

How significant are supplier selection criteria to the performance of a company? Reviewing Kuantan, Pahang Textile Industry

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Abstract

Purpose: The selection of a company's suppliers is crucial because they are one of the most influential factors that determine the success or failure of the company. Every business wants a reasonable price, acceptable quality and prompt delivery. Poor supplier selection can lead to performance problems that will affect the company. In particular, the company will lose customers and revenue.

Design/methodology/approach: A quantitative research methodology was used to assess the objectives of the study, which relate to the textile industry in Kuantan, Pahang. The analysis of the study includes descriptive analysis, reliability analysis (Cronbach's alpha > 0.70), normality analysis (histogram), correlation analysis (person correlation) and multiple regression analysis.

Result: The results show that the quality variables are rejected, while the price and cost variables and delivery are accepted in relation to business performance.

Research limitations/implications: There are various methods for evaluating a reliable supplier, including "decision theory techniques", which are recommended in the literature to assist companies' decision-making. In this study, decision theory is used to evaluate suppliers based on criteria and the profit that the company can gain from choosing the supplier.

Practical implications: The relationship between supplier selection factors and company performance has been sufficiently demonstrated by considering the study result. From this, a suggestion can be made for future improvements in the research, such as changes in the

business environment or location. This may help researchers to improve the validity of their work.

Originality/value: This problem results from the expensive and inferior purchase of raw materials by the supplier. The aim of this study is, therefore, to assist companies in selecting a reliable supplier. The profitability and competitiveness of a company also depend on the selection of reliable suppliers.

Keywords: Supplier Selection Criteria, Supplier evaluation, Company performance

Introduction

The choice of a company's supplier is crucial because it is one of the most influential factors that determine the success or failure of a business. Every business wants a reasonable price, acceptable quality and prompt delivery (Zakaria et al., 2019). Performance can be negatively affected if a company does not select a reputable supplier (Alikhani et al., 2019). For example, the company could lose customers and revenue (Beil & Ross, 2011). Supplier selection is crucial for companies as the first link in the supply chain. Supplier selection processes affect production activities, including planning and control systems and inventory management systems, scheduling, product capabilities and labour efficiency (Konys, 2019). From previous research and business practises, the implementation of a particular supply chain strategy affects a company's capability (Khosro & Yusof, 2019; Sarkar & Mohapatra, 2006; Watt et al., 2010). Supplier selection involves evaluating, identifying and contracting with suppliers. This process is challenging for the company's operations and management (Guarnieri & Trojan, 2019). A company's supplier selection is critical because it can improve performance, customer satisfaction and reputation. Problems that arise when a company selects the wrong supplier can increase production costs. This situation becomes a problem because the use of poor-quality raw materials would result in the company producing numerous defective products (Psarommatis et al., 2021).

The choice of suppliers is crucial for a company to achieve its goals because they contribute significantly to the company's performance and reputation (Beil & Ross, 2011). Problems arise when a company chooses the wrong supplier. For example, a company may not have any conditions or criteria when selecting a supplier (Tundys et al., 2019). Consequently, miscommunication between the purchasing manager and the supplier is the source of the problem. If a purchasing manager does not specify the product specifications, the supplier may charge a higher price for the raw material or component supplied. This circumstance would make it difficult for the company to reduce its unit costs. In addition, the company has to sell its products at a higher price and has difficulty retaining customers (Katsikeas et al., 2020).

Furthermore, selecting the wrong supplier can have a negative impact on the company's financial and operational status (Perboli et al., 2018). For example, if a procurement manager buys an expensive raw material and the finished product is of poor quality, performs poorly, has limited technical capabilities or is delivered late, the company may suffer a financial loss. However, if a company chooses its suppliers carefully, it can reduce its purchasing costs, improve its market position and satisfy its customers (Watt et al., 2010). To avoid a problem in the future, a company should evaluate its suppliers. For example, if a supplier does not deliver on time as promised, the company cannot operate and faces losses (Beil & Ross, 2011). Moreover, its reputation has suffered because it cannot meet customer demand (Pettit et al., 2019).

This study examines supplier selection in the textile industry in Kuantan, Pahang, Malaysia. The textile industry was selected because most textile companies in Kuantan work directly with suppliers to provide their raw materials. Therefore, the textile industry was selected for this study. Thus, the study will evaluate the above research hypothesis based on the literature review to achieve the research objective of identifying the relationship between supplier selection criteria and firm performance and investigating the impact of supplier selection on firm performance;

H1: There is a significant relationship between quality supplier selection criteria and company performance

H2: There is a significant relationship between cost and price supplier selection criteria and company performance

H3: There is a significant relationship between delivery supplier selection criteria and company performance

Literature Review

Supplier selection is about identifying the best suppliers who can provide customers with raw materials or finished goods of appropriate quality and quantity, at appropriate prices and at the right time (Huang & Keskar, 2007). Before selecting a supplier, company decision-makers first evaluate the attributes they want to consider (Wissuwa et al., 2022). The researcher found that pricing, quality and on-time delivery are the most important factors that companies consider when evaluating their suppliers before entering into a partnership (Fernando et al., 2019). Other characteristics discovered by the researcher include the supplier's communication system, financial situation, technical capabilities, financial situation and research and development carried out to improve product capability (Rashidi et al., 2020).

Price is the most common criterion used by companies when selecting a supplier (Katsikeas et al., 2020). When the unit cost of purchasing raw materials is lower, the cost of producing finished goods decreases (Vasina, 2014). As a result, the total price of the product is lowered. Discounts and payment terms can also influence pricing (Erdil, 2019). The next consideration in supplier selection is quality. Typically, companies buy high-quality goods (Hasan et al., 2020). They do not consider the additional costs that would be incurred (Taherdoost & Brard, 2019). They place a premium on quality compared to price. Consumer needs and expectations can be used to define the quality of a product (Atasağun et al., 2019). Moreover, meeting customer needs leads to superior products and services (Araújo et al., 2019). When selecting a supplier, services are considered - production, storage, transport and management services (Schramm et al., 2020). Another consideration when selecting a provider is delivery (Chai & Ngai, 2020). Delivery involves the transfer of physical products between an organisation and returns management. Delivery places more emphasis on managing operations, logistics and lead times (Kovács & Falagara Sigala, 2021). Operations management must ensure the timely delivery of products to customers (Konys, 2019).

Supplier Selection Criteria Related to Price, Quality and Delivery

When selecting a supplier, the company should analyse the whole process. According to Dickson (1966), there are a few important considerations when selecting a supplier. The

characteristics that play a role in selecting a supplier include supplier relationship management, quality, financial performance, price, delivery, communication system, service and geographical location, such as distance between suppliers and customers (Taherdoost & Brard, 2019). Quality parameters are often considered the decisive criterion for selecting a supplier. When selecting a supplier, a company must consider the supplier's price, the time window for delivery to the customer, the quality of the product and the service the supplier can provide (Konys, 2019).

In doing so, the supplier must meet the performance expectations set by the customers (Kovács & Falagara Sigala, 2021). The quality offered by the supplier is sufficient to avoid additional expenses while offering product quality and delivery dates to customers as the supplier's performance standard (Beil & Ross, 2011). According to Huang & Keskar (2007), suppliers are offered a fair price, which they either accept or not. However, they need to collaborate and negotiate to reduce the cost of the final product for all stakeholders, as they need to consider price when selecting suppliers. Price is, therefore, the optimal criterion for selecting a supplier as it is one of the most popular considerations. Fernando et al. (2019) emphasise that the lead time of the delivery process is crucial. Short delivery and lead times are critical for supplier selection, inventory reduction and inventory turnover. Lead time is a component of supplier selection and performance processes. The competitive cost was an important issue during the initial selection process, but it was not the deciding factor (Chai & Ngai, 2020).

Impact Supplier Selection on Company Performance

The selection of a supplier is crucial for companies as it is the first link in the supply chain (Fernando et al., 2022). The process of selecting a supplier involves the simultaneous use of resources. The execution of certain supply chain plans affects a company's performance (Zijm et al., 2019). For example, activities influence how each company performs process planning and control, leading to ineffective inventory management practices when inventory management does not go as planned (Fallahpour et al., 2021). A buyer's performance is also influenced by their ability to save money, as a company's investments will pay off better if they choose their suppliers wisely (Chen et al., 2020). Since it is easier for a company to run its operations smoothly if it has a suitable supplier as a partner, labour efficiency has a significant impact on a company's performance. When raw materials arrive on time, and the finished product has no defects, a company can run its business as usual (Yoon et al., 2017).

Selecting a supplier can be difficult for a number of reasons, including a lack of knowledge about the source (Taherdoost & Brard, 2019). Evaluating a company's supplier is of utmost importance, including the price the supplier offers, the quality of the product, the timeliness of material deliveries, and the services the supplier can provide (Yang & Wang, 2020). Suppliers are evaluated on a set of criteria based on the services they can provide to customers and the requirements of those customers. Furthermore, many experts agree that selecting a supplier is the most difficult task for the procurement department (Kusi-Sarpong et al., 2021). Supplier selection affects the company's performance, so they need to make an informed decision. It is important that by selecting the best supplier, the company is able to purchase raw materials at a reasonable price and improve its competitiveness (Saha et al., 2021).

Methodology

Since this study aims to understand the relationship between supplier selection criteria and firm performance, it falls under descriptive quantitative research. The population of this study is a

textile company in Kuantan Pahang which consists of about 328 people, including 68 employees of LM textile, 82 employees of Ventra Niaga, 60 employees of Seri Fesyen, 48 employees of Harp Bee, 70 employees of Eight Gold Empire. The total population ranges from ordinary workers to managers. However, to obtain data related to the study's subject, the target population consists only of managers and senior managers from departments or divisions, i.e. managers, management and senior management. The population is divided into subgroups with similar characteristics.

The researcher selects a sampling method based on probability from the total population data. Stratified random sampling was used to collect respondents to ensure that the study subgroup was adequately represented. The group was divided into executives, management and senior managers. The researcher then selects this sample by simple random sampling in each subgroup. Specific homogeneous groups with weights were assigned to each department to avoid low reliability and validity (Kamarudin, 2017). Only staff from each department were included in the sample population. The target population for the five textile companies is 50, which requires a minimum of 44 samples for 50 populations (Memon et al., 2020). To determine the relationship between supplier selection criteria and firm performance, the researcher used a questionnaire as a research instrument. The instrument design includes a nominal measurement scale for demographic data and an ordinal measurement scale for respondents' data on the research variables. A pretest was conducted with ten respondents to test the validity and reliability of the instrument (Cengiz et al., 2017; Herrán et al., 2011; Inemek & Tuna, 2009; Kant & Dalvi, 2017). The tested data indicate that all instruments are valid; therefore, data collection was continued.

After data collection, the researcher analysed the data using SPSS software. SPSS is the most commonly used statistical tool for processing data and producing various statistics. SPSS is a statistical package for the social sciences (Mishra et al., 2019). The researchers used descriptive analysis, reliability analysis (Cronbach's $\alpha > 0.7$), normality analysis (histogram), correlation analysis (person correlation) and multiple regression analysis (ANOVA, $p < 0.05$) in SPSS (Field, 2017).

Findings

A total of 44 responses were received for this study, and all data are valid for analysis. Four demographic characteristics were analysed. The four demographic characteristics are gender, age, position and number of years in the company. The number of respondents is 44 from 5 companies consisting of executives, management level and senior management level for each company. The respondents are 44 managers and key employees working in 5 textile companies in Kuantan. The pie chart shows the result of gender analysis: 38.64% of the respondents are male, which is equivalent to 17 people, and 61.36% are female, which is equivalent to 27 people. The samples show that female respondents are in the majority as there are currently more women in textile companies (Taherdoost & Brard, 2019).

The second demographic characteristic is age. The age of the respondents ranged from under 25 to 45 years and above. Most of the respondents are below 25 years of age, namely 23, representing 52.27% of the total number. The second largest group is those aged 45 and above, with seven respondents representing 15.9% of the total population. Seven of the respondents are between 26-30 years old, which is 13.64%. Three of the respondents are between 31-35

years and 41-45 years, 6.818%. The last two respondents were between 36-40 years old, which is 4.5%.

The third demographic characteristic is position. The largest proportion of respondents who participated in this study hold a managerial position. Eighteen respondents, or 38.6% of all respondents, hold this position. The second highest managerial position is held by 17 respondents, which is 38.64% of all respondents. The lowest percentage of respondents in the top management position is nine respondents, which is 20.45%. The final demographic group is the number of years in the company. The highest percentage of respondents has been with the company for less than five years, 25 respondents, which is 56.82% of the total population. The middle respondent worked between 5 and 10 years, which is 10 and 22.73%, respectively, followed by respondents who worked between 11 and 20 years, which is 5 and 11.36%, respectively. The smallest respondent who worked for 20 years or more is 4 or 9.09%.

The normality test determines whether the data roughly fit the bell curve of the standard distribution (Mishra et al., 2019). The first test represents the selection criteria for quality providers. The mean of this histogram is 3.76, and the standard deviation is 0.471 for a sample of 44 respondents. The shape of the histogram is a bell curve. It, therefore, shows that the data for the first independent variable is normally distributed. In this study, the skewness and kurtosis for the normality test were also determined. Skewness is used to measure the symmetry of the distribution. If the shape is symmetrical, the variables are normally distributed. Kurtosis refers to the flat shape of the distribution. If the value for skewness and kurtosis is between -1.96 and 1.96, the graph is normally distributed. Table 1 shows the normality test of the study.

Table 1: The study normality test

	N Valid	N Missing	Mean	Std. Deviation	Skewness	Std.Error Skewness	Kurtosis	Std.Error Kurtosis
Q	44	0	3.78	0.471	0.332	0.357	-1.349	0.702
PC	44	0	3.83	0.547	-0.393	0.357	-0.0226	0.702
D	44	0	3.98	0.595	-0.776	0.357	1.56	0.702
CP	44	0	4.1	0.5	-0.463	0.357	0.093	0.702

Note: Q = Quality, PC= Price and Cost, D= Delivery and CP= Company Performance.

Another crucial aspect of data analysis is reliability. It is to determine the consistency of the investigated constructs and quantify the instruments used to collect data from respondents who continually evaluate the investigated concept (Sekaran & Bougie, 2010). This study used Cronbach's alpha generated from the statistical analysis can be used to quantify construct reliability. Cronbach alpha values of 0.7 and more significant to be acceptable (Memon et al., 2020). The Cronbach alpha result shows that the quality variable is 0.70, price and cost is 0.720, delivery 0.729) and company performance is 0.803. Thus, all variable items are reliable for analysis, as shown in Table 2.

Table 2: Reliability analysis

Variable	N of items	No. of Items Deleted	Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	Indicator
Q	4	0	.701	.705	Accepted
PC	5	0	.720	.720	Accepted
D	4	0	.729	.725	Accepted
CP	5	0	.803	.800	Accepted

Note: Q = Quality, PC= Price and Cost, D= Delivery and CP= Company Performance.

Correlation analysis determines the degree of change in one variable as a result of the change in the other variable. A high correlation suggests a strong relationship between the two variables, whereas a low correlation shows a weak relationship (Green et al., 2016). The correlation coefficient measures the strength of the linear relationship between the variables investigated in a correlation analysis. Table 3 above shows that there was a significant correlation between quality and company performance. The correlation of quality is a moderate correlation score ($r = 0.432$) at (p -value = 0.003) of significant level (2-tailed). Thus, it shows that quality is moderately correlated to company performance.

Table 3: Correlation analysis (quality variable)

Variables		Q	CP
	Pearson Correlation	1	.432**
Q	Sig.(2-tailed)		.003
	N	44	44
	Pearson Correlation	.432**	1
CP	Sig.(2-tailed)	.003	
	N	44	44

Note: Q = Quality and CP= Company Performance.

Table 4 above shows that there was a significant correlation between price and company performance. The correlation of price is a high correlation score ($r = 0.629$) at (p -value = 0.000) of significant level (2-tailed). Thus, it shows that price is highly positively related to company performance.

Table 4: Correlation analysis (price and cost variable)

Variables		PC	CP
PC	Pearson Correlation	1	.629**
	Sig.(2-tailed)		.000
	N	44	44
CP	Pearson Correlation	.629**	1
	Sig.(2-tailed)	.000	
	N	44	44

Note: PC= Price and Cost and CP= Company Performance.

Table 5 above shows that there was a significant correlation between delivery and company performance. The correlation of delivery is moderate correlation score ($r = 0.594$) at (p -value = 0.000) of significant level (2-tailed). Thus, it shows that in hypothesis 3, delivery is moderately positively related to company performance.

Table 5: Correlation analysis (delivery variable)

Variables		D	CP
D	Pearson Correlation	1	.594**
	Sig.(2-tailed)		.000
	N	44	44
CP	Pearson Correlation	.594**	1
	Sig.(2-tailed)	.000	
	N	44	44

Note: D= Delivery and CP= Company Performance.

In a regression study, researchers employ the ANOVA test to analyse the impact of independent factors on the dependent variable. Using an ANOVA, the researcher can determine that at least two groups differed from one another (Field, 2017). The differences allow researchers to determine how each independent variable interacts with the study's dependent variable. Thus, we can conclude whether either study hypothesis can be accepted or rejected.

Based on the result in the ANOVA Table 6, only two variables are significant because the p -value is less than 0.05. Independent variable 1 is insignificant because the value of 0.071 is greater than 0.05. However, independent variables 2 and 3 are significant because the value is smaller than 0.05, representing 0.001 and 0.001. Based on the result, hypotheses 2 and 3 are accepted because it is signed between the independent variable and dependent variable. Besides that, hypothesis 1 is rejected because price and cost have no significant effect on company performance.

Table 6: The Summary of regression analysis

Variables		Sum Square	df	Mean Square	F	Sig.
Q	Between Groups	3.554	10	.355	1.964	.071
	Within Groups	5.973	33	.181		
	Total	9.527	43			
PC	Between Groups	7.167	10	.717	4.164	.001
	Within Groups	5.680	33	.172		
	Total	12.847	43			
D	Between Groups	8.393	10	.839	4.052	.001
	Within Groups	6.835	33	.207		
	Total	15.227	43			

Note: Q = Quality, PC= Price and Cost and D= Delivery

Discussion and Conclusion

The research was conducted using a series of hypotheses that related to the research question. The basic concept was that there is a correlation between the quality of supplier selection criteria and business performance. The research and the presentation of the data show a correlation between supplier selection criteria and business performance. The price and cost of supplier selection criteria and business performance are the second and third hypotheses of this study, respectively. The p-value for hypothesis 1 in the table ANOVA is greater than 0.05, which means that it is not significant for company performance. The two hypotheses are accepted. Previous research has found a relationship between supplier selection criteria and firm performance (Chai & Ngai, 2020; Guarnieri & Trojan, 2019; Taherdoost & Brard, 2019). The mix of quality, cost and delivery is a typical element that influences operational business performance (Beil & Ross, 2011; Pettit et al., 2019).

The second important finding of the study is that researchers can explore the relationship between supplier selection and business performance. The majority of the respondents agree that supplier choice affects their firm's performance, including productivity, efficiency, stability and competence. This result shows that labour productivity has a greater impact on business performance. Supplier choice will have a positive impact on business performance after achieving financial performance and stability, increasing labour productivity and improving employee skills and knowledge. Previous research has found that supplier selection has benefits for the company, such as lower costs, shorter manufacturing times, information sharing, and greater effectiveness and operational efficiency (Fernando et al., 2022; Perboli et al., 2018; Rashidi et al., 2020; Schramm et al., 2020).

The study is conducted in Kuantan, and the sample consists exclusively of textile companies in this region. Conditions that may influence the results of this study may only be present in the textile sector. Due to the small sample size and the textile industry, the results of the study may not be applied globally. Despite the fact that numerous studies have been conducted on supply chain management, the literature on this topic is currently sparse. Since the sample size for this company is smaller than other industries, the researcher cannot compare the results of this study with those of previous studies.

The duration of this survey is the only other limitation. Due to the limited availability of respondents, it is difficult for researchers to collect data from large samples. Respondents lack time to complete the survey. Due to the small sample size of the study of 44 respondents, the results of the survey may be limited. In addition, this study is hampered by the absence of an employee of a textile company. The small size of the company's workforce makes it difficult for the researcher to reach the respondent. Small companies usually have a small management team and only a few key employees. Therefore, it is difficult for the researcher to obtain a large sample.

The study's focus on the textile sector in Kuantan resulted in a small sample. The conclusions of the study may not apply to all countries in the world. For future research, it is recommended that this study be duplicated in conjunction with business scenarios and other sectors to ensure wide dissemination of the research findings. The second recommendation is to include intangible factors such as political, cultural and social factors in current studies on supplier selection. This could be a whole new environmental variable influencing supplier choice in the textile industry.

The reliability of the cross-sectional data collected in this study on the current business environment and the company is questionable. For example, only current market players and companies were considered in this analysis. We suggest that future studies adopt a longitudinal strategy and methodology to account for changes in customer demand and market conditions to confirm and verify the findings. Finally, we advise companies to carefully consider their criteria for selecting suppliers. A variety of factors are considered when selecting a supplier, including quality, pricing, delivery, reliability, technology, business ethics, environment and stability. The recommendation is that companies should analyse their suppliers based on supplier ratings and be aware of the impact the selection would have on the success of their business.

In summary, this research shows the relationship between supplier selection criteria and business performance. The data analysis shows that there are relationships between all the independent variables and the dependent variables. Furthermore, hypothesis 1 is rejected in this study because the p-value is greater than 0.05, and the result is not statistically significant. The relationship between supplier selection factors and business performance has been adequately demonstrated by the result of the study. From this, there is a suggestion to improve future research, such as changes in business environment or location. This may help researchers to improve the validity of their work.

Acknowledgement

The authors would like to thank the University Malaysia Pahang Research grant no. PGRS2003162 - Determinant of Malaysia SME Innovation Action Based on the Triple Helix Model for providing the funds and facilities to make this research possible.

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Appendices

APPENDIX A: STUDY QUESTIONER

SECTION A: PERSONAL INFORMATION 1. gender 2. age 3. current position 4. number of years in the company

SECTION B: QUALITY

To what extent do the following criteria/factors influence supplier selection in the quality of products/services in your company?

1. The product/service offered by the supplier meets the technical specifications and requirements of my company.
2. The supplier offers the latest quality products.
3. The supplier offers products that are returned 4. The supplier offers adequate product quality
5. Each supplier should be certified and meet the appropriate quality standards (e.g. BSI Kitemark, ISO).

SECTION C: PRICE AND COSTS

In your opinion, to what extent do the following criteria/factors influence supplier selection in terms of price and cost of products/services in your organisation?

1. The supplier must adhere to the prices and payment terms agreed in the contract.
2. The supplier's charges for returning goods are reasonable.
3. The prices/costs of spare parts should be taken into account when selecting the supplier.
4. The supplier must clearly state the maintenance costs for the warranty and post-warranty period.
5. Possible future price increases during the contract period should be agreed upon before the supplier is selected.

SECTION D: DELIVERY

In your opinion, to what extent do the following criteria/factors influence supplier selection in terms of delivery service in your company?

1. The supplier must be able to deliver the products/services on time.
2. Penalty charges are levied for late deliveries.
3. The supplier should offer short or reasonable delivery times for the products.
4. It is an advantage if the supplier is located near our organisation.

SECTION E: SUPPLIER SELECTION IMPACT

To what extent does supplier selection affect your organisation's performance?

1. An improved supplier selection process will increase work efficiency.
2. An improved supplier selection process will increase productivity.
3. An improved supplier selection process will lead to financial performance and stability.
4. An improved supplier selection process will improve quality and service to the customer.
5. An improved supplier selection process will further improve workers' skills and knowledge.