturing can be considered as small additional business with the production capacity of 4 persons under 500,000 Baht (Seksan Phonsuwana and Voratas Kachitvichyanukul, 2011). It requires skilled labors to maintain quality of the products sold. Coconut-shell business in our case good was run by the "make-to-order" method, which means there are no marketing forecasts and manufacturing plans. This impacts material management negatively. Coconut-shell manufacturing needs unique materials which are not easy to find. Besides, stocking large volumes of materials for a long time will reduce their quality. All inbound manufacturing processes are heavily impacted by long distance from tools providers, lack of storage and poor material organization. The manufacturing style here is "just in time"; however, if we consider it closer, make-to-order style is still a good strategy (Shoemaker and Lewis, 1999). Due to the fact that this business is limited by lack of tools and equipment, effective material provision really needs to be established. Just-in-time business style will be suitable for manufacturers in this region because it can save time and costs.

Impact factors on manufacturing also came from the lack of skilled labor, absence of high-quality equipment, and little storage to keep in-process products. Products made from coconut shells in Amphawa are mostly decorations or souvenirs which show the unique local features of Thai handmade. Thus, there should be more training to improve the related and skills more creative craftsmen should be involved for future growth of this business.

Impact factor on outbound processes is another factor that can add value to these products. Business owners did not pay sufficient attention to packaging design. Manufacturers do not know how to find proper and interesting package for products because of their limited access to packaging knowledge and technologies.

Suggestions. After studying all process of Amphawa's coconut-shell products manufacturing in detail, we reached the conclusion that this small business needs more logistic support to add more value to their products and to help them grow.

1. There should be more skilled labor to support this growing business.

2. There should be more markets for this type of products. A network of manufacturers is also suggested for establishment so they can work together and prevent unfair underpricing from the potential intermediaries' side.

3. There should be an additional process introduced of looking for suppliers who can provide required tools and equipment for the products to save time. More specific management of cost and time is also needed.

4. Materials and equipment should be kept in order and organized well to prevent products damage.

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