

**A STUDY OF THE RELATIONSHIP BETWEEN STRATEGIC SUPPLIER
SELECTION CRITERIA AND PARTNERSHIP SUCCESS – BASED ON THE
AUTOMOTIVE PARTS INDUSTRY IN CHINA**

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ABSTRACT

This doctoral thesis investigates the relationship between strategic supplier selection criteria and partnership success in the Chinese automotive parts industry.

The research methodology follows a mixed methods approach. The study begins with a comprehensive literature review. The quantitative approach, survey, is deployed to test the hypotheses and the qualitative approach, interview, is then used to establish explanations for the survey findings. Finally, the study proposes a revised framework of supplier selection criteria that is more appropriate to the Chinese automotive parts environment.

Data for this study is collected through survey and interview with 181 effective answers online and six semi-structured interviews respectively.

The findings of the literature review reveal that price, delivery, and service are identified as the most critical generic criteria, financial factors, technical factors, organisation culture, and strategy fitness as the strategic criteria for supplier selection in the Chinese automotive parts industry. The analysis results of research data indicate that the strategic criteria affect manufacturing performance and partnership success, while each criterion has a different effect mode:

- The technical factors and the strategy fitness have significant effects on the partnership success while the financial factors and the organisation culture do not.
- The technical factors and financial factors have significant effects on the manufacturing performance while the organisation culture and the strategy fitness do not.

Additionally, the study introduces three specific selection criteria, namely guanxi, intellectual property protection, and government relationship, based on the author's experience.

Lastly, these criteria are incorporated into a revised selection criteria framework. It consists of generic, strategic, and special criteria that buyer firms can adopt to enhance partnership success and manufacturing performance in the Chinese industry environment.

Keywords: Strategic Supplier Selection Criteria, Partnership Success, Manufacturing Performance, Chinese Industry Environment, Buyer Firm

DECLARATION

No portion of the work referred to in the thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

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CHAPTER I: INTRODUCTION

1.1 Research Background

Inappropriate selection of suppliers brings a high risk of disrupting the upstream supply of buyer companies, which can cause a massive loss, especially in the automotive parts industry. For example, Bosch, which is one of the largest automotive parts companies in the world, caused BMW a loss of more than EURO 400 million per week in 2017 (Chen, 2017). This problem was caused by one of its suppliers who could not supply a component, and consequently, Bosch could not supply the assembly products to the BMW global factories. The supplier is an aluminium parts manufacturer with 400 employees in Italy, while Bosch bought the parts globally. The capability issue may not be identified appropriately under specific criteria in their supplier selection process. Therefore, it constrained Bosch's manufacturing performance to serve the OEMs (Original Equipment Manufacturers) consequently. Finally, Bosch had to acquire the company and allocate the resources to build sufficient capabilities to resolve the supply problem.

The contemporary manufacturing industry has undergone a transformation in which most firms have begun to outsource their non-core business to appropriate suppliers due to resource limitations (Anderson & Katz, 1998). The buyers only retain their core competencies internally to concentrate their strengths under pressure from the market (Quinn & Hilmer, 1994). In order to utilise external resources, selecting suitable suppliers from a long-term perspective is becoming one of the essential decision-making issues in manufacturing supply chain management (Goffin et al., 2006; Ho et al., 2015). A partner supplier could help the buyers to relieve the internal resource limitation and focus on their core business by reducing the distraction of taking care of the supply (Sarkis & Dhavale, 2015). On the other hand, applying appropriate criteria when the buyers choose suppliers is necessary to identify the supplier's capability to fit the requirement, not to secure the supply chain stability as expected and create the risk of supply disruption. Therefore, specific selection criteria should be considered to evaluate the supplier's short-term and long-term capability from an external resource utilisation perspective.

Furthermore, having reliable suppliers may be one of the critical competitive advantages for the buyers competing in the marketplace. Many companies intend to use external resources to develop new products to break through the constraints of internal resources. Therefore, supplier integration in new product development is becoming increasingly important in academic research and business practice (Jayaram, 2008). A suitable supplier can support a buyer's new product development in terms of cost, quality, and time to improve project effectiveness and efficiency (Wynstra & Pierick, 2000; Yan & Dooley, 2013). High effectiveness and efficiency of new product development could be a competency (Wynstra & Pierick, 2000; Yan & Dooley, 2013). Although there are a lot of generic selection criteria, the buyers may need to consider selection factors from strategic perspectives to introduce suitable suppliers to cover some of the specific needs in different product development. For example, the supplier could serve different products or services, from a minor design suggestion on a component's manufacturability to the complete development of a specific part or sub-assembly. Moreover, the quality of the product or service that involved the supplier's development is strongly related to their capability in the expertise of knowledge, willingness, and communication between the buyer and the supplier. Therefore, strategic selection criteria should be adopted for supplier selection from capability and willingness perspectives regarding competitiveness creation consideration.

In addition, having a strategic relationship with a supplier changed from the traditional arms-length to a partnership is more perceived in the business market now (Revilla & Knoppen, 2015). Since partnership development requires much effort from both buyer and supplier, firms have become very selective in terms of with whom they want to engage. Under this consideration, the upstream partner's assessment is considered a critical stage (Kannan & Tan, 2002) after the first stage of qualifying potential candidates in the supplier selection process. Although the buyer can utilise generic criteria to qualify some potential suppliers to meet short-term performance requirements (Boer et al., 2001), more is needed for a partner supplier selection. General criteria, such as quality, price, and delivery, are not sufficient assessment for a strategic relationship development purpose since both buyer and supplier attractiveness may come from various perspectives bases (Tanskanen, 2015), e.g., economic-base, behaviour-base, resource-base, and bridging-based. Therefore, before the supplier

selection, the buyers may need to decide on a series of criteria from a long-term perspective if the product or service is a strategic item, such as the demand for improving corporate competitiveness, maintaining sustainable business development, and securing the marketplace. Because the partnership supplier selection is not the same as a qualified supplier selection, appropriate criteria different from the general ones are necessary to apply to identify strategy fitness between buyer and supplier for long-term relationship development.

Therefore, the changing environment is asking buyer firms to consider specific criteria to select appropriate suppliers in the supplier selection process in the industry. Subsequently, a natural question is: What selection criteria should buyers use based on today's situation? To answer this question, we study the tendency in supplier selection and draw the research direction in this chapter. The following sections present the current study progress and the research gap.

One systematic study by Dickson (1966) identified a list of 23 supplier selection criteria from a short-term perspective, which were analysed from 170 copies of the survey by the United States Manager Association. He considered quality, on-time delivery, and historical performance the most essential criteria. Donald et al. (1982) supported Dickson's view that the most critical criteria for evaluating suppliers are price, quality, on-time delivery, and service. In 1991, Weber reviewed 74 relevant papers on supplier selection criteria and methods from 1966 to 1991, and he agreed that the most important of the 23 evaluation criteria proposed by Dickson are price, on-time delivery, and quality. However, he argued that the different criteria should be adapted to the different sourcing environments. For example, geographical location is an essential criterion to be considered in a Just-In-Time (JIT)-based procurement context (Weber et al., 1991). Different purchasing situations at new task buy, modified re-buy, direct re-buy, and indirect re-buy formulating appropriate criteria are critical to assess the candidate suppliers. It is due to the differences in the uncertainty and complexity of each procurement environment (Boer et al., 2001). Kraljic (1983) proposed his model, based on a two-dimension approach, to diversify procurement items into four categories. In his model, the items are classified as routine items (low supply risk, low-profit impact), bottlenecks (high supplier risk, low-profit impact), leverage items (low supplier risk, high-profit impact) and strategic items (high supply risk, high-profit impact), in terms of profit

impact and supply risk considerations. In his argument, sourcing for strategic items requires long-term contracts and supplier relationships because sourcing is challenging in terms of changing suppliers. However, their study only considered sourcing items and did not consider suppliers' capabilities and intentions, significantly impacting long-term sourcing performance. In addition, the dynamics and complexities of supplier organisations change over time, such as the financial situation of suppliers, organisation culture, and the fitness of business strategy. These can lead to supply risk situations and impact the buyer's profitability.

Boer et al. (2001) considered the procurement phase in terms of complexity and importance. They argued that there are four stages in the supplier selection process, including the initial definition of the problem, the development of criteria, the qualification of potential suppliers, and the final selection among qualified suppliers. They stated that the final selection is largely governed by pre-selection. According to Krause et al. (2001), the five criteria are cost, quality, delivery, flexibility, and innovation for supplier selection from the perspective of buyer-company core competitiveness; supplier selection and management are used as proxies for these five competitive priorities in sourcing. Subsequently, Sarkis and Talluri (2002) identified two measures of strategic supplier selection from strategic performance indicators and organisation factors. They categorised sub-criteria, cost, quality, delivery, and flexibility, as strategic performance indicators and culture, technology, and relationship as organisation factors. The two hierarchy of criteria is demonstrated in their model. Ho, Xu, and Dey (2009) also emphasised that studying supplier evaluation and selection systems is complex as various criteria must be properly considered.

The interaction between selection criteria and buyer performance was identified from a strategic perspective and empirical studies by (Kannan & Tan, 2002, 2003). They explained that qualitative criteria affect buyer performance, while quantitative criteria have a minor impact on American manufacturing companies. Supplier's strategic commitment, as one of the qualitative criteria, has a more significant impact on supplier performance than supplier capability, as one of the quantitative criteria. Meanwhile, Chan (2003) presented that a high level of supplier technical competence can improve buyer performance in a 5-level buyer-supplier interaction. He argued that buyers should adopt different criteria to evaluate suppliers from levels 1 to 5 of the buyer-supplier relationship to select the right supplier

effectively. These studies conflict with the criteria categories and the interaction between criteria and supplier performance. Thus, it is necessary to have a study that clarifies strategic criteria for the evaluation of partnership suppliers from the perspective of the buyer's needs.

Seuring and Müller (2008) studied 191 articles on environmental, social and sustainability aspects from 1994 to 2007 from a sustainable supply chain management perspective. They found few studies about the social aspects of supplier selection, and the need for collaboration between buyer firms and suppliers is increasing. More recently, Luthra et al. (2015) proposed 22 evaluation criteria in three dimensions (economic, environmental, and social), identifying the top five sustainable supplier criteria: environmental cost, product quality, product price, occupational health and safety systems, and environmental competencies. After that, Stevic (2017) presented the nine most popular criteria in the study, including material quality, material price, product certification, delivery time, reputation, volume discounts, warranty period, reliability, and payment method, and applied them in supplier selection in the construction industry. As an evolution, the criteria applied to the earlier studies shifted from single foundational criteria to a hierarchy of relational criteria and its sub-criteria. For example, early studies focus on general criteria such as cost, quality, delivery, technical capability, and service. More recent studies have gradually categorised these foundational criteria into qualitative and quantitative criteria (Kannan & Tan, 2002), financial and non-financial (Narasimhan et al., 2006), economic, environmental and social (Luthra et al., 2015), and their sub-criteria are presented in turn.

Supplier evaluation and selection is complex because of the multiple objectives, multiple criteria, multiproduct period, and multiple suppliers' bidding characteristics. Differently, it is a multiple objective decision-making process impacted by many factors, such as human subjective opinion, purchasing strategy, supply network environment, supply chain risk, purchasing categories, process and technical method, and assessment criteria (Boer, 1998). Therefore, the criteria rating is challenging to implement in actual business practice due to the complexity and requires experts in the field. It makes supplier selection difficult from the buyer's perspective. Moreover, there are also some conflicts between the criteria. For example, high machine efficiency will frequently create low-cost operations and low-cost conflict with high quality. All these make the selection complex. Thus, categorising the criteria

and identifying strategic ones may reduce the complexity.

Furthermore, Narasimha et al. (2006) identified financial and non-financial criteria to select appropriate suppliers. Financial performance includes the direct cost of the products, indirect coordination cost, and fixed cost of maintaining relationships with suppliers. Non-financial aspects include product quality, delivery reliability and complexity of supplier arrangements. However, the selection criteria need to fit in terms of a dynamic bilateral relationship between the buying firms' changing priorities and the supplier's capability and willingness. We may consider bilateral criteria and the commitment of either the buyer or the supplier during the supplier selection phase. An initial strategy fitness between the buyer and the supplier is a premise to establish a close, long-term partnership; even strategies will be shifted during that time (Ellram, 1990). Therefore, a set of criteria for the compatible evaluation of bilateral strategy and organisation may be conducted to determine a strategic partnership.

Contemporary sourcing in the manufacturing industry has been changing, taking a strategic approach to outsourcing non-core operations, global supply chains and sustainability on both buyer and supplier sides. It indicates that supplier selection is increasingly critical to the success of procurement and affects the buyer company's performance and the partnership's success. The literature shows that only some studies identify the strategic selection criteria from a long-term perspective. The weighting of each criterion is flexible, and the ranking of suppliers is a subjective judgment of people and is not reliable and precise. Moreover, there are few studies related to the Chinese industry context in the supplier selection criteria. In addition, the existing research has yet to explicate the relationship among the criteria, the buyer's performance, and partnership success. To complement the research gap, we plan to study the topics in the Chinese automotive parts industry. Figure 1 shows the effect assumptions among the factors from the author's opinion. The strategic selection criteria will have a positive impact on the performance of the buyer, while improved performance will support the success of the partnership with the supplier.

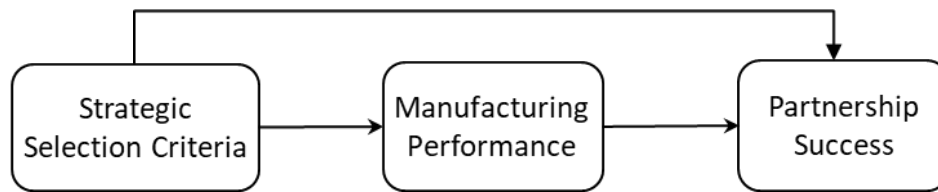


Figure 1 - Assumed Effect Model

The following chapter sets out research objectives and questions to drive the research towards validating the author’s assumption and finding answers for buyers in the industry so that they can assess and select appropriate upstream partners, improve their intake performance, and make a long-term partnership successful in China.

1.2 Research Objectives and Questions

The overall objective of this study is to understand the strategic criteria buyers should use when selecting suppliers in the Chinese context rather than a generic set of standard criteria. We conduct a mixed methods study in an exploratory sequential approach, in which data are collected through survey and interviews from the emerging market firms of automotive parts companies in China. We utilise a quantitative approach, specifically based on survey data, to test the hypotheses. Additionally, a qualitative approach with interview data is employed to explain the findings obtained from the survey. Ultimately, the study proposes a revised framework for supplier selection criteria better suited to the Chinese industry environment. According to the assumption that the supplier selection criteria affect the performance of buyers and the success of partnerships positively and significantly, three research questions are posed regarding supplier selection in the study as follows:

- What are the strategic criteria for selecting suppliers beyond the traditional generic criteria?
- How do the strategic criteria affect the manufacturing performance and the partnership?
- What selection criteria framework is appropriate to the Chinese automotive parts

industry?

1.3 Research Scope

Supplier selection is a crucial aspect of supply chain management, and selecting appropriate suppliers can significantly impact a firm's operations, competitiveness, and profitability. The two main types of criteria are defined for supplier selection from the author's perspective: strategic and non-strategic. Strategic criteria are those related to long-term goals, while non-strategic criteria are those related to short-term goals. This study focuses on the strategic criteria of supplier selection from buyers' perspective in the Chinese automotive parts industry. Many criteria have been identified from different perspectives in the antecedent research (Boer et al., 2001; Parthiban, Zubar, & Katarak, 2013; Şen, Şen, & Baraçlı, 2008; Wu, Shih, & Chan, 2009).

Nevertheless, strategic criteria are critical because they help firms establish long-term supplier relationships and build a competitive advantage. By selecting suppliers with innovative capabilities, financial stability, and a commitment to sustainability, firms can differentiate themselves from their competitors and create value for their customers. Additionally, strategic criteria can help firms reduce risks associated with supply chain disruption, as firms can rely on stable and committed suppliers to provide a consistent supply of goods and services.

On the other hand, non-strategic criteria are those related to short-term goals such as operational efficiency, transactional cost reduction, and day-to-day management of the supply chain. These criteria are typically more straightforward and require a simpler evaluation approach. Examples of non-strategic criteria include price, quality, delivery time, flexibility, and responsiveness. Non-strategic criteria are critical because they help firms achieve short-term goals related to the day-to-day management of their supply chain. By selecting suppliers that can provide high-quality goods and services at a lower cost and with shorter delivery times, firms can improve their operational efficiency and reduce transactional costs. Additionally, non-strategic criteria can help firms respond more quickly to market demand fluctuations and changing customer needs.

Overall, selecting appropriate suppliers is crucial to achieving optimal performance in a firm's supply chain. Strategic criteria are related to long-term goals and competitiveness, while non-strategic criteria are related to short-term goals and operational efficiency. To effectively evaluate suppliers, firms should consider both strategic and non-strategic criteria and choose an appropriate evaluation approach based on the assessed criteria. By doing so, firms can establish long-term relationships with strategic suppliers, reduce supply chain risks, and achieve short-term operational goals. This study focuses on the strategic criteria for supplier selection from the buyer's perspective. It concentrates on the criteria development for a comprehensive evaluation of suppliers and the definition of a set of strategic criteria for the supplier selection of China automotive parts manufacturing.

In the automotive supply chain, once a buyer firm has chosen a firm to supply its material or component, it is challenging to change their orders to another supplier. It is due to the vast validation cost and eventual OEM approval constraints (Han, Huang, & Macbeth, 2018; Vasiljević et al., 2018). Therefore, choosing an appropriate supplier is critical for the buyer's preference in the selection stage of the purchasing process in the industry. Furthermore, in the Chinese business environment, the relationship between the business partners is one of the most important because *guanxi* (Chinese business relationships) is more cared for than in Western culture (Ren et al., 2010), and it also takes a long time and resources to cultivate. Therefore, one study focused on long-term business relationships that are more common in the Chinese automotive parts industry (Han et al., 2018; Wang et al., 2016).

In the Chinese industry, where businesses often rely on Chinese suppliers, it becomes crucial to develop a robust supplier selection framework that considers the unique characteristics and challenges of the Chinese market. Additional criteria such as cultural compatibility, business ethics, and *guanxi* (Chinese business relationships) are essential in supplier selection decisions (Simpson et al., 2002; Mar & Young, 2001). *Guanxi*, a unique aspect of Chinese business culture, refers to developing personal relationships and networks to facilitate business transactions. *Guanxi* plays a significant role in supplier selection decisions in the Chinese industry. Building and maintaining strong *guanxi* with suppliers can improve communication, trust, and cooperation, ultimately enhancing supplier performance. Therefore, considering *guanxi* as a criterion in the supplier selection framework can be

advantageous for Chinese buying firms. Reputation and trustworthiness are crucial factors in supplier selection in China. Chinese companies place a high value on a supplier's reputation and track record. They often rely on word-of-mouth recommendations and references from other business partners to assess a supplier's reliability and integrity. "Face" is a concept deeply rooted in Chinese culture, referring to one's social standing, reputation, and dignity. Chinese companies often consider a supplier's reputation and the potential impact on their reputation when making supplier selection decisions. They prefer to work with suppliers with a positive reputation and can enhance their image in the industry. In terms of compliance and ethical standards, Chinese companies are becoming more conscious of compliance and ethical standards. They may prioritise suppliers who adhere to relevant regulations, environmental standards, and ethical business practices. Moreover, many companies in China are experiencing challenges in sourcing materials from long-term domestic partnerships since the market situation is quickly changing in China as a developing country (Pyke et al., 2000; Murray et al., 2004; Wilkinson et al., 2005). Therefore, buyers may have guidelines for selecting appropriate suppliers and managing partnerships with specialised types of criteria in China (McCutcheon & Stuart, 2000).

In addition, China is becoming one of the world's leading automotive markets, with the United States, Japan, and Germany becoming one of the largest automobile markets. Since the 1990s, the automotive industry has gradually become an integral part of the structure of the Chinese economy, with production reaching 25.2 million vehicles and sales revenues reaching RMB 8.2 trillion in 2020 (Bradstreet, 2021). Therefore, studying the topic in the Chinese market will be interesting.

In summary, this study focuses on three aspects: the effects of the strategic selection criteria between supplier and buyer, the automotive parts industry, and the geographical area of China.

1.4 Significance and Expected Contributions

The decision on supplier selection is a paradigm of a multi-criteria decision making problem, and it is an area of concern for supply chain management in academic and business

operations (Chai & Ngai, 2014). This study aims to further the understanding of the selection criteria from the perspective of academics and practitioners. It will contribute to supplier assessment and selection knowledge and provide valuable insights for academia and industry practitioners. The following are the anticipated results to be achieved during the research activities:

Academically, the study aims to build up a criteria framework for supplier selection in the automotive parts industry, especially in the Chinese environment. This framework will consider factors incorporated from the antecedent studies and the analysis of the quantitative and qualitative studies. Firstly, the study will provide a comprehensive and standardised approach for evaluating and selecting suppliers in the Chinese automotive parts industry by analysing the supplier selection criteria from the survey and interview data. Secondly, this study will adopt mixed methods as a research methodology in an exploratory sequential approach hybridised survey and interview. Many scholars have combined massive criteria in selecting suppliers from the antecedent literature. However, a limited number of studies have been conducted from mixed-method research. This study fills this imbalance gap in an exploratory sequential approach from the mixed method methodology. In assessing the resources and capabilities of suppliers, we plan to identify specific strategic criteria through literature review. After that, we validate via survey data analysis about the effect model that the suppliers selected through strategic criteria will significantly impact the performance and the relationships between the buyer and supplier. Thirdly, the study uses advanced analysis tools to process and study the quantitative and qualitative data. AMOS software is adopted to do the confirmatory factor analysis (CFA) and structural model building on the survey data. The reliability and validity of the model constructs and a good fit for the model are expected to be validated. Moreover, the hypotheses will be tested with use of the AMOS software. The qualitative analysis of interviews is done by NVivo software with a coding case study to explore the various weights of criteria for supplier selection in the Chinese automotive parts industry.

In practice, the selection of partnership suppliers is seen to enhance the advantage of the buyer organisation (Wu et al., 2009). However, there needs to be more consensus among practitioners regarding the impact of selection criteria on the success of partnerships and the manufacturing performance of the buyer organisation. This research aims to identify the

buyer's selection criteria for supplier selection in the Chinese industry environment from a buyer firm perspective. The study seeks to understand the factors buyers consider essential when evaluating and choosing suppliers in China. By identifying these selection criteria, the study aims to provide insights into buyers' decision-making process and contribute to understanding supplier selection in the specific industry context. Secondly, to validate the effects of these criteria on manufacturing performance and partnership success, the two software tools are deployed to analyse the quantitative and qualitative data. It will help researchers and industry partitioners to understand the available tools in the research area. Thirdly, the research will test the hypotheses that these four criteria positively affect manufacturing performance and partnership success. It will contribute to a better understanding of the weight of strategic criteria in the supplier selection process from a buyer perspective.

1.5 Structure of Thesis

Supplier selection arises in the context of dynamic supply chain management, and therefore buyer companies need to consider it from both a short and long-term perspective. To conduct a rigorous study, the significance of this research lies in the following theoretical and practical approaches. Theoretically, a comprehensive literature review related to the topic is conducted to express trends in supplier selection criteria. The research methodology is followed by mixed methods that are adopted in an exploratory sequential approach. Then, we propose a theoretical framework of supplier selection criteria for the Chinese industry context. Practically, the data are collected by survey and interviews. The structure of this thesis is outlined below.

- Chapter I – Introduction

This chapter briefly discusses the research background, research issues and expected outcomes.

Research background: Supplier capability is essential in the supply chain network of the Chinese automotive manufacturing industry. However, selecting appropriate suppliers is challenging because the criteria are related to multiple objectives, and many of the

criteria complicate the decision-making.

Research issues: What strategic criteria does the buyer use, and how do these criteria affect the manufacturing performance and the partnership success?

Expected outcomes: Identify appropriate criteria for supplier selection in the Chinese industry environment.

- Chapter II – Literature Review

This chapter presents an overview of the literature and discusses the relevant research background about the supplier selection criteria and the specific Chinese industry context of supplier selection. The definition of critical terms and the development of criteria are drawn from the literature review. The strategic criteria include four elements: financial factors, technical factors, organisation culture, and strategy fitness. The status quo and implications for selection criteria in the auto parts industry in China are presented.

- Chapter III – Research methodology and theoretical framework

This chapter indicates that a mixed methods approach is chosen as the research methodology. It considers the philosophical worldview, the nature of the research questions, the context of the researcher and the audience experience. The research programme begins with an online survey as an initial study of quantitative methods and semi-constructed interviews as a qualitative methods study in sequence. The resource-based perspective theory is discussed as the theoretical foundation.

- Chapter IV – Quantitative analysis of survey data

This chapter covers the steps and explanations for the survey development. It includes the hypothesis model to be tested among the factors. The primary elements of survey design are described, including scale, sampling, variables, and measures. It presents the results of an online survey and a test of an effects model among the strategic criteria, the buyer company's performance, and the partnership's success. The findings show that various criteria influence manufacturing performance and partnership success differently. Moreover, manufacturing performance has a positive effect on partnership success.

- Chapter V – Qualitative study of interview

The chapter focuses on the criteria for strategic supplier selection in the context of the industrial environment. The interviewer discusses the traditional criteria such as quality,

delivery on time, and service and explores the possibility of incorporating new criteria for supplier selection in today's industrial landscape. The interviewees provide insights into their company's background, including sales revenue, employee numbers, and product applications. They highlight the importance of function-related, quality-related, and market resource criteria for assessing strategic suppliers in long-term cooperation. The interviews provided valuable insights into the multifaceted criteria involved in supplier selection, including generic and strategic criteria.

- Chapter VI – Theory building

This chapter proposes a new selection criteria framework, which systematically integrates the extensive literature review, the hypothesis testing by the quantitative survey data, the study of the qualitative interview data, and the researchers' own experience.

- Chapter VII – Conclusions

This chapter is devoted to the study's conclusions regarding the theoretical and practical implications. It summarises the contributions and limitations of the research. Eventually, directions for future research are provided for practising and validating the effect model in a business case in a longitudinal study.

CHAPTER II: LITERATURE REVIEW

2.1 Introduction

A comprehensive literature review builds on a solid knowledge base and provides for theoretical development in the presence of substantial existing research. It briefs the scholar or colleague on what the author has learned and the goals of the field (Webster & Watson, 2002). The following rules are specific to the literature.

This literature review was proceeded through six stages, which refer to (Igarashi et al., 2013; Seuring & Müller, 2008):

- 1) Defining the research topic and questions that the thesis aims to address.
- 2) Material collection: This step involves defining and delimiting the material to be collected for the literature review. It includes identifying the relevant databases, journals, and other sources to search for literature.
- 3) Category selection: Structured dimensions and diverse categories are used as selection criteria to filter relevant articles, including year of publication, journal type, research topic, research methodology, and purchasing environment, and to select factors specific to the articles to be evaluated. It helps in organising and analysing the collected literature.
- 4) Material classification and evaluation: The collected material is analysed and classified according to the categories defined in the previous step. It involves reviewing and assessing the literature based on the selected criteria.
- 5) Critical evaluation: We objectively evaluate the strengths and limitations of the literature reviewed chronologically. It includes considering the history of the research, the quality of the research methods employed in the studies, the validity of the findings, and potential biases or limitations.
- 6) Summary: We aim to identify gaps or areas where further research is needed and narrow the research topic on strategic selection criteria effects to contribute to the existing knowledge and answer unanswered research questions.

2.2 Research Topics and Questions

Supplier evaluation and selection is a multi-criteria decision making problem involving quantitative and qualitative criteria (Simonov et al., 2018). Considering the long-term requirements of various factors and limited resource constraints, selecting a narrow number of strategic suppliers from a broad of potential suppliers is a critical step in the procurement process for the sustainable competitiveness of the buyer's company. Therefore, strategic selection criteria should be utilised in the selection process of suppliers from both long-term and short-term perspectives besides generic criteria. A crucial aspect of strategy management within an organisation involves evaluating and selecting suppliers based on specific criteria to support the organisation's strategic objectives. According to Sarkis and Talluri (2002b), sourcing strategies have become more critical in improving the buyer's competitiveness. The criteria are essential for assessing the capabilities of candidate suppliers and ensuring a comprehensive assessment from a long-term and sustainable perspective. Strategic fit between the buyer and the supplier is crucial for developing long-term partnerships based on trust, collaboration, and shared risk and reward. It also fosters collaboration and innovation, leading to the development of new products, improved processes, and enhanced value for both parties.

In general, switching suppliers could support the buyer in reducing procurement costs in a short time. However, it may bring a risk of introducing an inappropriate supplier for a long time. Although there are many criteria that a buyer firm can choose from, the decision of which criteria is complicated. Moreover, the buyer must spend lots of resources to cultivate their relationship with new or existing suppliers. Therefore, strategic criteria identifying may be a good start for supplier selection. In particular, partnership cooperation considers bilateral interests, including those of the buyer and the supplier (Imeri, 2013). It is necessary to have a systematic literature review of the existing research to identify the appropriate criteria for strategic supplier selection.

Therefore, a comprehensive portfolio of publications from top journals related to the topic is collected in academic databases. The literature study is conducted to answer the following question: What criteria and their sub-criteria are utilised during the supplier selection process

in the industry? Any specific criteria are more appropriate to the Chinese context?

2.3 Material Collection

In developing evidence-informed management knowledge, social management researchers prefer to rely on articles published in existing journals, which are peer-reviewed and quality-rated, rather than applying quality assessment criteria to individual articles, compared to other types of scientific research. It is due to the difficulties in defining the specification of studies and making quality assessments (Tranfield et al., 2003). The Chartered ABS (Association of Business Schools) journal rating is, therefore, a reference for screening journals. The 's Academic Journal Guide classifies journals into five levels: 4*, 4, 3, 2 and 1. Level 4* is the best distinction, with level 1 being the lowest but more modest standard. We selected the version ABS2021 as the reference. On the other side, as supplier selection is a crucial element in the overall purchasing process and dominates one of the most critical supply chain managements, the research topic is a branch of purchasing and supplier management. Therefore, we refer to relevant journals concentrating on purchasing and supply management. Zsidisin et al. (2007) published a list of journals relevant to Purchasing and Supplier Management (PSM). This list contained 27 journals, which is also seen as necessary to move the field of PSM forward. In summary, I initially used these two references to filter journals. Figure 2 shows a flow chart of the method used to search for articles from the literature databases.

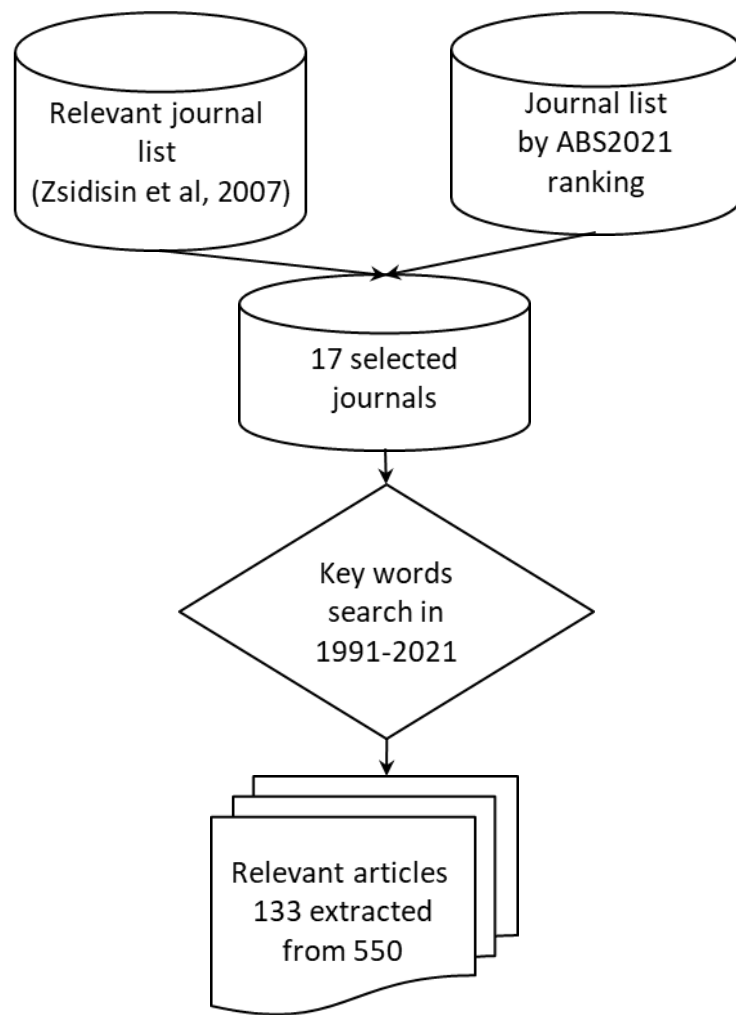


Figure 2 – Methodological Framework for Literature Searches

The 17 top journals are selected from the full list of the 454 journals rated as level 4*, 4 and 3 by ABS2021 and the 27 journals ranked by Zsidisin et al. (2007). The selected 17 journals include the Journal of Operations Management, Journal of Supply Chain Management, Harvard Business Review, MIT Sloan Management Review, Strategic Management Journal, Expert Systems with Applications, Supply Chain Management: An International Journal, Production and Operations Management, International Journal of Operations & Production Management, Industrial Marketing Management, Management Science, International Journal of Production Research, European Journal of Operational Research, Omega (International Journal of Management Science), International Journal of Production Economics, IEEE Transactions on Engineering Management, Journal of the Operational Research Society. The

journals of levels 2 and 1 are not considered as they are rarely cited. Table 1 provides a detailed list of the journals selected. Other journals or books are not considered for the literature review.

Table 1 – Selected Journals

No.	Zsidisin et al. (2007) Ranking	2021 ABS Rating Level	Journal Name
1	1	4*	Journal of Operations Management
2	3	3	Journal of Supply Chain Management
3	4	3	Harvard Business Review
4	6	3	MIT Sloan Management Review
5	7	4*	Strategic Management Journal
6	9	3	Expert Systems with Applications
7	11	3	Supply Chain Management: An International Journal
8	12	4	Production and operations management
9	13	4	International Journal of Operations & Production Management
10	16	3	Industrial Marketing Management
11	17	4*	Management Science
12	20	3	International Journal of Production Research
13	23	4	European Journal of Operational Research
14	24	3	Omega, International Journal of Management Science
15	25	3	International Journal of Production Economics
16	26	3	IEEE Transactions on Engineering Management
17	27	3	Journal of the Operational Research Society

About Keywords, the various terms chosen for the study are "supplier assessment", "vendor assessment", "supplier selection", "vendor selection", "supplier evaluation", "vendor evaluation", "supplier partnership", "strategic supplier", "strategic vendor", "supplier relationship", "supplier management" and "supplier strategy". The keywords "manufacturing performance" and "partnership success" are considered to search for articles related to the

impact of selection criteria on manufacturing performance and partnership success. These keywords are used to search the entire article text, including article titles, abstracts, and main body text in the journal databases.

The article search is restricted to 17 scholarly and peer-reviewed journal papers. All papers are written in English and published between 1991 and 2021. 1991 is the logical starting point for drawing up a dedicated publication on supplier selection criteria after Weber et al. (1991) published his article on supplier selection criteria and methods, reviewing 74 related articles over the previous 20 years.

Firstly, 550 articles were selected from 17 journals as a preliminary selection. Further, each article is screened in more detail by determining whether it addressed a specific topic of supplier selection or evaluation criteria through the title, abstract and body content. If an article did not mention the criteria or factor elements of supplier selection, it is screened out of the final literature list, even if it contained keywords. After excluding the non-relevant articles, 133 are ultimately chosen as appropriate literature for subsequent analysis.

2.4 Category Selection, Material Classification and Evaluation

These categories are defined according to Seuring and Müller (2008) and Igarashi et al. (2013). The following categories are used to collect relevant articles: year of publication, research methodologies, supplier selection criteria and purchasing context.

Publication Year

As described in the previous section, a search was conducted for publications from 1991 to 2021. As shown in Figure 3, each of the 133 articles is classified according to its year of publication. Overall, the publications increase over time, as shown on the dot trendline. 1991 is the first year of publication that could be sought. Weber et al. (1991) conducted a literature review and summarised 23 criteria based on Dickson's study. No articles on the supplier section criteria are found in these journals from 1992 to 1995. The decade from 2006 to 2015 is a period of proliferation of related publications, with 2015 being the year with the highest number of publications, 15 articles. This number then dropped to three publications in 2016. Furthermore, the first studies in 1991 focused on multiple factors (Shipley et al., 1991; Weber

et al., 1991).

The distribution of publications per journal from 1991 to 2021 is shown in Figure 4. The number of publications in Expert System with Application (25 articles) and Industrial Marketing Management (22 articles) are the top, focusing on related and modelling topics. The International Journal of Production Research (16 articles) and the Journal of Operations Management (14 articles) have almost the same number of published papers. In addition, the European Journal of Operational Research had 13 articles, and the International Journal of Production Economics had 11 articles. The other group of journals published less than ten articles. The International Journal of Operations & Production Management had eight articles, the Journal of Supply Chain Management had eight articles, and the International Journal of Management Science had six articles. Last, there are some journals, Supplier Chain Management - An International Journal (4 articles) and Transactions on Engineering Management (1 article). Surprisingly, in the six journals selected, the keyword search did not reveal any articles related to the research topic. They are Harvard Business Review, MIT Sloan Management Review, Strategic Management Journal, Production and Operation Management, Management Science, and Journal of the Operational Research Society.

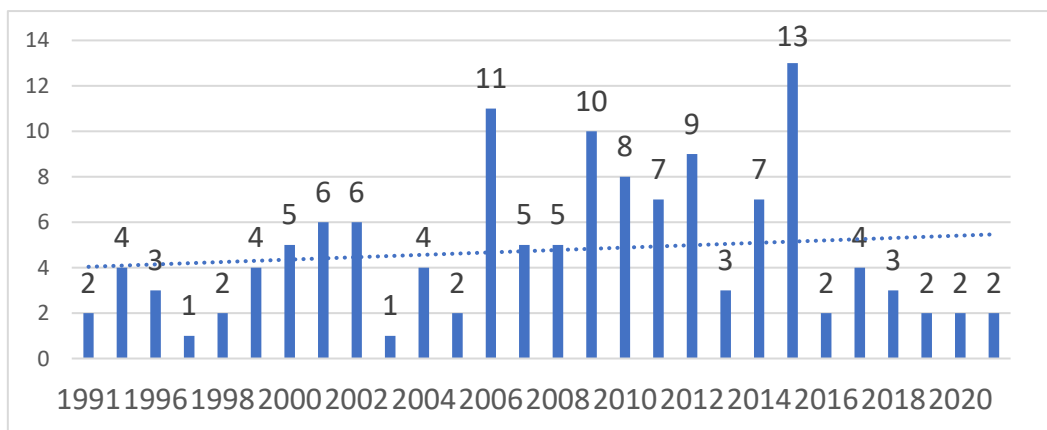


Figure 3 – Distribution of Publications per Year, N=133

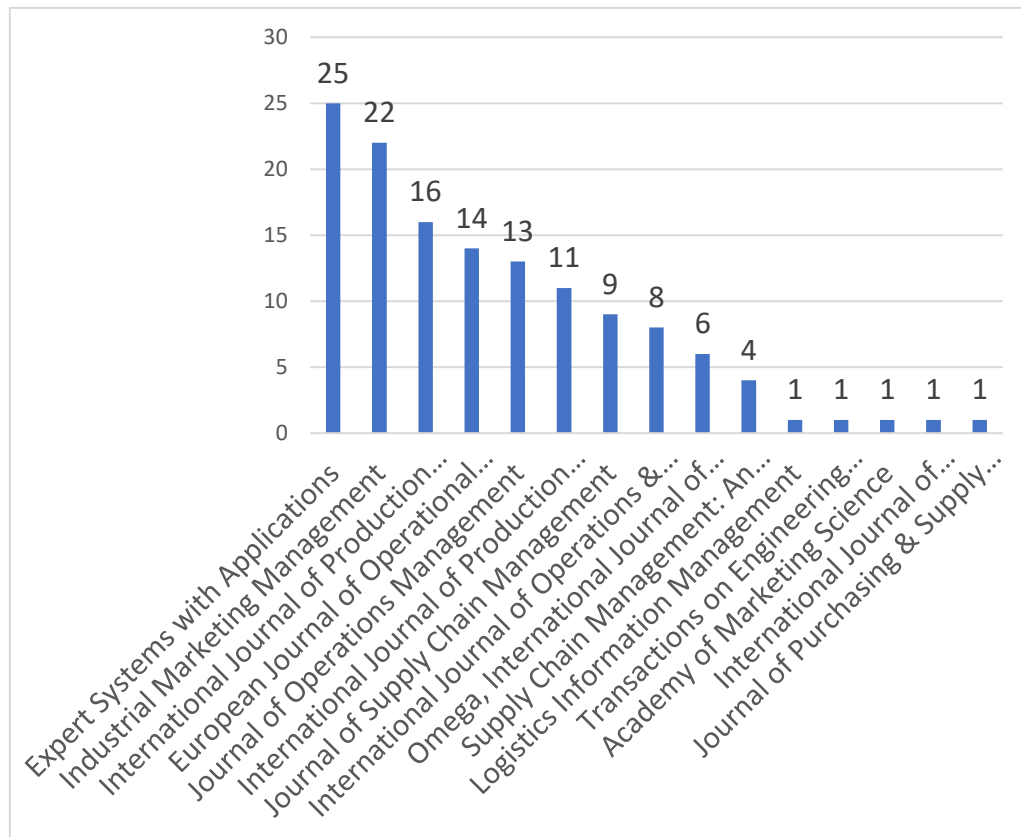


Figure 4 – Distribution of Publications per Journal, N=133

Research Methodologies

The research methodologies applied in the selected papers are categorised by following the seven methods (Igarashi et al., 2013; Wacker, 1998). They are distinguished as 1) Action Research, 2) Theoretical and Conceptual, 3) Literature Review, 4) Interview, 5) Modelling, 6) Case Study, and 7) Survey. Figure 5 shows the distribution of the papers in terms of research methods. Case studies and Surveys are the two most popular research methods, accounting for a significant proportion of the papers published (30%, 40 articles) and (29%, 39 articles), respectively. It is followed by the Modelling method (26%, 34 articles), Interview and Literature Review (7%, nine articles and 4%, six articles), Theoretical and Conceptual (3%, four articles), and Action Research (1%, one article). So, the most popular research methodologies are survey, case study, and modelling, which are in line with (Agus et al., 2018). The analysis also shows that mixed or hybridised research methods are not well applied in the relevant studies.

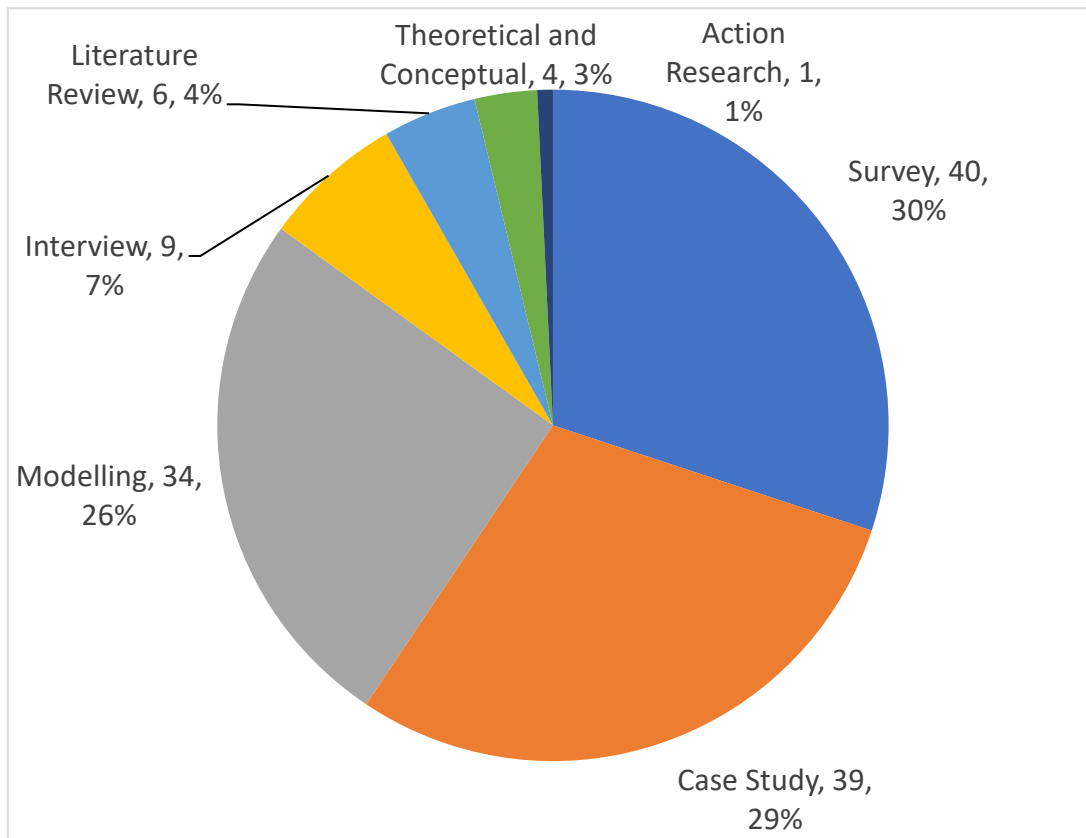


Figure 5 – Distribution of Research Methodologies, N=133

Dimensions of Criteria

The five categories of articles chosen to differentiate in terms of supplier selection criteria are Generic criteria, Financial Factors, Technical Factors, Organisation Culture, and Strategy Fitness adopted (Chan, 2003; Ellram, 1990; Luthra et al., 2015). The criteria mentioned in the articles are shown in Figure 6. Generic Criteria include cost, quality, service, and environmental and social considerations. Ninety-nine articles emphasised the generic criteria as they are essential for assessing suppliers, whether pre-qualified or re-purchased. Moreover, the financial factors are also well mentioned in eighty-five articles. The technical factors are mentioned in sixty-seven articles. The organisation culture is mentioned in twenty articles, and the strategy fitness is mentioned in fifteen articles. Generic criteria and Financial and Technical Factors are increasingly attracting research attention. The analysis also shows that only some specific supplier selection criteria are studied, especially in the Chinese industry. There are limited articles that address only the criteria studies.

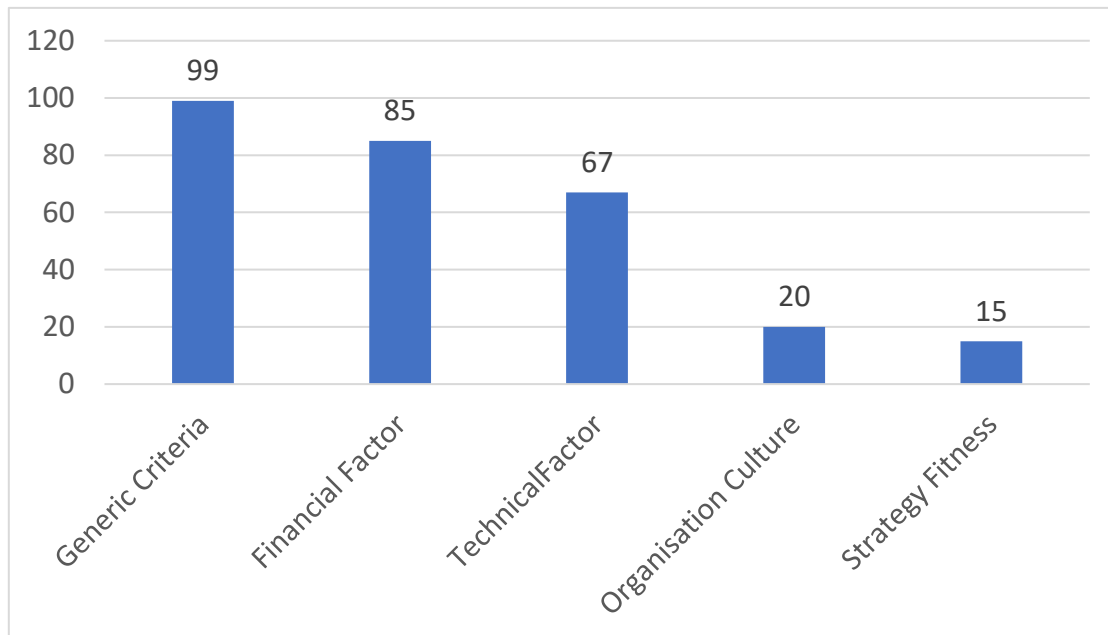


Figure 6 – Distribution of Criteria Selected, N=133

Purchasing Context

The selected articles are also categorised from the perspective of the procurement context: supplier position, inter-organisational perspective (Igarashi et al., 2013) and new or re-purchase (Boer et al., 2001).

It is an essential characteristic to examine when taking a buyer or supplier position in the purchasing environment. Depending on the position of the focal supply chain actor, the influence of the sourcing environment on supplier selection may be different, especially from the perspective of the entire supply chain. In addition, companies in each position have different market pressures. Therefore, testing the sourcing context for all articles will enable us to derive implications for future research. Supplier selection occurs at different supply chain positions and involves different neighbouring actors. Regarding the first and second perspectives, we adopt the Igarashi et al. (2013) classification of the buyer position to study headway. A view of the buyer position is given in Figure 7. The buyers in the supply position are divided into three categories. 1) The buyer is an Original Equipment Manufacturer (OEM) or end-user facing the final consumer, such as end-product manufacturers, construction companies and service providers. Individual consumers are not considered in this paper. 2)

The buyer is the tier manufacturer that supplies the OEM with its product or service. 3) The positions in classifications 1 and 2 are considered simultaneously in the paper. If an article is described without sufficiently clear implications to define the position of the supply chain, then the paper will be classified as "n/a" (not available). From the analysis results, 14 implicitly refer to the OEM's requirements for its sub-suppliers regarding assessment criteria, and 14 articles relate to tier suppliers who supply to the OEM but also have sub-suppliers. One hundred five articles are available in both positions; most do not specify a position. Thus, a clue could be generated that supplier assessment criteria are critical to the supply chain for companies in each position and should be carefully considered.

The second dimension of the purchasing context is that a study is from the buyer, supplier, or both. The buyer's perspective dominated the number of articles at 110, with 17 articles considering both buyer and supplier perspectives. Six articles described the evaluation criteria from the supplier's perspective, which is close to the theme of customer evaluation, see Figure 8.

The third argument that sourcing is a prerequisite for a new purchase, a re-purchase, or both comes from Boer et al. (2001). Therefore, the assessment criteria could be applied to new and existing candidate suppliers to measure and monitor continuous improvement performance. A few articles (4) focused only on a new buy, assessing new or existing suppliers of new products. A significant proportion of the others relate to re-purchase situations (52 articles), both new and re-purchase (64 articles), and unspecified (13 articles); see Figure 9.

The supplier selection process described by (Boer et al., 2001) explains that the finalisation phase of the criteria is indispensable. Moreover, this section expressed the analysis of the selected articles. Supplier assessment criteria are crucial for supplier selection, regardless of the purchasing environment. The selected papers demonstrated that both tiers and OEM firms used appropriate criteria to select suppliers. It is the same as in the case of new purchases or re-purchases. Particularly for buyer companies, the supplier selection criteria should be sufficiently defined to select qualified suppliers from the candidate suppliers.

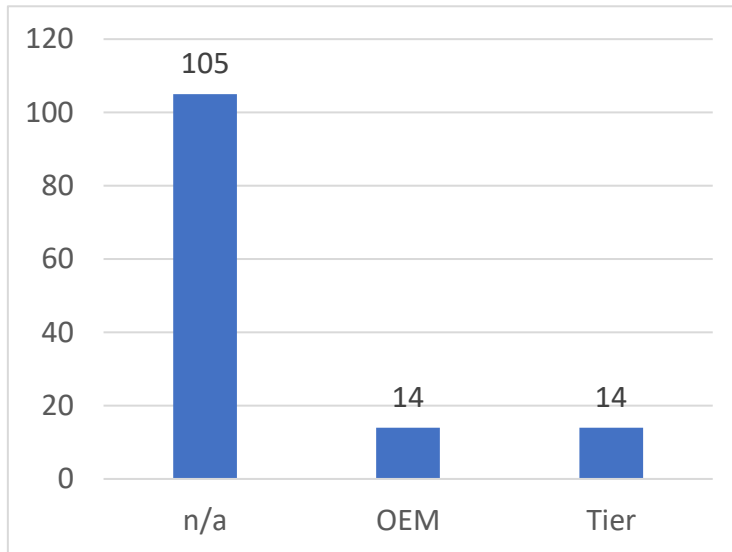


Figure 7 – Distribution of Company Tier Position, N=133

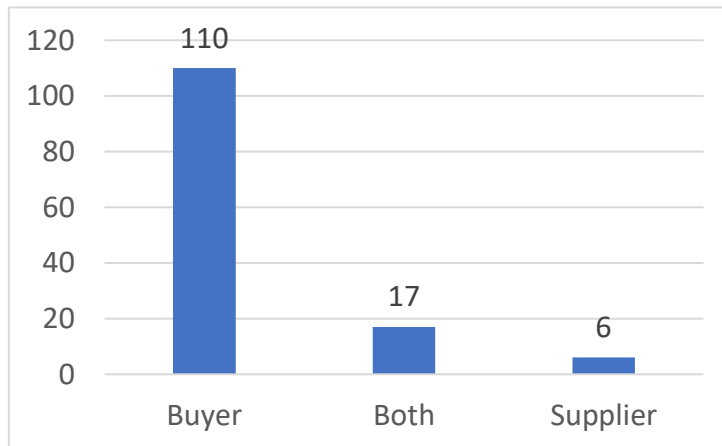


Figure 8 – Distribution of Buyer or Supplier Position, N=133

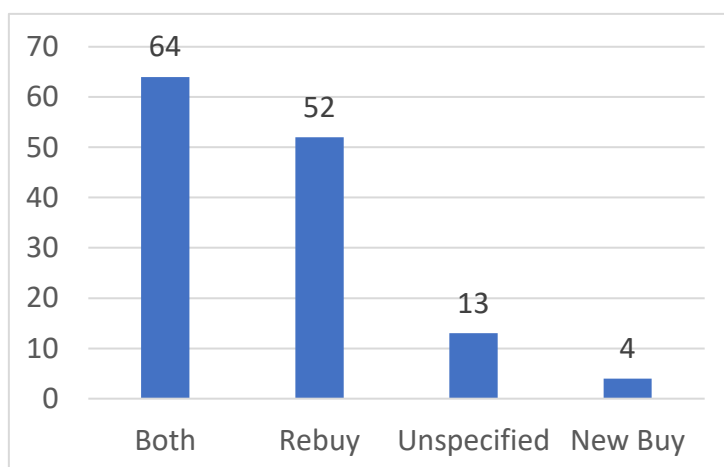


Figure 9 – Distribution of New- or Re-buy, N=133

2.5 Evaluation of Literature

2.5.1 Chronological Approach of Criteria

The study of supplier evaluation and selection systems is changing from sole criterion to multiple criteria in the chronological approach. Historically, Dickson (1966) is one of the first to study supplier selection criteria systematically. He analysed 170 United States Managers Association surveys, defined 23 supplier selection criteria, and ranked them. The critical criterion is quality, and the critical criteria are delivery, performance history, warranty policy, capacity, price, and finance. He also listed universal vital criteria, such as procedural compliance, communication systems, supplier reputation and standing, desire for business, management and organisation, operational control, maintenance services, attitude, impressions, packaging capabilities, labour relations record, geographical location, past business volume, training assistance and less importance reciprocal arrangements. Since then, several conceptual and empirical articles on supplier selection have appeared related to selection criteria.

With the requirement of long-term cooperation, Ellram (1990) created a set of soft criteria to evaluate supplier performance to obtain more purchasing benefits between the purchase and the supplier. He divided the criteria into four clusters: financial aspects, organisation culture and strategy, and technical issues. Many sub-criteria are deeply explored. For example, economic performance and financial stability are for financial aspects. Organisation culture and strategy issues consist of a sense of trust, management's attitude/outlook for the future, strategic fit, top management capability, capability at all levels and functions of the buyer and supplier firms, suppliers' organisational structure and individuals; technical factor include assessment of current manufacturing facilities/capabilities, assessment of future manufacturing capabilities, suppliers' design capabilities and the suppliers' speed of development. Other factors include the supplier's content security record, commercial references, and the supplier's customer base.

Weber (1991) reviewed 74 relevant papers from 1966 to 1991 based on Dickson's criteria and supplier selection methodology. It is then found that three of the 23 evaluation criteria

are the most important: price, on-time delivery, and quality. Of the 74 articles, the price criterion is the most popularly cited, with a very different sequential position than Dickson's study. Weber also argued that different criteria should be applied to different purchasing environments. For example, in his case study, geographical location is a crucial criterion based on the JIT procurement context.

Krause et al. (2001) studied North American purchasing executives. They concluded that the four traditional competencies criteria (quality, delivery, cost, flexibility) are preliminary substantive in evaluating the competitive priority of suppliers, while additional criterion innovation is significant. They argued that the concept of procurement core competencies is similar to the competitive priorities in business and supplier selection and improvement as a representative of the criteria quality, delivery, cost, technical competence and technological capability from a strategic perspective.

With the development of manufacturing theory, JIT, and TQM (total quality management), both concepts of supplier chain management are gaining importance in considering supplier relationships from a strategic dimension. Sarkis and Talluri (2002) identified strategic performance metrics and the organisational factors for strategic supplier selection. These included sub-criteria such as cost, quality, delivery, flexibility and culture, technology, relationship, and differentiation.

Evaluating suppliers is associated with various criteria classified as quantitative and qualitative. Cebi and Bayraktar (2003) utilised a hierarchical process model of analysis to demonstrate both tangible (quantitative) and intangible (qualitative) factors. These criteria include logistical, technical, commercial, and relational factors and 14 sub-criteria. Moreover, suppliers selected based on these criteria may impact the buyer's performance differently than the above criteria. Therefore, the relationship between the criteria and the business performance of the buying company is identified from a strategic perspective and empirical research on supplier selection and assessment in American and European companies, and the impact of evaluation on business performance is presented by (Kannan & Tan, 2002, 2003). Under the buyer-supplier interaction, Chan (2003) advocated using different criteria to evaluate suppliers within the five levels of the buyer-supplier relationship. He expressed the effectiveness of the interaction in terms of long-term, cyclical, and temporary. Moreover,

whether the value of the interaction is high or low, suppliers should be evaluated using different criteria details based on the categorised five levels of relationship. Sen et al. (2005) also presented a theory of supplier selection criteria based on five similar levels of integration between supplier and buyer-company.

The evaluation and selection of suppliers in the product life cycle is complex due to multiple objectives, criteria, multiple product periods and suppliers with bidding characteristics. Narasimha et al. (2006) presented financial and non-financial criteria to select appropriate suppliers in multi-objective programming. The financial aspects included the direct cost of products and indirect coordination cost. There are substandard unit prices for performance measures times the number of units purchased and fixed costs for maintaining relationships with suppliers, respectively. Non-financial aspects include product quality as measured by the percentage of supply units meeting quality conformity criteria, delivery reliability as measured by the percentage of delivery units meeting specific lead-time criteria, and complexity of supplier arrangements as measured by the total number of bids for meeting overall demand. The capabilities of the chosen supplier should be appropriate to the changing priorities of the buying company at different stages of the product life cycle.

Seuring and Müller (2008) identified 191 articles published from 1994 to 2007 regarding environmental, social and sustainability dimensions. Luthra et al. (2015) proposed 22 evaluation criteria in three dimensions (economic, environmental, and social), identifying the top five sustainable supplier criteria as environmental cost, quality of product, price of the product, occupational health and safety systems and environmental competencies. Stevic (2017) presented the four most important criteria and their sub-criteria for supplier evaluation by reviewing the relevant literature. The financial, logistics, quality and communication operations criteria contain five sub-criteria. Furthermore, in his study, the essential sub-criteria are the company's product and quality certifications in the context of sourcing for the company's export operations.

In short, the literature's strengths and limitations are summarised as follows. The antecedent literature provides insights into the importance of supplier selection criteria in the project procurement process. It offers a comprehensive list of criteria to be used as a starting point or reference when selecting and evaluating suppliers. The papers highlight the need for

organisations to build their list of criteria based on their specific needs and project type and emphasise the importance of considering aspiration levels for clients and suppliers during the supplier selection process. It also suggests that supplier evaluation and selection criteria can positively impact supplier performance and capabilities and provides evidence of the impact of supplier selection criteria on business performance, such as cost reduction and leveraging supplier capabilities. The material needs to comprehensively discuss the aspiration levels of clients and suppliers during the procurement process.

Conversely, the antecedent research extends beyond examining the impact on the buyer's business performance and partnership success, which may limit its applicability. Significantly, empirical studies need to be related to the effects of the strategic selection criteria. Moreover, the studies must provide a proposed supplier selection and evaluation decision framework on the specific sectors, industries, or geographies, which may limit its applicability to different contexts.

2.5.2 Selection Criteria in China Context

The automotive parts industry in China has witnessed significant growth and development in recent years. In 2020, the total production value of automotive parts in China reached approximately 498 billion US dollars (Lv, 2022). The industry has been expanding steadily, driven by the sustained growth of the automotive market in China. While the growth rate can vary year by year, historically, it has shown a positive trend. The growth rate has been around 5% to 7% recently. China is home to numerous automotive parts manufacturers, both domestic and international. It is important to note that China has many domestic manufacturers playing a crucial role in the industry's development. The dynamics of the industry are changing rapidly now in China.

The supplier selection criteria commonly used in the automotive parts industry include traditional criteria, such as price, quality, and delivery time, and emerging criteria, such as technological capabilities, sustainability practices, and supply chain integration. The criteria Chinese automotive parts buyers commonly use can vary depending on their specific needs and the nature of the automotive parts involved. However, some of the most frequently

considered criteria include quality, price, manufacturing capabilities, supply chain management, innovation and R&D, and after-sales service. Different companies may have unique priorities and criteria weighting when selecting suppliers or making purchasing decisions.

The empirical studies and industry reports explored the most used criteria by Chinese automotive parts suppliers and buyers, and examined some variations or unique considerations specific to the Chinese context, especially the influence of guanxi (business relationships), government policies, regulations, intellectual property protection, and government relationships. Guanxi is a Chinese term for personalised networks of influence and connections, which often play a significant role in business dealings, including supplier selection (Han et al., 2018; Wang et al., 2016). In China, buyers may prioritise suppliers with established guanxi to enhance trust, communication, and cooperation between parties. Government Policies and Regulations are among critical factors in China since China has a complex regulatory environment, and government policies can significantly impact supplier selection. Buyers may consider suppliers who comply with relevant regulations, possess necessary certifications, and meet government-mandated quality and safety standards. Intellectual property protection is also essential in supplier selection, particularly in China, where concerns over counterfeiting and intellectual property infringement have been raised. Buyers may prioritise suppliers demonstrating strong commitment and measures to protect intellectual property rights. In some cases, buyers may prioritise suppliers with established partnerships or collaborations with local government entities. Such relationships can facilitate regulatory compliance, access resources, and navigate bureaucratic procedures more effectively.

It is essential noting that while these variations exist, the above may not apply to every buyer or industry sector within China. The significance and impact of the Chinese context can vary depending on the nature of the business, industry dynamics, and buyers' individual preferences. Therefore, it is crucial to understand the unique context and challenges suppliers and buyers face in this industry. It serves as a foundation for further research and contributes to the development of effective selection frameworks and strategies in the automotive parts industry in China.

2.6 Summary

We collected criteria from the literature and categorised them into two themes: one focused on short-term capabilities assessment, named generic criteria, and the other named strategic criteria for long-term capabilities and fitness evaluation, see Figure 10. Some existing studies emphasise using generic criteria, such as cost, quality, service, and environmental and social measures, to evaluate and select the suppliers. However, from a sustainability standpoint, strategic purchasing, which needs strategic criteria, is increasingly crucial to the buyer manufacturing performance (Carr & Pearson, 2002) and the buyer-supplier partnership (Chan, 2003; Luthra et al., 2015).

The literature review presents massive assessment criteria that buyers can choose from the available articles. However, most of the literature shows that existing research focuses on the traditional performance criteria, such as cost, quality, delivery, technical competence and service (Dickson, 1966; Weber et al., 1991), usually used to identify qualified suppliers. Nevertheless, it is vital to optimise the prioritisation of each criterion and evaluate the bilateral fitness of buyer-suppliers in the specific procurement environment. Although a few research has gradually expanded to adopt specific criteria to evaluate the suppliers in industries that have different weights in the overall business environment, such as geographical location is an essential criterion to be considered in a Just-In-Time (JIT)-based procurement context (Weber et al., 1991). In short, only some comprehensive studies categorise the generic and strategic criteria for supplier selection, while they are only for assessing suppliers.

From the chronological review, supplier relationships have become more visible from a strategic perspective in recent decades (Sarkis & Talluri, 2002b), and sourcing strategies have become more critical in simultaneously improving the buyer's competitiveness (Sucky, 2007). Although the literature covers a wide range of such criteria, they applied various criteria to supplier selection related to partnership (Chan, 2003; Luthra et al., 2015; Sarkis & Talluri, 2002b), there are few studies to structure these criteria for supplier selection by integrating the consideration of the relationship of buyer-supplier and buyer's performance in the articles.

Moreover, some studies divided selection criteria into qualitative and quantitative

(Kannan & Tan, 2002), financial and non-financial (Narasimhan et al., 2006), economic, environmental and social (Luthra et al., 2015), tangible and intangible (Boer et al., 2001; Parthiban et al., 2013; Şen et al., 2008). Nevertheless, they did not present the strategic criteria from a long-term and sustainable perspective since the strategic selection criteria could support buyers to comprehensively assess the candidate suppliers' capabilities in the Chinese industry environment, such as financial factors, technical factors, organisation culture, and strategy fitness.

Supplier Selection Criteria

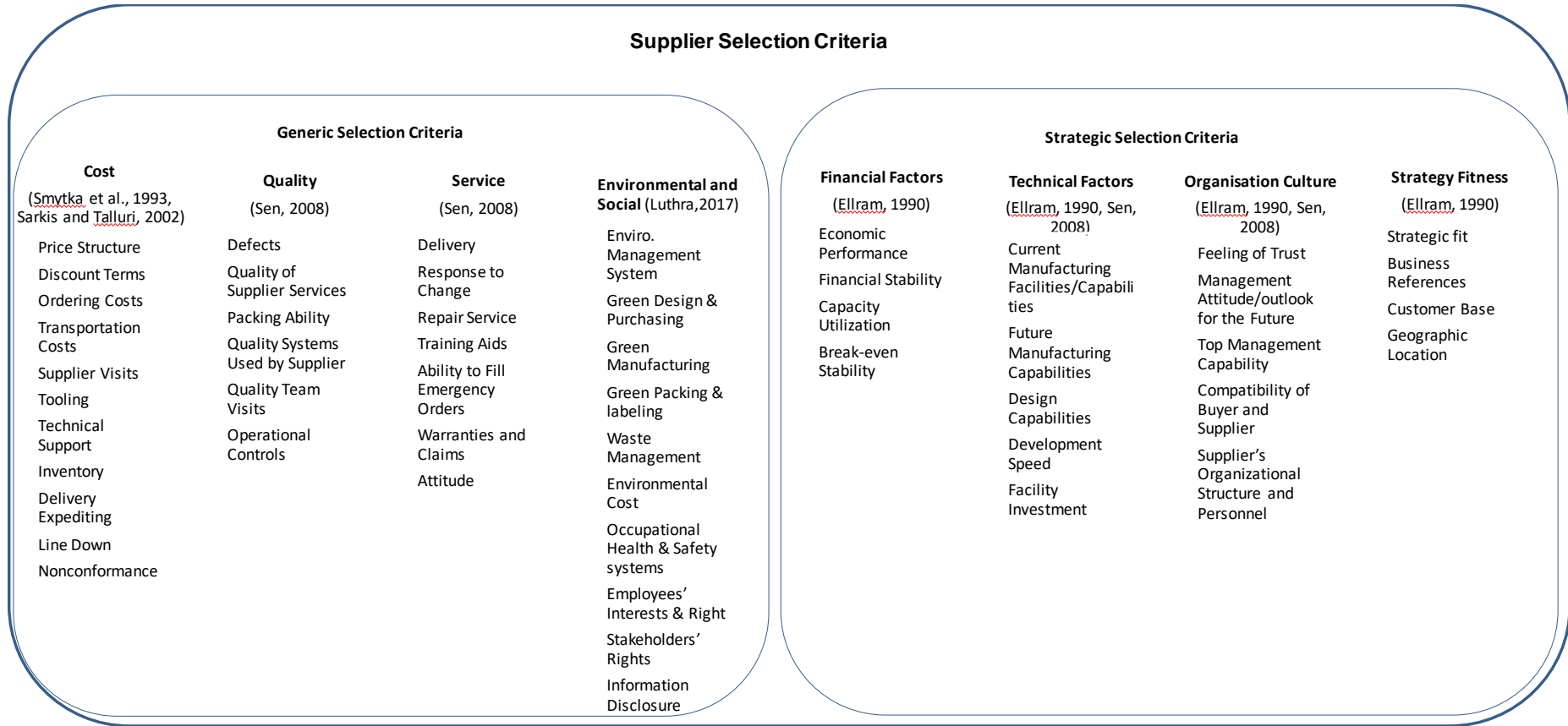


Figure 10 – Supplier Selection Criteria

CHAPTER III: RESEARCH METHODOLOGY AND THEORETICAL FRAMEWORK

3.1 Introduction

As a research approach, research methodology is the plans and procedures that guide research action, from hypothesis to data collection, analysis and interpretation (Creswell, 2014). Researchers can determine whether they will employ a qualitative, quantitative or a combination of both approaches when planning a research project. It is based on combining a worldview, hypothesis, specific research design and methodology; therefore, the selection of research methodology is affected by the consideration, including the philosophical worldviews, the nature of the research question, the personal experiences of the researcher and the audiences for the study.

This study adopts mixed methods as its research methodology, and it is a combination of quantitative and qualitative methods. Starting from a philosophical worldview, we conducted an approach followed by the pragmatism perspective, one of four orientations (Creswell, 2014); see Table 2. In the context of the study on supplier selection criteria in the industry, the mixed methods approach aligns with Pragmatism in several ways. Firstly, Pragmatism emphasises the practical consequences and real-world implications of research. Using a mixed methods approach, we can gather quantitative data (through surveys) and qualitative data (through interviews) to gain a comprehensive understanding of the supplier selection criteria. It allows us to address the practical concerns of industry professionals and stakeholders and provide insights that can be directly applied to improve the framework of supplier selection criteria. Secondly, Pragmatism recognises that different research questions may require different methods. By adopting a mixed methods approach, we have the flexibility to use both surveys and interviews, which can complement each other and provide a more robust understanding of the topic. Surveys can help us collect quantitative data on a larger scale, while interviews can provide in-depth qualitative insights and capture the nuances and complexities of the supplier selection process. Thirdly, Pragmatism emphasises the integration of theory and practice. The integration allows us to connect theoretical frameworks and concepts with real-world experiences and practices, enhancing the relevance and applicability of the research findings. At last, in terms of data triangulation, Pragmatism values multiple perspectives and the convergence of evidence. Using a mixed methods approach, we can

triangulate our findings by comparing and contrasting the results from surveys and interviews. This triangulation strengthens the validity and reliability of the research, as it allows us to corroborate and validate the findings across different data sources and methods.

In summary, the mixed methods approach in our study on supplier selection criteria in the industry aligns with Pragmatism by emphasising practical problem-solving, offering methodological flexibility, integrating theory and practice, and enabling data triangulation. This combination allows for a more comprehensive and robust understanding of the topic, with findings that can be directly applied in real-world contexts. It understands knowing the world as inseparable from an agency within it, that a claim is valid if only applicable (Heath, 2015) and arises from actions, situations and consequences rather than antecedent conditions (Creswell, 2014). It matches the study's aims to direct buyers or suppliers about their industry practice and fill the research gap. It followed the pragmatism philosophy that studies involve transacting with rather than representing nature; therefore, mixed methods are a proper approach.

In terms of the nature of the research question, it is about what criteria buyers should use to select a supplier and how the criteria affect the manufacturing performance and the partnership success in the industry. Moreover, the topic relates to multiple objectives of the purchasing network in the business world, such as different stakeholders and various levels of relationships. Therefore, a large sample of individuals is surveyed with the closed-ended scale. Afterwards, the interviews could identify the criteria via open-ended questions rather than conceptual deduction and are explored in general terms to define the variables. The combination proves the advantages of the mixed methods.

Regarding personal experience and audience, the researcher was trained in technology, scientific writing, statistics and computer statistics programs at The University of Manchester and Shanghai Jiao Tong University and is familiar with quantitative and qualitative journals in the library. Furthermore, the researcher prefers to conduct semi-structured interviews and online surveys since the time and resources could be allocated to collect quantitative and qualitative data. This research is written for the researcher's university PhD thesis, and the mixed methods approach is acceptable to the supervisors.

Therefore, the mixed methods design is helpful to the study from the perspective of the research questions and issues.

Table 2 – Four Worldviews, Adapted from (Creswell, 2014).

Post-positivism	Constructivism
* Determination	* Understanding
* Reductionism	* Multiple participant meanings
* Empirical observation and measurement	* Social and historical construction
* Theory verification	* Theory generation
Transformative	Pragmatism
* Political	* Consequences of actions
* Power and justice-oriented	* Problem-centred
* Collaborative	* Pluralistic
* Change-oriented	* Real-world practice-oriented

According to the study (Tashakkori, 1998), there are four basic research models: 1) Development model, or the use of one study to inform subsequent studies; 2) Initiation model, or the use of a preliminary study to launch the main study; 3) Complementarity model, or simultaneous examination of dimensions of a phenomenon through two or more studies, and; 4) Interpretation model, or the concurrent use of a second study to explain or confirm the findings of the main study. Considering the research topic, we use the Interpretation model to conduct a survey study first and second, followed by an interview study to supplement the previous research. Our research questions are: What criteria are used to select suppliers for advanced manufacturing performance and partnership success? The criteria for supplier selection have been widely expressed in antecedent research. However, it is not easily applied when there are too many criteria.

Therefore, as a primary study, a survey is needed to clarify whether the selected criteria are suitable or not to affect the manufacturing performance and partnership success in the Chinese automotive parts industry. Then, an interview is used to establish explanations for the survey findings. Finally, the study proposes a revised framework of supplier selection criteria that is more appropriate to the Chinese industry environment.

In general, our approach is tailored to the following study steps:

1. We conduct an online survey to collect the data, code, and interpretation.
2. We use the AMOS software of SEM technology for model validation and hypothesis

testing.

3. We interview procurement stakeholders from six buyers to clarify the strategic selection criteria derived from the literature perspective.
4. We use the software NVivo to analyse the qualitative interview data.
5. The final revised framework is made about supplier selection criteria in the automotive parts industry in the Chinese environment.

Ethical issues are apparent today, such as personal disclosure, authenticity, and credibility of the research reports, the role of researchers in cross-cultural contexts, and personal privacy issues in data collection via the Internet (Israel & Hay, 2006). Research involves the collection of data from people about people. Our research is conducted within the appropriate ethical guidelines of the University of Manchester.

3.2 Mixed Methods

Mixed methods involve a combination of quantitative and qualitative research methods. It is relatively new, developed in the mid to late 1980s. It originates in the multiple methods used in 1957 to research psychological characteristics. It integrates quantitative and qualitative data, and these two databases could explain, support or lead to better instruments or even build on each other (Tashakkori & Teddlie, 2010). The expected outcome of the study is to characterise diversity in terms of the research gaps, which requires merging the two databases, focus group surveys and interview data.

We followed the exploratory sequential procedure of mixed methods for the research approach. It started with literature review to assume the hypothesis and its effect model. Using a mixed methods approach, researchers can gather numerical data (through surveys) and in-depth insights (through interviews) to better understand the supplier selection criteria in the industry. The survey collected 181 effective answers online, and the semi-structured interviews proceeded with six different product firms by semi-structured methods. All the data was collected from the automotive part companies in China. The quantitative approach, survey, is deployed to test the hypotheses and the qualitative approach, interview, is then used to establish explanations for the survey findings. This approach allows for a more nuanced analysis and interpretation of the data and the opportunity to explore any discrepancies or contradictions that may arise.

3.3 Theoretical Framework

Since Ellram (1990) articulated four categories of strategic criteria for partnership supplier selection, it has received considerable attention in academic journals and business practice. We define strategic criteria as multiple factors for assessing candidate suppliers' tangible and intangible capabilities to select the right partner. It includes four elements: financial factors, technical factors, organisation culture, and strategy fitness. Strategic selection criteria in the sourcing process are also becoming increasingly important from a resource-based view (RBV) as companies recognise the importance of long-term input from partnering suppliers to their products. Sarkis and Talluri (2002a) stated that strategic performance and organisational factors are critical for selecting a collaborative supplier. Moreover, firms could obtain and mobilise complementary resources from external suppliers to improve their manufacturing performance (Teixeira et al., 2012). Depending on the level of partnership and the sourcing environment, a range of strategic criteria related to supplier selection have been developed (Chan, 2003; Sarkis & Dhavale, 2015; Şen et al., 2008) based on the RBV. Moreover, some researchers on strategic selection criteria that influenced the performance and partnership success (Carr & Pearson, 2002; Teixeira et al., 2012) are relevant to the theory. This section describes the theoretical framework of the resource-based view and the theoretical foundations of how selection criteria affect buyer performance and partnership success by utilising supplier capabilities and resources.

3.3.1 Resource-based View Theory

The resource-based view emphasises the strategic importance of a firm's resources and capabilities. These are tangible and intangible resources (Barney, 1991). Tangible resources include financial, organisational, physical, and technical, while intangible resources include human, innovation, and reputation.

Penrose (1959) resource-based view of theory takes firms as bundles of resources that are managed, deployed, and reorganised in ways that provide unique form and value. Since then, many studies have significantly contributed to this theoretical perspective (Barney, 1991; Dierickx & Cool, 1989). A range of tangible and intangible assets owned by a firm are defined as resources (Wernerfelt, 1984). Tangible assets may include infrastructure, equipment, and hardware, while intangible assets may include organisation capability, management skills and

knowledge, technical skills, products, and quality control processes. For example, it is assumed that a superior product market position would be achieved or protected by utilising the scarce resource. In this case, it is necessary to preserve the assets as non-tradeable, non-imitable and non-substitutable (Dierickx & Cool, 1989). Barney (1991) defined two significant assumptions about a firm's resources. One is that resources are heterogeneous, and the other is that resources would only be mobilised slowly. Heterogeneity refers to organisations having different resources, routines, capabilities, and other assets that distinguish one organisation from another. This differentiation of organisational resources helps to create different strategies and sustain competitive advantage. Organisations can achieve different performance levels by pursuing different resources and creating different strategies. Imperfect mobility meant that resources have a degree of immobility. Some resources have high mobility and can be purchased in the market, while others are less mobile and more difficult to purchase. Based on these varying degrees of resource mobility, organisations can develop unique resources and create complex strategies for competitors to imitate. Furthermore, Swinarski et al. (2006) provided a concise framework for the theory. They argue that resources are heterogeneously distributed among competing firms and that firms gain competitive advantages in the marketplace through the ability to effectively develop, deploy and nurture scarce, valuable, imperfectly mobile, and non-substitutable resources.

To create a sustainable competitive advantage, five attributes are considered to characterise a resource (Barney, 1991; Peteraf, 1993). Firstly, resources must be valuable. Valuable are those resources that enable the firm to create a differentiated strategy, that is, that helps the firm to create value for its stakeholders. Secondly, resources must be rare and ensure that a particular resource is difficult to exploit by other competitors. Thirdly, the resources must be imitable. In other words, the resource must be hard to imitate, enabling the firms to create strategies based on resources that are difficult to imitate. Fourthly, the resources must be irreplaceable. A firm's resources cannot have a similar or equivalent resource in the market. Finally, the lower mobility of resources should be a limitation to the other firms. Although the resources can be traded, they are more valuable within a given firm.

Based on the selection from the strategic criteria, firms can strengthen their advantages by acquiring suppliers as resources. It is because the strategic criteria will support the selected supplier as a valuable, rare, non-imitable, non-substitutable and immobilised resource that is difficult for competitors to obtain, see Figure 11.

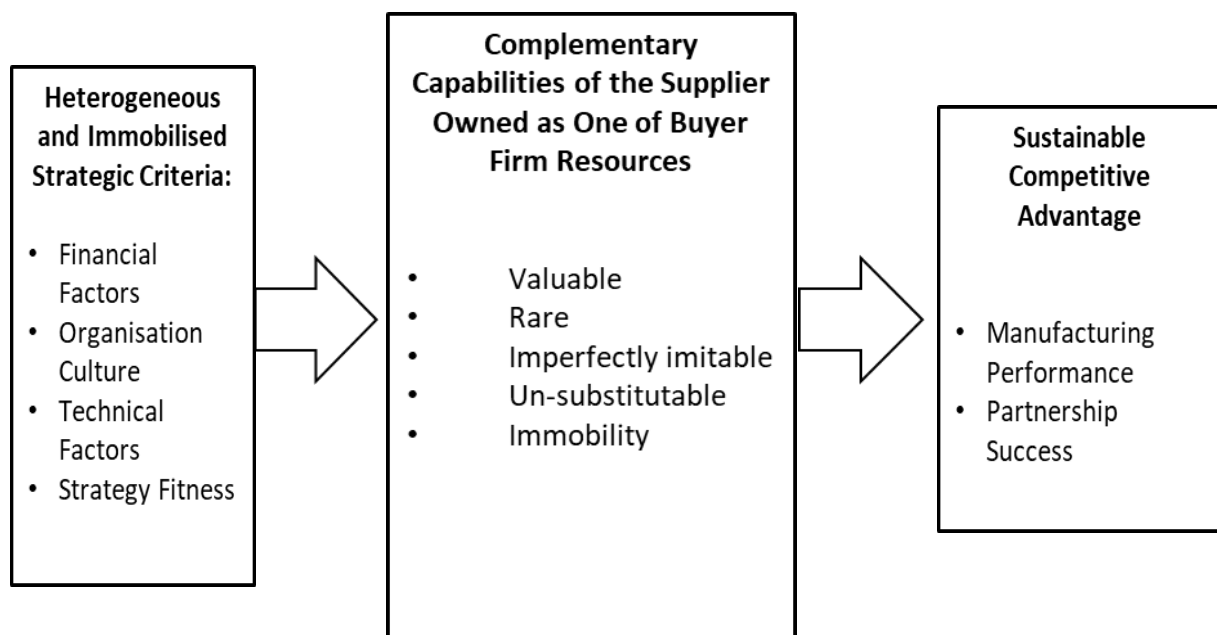


Figure 11 - RBV Theoretical Framework

The RBV provides a theoretical framework for understanding how a firm's unique resources and capabilities can lead to sustained competitive advantage. According to the RBV, a firm's resources must be valuable, rare, inimitable, and non-substitutable to generate sustained competitive advantage. In supplier selection, the RBV suggests that a firm should identify and select suppliers whose resources and capabilities are valuable, rare, and difficult to imitate. For example, a firm may seek suppliers with unique manufacturing processes or access to rare raw materials. By selecting suppliers with such valuable and rare resources, a firm can gain a competitive advantage that is difficult for competitors to replicate. It is a theoretical framework focusing on how firms can achieve sustainable competitive advantages by utilising their unique and valuable resources (Barney, 1991). According to the RBV, specific resources and capabilities can be inelastic in supply, leading to sustained competitive advantage (Peteraf, 1993). These resources possess path dependence, causal ambiguity, and social complexity, making them difficult to imitate or substitute (Barney, 1991).

RBV provides a foundation for understanding how firms can develop and leverage unique resources and capabilities for sustained competitive advantage. Then, dynamic capacity and absorptive capacity theory complement RBV by emphasising the importance of adaptability and responsiveness to maintain a competitive advantage in dynamic environments and play a

crucial role in the acquisition and utilisation of external knowledge, which can enhance a firm's resource base and dynamic capabilities (Teece, 1997).

The concept of absorptive capacity suggests that suppliers with high absorptive capacity can offer several benefits to the buyer firm. Firstly, these suppliers can provide access to new technologies, industry trends, and best practices to enhance the buyer's manufacturing processes. By assimilating and applying this external knowledge, the buyer can improve its operational efficiency, reduce costs, and enhance product quality.

Secondly, suppliers with high absorptive capacity can contribute to the buyer's innovation efforts. They can bring new ideas, insights, and perspectives to stimulate creativity and drive product or process innovation. It can lead to the developing of new and improved products, giving the buyer a competitive edge in the market.

Furthermore, suppliers with high absorptive capacity can facilitate knowledge transfer and learning within the buyer-supplier relationship. Through collaborative interactions and information sharing, the buyer can gain valuable insights and expertise from the supplier, leading to mutual learning and continuous improvement. It can foster a long-term partnership based on trust, shared knowledge, and joint problem-solving, ultimately contributing to partnership success.

In summary, absorptive capacity as a supplier selection criterion is crucial in buyer-firm manufacturing performance and partnership success. By selecting suppliers with high absorptive capacity, the buyer can tap into external knowledge, access new technologies, drive innovation, and foster a collaborative learning environment. These factors contribute to improved operational efficiency, product quality, and overall performance, as well as the success of the buyer-supplier partnership.

Similarly, selecting suppliers with dynamic, solid capabilities enables the buyer firm to adapt to changing market conditions and customer demands. Suppliers with dynamic capabilities can quickly respond to shifts in demand, adjust production schedules, and offer customised solutions. It enhances manufacturing performance by ensuring timely delivery, flexibility, and responsiveness to customer needs. Moreover, dynamic suppliers contribute to partnership success by enabling the buyer firm to meet evolving market demands and maintain a competitive edge.

Dynamic capacity refers to a supplier's ability to adapt and respond to changes in demand and production requirements over time. It is an essential criterion in supplier selection as it

enables a company to effectively manage fluctuations in demand and maintain a smooth supply chain operation.

The concept of dynamic capacity as a supplier selection criterion has been recognised and discussed in academic literature. For example, Wu and Barnes (2010) developed a method for formulating criteria for partner selection decision-making in Advanced Supply Chains (ASCs) under resource constraints. They emphasised the importance of considering a supplier's technological capacity, financing capability, after-sales service, and strategic considerations in the selection process.

Furthermore, the literature review conducted by Weber et al. (1991) highlighted the significance of production capacity as one of the most cited criteria in supplier selection. It indicates that a supplier's ability to meet the changing production demands of the buyer is crucial for successful collaboration.

In addition, the study by Bharadwaj (2004) emphasised the importance of long-term supply capability in supplier evaluation and selection. It implies that a supplier's capacity to meet the buyer's needs over an extended period is critical to the selection process.

Overall, the dynamic capacity of a supplier plays a vital role in ensuring the smooth functioning of the supply chain and meeting the changing demands of the buyer. Academic literature recognises the importance of considering a supplier's technological capacity, financing capability, production capacity, and long-term supply capability when evaluating and selecting suppliers.

In summary, supplier selection criteria's absorptive capacity and dynamic capability significantly impact buyer-firm manufacturing performance and partnership success within the RBV framework. The buyer firm can leverage external knowledge and capabilities by selecting suppliers with high absorptive capacity, leading to improved manufacturing performance. Similarly, partnering with suppliers possessing strong dynamic capabilities enables the buyer firm to adapt to market changes and enhance manufacturing performance. Both factors contribute to partnership success by fostering collaboration, innovation, and responsiveness to customer needs.

The concepts provide insights into how firms can strategically select suppliers to enhance their competitive advantage. Nevertheless, the topic of absorptive capacity and dynamic capability related to supplier selection is extensive, and this study focuses on the strategic criteria mainly derived from the literature (Ellram, 1990). Therefore, the thesis directs to a

future study for the topic.

3.3.2 Research Model Development

The strategic selection criteria of financial factors, technical factors, organisation culture, and strategy fitness can enable buyers to acquire VRIO (value, rarity, imitability, and organisation) by ensuring that the selected vendors possess the necessary resources and capabilities to contribute to the buyer's competitive advantage. Figure 11 presents a theoretical framework of the relationship among strategic selection criteria, manufacturing performance, and partnership success. Figure 12 shows the assumed effect model among the factors. In our model, the strategic criteria are a broader construct consisting of four parts: financial factors, technical factors, organisation culture, and strategy fitness. The four parts of the strategic criteria are defined as tangible and intangible resources aligned with (Barney, 1991), including financial, organisational, physical, technological, human, innovation, and reputation. Each construct is hypothesised to affect different manufacturing performance measures and partnership success. This model is based on a resource-based view. It assumes that strategic selection criteria allow firms to utilise complementary resources of their upstream supplier (Ellram, 1990; Şen et al., 2008) to achieve better manufacturing performance and partnership success (Katsikeas et al., 2004; Vonderembse & Tracey, 1999). According to the resource-based view (RBV), suppliers selected based on the strategic criteria can be understood as a unique composite of resources and knowledge (Penrose, 1959). The strategic selection criteria of financial factors, technical factors, organisation culture, and strategy fitness can enable buyers to acquire VRIO by ensuring that the selected vendors possess the necessary resources and capabilities to contribute to the buyer's competitive advantage.

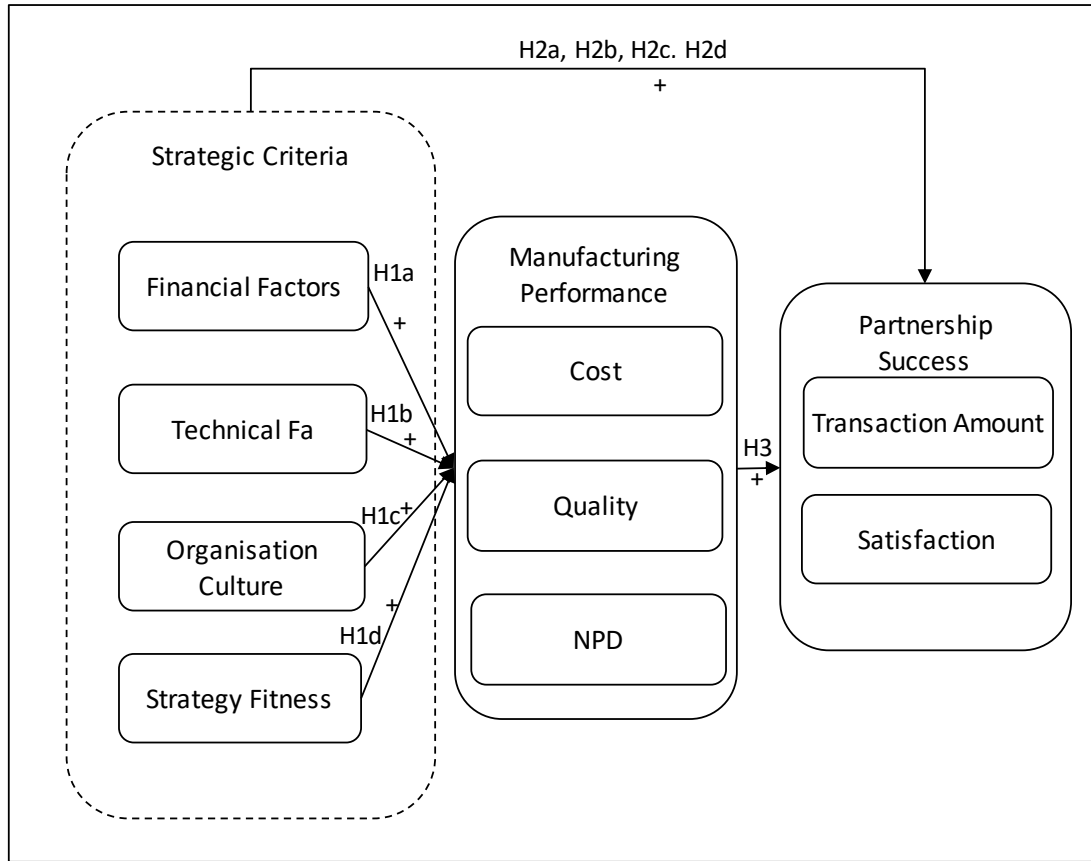


Figure 12 – The Effect Model

Firstly, technical factors play a crucial role in the vendor selection process. By evaluating the technical capabilities of potential vendors, buyers can assess their ability to provide innovative and high-quality products or services. This criterion ensures that the selected vendors possess the technical expertise and resources to support the buyer's strategic objectives and enhance their competitive position.

Technical factors are crucial in vendor selection as they contribute to a firm's ability to achieve a competitive advantage and acquire VRIO resources. These factors encompass the technological capabilities of a vendor, including design capability, technology and innovation, collaboration with research institutes, quick response capacity of product research and development, and other related aspects (Punniyamoorthy et al., 2011).

The technological capabilities of a vendor are critical because they enable a firm to stay competitive in the market by continuously improving its products and processes. For example, a vendor with solid design capabilities can provide innovative, high-quality products that meet the firm's requirements. It can improve product performance, customer satisfaction, and a

competitive advantage.

Furthermore, technology and innovation play a crucial role in the vendor selection process. Vendors at the forefront of technological advancements can offer cutting-edge solutions and products that give the firm a competitive edge. Collaboration with research institutes allows vendors to access the latest research and development findings, which can be leveraged to develop innovative products and solutions.

The quick response capacity of product research and development is another critical factor in the vendor selection process. Vendors that can quickly respond to changes in market demands and customer preferences are more likely to promptly meet the firm's needs. This agility in product research and development can give the firm a competitive advantage by allowing it to introduce new products or modify existing ones to meet customer needs better.

Overall, the technical factors in the vendor selection process are critical for a firm to acquire VRIO resources. By selecting vendors with solid technological capabilities, firms can gain access to valuable and rare resources that are difficult for competitors to imitate. These resources can then be organised and leveraged to achieve a sustainable competitive advantage in the market.

Technical are crucial in vendor selection as they directly impact a firm's ability to acquire VRIO resources. In vendor selection, technical factors refer to the specific technical capabilities and resources a supplier possesses that contribute to a firm's competitive advantage.

One crucial technical factor is the technical level of the supplier's production facilities. The quality and efficiency of a supplier's production facilities can significantly impact the quality and timeliness of the products or services provided. Suppliers with advanced and well-maintained production facilities are more likely to deliver products that meet the firm's quality standards and are produced cost-effectively. It can contribute to the firm's competitive advantage by ensuring consistent product quality and efficient production processes.

Another crucial technical factor is the supplier's R&D infrastructure. A robust R&D infrastructure indicates a supplier's commitment to innovation and continuous improvement. Suppliers with well-equipped R&D facilities and a skilled R&D team are more likely to develop new and innovative products or solutions that can provide a competitive edge to the firm. Access to a supplier's R&D infrastructure can also facilitate collaboration and knowledge sharing, enabling the firm to leverage the supplier's technical expertise and capabilities.

The new product development lead time is another important technical factor in vendor

selection. The ability of a supplier to develop and bring new products to market quickly can be a significant advantage for a firm. Suppliers with shorter lead times in new product development can help the firm stay ahead of competitors by introducing innovative products or adapting existing ones to changing market demands. It can contribute to the firm's competitive advantage by enabling it to offer unique and differentiated products to customers.

Lastly, the supplier's R&D investment plan is a critical technical factor. A supplier's commitment to investing in R&D activities demonstrates their long-term focus on innovation and continuous improvement. Suppliers that allocate significant resources to R&D are more likely to develop new technologies, products, or processes that can provide a competitive advantage to the firm. By selecting suppliers with a strong R&D investment plan, the firm can access valuable and rare resources difficult for competitors to imitate.

In conclusion, the technical factors of the supplier's production facilities, R&D infrastructure, new product development lead time, and R&D investment plan are crucial in the vendor selection process to acquire VRIO resources. These factors directly impact a firm's ability to gain a competitive advantage by accessing valuable, rare, and inimitable technical capabilities and resources. By carefully evaluating and selecting suppliers based on these technical factors, firms can enhance their technological capabilities and gain a sustainable competitive edge.

Secondly, financial factors are essential in vendor selection as they determine potential vendors' financial stability and viability. Buyers need to assess the financial position of vendors to ensure their long-term sustainability and ability to meet the buyer's requirements. Financial factors such as profitability, liquidity, and solvency are indicators of a vendor's ability to invest in research and development, maintain quality standards, and provide ongoing support.

Financial factors are crucial in vendor selection as they contribute to acquiring VRIO (Valuable, Rare, Inimitable, and Organized) resources. These factors include supplier profitability, production utilisation, investment growth, and revenue growth.

Supplier profitability is an essential financial factor to consider in the vendor selection process. It indicates the financial health and stability of the supplier. A profitable supplier is likelier to have the resources and capabilities to meet the buyer's requirements and provide high-quality products or services. Profitability also reflects the efficiency and effectiveness of the supplier's operations, which can directly impact the buyer's ability to acquire VRIO resources. A financially stable and profitable supplier is more likely to invest in research and

development, technology upgrades, and employee training, which can lead to developing innovative and high-quality products or services. Additionally, a profitable supplier is better positioned to withstand market fluctuations and economic uncertainties, ensuring a reliable and consistent supply of goods or services to the buyer.

Production utilisation is another crucial financial factor in the vendor selection process. It refers to the extent to which a supplier's production capacity is being utilised. High production utilisation indicates that the supplier efficiently utilises its resources and can meet the buyer's demand. Ensuring a reliable and timely supply of products or services is essential, reducing the risk of disruptions in the buyer's operations. Furthermore, high production utilisation can lead to economies of scale, cost efficiencies, and improved profitability for the supplier, translating into competitive pricing and better value for the buyer.

Investment growth is a financial factor that reflects the supplier's commitment to long-term growth and development. Suppliers demonstrating consistent investment growth are more likely to have the financial resources to invest in research and development, technology upgrades, and process improvements. These investments can lead to the developing of new and innovative products or services, improved operational efficiency, and enhanced capabilities that can provide a competitive advantage to the buyer. Buyers can access suppliers with the financial resources and capabilities to support their growth and innovation strategies by selecting suppliers with a track record of investment growth.

Revenue growth is a significant financial factor indicating the supplier's ability to increase sales and expand its market presence. Suppliers with consistent revenue growth demonstrate their ability to attract and retain customers, adapt to changing market conditions, and effectively compete in the industry. Revenue growth can indicate the supplier's market position, customer satisfaction, and the demand for its products or services. Buyers can align themselves with suppliers with a proven track record of success by selecting suppliers with solid revenue growth. They will likely continue investing in their capabilities, leading to a sustainable supply of VRIO resources.

In conclusion, financial factors such as supplier profitability, production utilisation, investment growth, and revenue growth play a crucial role in the vendor selection process to acquire VRIO resources. These factors provide insights into the supplier's financial health, operational efficiency, growth potential, and market competitiveness. By considering these financial factors, buyers can identify suppliers with the financial resources, stability, and

growth potential to support their strategic objectives and gain access to valuable and rare resources that can provide a competitive advantage in the market.

Organisation culture is another critical criterion in the strategic selection process. It refers to a vendor's organisation's shared values, beliefs, and norms. By considering organisation culture as a selection criterion, buyers can ensure alignment between their organisational values and those of the selected vendors. This alignment fosters effective collaboration, communication, and mutual understanding, which is essential for successful partnerships. A strong cultural fit between the buyer and vendor promotes a harmonious working relationship and facilitates the transfer of knowledge, resources, and capabilities.

Organisation culture plays a crucial role in vendor selection as it can contribute to acquiring VRIO resources from suppliers. In vendor selection, it provides a competitive advantage to the buying organisation.

One of the factors of organisation culture that can contribute to the acquisition of VRIO resources is the supplier's mission and vision alignment with the buying organisation. When the supplier's mission and vision align with the buying organisation's goals and objectives, it indicates a shared understanding and commitment to achieving mutual success. This alignment can lead to a strengthened partnership and the acquisition of valuable resources from the supplier.

Another factor is the management organisation of the supplier. How the supplier's management is organised and operates can significantly impact acquiring VRIO resources. For example, if the supplier has a strong and effective management structure, it can ensure efficient processes, timely decision-making, and effective resource allocation. These factors can contribute to acquiring valuable and rare resources from the supplier.

Furthermore, the management capabilities of the supplier are also crucial in the vendor selection process. The supplier's management capabilities refer to their skills, knowledge, and expertise in managing their organisation and resources. If the supplier has strong management capabilities, it can effectively utilise its resources to create and deliver value to the buying organisation. It can result in the acquisition of inimitable resources that are difficult for competitors to replicate.

In summary, factors such as supplier mission and vision alignment, management organisation, and management capabilities are essential aspects of organisation culture that can contribute to acquiring VRIO resources in the vendor selection process. These factors

indicate the potential for the supplier to provide valuable, rare, inimitable, and organised resources that can give the buying organisation a competitive advantage.

The alignment of the supplier mission and vision with the buying organisation's goals and objectives is crucial in the vendor selection process. When the supplier's mission and vision align with the buying organisation, it indicates a shared understanding of values, strategic direction, and commitment to achieving mutual success. This alignment fosters a strong partnership and increases the likelihood of acquiring valuable resources from the supplier. For example, suppose the buying organisation prioritises sustainability, and the supplier shares the same commitment. In that case, it can lead to acquiring environmentally friendly and sustainable resources, providing a competitive advantage in the market.

The management organisation of the supplier also plays a significant role in acquiring VRIO resources. A well-organised management structure ensures efficient processes, effective decision-making, and optimal resource allocation. For instance, if the supplier has a streamlined and agile management organisation, it can respond quickly to changing market demands, allocate resources effectively, and deliver high-quality products or services. It can result in acquiring valuable and rare resources that are difficult for competitors to replicate, giving the buying organisation a competitive edge.

Furthermore, the management capabilities of the supplier are critical in the vendor selection process. Strong management capabilities encompass the supplier's management team's skills, knowledge, and expertise in managing their organisation and resources effectively. For example, if the supplier has a highly skilled and experienced management team, they can effectively utilise their resources to create and deliver value to the buying organisation. It can lead to the acquisition of inimitable resources unique to the supplier and not easily replicated by competitors, providing a sustained competitive advantage.

In conclusion, factors related to organisation culture, such as supplier mission and vision alignment, management organisation, and management capabilities, are crucial in the vendor selection process to acquire VRIO resources. These factors indicate the potential for the supplier to provide valuable, rare, inimitable, and organised resources that can give the buying organisation a competitive advantage. By considering these factors, the buying organisation can select suppliers that align with their strategic objectives and possess the organisation culture to deliver valuable and unique resources.

Lastly, strategy fitness is a crucial criterion that assesses the alignment between the

vendor's strategic capabilities and the buyer's strategic objectives. Buyers must evaluate whether the selected vendors possess the necessary resources, competencies, and market positioning to support the buyer's strategic goals. Strategy fitness ensures that the selected vendors can contribute to the buyer's competitive advantage by providing unique and valuable resources or capabilities that are difficult for competitors to imitate or substitute.

The criteria of strategy fitness play a crucial role in the vendor selection process to acquire VRIO resources. Firms need to align their vendor selection criteria with their overall business strategy to achieve a competitive advantage. It ensures that the selected vendors can contribute to the firm's strategic goals and objectives.

One important criterion in the vendor selection process is existing customers. This criterion assesses the vendor's ability to serve and satisfy the firm's existing customer base. By selecting vendors with experience and success in serving similar customers, the firm can ensure that its customers' needs and expectations will be met. This criterion also helps in building strong customer relationships and enhancing customer loyalty.

Another vital criterion is safety and environmental management. Sustainability and responsible business practices are becoming increasingly important in today's business environment. Firms need to select vendors who prioritise safety and environmental management in their operations. This criterion ensures that the selected vendors comply with relevant regulations and standards, reducing the risk of accidents or environmental harm. It also aligns with the firm's commitment to corporate social responsibility and can enhance its reputation among stakeholders.

The production footprint criterion is also significant in the vendor selection process. It assesses the vendor's production capabilities and facilities. By selecting vendors with an efficient and effective production footprint, the firm can ensure the timely delivery of products and services. This criterion also considers factors such as production capacity, location, and technology. A well-optimised production footprint can contribute to cost savings, improved quality, and increased flexibility in meeting customer demands.

In summary, the criteria of existing customers, safety and environmental management, and production footprint are essential considerations in the vendor selection process to acquire VRIO resources. These criteria align with the firm's strategic goals and objectives, ensuring the selected vendors can contribute to its competitive advantage. By evaluating vendors based on these criteria, firms can make informed decisions and establish strategic

partnerships that drive their success in the marketplace.

In conclusion, we use the strategic criteria derived from the basis of RBV theory to select suppliers. Theoretically, each of the four building blocks of the strategic criteria impacts different indicators of manufacturing performance and partnership success.

● **Strategic Selection Criteria**

Our theoretical model has four constructs, including tangible and intangible factors of strategic criteria (Barney, 1991; Ellram, 1990), for selecting a partnership supplier by achieving success in suppliers. Due to resource constraints, not all qualified suppliers are suitable for long-term partnerships. A systematic, enterprise-wide evaluation of suppliers' assets and capabilities regarding overall business strategy could determine which activities to engage in with different suppliers and plan and execute interactions with suppliers.

The first criterion is the financial factors. They are historically reflected in the supplier's financial stability and economic performance. Financial stability reflects future viability, capacity utilisation assesses the efficiency of the supplier's current facilities, and break-even stability represents the supplier's level of cost control. We therefore categorise profitability, revenue, investment growth and debt ratio as financial factors. The assessment of these four detailed financial analyses could be based on public information and the extent to which the supplier allows its records to be reviewed or allows for third-party investigations. Assessing the supplier's financial factors is crucial in working with the buyer company. The buying firm and supplier are looking for a long-term business that is viable in the long term and will contribute to the relationship today and in the future. A financially unstable supplier will have a greater risk of jeopardising the ongoing business of its customers as it focuses on improving its financial position. Furthermore, the supplier may not be able to survive in the long term, so both the buyer-firm and supplier are struggling with their own financial needs.

The second is the organisation culture. It is conceptualised as how a company runs its business through its distribution of responsibility and authority and how its members perform the work process (Ellram, 1990; Forrester, 1994; Teixeira et al., 2012). It is maintained over time by labelling the company's value, business strategy, and behaviours, which are intangible factors. These factors include a sense of trust, management attitudes and outlook on the future, top management competence, buyer and supplier compatibility, organisational structure and personnel (Ellram, 1990). Sometimes, the feeling of trust is not easy to assess

accurately. It is an unconscious feeling from both parties that will suspend or stop the business and enable them to work well together in the long term. Management attitudes and a vision of the future are strategic directions, and suppliers are willing to modify their behaviour to meet the requirements of the buyer-company as an alignment of objectives. Top management compatibility is critical as top management sets the company's direction and the relationship's tone. Both top management and buyer-supplier compatibility represent the overall personality fit of the key individuals involved in each company and the ability of these key individuals to communicate and work together effectively at their respective levels. The supplier inherits the organisational structure and personnel to run its employee-related business. An appropriate organisation mechanism and actors are essential to running a business.

The third is the technical factors. They can be defined as the technical capabilities concerning soft and hard facilities to support their production and new product development in the market (Ellram, 1990). They are essential for the buyer-company to select suppliers to form long-term relationships. Moreover, they are based both on the technology currently used by the supplier and on assessing their future technological capabilities. Regarding the strategic criteria for supplier selection, we consider it one of them from the perspective of the buyer company. Advanced technology can strengthen the buyer's weakness by leveraging supply knowledge and technological competence. Therefore, it plays an important role. The buyer can measure the manufacturing performance of the supplier in terms of technology, innovation, and other activities.

Fourth, strategy fitness is conceptualised as the level of strategic compatibility between supplier and buyer regarding business strategy, similar customers, business references and geographical location. While circumstances sometimes change over time, the initial fit between the buyer-firm and the supplier regarding the strategic outlook and plans is considered a prerequisite for a long-term business relationship. As the internal and external environment changes, strategies may change or shift in business practice. The willingness of suppliers to adapt their strategies to the needs of the customer is essential for the sustainability of long-term sourcing. Shen et al. (2012) argue that the supplier selection assessment criteria should align with the buyer company's strategy. It can estimate the supplier's performance and capability from the supplier's manufacturing process capability criteria and its process output. Afterwards, the buyer can evaluate to select the best suppliers.

Thus, they use the business process-oriented criteria as the strategic or motivation criteria. Commercial references and customer base are linked to its performance reputation. Checking the supplier's business references and customer base is essential, as experience indicates how well a supplier keeps its promises.

● **Manufacturing Performance**

We adopt product price, quality, and new product development as performance measures for buyer manufacturing. These three indexes play a crucial role in measuring the manufacturing measurement performance of firms. It is validated by (Teixeira et al., 2012) in a supply chain setting.

All buyers emphasise the importance of purchasing lower-cost products or materials from suppliers, which contribute significantly to the profit of the buyer company's products. External purchases of products or services generally account for more than 50 per cent of total cost (Degraeve & Roodhooft, 1999) in the manufacturing industry. Cost reduction from suppliers could make the buyer company price competitive in the marketplace. Quality has a pragmatic expression in the business context. It is defined as meeting the customer's expectations while meeting their intended expectations (Narasimhan, 2007). They can assess or evaluate the consistency of quality, the correct production level, the degree of product reliability, maintainability, and sustainability. Quality characteristic is the combination of performance of a product or service and is not only related to the lower price of the product/service offered. Adequate quality is essential to the business interaction between buyers and suppliers. Existing selection studies show that quality is one of the most critical factors in manufacturing performance measurement (Choi & Hartley, 1996; Dickson, 1966; Weber et al., 1991). External networks, such as supplier networks, have become essential for new product development due to rapid technological advances and unstable customer demand requiring knowledge and expertise beyond the firm's boundaries (Gao et al., 2015). External networks provide an essential source of knowledge for firms to innovate. As a result, price, quality, and NPD are the measurement structures for manufacturing performance.

Manufacturing performance depends to a large extent on supplier competence and involvement (Vonderembse & Tracey, 1999). As firms become increasingly dependent on their suppliers, supplier competence becomes an essential resource for developing the capabilities and performance of buyers; it makes supplier selection critical. González et al.

(2004) argued that supplier selection is one of the most influential factors in product quality. Su et al. (2009) found that supplier selection impacts the firm with the competitive advantage of cost, quality delivery dependability, flexibility, and response time in a textile supply network in the US. Koufteros et al. (2012) demonstrated that supplier selection affects buyer performance in the matching areas of product innovation, quality, and price if the criteria are the supplier's ability to develop new products, the supplier quality capability and supplier cost capability. In our view, the positive effects of strategic criteria will be reflected in the overall price, quality, and NPD, regardless of whether the buyer-firm manufacturing performance does not match domains to supplier capabilities.

● **Partnership Success**

Ellram (1990) defined a supplier partnership as a strategic relationship between a buyer and its upstream suppliers. It is a mutual, ongoing relationship that involves long-term commitment, information sharing, and the relationship's risks and rewards. Jakki and Robert (1994) found that partnerships are purposive strategic relationships between independent firms. They share common goals, strive for mutual interests, and acknowledge significant interdependence. Bleeke et al. (1991) considered partnership successful as both buyer and supplier achieve their strategic objectives and recover their financial capital costs. With supplier relationship management no longer a buzzword in supply chain management, all companies are initially eager to get involved (Lindgreen et al., 2006).

It is believed that the success of strategic partnerships is largely based on expectations of future growth and cooperation (Spekman, 1988). It has also been argued that participant commitments could lead to successful partnerships (Carreras et al., 2009). Therefore, long-term partnerships between buyers and suppliers are expected to contribute to competitive products to ensure leadership in the market for both parties. Sometimes, suppliers perform differently than expected, but they are moving in the right direction as promised and in line with the buyer's expectations. These suppliers may have more significant potential to work with than those who currently meet specifications but for whom the company has only a relatively small piece of business. Both buyer companies and suppliers will consider long-term relationships with a limited number of suppliers. However, ranking and assessing the success of relationships between buyers and suppliers takes work, as most data are intangible, qualitative, and subjective by human influence. Relationship elements relate to bilateral

strategy between the buyer company and supplier, bilateral product and marketing strategy, people and stakeholders, communication, information exchange, trust and commitment and the level of relationship (Goffin et al., 2006; Golmohammadi & Mellat-Paast, 2012; Gunasekaran & Ngai, 2004).

The level of information sharing could assess partnerships, buyer-supplier cost-saving initiatives and the extent of cooperation. These lead to improvements in quality, the entity and stage of supplier involvement, and the extent to which they help each other in problem-solving efforts (Gunasekaran et al., 2001). In this research, close interaction of multiple functional areas across organisational boundaries is the basis for partnership interactions. However, it takes work to define the areas and scope of cooperation (Kraljic, 1983). We therefore focus on the success of supplier relationships by measuring two-way, mutually beneficial achievement with the upstream partners. It includes transaction amount and satisfaction (Jakki & Robert, 1994; Mclvor & McHugh, 2000). Cooperative suppliers can support their customers in generating more sales revenue and providing a more satisfying service to the marketplace than buyers could achieve by independent operations or traditional transaction purchasing arrangements (Mettler & Rohner, 2009). In return, transaction volumes and satisfaction between the buyer and the supplier also increase. Thus, we adopt transaction volume and satisfaction to measure the collaboration success between the buyer and the supplier.

3.3.3 Hypothesis Development

The relationship between strategic criteria and manufacturing performance

Many authors argue that the chosen supplier impacts manufacturing performance (Ellram, 1990; Sarkis & Talluri, 2002a; Şen et al., 2008). Industrial marketing researchers have identified various strategic supplier criteria that can be considered to distinguish supplier differentiation (Gregory, 1986; Moharty & Deshmukh, 1993). Supplier differentiation refers to the differences in supplier characteristics such as organisation culture, manufacturing processes, technological capability and geographical distribution (Chang et al., 2011). Nair et al. (2015) found that selecting the proper selection criteria ensures better sourcing performance in cost, quality, delivery, flexibility, and innovation. The buyers develop and adopt a related set of selection criteria, including financial factors, technical factors,

organisation culture, and strategy fitness to assess potential or existing purchasing sources (Chan, 2003; Ellram, 1990; Şen et al., 2008).

In previous studies, suppliers could drive manufacturing performance and sustainable competitive advantage. It is necessary for the buyer's expectations (Gudum & Kavas, 1996; Quayle, 2002). From a short- and long-term perspective, it is reasonable that strategic criteria assessment can support supplier selection to meet the buyer's requirements. From the buyer's perspective, a qualified supplier can provide supply reliability, improved delivery schedules, lower material/product costs, and resolve conflicts satisfactorily. It will, therefore, contribute to the corresponding performance of the buyer in terms of cost, delivery and NPD (Han et al., 1993). That is, the manufacturing performance that leads to improved delivery, lower procurement costs and improved NPD capabilities of the buyer that may come from the chosen supplier with such capabilities. In another way, the supplier's ability may offer more competitive and stable prices. It may come from the reliability of the financial situation, while efficient production planning and facility utilisation by the supplier may give the buyer company a price advantage. The reduction of purchasing costs for the buyer company comes from the close knowledge of each other between the buyer and the suppliers. The familiar extent of the organisation culture between buyer and supplier will affect the integration of suppliers in the communication and interaction process (Teixeira et al., 2012), as well as the manufacturing performance at quality, flexibility, delivery, innovation, and cost. The reduction of sourcing costs depends not only on the financial factors and culture of the supplier but also on the state of technology and strategy fitness. For example, in JIT and lean manufacturing environments, advanced production facilities and closer proximity will make it easier for buyer firms to provide timely deliveries and services. In addition, a well-established supplier with a proven track record is less likely to fail to meet expectations than a supplier with no interaction history according to the strategic criteria, mainly as it takes time for the buyer company to understand the technical capabilities. The buyers could use technical factors criteria to assess the supplier's technology situation they may need to be equipped with or plan to invest. As a result, the firms have a technically strong supplier, which may help develop new products or technical innovation. Moreover, new products and technologies can be brought to market quickly, a critical advantage for buying firms.

Therefore, the strategic criteria for supplier selection are assumed to positively impact the buyer-firm's manufacturing performance. They include financial factors, technical factors,

organisation culture, and strategy fitness. The strategic selection criteria should indicate the enhancement of manufacturing performance in supplier selection. We propose the first set of hypotheses (in Figure 12):

H1a: Supplier financial factors positively impact manufacturing performance.

H1b: Supplier technical factors positively impact manufacturing performance.

H1c: Supplier organisation culture positively impacts manufacturing performance.

H1d: Supplier strategy fitness positively impacts manufacturing performance.

The relationship between strategic criteria and partnership success

The suppliers selected by asymmetries consideration are assumed to increase the success of strategic alliances (Harrigan, 1988). Asymmetry factors include compatibilities of the products, markets, technologies, nationalities, company size and entrepreneurial experience. On the other side, a recent study demonstrates that industrial buyers are more likely to concentrate their purchases with partners who are familiar with each other on specific measurements (Carr & Pearson, 2002; Carreras et al., 2009; Maestrini et al., 2018; Spekman & Carraway, 2006). Buyers may pursue more collaborative negotiations and open communication when they know the supply company's short- and long-term. Therefore, suppliers selected by financial and technical factors, organisation culture, and strategy fitness criteria will support partnership success (Ellram, 1990).

Furthermore, buyers tend to exhibit loyal purchasing behaviour and volume to supplying companies. With improved quality and reduced uncertainty, selected suppliers with sufficient competence will transfer more orders to them. As a result, satisfaction on both sides will be enhanced. Buyers are always looking for ease of interacting with exchange suppliers, reducing anxiety and uncertainty when doing business with unknown suppliers. They resolve conflicts more efficiently, and the supplier will have less cost of sales and more sales revenue from the buyer. Partnerships are successful when partners are associated with their business regarding products, markets, and technologies (Harrigan, 1988). The strategic criteria focus more on assessing financial factors, technical factors, organisation culture, and strategy fitness.

Suppliers with higher capabilities on the four criteria are more likely to have a higher level of supplier partnership development to provide satisfaction and cooperation with the buyer (Dacin et al., 1997; Tuten & Urban, 2001). Furthermore, from the buyer firm's evaluation and selection of suppliers, a close and long-term relationship can be established regarding the

strategic outlook and plans, even if the strategy may change over time. Thus, the assessment of suppliers on the financial factors, technical factors, organisation culture, and strategy fitness during the selection process should positively impact the development of the partnership. Hence, we propose the second set of hypotheses (in Figure 12),

H2a: Supplier financial factors have a positive impact on the success of the partnership.

H2b: Supplier technical factors positively impact the partnership's success.

H2c: Supplier organisation culture has a positive impact on the success of the partnership.

H2d: Supplier strategy fitness has a positive impact on the success of the partnership.

The relationship between manufacturing performance and partnership success

The literature strongly suggests that the manufacturing performance contributed by the suppliers will enhance the partnership success between the buyer and the supplier (Ellram, 1990; Jae-Nam & Young-Gul, 2005; Lehtinen, 1999). Han et al. (1993) validated that improved performance, lower purchasing costs, and increased technical cooperation would lead firms to select fewer suppliers to develop excellent buyer-supplier relationships with long-term perspectives. Dey et al. (2014) found that enhanced operational and business performance positively impacts supplier relationships. It includes visible measures of increased spending, consistent product quality, reliable deliveries, and invisible satisfaction measurements. Not surprisingly, the characteristics of a satisfactory performance contributed by the suppliers will create a satisfying relationship. Each party involved in improving buyers' performance should be happy and satisfied with the partnership in the marketplace. As a result, firms are more likely to shift their purchasing from adversarial to cooperative (Anderson & Katz, 1998; Carr & Pearson, 1999). In a collaborative environment, the partnership is based on improved buyer performance, not only in terms of price or cost but also on the factors that contribute more to the buyer's competence in the delivery and quality performance (Şen et al., 2008). When buyers start working with external supplier partners, monitoring the buyer's performance is crucial. Thus, improvements in buyer performance may increase partnership satisfaction, including on-time delivery, low procurement costs and improved NPD capabilities. We also find in the literature (Jakki & Robert, 1994) that the measure of partnership success is the extent to which transaction value (expenditure) and satisfaction (quality and delivery performance) are achieved in supplier relationship development. Therefore, we propose the final hypothesis.

H3: Manufacturing performance will positively affect the success of the partnership between the buyer and the supplier.

CHAPTER IV: QUANTITATIVE ANALYSIS OF SURVEY DATA

4.1 Introduction

Survey research is a methodology for gathering information from a large group or population to advance scientific knowledge or develop a theory (Cui & Keeling, 2014). The purpose of survey research is to generalise a sample to a population to make inferences about specific characteristics, attitudes or behaviours of this population (Creswell, 2014). This section presents why survey research is adopted as a primary part of the mixed method.

Firstly, the study problem of this research is to clarify the effect of the supplier selected by utilising the strategic criteria on the manufacturing performance and partnership success. As such, it entails identifying and evaluating the reasons for influencing experiment outcomes. Furthermore, it is reductionistic because it intends to reduce ideas into a small discrete set to test the variables that comprise hypotheses and research questions (Creswell, 2014). Therefore, the experiment approach is suitable for the research. Next, as the effect model is derived from the RBV theoretical foundation, it is a descriptive philosophy when describing the correlation between variables. It is a posteriori assumption and the pragmatic worldview possessed by the researchers (Steel & Guala, 2011). The knowledge developed through a pragmatic perspective is based on careful observation and measurement of the objective reality in the world. Thus, developing numerical observation measures and studying individuals' behaviour becomes crucial. It follows that the research requires a rigorous research approach. The survey design provides a quantitative or numeric description of a population's trends, attitudes or opinions by studying a population sample. In the test, the primary intention is to study the impact of a treatment or intervention on an outcome and to control for all other factors that may affect that outcome. Finally, we also consider the advantages of survey design in data collection (Fowler, 2009; Kelley et al., 2003). The data generated by the survey are based on real-world observations and serve as empirical data. The results can be generalised to a group as the data is collected from a representative sample.

Furthermore, surveys can identify the attributes of a large group of people from a small number of people in a short period and at a reasonably low cost. The survey is, therefore, the preferred data collection procedure for this research. It encompasses measurement procedures that ask questions of respondents.

Our hypotheses are drawn from the antecedent literature so that the effects model will be tested and validated in the population of automotive parts firms. We classify the research as a descriptive study (Kelley et al., 2003) since the central part of the research attempts to explore the effects model and formulate conclusively. Moreover, the cross-sectional survey is a typical data collection method for descriptive studies at one point in time. The study follows a descriptive research (Malhotra & Birks, 2003):

1. Explain the particular factors of the organisation in question.
2. Assume the percentage of units in a specific population that present a safety observance.
3. Methodology for arbitrating product-specific factors.
4. Determine the degree to which variables are associated with the research area.
5. Make specific predictions or forecasts.

Malhotra and Birks (2003) categorised social research in terms of research objectives as exploratory and conclusive (conclusive research includes descriptive and causal research). Exploratory research defines and formulates search problems more precisely, recognises alternative courses of action, develops hypotheses, gains deeper insights, and establishes priorities for further research. Descriptive research describes the characteristics and behaviours of many objects, events, individuals, or groups, identifies associations between variables and makes specific predictions. Causal research identifies the causal relationships. Descriptive research is adopted in this study. We follow a stepwise approach to describe the correlations between buyers' criteria in deciding to adopt supplier selection and manufacturing performance and partnership success, see Figure 12. The survey research attempts to verify the effects model.

Meanwhile, the research method is designed as a cross-sectional survey since data are gathered at a single point in time from a sample selected to represent the population of interest at that time, to describe a population or record and test differences in a subset of the population at one point in time. The details and procedures of the survey and the experiment are presented in the following sections.

Supplier selection becomes more critical as materials and components from suppliers are the main cost drivers of a firm's products in the manufacturing industry. To get a result of cost advantage, companies tend to establish long-term partnerships with fewer suppliers (Kellner et al., 2019). Therefore, strategic criteria for selecting suppliers have become an attractive

topic in academic research and business practice. The objectives of the research are as follows:

- Identify the relative strategic criteria for partner supplier selection from the buyer's perspective.
- Examine the importance of the criteria used by Chinese automotive parts manufacturers in selecting strategic suppliers.
- Examine the extent to which the selection criteria employed impact the manufacturing performance.
- Examine the effect of manufacturing performance on the partnership success between the buyer and the supplier.

In Figure 1, claims are made about the effect model among the strategic selection criteria, the manufacturing performance, and the partnership success. It is a practical assessment method for selecting suppliers to improve the firm's performance and partnership success. Partnerships are different from traditional buyer-supplier relationships (Ellram, 1990). Therefore, specific criteria, rather than generic ones, must be considered when selecting a supplier for a partnership. In addition to cost, quality, and service, selecting a partner supplier may need to consider other criteria such as financial factors, technical factors, organisation culture, and strategy fitness. This research approach adopts an exploratory mixed-methods sequential model driven by the author's philosophy of pragmatism.

Kelley et al. (2003) mentioned some of the disadvantages of the survey approach. The significance of the data may be overlooked if the researcher focuses too much on the range of coverage and needs to provide an adequate account of the implications of these data for the issue, problem, or theory in question. Secondly, the data generated will likely need more details or depth in the subject matter under investigation. Thirdly, it is not easy to control whether a high response rate can be obtained if it is done by mail or even by face-to-face and telephone. To eliminate the shortcomings of survey research, we follow the process (Cui & Keeling, 2014):

- Presentation of the theoretical framework and hypotheses
- The design uses a cross-sectional survey.
- Propose a precise definition of the research structure.
- Conduct a pilot study with a test questionnaire to test validity and reliability and justify how the research constructs would be measured.
- Select the sampling frame and justify the sampling methods.

- Plan to implement a questionnaire approach to collect online data.
- Outline the proposed analysis.

4.2 Survey Design and Conduct

A survey design provides a quantitative or numeric description of a population's trends, attitudes or opinions by studying a sample of that population (Creswell, 2014). It follows a standard format. Many examples of this format appear in academic journals, providing valuable models. In addition, we consider the components of the survey method plan according to (Creswell, 2014). The survey method plan includes the survey design, population and sample, instruments, variables, data analysis and interpretation.

In the survey design plan, the purpose of the survey is presented. It is to generalise from the sample those inferences that can be made about some characteristic, attitude, or behaviour of this population (Creswell, 2014). We point out why we selected the survey method to collect data for the study and the advantages of survey design. They include it being economical in design and quick turnaround in data collection. Surveys could identify attributes from a small group of people in a large population (Fowler, 2009). This study indicates a cross-sectional survey that collects data at a point in time. Data is collected via the Internet (Kelley et al., 2003). The population and sample are identified, and the survey instrument is developed through a spiral of improvement progress with the research supervisors and pilot results. The variables, data analysis and interpretation are presented in Chapter V. The survey procedure follows a standard four-topic format: participants, materials, procedures and measures (Cresswell, 2007). The survey questionnaire was developed to collect data from Chinese automotive parts companies. Once the data had been collected, we analysed the significance of the impact of strategic selection criteria on buyer-firm's performance and partnership success. It incorporates some parts of the existing literature for some of the sections. As the survey method for obtaining information is based on the questioning respondents (Malhotra & Birks, 2003), a pilot and target samples screening are done as part of the scale refinement process before the formal survey. Initial instrument development and pilot testing were conducted with a small sample of 37 senior purchasing executives in automotive parts companies in Shanghai, China. Based on the feedback received during the pilot, items are removed or added, and a revised final questionnaire is identified for use in the

extensive sample administration. The final questionnaire was sent to the sample participants in April 2021.

4.2.1 Variables

Derived from the RBV theory, a firm can use the capabilities of its suppliers to strengthen its competitiveness in the marketplace (Porter, 2004). Supplier assessment criteria will enable the buyer to select appropriate suppliers for the firm to achieve its short-term and long-term goals (Carr & Pearson, 1999). A model of the impact of supplier selection criteria on manufacturing performance and partnership success is shown in Figure 12, which is proposed and examined in this research. The model tests the proposition that the strategic selection criteria affect manufacturing performance and partnership success, and that manufacturing performance may positively affect partnership success. The following are the full list of hypotheses associated with the model.

H1a: Supplier financial factors positively impact manufacturing performance.

H1b: Supplier technical factors positively impact manufacturing performance.

H1c: Supplier organisation culture positively impacts manufacturing performance.

H1d: Supplier strategy fitness positively impacts manufacturing performance.

H2a: Supplier financial factors have a positive impact on the success of the collaboration.

H2b: Supplier technical factors have a positive impact on the success of the partnership.

H2c: Supplier organisation culture positively impacts partnership success.

H2d: Supplier strategy fitness positively impacts partnership success.

H3: Manufacturing performance positively affects the partnership success between the buyer and the supplier.

As noted in the literature review, generic criteria, such as quality, delivery, and cost, are favoured in supplier assessment and reflect the current performance of suppliers. Nevertheless, competency indicators of candidate suppliers are not clearly defined as strategic criteria for assessing their future supply capability. Therefore, they have been grouped into four strategic criteria to assess a supplier's ability to work together in the long term. It is essential since the supplier selected on these criteria may affect the buyer's manufacturing performance and the partnership's short- and long-term success.

In the current business environment, competition in the marketplace between companies

has increased, and the needs of customers have been diversified. As a result, suppliers that have sufficient capabilities or potential to develop in terms of financial factors, technical factors, organisation culture, and strategy fitness support the companies outsourcing products or processes that are not part of their core competencies (Ellram & Carr, 1994; Şen et al., 2008). Table 3 shows the four independent variables used to construct the strategic selection criteria. They are the inputs to the dependent variables in the model. These variables are represented by FF, OC, TF, SF and StrCr for financial factors, technical factors, organisation culture, and strategy fitness, respectively. Miller (1956) finds that most decision-makers cannot process too much data simultaneously, while decisions are made on more than seven elements in parallel. Therefore, breaking down the main objective into more manageable sub-issues is an excellent way to solve the complex problem. In this case, we decompose each strategic criterion into several sub-criteria.

We assess buyers' manufacturing performance on its efficiency and effectiveness, reflected in supplier performance on cost, quality, and NPD (Dey & Ho, 2014; Şen et al., 2008). Thus, these variables of supplier performance will be denoted by CO, QU and NPD for cost, quality, and new product development, respectively. MaPer is denoted by manufacturing performance.

As for the partnership success, we measure the transaction amount and satisfaction of the buyer (Jakki & Robert, 1994). They are denoted as TA and SA, respectively. The partnership success is denoted as ParSu.

4.2.2 Instruments Development

The research instrument of this study is an online questionnaire. As part of rigorous data collection, the following factors are considered in its development instruments (Cresswell, 2007).

- Name the survey instrument used to collect data.

The complete tool is developed by the group discussion between the researcher and the two supervisors. The pilot test results are considered, and five questionnaire sections are constructed. After a spiral of discussions and modifications, the fifth version is the final version used to collect the data. It is posted on the WJX.CN (<http://www.wjx.cn/>) website for participants to complete. It can be downloaded into a spreadsheet as a database for

conducting the analysis.

- Develop the scale constructs.

To presuppose the validity and reliability of the complete instrument, the structure of the strategic selection criteria is adopted from the literature (Ellram & Carr, 1994; Şen et al., 2008) and interview results. It comprises four sub-criteria: financial factors, technical factors, organisation culture, and strategy fitness. Moreover, for each sub-criterion, several questions are used as measures. The manufacturing performance includes cost, quality and NPD (Koufteros et al. (2012). Transaction volume and satisfaction (Jakki & Robert, 1994; McIvor & McHugh, 2000) reflect the partnership's success. There are several questions as a measure of each construct; see Table 3.

This study has three sets of variables: independent, control, and dependent. The variables selected for this study are based on the literature review and the interviews. We identify four independent variables, four control variables and two dependent variables. The strategic criteria consist of four independent variables, which can also be seen as level 1 variables, financial factors, technical factors, organisation culture, and strategy fitness. Two dependent variables are buyer-firm performance and strategic supplier partnership. The control variables are work experience, company size, ownership, and product. Work experience is included as a control variable because it can influence individuals' knowledge, skills, and decision-making abilities, which may, in turn, affect the outcomes being studied (e.g., performance innovation). Company size is often controlled because larger companies have more resources, capabilities, and market power, which can impact their strategies and outcomes compared to smaller companies. Company ownership is considered a control variable because different ownership structures (e.g., privately owned, state-owned) can lead to variations in decision-making processes, risk-taking behaviour, and performance. Lastly, product is included as a control variable because different types of products (e.g., durable goods, perishable goods) may require different supply chain strategies, production processes, and marketing approaches. These control variables have been widely recognised in the literature as essential to understanding the relationships between various variables (Dyer & Singh, 1998; Handfield et al., 2002). The four independent variables, the strategic selection criteria, are studied to understand their effects on the buyer-firm's performance and the supplier partnership. We measure each independent variable with several items on a 5-point response scale (1 = strongly disagree to 5 = strongly agree) developed from the existing literature.

Table 3 - Survey Constructs

Construct		Measures	Description	Item on Survey	Sources
Level 2 Variable	Level 1 Variable				
Strategic Selection Criteria (StrCr)	Independent Variable 1: Financial Factors (FF)	FF1	Supplier's profit rate	4.1.1	Ellram, 1990, Sen et al., 2008
		FF2	Supplier's revenue	4.1.2	
		FF3	The rate of supplier investment growth	4.1.3	
		FF4	Supplier's liability rate	4.1.4	
	Independent Variable 2: Organisational Culture (OC)	OC1	Supplier's company ownership	4.2.1	Ellram, 1990, Harrigan, 1998, Sen et al., 2008
		OC2	Supplier's management organisation	4.2.2	
		OC3	Supplier's management capability	4.2.3	
		OC4	Supplier's vision and target	4.2.4	
		OC5	Supplier's value	4.2.5	
		OC6	Supplier's talent development plan	4.2.6	
	Independent Variable 3: Strategy Fitness (SF)	SF1	Supplier's existing customers	4.3.1	Ellram, 1990, Sen et al., 2008
		SF2	Supplier's safety and environment management	4.3.2	
		SF3	Supplier's manufacturing footprint	4.3.3	
		SF4	Supplier's target customers	4.3.4	
	Independent Variable 4: Technical Factors (TF)	TF1	Supplier's technology level of the manufacturing equipment	4.4.1	Ellram, 1990, Sen et al., 2008
		TF2	Supplier's R&D infrastructure	4.4.2	
TF3		Supplier's lead time for new product development	4.4.3		
TF4		Supplier's R&D investment plan	4.4.4		
Dependent Variable 1:	Quality (QU)	QuRa	Buyer firm's product quality rate	3.1	
		QuSt	Buyer firm's stability of product quality	3.2	

Manufacturing Performance (MaPer)		DePr	Buyer firm's delivery accuracy	3.3	Sen et al., 2008, Prasanta et al., 2014
		DeOn	Buyer firm's on-time delivery	3.4	
	Cost (CO)	Cost	Buyer firm's products cost	3.5	
	New Product Development (NPD)	SeSp	Buyer firm's response speed related to the NPD	3.6	
		SeQu	Buyer firm's response quality related to the NPD	3.7	
Dependent Variable 2: Partnership Success (ParSu)	Transaction Amount (TA)	SpEn	Spending increase to the supplier	5.1	Mohr and Spekman, 1994, Ronan and Marie, 2000
	Satisfaction (SA)	NePr	Satisfaction of supplier's support on the NPD	5.2	
		CoDo	Satisfaction of supplier's support on the cost	5.3	
		DeLo	Satisfaction of supplier's support on the deliveries	5.4	
Control Variables: Working experience (WoEx), Company size (CoSi), Company ownership (CoOw), Company products (CoPr)		WoEx	Working experience	2.2	Jingqing, 2009
		CoSi	Company size	2.3	
		CoOw	Company ownership	2.4	
		CoPr	Company products	2.5	

Schmenner and Vollman (1994) identified two significant errors in the variable settings. First, the wrong selection of variables only encourages inappropriate decisions and can even have harmful consequences for the buyer companies if applied to the assessment criteria. The other mistake is that the correct measurements are used, but what is essential for assessing organisational capability needs to be addressed. As such, the selection of variables must be carefully assessed and justified. Most of all, the decision problem must be formulated in a way that is reasonable and practical for the organisation. The definition of variables is therefore based on Section 3.3.

Initially, interviews with experts or managers are needed to determine the importance of particular variables in the dataset and which variables to include in the study before any statistical tests are conducted to validate and justify the selected variables. However, there are too many input and output variables in the study. In that case, the dimensionality of the solution space will be relatively high, which may lead to poorer discerning results and analysis. Better discriminant results can be obtained by increasing the sample size and omitting salient variables. Banker et al. (1996) and Friedman and Sinuany-Stern (1998) recommended that the total number of input and output variables should be less than one-third of the number of decision units in the analysis. It is, therefore, described in Sections 5.5 and 5.6. We have also performed correlation testing and cluster analysis to improve the efficiency of differentiating decision units in correlation tests. If specific input or output variables are highly correlated, one or more may be redundant and discarded. It is because they have no significant impact on the results. A small number of variables is enough to explain most of the data. In addition, a variable set should include regression analysis to identify input variables with significant correlation coefficients with the output variables. It includes the suggested input variables. It is described in Section 5.4.

In addition, principal components analysis (PCA) is conducted to reduce the dataset by selecting the most relevant and appropriate variables for study from the large data pool in Section 5.3. PCA and factor analysis identify components or factors that consist of linear combinations of the original variables and can explain much of the entire dataset without losing much information about the original variables. PCA extracts the principal components so that the remaining variance is reduced as much as possible from the iteration. Once the orthogonal components have been calculated, they are rotated so that the first component explains most of the variance in the dataset and the second component explains most of the

remaining variance.

- Indicate the content part of the survey.

A questionnaire with 29 questions in five sections is designed for the online survey. The 29 question items are relevant and can be found in Appendix I. Each question is assessed on a 5-point scale, with five being very important and one very unimportant.

1. Five questions related to respondent characteristics.
2. Seven questions related to the buyer-firm's performance.
3. Eighteen questions related to the strategic sub-criteria of the four criteria.
4. Four questions related to the success of the vertical partnership between the buyer firm and the supplier.

The online survey instrument consists of five sections. Section I covers the survey, which explains general research information, including the research purpose, the identity and affiliation of the researcher, details participation and confirmation of ethical approval (Alessi & Martin, 2010). Section II is the questionnaire related to the responders' work background. Respondents are asked to select their supplier classification expression, years of work experience, company size, ownership, and company products. Moreover, in section III, respondents are asked to evaluate the extent to which the supplier affects the buyer performance, such as quality, delivery, cost, and service, and on a seven-question scale from 1 to 5, where "1" indicates that the factor is not essential in the supplier selection criteria and "5" indicates that the factor is the most important. Section IV asks the respondents to rate the extent to which 18 sub-criteria of the four criteria affect the buyer-firm's performances on a scale from 1 to 5. Again, "1" is very unimportant and "5" is very important. Section V consists of four questions that require respondents to rate the level of satisfaction of the buyer firms and to assess the successful performance of the customer-supplier partnership on a scale of 1 to 5. "1" indicates very unsatisfactory, and a "5" indicates very satisfactory. Items from the supplier selection sub-criteria are grouped together to minimise any potential memory bias. The items in the questionnaire are adapted from previous literature and interviews conducted prior to the development of the research instrument. The average completion time for the questionnaire is approximately 20 minutes.

- Pilot testing

Because it is necessary to pre-test the data collection instrument, a pilot study is conducted before the data collection. The pilot test is done on 37 samples, and 21 valid

answers are received. The pilot samples come from people who graduated from Shanghai Jiao Tong University, majoring in automotive. The reason for limiting the sample for the pilot study to automotive students is to speed up the survey time and because they are from the automotive parts industry, which is a good fit for our study. The survey is also sent out within the WeChat group with the permission of one of the class teachers of the subject, who also reminds the students to complete it. The pilot survey consists of a questionnaire and a cover letter. The pilot study received a 100% response rate, but the validity rate is 57%, with 21 answers. The respondents do not appear to experience difficulties in completing the questionnaire online. At the same time, in the monthly debriefing, the supervisors commented on the appropriateness of the project. It is also pointed out that the correlation coefficients between different issues might be low, and it is suggested that to distinguish between different constructs of the same dimension, more appropriate references must be found to support them. Statistical tools, such as histograms, are also used for analysis, and further clear distinctions are obtained. Based on the analysis of the pilot test, some changes are made to the questionnaire or cover letter. Some items are removed or added, and a revised instrument is developed for the final data collection.

- Administer the survey for a high response rate.

Firstly, the China Automotive Parts Industry Association's WeChat group was chosen to approach the target participants better. Prior consent is obtained from the leader of the WeChat group through telephone communication and WeChat exchanges. Also, the questionnaire is shared with him before it is distributed in the first week. Secondly, a greeting text message, including a brief introduction, is sent to group members as a preview letter. During the second week, text messages with a RMB 10.00 voucher and a link to the questionnaire website are sent to group members as the online survey. In the third week, we send reminders to all sample members to complete the questionnaire and resend the website link. Finally, we text a message thanking everyone for their participation in the fourth week. In total, we end the administration period within four weeks after the start.

4.2.3 Sampling

The sample frame is drawn from the Automotive Parts Industry Association in China's Yangtze River Delta (YRD). The YRD automotive parts industry is the most significant auto parts

industry region in China, accounting for 37% of China's auto parts revenue in 2021 (Liu, 2021). The target sample group is 2,600 automotive parts companies in the YRD region. Of these, 600 companies have revenues of over RMB 20 million (Lv, 2022). The companies in which the study participants work for 70% of the revenue of the automotive parts industry in Shanghai and the YRD region. A pre-screening is conducted to identify the participants' purchasing titles and positions in each company. These pre-screening results indicate that the purchasing manager, supply chain manager, purchasing supervisor and purchasing specialists are the primary decision-makers in the selection of suppliers in sourcing companies. It is consistent with the deployment of functions with the typical business practice. Following the guidelines regarding the Internet survey process (Cui & Keeling, 2014), links to the final tool are posted to 500 WeChat group members. In our study, the item measures for the different constructs are adapted and built from existing scales and conceptual works. Item measures for strategic supplier selection criteria are adopted from the procurement literature (Ellram, 1990; Ellram & Carr, 1994; Şen et al., 2008). The resulting item bank is pre-tested based on practical exercises by academics and interviewees. Following the guidelines (DeVellis, 2003), an initial face validation of the item measures is conducted through discussions with practitioners and academics. Feedback is obtained in other areas, such as consideration of the length of the instrument. However, as a precautionary measure, the item measures are reverse coded and decentralised for placement to prevent potential response bias.

4.2.4 Data Collection

The target group is the Automotive Parts Industry Association located in the Shanghai and YRD region in China, and the final online questionnaire link is posted to the 500 members of the WeChat group. Each respondent is given a voucher of RMB 10.00. In addition, the WeChat group administrator encourages and reminds the members to complete the online survey. Although the survey can be carried out by mail, telephone, the Internet, personal interview or group administration (Fowler, 2009), we decided on an online survey (by WeChat) to collect the data. It is because the online survey software is user-friendly and simplifies the questionnaire design process and the process of collecting and summarising data.

Furthermore, access to the target sample population of the WeChat group is easy. Participants fill in the questionnaire items online and record the results electronically. The

data collected can be downloaded in various formats, including Excel spreadsheet format and AMOS format.

We use the online survey software from WJX.CN (<http://www.wjx.cn/>) to design and administer our survey. There are various similar sites, including SurveyMonkey (<http://www.surveymonkey.com/>), Zoomerang (<http://www.zoomerang.com/>) and Zarca (<http://www.zarca.com/>). These online programs offer researchers multiple easy-to-use ways to design questionnaires, making coding and cleaning up data a virtual thing of the past. WJX.CN website was chosen because of the Chinese language interface and the ability of informants to fill out the questionnaire quickly. Several steps were followed (Ball, 2019) for reasonable response rates. The first step is to send an introductory message to all members of the China WeChat group of Automotive Supply Chain Management that constituted the study population. Two weeks are planned for respondents to complete the questionnaire on the website. A notification of participation is sent to the WeChat group members, and each respondent is offered a RMB 10.00 voucher as a reward. Towards the end of the survey, the WeChat group administrator sends a message encouraging and reminding the members to complete the online survey. Four weeks after the initial message is sent, the number of non-respondents is collected, and this number will be removed from the study population to arrive at the total number of potential respondents. In addition, statistical analysis will be conducted to achieve a reasonable response rate.

4.2.5 Analysis Tool and Procedure

Structural Equation Modelling (SEM) is a survey analysis tool that finds interdependencies faster than other methods (Piltan & Sowlati, 2016). Therefore, it is often used to analyse data. We follow up on the research prompts by presenting them as a series of steps so that the reader can see how one step leads to another, thus completing the discussion of the data analysis procedure (Cresswell, 2007).

Step 1. Report information on the number of sample members who have and have returned to the survey.

Step 2. Discuss methods for determining response bias.

Step 3. Discuss the plan for descriptive data analysis for all independent and dependent variables in the study.

Step 4. Identify statistical procedures to verify the consistency and veracity of the study through validity and reliability analysis.

Step 5. Identify statistics and the statistical computer programs to test the significant inferential research hypotheses in the proposed study.

Step 6. Present the results of the data analysis in a table and explain the results of the statistical tests.

The detailed analysis is presented in Section 4.3.

4.3 Quantitative Analysis

4.3.1 Sample Summary

The sample frame is drawn from the Automotive Parts Industry Association in China's Yangtze River Delta (YRD). The group has 2,600 auto parts companies, including 600 companies with revenues of over RMB 20 million (Lv, 2022). The sample list of 500 firms is derived from the association randomly selected according to the guidelines (Fowler, 2009). Pre-screening is conducted to identify the names and positions of the participants in each company for purchase. Guidelines on the Internet survey process are followed (Cui & Keeling, 2014), and a link to the final instrument is posted to the 500 members of the WeChat group. A follow-up reminder message is sent to all members two weeks later. Out of 220 surveys received, the response rate is 44%. Of these, 181 are valid, and 39 questionnaires are filtered out because of answers to question 1, "Does your company have strategic criteria for selecting suppliers?" is No. This response rate is lower than expected, possibly due to the time it took to collect the questionnaires. Moreover, when the survey is conducted, it falls on an official Chinese holiday, and some may have missed such messages. 44% response rate compares reasonably well with the response rates of other studies (Koufteros et al., 2012; Nair, Jayaram, & Das, 2015).

To test non-response bias, we compare responses to return surveys in non-responsive and responsive waves (Kelley et al., 2003). As is customary, we utilise profile variables (Chen et al., 2000) as well as other randomly selected variables (Alessi & Martin, 2010) to test for non-response bias among respondents in waves 1 (n=76) and 2 (n=105). The *t*-tests yield no statistically significant difference between the non-response and response groups, suggesting that non-response bias is not an issue. The sample descriptors in Table 4 show that 86% of the respondents have more than ten years of work experience. 81% of respondents work for companies with annual revenues of over RMB 20 million, meeting the criteria for medium-sized and above companies in terms of corporate revenue. It implies that medium and large companies emphasise strategic supplier selection and supplier partnership development. The distribution of company ownership types is similar between multinational and local ownership, suggesting that strategic supplier selection and vertical partnership development are essential in companies with different ownership types. The distribution of product types shows that the

majority comes from physical components or materials suppliers, which aligns with the common knowledge that it is a significant part of the automotive industry compared to service providers, original equipment manufacturers (OEM) and other companies.

Table 4 – Sample Description

	Characteristic	Number	Percentage
Respondent Working Years	1-5 years	2	1%
	5-10 years	24	13%
	$> \cong 10$ years	155	86%
Company Size	< 20 million CNY	35	19%
	$\cong 20$ million CNY	146	81%
Company Ownership Type	Multinational Ownership	92	51%
	Local Ownership	89	49%
Company Product Type	Physical Components or Material	108	60%
	Service Provider	7	4%
	OEM	39	22%
	Others	27	15%

4.3.2 Preliminary Data Process

The primary purpose of PCA is to see whether the first few principal components can explain most of the variation in the data set so that these can be used to replace the original variables without losing too much information. In factor analysis, factor loadings are generated when only a few original variables are heavily weighted. Essentially, principal components or factor loadings form a linear combination of the original variables and are used to replace the original variables and data. However, when a small number of principal component variables are used instead of all variables, the problem of interpreting the meaning of new variables with a fully transformed data set arises. Rather than having a new set of data values, it is better to have the original ones. Our motivation is, therefore, to find a systematic method in which some of the original variables can be omitted with little loss of information.

Jenkins and Anderson (2003) proposed a multivariate statistical approach based on partial

covariance for selecting or reducing the number of variables in a study. The procedure works by removing one of the variables and statistically conditioning the remaining variables. The second variable is then removed, and the transformation continues for the remaining variables conditioned on the second variable, and so on. The variation each conditioning removes is used as a measure to determine which variables contain the most information. The general idea is to retain as many variables as possible that represent the information contained in the original variables. Raw information is measured by the proportion of total variance of all variables after omitting unwanted or abnormal variables. The original variables are first standardised to have a mean of 0 and a variance of 1 for all variables to be given equal importance. Therefore, to improve efficiency, the discrimination between decision units is tested for correlation between items and the total (Wu, 2003). The correlations between items and the core of the total subscale are initially examined in a measurement model that includes all measured variables of the dependent and independent variables. The correlations for all individual items are significant at the 0.01 level following PCA (2-tailed). A series of exploratory factor analyses (EFA) are conducted, using principal component extraction and varimax rotation to purify the four constructs of the measure. Loadings OC4, OC5, OC6, and SF4 are removed and at least three loadings are existing for each factor (DeVellis, 2003; Field, 2013; M. Wu, 2003). Table 5 shows the factor matrix after the purification.

Table 5 - Factor Matrix after the Purification

Variable	Facotor			
	1	2	3	4
FF4	0.850			
FF2	0.806			
FF3	0.762			
FF1	0.584			
TF1		0.848		
TF2		0.713		
TF3		0.670		
TF4		0.640		
SF2			0.904	
SF1			0.890	
SF3			0.883	
OC1				0.882
OC2				0.861
OC3				0.556

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.

4.3.3 Respondents

Table 6 presents the descriptive statistics for the respondent characteristic variables. The average work experience (WoEx) of the respondents is 2.845, which is close to the maximum value of 3.000. Moreover, the standard deviation of this indicator is the lowest, at 0.392. Therefore, the respondents tend to be more advanced in the survey companies. It gives the researcher more confidence that selecting strategic suppliers is critical to the company's operations. Therefore, crucial or senior stakeholders should be involved (Ho et al., 2015). The mean values for company size (CoSi) and company ownership (CoOw) are 1.807 and 1.492, respectively, with a median of 2.000 and 1.000 and their standard deviation of 0.396 and 0.501,

respectively indicating that the respondents' distributor is in an average lever. The company's product (CoPr) has a mean of 1.917, a median of 1.000 and a standard deviation of 1.187, which indicates that the product values vary considerably within the sample.

Table 6 – Descriptive Statistics, N=181

Variable	Item	Mean	Median	Std. Deviation	Minimum	Maximum
WoEx	Working experience years	2.845	3.000	0.392	1.000	3.000
CoSi	Company size by revenue	1.807	2.000	0.396	1.000	2.000
CoOw	Company ownership type	1.492	1.000	0.501	1.000	2.000
CoPr	Company product type	1.917	1.000	1.187	1.000	4.000

4.3.4 Control Variable Testing

The constructs may be affected by different categories of respondents. Some of the data collected from respondents are represented as categorical variables, such as length of employment, size of company revenue, type of company ownership and type of company product. Statistical tests, such as the two-sample *t*-test, can identify the type of returns to scale that best describes the data set, and ANOVAs could compare differences between means of more than two groups (Schwartz et al., 1996). Using inappropriate returns to scale could provide estimates of efficiency that differ from the valid efficiency values.

In this case, a correlation procedure is applied to examine mean scores to assess whether relevant dummy variables should be considered in the structural model (Field, 2013). The mean scores of the four categorical variables on the six constructs are investigated. As can be seen in Table 7, there is a significant difference between the mean values of SF and ParSu in terms of company size revenue ($P < 0.05$). The mean SF of respondents with company sales revenue greater than RMB 20 million (3.969) is higher than that of respondents with company sales revenue less than RMB 20 million (3.743), with a *t*-value of -1.985. Respondents with company sales revenue greater than RMB 20 million had a higher mean ParSu (3.921) than respondents with company sales revenue less than RMB 20 million (3.714), with a *t*-value of -2.424.

Table 7 – Mean Difference on Company Size

Test Variable	Mean Scores		T-test	
	Revenue < 20 million CNY (N=35)	Revenue > 20 million CNY (N=146)	T value	Significance
FF	3.56±0.574	3.467±0.82	0.785	0.435
OC	3.552±0.657	3.719±0.76	- 1.196	0.233
TF	3.821±0.685	3.877±0.681	- 0.431	0.667
SF	3.743±0.561	3.969±0.616	- 1.985	0.049
MaPer	4.49±0.601	4.3±0.624	1.625	0.106
ParSu	3.714±0.395	3.921±0.637	- 2.424	0.018

* P < 0.05

Table 8 shows a significant difference between the SF and ParSu means in terms of type of company ownership ($P < 0.05$). Multinational respondents had a higher SF mean (4.024) than local ownership company respondents (3.823), with a t -value of 2.236. On the other hand, multinational respondents had a higher ParSu mean (3.97) than local companies (3.789), with a t -value of 2.028.

Table 8 – Mean Difference on Company Ownership

Test		Mean Scores		T-test	
Variable	Multinational ownership (N=92)	Local ownership (N=89)	T	P	
FF	3.496±0.866	3.474±0.68	0.185	0.853	
OC	3.696±0.741	3.678±0.748	0.160	0.873	
TF	3.927±0.601	3.803±0.751	1.217	0.225	
SF	4.024±0.544	3.823±0.661	2.236	0.027	
MaPer	4.297±0.63	4.379±0.615	-0.888	0.376	
ParSu	3.97±0.538	3.789±0.654	2.028	0.044	

* $P < 0.05$

Table 9 shows significant differences in the means of respondents with different work experiences on the variables FF, TF and MaPer. For example, FF, there are significant differences between respondents with 1-5 years, 5-10 years, and more than 10 years of work experience (all $P < 0.01$). The mean value of FF for respondents with 1-5 years of experience is 2.2; for respondents with 5-10 years of experience is 3.125; and for respondents with more than 10 years of experience is 3.557. Table 10 shows significant differences in the mean values regarding TF, SF and ParSu variables on different company product types, such as TF, between respondents of physical parts or materials, services, OEM, and others (all $P < 0.01$). The mean TF for OEM respondents is 3.756, for physical component or material suppliers 3.824, for other product suppliers 3.991, and for service providers 4.643. Therefore, they are not used as dummy variables in the test of the conceptual model to maintain parsimony.

Table 9 – ANOVA Test on Working Years

Working Experience	FF		OC		TF		SF		ParSu		MaPer	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
	Working experience: 1-5 years	2.200	1.131	3.167	0.236	3.750	0.000	4.125	0.177	4.100	0.424	3.929
Working experience: 5-10 years	3.125	0.486	3.403	0.622	3.563	0.600	3.781	0.652	3.633	0.574	3.905	0.765
Working experience: >10 years	3.557	0.786	3.738	0.753	3.915	0.685	3.945	0.607	3.916	0.603	4.409	0.573
F	2.443**		1.812		4.017*		2.968		3.643		0.456*	
LSD	1<2<3				2<1<3						2<1<3	

* P < 0.05; ** P < 0.01

Table 10 – ANOVA Test Based on Company Product Type

Company Product Type	FF		OC		TF		SF		ParSu		MaPer	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
	Physical material	3.469	0.786	3.660	0.696	3.824	0.657	3.882	0.614	3.869	0.554	4.358
Service provider	4.114	0.765	4.286	0.848	4.643	0.537	4.571	0.590	4.486	0.672	4.469	0.426
OEM	3.323	0.836	3.607	0.901	3.756	0.751	3.897	0.668	3.944	0.668	4.242	0.624
Others	3.622	0.572	3.753	0.596	3.991	0.574	3.972	0.418	3.681	0.593	4.354	0.429
F	2.443		1.812		4.017**		2.968*		3.642*		0.456	
LSD					3<1, 4, 2		1<3, 4, 2		4<1, 3, 2			

* P < 0.05; ** P < 0.01

4.3.5 Reliability

Reliability is concerned with the repeatability of measurements and assesses the degree of consistency between multiple measurements. Reliability is essential to the outcome of our information-gathering efforts. It will be undermined by poor sampling techniques, errors in completing questionnaires or poor construction of research instruments. Reliability relates to measurement error, and reliability tests attempt to segregate accurate or systematic variation from error variation (Nunnally, 1978). In the true sense of the word, this study is descriptive and attempts to describe the variation in the importance of various criteria used in strategic supplier selection. In this sense, the reliability or repeatability of the results is related to the accuracy of the subjects' responses. It is achieved, as far as possible, by using a well-structured instrument for an individual who could provide the necessary information accurately.

The samples are examined following the methodologies recommended in the literature. Table 11 reports the results of the reliability tests for the constructs. All Cronbach's alpha values exceed the critical value of 0.70 (Nunnally, 1978), and the composite factor reliability (CFR) values exceed the threshold of 0.70 (Moore & Benbasat, 1991). Mean-variance extracted values are above the cut-off value of 0.50 (Segars, 1997). Thus, the reliability of the construct check is supported.

Table 11 – Reliability Analysis

Constructs	N of Items	Cronbach's Alpha	CFR	AVE
FF	4	0.854	0.879	0.593
OC	3	0.874	0.890	0.734
TF	4	0.855	0.874	0.582
SF	3	0.779	0.941	0.841
ParSu	5	0.839	0.841	0.514
MaPer	7	0.896	0.896	0.558

CFR = composite factory reliability, AVE = average variance extracted

4.3.6 Validity

Another concern for any research project is the validity of the research instrument. Validity

relates to whether an instrument measures what it is supposed to measure and accurately represents a phenomenon (Cui & Keeling, 2014). There are various types of validity in surveys, including content validity, convergent validity, and discriminant validity, following the recommended two-step analysis process (Anderson & Gerbing, 1988). The first step in data analysis is to assess the measured properties of the instrument, while the second step is to examine the structural relationships.

In this study, we test three types of validity: content, convergent, and discriminant. Content validity relates to whether the measure adequately captures the domain of characteristics. Content validity assesses whether the chosen measures appropriately capture the entire domain of the construct (Wu, 2003). We examine content validity by checking the consistency between the measure items and the existing literature. It is done at the design stage of the questionnaire. Although content validity cannot be guaranteed, and there are no tests to verify it, an acceptable level of content validity can be achieved by exercising care in developing the instrument. Convergent validity checks how well indicators from one construct correlate with each other compared to indicators from another construct. As explained in the preliminary data processing section, the three measures are purified using PCA to finalise the final measure with its construct. Table 12 notes that the KMO of 0.862 for the strategic supplier selection criteria constructs is above the critical value of 0.8, and Bartlett's test of sphericity is 0.000, which is below the significant critical value of 0.01. Table 13 explains the correlation between the constructs ($P < 0.01$). All the above explains the feasibility of confirmatory factor analysis on the constructs, which demonstrates convergent validity. Following the suggestion of (Fornell and Larcker, 1981), we verify the discriminant validity by examining the square root of the AVE, see Table 14. The square root value of the AVE is more significant than the correlation between the constructs and, therefore, shows satisfactory discriminant validity.

Table 12 – KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.862
Bartlett's Test of Sphericity	Approx. Chi-Square	2191.588
	df	120
	Sig.	0.000

Table 13 – Correlations for the Constructs

Variables	FF	OC	TF	SF	ParSu	MaPer
FF	1					
OC	.695**	1				
TF	.583**	.657**	1			
SF	.461**	.625**	.744**	1		
ParSu	.519**	.594**	.642**	.682**	1	
MaPer	.495**	.432**	.449**	.345**	.522**	1

** Correlation is significant at the 0.01 level (2-tailed).

Table 14 – Discriminant Testing

Construct	FF	OC	SF	TF	MaPer	ParSu
FF	0.593					
OC	0.464	0.734				
SF	0.338	0.468	0.841			
TF	0.610	0.677	0.572	0.582		
MaPer	0.537	0.578	0.598	0.763	0.558	
ParSu	0.452	0.269	0.215	0.529	0.579	0.514
Square Root of the AVE	0.770	0.857	0.917	0.763	0.747	0.717

4.4 Findings

4.4.1 Structural Model Results

There are three appropriate measures of model construction: absolute fit, incremental (relative) fit and analytical fit. As no statistical test for SEM best describes the "strength" of the model predictions, multiple fit indices should be used to assess the fit. For example, the χ^2 and the χ^2/df (normed Chi-square), a fit index for goodness (GFI, CFI, NFI, TLI) and a fit index for badness (RMSEA, RMSR). The essential results of the hypothesised relationships tested with the SEM techniques are demonstrated in Figure 13. For the default model, the

discrepancy divided by degrees of freedom (CMIN/DF) is $375.994/171=2.199$ ($P<0.001$). It is an acceptable fit (Paulraj, 2017). The goodness-of-fit statistics indicate a satisfactory fit of the model. Both the Comparative Fit Index (0.918, above 0.900) and Bollen's Incremental Fit Index (0.919, above 0.900) indicate a good fit for the structural model (Paulraj, 2017). The Root Mean-Square Error of Approximation (0.08, less than 0.10), also known as the Badness-of-fit index, exhibits an acceptable model fit. RMSEA and CFI provide a better concept for fitting small sample models (Paulraj, 2017); see Table 15. Therefore, these indices are chosen for the study to determine the model.

The previous section scrutinises the unidimensionality, reliability, convergent and discriminant validity of the scales in the measurement model to capture potential focal constructs. Having satisfied the stringent requirements for the measurement issues, we subsequently test whether the hypothesised relationships in the proposed model hold. The following section focuses on parts of the SEM analysis that refer to the results of the hypothesis testing.

4.4.2 Hypothesis Paths

The path validation for the complete structural model is reported in Table 16. Nine hypothetical paths are tested, and six of the nine coefficients are consistent with the expected signs; they are H1a, H1b, H2b, H2c, H2d and H3. Three other coefficients of the nine paths are inconsistent with the expected signs; they are H1c, H1d and H2a. The result of H1c ($\beta=-0.117$, $P=0.519$) suggests that organisation culture negatively influences supplier performance, and the result of H1d ($\beta=-0.078$, $P=0.221$) suggests that strategy fitness also has a negative influence on buyer-firm's performance. The result of H2a ($\beta=-0.037$, $P=0.609$) suggests that financial factors have a negative impact on supplier partnerships. Five of the nine paths are significantly supported; they are H1a, H1b, H2b, H2d, and H3. The four components, H1c, H1d, H2a and H2c, are not significantly supported. Of the five significant factors, the results of the data analysis represent a significant influence on the performance of the buyer company: technical factors ($\beta=0.401$, $P<0.01$) and financial factors ($\beta=0.183$, $P<0.01$) support of H1c and H1a, respectively. The greater (smaller) the degree of technical and economic factors between alternative suppliers, the greater (smaller) the level of performance of their buyer companies. The results of the data analysis represent a significant effect on supplier partnership: technical

factors ($\beta=0.341$, $P<0.05$) and strategy fitness ($\beta=0.179$, $P<0.01$) support of H2b and H2d, respectively. The greater (smaller) the degree of technical factors and strategy fitness between the alternative suppliers, the greater (smaller) the partnership level between the suppliers and the buyer. Lastly, the significant result for H3 ($\beta=0.384$, $P<0.01$) verifies that the performance of the buyer company has a strong positive influence on the improvement of supplier partnership.

4.4.3 Summary

The survey findings proved the effect mode among the strategic supplier selection criteria, the performance of the buyer company, and the success of the strategic supplier partnership. The findings showed that technical and financial factors positively impact buyer-firm performance significantly, while organisational culture and strategy fitness do not receive significant support. For partnership success, supplier technology factors and strategy fitness have significant direct effects, while financial factors and organisation culture do not receive significant support. The findings concluded that buyer-firm performance is critical in enhancing supplier partnerships.

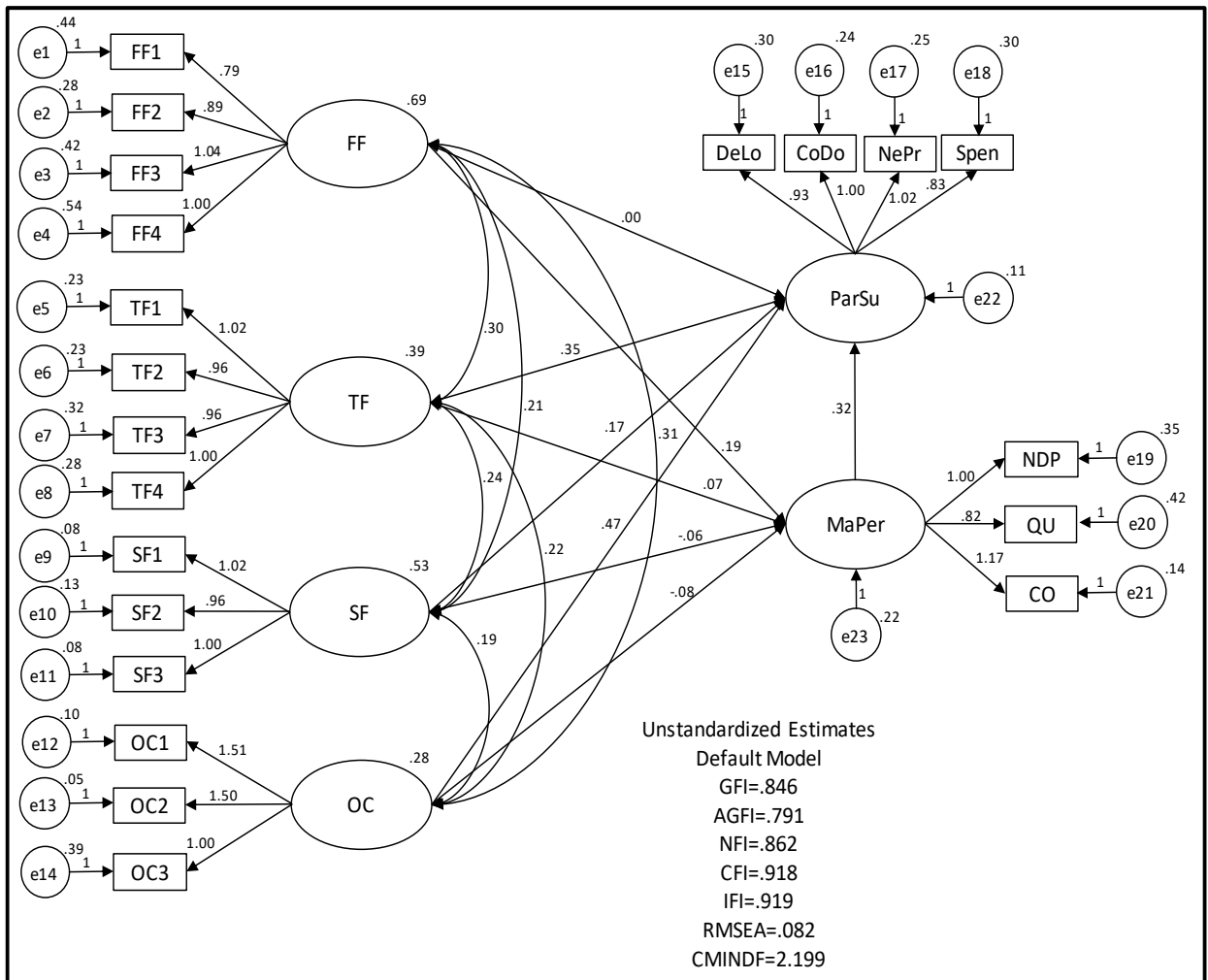


Figure 13 – AMOS Model Validation

Table 15 – Model Fitness Parameter

	Model	Acceptable Values
χ^2	337.708	
p-value	0.000	<0.05
χ^2/df	1.777	<3
Goodness of Fit Index (GFI)	0.856	≥ 0.90
Adjusted Goodness of Fit Index (AGFI)	0.808	≥ 0.90
Normed Fit Index (NFI)	0.875	≥ 0.90
Comparative Fit Index (CFI)	0.940	≥ 0.90
Incremental Fit Index (IFI)	0.941	≥ 0.90
Tucker Lewis Index (TLI)	0.928	≥ 0.90
Root Mean Square Error of Approximation (RMSEA)	0.067	<0.08

Table 16 – Paths Validation

Paths	Hypothesis (Expected)	Standardized Coefficient	P-Value
Financial Factors → Manufacturing Performance	H1a (+)	0.183	**
Technical Factors → Manufacturing Performance	H1b (+)	0.401	**
Organisation Culture → Manufacturing Performance	H1c (+)	-0.117	
Strategy Fitness → Manufacturing Performance	H1d (+)	-0.078	
Financial Factors → Partnership Success	H2a (+)	-0.037	
Technical Factors → Partnership Success	H2b (+)	0.341	*
Organizational Culture → Partnership Success	H2c (+)	0.182	
Strategy Fitness → Partnership Success	H2d (+)	0.179	*
Supplier Performance → Partnership Success	H3 (+)	0.384	**

Note: * = $p < 0.05$, ** = $p < 0.01$

CHAPTER V: QUALITATIVE STUDY OF INTERVIEW

5.1 Introduction

In qualitative research, there are many methods of collecting data, such as observations, interviews, archival documents, and audio-visual materials (Creswell, 2014). However, when participants cannot be directly observed, the advantages of interviews are functionally dominant. Through interviews, participants can provide historical information, allow the researcher to control the line of questioning, and provide additional detail and insight. In other words, an interview identifies informants in a critical position to understand a situation, such as the managers responsible for implementing company policy in a specific circumstance and who could give specific insights and opinions. Interviews are helpful when the research objectives are focused on understanding experiences, opinions, attitudes, values and processes (Rowley, 2012). Many researchers in business and management and other social sciences use interviews to collect data.

As stated by Aylen and Lu (2017) and Creswell (2014), there are three types of interviews: structured, semi-structured and unstructured. A structured interview can test specific hypotheses or gather data but offers little flexibility or additional insight. It is conducted by asking a few questions in the same order to each interviewee, similar to a questionnaire for a survey. A semi-structured interview is undertaken on a limited number of questions, allowing respondents to elaborate their responses and explore unanticipated themes. It has various formats, varying numbers of questions, varying degrees of adaptation of questions and the sequencing adapted to suit the interviewee. An unstructured interview is based on a limited number of topics or issues, emphasising encouraging the respondent to talk around a theme, and the questions and sequence will be adapted to what the interviewee says. An interviewee-driven requires skill, and it is difficult to put into fixed words. However, it differs from questionnaires in that interviews do not ask respondents to complete a certain number of questions at a specific time. Interview is a way to increase response rates when questionnaires do not elicit a reasonable response rate.

5.2 Interview Design and Conduct

Interviews are commonly employed as a data collection method to gain in-depth insights

into participants' perspectives and experiences. Although there can be some variations depending on the specific research context, the following steps generally outline the process of conducting interviews in this qualitative research:

1. **Research design:** Develop a straightforward research question and objectives that align with the qualitative research paradigm. Determine the purpose of conducting interviews and how they will contribute to addressing the research question.
2. **Sampling:** Identify and select participants (commonly referred to as informants or interviewees) with relevant knowledge and experiences related to the research topic. Consider using purposeful sampling techniques, such as maximum variation, snowball sampling, or theoretical sampling, to ensure diversity in perspectives.
3. **Recruitment:** Develop a recruitment strategy for reaching out to potential participants. Clearly articulate the purpose, scope, and ethical considerations of the study. Obtain informed consent from participants, ensuring their voluntary participation and the protection of their rights and privacy.
4. **Interview guide development:** Prepare a comprehensive interview guide with open-ended questions and prompts to elicit rich and detailed responses. The interview guide should be flexible enough to allow for spontaneous exploration of relevant topics that emerge during the conversation.
5. **Pilot testing:** Pre-test the interview guide with a small number of participants similar to the target sample. It will help identify potential questions or interview flow issues, enabling revisions and improvements.
6. **Data collection:** Conduct the interviews, either face-to-face, through telephone calls, or using online platforms. Create a comfortable and supportive environment to encourage participants to share their experiences openly. Ensure clarity in communication, active listening, and probing for deeper understanding. Consider audio or video recording to facilitate accurate data analysis with appropriate consent.
7. **Data analysis:** Transcribe the interview recordings, carefully capturing verbal and non-verbal data. Apply a systematic and rigorous analysis approach, such as thematic, grounded theory, or interpretative phenomenological analysis. Identify patterns, themes, and insights that emerge from the interviews. Maintain an audit trail and document the analytical process.
8. **Data interpretation and reporting:** Analyse and interpret the findings, drawing

connections between participants' responses and the research objectives. Use direct quotes, examples, and rich descriptions to illustrate key themes. Address any limitations, including potential biases or limitations of the study. Provide a coherent, well-supported analysis that reflects the complexity and nuances of the participants' perspectives.

5.2.1 Research Design

Considering the focus of the study on supplier selection, a semi-structured interview is adopted for this study. It is related to the actors' experience, knowledge and working environment. The survey aims to determine what criteria exist for China automotive parts manufacturers when selecting suppliers and why these criteria are essential. Another key reason we use the interview as a data collection method is that interviews are often used to collect facts and insights and understand opinions, attitudes, experiences, processes, behaviours, or predictions. With the right design and interviewees, properly utilised interviews may yield details, insights and understandings from the professional perspectives or critical positions that understand the situation. As Aylen and Lu (2017) argued, interviews are a highly conducive way of gathering rich, empirical data, mainly when the target phenomenon is characterised by a high degree of episodic and infrequent nature. However, interviews also regularly provoke a "knee-jerk" reaction that the data are biased, with impression management and retrospective sense-making considered the main culprits.

5.2.2 Sampling and Recruitment

Our semi-structured interviews were conducted with the interviewees from various automotive parts manufacturers, company size, company ownership, and senior working experience by snowball sampling. The profile of the interviewees in terms of job employer, job role, qualifications, experience, gender, and other relevant criteria is critical to the study. Informants should include organisational actors from different levels, functional areas, groups and geographies, actors from other relevant organisations and external observers (Eisenhardt & Graebner, 2007). Therefore, six interviews of approximately one hour are adopted, with people from multinational and local companies in different positions, and Table 17 shows the list of interviewees. They come from companies with two types of ownership: multinational

companies and local Chinese companies. The interviewee titles cover three levels: Director, General Manager and Manager with a strategic role – commodity manager and operational level – purchasing or SCM manager, from the perspective of the buyer company.

They centre on ten carefully chosen and well-worded questions in a fixed order, with some flexibility in questioning. Each question is accompanied by two to four sub-questions or prompts, which the interviewer uses as necessary to ensure that the interviewee fully explores the main issues, see Appendix II. We also consider introducing the research background and ethical requirements. Interview questionnaires are sent to interviewees prior to the interviews.

5.2.3 Interview Guide Development

The interview questionnaire is designed using a deductive methodology. Theory is a significant factor in determining the research questions, and the interview schedule from two or three published research articles could be used as the basis for the interview schedule for this research. It makes it easier to compare the research with previous research to make explicit claims about the findings' new findings. Therefore, the questions are adapted to the articles' content (Narasimhan et al., 2001; Dey, 2014; Sen, 2008). For example, "What intrinsic factors can enhance competitiveness when assessing suppliers from a strategic perspective?"; "What sub-criteria should you consider when selecting suppliers from a strategic perspective of capability and practices and performance measurement?"; "What elements do you consider for supplier selection criteria based on quantitative and qualitative positions?".

Many knowledgeable informants view the focal phenomena from diverse perspectives to mitigate the bias in interview data collection. These interviewees can include organisational actors from different levels, functional areas, and groups. Our study relies on interviews with executives from two groups and three levels. In addition, we consider the time resources available to conduct the interviews and analyse the interview data and the ability to maintain validity over a more extended period.

5.2.4 Pilot Testing

Starting from the previous explanation, we selected a semi-structured interview as a second exploratory step to clarify the strategic criteria effects from the first step of the survey.

A pilot interview is conducted with a procurement staff in a multinational company before the formal interview. It is to make the questions understandable, relevant to the research topic and in a self-explanatory order that leads naturally to the interview's conclusion.

5.2.5 Data Collection

We gathered qualitative data through semi-structured interviews with six interviewees. They are all purchasing stakeholders: purchasing managers, R&D directors, supply chain management directors, general managers, and commodity managers. The four-stage interview methodology adapted from (Aylen et al., 2017) is referred to clarify the content of the strategic criteria. The findings support that these strategic selection criteria include four themes: financial factors, technical factors, organisation culture, and strategy fitness, and identify some critical criteria that apply in the Chinese automotive parts industry. The four-stage process is as follows:

Stage I. Getting ready for the interview.

Before the interview, the research questions and target population are identified, such as the list of interviewees, the interview questionnaire and the interview schedule, and the breakdown of the interviewees is shown in Table 17. All interviewees are faced with supplier selection problems in their daily work. The interviews are based on a semi-structured questionnaire from the literature (Narasimhan et al., 2001; Dey 2014; Sen 2008); see Appendix II. We obtain basic information about the target organisations from publicly available information on the Internet or their company presentations. The author's colleagues or classmates refer the interviewees based on the efficiency consideration. We also visit the company's website before the interview to verify the information.

Table 17 – Interviewee List

No.	Corporate Ownership	Product	Sales Revenue (M\$)	Job Role	Working Years
1	MNC	Electric Equipment and Machinery	\$ 400	R&D Director	20

2	MNC	General Purpose Machinery	\$ 10,000	Global Commodity Manager	15
3	MNC	Rubber and Plastic Products	\$ 505	Site Purchasing Manager	10
4	Local Company	Metal Products	\$ 100	General Manager	13
5	Local Company	Electric Equipment and Machinery	\$ 250	SCM Director	12
6	Local Company	Electronics	\$ 5,000	R&D Director	15

Stage 2. Getting access

There are different ways to reach interviewees, such as family networks or friends, supervisor help, colleagues, industry associations, conferences, and workshops. Moreover, framing the interview is a crucial step towards success since academics and business are very different and theoretical questions are rarely of interest to business executives. It is only likely to be obtained where there is an identifiable payoff to their organisation, or the individuals involved. The research is presented in a way that neither threatens the organisation nor goes against its culture. As the author has worked in the supply chain field for more than 20 years, it is easy to get in touch with the interviewees and some colleagues, business partners and friends who could learn about supplier selection.

Stage 3. Getting data

Before arriving at the interview site, we study the interviewee's company background. A printed questionnaire is then shared with the interviewee, and questions are asked using cardboard to guide the interview. All in all, some critical points are reinterpreted to explain their true meaning fully.

Stage 4. Getting more data

Most interviews are recorded with permission or, where audio recorders are not permitted, manually using pen and paper. It is to mitigate retrospective sense-making and impression management, to avoid combining retrospective and real-time cases, and to make it more accurate with the focal companies. The transcripts are sent to the interviewees, asking them to clarify unclear conversations and to correct and approve their use for this study. Therefore, the interviewees are revisited at the end of the interview to re-clarify the data. As a standard

courtesy, a warm message is sent to the interviewees the following week to express our gratitude to them, along with a copy of the transcript.

5.2.6 Data Analysis

We used NVivo software to analyse the interview notes in five steps. Please see the following section, 5.3 – Qualitative Analysis.

5.3 Qualitative Analysis

5.3.1 Coding and Interpreting

We adapted the data analysis process from (Kvale & Brinkmann, 2008) by following five steps to identify patterns, themes, and insights that emerged from the interviews; we conducted two sessions of investigation of data grinding interpreting and data presentation summarisation.

The five-step analysis includes:

1. Importing the data: Import the interview notes into NVivo. It was done by creating a new NVivo project and importing the interview notes' Word files.
2. Coding the data: Once the interview notes are imported, we start coding the data. Coding involves assigning labels or tags to specific sections of the text that represent themes, concepts, or categories we want to analyse. We create three central nodes and nine sub-nodes (coding categories) in NVivo to represent the themes and then assign relevant sections of the interview notes to the appropriate nodes. This process helps in organising and categorising the data for analysis. Through the number of sources of node materials and the number of reference points, we can judge the importance of each node in the whole structure of the model of the strategic selection criteria. Regarding the tree node of the central theme, strategic selection criteria are the hottest theme compared with the other two, manufacturing performance and partnership success. In the strategic selection criteria tree node, technical factors occupy the most critical position, followed by financial factors, strategy fitness, and organisation culture. See Table 18.
3. Analysing the data: After coding the data, we explore the coded data by running queries or searches to identify patterns, relationships, or themes within the interviews. We also use

visualisation tools such as word clouds, charts, and matrices to help gain insights from the data.

4. Generating reports and visualisations: Once we have analysed the data, we generate reports and visualisations in NVivo to present the findings. These reports include summaries of the coded data, visual representations of themes or patterns, and excerpts from the interview notes to support the analysis.

5. Iterative analysis: Qualitative data analysis is often an iterative process, where we go back and forth between coding, analysing, and refining the interpretations.

While the NVivo is analysed, there are two main sessions to analyse the data (Rowley, 2012): data grinding and interpreting and data presentation and summarisation.

5.3.2 Results

A general conceptual model and a set of theoretical propositions are developed to explain the patterns in the interview data in three main steps, see Figure 14.

Firstly, we begin our analysis by abridging all the interview quotes. As we notice in our interviews related to supplier selection, strategic selection criteria are the most prominent theme. In support of this view, the observations and archival documents suggest that many companies use strategic criteria, in addition to generic criteria, to assess and select suppliers. To explore this further, we focus on the interview quotes from participants discussing strategic selection criteria and their experiences. In searching for themes in these quotes, we note that all interviewees described the importance of strategic criteria, and it helped them select an appropriate supplier and improve manufacturing performance and partnership. To narrow down the scope of the research and focus on specific aspects of the criteria factors that are relevant to the context while some big scope concepts are removed from the coding. For example, trust is indeed a complex and multifaceted concept in various domains, including interpersonal relationships, organizational dynamics, and even societal structures. The approach allows for a more in-depth analysis and provides a solid foundation for the research endeavours.

Secondly, to unpack how interviewees describe the links between strategic criteria, manufacturing performance and partnership success, we set out to categorise the quotes that mentioned their relationship. We cull data that separately mentioned strategic criteria,

manufacturing performance or partnership success. Next, we use an open coding approach to categorise these quotes into first-order codes, grouping statements with similar keywords and themes related to how strategic criteria influence manufacturing performance and partnership success. After several iterations, we identify a set of first-order codes that enabled us to categorise most of the data into four composite codes representing how interviewees describe the relationship between strategic criteria, manufacturing performance and partnership success.

Finally, we realise that the four composite codes and most of their statements describe different ways strategic criteria provide tools for appropriate supplier selection. Recognising that appropriate supplier selection is crucial; we set out to find patterns and similarities between these four aggregate codes and manufacturing performance and partnership success. Lastly, we revisit the literature, looking for constructs relevant to the theoretical mechanisms described in each manufacturing performance and partnership success. It leads us to build manufacturing performance into quality, cost, new product development, and partnership success into transaction amount and satisfaction.

Coding and interpreting the interview data allows us to ground our theorising in the data and identify areas where our findings overlap with and extend the existing literature. Lastly, we organise our qualitative findings into theoretical propositions. Please see Section 5.4.

Table 18 - Theme Summary

Theme	Sub-theme	Interview Quantity	Mentioned Times	Quote Example
Strategic Selection Criteria	Financial Factors	6	58	"Once they cannot make money with the business, they may jeopardize the supply."
	Technical Factors	6	63	"Soft capability, I do think the R&D capability is a kind of soft capability. And the management system of the production process and maintaining the advance technology, we also spend the energy on these aspects."
	Organisation Culture	6	18	"Yes, this ability is trainable to gain; it depends on the manager's mindset that they would like to accept the improvement change or not. After they have the willingness, then we could set up the project team and study deeply into each process."
	Strategy Fitness	6	55	"Supplier itself position in the market.... Their long-term objectives are matching our purchasing demand is critical."
Manufacturing Performance	Quality	6	31	"In the automotive project, we have to present the quality stability, which is more than the conformance of product with the drawing."
	Cost	5	33	"In my personal opinion, even the price is very important for buyer, but the intangible cost of un-quality raw material and delayed delivery are much higher than price advantage."
	New Product Development	6	57	"It is preferred that they could support us to conduct some pre-design in terms of components or material."
Partnership Success	Transaction Amount	5	29	"I have a supplier that we occupy their 90% sale, which provides an extremely low price; we cannot find any suppliers better than them in terms of price."
	Satisfaction	6	11	"I spend >100K RMB on the prototype samples and send them to the UK customer at free charge. This represents our engineering capability and cooperation willingness."

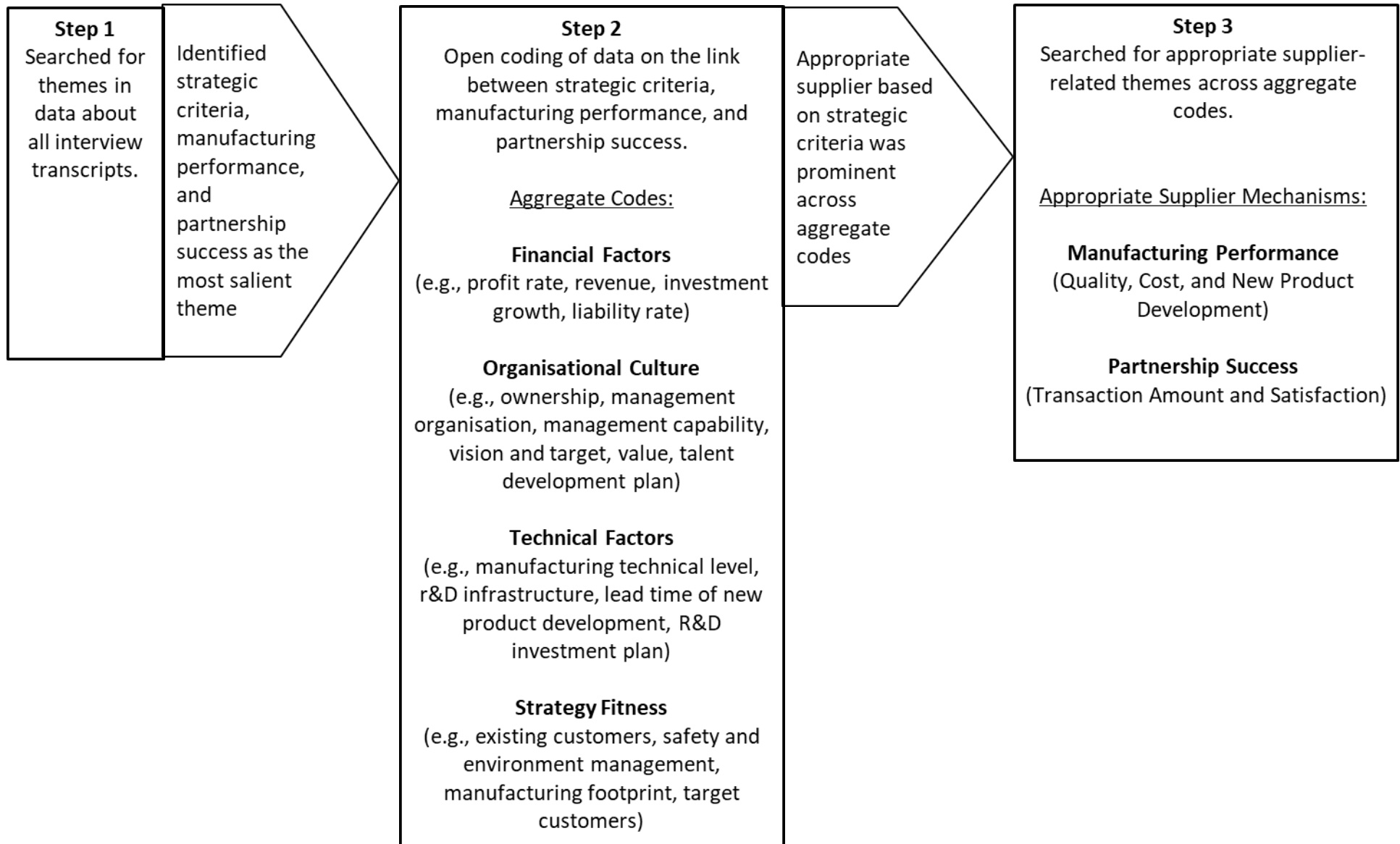


Figure 14 - A Schematic Diagram Explaining the Interview Data Pattern

5.4 Findings

According to the literature review and the previous survey study, we categorise financial factors, technical factors, organisation culture, and strategy fitness into strategic selection criteria (Ellram, 1990; Smytka et al., 1993; Sarkis & Talluri, 2002; Sen, 2008). Each criterion has several sub-criteria. Strategic selection criteria affect buyers' performance and partnerships' short- and long-term success. Furthermore, the effect paths are tested differently from the hypothesised. The semi-structured interview results did explain the further of the survey findings.

5.4.1 Significant Effects of Criteria

The interview theme portfolio, see Table 18, supports the survey result that the strategic selection criteria significantly affect the manufacturing performance and the partnership success. The theme of supplier selected based on strategic criteria contributing to the manufacturing performance of buyer and the partnership success is prominent in our interviews, being mentioned by 100% of the interviewees.

The interviews with various industry professionals shed light on the criteria used for supplier selection, particularly from the perspective of stakeholders such as GMs, Global Commodity Leaders, and Supply Chain Directors. The interviews emphasised the significance of long-term supplier capability assessment. This long-term perspective is crucial for selecting strategic suppliers to meet the company's evolving needs. The interviews also revealed the importance of considering the supplier's willingness to cooperate and ability to meet technical requirements. Some interviewees said, "Some suppliers do not accept small quantity orders, but they do not speak out directly; they delay quotation or postpone delivery. It is necessary to identify their cooperation willingness or what business they want."; "We need to inform suppliers clearly about our technical requirements."; "I would more consider supplier's engineering capability, such as their technology ability and their existing experience with the related products production." Furthermore, it includes tracking supplier improvement progress and understanding their business evolution. One interviewee stated, "I also think we may need to put more resources into tracking supplier improvement progress or their business evolution situation, especially at strategic suppliers."; "The strategic supplier should

be selected after periodic performance assessment. We should know their capability before deciding to give them many businesses."

5.4.2 Various Effects of Sub-criteria

The interviews also explored the differences in supplier assessment criteria between local and overseas colleagues. While local colleagues prioritise existing product experience, one sub-criteria of the strategy fitness, overseas colleagues tend to focus on similar product experience and price, one of the general criteria, when selecting strategic suppliers. "They are more likely to take the similar products experience as high weight criterion to select the supplier and price supplier offered as well."; "If the requirements are quite similar on the products, e.g., medical pipe and our pipe, we think this should be the similar business industrial scope.". The interviews also highlighted the need for periodic performance assessments, one sub-criteria of the organisation culture, for strategic suppliers to ensure their ongoing suitability for the company's needs. "I think if we consider long-term supply requirements in terms of supplier long-term capability, tracking supplier long-term capability development progress is mandatory. We were assessing suppliers now of introduction to the active supplier list and regularly re-assessing them on the supplying period, e.g., once a year or once per half a year. Supplier is also improving every year; we need to know their progress. This way, it could help us appropriately assess the strategic suppliers from a long-term perspective."; "This year, we added an annual assessment into a regular assessment system, which was newly added besides the existing monthly assessment. The last three suppliers are asked for improvement, and the buyer will build a backup plan. Looking for new suppliers does not mean we will change the business of the last three suppliers to new suppliers immediately; it is a backup plan. The reason for suppliers on the last three must be identified by price, quality, or other factors. One question will be brought out: Can we find a new supplier to provide better quality parts at the same price level?"

5.4.3 Generic Selection Criteria

In addition, the interviews highlighted the importance of quality, price, and delivery (these belong to generic selection criteria in this study) as the primary factors influencing supplier selection. "The first important is quality, then price and delivery; these are the most important

criteria."; "I think the performance criteria are the basic assessment tools. It is because it reflects daily suppliers of supplier capability, include the on-time delivery, quality and include the price level they offered."

Additionally, the interviews revealed that the assessment criteria may vary depending on the industry and each customer's specific requirements. "The assessment criteria for supplier selection can differ across industries and are influenced by the unique needs and expectations of individual customers." One interviewee stated.

5.4.5 Summary

Overall, the interviews provided valuable insights into the multifaceted criteria involved in supplier selection, including short-term performance factors and long-term supplier capability. These findings contribute to a comprehensive understanding of the factors influencing strategic supplier assessment and selection. In conclusion, we revealed several sub-criteria for supplier selection from the interviews. These include:

Quality, price, and delivery are the most critical factors in supplier selection. While price is mentioned as a primary factor in supplier selection, it is essential to consider the overall cost-effectiveness of a supplier. It includes evaluating factors such as quality, reliability, and total cost of ownership rather than solely focusing on the initial purchase price. Quality refers to meeting industry-specific requirements, while price and delivery are crucial for attracting customers.

Innovation should be within technical factors. Innovative suppliers who contribute to product or process improvements are considered valuable partners. Investing in research and development and having a track record of innovation are indicators of a supplier's potential to drive innovation within the company.

Financial Stability should be included in financial factors. The financial position of a supplier is crucial in ensuring their ability to withstand economic challenges and continue providing goods or services. Conducting financial assessments and due diligence on potential suppliers is essential to mitigate financial risks.

Organisation culture factors should include Strategy Fitness. Assessing the cultural fit between the company and the supplier is essential for building strong relationships and effective collaboration. Shared values, communication styles, and alignment of business

practices contribute to successful partnerships. China's cultural and institutional environment plays a significant role in supplier integration. Chinese suppliers may have different behaviours and limitations regarding collaborative capability, which can impact the competitiveness of global buyers.

Supplier absorptive capacity and dynamic capability are critical besides the four strategic criteria. They are factors that can be relevant in supplier selection. These factors refer to a supplier's ability to acquire, assimilate, and apply new knowledge and technologies and adapt and respond to changing market conditions. Assessing a supplier's ability to scale production and meet future demand is crucial, especially for companies experiencing growth or fluctuations in demand. Understanding a supplier's capacity and flexibility to adapt to changing needs is essential for long-term partnerships.

By considering these additional criteria, companies can make well-informed decisions when selecting suppliers that align with their strategic goals, mitigate risks, and contribute to long-term success. The interviews provided valuable insights into supplier selection, enabling companies to develop comprehensive and effective supplier assessment strategies.

CHAPTER VI: THEORY BUILDING

This chapter presents a section dedicated to theory building grounded in the study. It summarises the interim findings, including the supported and unsupported hypotheses and the reasons behind them. Additionally, it integrates an expanded literature review, interview findings, and the author's own experience to develop a revised and improved strategic supplier selection framework. This framework contributes to the existing knowledge and offers practical implications. It builds upon the strengths of the current factors while eliminating irrelevant factors identified through survey findings. Furthermore, it incorporates dynamic factors based on the Resource-Based View and other factors that emerged during the interviews, as well as the author's own experience and contextual analysis through the literature review.

6.1 Findings Discussion

6.1.1 Strategic Selection Criteria

Ghodsypour and O'Brien (2001) argued that the best supplier selected solely from the technical and human resource perspective may only be suitable if the supplier considers the business direction of the customer. A comprehensive assessment of a supplier's capabilities in terms of overall business strategy could better enable a buying company to make a strategic supplier selection.

This study found that the strategic selection criteria consist of four factors (Barney, 1991; Ellram, 1990) from the literature. They are financial factors, technical factors, organisation culture, and strategy fitness. The technology factor is the most important regarding the average of the sub-criteria in the survey data and interview results. It is also well illustrated by the significant positive impact of the relevant results on the model's manufacturing performance and the partnership's success. The advanced technology of the supplier can compensate for the shortcomings of the buyer company and strengthen the relationship between the two parties to face the complex market requirements. It comprises four sub-criteria: current manufacturing facilities/capabilities, R&D infrastructure, new sample development speed and related investment plans. As other critical criteria, financial factors are represented by profitability, production utilisation, investment growth and revenue. Buyer

companies are more interested in finding a long-term supplier from a healthy financial base. An unstable financial situation for suppliers can lead to opportunism on their part, and in turn, they will gain the maximum financial benefit from the business to improve their financial situation, not both parties. In addition, the supplier may only survive in the short term. Strategy fitness refers to the level of strategic compatibility between the supplier and the buyer company regarding business strategy, safety and environment management and geographical location. It determines the supplier's business orientation. Checking whether the supplier's strategy is compatible with the buyer company's requirements is crucial, as it will show the extent to which the supplier is keeping its promises or adapting its strategy to meet the customer's requirements. Organisation culture represents the supplier's business (Ellram, 1990; Forrester, 1994; Teixeira et al., 2012). It is related to the type of company ownership, a form of management organisation and capability. These will show the supplier's trust in the buyer company, management attitude, and outlook on the future (Ellram, 1990). A suitable organisational mechanism is essential, as their actors are crucial to running the business.

The Criteria Effects on Manufacturing Performance

Many researchers have discussed supplier selection criteria extensively, linking several research streams and integrating them to form various theories. This research integrated previous literature into four sets of strategic criteria: financial factors, technical factors, organisation culture, and strategy fitness. The preliminary findings indicate both supported and unsupported hypotheses from the survey study.

Supported Hypotheses:

H1a: The hypothesis suggests that supplier financial factors have a positive impact on the performance of buyers. This hypothesis is supported as the findings affirm the positive impact of financial factors on buyer performance. It supports the perspective of Ellram (1990) and Şen et al. (2008) that suppliers selected based on financial issues contribute to long-term manufacturing performance.

The result also appears the conceptual hypothesis that supplier's financial factors positively impact manufacturing performance. The financial factors of a supplier indicate financial stability and operating performance, which in turn reflect the suppliers' historical performance and future viability (Ellram, 1990). The evidence suggests that supplier

performance is influenced by the extent to which suppliers collectively meet various financial and technical criteria. Financial factors are used to measure the overall financial health of a company (Jyoti & Arora, 2013), which reports on sales volume, profitability and market share based on objective and subjective performance criteria. It is logical because buyer companies want suppliers to have a stable financial position (Ho et al., 2009). Therefore, the financial factor is one of the factors that buyers care most about when selecting suppliers, a result that is also consistent with (Barbarosoglu & Yazgac, 1997), who use the financial criteria as one of the supplier capabilities for selection rating.

H1b: The hypothesis states that supplier technical factors positively impact buyer-firm manufacturing performance. This hypothesis is supported because the findings confirm a positive effect of technical factors on buyer-firm manufacturing performance. It aligns with the view of Ellram (1990) regarding the importance of technical factors in assessing supplier capability.

The SEM evidence of the survey data suggests that technical factors are the most important in determining strategic supplier performance to affect manufacturing performance, closely followed by financial factors as a second important criterion. Other factors, such as organisation culture and strategy fitness, cannot significantly support their impact on manufacturing performance. In addition, selecting suppliers based on technical and financial factors positively impacted manufacturing performance, as expected. The other two criteria, organisation culture and strategy fitness, had a surprisingly negative impact, and the effects are insignificant.

The technological capabilities of suppliers in supply networks provide buyers with a rich source of new knowledge, wellsprings, and expertise from the market (Gao et al., 2015). These factors are essential for buyers to select suppliers. From the RBV's perspective, they can use the supplier's technology to enhance their capabilities, in line with previous research (Ellram, 1990; Spekman, 1988). Research has shown that suppliers with high technological capabilities benefit the performance of buyers. We find that the benefits of the supplier's technological capability on buyer performance are reflected in the supplier's production line, technical infrastructure of technology, sample development and technology-related investment. The result is consistent with (Ellram, 1990; Katsikeas et al., 2004; Şen et al., 2008), who state that suppliers with high technical capability are a resource that benefits buyer performance.

Unsupported Hypotheses:

H1c: The hypothesis predicting a negative relationship between supplier organisation culture and buyer performance does not receive significant support. The findings indicate a negative and insignificant relationship contrary to the original hypothesis.

The interesting implication is that organisation culture factors and strategy fitness are only marginally associated with buyer performance. For the organisation culture, if groups of companies have similar organisational arrangements, it is reasonable to assume that they will perform better together (Crispim & Pinho De Sousa, 2009). Conversely, if there is an asymmetry between firms due to different maturity levels of organisation culture, it may perform poorly. This asymmetric organisation between the buyer and the supplier only significantly affects price, not delivery (Chang & Ding, 1995).

H1d: The hypothesis predicting a negative relationship between supplier strategy fitness and buyer performance also does not receive significant support. The findings indicate a negative and insignificant relationship contrary to the original hypothesis.

The association between strategy fitness and manufacturing performance is surprisingly negative and insignificant. Strategy fitness includes customer base, compliance with corporate social responsibility, location, and commitment to cooperation. Furthermore, one interviewer replied, " The supplier's long-term product strategy is essential to match the expectations of the buyer company, as both sides are moving in the same direction, but they may not match each other at the beginning of the business". Moreover, the quantitative results suggest that the level of the other combination factors does not significantly affect supplier performance. The reason for this insignificant effect may be that the survey is conducted cross-sectional so that the data are collected at a single point in time from a sample selected as representative of the population of interest. Furthermore, strategy fitness is related to a long-term perspective, which means that at different points in time, the strategy of the supplier or buyer company may change (Ellram, 1990).

The Criteria Effects on Partnership Success

The research findings encompass the hypotheses supported and not supported by the survey study.

Supported Hypotheses:

H2b: This hypothesis proposes that supplier technical factors positively impact the

partnership's success. The hypothesis is supported as the findings indicate a significant direct effect of supplier technology factors on supplier partnerships. It aligns with the view of Harrigan (1988) that partnership firms are more successful when partners are associated with their firms in terms of products, markets, and technologies.

The supplier technical factors have a significant positive impact on the success of partnerships. Other studies (Gao et al., 2015; Weber et al., 2000) concluded that supplier capability plays a crucial role in strategic partnerships, as only some companies have unlimited capacity to supply the full range of demand in a network. Moreover, it emphasised that the buyer takes a long-term interactive relationship with its suppliers by which the technical capabilities are essential (Katsikeas et al., 2004). Ellram (1990) also stressed it as a sustainability driver for supplier partnership. This finding aligns with (Jyoti & Arora, 2013), who argued that technological capability affects the customer-supplier relationship. Today, it is increasingly common for companies to engage in long-term partnerships, for example, with suppliers who share technological advantages and the same strategic direction. Lying to upstream suppliers about supplier relationship quality supports the focal company's guilt-inducing approach to the market. Furthermore, operational decisions of supplier selection are more often made by managers who focus only on partnership (Bleeke & Ernst, 1991) when considering the partnership success in terms of satisfaction and business turnover (Wu et al., 2009).

H2d: The hypothesis suggests that supplier strategy fitness positively impacts the partnership's success. This hypothesis is supported as the findings confirm a positive influence of supplier strategy fitness on supplier partnerships. It supports the idea that initial fitness between suppliers and the buyer company regarding strategic outlook and plans is crucial for a close long-term relationship, as Ellram (1990) suggested.

Strategy fitness has a significant impact on the success of a partnership, as suitable partnership suppliers are selected based on the alignment of strategic objectives between the buyer company and the supplier. Strategy fitness should be considered one of the criteria for strategic supplier selection, in line with Spekman (1988).

From the structural model assessment, the SEM results show that supplier selection based on technical factors and strategy fitness significantly impacts the partnership success.

Unsupported Hypotheses:

H2a: It suggests that the better (worse) the supplier financial situation, the worse (better)

the supplier partnership. The hypothesis is unsupported as the findings indicate a negative and insignificant relationship between finance factors and supplier partnership. The reason behind this lack of support is not explicitly mentioned in the provided context.

It means that financially healthy or better suppliers will be less willing to enter business partnerships with downstream customers who are willing to have them. They will have to share benefits, which the healthy party may be reluctant to do (Jakki & Robert, 1994).

H2c: The hypothesis proposes that supplier organisation culture positively affects supplier partnerships. However, the hypothesis must be supported as the findings indicate a positive but insignificant relationship between organisation culture and supplier partnerships.

Regarding organisation culture, companies may have different communication methods and considerations for vertical partnerships regarding commitment, coordination, and trust. Cultural diversity can create practical barriers to smooth interaction between supplier and buyer companies and, with appropriate mediation mechanisms, can ensure the success of partnerships. It is also supported by (Chen & Wu, 2010). In this research, organisation culture is measured by ownership similarity, management organisation and management capability. Only companies with high similarity will likely cope with the adaptability in forming partnerships. If the cultures of both parties are asymmetrical, then more conflict will arise because culture guides communication behaviour and conflict resolution, an outcome that is consistent with (Wu et al., 2009). They argue that suitability and partner characteristics are the lowest two criteria in selecting a partner. Partnerships, therefore, require a continuous maturation of the collaborative culture at all levels of the supplier and the buyer (Wucherer, 2006). It would not be very sensible if only the supplier's organisation culture is mature, but the buyer company is not.

6.1.2 Generic Selection Criteria

Interviews with industry professionals also provided valuable insights into the selection criteria that are relevant and effective in the Chinese industrial environment. For instance, Frank Wang, the Global Commodity Leader, mentioned in the interview that traditional criteria like quality, delivery on time, and service are still critical. Based on the study, a series of generic criteria for supplier selection have been identified as top critical. These criteria include quality, price, and delivery. Quality is considered a fundamental criterion, emphasising

the importance of the supplier's ability to meet the required standards and specifications consistently. Price is another crucial criterion, as it directly impacts the cost-effectiveness of the procurement process. Delivery performance is also critical, as timely and reliable delivery ensures smooth operations and customer satisfaction. These criteria collectively contribute to evaluating and selecting suppliers, enabling organisations to make informed decisions and establish strong supplier relationships.

Supplier quality is identified as one of the essential criteria in supplier selection. Supplier quality refers to the ability of a supplier to consistently deliver products or services that meet or exceed the buyer's expectations and requirements. This criterion is crucial for both manufacturing performance and partnership success.

Firstly, supplier quality plays a significant role in manufacturing performance. A firm selecting suppliers based on their ability to provide excellent product quality can lead to improved manufacturing performance. High-quality inputs from suppliers contribute to producing high-quality finished products, reducing rework costs, and improving the quality of outgoing products. It, in turn, enhances customer satisfaction and loyalty as customers receive products that meet their expectations. Moreover, supplier quality also influences other dimensions of manufacturing performance, such as unit costs of finished products, work-in-process inventory levels, on-time delivery, and material handling costs. By selecting suppliers with a strong focus on quality, a firm can achieve operational efficiency, cost reduction, and timely delivery, enhancing overall manufacturing performance.

Secondly, supplier quality is crucial for partnership success. Strategic partnerships between buyers and suppliers are formed to create a mutually beneficial relationship and achieve common goals. In such partnerships, supplier quality becomes a critical factor in ensuring success. When suppliers consistently deliver high-quality products or services, they contribute to the buyer's ability to meet customer needs and expectations. It builds trust and credibility between the buyer and supplier, strengthening the partnership. Moreover, supplier quality also impacts the buyer's reputation in the market. If a buyer consistently delivers high-quality products to its customers, it enhances its brand image and competitive advantage. It, in turn, strengthens the buyer's position in the market and contributes to partnership success.

Supplier quality is essential for both manufacturing performance and partnership success. Selecting suppliers based on their ability to provide excellent product quality improves manufacturing performance by reducing costs, improving product quality, and ensuring timely

delivery. Additionally, supplier quality is crucial in building successful partnerships by enhancing customer satisfaction, building trust, and strengthening the buyer's reputation. Therefore, considering supplier quality as a criterion in supplier selection is essential for achieving manufacturing excellence and fostering successful partnerships.

The products or service price of the supplier provided is an essential criterion in supplier selection as it directly impacts manufacturing performance and partnership success. Suppliers' material prices, parts, and services can significantly affect a firm's manufacturing costs and overall financial performance. According to Burt and Soukup (1985), managing suppliers can account for as much as 60-80% of manufacturing costs in many industries. Therefore, selecting suppliers that offer competitive prices and cost-effective solutions is crucial for improving manufacturing performance.

When suppliers offer competitive prices, it enables firms to reduce their production costs, which can lead to increased profitability and competitiveness. Lower supplier costs can also reduce finished product costs, making the firm's products more affordable and attractive to customers. It can result in increased market share and revenue.

Furthermore, the cost or price of suppliers' offerings can impact the success of strategic partnerships and collaborative relationships. Suppliers providing cost-effective solutions enhances the partnership's value proposition and strengthens the firm's overall competitiveness. It can improve collaboration, trust, and long-term commitment between the firm and its suppliers.

In summary, supplier cost or price is an essential criterion in supplier selection as it directly influences manufacturing performance and partnership success. By selecting suppliers that offer competitive prices and cost-effective solutions, firms can reduce manufacturing costs, improve profitability, and enhance the value proposition of their partnerships.

Supplier delivery on time plays a critical role in manufacturing performance. It directly affects production costs, work-in-process inventory levels, product quality, and on-time delivery to the final customer (Burt & Soukup, 1985). Delivery or stock-outs can disrupt production schedules, increase inventory costs, and lead to customer dissatisfaction. On the other hand, timely delivery enables efficient production planning, reduces inventory holding costs, and enhances customer satisfaction by ensuring on-time delivery (Burt & Soukup, 1985; Churchill, 1979).

Moreover, supplier delivery performance is highly correlated with manufacturing

performance. A study by Shin et al. (2000) found that involving suppliers in the product development process and emphasising quality and delivery as competitive priorities improved both the buyer's and supplier's performance. When suppliers consistently deliver materials on time, it positively impacts the buyer's manufacturing performance, including production costs, product quality, and delivery to customers.

In addition to manufacturing performance, timely supplier delivery is crucial for partnership success. Effective supply chain management requires strong relationships and collaboration between buyers and suppliers. Timely delivery fosters trust and reliability between partners, improving partnership success (Shin et al., 2000). When suppliers consistently meet delivery commitments, it enhances the buyer's confidence in the supplier's capabilities and strengthens the partnership. It, in turn, leads to increased cooperation, knowledge sharing, and joint problem-solving, which are vital for long-term success (Shin et al., 2000; Prahinski & Benton, 2004).

Furthermore, timely delivery is a critical factor in customer satisfaction and loyalty. Late deliveries can result in dissatisfied customers, negative word-of-mouth, and potential loss of business. On the other hand, on-time delivery enhances customer satisfaction, builds trust, and strengthens the buyer's competitive position in the market (Burt & Soukup, 1985; Shin et al., 2000).

In the Chinese industry, supplier quality, price, and timely delivery are crucial factors in supplier selection and evaluation. These criteria play a significant role in ensuring Chinese companies' overall performance and competitiveness.

Supplier quality is of utmost importance as it directly impacts the final product or service provided by the company. High-quality suppliers are essential for maintaining customer satisfaction and loyalty. In the Chinese industry, the concept of quality varies across different sectors. For instance, the automotive and 3C (Computer, Communication, and Consumer Electronics) industries have different quality requirements. The higher the quality requirement, the higher the total cost of the product. Therefore, Chinese companies must carefully assess and select suppliers that can meet the specific quality standards of their industry. Price is another critical criterion in the Chinese industry context. Chinese companies strive to maintain competitive pricing to attract customers and gain market share. Suppliers who offer competitive prices enable companies to optimise their cost structure and enhance their profitability. However, it is essential to note that price should not be the sole determining

factor, as it must be balanced with other criteria such as quality and delivery. Delivery on time is a vital aspect of supplier selection in the Chinese industry. Timely delivery ensures that companies can meet their production schedules and fulfil customer orders on time. In the highly competitive Chinese market, delivery delays can lead to customer dissatisfaction, loss of business opportunities, and damage to the company's reputation. Therefore, Chinese companies prioritise suppliers with a proven track record of delivering products or materials on schedule.

In conclusion, supplier delivery on time is a critical criterion in supplier selection that significantly impacts manufacturing performance and partnership success. Timely delivery enables efficient production planning, reduces inventory costs, improves product quality, and ensures on-time customer delivery. It fosters trust, reliability, and collaboration between buyers and suppliers, improving partnership success. Moreover, on-time delivery enhances customer satisfaction and loyalty, contributing to the buyer's competitive advantage. Therefore, considering supplier delivery on time as a selection criterion is essential for achieving manufacturing performance goals and building successful partnerships.

6.1.3 Special Selection Criteria

In the Chinese industry context, several special criteria play a significant role in supplier selection in addition to generic and strategic criteria. These criteria include *guanxi*, intellectual property protection, and government relationships. They reflect China's unique business environment and cultural context and should be considered when selecting suppliers in the Chinese industry (Chen & Wu, 2010; Han et al., 2018; Xia, 2009).

Guanxi, deeply rooted in Chinese philosophy and culture, is a crucial factor in building and maintaining business relationships and refers to the cultivation and maintenance of personal relationships. It plays a significant role in supplier selection in China. Building strong *guanxi* with suppliers is crucial as it helps establish trust, loyalty, and mutual understanding. It enables effective communication and cooperation, leading to smoother business transactions and better outcomes.

Intellectual property protection is another critical criterion in supplier selection. China has been known for intellectual property concerns, and buyers must ensure their suppliers have robust measures to protect intellectual property rights. It includes safeguarding trade secrets,

patents, copyrights, and trademarks. Suppliers with a strong track record of intellectual property protection are preferred to mitigate the risk of infringement and unauthorised use of proprietary information.

Government relationships also influence supplier selection in China. For example, the government may prioritise specific industries or sectors through incentives, subsidies, or preferential treatment. When selecting suppliers, companies may consider the alignment of their potential suppliers with the government's strategic priorities and initiatives. It can provide opportunities for collaboration and mutual growth. Establishing connections and maintaining positive relationships with government officials can provide advantages regarding access to resources, preferential treatment, and regulatory support. Suppliers with solid government relationships may have an edge over competitors, as they can navigate bureaucratic processes more effectively.

It is essential for buyers to carefully evaluate and prioritise these criteria based on their specific industry, business objectives, and risk tolerance. Supplier selection in the Chinese industry requires a comprehensive understanding of the local business environment, cultural dynamics, and regulatory landscape. By considering these criteria, buyers can make informed decisions and establish successful partnerships with suppliers in China.

6.2 Updated Theoretical Framework

In the context of the Chinese industrial environment, selecting appropriate criteria for supplier selection is crucial for effective decision-making. An extensive literature review provides a foundation for identifying relevant selection criteria. Several studies have explored supplier selection criteria in various industries (Ellram & Carr, 1994; Zhang & Zhang, 2011; Zhang et al., 2003). The survey and interviews with industry professionals also provided valuable insights into the selection criteria that are relevant and effective in the Chinese industrial environment. For instance, in the survey, the strategic selection criteria consisted of four factors that significantly affect manufacturing performance and partnership success; in the interview with Frank Wang, the Global Commodity Leader, he mentioned that traditional criteria like quality, delivery on time, and service are still critical. Additionally, he highlighted the significance of technology ability and existing experience in related product production when assessing suppliers.

By integrating the findings from an expanded literature review, interview findings, and the author's own experience, several appropriate selection criteria for the Chinese industrial environment can be identified. These include generic criteria like quality, price, and delivery on time; strategic criteria like financial factors, technology factors, organisation culture, and strategy fitness; and special criteria like *guanxi*, intellectual property protection, and government relationships. Please see Figure 15. It is important to note that the specific criteria may vary depending on the industry, the organisation's unique requirements, and geography.

Quality, delivery on time, and price are generic selection criteria in the Chinese industrial environment because they contribute to customer satisfaction, operational efficiency, and the establishment of solid supplier relationships. Considering them as generic selection criteria helps a firm align its supplier selection with its overall competitiveness strategy. These criteria ensure that the selected suppliers meet the firm's quality standards, deliver products on time, and provide a competitive price. By prioritising these criteria, a firm can enhance its operational efficiency, customer satisfaction, and overall competitiveness in the market.

Quality is critical in supplier selection as it ensures that the products or services meet the required standards and specifications. High-quality products or materials are essential for meeting customer expectations and ensuring customer satisfaction. A firm can maintain its competitive advantage and enhance its brand image by selecting suppliers that consistently provide high-quality products. In the Chinese industrial environment, different industries have different quality requirements. For example, the automotive industry may have higher quality standards than the 3C (Computer, Communication and Consumer electronics) industry. Therefore, considering quality as a selection criterion helps to ensure that suppliers can meet the specific quality requirements of the industry.

Timely delivery is crucial for maintaining smooth operations and meeting customer demands. Delivery delays can disrupt production schedules, increase costs, and negatively impact customer satisfaction. In the Chinese industrial environment, where efficiency and productivity are highly valued, selecting suppliers who consistently deliver products or services on time is essential. This criterion helps to minimise production delays, avoid disruptions in the supply chain, and meet customer expectations.

Price is considered a crucial criterion for supplier selection. It is supported by various studies and literature in supply chain management. The highly competitive nature of the global market, coupled with the increasing pressure to reduce costs, has led industries to

prioritise price as a critical factor in supplier selection. Companies in China, like in many other countries, seek to achieve cost efficiency and competitiveness by selecting suppliers who offer competitive pricing. This shift from a sole focus on the lowest bid approach to considering both quality and price reflects the recognition that overall costs and value creation are essential considerations in supplier selection. While quality remains significant, price integration as a selection criterion acknowledges the need for a balanced approach that considers cost and quality to ensure sustainable and profitable supplier relationships. Therefore, in the Chinese industry context, price plays a significant role in supplier selection as it directly impacts companies' overall cost structure and competitiveness.

From the dynamic perspective of the Resource-Based View (RBV) and strategy management, financial factors, technical factors, organisation culture, and strategy fitness should be considered as strategic supplier selection criteria for several reasons:

Financial stability and performance are essential considerations in supplier selection. Firms need suppliers who can provide reliable and consistent products or services without financial disruptions. By evaluating potential suppliers' financial health, including profit situation, revenue growth, investment plan, and liability, firms can mitigate the risks associated with supplier bankruptcy or financial instability, ensuring a stable supply chain.

Technical advancements and innovation are crucial in maintaining a competitive advantage in a dynamic environment. By considering technical factors in supplier selection at the manufacturing facility, R&D infrastructure, New Product Development Speed, and R&D investment plan, firms can identify suppliers with the necessary technical capabilities to support their innovation and product development efforts. It aligns with the RBV's emphasis on acquiring resources or capabilities that can be transformed into competitive advantages. In the Chinese industrial environment, technical factors are crucial in supplier selection. It includes assessing the supplier's technical capabilities, expertise, and ability to meet the buyer's specific technical requirements.

Strategy fitness refers to the alignment between the buyer's strategic goals and the supplier's capabilities and offerings via assessing existing customer panels, environmental and social management, and footprint. From a dynamic perspective, selecting suppliers that align with the firm's strategic direction ensures that the buyer can leverage the supplier's resources and capabilities to achieve their strategic objectives. This alignment enhances the firm's ability to respond to market changes and maintain a competitive advantage.

Organisation culture is not recommended in the selection criteria because Organisation culture is often considered a complex and multifaceted concept encompassing an organisation's values, beliefs, norms, and practices. While organizational culture plays a crucial role in shaping a company's overall functioning and performance, there may be other appropriate criteria for supplier selection. It is because supplier selection focuses on evaluating the capabilities, resources, and performance of potential suppliers rather than the cultural aspects of their organizations. It may be why the significant effect is not supported among manufacturing performance and partnership success, see Table 16. Nevertheless, company ownership, particularly in Chinese enterprises, can be a relevant criterion for supplier selection. Chinese enterprises can be categorized into wholly domestically funded and foreign-funded enterprises, which can provide insights into their legal status, ownership structure, and potential implications for supplier relationships. Understanding Chinese enterprises' ownership types can help assess their stability, financial backing, and potential alignment with the buyer's strategic objectives.

Considering these criteria in supplier selection from a dynamic perspective allows firms to adapt to changing market conditions, leverage supplier capabilities for competitive advantage, and foster long-term relationships with suppliers. It aligns with the RBV's focus on acquiring and integrating valuable resources and capabilities to sustain a competitive advantage over time. In the Chinese industrial environment, there should be varying weights among financial factors, technical factors, and strategy fitness when considering them as strategic supplier selection criteria. It is because each of these factors plays a unique and essential role in determining the suitability and effectiveness of a supplier in the Chinese context. By assigning varying weights to these factors, the buyer can prioritise and emphasise the most critical criteria for their specific needs and context. It allows for a more comprehensive and tailored evaluation of potential suppliers, leading to better-informed decisions and stronger supplier partnerships in the Chinese industrial environment.

In the Chinese industry context, special supplier selection criteria are necessary due to several factors unique to the Chinese business environment (Jiang et al., 2007; Mortensen & Arlbjorn, 2012; Xia, 2009). One such criterion is *guanxi*, which refers to cultivating and maintaining business relationships. *Guanxi* is significant in Chinese business culture and can influence supplier selection decisions. Building strong *guanxi* with suppliers can increase trust, cooperation, and mutual benefits, which are highly valued in Chinese business practices.

Another vital criterion is intellectual property protection. China has been known for intellectual property rights infringement issues, which can pose risks for foreign companies operating in the country. Therefore, when selecting suppliers in China, it is crucial to consider their commitment to intellectual property protection and their track record in safeguarding proprietary knowledge and technologies. This criterion helps ensure suppliers have the necessary measures to protect their customers' intellectual property.

Additionally, government relationships are an essential consideration in the Chinese industry context. The Chinese government plays a significant role in business operations and regulations, and having solid relationships with government officials can provide advantages and opportunities for suppliers. Suppliers with established government relationships may have better access to resources, support, and preferential treatment, which can positively impact their ability to meet customer requirements and deliver high-quality products or services.

Special supplier selection criteria, such as *guanxi*, intellectual property protection, and government relationships, are necessary in the Chinese industry context due to the cultural significance of *guanxi*, the importance of intellectual property protection, and the influence of government relationships on business operations. Considering these criteria can help companies navigate the unique challenges and opportunities the Chinese business environment presents and select suppliers that align with their strategic goals and values.

In conclusion, in the Chinese industry context, the use of generic, strategic, and special selection criteria is necessary for supplier selection. These criteria contribute to academic and practical perspectives by providing a comprehensive framework for supplier evaluation, aligning supplier selection with long-term goals, and addressing the unique challenges and opportunities in the Chinese market. Understanding and applying these criteria can improve supplier performance and successful partnerships.

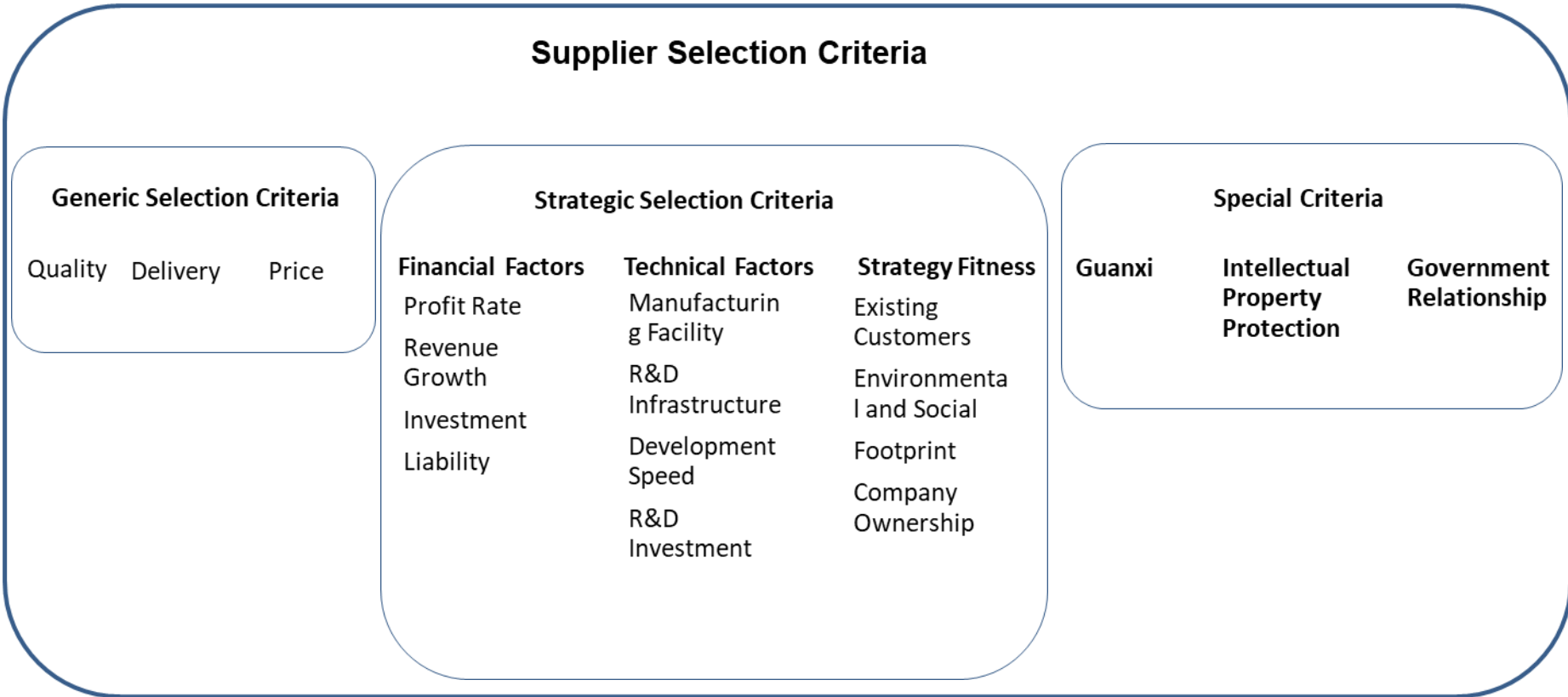


Figure 15 - Updated Criteria Framework of Supplier Selection

CHAPTER VII: CONCLUSIONS AND RECOMMENDATIONS

Identifying strategic selection criteria and understanding the extent of the effects on manufacturing performance and partnership success is an essential topic before forming a partnership alliance. Therefore, decision-makers may need to design, identify, and validate effective selection criteria before forming a joint venture. Moreover, to understand their influence patterns, this research applied an exploratory sequential mixed method to conduct a primary survey and follow-up interviews in the automotive parts industry in the YRD region in China.

As proposed in the introduction section of this thesis, this final chapter explains the conclusions and recommendations for future research.

7.1 Study Summary

The starting point of this study is that appropriate suppliers should be assessed based on a series of criteria. In the long term, suppliers selected based on strategic criteria will affect the manufacturing performance (Ellram, 1990) and the partnership's success (Harrigan, 1988). Moreover, the success of vertical partnerships with upstream suppliers will be affected by manufacturing performance, while the advanced supplier assessment may play a critical step in supply chain management. This thesis aims to provide a more comprehensive framework to formulate various strategic criteria for partnership supplier selection. Also, to understand the relationship between the effects of strategic criteria, manufacturing performance and partnership success in the supply chain environment. Furthermore, it is to generate practical implications of a new criteria framework for alliances between suppliers and buyers from an empirical test of the theory.

This research studied the criteria of supplier selection for manufacturing performance enhancement and partnership success among buyers in the automotive parts industry in the YRD region from a comprehensive research process. Chapter I briefly discusses the research background. Furthermore, the research question is posed as to what supplier selection criteria affect manufacturing performance and partnership success. The expected findings are to identify appropriate criteria for supplier selection from a strategic perspective and to clarify the correlations between the strategic criteria, manufacturing performance and partnership success. Chapter II presents an overview of the literature and discusses the relevant

theoretical background in supplier selection research. The strategic criteria include four sub-factors from the literature review: financial factors, technical factors, organisation culture, and strategy fitness. Chapter III explains the research methodology and discusses the theoretical underpinnings of RBV theory as the effects hypothesis among selection criteria, manufacturing performance, and partnership success. The research methodology is derived from the author's philosophical worldviews, the nature of the research issue, the context of the researcher and the audience. It follows an exploratory sequential approach to research: the first step begins with an online survey as the primary quantitative study; the second step is six interviews as a qualitative study. Chapter IV covers the steps and explanation of the survey development since it is the primary research method for the study. The elements of survey design are described, including the survey instruments, sampling, variables, and measures. Chapter V explains the survey study process and analysis results. The interviews provided valuable insights into the multifaceted criteria involved in supplier selection, including the generic and strategic criteria, to supplement the survey findings. Chapter VI proposes a new selection criteria framework. It integrates the extensive literature review, the hypothesis testing by the quantitative survey data, the study of the qualitative interview data, and the researchers' own experience. Chapter VII summarises the contributions and limitations of the research and directs some future research to practise and validate the criteria framework of supplier selection in a longitudinal study.

Furthermore, according to the study, the supplier technical factors and strategy fitness significantly impact partnership success. In contrast, financial factors and organisation culture do not significantly impact. As expected, manufacturing performance positively affects the partnership's success. In addition, the tests reveal some surprising cases where some sub-criteria had a negative impact on manufacturing performance and partnership success. Examples include the impact on the manufacturing performance of suppliers selected based on organisation culture and strategy fitness and the impact on partnerships of suppliers selected based on financial factors.

The study proposes a new selection criteria framework. It includes the generic, strategic, and specific criteria for supplier selection in the Chinese industry environment. It integrates the extensive literature review, the study of quantitative and qualitative interview data, and the researchers' experience.

7.2 Contributions

The supplier selection decision is an example of a multi-criteria decision making problem. It is also attractive to the academic and business operations communities in supply chain management (Chai & Ngai, 2014). However, while academic research provides a rationale for building more collaborative supply relationships from supplier selection onwards, some companies still need to realise and understand the critical criteria necessary to ensure a more customer-focused supplier is found at the outset of the partnership. This study, therefore, aims to understand further the patterns of influence of selection criteria on the buyer's performance and partnership success from both academic and practitioner standpoints in the Chinese industry context.

When selecting suppliers, managers are concerned about cost and delivery performance (Spekman & Carraway, 2006) from a short-term perspective. The research asks managers to consider strategic ratings for long-term consideration. These include the extent to which the supplier technology can be a suitable supplier, the extent to which the supplier financial position can be a suitable supplier, and the extent to which the supplier's strategy fitness can be a suitable supplier. Thinking about the importance of the criteria helps in selecting suitable suppliers and creating and maintaining a more cooperative buyer-supplier relationship. Due to the unique Chinese business environment, special supplier selection criteria are necessary in the Chinese industry. Guanxi, Intellectual property protection, and government relationship can play significant roles in Chinese business culture and significantly influence supplier selection decisions.

We assumed that the buyer firm could use the criteria to select suppliers for a sustained short- and long-term competitive advantage. These criteria play a crucial role in both academic and practical perspectives.

Developing a new supplier selection criteria framework encompassing generic, strategic, and special criteria makes a significant academic and practical contribution to supplier selection. From an academic perspective, the framework provides researchers with a theoretical foundation for further exploration. It offers practitioners a practical tool for improving their supplier selection process and ultimately enhancing their overall performance and competitiveness.

From an academic perspective, firstly, this framework expands the existing body of

knowledge by providing a comprehensive and systematic approach to evaluating and selecting suppliers. By incorporating generic criteria, which apply to a wide range of industries and projects, the framework offers a foundation for supplier evaluation that can be universally applied. Additionally, including strategic criteria allows organisations to align their supplier selection process with their overall business strategy, ensuring that suppliers are chosen based on their ability to contribute to long-term goals and objectives. Special criteria further enhance the framework's practical value by enabling organisations to consider unique factors specific to their industry or project.

Secondly, the research methodology adopted fills a gap in previous research. This study is conducted using a mixed methods approach related to supplier selection criteria. The study develops supplier selection criteria from a literature review and validates the effectiveness of the constructed model from survey data and interviews.

Thirdly, the study is the first to take comprehensive consideration of strategic selection criteria, manufacturing performance and partnership success in a theoretical framework of RBV.

Fourthly, this study develops an effects model for Chinese automotive parts companies. Using relative measures, this effect model is valuable for both sides to understand the critical factors in achieving the success of the ultimate partnership. Moreover, the ranking of the criteria buyers use to evaluate vendors' capability is broadly consistent across academia. In short, the business implication is that these firms will be better able to capture the full potential of their critical suppliers if they formally evaluate the capability of their suppliers alongside the criteria.

In practice, firstly, this framework provides researchers with a theoretical foundation for further exploration. It offers practitioners a practical tool for improving their supplier selection process and ultimately enhancing their overall performance and competitiveness. It addresses the criteria critical to buyer companies and suppliers in selecting suppliers. For buyer companies, the study can provide a basis for procurement management to compare their selection criteria with those of other companies and, from this comparison, make changes to the procurement organisation to gain more significant benefits from the selection of suppliers from a long-term perspective. For suppliers, this research can provide information on how their industrial customers rate them in terms of criteria and what factors influence their customers' strategic perspective. The study results will enable industrial marketers to adjust

their marketing mix to reflect the concerns of the marketplace.

Secondly, using quantitative and qualitative data collection methods allows for a more comprehensive understanding of the complex factors involved in supplier selection. Surveys provide a systematic and structured means of gathering data from a large sample size, enabling researchers to identify trends and patterns in supplier selection criteria across different organisations. On the other hand, interviews offer the opportunity to delve deeper into the subjective experiences and perspectives of individuals involved in the supplier selection process, providing valuable insights into the decision-making process and the underlying rationale for the selection criteria. By combining these two methods, researchers obtain a more holistic and nuanced understanding of supplier selection criteria, which can inform practical decision-making in organisations.

Thirdly, utilising analysis tools such as Structural Equation Modelling (SEM) and NVivo in the context of survey and interview data analysis for supplier selection criteria research is significant. SEM provides a robust statistical framework to examine the relationships between variables and test hypotheses. NVivo, a qualitative data analysis software, offers a systematic and efficient approach to analysing interview data. Combining SEM and NVivo in supplier selection criteria research offers a powerful analytical approach. It allows researchers to integrate quantitative and qualitative data, providing a holistic view of the research topic.

In conclusion, this research on supplier selection criteria has made significant academic and practical contributions. Academically, it has provided a comprehensive taxonomy of criteria for supplier selection and evaluation in industry environments, highlighting the need for further research in supplier evaluation. Practically, it has offered managers a starting point or reference list of factors to consider when selecting and evaluating suppliers while emphasising the importance of tailoring these criteria to the specific needs of their organisation and project.

7.3 Limitations and Future Research

7.3.1 Research Limitations

This study was conducted in the automotive parts industry from the buyer's perspective. Although we have attempted to improve the internal validity of the research, also fully recognising that this is achieved with some loss of external validity, the single-industry studies

tend to need more generalisability; they reduce the external variation caused by industry characteristics and environmental noise. Therefore, the study must be considered in light of its limitations under a comprehensive overview of the challenges faced during the research process. The research has several limitations in terms of the research design and process.

Firstly, the research process relied solely on reviewing the existing literature from the 17 top-selected journals and did not involve other resources. It is important to note that the taxonomy used in this study was proposed based on a review of existing literature, and no primary research was conducted to test this taxonomy. Classifying criteria and subcategories may need to be more comprehensive and accurate. Future research should address these limitations to enhance further my understanding of supplier selection criteria in different environments.

Secondly, the data collection was based on a survey instrument developed by the researchers, which may introduce bias and subjectivity in the responses. The reliance on self-reported data from survey respondents introduces the potential for response bias and inaccuracies. Respondents may have provided socially desirable or incomplete responses, leading to a distorted understanding of the supplier selection criteria used in practice. Additionally, using a single survey instrument may not capture the full range of criteria and nuances involved in supplier selection, potentially overlooking essential factors that could impact decision-making. In addition, using qualitative data from interviews while providing valuable insights can be influenced by individual biases and interpretations. This subjectivity may introduce inconsistencies and variations in the reported supplier selection criteria, making it challenging to establish a standardised framework or set of criteria applicable across different organisations and industries.

Thirdly, the survey and interview population were limited to a few respondents, which may not adequately represent managers' diverse perspectives and experiences in supplier selection and evaluation. It poses challenges to the generalizability of the findings. The research may have focused on a specific industry or geographical region, limiting the applicability of the results to other contexts. Additionally, the sample size of the survey and the number of interview participants may have needed to be bigger, making it difficult to draw broad conclusions or identify patterns that are representative of the larger population of managers involved in supplier selection. It restricts the external validity of the research and calls for more extensive and diverse samples to ensure a comprehensive understanding of

supplier selection criteria.

Additionally, the research may have yet to consider the potential trade-offs and prioritisation of supplier selection criteria. In practice, organisations often need more support and must make decisions based on limited resources. It may require them to prioritise certain criteria over others or make trade-offs between conflicting criteria. Understanding the trade-offs and prioritisation strategies employed in supplier selection can provide valuable insights, but the research may have yet to explore this aspect thoroughly.

Moreover, the research needed a longitudinal perspective on supplier selection criteria. The study may have focused on a single point in time, failing to capture how supplier selection criteria evolve and change over the long term. Supplier selection is a dynamic process influenced by various internal and external factors, and understanding how criteria evolve can help organisations adapt their selection strategies accordingly.

In conclusion, while the supplier selection criteria research has provided valuable insights, it must examine the influence of limited literature review, data collection, trade-offs, and the longitudinal perspective. Future research should consider these aspects to provide a more comprehensive understanding of supplier selection criteria and their implications for decision-making in different contexts.

7.3.2 Future Research

Based on the limitations identified, several promising avenues for future research can contribute to a deeper understanding of this critical area. The following proposals outline potential directions for future research:

Cross-disciplinary research: Future research could explore cross-disciplinary perspectives. It would involve drawing insights and theories from related fields or disciplines that may have relevance to the research topic. Researchers can gain new perspectives and generate innovative insights by integrating knowledge from different disciplines. This cross-disciplinary approach can enrich the literature and provide a more holistic understanding of the research topic.

In-depth case studies: Another approach to address the limitation of a limited literature review is to conduct in-depth case studies. It would involve selecting a few organisations or contexts and conducting detailed investigations to understand the research topic better. In-

depth case studies provide valuable insights into specific contexts, practices, and challenges that need to be captured in broader literature reviews. By delving deeply into specific cases, researchers can generate new knowledge and identify unique factors influencing the research topic.

Longitudinal studies: The current study focused on a specific period, which may limit the ability to capture changes and trends over time. Future research could adopt a longitudinal approach, conducting multiple data collection points over an extended period. It would enable researchers to track changes in the variables of interest and provide a more dynamic understanding of the research topic.

Overall, these proposals for future research aim to address the limitations of the research. By adopting these approaches, I hope to expand the knowledge base, provide a more comprehensive understanding of the research topic, and contribute to advancing the field.

APPENDICES

Appendix I: Survey Questionnaire

SUPPLIERS SELECTED BASED ON THE STRATEGIC CRITERIA AFFECT MANUFACTURING PERFORMANCE AND PARTNERSHIP SUCCESS

I. COVER

Thanks for participating in the online survey. The purpose of the survey is to determine the supplier selection criteria for the automotive parts industry in China. The results of the study will help buy firms to select appropriate suppliers.

The questionnaire focuses on four selection criteria and the extent to which they influenced the manufacturing performance of the buyer company and the success of the partnership. The criteria include financial factors, organisational factors, technical factors, and strategy fitness.

The survey is conducted online with five sections. Section I is the cover introduction. Section II is a five-question survey on respondent characteristics. Section III is a seven-question survey on the degree of influence of supplier manufacturing performance, using a 5-point scale. Section IV is eighteen questions relating to strategic criteria, using a 5-point scale. Section V consists of four questions relating to the degree of influence on the success of supplier collaboration, using a 5-point scale. 5 means very important, 1 means very unimportant. It takes around 10 minutes to complete the entire questionnaire.

This study is conducted by Lihua Xia from the Alliance Manchester Business School in Manchester University. Email address: lihua.xia@postgrad.manchester.ac.uk

The research will be conducted under the appropriate ethical guidelines provided by the University of Manchester. The potential for harm and risks has been identified as low. The subject area is not controversial and the research does not include any vulnerable groups. Participants will provide informed consent prior to taking part in the research. There is a slight risk of professional embarrassment, especially if the project may be likely to fail or falter, but these risks will be mitigated by the use of pseudonyms, confidentiality or omission where possible.

II. RESPONDENT CHARACTERISTICS

2.1 Does the company use strategic criteria when selecting suppliers?

- No
- Yes
- Not

sure

2.2 Your working years in the company:

- 1-5 year(s)
- 5-10 years
- >10 years

2.3 Annual revenue for the company:

- <20 million CNY
- \geq 20 million CNY

2.4 Type of ownership of your company:

- Partially or fully founded by foreign parties
- Chinese enterprise

2.5 Your company's products:

- Physical components or materials
- Service related
- OEM
- Others

III. EFFECT EXTEND TO MANUFACTURING PERFORMANCE BY THE SUPPLIER

How do suppliers affect manufacturing performance in your company? 5 means very important, 1 means very unimportant.

Item	1	2	3	4	5
3.1 Product quality rate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3.2 Product quality stability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3.3 Product delivery accuracy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3.4 Product delivery on time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3.5 Product cost	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3.6 New product development speed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3.7 New product development quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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IV. HOW IMPORTANT ABOUT EACH STRATEGIC CRITERION?

How would you describe the importance of each criterion? 5 means very important, 1 means very unimportant.

Item	1	2	3	4	5
4.1.1 Supplier's profit rate (global average EBITA is from 6.2% to 9.0%)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.1.2 Supplier's revenue is bigger than your company	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.1.3 The increase of supplier investment growth rate (China company average rate is 9.5% in 2019)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.1.4 Supplier's liability rate (China company average rate is 52.8% in 2019)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.2.1 Supplier's company ownership type	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.2.2 Supplier's management organisation similarity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.2.3 Supplier's management capability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.2.4 Supplier's vision and target compatibility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.2.5 Supplier's value similarity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.2.6 Supplier's talent development maturity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.3.1 Supplier's existing customer's similarity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.3.2 Supplier's safety and environment management maturity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.3.3 Supplier's global manufacturing footprint	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.3.4 Supplier's target customer similarity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.4.1 Supplier's technology advance level in the	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

manufacturing					
4.4.2 Supplier's R&D infrastructure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.4.3 Supplier's sample development speed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.4.4 Supplier's R&D investment rate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

V. PARTNERSHIP SUCCESS IS AFFECTED BY MANUFACTURING PERFORMANCE

How would you describe partnership success are affected by manufacturing performance in your company? 5 means very important, 1 means very unimportant.

Item	1	2	3	4	5
5.1 Spending increase to the supplier	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.2 The service satisfaction of new product development from the supplier	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.3 The satisfaction of the product cost supplied by the supplier	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.4 The satisfaction of the delivery on time supplied by the supplier	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Thanks for your participation!

Appendix II: Interview Questionnaire

RESEARCH INTRODUCTION & ETHICAL CONFIDENTIALITY

研究说明与道德承诺书

➤ RESEARCH TOPIC 研究课题

Analysis of Supplier Selection Criteria in Automotive Parts Industry in China
中国汽车零部件公司在选择供应商时所采用的评估指标

➤ THE RESEARCHER 研究人员

Mr. Lihua Xia 夏利华先生

Doctoral Candidate, Alliance Manchester Business School, University of Manchester,
博士候选人, 英国曼彻斯特大学商学院

Supervisor 指导老师:

Prof. Yu-wang Chen 陈玉旺教授

Alliance Manchester Business School, University of Manchester 英国曼彻斯特大学商学院

Prof. Wenhui Zhao 赵文辉教授

Antai College of Economics & Management, Shanghai Jiao Tong University 上海交通大学安泰经管学院

➤ RESEARCH PURPOSE 研究目的

The purpose of this study is to understand the way in which the company's performance indicators (such as quality, price, service) and long-term capacity indicators (such as organizational capacity, equipment capacity, risk management capacity, corporate social responsibility capacity) affect each other when selecting suppliers in Chinese auto parts manufacturing companies, and to determine whether the selection of evaluation indicators is appropriate. Finally, find a strategic supplier suitable for the company's long-term development needs.本研究旨在了解中国汽车零部件制造公司里, 在选择供应商时, 公司绩效指标(如质量、价格、服务)和长期能力指标(如组织能力、设备能力、风险管理能力、企业社会责任能力)相互之间的影响方式, 确定评估的指标选用适合, 最终找到适合公司长期发展需要的战略供应商。

➤ THE RESEARCH WILL BE PUBLISHED OR NOT 这个研究的结果是否会发表

The primary intent of the research is a thesis contributing to the application for a DBA at the University of Manchester. Secondly, any research results that are conducive to the discovery or knowledge of the research participants of this topic may be partially shared in the form of papers, meetings or consultations on academic or commercial networks.这个研究的首要目的是完成英国曼彻斯特大学的管理学博士课题。其次, 任何有利于此课题研究参与者的发现或者知识的研究成果也许会在学术或者商业网络中通过论文, 会议或咨询的形式进行部分分享。

➤ ETHICAL RISK ASSESSMENT 伦理风险评估

The research will be conducted within the appropriate ethical guidelines provided by the University of Manchester.

这个研究将会在英国曼彻斯特大学的要求下按照其伦理准则指导下进行。

The potential harm and risks have been identified as lowest level. The subject area is not controversial, and the research does not include any vulnerable groups. Participants will be expected to provide informed consent before taking part in the research. There are minor risks of professional embarrassment, especially where projects may have failed or faltered, but these will be mitigated against where possible by the use of pseudonyms, confidentiality or omission as appropriate.

潜在的伤害和风险已被确定为最低级别。该研究课题领域没有争议，该研究不包括任何弱势群体。参与者将在参加研究之前提供知情同意。存在轻微的职业尴尬风险，特别是在项目可能失败或动摇的情况下，但在可能的情况下，将通过使用假名、保密或适当的省略来减轻这些风险。

➤ RESEARCH METHOD 研究方法

The study began with face-to-face interviews with six people in charge of three management levels in two different types of companies in China to understand the discrepancies between the assessment indicators used in actual business operations and those mentioned in the literature. A questionnaire is then used to collect data from companies in the industry and further statistical analysis is conducted to demonstrate the interaction between immediate performance indicators and long-term capability indicators. Finally, the system of assessment indicators found in this study is applied in an empirical study of real cases. 本研究首先对于在中国的两种不同类型公司里的三个管理层次的六个负责人员进行面对面的访谈，了解实际业务操作时运用到的评估指标和文献中提到的差异性；然后用调查问卷的形式对行业内的公司进行数据搜集和 SPSS 统计技术来证明即时绩效评估指标和长期能力指标之间相互作用的关系；最后应用本研究发现的评估指标系统在实际案例进行实证研究。

➤ INTERVIEWEE PROFILE 访谈人员简介

The face-to-face interviews will focus on the six people responsible at three management levels in two different types of companies. This is shown in the table below.面对面的访谈将聚焦在两种不同类型公司里的三个管理层次的六个相关负责人员上。如下图示

No.	Corporate Ownership	Product	Job Role
1	MNC	Electric Equipment and Machinery	R&D Director
2	MNC	General Purpose Machinery	Global Commodity Manager
3	MNC	Rubber and Plastic Products	Site Purchasing Manager
4	Local Company	Metal Products	General Manager
5	Local company	Electric Equipment and Machinery	SCM Director
6	Local company	Electronics	R&D Director

➤ INTERVIEW PROCESS 访谈过程

The researcher will confirm with you the time and place of the interview. You can decide the details of the location, date and time based on your convenience and preference. The first

option is your office or meeting room. If you are not comfortable with these venues, the researcher can accommodate any other venue for the interview. 本研究者将会和您确认访谈的时间，地点。您可以基于您的方便和喜好决定地点，日期和时间的细节。第一选择是在您的办公室或者会议室。如果您不方便在以上的场地，研究者也可以配合在任何其他的场地进行访谈。

After the interview has been confirmed, the researcher will conduct a one-to-one interview with the participant. This interview will last approximately 60 minutes and will consist of 10 questions. The first 50 minutes are devoted to the interview of the 10 questions and then the rest of the interview is devoted to further clarification of the answers to some of the questions. 在访谈确认后，本研究者将和参与者进行一对一的访问。这个访问大约 60 分钟，一共有 10 个问题。开始的 50 分钟是关于对这 10 个问题的访问，然后剩下的时间是对一些问题回答的进一步澄清。

These interviews will start with the sending of this study note and ethics commitment in September 2019 and continue until the end of all interviews in June 2020. There may be some further follow-up clarification if necessary.

这些访谈将从 2019 年的 9 月发送本研究说明和道德承诺书开始，持续到 2020 年 6 月全部访谈结束。如果需要，也许会有一些进一步的跟进澄清访谈。

➤ **DATA PROTECTION AND CONFIDENTIALITY 数据保护和保密**

This subject will collect the personal information section. No specific contact data (SCD) will be collected. Some potentially identifiable personal data (PD) will be collected, such as name, contact details. 本课题将收集个人信息部分：没有任何的特别个人信息(SCD)将会被采集。一些可能会被识别的个人信息(PD)将会被收集，例如姓名，联系方式。

Recorded interviews (for researcher write-back interviews only) 访谈录音（仅供研究者回访书写访谈内容）

The interview will not involve sensitive or private information. 访谈不会涉及敏感或私人信息

- ★ Special contact data (SCD) is sensitive information containing political, health, sexual activity, etc.
- ★ Potentially identifiable personal data (PD) refers to personal data.
- ★ 特别的个人信息(SCD)是指包含政治，健康，性活动等的敏感信息
- ★ 可能会被识别的个人信息（PD）指的是个人隐私数据

This researcher fully understands the importance of confidentiality to business competition. For sensitive business information or business information that contains data that is particularly unique to the competitive advantage, such data must not be disclosed in any scenario that might benefit a competitor. For example, descriptions of manufacturing processes, data sources, data analysis methods. This information will be obscured in this thesis. 本研究者充分理解保密对于商业竞争的重要性。对于一些敏感的商业信息或者商业信息包含了特别独特的竞争优势数据，这些数据一定不会被披露在任何可能有益于竞争对手的任何场景。例如制造工序的描述，数据来源，数据分析方法。在本论文中这些信息都会被模糊化。

➤ **LEGAL BASIS 法律依据**

The researcher will follow and adhere to the University of Manchester Research Data Management Policy.

本研究员将严格遵循英国曼彻斯特大学的研究数据管理制度。

In addition to University of Manchester policies, there are some other implications for data management which will be adhered to.

除了曼彻斯特大学的研究数据管理制度之外，还有以下的数据管理制度也会被遵守

The University of Manchester Records Management Policy

曼彻斯特大学记录管理条例

The University of Manchester Data Protection Policy

曼彻斯特大学数据保护条例

The University of Manchester Intellectual Property Policy

曼彻斯特大学知识产权保护条例

The University of Manchester IT policies and guidelines

曼彻斯特大学信息技术条例和指南

Standard operating procedures (SOP) for recording participants for research projects 记录的标准作业指导书

➤ **INTERVIEWEE RIGHTS 受访者权利**

You have several rights under data protection law regarding your personal information. You may, for example, request a copy of the text of the interview.

按照数据保护法，关于您的个人信息您有多项权利。例如您可以要求一份关于访谈的文字副本。

If you would like to know more about your different rights or the way we use your personal information to ensure we comply with the law, please see our Privacy Notice for Research.

如果你想了解更多关于你的不同权利或我们使用你的个人信息以确保我们遵守法律的方式，请查看我们的《研究工作隐私通知》。

➤ **DATA CONFIDENTIALITY AND PERSONAL INFORMATION NONDISCLOSURE 数据保密和个人信息的防泄漏**

The University of Manchester is the data controller for this project in accordance with the Data Protection Act. This means that we are responsible for ensuring that your personal information is kept secure, confidential and only used in the way you have been told.

根据数据保护法，英国曼彻斯特大学是本项目的数据控制方。这意味着我们有责任确保你的个人信息是安全、保密的，并且只按照你被告知的方式使用。Confidentiality will always be respected and any information provided by an individual or company that is stated to be confidential will be treated as confidential.

保密性将始终得到尊重，任何由个人或公司提供的、注明应予保密的信息都将被视为保密信息。Please note that personnel from the University of Manchester or regulatory authorities may need to see the data collected for this study to make sure the project is proceeding as planned. All individuals involved in reviewing and monitoring the study have a strict obligation of confidentiality to you as a research participant.

请知晓曼彻斯特大学或者监管机构的人员可能需要查阅为本研究收集的数据，进而项

目按计划进行。所有参与审查和监督该研究的人都对作为研究参与者的你有严格的保密义务。

Researchers are responsible for adhering to the principles, ensuring compliance with the Data Management Plan (DMP) and updating it as required.

研究人员负责遵守该原则，以确保遵守数据管理计划（DMP），并根据需要进行更新。

Respect Intellectual Property Rights.

遵守知识产权。

Comply with all organizational, regulatory, institutional and other contractual and legal requirements.

遵从所有相关的组织，监管，机构以及其他合同或者法律要求。

➤ COMPLAINT ESCALATION 投诉处理

If you have concerns or complaints, please make sure you contact the researcher in the first instance. Contact information is on the last page of this information booklet. 如果您有顾虑或者投诉，请您务必在第一时间联系研究者。联系信息在本信息书的最后一页。

If there are any issues that you do not wish to discuss directly with this researcher, you are invited to contact Prof. Yu-wang Chen, Alliance Manchester Business School yuwang.chen@manchester.ac.uk.

如果有任何问题您不愿意和本研究员直接讨论，请您联系曼彻斯特大学商学院的陈玉旺教授（yu-wang.chen@manchester.ac.uk）。

If any issues regarding this research that remain unresolved after the above procedures, please contact the Research Governance and Integrity Team by emailing: research.complaints@manchester.ac.uk, or call 0161 275 8093 or 275 2674.

如果有关这项研究的任何问题在经过上述程序后仍未得到解决，请通过电子邮件联系研究管理和诚信团队，research.complaints@manchester.ac.uk 或致电 0161 275 8093 或 275 2674

Contact for further information

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更多信息请联系

夏利华先生

电子邮件: lihua.xia@postgrad.manchester.ac.uk

➤ INTERVIEW QUESTIONNAIRE 访谈问卷

1. Interviewee background: years of experience, current position, job duties. 被访人工作背景：工作年限，目前职位，工作职责。
2. Company general background: date of establishment, current number of personnel, annual sales, organisational structure (form of ownership), main products and the industries in which they are used, demographics of the company 公司情况：成立时

间，当前人员数量，年销售额，组织架构（所有权形式），主要产品及其应用行业，公司的人口统计资料

3. Purchased components characteristics. What categories of raw materials are purchased? What are the characteristics of your procurement control methods for each of these different categories of raw materials? 所购部件的特点。采购的原物料涵盖哪些品类？贵司这些不同类别的原物料的采购控制方法上有什么各自特点？
4. Supply market characteristics. What is the importance classification of purchased materials? How are these suppliers evaluated? 供应市场的特点。采购物料重要性分类？如何评估这些供方？
5. In evaluating suppliers from a strategic perspective, what factors from inherent could be more competitive (Narasimhan et. al 2001)? What sub-criteria should you think about when you assess your suppliers from a strategic perspective of capability & practices and performance measurement? (Dey 2014)
What contents do you consider about supplier selection criteria based on quantitative and qualitative standpoints? (Sen 2008)
 从战略角度评估供应商时，从固有的哪些因素可以提高竞争力 (Narasimhan et. al 2001) ？
 当你从战略角度评估供应商的能力与实践和绩效衡量时，你应该考虑哪些子标准？ (Dey 2014)
 基于定量和定性的立场，你会考虑哪些关于供应商选择标准的内容？ (Sen 2008)
6. What factors to drive a company's need to select a strategic supplier? 什么因素促使公司有选择战略供应商的需求？
7. What strategic indicators would you consider to select the right supplier to work with? (in the context of question 6) 为了选择合适合作供应商，你会考量战略指标？（在前一个问题的背景下）
8. After you have selected a strategic partner supplier, what are the indicators that need to be assessed for the subsequent performance of the company? What aspects should I pay attention to when conducting the appraisal? 贵司在选择了战略合作供应商后，后续对公司的绩效需要考核那些指标？考核的时候要注意哪些方面？
9. What could be improved in the selection of suppliers for your past strategic partnerships? 贵司过往的战略合作供应商选择上有哪些方面可以改进的？

10. Thanks for your time, could you recommend other interviewees if possible. 谢谢您的时间，如果可能的话，能否推荐其他受访人员。

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