Digital model for Sugarcane Production for the Factory in Thai Supply Chain

Artaphon Chansamut

Office of Dean, Faculty of Home Economic Technology, Rajamangala University of Technology Krungthep, Thailand

artaphon.c@mail.rmutk.ac.th

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***Abstract*— The paper aimed to study and to assess digital model for sugarcane production for the factory in Thai supply chain . The samples are ten experts in the field of information and supply chain. The data is analysed by means and standardized deviations. The research about digital model for sugarcane production for the factory in Thai supply chain consists of eight elements namely main components Suppliers , Factory (Manufacture) Distribution Wholesaler Consumers and Satisfaction. The assessment about digital model for sugarcane production for the factory in Thai supply chain using Black-Box technique. The research findings revealed that digital model for sugarcane production for the factory in Thai supply chain is appropriate at the high level and can be applied in support the tasks**

***Keywords*—** *Digital model, Sugarcane production, Factory, Thai supply chain*

1. Introduction

Thailand is currently the largest exporter of sugar in the world. To generate safe and high-quality raw materials for sugar production, good sugarcane growing practices still need to be developed. Thailand's economy and social life are significantly impacted by the production of sugarcane. About 10,988,489 rai in Thailand are separated into sugarcane to the factory, which is delivered by three associations, and sugarcane to the factory itself, which is grown over an area of 1,123,821 rai. With more than 10,000 direct jobs and more than 7,000 indirect jobs, the sugarcane supply chain is a significant employer. Cane farmers, who are represented by three groups, are significant participants in the Thai sugar business. [44] So An application of the concept of supply chain management digital system is applied to factory system . It will be optional because the business needs to be highly competitive due to increasingly high competitions from both within and outside the country. In order to be highly competitive, organizations in the sector need to have personnel with knowledge, ability and skills who can work efficiently to increase output . The organizations, therefore, need to have sufficient data and resources to increase their values and respond to the demand of their clients. Thus, the supply chain management process is a key process to support the organization's whole activities system from upstream to downstream. It enables the organization to promptly check the information system to ensure that the organization operates smoothly and effectively based on the determined strategies. [1] and [2] For this reason, researcher has decided study and assess digital model for sugarcane production for the factory in Thai supply chain for ensuring customer satisfaction

2. Literature Review

Chansamut&Boonbrahm (2009**)** said that an information system for sugarcane production in Barium province The study's objectives were to create and document how well the province of Barium's sugarcane production utilized an information system. For operational activities, the program can report on and plan. A sugarcane collection center created the database to make data entry, searching, and reporting chores easier. Twenty-two tables make up the database, which was created using the Microsoft Access 2003 database application. The tables cover the sugarcane grower profile, the weighting unit, the laboratory for chemical analysis of sugarcane, and the finance unit. The effectiveness and utility of the information system were evaluated using the Black Box Testing evaluation methodology. The average rating is 8.28 on a scale of 10.0, which indicates that the information system may be used.

All businesses and organizations want to develop effective supply chains and information systems. Supply Chain and Information will aid the organization in increasing productivity and lowering costs, By keeping a solid supply chain and information, high value customers and suppliers can be acquired or kept. These will

commit the company to the objective of producing high-quality products for use in boosting business values and boosting consumer happiness.[7]

3. Research Methodology

3.1 Examines the paper describing the digital model for sugarcane production for the factory in Thai supply chain

3.2.Create a digital model for sugarcane production for the factory in Thai supply chain

3.3 Selection of ten specialists to review the digital model for sugarcane production for the factory in Thai supply chain
for revision.

3.4. Create a questionnaire to assess how well the model works.

3.5 Present the created digital model for sugarcane production for the factory in Thai supply chain to ten experts, which included five supply chain specialists and five digital experts.

3.6 Examine the outcomes of the mean and standard deviation analysis of the results of the evaluation about digital model for sugarcane production for the factory in Thai supply chain by mean and standard deviation consisting of 5 criteria for evaluation according to the idea of Likert scale.

4. Results

In the figure 1 a depicts Digital model for sugarcane production for the factory in Thai supply chain as show below

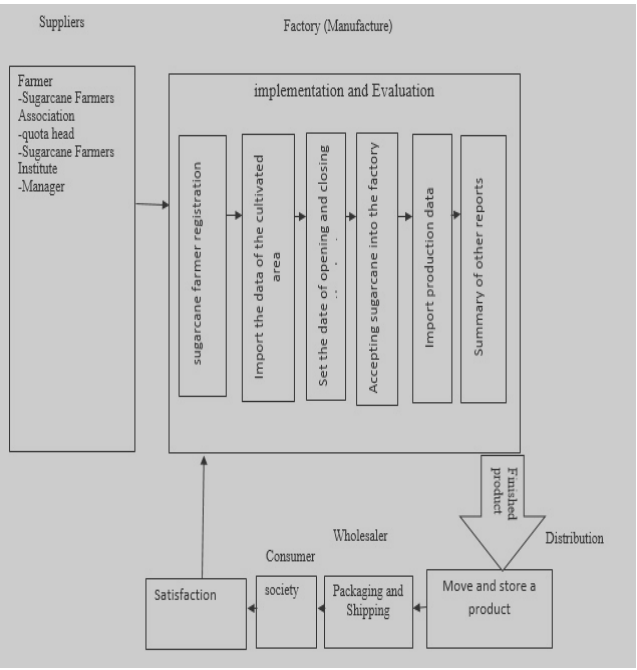

Figure 1: Digital model for sugarcane production for the factory in Thai supply chain

1.Suppliers

Suppliers mean Farmer, Sugarcane Farmers Association, quota head Sugarcane Farmers Institute, Manager, that supply raw materials to the manufacturer. Raw materials in the case are cane from high factory They can use the computer system that can process and save the data

.2. Manufacturer

The manufacturer means factory that produces finished products. It performs the duty to transform raw materials, or entering canes, into the finished products. The factory will perform its duty of raw materials development and evaluation of each activity namely Sugarcane farmer registration, Import the data of the cultivated area, Set the date of opening and closing the chest., Accepting sugarcane into the factory, Import production data and Summary of other reports .

3 Finished product

Finished product mean brown sugar, raw sugar and white sugar

4. Distribution

Distribution refers to the actions taken to transport and store a product along the supply chain from the supplier stage to the customer stage. Every pair of steps in the supply chain have distribution.

5. Wholesaler

Wholesaling is one step in the supply chain, which also comprises makers of completed items, retailers to end users, and suppliers of raw materials, includes wholesalers as one link in the chain. Retailers buy products from wholesalers and then resell them for a profit after covering their costs.

6. Consumers

Customers refer to the model's end-of-process element. The society is among them. Finally, the finished product will improve the supply chain.

5.Satisfaction

Satisfaction is defined as the results of the survey with data from the questionnaire. [1],[2],[3],[4],[5],[6],[7].[8],[9],[10],[11],[12],[13],[14],[15],[16],[17],[18],[19],[20,[21],[22],[23],[24],[25],[26],[27],[28],[29],[30],[31],[32],[33],[34],[35],[36],[37],[38],[39,[40],[41],[42][43]

Table 1: Results for evaluation of digital model for sugarcane production for the factory in Thai supply chain

No	Evaluation Lists	$\overline{X}$	S.D.	Suitability
1	Main components	3.65	1.17	High
2	Suppliers	3.62	1.04	High

Table 1:(continued)

No	Evaluation Lists	$\overline{X}$	S.D.	Suitability
3	Manufacturer	3.70	1.05	High
4	Finished product	3.60	0.84	High
5	Distribution	3.60	0.96	High
6	Wholesaler	3.60	0.84	High
7	Customers	3.70	0.94	High
8	Satisfaction	3.70	0.94	High
	Total	3.64	0.97	High

From the table 1, the experts determined that digital model for sugarcane production for the factory in Thai supply chain is highly appropriate ($\overline{X}$ = 3.64, S.D. = 0.97).

5. Conclusion

Supply chain model in digital for basic education core curriculum management in Thailand is appropriate at the high level development The rating mean of 3.64 and standard deviation of 0.97, which means that the model is appropriate at the high level. The model could be applied in support the tasks.

6. Discussion

The supply chain model in digital for basic education core curriculum management in Thailand is considered to be highly appropriate (= 3.64, S.D. = 0.97), and the design corresponds to the research of Chansamut and Piriyasurawong who have studied supply chain and information systems about educational [1] including the research of Chansamut suggesting that technology in supply chain management. [2],[3],[4],[5],[6], [7],[8], [9],[10],[11],[12],[13], [14],[15],[16], [17],[18], [19],[20,[21],[22],[23],[24],[25],[26],[27], [28],[29],[30],[31],[32],[33],[34],[35],[36],[37] and [38]

7. Recommendation

Digital model for sugarcane production for the factory in Thai supply chain is considered to be high appropriate if possible it should be case studies of high school that implement the model and efficiently.

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