

# FACTORS INFLUENCING THE INDUSTRIAL PURCHASE INTENTION OF RUBBER CHEMICALS FOR THE MANUFACTURING FIRMS IN RUBBER INDUSTRY

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## ABSTRACT

As Thailand is one of the hubs for the world's leading car manufacturers and the strategic location for the world's leading tire manufacturers and other rubber products, fierce competition can be expected in the rubber chemical market in order to meet the needs and attract more manufacturing firms as their customers. Studying how factors influence the industrial purchase intention of rubber chemicals becomes crucial to adapt business strategies. This research then studies factors influencing the purchase intention of rubber chemicals for the rubber industry, an industrial market (business-to-business or B2B) in Thailand. The existing researches focus mostly on understanding a consumer market (business-to-consumer or B2C). Given that consumers in these two markets have different buying behavior, a better understanding of how different factors impact the industrial purchase intention will provide a competitive advantage to businesses in the market. This paper employs multiple regression analysis to investigate the relationship between independent variables (brand awareness, value for money, quality, after-sales services, country of origin, supply ability, perceived economic situation, and firm performance) and a dependent variable (purchase intention). The result shows that value for money, after-sales services, supply ability, and firm performance were positively significant towards the purchase intention. Based on the results, the following suggestions are made. To increase sales, the suppliers must have good knowledge to give advice to the customers, especially during the after-sale. Supply continuity and flexibility are very crucial in this market given many stakeholders are involved along the supply chain. Therefore, good teamwork in a company is necessary to manage the supply chain and create supply security in the mind of the customers.

**Keywords:** Rubber Chemicals, Rubber Industry, Industrial Market, Business-to-Business, Industrial Purchase Intention

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## **Introduction**

Thailand is one of the hubs for the world's leading car manufacturers, and also the strategic location for the world's leading tire manufacturers and other rubber products including industrial and non-industrial products (Thailand Board of Investment, 2016). One of the main raw materials for the industry is rubber chemicals as they are used to process the rubber to a wide range of products such as vehicle tires, automotive rubber parts, industrial rubber parts, other rubber products, belt products, and concentrated latex-based products (Weerathamrongsak & Wongsurawat, 2013). In addition, with an increase in both the global demand for natural rubber from various industries and the global production of natural rubber with a compound annual growth rate (CAGR) of 5.0% during the forecast period of 2022 - 2027 (Natural Rubber Market, 2022), an increase in the usage of rubber chemicals from the manufacturing firms is expected. At the same time, Thailand is implementing the new economic model, namely 'Thailand 4.0', to promote stability, sustainability, and prosperity (Thailand Board of Investment, 2016) for its economy. It is unavoidable for the manufacturing firms to adapt their business strategy and operations to this economic development. One of the key strategies the manufacturing firms aim for is to use adequate rubber chemicals, in terms of quality, price, and continuous supply, to improve and increase their production in a sustainable way, such as lowering the scrap or waste of finishing products and reducing any kind of pollutions from the production. Therefore, for the rubber chemical suppliers and distributors, fierce competition can be expected in the rubber chemical market in order to meet the needs and attract more manufacturing firms as their customers. Studying how marketing factors (e.g. brand awareness, quality, after-sales service) influence the industrial purchase intention of rubber chemicals for these manufacturing

firms becomes crucial to adapt their business strategies.

Moreover, as Thailand does not have local rubber chemical suppliers, rubber chemicals are imported from all over the world, mainly from China, Japan, and Germany (TechSci Research, n.d.), and enter into Thai market through local distributors. Any changes in the world economic situation can therefore impact the production availability, how the manufacturing firms perceive the condition of the economy, and how the economy affects performance of the manufacturing firms which in turn affect their buying decision on rubber chemicals for the business operations. For instance, in 2017, the Chinese government decided to shut down many rubber chemical factories and impose strict environmental standards resulting in the sudden increase in price level and the supply tightness (Tan, 2018). As China is the main supplier of rubber chemicals, the incident put a lot of concerns on both tire manufacturers and other rubber manufacturing firms to secure rubber chemicals and ("Why is Tire Production and Marketing in a Favorable Situation but Generating Few Profits?", 2017). Therefore, in the context of rubber industry in Thailand, economic factors (e.g. perceived economic situation, supply ability) also play an important role in gaining better understanding on purchase intention of rubber chemicals in the rubber.

In literature, many studies focus on consumer markets while the research regarding factors towards industrial purchase intention is very limited (Bendixen, Bukasa, & Abratt, 2004; Hinterhuber & Hinterhuber, 2012; Mudambi, 2002; Walley, Custance, Taylor, Lindgreen, & Hingley, 2007; Yuan, Moonm Wang, Yu, & Kim, 2021). Given that consumers in these two markets have different buying behavior, a better understanding of how different factors impact the industrial purchase intention will provide a competitive advantage to businesses in the market. As the industrial

market becomes more competitive and customers change their aims, sellers must adapt to the current situation and need to satisfy the customers' demands. Without in-depth research, it is difficult for the suppliers and distributors to understand the behavior of the buyers or manufacturing firms as purchase intention is a complex and dependent variable. The study therefore aims to investigate what factors the buyers of rubber chemicals are looking for and how the sellers should adapt and prepare for this kind of market situation. The findings from this study can then be used to understand and guide both suppliers and distributors on how to improve their decision-making processes to satisfy the manufacturing firms in the rubber industry in Thailand. Moreover, the findings can be applied in other industrial markets that might be experiencing a similar situation as the rubber chemical market as well and provide additional empirical evidence on industrial purchase intention.

### **Objectives of the study**

1. To identify the significant factors the influence industrial purchasing intention of rubber chemicals.
2. To provide managerial insights and suggestions to both raw material suppliers and distributors to satisfy the manufacturing firms in rubber industry in Thailand.

### **Literature review**

There are many types of business transactions in the business system, such as B2B (business-to-business) and B2C (business-to-consumer). In the industrial marketing, B2B is the main activity which consists of a significant amount of share in many countries (Hinterhuber & Hinterhuber, 2012). Walley et al. (2007) indicated that industrial markets were also different from consumer markets in several dimensions. In the industrial market, there are fewer but larger buyers, and a lot of people are involved in the buying process in order to approve the raw

material to be used in the production line. Thus, closer buyer-seller relationships are required because the products often need customizing based on customers' needs. Moreover, buying decision process is rational and requires extended negotiation, but, once everything falls into place, buying is negotiated less frequently. Unlike industrial markets, consumer markets have massive amounts of buyers. Thus, the products tend to be mass-produced and the transactions are smaller and shorter with less complex processes (Hinterhuber & Hinterhuber, 2012). Therefore, to understand both markets, the types of product need to be discussed. Industrial product is defined as "products used in manufacturing that are not market to the general consuming public" (Mudambi, Doyle, & Wong, 1997, p. 435) and is used in the production of other goods. Consumer product, in contrast, is the goods for the consumption of the end consumer. Since these two markets having two different kinds of products are very distinct from each other, the factors influencing purchase intention should also affect differently.

Moreover, as explained by Syed Alwi, Nguyen, Melewar, Loh, & Liu (2016) and Yuan et al. (2021), due to the evolution and the transformation of the B2B markets in terms of technological advancement, faster and larger amount of information exchange, and the new supply chain management, B2B markets encountered with an increase in competitive pressure. Moreover, every firms were utilizing the same strategy with various cost reduction either in their production or technology. This is the same case for manufacturing firms in the rubber industry in Thailand. Thus, the strategy reduces the gap between firms regarding their differentiation. Therefore, in order to gain sustainable competitive advantage for B2B firms, they need to keep differentiate their products and services from their competitors, not only the tangible features but also intangible features (Mudambi et al., 1997;

Bendixen et al., 2004; Syed Alwi et al., 2016).

This paper explored the industrial market, specifically rubber chemicals for the rubber industry, because this is a very niche market. In addition, not only Thailand is the number one exporter of natural rubber, it also has many rubber-related manufacturing firms of many sizes. However, there was no research on the purchase intention of the rubber chemicals and very limited research in the industrial market in Thailand. One of the researches that can be found is the purchase decision for Chinese PVB film (Lin, 2014). The only research that was related rubber industry was about the past achievements and future prospects of rubber industry in Thailand (Weerathamrongsak et al., 2013). Therefore, there is a gap in the research on rubber chemicals in Thailand. Thus, understanding the significance of these firms regarding their purchase decision of rubber chemicals can benefit both buyers and sellers. This section investigated further the empirical literature that studied factors that can influence the industrial purchase intention of rubber chemicals.

#### *Brand Awareness*

Brand awareness is very important as the buyers would think of a particular brand name first before considering its associations. For example, when the buyers select the product category, a set of brands would appear in their minds for consideration. Any brands that have higher brand awareness, the buyers tend to purchase from those brands (Shahid, Hussain, & Zafar, 2017). Moreover, the buyers may consider based on the brand awareness alone in the absence of brand image because of either having no interest in the product or service or having no knowledge about the brand (Keller, 1993). Chi et al. (2009) stated that the customers were likely to purchase the products which were well-known and familiar to them, and they found that, in the cellular phone market, the customers tended to buy the products if they could identify a brand

corresponding to their preferences. For the franchise business, Lin et al. (2014) found that, at the tourist destinations, the customers were willing to purchase products from the branded franchise stores, such as 7-eleven and Family Mart, more than the local independent stores because they perceived as riskier at the non-franchised stores. Brand awareness and brand image played an important role in this case. Therefore, without the experience with the brand, it is very difficult for the customers to recognize, recall, and make the decision to purchase (Davis et al., 2009). Additionally, when the customers are uncertain about a particular product and not familiar with its category, they tend to incline towards the popular, well-known, and reputable products instead (Lin et al., 2014). From these researches, brand awareness affects the purchase intention differently across the industries in the market. Therefore, the author would like to study whether the buyers can recall and recognize any brands associated with any kind of rubber chemicals at the time of purchase or not, without reflecting on the perceptions of the brands or brand image.

#### *Value for Money*

In rubber chemicals context, the supplier that offers a lower price product than its competitors is not always guaranteed to get the orders. In addition, this does not mean that the supplier would not get the orders from offering a higher price than its competitors as well. There must be reasons why the customers make such purchasing decisions. Mudambi et al. (1997) indicated that price alone did not fully explain the purchase decisions. Hence, instead of looking at price as the factor, value for money should be considered for this study. In Zeithaml's (1988) research, the author gave four definitions of value: value is low price, value is whatever I want in a product, value is the quality I get for the price I pay, and value is what I get for what I give. Accordingly, the author defined them as perceived value and

gave another overall definition as “the customer’s overall assessment of the utility of a product based on perceptions of what is received and what is given” (p. 14). Moreover, the value was not only about the low price or the good quality, but also a tradeoff which might include other factors as values rather than looking at the quality alone (Zeithaml, 1988). Further research by Sweeney and Soutar (2001), they developed and generalized the perceived value to be a multidimensional construct consisting of emotional, social, quality/performance, and price/value for money. Nevertheless, this study only focuses on the price/value for money factor because it is related to the price. Value for money was defined as “the utility derived from the product due to the reduction of its perceived short term and longer-term costs” (Sweeney & Soutar, 2001, p. 211). In other words, value for money is the cost-effectiveness of a product or the product should be reasonably priced. Several researches confirmed that the level of purchase intention could be increased by improving the value for money (Hsu & Lin, 2015; Yoo, 2015). Therefore, if the supplier can meet or exceed the value of a product, this should also increase the purchase intention of rubber chemicals in this study.

### *Quality*

Based on Zeithaml (1988) and Sebastianelli & Tamimi (2002), quality was defined as the excellence or the superiority of a product; in another word, it was called objective or actual quality. Quality could be identified in five definitions: transcendent, product-based, user-based, manufacturing-based, and value-based (Sebastianelli & Tamimi, 2002). Moreover, quality is also a multidimensional construct consisted of eight dimensions: performance, features, reliability, conformance, durability, serviceability, aesthetics, and perceived quality (Zeithaml, 1988; Sebastianelli & Tamimi, 2002). However, in Sebastianelli & Tamimi (2002)’s

study, some of the quality dimensions were subsumed under three major definitions of quality which were the product-based, user-based, and manufacturing-based. Product-based quality consisted of performance, features, and durability dimensions. User-based quality consisted of aesthetics and perceived quality dimensions. Manufacturing-based quality consisted of conformance and reliability dimensions. In the industrial markets and manufacturing firms, quality is related to both product-based quality and manufacturing-based quality because product-based quality is viewed based on the measurable characteristics of the product and manufacturing-based quality is viewed as the conformance of the product to its specifications. Therefore, a high level of product-based and manufacturing-based qualities that meets the design standards should increase the level of purchase intention. By conforming with the product technical standards, the manufacturing firms could avoid the nonconformity products which could generate costs to scrap, rework, and product failure (Sebastianelli & Tamimi, 2002). Additionally, Hinterhuber & Hinterhuber’s (2012) study also proved that quality is one of the important factors for farmers and resellers.

### *After Sales Service*

Another aspect towards purchase intention is the after sales service. For the manufacturing firms, not only that they were trying to sell goods and services and to gain market shares, after sales service had also become one of the significant roles. Ahn & Sohn (2009), Murali, Pugazhendhi, & Muralidharan (2016), and Habib & Sarwar (2021) stated that the main objectives for every business are to satisfy and keep the existing customers, and to attract the new customers. Therefore, in order to meet with these objectives, performing customer service activities are unavoidable and become one of the focuses rather than manufacturing of

products. The customer services could additionally improve the customer satisfaction, customer retention, and customer loyalty towards the firms (Ahn & Sohn, 2009; Murali et al., 2016). In our case, the main service in this study is the after-sales service. After-sales service consisted of many activities, such as technical advice, maintenance/ repair, spare parts delivery, product upgrading etc. (Ahn & Sohn, 2009; Murali et al., 2016). Furthermore, Murali et al. (2016) exemplified after-sales service more in details as follows: guaranteeing the suppliability of goods, solving the problems for the end- users, supporting customers from the time of purchase until the time that the product was removed from service by the customers. Ahn & Sohn (2009) stated that after-sales service was not only significant in differentiating the product from other competitors, but it was also important to the sales of the product itself. Besides, Ahn & Sohn (2009) also confirmed that manufacturing firms could obtain four times greater in sales and three times greater in the turnover during the product life's cycle. Both Ahn & Sohn (2009) and Murali et al. (2016) indicated that after-sales service was not only the source of profit, but also the revenue generator. Thus, the high level of after-sales service can enhance the profitability of the firms in return. By providing after-sales service, the manufacturing firm can receive feedback about its quality of the product, service, and marketing activity etc. from the customers. This particular information can help the firms to gain new knowledge to improve its product; moreover, it can help increase the relationship between firms and customers (Murali et al., 2016). So, firms can receive more information regarding their competitors in the market from the customers. Therefore, by improving the relationship, after-sales service could enhance more business and transactions (Murali et al., 2016).

### *Country-of-Origin*

An additional factor that could affect the industrial purchase intention is the country-of-origin. Country-of-origin could be viewed in other word as country image (Min Han, 1990; Godey et al., 2012; Wang, Barnes, & Ahn, 2012; Reichert & Altobelli, 2016) and it was one of the important factors for the field of international business (Wang et al., 2012). In general, country-of-origin was one of the factors used in decision criteria to purchase and became more important when consumers are unfamiliar with the product as studied by Min Han (1990). Furthermore, Min Han (1990) also pointed out the important finding that country image had more impact towards the products from developed countries than the developing countries, because consumers were more familiar with the product from developed countries.

In terms of the industrial market specifically, Reichert & Altobelli (2016, p. 627) indicated that there was not much attention on the country- of- origin in the industrial markets, unlike consumer markets, because the research on country- of- origin effect related to B2B was "somewhat dated" and apparently quiet for the past decade. Thus, the authors established the new perspective regarding the effect of country-of-origin on the buying center member and reflect on the reality of the industrial purchase decision. The industrial purchase decision was not made by only people from purchasing department, but people from various departments instead. Therefore, there were two groups which are the users and non- users. In the manufacturing firms, it is normal that the product users are not the ones who purchase, rather the purchasers are the non- users who are the CEO or managers of the company. The study showed that these groups of people perceived the quality of the product and country image differently towards intention to purchase.

### *Supply Ability*

For the industrial market, supply ability is also considered to be another important factor because having enough resources to produce goods means that a manufacturer can generate sales from the products committed to its customers (Steinhart, Mazursky, & Kamins, 2013). Every company tries to avoid the shortage of the raw materials and this can refer to scarcity, disruption of supply, unavailability, supply risk, and availability risk depending on the familiarity of each company. These terms can be defined as possible situation of the inbound supply circumstance which cannot meet the customer demand. This supply risk could occur from natural disasters, poor demand forecasting, poor supplier quality, shipment inaccuracy, and poor environmental and social performance of the suppliers (Carter & Rogers, 2008).

In terms of supply chain, this term refers to the flow of information and product from the raw material to the end customer. Christopher & Peck (2004, p. 2) defined supply chain as “the network of organizations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of the ultimate customer”. However, due to the expansion of supply chain from the increasing of interconnection between companies, the global market becomes bigger and increases the complexity along the line (Christopher & Lee, 2004; Christopher & Peck, 2004). Therefore, it is unavoidable that the supply chain is facing the uncertainties and can be unpredictable which lead to the disruptions of product and service. There are the risks associating with the companies both internally and externally. In order to respond to these risks, it is the responsibilities of procurement or purchasing teams (Christopher & Lee, 2004; Roberta Pereira, Christopher, & Lago Da Silva, 2014). The teams must identify, assess, register, monitor, and manage their own risks

for the business continuity. Furthermore, the literatures also suggested that the companies should strive for supply chain resilience (Christopher and Lee, 2004; Christopher and Peck, 2004; Roberta Pereira et al., 2014). Resilience is defined as the ability to return the supply chain to its original state after going through the disruptions or any disturbances. Two key ideas for supply chain resilience are visibility and agility. Visibility is the ability for the companies to see from one end to the other end of the supply chain and agility is the ability to respond to the unexpected events. By achieving these ideas, they would give more confidence along the supply chain (Christopher & Lee, 2004). Thus, it is very important for the procurement and purchasing teams to have a business contingency plan on hand to increase the competitiveness in the market (Roberta Pereira et al., 2014). With the supply chain risk management, it can increase the sales, improve the market share, and help to go into the new markets (Christopher & Lee, 2004). From the above-mentioned literature review, it is the role of procurement and purchasing team to secure the supply chain and the supply ability should be put into their consideration.

### *Perceived Economic Situations*

Another factor to be considered in this study is how consumers view the economy as a whole or it is called “perceived economic situation”. In the Chinese property market, Wang, Chan, & Xiong Chen (2001) found out that economic sentiment (economic situation) was a significant economic variable in predicting the housing purchase intention. However, the economic sentiment only concentrated on the macro aspects of consumer behavior or the aggregate demand; therefore, it was applied in some markets and situations, such as housing, stock market behavior, automobile purchases, consumer saving, expenditure, and credit (Wang et al., 2001). In comparison, Chaniotakis, Lymperopoulos, &

Sourelis (2010) explored this factor on the perception of national brands and own-label brands in Greece on olive oil. The research confirmed that if the consumers perceived economic situation pessimistically, they seemed to enjoy the advantage of own-label products and indirectly influenced the intention to purchase. Furthermore, Jaafar, Lalp, & Naba (2012) conducted the research on the private label products or own-label brands. Many variables were tested to compare in the perception of extrinsic factors, intrinsic factors, and consumers' attitude in which perceived economic situation was included. Perceived economic situation was a significance variable among the others as well as the research on purchase intention towards private label products by Cela & Cazacu (2016) which was conducted at LIDL supermarket and Carrefour in Greece, while Jaafar et al.'s (2012) research was conducted in Malaysia on food products. Both papers agreed that, during the economic crisis, consumers tried to save money by purchasing private label brands. Once they perceived the economy to be better, they would switch back to the well-known brands or products.

Based on Chaniotakis et al.'s (2010), Jaafar et al.'s (2012), and Cela & Cazacu's (2016) researches, it depended on how the economic situation was perceived by the consumers. In Wang et al.'s (2001) paper, consumers could perceive the economy optimistically or pessimistically. Economic optimism could enhance the consumer confidence to make a large expenditure, while economic pessimism could generate the hesitancy towards the big purchase. Rubber chemicals also have similar traits, such as the premium brands with high quality products and the brands with acceptable quality. Nevertheless, there were no researches on optimism and pessimism economic perception towards purchase intention of rubber chemicals.

### *Firm Performance*

From the previous literatures on firm performance, many definitions of this term were proposed by the scholars and it basically referred to the efficiency, effectiveness, and competitiveness of a firm (Murphy, Trailer, & Hill, 1996; Santos & Brito, 2012; Taouab & Issor, 2019). Firm performance comprised of two elements which were financial and nonfinancial measures (Murphy et al., 1996). Profitability and growth were included in financial measure, while customer satisfaction, employee satisfaction, social performance, and environmental performance were included in nonfinancial measure. However, this study only focuses on the financial part, specifically on firm growth, whether it influences the purchase intention or not. The growth referred to the growth of market share, sales, revenue, or net profit etc. but profitability referred to the financial ratios. Therefore, using firm growth as the indicators is more appropriate in this study because the respondents have more access to those indicators rather than the financial ratios, especially the procurement team. By examining the relationship between firm performance and purchase intention, it can also illustrate the competitiveness of the firms in the market as it is unavoidable that every firms must maintain their firm performance or growth of their business to be competitive and survive in market (Richard, Devinney, Yip, & Johnson, 2009; Taouab & Issor, 2019). Based on Elbanna & Child's (2007) research, firm performance is classified as the firm characteristics which affects the decision-making processes. In addition, successful decision is the function of sufficient availability of resources, such as money, materials, and customers etc. (Rodrigues & Hickson, 1995; Elbanna & Child, 2007). Thus, with the firms having high performance, their performance should subsequently increase the level of purchase intention.

## Research methodology

The study was conducted in Thailand using survey questionnaire and e-mail survey questionnaire to collect the primary information. The samples were mainly purchasing officers, purchasing managers, and others who are responsible for the purchasing of rubber chemicals for manufacturing firms of rubber products. The sample size for the study was calculated using Yamane's (1967) equation. The acceptable precision error of 5% was used to calculate the appropriate sample size. Based on the statistic report from Rubber Intelligence Unit, there are a total of 652 companies which produce rubber products and require rubber chemicals as raw material in Thailand as of June 2, 2019 (Rubber Intelligence Unit - n.d.). Therefore, 248 samples were required for this study.

The survey questionnaire was structured in two parts. The first part asked mainly about the basic profiles of the respondents which were the responsibility of the purchase, job position, number of employees in the company, and types of products being manufactured. The second part was the main section where the respondents were asked to rate nine factors, namely brand awareness, value for money, quality, after-sales services, country of origin, supply ability, perceived economic situation, firm performance, and purchase intention of the industrial products (rubber chemicals). The first eight were the independent factors while the last one was the dependent factor. The respondents would be asked to rate each attribute on the 7-point Likert scale (1 = strongly disagree, 4 = neutral, and 7 = strongly agree) (Reichert & Altobelli, 2016). The questionnaire was also available in both English and Thai languages to avoid the misunderstanding of the questions. The detail on the questionnaire is presented in the Appendix.

Reliability analysis was performed on each construct to obtain the Cronbach's alpha

coefficients. Based on other researches, the value of 0.7 or greater was advised. Although the value between 0.5 and 0.7 was acceptable, it was not recommended on most researches. The value less than 0.5 was considered unacceptable and any variables with such value should be removed from their constructs (Murali et al., 2016; Reichert & Altobelli, 2016; Syed Alwi et al., 2016). Multiple regression analysis was then conducted to determine the linear relationship between independent variables (brand awareness, value for money, quality, after-sales services, country of origin, supply ability, perceived economic situation, and firm performance or  $X_i$ ) and dependent variable (purchase intention or  $Y$ ). The size of company and type of product were also included in the model as control variables to capture the differences among the groups. The methodology has been used in many studies to analyze purchase intention (Curvelo, Watanabe & Alfinito, 2019; Lau, Lam & Cheung, 2016; Wekeza & Siband, 2019). The analysis would then calculate the coefficients of each independent variables towards the dependent variable (Reichert & Altobelli, 2016). By comparing the calculated significance of each independent variables with significance level, the hypotheses could be analyzed and justified. The multiple regression model used for this study was therefore constructed as follows.

$$Y = \beta_0 + \beta_1 X_1 + \dots + \beta_p X_p + e$$

where  $e$  is the error term.

## Results

### *Profile of Respondents*

From the face-to-face interaction with the team, a total of 263 respondents voluntarily did the questionnaires. 16 sets of the questionnaires were considered incomplete and excluded from the total number of questionnaires. Thus, a total of 247 sets were used to analyze which is approximately according to the calculation of Yamane's

(1967) equation.

Table 1 shows the number of the sizes of companies where the respondents were working. It summarizes the companies into small, medium, and large enterprises according to the number of employees in the companies as defined by Revenue Department of Thailand for the manufacturing firms (Types of SMEs, 2018). Table 2 shows the number of job position of the respondents. Despite that there were many job positions from the collected data, they were organized into four categories for the ease of understanding. The largest group was procurement section following by technical section, management section, and others, respectively. From this table, not only that the procurement section had the responsibility for sourcing the raw materials, technical section also was a part of decision-making team with purchasing power. Moreover, only the small portion that the management team made the decision and other departments could make the purchasing decision. Table 3 summarizes the data from the respondents in terms of type of products as stated in Weerathamrongsak & Wongsurawat (2013).

#### *Multiple Regression Analysis*

Multiple regression analysis was conducted to test the linear relationship between independent variables (brand awareness, value for money, quality, after-sales services, country of origin, supply ability, perceived economic situation, and firm performance) and dependent variable (purchase intention). The model indicated the adjusted R<sup>2</sup> value of 0.466, that is, the model explained 46.6% of the variability of the data around its mean ( $F = 22.455$  and  $p\text{-value} = 0.000$ ). Moreover, the multicollinearity problem was shown to be insignificant. The multicollinearity problem only shows when the variance-inflating factor (VIF) exceeds the value of 10, so it can be concluded that there

were no relationships among the independent variables. The results of multiple regression are shown in Table 4. According to the statistical significances, out of eight independent factors, four factors had a significant and positive relationship towards purchase intention of rubber chemicals for manufacturing firms in the rubber industry in Thailand. These factors include value for money, after-sale services, supply ability, and firm performance. Size of company and type of products were also included in the model as control variables and the result indicated that no effects were shown from different groups of manufacturing firms considered towards the purchase intention. Detailed discussion on each of the independent factors in the model and managerial implications were discussed in the following section.

Table 1: Number of respondents according to the size of the company

Size of Company	Number of Employees	Number of Respondents	Percentage
Small	1-50	22	8.9%
Medium	51-10	54	33.6%
	101-150	9	
	151-200	20	
Large	201-250	8	57.5%
	251-300	10	
	301-350	7	
	351-400	13	
	401 or more	104	
<b>Total Amount</b>		<b>247</b>	<b>100%</b>

Table 2: Number of respondents according to the job position

Section	Job Position	Number of Respondents	Percentage	Total Percentage
Procurement	Procurement Staff	121	48.99%	67.61%
	Assistant Procurement Staff	1	0.40%	
	Procurement Manager	43	17.41%	
	Raw Material Planning	2	0.81%	
Technical	R&D Staff	22	8.91%	23.08%
	R&D Manager	28	11.43%	
	Production Staff	1	0.40%	
	QC Staff	4	1.62%	
	Technical Advisor	1	0.40%	
	Rubber Mixing Head	1	0.40%	
Management	Managing Director	5	2.02%	5.67%
	Owner of the Company	8	3.24%	
	Shareholders	1	0.40%	
Others	Sales Staff	4	1.62%	3.64%
	Accounting Staff	4	1.62%	
	Other	1	0.40%	
<b>Total Amount</b>		<b>247</b>	<b>100%</b>	<b>100%</b>

Table 3: Number of respondents according to a type of products

Type of Products	Number of Respondents	Percentage
Automotive Rubber Parts	88	35.63%
Industrial Rubber Parts	30	12.15%
Other Rubber Products	79	31.98%
Vehicle Tires	50	20.24%
<b>Total Amount</b>	<b>247</b>	<b>100%</b>

Table 4: Multiple regression results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.712	.436		1.635	.103		
Brand Awareness	.003	.060	.003	.053	.958	.643	1.555
Value for Money	.096	.052	.109	1.841	.067*	.616	1.624
Quality	.107	.074	.094	1.449	.149	.512	1.952
After Sales Service	.151	.080	.128	1.891	.060*	.472	2.117
Country of Origin	.025	.050	.029	.497	.620	.646	1.549
Supply Ability	.155	.066	.151	2.343	.020**	.525	1.906
Perceived Economic Situation	.073	.066	.065	1.099	.273	.627	1.596
Firm Performance	.331	.058	.353	5.658	.000***	.557	1.794
Size of Company	-.037	.075	-.023	-.485	.628	.948	1.055
Type of Product	-.002	.042	-.002	-.037	.971	.970	1.031

a. Dependent Variable: Purchase Intention

Note: \*\*\* Statistical significance at 1% level

\*\* Statistical significance at 5% level

\* Statistical significance at 10% level

## Discussion

To have better understanding, each of the independent factors in the model was discussed in detail on how it can or cannot influence the purchase intention in this section.

### Brand Awareness

Based on the results, brand awareness was insignificant towards the purchase intention, implying that the buyers of rubber

chemicals were not aware of the brand of the product when they made the purchase. The results were contradict to the other studies on brand awareness, for example, in cellular phone market (Chi et al., 2009) and franchise business (Lin et al., 2014). It was possible that, for rubber chemical industry, the buyers did not pay much attention to the brand names as the products provided the similar performance and quality causing no brands to stand out from

the competitors. In addition, buyers procured the rubber chemicals from many suppliers. Therefore, for the procurement team, they might use only a common name or generic name of the rubber chemicals for the ease of recognition and understanding to avoid any mistakes. Another possibility was that the buyers could acknowledge the manufacture name as the brand or distributor name as the buyers were not always purchased directly from the supplier (Walley et al., 2007; Davis et al., 2009), especially in the case of Thailand. Thus, brand awareness of the product itself became insignificant towards the purchase intention. Regardless of the brand awareness, the buyers could also keep purchasing from the same or existing suppliers as a result of “inertia”. The inertia is the habit of purchasing from a particular brand as the buyers always buy it as a risk reduction strategy which believed to be important in the industrial market (Walley et al., 2007).

#### *Value for Money*

Value for money showed a significant relationship towards the purchase intention and it was also important for the industrial market. The result also aligned with other studies for this direct relationship (Hsu & Lin, 2015; Yoo, 2015). For this study, the factor confirmed that the buyers considered what they received at a particular price and whether it was worthwhile or not. For example, one rubber chemical might be more expensive than the other suppliers; however, the buyers still considered to purchase from this supplier because the product solved the problem during the production process, increasing the productivity and reducing waste at the same time. So, the customer could gain more than using a cheaper raw material. In term of condition, the buyers could receive more services either from the suppliers which improved the convenience to the production workers (Zeithaml, 1988). For instance, the ready-to-use packaging might be customized specifically for the customer at the

acceptable price, while the other competitors were not able to facilitate this benefit to the customers although they offered a lower-priced product. Therefore, the price level was not everything during the purchase, but what kind of values that the customers could get at the price was more influential. Depending on the types of products either in consumer or industrial market, the suppliers had to find the values as they might be differed in term of benefits to the customers. However, pricing strategy should not be ignored (Syed Alwi et al., 2016) and the price level must be competitive enough with other suppliers.

#### *Quality*

The results showed that quality was not significantly related to the purchase intention. In the industrial market, having a good quality product that conformed to the user's specification was very critical in the manufacturing process. Therefore, most customers required their suppliers to have the international standards either ISO 9001 (Quality Management System), TQM (Total Quality Management) or both as one of the procurement's requirement. Thus, the consistent product quality would already be achieved through these standards. The customers then did not have to concern so much on the quality factor of the rubber chemicals when they made the purchase. However, the quality factor in this industrial market did not confirm its importance as in the other researches (Zeithaml, 1988; Mudambi et al., 1997; Sebastianelli & Tamimi, 2002; Bendixen et al., 2004; Hinterhuber & Hinterhuber, 2012).

#### *After-Sales Services*

After-sales services were significantly related to purchase intention in this study and the level of influence was relatively high comparing to other factors as well. The study showed that this factor was an essential part of the sales to the buyers, indicating that the

higher level of after-sales services enhanced the purchase intention of rubber chemical products. In order to do sales and promotion of this type of product, the salesperson had to understand the technical knowledge because this was an industrial product that a deep technical advice by the salesperson was a must. The after-sales services were sufficient and the buyers received good supports from the suppliers. This indicated that every supplier in this market must have the fundamental knowledge of rubber industry and the ability to explain in-depth information. Rubber chemical products were one of the important parts of the manufacturing process. Therefore, without the knowledge, the salesperson could not support or get the feedback from the customers correctly and accurately. This could eventually create more problems to the end products causing multiple damages to many parties along the process. In addition, the after-sales services could also help to create the relationship between the suppliers and customers which was a key element in the industrial market.

#### *Country-of-Origin*

According to the result, country-of-origin did not affect the purchase intention of the rubber chemicals. It contradicted the other researches that country-of-origin influenced the purchase intention on both consumer and industrial market (Godey et al., 2012; Wang et al., 2012; Reichert & Altobelli, 2016). For the case of Thailand, the result was possible as the buyers might not be able to remember where all the raw materials came from because, for example, there were many suppliers selling the same product and the products were imported from many different countries. Moreover, not all the buyers had the opportunity to visit the countries of their suppliers. It then became difficult for the buyers to be familiarized with those countries. The customers could be less dependent on the country-of-origin if they had enough knowledge and experience with the

attributes of a product from that specific country (Min Han, 1990). Moreover, the country image could be changed over time (Reichert & Altobelli, 2016). So, the reputation from the country-of-origin did not necessary lead to the purchase.

#### *Supply Ability*

Supply ability was significantly related towards the intention to purchase. The level of influence was almost identical to the after-sales services but it was more influential showing that the customers genuinely emphasized this factor. The sustainability of supply chain was considered by the procurement team during the discussion with its supplier because not only the social factors were important but also the environmental factors. For instant, in 2017, China imposed strict environmental standards to its producers and shut down some producers because of the heavy air pollution (Tan, 2018). Due to the event, the supply of rubber chemicals became tight to downstream customers and caused the sudden increase in price level from the limited supply. At the time, the customers tried to seek other suppliers outside China to mitigate the future risk of supply disruption. Nowadays, to reduce such a risk, the customers also requested and pushed their suppliers to have business contingency plans as one of the procurement requirements (Roberta Pereira et al., 2014). Therefore, to enhance the purchase intention of rubber chemical products, suppliers should ensure their sustainability of supply chain to their customers. According to the study by Christopher & Peck (2004), the customers perceived the supply ability of the suppliers by considering several factors including the number of suppliers and plants available in the market. For example, a supplier could have multiple plants across a country or the world to avoid the single source of supply which increased the risk of its supply chain. Furthermore, the suppliers have to keep sufficient inventory for the smooth supply and

it is a common practice that they keep more inventories as the safety stock to cope with the uncertainties of, for instance, delayed transportation, inconsistent production schedule and irregular demand.

#### *Perceived Economic Situation*

In this research, perceived economic situation showed an insignificant relationship towards purchase intention. Whether the customers perceived the economy either positively or negatively, they still had to purchase the rubber chemicals for their production. Even though perceiving the economic situation positively and negatively could influence the high or low volume of purchase and the acceptable price range, it did not influence the purchase intention of the buyers. Furthermore, the customers might consider using the equivalent product with a lower price and a fair quality when they perceive the economy negatively. Likewise, they might consider the premium brand product when they perceive the economy positively to avoid and reduce the possibility of non-conformed product because it is well-known for its standard and quality. Both Chaniotakis et al. (2010) and Cela & Cazacu (2016) confirmed the same occurrence in their studies that the perceived economic situation influenced how people evaluate the products. If they perceived negatively on the economy, they tended to purchase the private label products or own-level products (low price with low quality or acceptable quality), and vice versa. Therefore, this factor influenced how the customers made the purchase, not the decision to make the purchase.

#### *Firm Performance*

In this study, firm performance showed the most significant relationship towards purchase intention. Based on the result, it showed that growing in sales, production, and obtaining more customers were important for the firm to influence its purchase. The higher

the level of firm performance, this helped the firm to consider easier and took less time for the purchase because its resource was readily available (Rodrigues & Hickson, 1995). Therefore, the effect on the purchase intention would be varied depending on each firm's situation and this confirmed that firm performance was the firm-specific factor (Elbanna & Child, 2007).

#### **Conclusion**

This study provided more insights to the existing researches for the industrial market (B2B), specifically focusing on the influencing factors on purchase intention of rubber chemicals. Based on the multiple regression analysis, value for money, after-sales services, supply ability, and firm performance were positively significant towards the purchase intention. The result benefited the sellers of rubber chemicals in Thailand to understand more on what factors their customers are looking for during the purchase and improve their decision-making processes to satisfy the manufacturing firms in rubber industry in Thailand. For this B2B market, it can be seen that the buying process is more rational and less influence by emotions. Thus, values and benefits offered by the sellers are very important to the customers.

#### **Managerial Implications**

The study provided the following suggestions to both raw material suppliers and distributors in the rubber industry. In order to increase sales, the suppliers must have good knowledge on the raw materials and experiences with them, so that they can give advice to their customers, especially during the after sale. In case of any problems arise, the suppliers must be able to guide their customers through the process as quickly as possible. More importantly, the suppliers must be reliable to their customers. Supply continuity and flexibility are very crucial in this market because there are many stakeholders along the

supply chain. An interruption of supply ability can cause a huge effect to the next company in line. Inability to supply the raw material can create bad image for a company in the market and create hesitancy among the customers. Therefore, the suppliers, not only the management level but also every employee, must have good teamwork to manage their supply chain to create the supply security in the mind of their customers. Last but not least, the suppliers must find their own values and ask themselves as to why the buyers have to buy the products from them given the price level. If the values coincide with the customer's expectation, the supplier would gain competitive advantage and be able to attract more customers' purchase intention. Accordingly, this would also create trust with the new and existing customers resulting in future benefits to the suppliers.

#### **Limitations and recommendations for further study**

The author recognizes the limitations in this research. This paper is limited to the small sample size of the certain group of people with the purchasing authority for rubber chemicals, unlike the consumer market that the sample size is extremely large. The non-probability sampling method may create the biases to some degree. Therefore, this research cannot represent every industrial market but it helps and enhances further studies in this field. In addition, even though the Likert scale is a universal method for analyzing survey, there are limitations in using such methodology such as response bias, restricted choice and the use of parametric hypothesis tests. The interpretation of the results are therefore required to take these limitations into consideration.

Further research is recommended to understand more on the rubber industry as well as the industrial market. The significant factors might be changed from the longitudinal study (Hinterhuber & Hinterhuber, 2012). For

example, perceived economic situation was not significant in this study at the time when the sample was collected. However, these factors might strongly be significant if the questionnaire was distributed during the ongoing pandemic (COVID-19). Different sets of predicted factors and time of the study would definitely show distinct results, but there would be a common ground that the same predictors show the similar results. Moreover, some factors in this paper were the multidimensional constructs according to many researches previously. To understand more on any particular factors, future researches should concentrate on those sub-dimensional variables as they should provide further insights to other researchers.

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