Marketing Strategies of Conveyor Belt Technology in Thailand

Artit Boonyapisangkhan
Graduate School, Lyceum of the Philippines University-Batangas
Artit.natacea@gmail.com

Abstract – This study examined the marketing strategies of conveyor belt technology in Thailand, focusing on customer demographics, saleable product factors, and the correlation between marketing strategies and saleable products. Surveys were conducted among 273 consumers in Thailand, and data were analyzed using the Statistical Package for Social Sciences. The study found that demographic factors and the service marketing mix 7P's were determinants for marketing strategies of conveyor belt technology in Thailand. Results showed significant differences in marketing strategies based on the type of industry, while no significant differences were found based on sex, age group, or educational attainment. Pearson Correlation analysis revealed a significant positive strong association between marketing strategies and saleable product factors. The findings suggest that understanding customer demographics and tailoring marketing strategies accordingly are crucial for effective marketing of conveyor belt technology in Thailand.

Keywords – Marketing Strategies, Conveyor Belt Technology, Saleable products, Service Marketing Mix.

INTRODUCTION

Today, bulk material handling systems incorporate a variety of machines such as screw conveyors or augers, stackers, reclaimers, rail cars, bucket elevators and the most common, troughed belt conveyors [1]. The conveyor belt is a mechanical material handling equipment that is absolutely necessary in handling the material, mass quantity which is widely used for a variety of industrial applications especially in coal mines power plant steel factory gravel pond and sand pit mining, cement production plant, chemical industry and food industry. At present, the conveyor belt can be constructed at a width of not less than 3 meters with a length of more than 7,000 meters and a speed greater than 10 meters/ second [2]. One heavy burden that the company is in the production and distribution industry is often faced with choosing the right product conveyor system.

Currently, the use of conveyor belt technology is used to transport products and services such as food delivery in restaurants and industrial products using automatic delivery systems can improve efficiency, reduce labor costs and increase service quality. Systems for transferring objects and equipment in industrial plants that use conveyor belt systems from the source station to the destination station instead of moving objects with people. Because this system has offered many benefits in the continuity of work, speed, consistency of the objects used for moving and the current conveying system can also automatically separate the objects which is good for production quality control and increasing the profit of the establishment. For this reason, the idea is to conduct research for separation. Automatic objects according to the conveyor belt based on the operation of the motor. When the object is moving to the object detection point, the sensor sends a signal to the Programmable Logic Controller (PLC) to process, which the Logic Control program will be the output signal, instructing the motor to push the object down according to the channel specified pushing the object using three motor- controlled crank mechanisms [3].

In the drive, the belt and pluton are used to transport the object from the source to the destination which conveyor belts are commonly used, such as flat belt, fold edge, and V-belts etc. A sensor is a capacitive sensor with proximity sensor based on the capacitance change due to the distance and type of the object to be detected. In which the device has an advantage over an induction- type proximity sensor can detect all kinds of metal and non-metal objects, especially objects that have a constant value on the dielectric constant will occur when there is an object moving closer to the sensor area, which has a diffusion of electric fields generated by the RC Oslillator Circuit, and when the capacitance changes to the one value, It will create a condition called RC resonance, resulting in an oscillation of the signal [4].

Conveyor belt technology helps manufacturers to reduce production and labor costs, effective and safe

conveying technology. The belt manufacturer uses advanced technology to help with the production of the belt. In particular, the design of efficient conveyor belts and maintain the environment of personnel safety management and the most effective performance in the work, making the conveyor belt products more popular with customers. For example, one Belting Company in the Netherlands can produce conveyor belt technology products sold each year, such as 2016, can sell conveyor belts with ready-made rubber sheets of not less than 7,200 tons, both domestic and overseas.

The Conveyor belt technology in Thailand is a leader used in various industries such as product transportation, food transport, etc. and the tendency to use the service of belt technology is increasing. Therefore, service marketing strategy is important factor in order to provide customers with satisfaction in the service and increase their benefit.

The study is beneficial to service marketing strategies of conveyor belt technology business and to entrepreneurs on conveyor belt business with customer satisfaction using the service quality for developing the marketing plan and for the customers to choose the right conveyor belt technology in their business.

OBJECTIVES OF THE STUDY

This study assessed the marketing strategies of Conveyor Belt Technology in Thailand. Specifically, to present the demographic profile of the customer in terms of sex, age group, educational attainment and type of industry; to determine the saleable products factors in terms of market demand, saleable goods/best sellers, reduce production and labor costs, effective and safe conveying technology; to determine Marketing Strategies of Conveyor Belt Technology in Thailand in terms of product, price, place, promotion, people, process and physical evidence; to test the significant difference between Marketing Strategies of Conveyor Belt Technology in Thailand when grouped according to profile variables; to test significant correlation between Marketing Strategies of Conveyor Belt Technology in Thailand and saleable products in terms of market demand, saleable goods/best sellers, reduce production and labor costs, and effective and safe conveying technology, and to prepare a marketing strategic action plan to improve Marketing Strategies of Conveyor Belt business in Thailand.

MATERIALS AND METHODS

Research Design

This study used quantitative descriptive method of research to determine Marketing Strategies of Conveyor Belt Technology in Thailand and Saleable product factors and descriptive research design with survey method is applied in the study. The researcher has used both the primary and the secondary data for the purpose of this study. Secondary data were collected from available books, publications, research studies and websites.

Research Instrument

The researcher used self-made questionnaire which was constructed as a result of literature review and related studies analysis. The instrument has three (3) parts. Part I dealt with demographic profile of consumer, Part II dealt with saleable product factors in terms of marketing demands, saleable goods/best sellers, and reduce production and labor costs, Effective and safe conveying technology develop from concept of McGuire [1]; Part III dealt with Marketing Strategies of Conveyor Belt Technology in Thailand using Service Marketing Mix 7P's regards to product, price, place, promotion, people, process, physical evidence develop from Purashraf and Bidram [5]. The instrument was also tested its reliability with resulting Cronbach's alpha value of 0.918 which means that it has excellent internal consistency.

The research instrument collected data was 5 point rating scale questionnaires (Likert, 1967) was used to measure respondent's on Marketing Strategies of Conveyor Belt Technology in Thailand and saleable product factors. Responses to Part III were quantitatively measured using an item choice of options was 1 as the lowest and 5 as the highest. The five-point Likert scale was used to measure respondents' perception of consumers in Thailand. The value and the corresponding verbal interpretation are the following: 4.50-5.00: Strongly Agrees (SA); 3.50-4.49: Agree (A); 2.50-3.49: Moderately Agree (MA); 1.50-2.49 Disagree (D): 1.00-1.49: Strongly Disagree (SD).

Respondents

The target population of the study is composed of consumers from newly opened industrial factories and packaging factories in Bangkok and perimeter in 2018, which amounted to approximately 858 factories. The total population is 858 persons. the sample size is 273

persons using the Yamane formula [6] with a margin of error of 5%. Respondents were identified using simple proportional allocation. Random sampling was used in the selection of consumers to acquire a sample of 273 participants from factories in Bangkok and perimeter in Thailand.

Data were collected via a survey conducted on consumer in Bangkok. A total of 273 questionnaires were distributed and returned as usable and valid for analysis. The number of questionnaires returned represents about 100 percent of the total number of questionnaires distributed.

Data Collection Procedure

The researcher visited manager of each company in Bangkok Thailand to talk informally for collecting information regarding the Marketing Strategies of Conveyor Belt Technology in Thailand and saleable product factors. Upon approval, the researcher distributed the questionnaires to the intended respondents. After collecting all necessary data, these have been analyzed and tabulated descriptively. This tabulated information used in analyzing the Marketing Strategies of Conveyor Belt Technology in Thailand and saleable product factors.

Data Analysis

Quantitative data analyses were conducted using descriptive statistics: mean, median, standard deviation, frequency, percentage. To measure level of Marketing Strategies of Conveyor Belt Technology in Thailand and the saleable product factors. And Inferential Statistics: t-test and One Way ANOVA and Pearson Correlation Coefficient at 0.05 level of significance.

An Independent Sample t-test was used to compare of the difference between the average of The Marketing Strategies in terms of sex. One Way ANOVA was used to compare Marketing Strategies with age group, educational attainment and type of industry.

In testing the variance of the variable according to the objectives of the research with the F-test, the test results showed that there was statistically significant difference at least 1 pair at the 0.05 level. A multiple comparison test using the Scheffe's method is required to find a matched pair.

Pearson Correlation Coefficient was used to analyze the relationship between Marketing Strategies of Conveyor Belt Technology in Thailand and saleable product factors.

Correlation coefficients, r, vary from 0 (no relationship) to 1 (perfect linear relationship) or -1 (perfect negative linear relationship). Positive coefficients indicate a direct relationship, indicating that as one variable increases, the other variable also increases. Negative correlation coefficients indicate an indirect relationship, indicating that as one variable increases, the other variable decreases.

Cohen's standard was used to evaluate the correlation coefficient, where 0.10 to 0.29 represents a weak association between the two variables, 0.30 to 0.49 represents a moderate association, and 0.50 or larger represents a strong association.

RESULTS AND DISCUSSION

Table 1. Summary of Saleable Product Factors

Saleable Product Factors	Weighted Mean	Verbal Interpretation	Rank
1. Market demands	4.63	Strongly Agree	2
2. Saleable goods/best sellers	4.64	Strongly Agree	1
3. Reduce production and labor costs	4.59	Strongly Agree	3
4. Effective and safe conveying technology	4.58	Strongly Agree	4

Table 1 presents the summary of Saleable Product Factors. The composite mean score of 4.61 implies that there is a very high level of Saleable Product Factors regarding market demands, saleable goods/best sellers, reduced production and labor costs and effective and safe conveying technology. Among the indicators on saleable product factors are considered very high level in terms of market demands (4.63), saleable goods/best sellers (4.64), reduced product costs and labor (4.59), effective and safe conveying technology (4.58).

The result of this research is a type of saleable product in the industry for various products in various industries. The result showed the saleable product in terms of efficiency of conveyor capacity, investment in conveyor belts as an important factor in the production, granular and lumpy and that can be transported up and

down horizontally and efficiently and help the industry reduce production and labor cost. So, saleable product factors are important that affect consumer decisions to use Conveyor Belt in their industries. McGuire [1] stated that the manufacturing industry needs bulk material handling systems that incorporate a variety of machines such as screw conveyors or augers, stackers, reclaimers, rail cars, bucket elevators and the most common, troughed belt conveyors. The conveyor belt is necessary for handling material and mass quantity. It is widely used in a variety of industrial applications, especially in coal mines power plants steel factories gravel pon and san pit mining, cement production plants, the chemical industry and food industry.

Table 2. Summary of Marketing Strategies of Conveyor Belt Technology in Thailand

Marketing Strategies of Conveyor Belt Technology in Thailand	Weighted Mean	Verbal Interpretation	Rank
1. Product	4.68	Strongly Agree	3
2. Price	4.61	Strongly Agree	6
3. Place	4.67	Strongly Agree	4
4. Promotion	4.69	Strongly Agree	5
5. People	4.80	Strongly Agree	1
6. Process	4.65	Strongly Agree	5
7. Physical evidence	4.59	Strongly Agree	7

Table 2 presents the respondents' agreement on the summary of Marketing Strategies of Conveyor Belt Technology in Thailand. The overall composite mean score of 4.67 signifies that the Marketing Strategies of Conveyor Belt Technology in Thailand have a very high level of agreement from the respondents. Among the items where the respondents strongly agreed are the following: product (4.68), price (4.61), place (4.67), promotion (4.69), people (4.80), process (4.65), and physical evidence (4.59).

This agreement is an indication that the Marketing Strategies of Conveyor Belt Technology in Thailand have a very high level of importance in consumer decision-making to buy conveyor belt technology for their work in a factory. Because marketing strategy is a tool of business in selling the products. In this research, it was found out that service in marketing mix 7P's concept is a powerful marketing tool that business organizations use in marketing endeavors. That is used to measure consumer satisfaction. Successful organizations strongly focus on the service paradigm with investments in people, technology, personnel policy and remuneration systems for their employees. This is very important as the behavior of the employees can have a direct influence on the quality of the service. Employees represent the face and the voice of their organization to the customers. They translate the services provision into services for the customer across all sectors. Purashraf and Bidram [7] stated that Marketing Mix is a marketing strategy that involves the process of buying decisions where the order of consumers' purchasing decisions and found that consumers passed the 7-step process in which the businesses provide services with the use of Marketing Mix. Service marketing mix in terms of People, Physical Education Evidence and Process determine the success and the existence of the service company.

The influence of buying needs, customer satisfaction and customer experience within the service company with the quality of feedback which are considered always at the top of the list so that they can serve their customers well. Retaining and improving the necessary service processes and service scape is considered necessary for he company to become effective [8]. Kotler [9] stated that Marketing Mix is a marketing tool that can be controlled. The company will often be used together to meet the satisfaction and needs of customers who are target groups of Marketing Mix 4Ps including Product, Price, Place, and Promotion.

The result of this study shows that the company focus on people, promotion, product and price. Employees are working to benefit various organizations which count since the owner of the senior manager and middle managers as well the lower level executives, general employees, housewives, etc. The personnel are considered as important marketing ingredients. Because, it is the person who thinks, plans and works which drives the organization to be in the right direction and follow the strategies. In addition, another role of personnel that is important is the interaction and friendship with customers. It is important to make customers satisfied and have long-term engagement with the organization.

Table 3. Correlation between Marketing Strategies of Conveyor Belt Technology in Thailand and Saleable Product Factors

Variables	Mean	S.D.	r	p
Marketing Strategies of Conveyors Belt Technology in Thailand (Y)	**4.41**	**.234**	**-**	**-**
Saleable Product factor (x)	**4.61**	**.301**	**.650****	**.000**
Market demands (x1)	4.63	.337	.267**	.000
Saleable goods/best sellers (x2)	4.64	.380	.456**	.000
Reduce production and labor costs (x3)	4.59	.458	.647**	.000
Efficient conveying equipment technology and safe ty (x4)	4.8	.396	.558**	.000

Table 3 presents the relationship between Marketing Strategies of Conveyor Belt Technology in Thailand and saleable product factors in terms of market demands, saleable goods/best sellers, reduce production and labor costs, and efficient conveying equipment technology and safety, As seen in this table, it was found out that the correlation coefficient of between Marketing Strategies of Conveyor Belt Technology in Thailand and Saleable product factors indicated that there was correlated positive strong association between saleable product factors and Marketing Strategies of Conveyor Belt Technology in Thailand (r=.650) at significant level of 0.01 (p<.01). There were correlated positive strong association between reduce production and labor costs, and Efficient conveying equipment technology and safety(r=.647 and r=.558 respectively), there was a positive moderate association between Marketing Strategies of Conveyor Belt Technology in Thailand and saleable goods/best sellers (r=456) and there was correlated positive weak association between Marketing Strategies of Conveyor Belt Technology in Thailand and market demands at significant level of 0.01. This result described that there are positive strong association between Marketing Strategies of Conveyor Belt Technology in Thailand and saleable product factors and positive strong association between Marketing

Strategies of Conveyor Belt Technology in Thailand and saleable product factors in terms of reduce production cost and labor, and efficient conveying equipment technology and safety while there are positive weak correlation between saleable good/best sellers, there are positive correlation moderate association between Marketing Strategies of Conveyor Belt Technology in Thailand and saleable goods/best seller. The saleable product factors are motivate consumers to decision to use Conveyor Belt Technology for help them to work with new technology and safety.

These findings align with prior research indicating the importance of product factors in influencing marketing strategies. For instance, according to Kotler and Armstrong [10], understanding consumer needs and preferences, as reflected in market demands and saleable goods, is crucial for developing effective marketing strategies. Moreover, reducing production and labor costs, as well as ensuring efficient conveying equipment technology and safety, are essential elements in enhancing product attractiveness and competitiveness [11].

Furthermore, the positive moderate association between marketing strategies and saleable goods/best sellers suggests that emphasizing popular products can contribute to the success of marketing initiatives. Additionally, the positive weak correlation between marketing strategies and market demands underscores the need for aligning marketing efforts with evolving consumer preferences and trends [11].

CONCLUSION AND RECOMMENDATION

The results of comparison of the Marketing Strategy of Conveyor Belt Technology in Thailand had no significant difference when grouped according to sex, age group, education attainment and the Marketing Strategy of Conveyor Belt Technology in Thailand had significant difference when grouped according to type of industry at significant 0.05 level. The result of Pearson Correlation that the correlation coefficient of between Marketing Strategies of Conveyor Belt Technology in Thailand and Saleable product factors indicated that there was a positive strong correlation between saleable product factors and Marketing Strategies of Conveyor Belt Technology in Thailand at significant level of 0.01. There were positive strong associations between reduce production and labor costs, and efficient conveying equipment technology and safety and there was positive moderate correlation between Marketing Strategies of

Conveyor Belt Technology in Thailand and saleable goods/best sellers. There was positive weak correlation between Marketing Strategies of Conveyor Belt Technology in Thailand and market demands at significant level of 0.01. An action plan was proposed to improve the Marketing Strategic Plan of Conveyor Belt Technology in Thailand.

This research will be useful to improve the Marketing Strategy of Conveyor Belt Technology in Thailand. Marketing Strategy of Conveyor Belt Technology may identify the features with the ability to translate strategy into action. Entrepreneur and Sale Marketing should be given the needed attention to choose Conveyor Belt Technology for their industry. The proposed strategies may be discussed during entrepreneur, sale marketing and engineer to affirm the result of this research and used as input in developing Marketing Strategies of Conveyor Belt Technology. The limitation of this study is on of customers decision to use Conveyor Belt Technology which may be a baseline of other research for investigating another variable for Conveyor Belt Business in other variables. The results of this study are used as data for entrepreneur and sale marketing to improve the marketing strategy plan for innovation conveyor belt products in the future.

REFERENCES

[1] McGuire, PM. (2009). Conveyors: application, selection, and integration, 1. CRC Press, Hoboken.

[2] Yanyong S.. (2010). Energy Saving Conveyor Belt. Department of Material Handling Engineering Faculty of Engineering King Mongkut's University of Technology North Bangkok.

[3] Krisorn R. & Danai T. (2013). Automatic Shrimp Feeding Machine Sliding Rail. Journal, Rajamangala University of Technology Tawan-ok. 6 (1), pp.63-69.

[4] Kataphon, P. (2014). Automatic Sorting Machine with Conveyor Belt. Wong Chavalit University, Nakhon Ratchasima.

[5] Purashraf Y., Bidram V., (2012). Studying the Status of Marketing Mix (7Ps) in Consumer Cooperatives at Ilam Province from Members' Perspectives. Management Department, University of Ilam, llam, Iran.

[6] Yamane. (1967). Taro Statistic: An Introductory Analysis. New York: Harper and row.

[7] Purashraf Y. & Bidram V. (2012). Studying the Status of Marketing Mix (7Ps) in Consumer Cooperatives at Ilam Province from Members' Perspectives. Management Department, University of Ilam, llam, Iran.

[8] Vliet, V. V. (2018). Service Marketing Mix (7P's). Retrieved from https://www.toolshero.com/marketing/service-marketing-mix-7ps/

[9] Kotler, P. (2012). Marketing Management (Pearson Education). New Jersey: Prentice Hall

[10] Kotler, P., & Armstrong, G. (2016). Principles of marketing. Pearson.

[11] Kotler, P., Keller, K. L., Ang, S. H., Leong, S. M., & Tan, C. T. (2017). Marketing management: An Asian perspective. Pearson.