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COMPETING THROUGH SOURCING: MANUFACTURING FIRMS IN BANGLADESH

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Universiti Utara Malaysia

DOCTOR OF PHILOSOPHY
UNIVERSITI UTARA MALAYSIA
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COMPETING THROUGH SOURCING: MANUFACTURING FIRMS IN BANGLADESH

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A thesis submitted to School of Business Management,
Universiti Utara Malaysia
in fulfilment of the requirement for the
degree of Doctor of Philosophy

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ABSTRACT

Manufacturing firms are confronted with the challenge to respond to uniqueness of customer demands, uncertain market environment and performance improvement. This study therefore, aimed to provide an integrated strategic model to manufacturing firms to overcome these challenges. The framework was comprised of sourcing strategy, competitive strategy, strategic flexibility, strategic capability and sourcing relationship quality to enhance the firm's performance. To achieve this, a quantitative research approach was used to collect primary data and Structural Equation Modeling (SEM) was used to analyze the hypothesized effects. Data were collected from manufacturing firm situated in Bangladesh. This study found positive direct effect of exogenous variable; cost-leadership strategy, related product diversification, manufacturing capability and purchasing capability on firm performance and sourcing strategy. Differentiation strategy and unrelated product diversification have not direct effect on manufacturing firm's performance. In addition, sourcing strategy effect on firm performance was positive. Significant positive mediating effect of sourcing strategy was reported in between exogenous variables and firm performance. Moderating effect of sourcing relationship quality was found significant. Sourcing relationship quality therefore, strengthen the relationship of sourcing strategy and firm performance. Empirical evidence of proposed integrated framework was established, and this will help manufacturing firms to improve performance. Manufacturing firms can consider the strategic fit of the study variables and outcome which might help for appropriate decision making and remain competitive. This study also shed light on strategic management literature by approaching moderated mediation model.

Key words: Sourcing Strategy, Firm Performance, Sourcing relationship Quality, Competitive Strategy, Strategic Capability.

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ABSTRAK

Firma pembuatan berhadapan dengan cabaran untuk memenuhi permintaan unik pelanggan, persekitaran pasaran yang tidak menentu dan peningkatan prestasi. Oleh itu, kajian ini bertujuan untuk menyediakan model strategik yang bersepadu kepada firma pembuatan untuk mengatasi cabaran ini. Rangka kerja ini terdiri daripada strategi sumber, strategi persaingan, fleksibiliti strategik, keupayaan strategik dan kualiti hubungan sumber untuk meningkatkan prestasi firma. Untuk mencapai matlamat ini, pendekatan kajian kuantitatif telah digunakan untuk mengumpul data primer dan Pemodelan Persamaan Berstruktur (SEM) digunakan untuk menganalisis kesan hipotesis. Data telah dikumpulkan dari firma pembuatan yang terletak di Bangladesh. Kajian ini mendapati kesan langsung positif terhadap pemboleh ubah eksogen; strategi kepimpinan kos, kepelbagaian produk berkaitan, keupayaan pembuatan dan keupayaan pembelian terhadap prestasi firma dan strategi sumber. Strategi pembezaan dan kepelbagaian produk yang tidak berkaitan tidak memberi kesan langsung kepada prestasi firma pembuatan. Di samping itu, kesan strategi sumber terhadap prestasi firma adalah positif. Kesan pengantaraan positif yang signifikan dalam strategi sumber telah dilaporkan antara pemboleh ubah eksogen dan prestasi firma. Kesan penyederhanaan kualiti hubungan sumber didapati signifikan. Oleh itu, kualiti hubungan sumber mengukuhkan hubungan strategi sumber dan prestasi firma. Bukti-bukti empirikal cadangan rangka kerja yang bersepadu telah diwujudkan dan ini akan membantu firma-firma pembuatan untuk meningkatkan prestasi. Firma pembuatan boleh mempertimbangkan kebolehan strategik pemboleh ubah dan hasil kajian yang mungkin membantu membuat keputusan yang sesuai dan kekal berdaya saing. Kajian ini juga memberi penerangan tentang karya pengurusan strategik dengan pendekatan model pengantaraan yang sederhana.

Kata kunci: Strategi Sumber, Prestasi Firma, Kualiti Hubungan Sumber, Strategi Daya Saing, Strategi Keupayaan

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List of Abbreviation

AVE	Average Variance Extracted
BBS	Bangladesh Bureau of Statistics
BDT	Bangladeshi Taka
BGMEA	Bangladesh Garment Manufacturers and Exporters Association
CBSEM	Covariance-based Structural Equation Modelling
CFA	Confirmatory Factor Analysis
CR	Composite Reliability
GDP	Gross Domestic Product
HKTDC	Hong Kong Trade Development Council
HTMT	Heterotrait-Monotrait Ratio of Correlations (HTMT)
IO	Industrial Organization
PLS	Partial Least Square
R&D	Research & Innovation
RBV	Resource-Based View
RMG	Ready Made Garments
ROA	Return on Assets
ROE	Return on Equity
ROI	Return on Investment
ROS	Return on Sales
SCM	Supply Chain Management
SE	Standard Error
SEM	Structure Equitation Modelling
SEM-PLS	Partial Least Squares Structural Equation Modelling

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SET	Social Exchange Theory
SMEs	Small and Medium Size Enterprises
TCE	Transaction Cost Economies
VIF	Variance Inflation Factor

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CHAPTER ONE

INTRODUCTION

A prime question that has dominated much of strategic management research is: What determines superior firm performance? This study examined the effect of integrated strategies (competitive strategy, strategic flexibility, strategic capability and sourcing strategy) and moderated mediation effect of sourcing relationship quality on firm's performance. The use of Structural Equation Modeling (SEM) provides new insight to this integrated strategic model for manufacturing firms to compete in global market. Following sections provide the background of this study, motivation to carry out this study, problem statements, research questions and objectives as the guide for the outcomes of the study.

1.1 Background of the Study

Over almost two decades, scholars have sought to examine the role of various factors that could possibly influence business performance of a firm. Three determinants that have been mostly studied include influence of the industry in which a firm belongs to (industry effect), influence of parent-corporation of a firm (corporate effect), and influence of business unit(s) of a particular firm (business unit effect). Remarkably, argument regarding comparative stimulus of these three antecedents of firm performance continues. Precisely, despite the use of various theoretical lenses and complex methodological tools, there is still little convergence on the question of what causes firms to differ. So long varying conclusions persist, the issue of what constitutes

appropriate strategy for firms will continue to remain unclear to academicians and practitioners alike.

Of recent, global trends and competition manufacturing firms have been experiencing to adopt world-class manufacturing to boost firms' performance (Dubey *et al.*, 2017; Lucianetti, Jabbour, Gunasekaran & Latan, 2018). Firm performance indicates how effectively an organization runs its business, evaluate the success, or the mere possibility of survival, of an organization. Firm performance is one of the most relevant constructs in the field of business studies and defined as the consequence of a firm's attempt to leverage appropriate strategies and techniques to achieve its goals. To improve performance, manufacturing firms may seek to improve product quality, limit costs, and improve operational efficiency. A central premise to the literature is that a firm's strategy must fit its environment if it is to achieve competitive advantage hence-the concept of "strategic fit" (Liu, & Atuahene-Gima, 2018).

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Global competition and ever-changing customer preferences around the world firm's profitability is constantly under pressure and having difficulty to respond (Dobni & Sand, 2018). Customization demands from consumers and the need for "quick response" in rapidly changing markets to increase the opportunities for a company to expand its sales and improve performance (Benito-Osorio, Jimenez, & Peris-Ortiz, 2014; Bowen *et al.*, 2015; Prada, Rodriguez & Jordán, 2018). Manufacturing firms therefore can influence the balance of competitive forces through strategic moves. Competitive strategy represents firm's business strategy orientation toward external environmental conditions that include competitors and customers and allow for the

pursuit of a competitive advantage position through cost leadership or differentiation (Liu, & Atuahene-Gima, 2018; Lorenzo, Rubio & Garcés, 2018).

Cost leadership strategy is an integrated set of actions taken to produce goods with unique features that are sold to customers at the lowest cost compared to competitors or at reduced cost to achieve superior profitability (Soltanizadeh *et al.*, 2016; Teeratansirikool, Siengthai & Badir, Charoenngam, 2014). Whereas, a differentiation strategy develops a competitive advantage by creating strategy as unique or unique products in the industry, having quality products, broad product lines which driven from internal resources that comprised capabilities, knowledge, and skills (Brenes *et al.*, 2014; Hilman & Mohamed, 2011; Porter, 1980).

In this globalization era, the world has become extremely connected as one globe and people from all over the world have developed strong interdependent relationships at all phases of their lives. Consumers from other parts of the world, in fact, have financially benefited from continuous escalation on volume of products of lower prices imported from developing countries. The increased pressures from fickle consumers and uncertain business environment have made more and more firms to recognize the importance to identify strategic factors of today's business environment. The firms ought to have the capability of responding to the changing business environment efficiently and effectively, where sourcing can play a significant role in order to achieve sustainable competitive advantage (Gligor & Holcomb, 2014; Kumar, Basu, & Avittathur, 2018).

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Almost all firms face competitive pressures, constantly changing consumer preferences, technological changes, continuously strives to reduce cost of production in order to keep pace with delivery requirements and to maintain competitive advantage. Therefore, the existence of competitiveness, persistent consumer preferences and technological changes enforce the firms to gain cost leadership. Manufacturing firms are frequently confronted with the challenge to respond to these issues and the uniqueness of customer demands to enjoy the benefits of higher returns (Hilman, Mohamed, Othman, & Uli, 2009).

Strategic flexibility allows a manufacturing firms to respond more quickly and faster than ever before in competitive landscape and grab market opportunities by producing more of new products, offering broader product lines, and improving products (Wagner, 2014). According to Baum *et al.* (2013) a product suitable for one market by very least in terms of flexibility may not be attractive to other customers. Furthermore, demand shocks or arising of new competitors may pose negative impact on sales and profits of a firm.

Hence, to respond to these environmental changes a firm must restructure itself internally and poses relationship with the external environment. A single-product firm highly vulnerable to adverse shocks that hit its market, whereas, multi-product firm can substantially reduce such vulnerability. Thus, by options, a manufacturing firms may reduce their risk and uncertainty by options through product diversification (Batsakis, & Mohr, 2017; Blome *et al.*, 2013; Fayezi *et al.* 2015; Wagner, 2014).

Diversification is a strategic expansion to response to competitive business environment. Strategic management scholars have examined several types of diversification strategies for expanding different industries, markets and/or product. Product diversification considers as a well-known diversification strategy to expand the firm's product portfolio (Batsakis, & Mohr, 2017; Kim, Hong, Kwon, & Lee, 2017; Wang *et al.*, 2014) and a major strategic initiative in the manufacturing sector.

Product diversification is categorized into two; related product diversification and unrelated product diversification. Empirical evidences pointing that a notable lack of studies in emerging economies which focus on the examination of firm's performance issues associated with diversification until recently. To date the mixed views and findings, the inconsistencies in the relationship between diversification and firm performance have been documented (Gyan, Brahmana & Bakri, 2017; Wang *et al.*, 2014). In context of Bangladesh, manufacturing firms get order from abroad or local customers which perhaps not related to own product. Based on the argument it is difficult for firm to develop new product. Therefore, to meet the customer demand manufacturing firms might buy it from supplier to complete order is the best option.

Achieving higher returns through offering the best possible lower price to customers, strive to reduce cost of production is always a challenge to most manufacturing firms to compete with existing competitors. Generally, manufacturing firms reduce the cost of production through efficiency and productivity to secure the market share in order to add value to the shareholders (Espino-Rodríguez & Lai, 2014; Hilman & Mohamed, 2011). Firms in the manufacturing sectors are facing the most inevitable challenge to decide whether products to make through internal effort or solicit from outside

independent suppliers (buy) with a high degree of economies-of-scale to enhance efficiency and productivity (Espino-Rodríguez & Lai, 2014). Efficiency and productivity thru reducing costs, maintain high quality, flexibility, improved delivery dependability, and prompt response are among factors which may enable manufacturing firms to achieve better degree of competitiveness and performance (Chan, Ngai & Moon, 2017; Hill, 2017; Su & Gargeya, 2012).

Studies on competitiveness asserted that a firm needs to a specific dynamic capability to provide firms with a specific value which in turn can improve performance. The interrelationships of capabilities, strategy, and performance are central issue to management (Hitt *et al.,* 2015; Teece, Pisano & Shuen, 1997). A firm's capabilities combining with its strategy subsequently affect firm performance. Owing to its importance to the theory and practices, many scholars have paid attentions to the issue and have examined the relationships from different approaches overlapping and somewhat different view as to the nature of this relationship. The strategic management literature generally views organizational capabilities as being developed by the interaction of firm resources where such resources can be reconfigured to respond to the market and gain competitive advantage (Chryssochoidis, Dousios & Tzokas, 2016; Kam, Chen & Wilding, 2011; Mohiuddin & Su, 2010; Rice, Liao, Galvin & Martin, 2015; Yu & Lindsay, 2011).

Arguments and findings about capability and competitive strategy effect on firm performance are still unresolved. Previous studies have found a mix result of competitive strategies and dynamic capabilities association with firm performance. Some researchers (Parnell, 2011; Soto-Acosta & Meroño-Cerdan, 2008) pointed that

capabilities have a direct impact on a firm's performance while other studies (Chryssochoidis, Dousios & Tzokas, 2016; Makkonen, Pohjola, Olkkonen & Koponen, 2014) has supported an indirect relationship of dynamic capabilities and competitive strategy on firm performance.

This inconsistency of findings could be measuring dynamic capabilities as unidimensional and overlooking that a competitive strategy might be best supported by developing a specific capability to enhance value and improve performance (Rashidirad, Salimian, Soltani, & Fazeli, 2017). The other types of competitive strategies and capabilities may not be quite so helpful to create value or improve performance of a firm. Capability is considered as a critical success factor for most collaboration, but the literature offers little insight as to what types of capabilities that are needed as to ensure successful collaboration (Barney, Ketchen, & Wright, 2011; Rashidirad *et al.*, 2017; Wang, Dou, Zhu, & Zhou 2015). Against this backdrop this study looks into specific capability a manufacturing firm needs to align with strategy to enhance better performance. Manufacturing capability and purchasing capability have been considered in this study from strategic point of view to align with other strategy.

The role of purchasing is considered a low-key functional activity. As sustainable sourcing translates into superior quality of products, diminished delivery lead time, increased cost savings and lasting business competitiveness, it should be recognized as a strategic weapon by the manufacturing firms. The study by Jensen (2017) on strategic sourcing highlighting its cost-benefit effect is a pointer along this line.

Undoubtedly, various approaches with multiple strategies, combined resources and organizational processes should enable firms to compete competitively and achieve desired objectives (Mohiuddin & Su, 2013). As an integrated approach of several factors like competitive strategy, sourcing strategy, strategic flexibility and organizational resources and capability ensure firms to adapt in a competitive environment and help to enhance performance (Cingöz & Akdoğan, 2013; Hilman *et al.*, 2009; Mohiuddin & Su, 2013).

Therefore, the corresponding goal of this study is to address the quotation on how manufacturing firm can achieve better performance and remain competitive. The effectiveness of the proposed alignment of strategy in this study is by applying it to manufacturing firms in Bangladesh, which should enhance their performance in comparison to the past. Therefore, detailed explanation about the motivation to conduct the current research on manufacturing sector in Bangladesh is presented in the following section.

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1.2 Motivation of the Study

Bangladesh's economy has witnessed significant structural changes over the last four decades. The share of agriculture in GDP has declined from over 60% to less than 20% during this period (1985-2010), while the relative significance of industry (including manufacturing), which is currently estimated to be 28% of GDP, and of the services sector (currently estimated to be more than 50% of GDP) has increased substantially (World Bank, 2010). Over the past two decades or so, Bangladesh has recorded overall economic expansion of more than 5% per annum. The growth dynamism in Bangladesh during this period (1985–2015) has been largely provided by the industrial

and services sectors (Amjad, Chandrasiri, Nathan, Raihan, Verick, & Yusuf, 2015). However, the economy is yet to have a strong manufacturing base, despite the success of the garment industry, as the share of manufacturing in GDP touched only 17.9% by 2016, which was just 3.7 percentage points higher than that in 1985-86 (Bangladesh Bureau of Statistics, 2016).

Table 1.1
Manufacturing Share of Total GDP in Bangladesh

	2013	2014	2015	2016
Share of GDP	17.27	17.43	17.61	17.91
Growth	17.39	13.24	14.01	15.96

Source: *Bangladesh Bureau of Statistics (BBS) (2016)*

Table 1.1 shows manufacturing share of GDP and growth rate since 2013. GDP from manufacturing sector in Bangladesh had increased from 15956.80 BDT Million in 2015 to 17600.10 BDT Million in 2016 (BBS, 2016). The average of GDP for manufacturing sector in Bangladesh between 2006 to 2016 was 11632.78 BDT Million. Although it shows the increasing trend in share of GDP from 2006 to 2016, the growth rate of the sector was not stable.

First, although diversification of the manufacturing sector has been on the agenda of policymakers in drafting trade and industrial policies, little progress has been achieved during these decades (Amjad *et al.*, 2015). There is no doubt that diversification is a necessary condition for achieving sustainable and long-term growth of the manufacturing sector in an economy (Furtado, 2018). Bangladesh is fraught with practical difficulties in manufacturing sector, like productivity particularly lower than

other countries, both on the production frontline and at the management level to ensuring quality and timely delivery (HKTDC Research, 2016). Hence, capability to cope with deliveries in question and it could greatly affect the performance of manufacturing firms in Bangladesh.

Moreover, Bangladesh was ranked 99 out of 137 countries in the Global Competitiveness Index (GCI) 2017-18 by the (World Economic Forum, 2017). In 2016, global FDI flows decreased by 2 per cent to $1.75 trillion owing to weak economic growth and significant policy risks (The Financial Express, January 2018). Despite garments manufacturing Bangladesh promotes itself as the "source of cheapest labor", although cost of labor is not the main indicator of competitiveness.

Consequence of above discussions about the manufacturing sector in Bangladesh, there is a prevalent disconnect between the manufacturing firms' strategies and performance fit for other than readymade garments sector. To overcome these challenges discussed above manufacturing firms in Bangladesh should rebuild their strategies to remain competitive. To this end, there is a need of distinct research for manufacturing firms in Bangladesh. Besides the manufacturing sectors of Bangladesh, in following section research problems in academia and practice are discussed.

1.2.1 Overview of Bangladesh Manufacturing Sector

As a developing country, Bangladesh is gradually improving its economic strength (World Bank, 2017). International Monetary Fund (IMF) has listed Bangladesh as one of the emerging economies in the world (International Monetary Fund, 2016). To push this economic advancement, various modern and traditional industries are playing key

roles. Among these contributing industries, manufacturing industry is acting as a leading contributor. Especially garment manufacturing industry, pharmaceuticals manufacturing and leather goods are the leading sectors. For instance, 4,482 garment manufacturing factories are currently operating in Bangladesh, satisfying both export and local clothing needs (Bangladesh Garment Manufacturers and Exporters Association, 2018). The garments manufacturing industry employed about 4 million people from more than 160 million and carried their torch of aspirations and success since the beginning of this industrial sector (BGMEA, 2018).

Customers from world market are more demanding, requiring full package offering, careful about margins, expect diversified products and services, observant about amenableness requirements and have more options to choose from. In this regards manufacturer are facing tremendous pressures from buyers and string competition from other global players in the world market (Nuruzzaman & Haque, 2009; Su & Gargeya, 2012). Henceforth, it is vital for the Bangladeshi manufacturers prevailing toward best strategy on how to fruitfully manage their manufacturing, and tie with cost and capability and in return ensuring the profitability and steady growth.

Henceforth, customization demands from consumers and the need for "quick response" in rapidly changing markets are making more and more firms recognize the strategic role that sourcing can play in achieving sustainable competitive advantage and improving financial performance for Bangladeshi manufacturers (Bruce & Daly, 2011; Su & Gargeya, 2012).

Bangladesh is one of the leading (fourth) emerging economies in the world along with China, Nigeria and Philippines (Euromonitor, 2014). Manufacturing in Bangladesh accounts for 17.1% of total GDP. Previous studies show that the growing manufacturing sector labor costs have risen in other developing countries, such as China and India, Bangladesh has emerged as a new destination for labor-intensive industries (Sincavage, Haub, & Sharma 2010; Sonobe, Mottaleb & Amin, 2018; Zhang, Rashid, Ahmad & Ahmed, 2014).

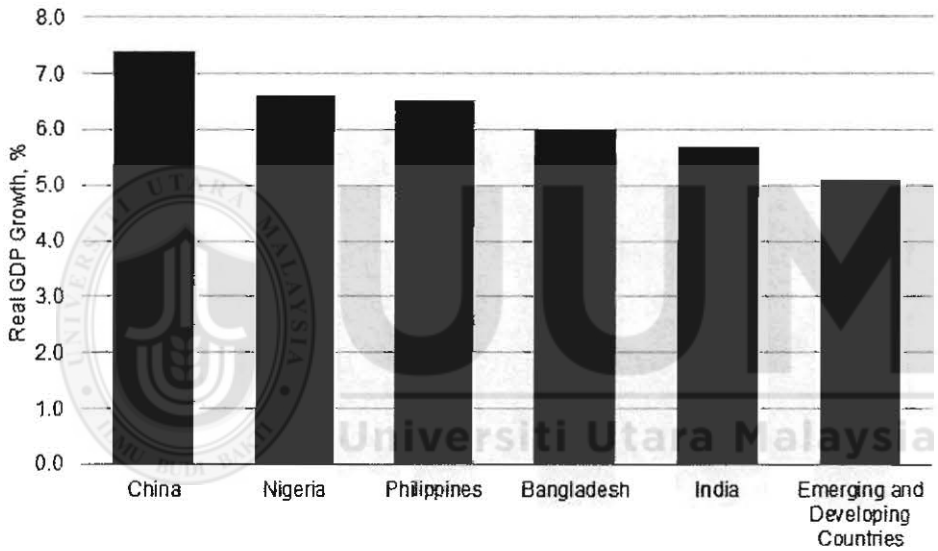

Figure 1.1: Ranking of the Emerging Economies based on Real GDP growth
Source: Euromonitor (2014)

The manufacturing sector is the backbone to Bangladesh economy, major source for foreign currency and support for rapid economic development. Especially in the garments manufacturing sectors, more than four million workers and another 15 million depend directly and indirectly on this sector (Bangladesh Bureau of Statistics, 2013; Euromonitor, 2014). Over the past decade, labor costs have increased, and profit margins have fallen for multinationals manufacturing firms in China (Richey, 2013)

had driven companies in low-skill, raw material intensive trades to move their operations to lower cost countries like Bangladesh (Euromonitor, 2014). According to a recent study of chief purchasing officers reported 66% of their supplies come from Bangladesh especially those in Europe and the United States and 89% rank Bangladesh as one of the top sourcing "hot spots" in the next five years (Berg, Hedrich, & Tochtermann, 2012).

Moreover, next to competitive pricing, these purchasing officers rank Bangladesh's capacity of over 5,000 Ready Made Garments (RMG) factories and suppliers' capability as the country's main advantages over its competitors, like Cambodia, India, Indonesia, Pakistan, and Vietnam (Berg *et al.*, 2012). RMG sector of Bangladesh is seemed to have an extensive competitive environment as the amounts of production is increasing from developing countries of low-wage levels (Sly & Soderbery, 2014). Specifically, China gradually shifts away from the production into higher-end manufacturing, and this trend will expand the export opportunities for Bangladesh's garments sector (Ahmed, Greenleaf & Sacks, 2014).

In the world of apparel market, according to data from the World Trade Organization (WTO), Bangladesh is now second largest exporter after China on apparel with an export amount of $29 billion worth of ready-made garments and accounting for 6.5% share of world market (The Daily Star, August 2, 2018). Bangladesh is an attractive destination for garment manufacturing because it boasts the lowest labor costs in the world; workers are paid an estimated $.24 per hour in comparison to China's $1.26 per hour (minimum wage) (Richey, 2013). In addition, what made Bangladesh appealing to companies like WalMart, Gap, and Polo Ralph Lauren is its massive manufacturing

capacity, which includes nearly 3.6 million garment workers and an estimated 5,000 apparel factories in Bangladesh (Euromonitor, 2014; Rahman, 2010). Due to these advantages, Bangladeshi apparel exports grew to $21.52 billion (Euromonitor, 2014). That figure represents 18.6 percent of the country's gross domestic product and 79.6 percent of its total exports from garments manufacturers (Rahman, 2010).

Table 1.2
Competitive Position of Bangladesh Garments

Country Name	Position	World Export (%)
China	1	37.30
Bangladesh	2	4.80 (>$20 billion)
EU-27 countries	3	28.20
India	4	3.50
Turkey	5	n. a.

Sources: WTO, 2012; Breed-2012; BGMEA-2013, Euromonitor, 2014.

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Recent studies report that companies from different parts of the world whom outsourced from China found the overall cost savings are less than they had in comparison to few years ago (Rein, 2012). Several authors have observed a possible loss of Chinese competitiveness due to rising costs, rising wages and higher rents (Bradsher, 2012; Rein, 2012). Hence, this is the opportunity for Bangladesh to become world first choice for manufacturing hotspot in global market.

In order to attract customers around the world, manufacturers in Bangladesh have to be more strategic and practical to produce more product than ever before and above all must deliver on time. In ensuring that, there is a need for a study to conceptualize what determines strategy and subsequent firm performance for manufacturing firms in

Bangladesh. The research needs to consider various factors that might influence strategy formulation, especially in the context to compete in global market. The much-examined determinants of firm performance (industry, corporation and business unit) can be incorporated under industry and firm-level determinants.

1.3 Problem Statement

Bangladesh's economy is yet to have a strong manufacturing base, despite the success of the garment industry, as the share of manufacturing in GDP touched only 17.9% by 2016, which was just 3.7 percentage points higher than that in 1985-86 (Bangladesh Bureau of Statistics, 2016). This slow growth rates of manufacturing sectors occurred because of lower productivity particularly on the production frontline and at the management level. This leads the country's competitiveness at the bottom of world competitive ranking.

Noteworthy point to consider from competitive strategy literature is that most of the study on understanding the determinants of the competitive strategy adoptions of firms mainly focused in developed economy settings (McCann & Bahl, 2017). According to McCann and Bahl, (2017) firms from developing countries are largely unexamined.

Empirical evidences pointing that a notable lack of studies in emerging economies which focus on the examination of performance issues associated with divarication-until recently. To date the mixed views and findings, the inconsistencies in the relationship between diversification and firm performance have been documented (Gyan *et al.*, 2017; Wang *et al.*, 2014).

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Manufacturing firms in Bangladesh can overcome the lower productivity through sourcing, although empirical evidence of the direct effect of sourcing on firm performance is inconclusive (Isaksson, & Lantz, 2015). In addition, from previous literature reviews of the field of sourcing it is obvious that in the area has been dominated by studies in a U.S. context, even though there are some noteworthy exceptions (Gyan *et al.*, 2017; Isaksson, & Lantz, 2015).

Number of studies have been done on effects of sourcing strategy on firm performance, which some of them emphasize on make or buy option of sourcing strategy (Espino-Rodríguez *et al.,* 2014; Hilman & Mohamed, 2011; Kumar *et al.*, 2018; Pati *et al.*, 2018). To opt of make or buy of sourcing strategy requires specific capabilities (Dobni, & Sand, 2018; Wang *et al.,* 2015). Limited studies have found about purchasing capability as a strategic weapon within the manufacturing firms to coordinate interdependent activities and optimize operations with suppliers when a firm adopt buy strategy (Jensen, 2017; Tang & Rai 2014; Wang *et al.,* 2015). Consequently, very few studies focused sourcing relationship quality with external firms especially in the context of developing, nurturing, and managing relationships to remain competitive and enhance firm performance (Leischnig, Geigenmueller, & Lohmann, 2014).

Firm performance related main stream researches of Bangladeshi manufacturing firms were focused on readymade garments industry. Moreover, evidence shows that Bangladesh is an interesting country to study for two reasons; the correlates of firm productivity/performance in low-income countries is rare and most of the productivity/performance studies focus on middle-income countries in Latin America or Eastern Europe due to data availability (Chan *et al.*, 2017).

In other words, one significant shortcoming of past researches is that each study concentrates on a specific issue. To put it differently, there is a lack of investigation from a more holistic and strategic perspective considering the importance to relate the strategic factors in an emerging country like Bangladesh. Therefore, in this study, four strategies (competitive strategy, strategic flexibility, strategic capability and sourcing strategy) and their effect on firm's performance were investigated.

In addition, moderating effect of sourcing relationship quality on the relationship between sourcing strategy and manufacturing firm's performance was investigated. Studies on sourcing strategy and its relationship with performance of manufacturing firms bring new perspective on how to build new competitive advantage (Dekkers, 2011; Gorg & Hanley, 2011; Hilman & Mohamed, 2011; Hilman & Warokka, 2011). Such studies give strategic choices to manufacturing firm by adopting sourcing strategy (make or buy) aligning with competitive choices based on cost leadership, differentiation and product diversification (Hilman & Mohamed, 2011). Moreover, sourcing strategy sought in several studies to achieve competitive advantage and strategic flexibility (Su & Gargeya, 2012).

The lack of research on strategic factors and strategic fit among firms become more alarming in today's business environment. There are several domains in strategy research that warrant testing models that combine moderation and mediation. For instance, from a conceptual standpoint, the effects of competitive environment on firm performance are mediated by factors within the firm such as strategic choice. These mediated effects could depend on the resources available to the firm such that firms with greater resources at their disposal can choose from a wider array of strategic

options and more readily translate these choices into gains in performance. A meta-analysis conducted by Aguinis, Edwards, and Bradley (2017) found that limited number of studies combined mediation and moderation within the same strategic management study. This shortcoming and underutilization of moderated mediation in strategic management literature need to address.

Henceforth, in this hyper competitive environment firms are being forced to determine the best strategic fit of strategic factors to remain competitive and secure better firm's performance (Shamimul, Hilman, & Gorondutse, 2017; Wang *et al.,* 2015). Based on the above discussion about problems and the gaps in academia, the following section presents the formulated research questions that were guided this research.

1.4 Research Questions

Significant roles of research questions in an undertaken study help and guide researcher to determine the research methods and achieve the objectives of the study. Therefore, research questions of this study were concerned as follows:

1. What is the effect of competitive strategy (cost-leadership and differentiation strategy) on sourcing strategy and firm performance?
2. What is the effect of strategic flexibility (related product diversification and unrelated product diversification) on sourcing strategy and firm performance?
3. What is the effect of strategic capability (manufacturing capability and purchasing capability) on sourcing strategy and firm performance?

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4. What is the mediating effect of sourcing strategy on the relationship between strategic orientation, strategic flexibility, strategic capability and firm performance?
5. What is the moderating effect of sourcing relationship quality on the relationship between sourcing strategy and manufacturing firm performance?

The objectives of this study are presented in following section which were framed based on the research questions.

1.5 Research Objective

The purpose of this study was to provide an integrated strategic framework to manufacturing firms to improve performance and remain competitive. Therefore, to achieve this, and to give direction to present study, the specific objectives were formulated as follows:

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1. To investigate the effect of competitive strategy (cost-leadership and differentiation strategy) on sourcing strategy and manufacturing firm performance.
2. To investigate the effect of strategic flexibility (related product diversification and unrelated product diversification) on sourcing strategy and manufacturing firm performance.
3. To investigate the effect of strategic capability (manufacturing capability and purchasing capability) on sourcing strategy and firm performance.

4. To investigate the mediation effect of sourcing strategy on the relationship between competitive strategy, strategic flexibility, strategic capability and firm performance.
5. To investigate the moderating effect of sourcing relationship quality on the relationship between sourcing strategy and manufacturing firm performance.

1.6 Scope of the Study

Manufacturing accounts for 17.91% of GDP in Bangladesh (Bangladesh Bureau of Statistics, 2016). The garment industry is the backbone of manufacturing and about four million workers drive the garment manufacturing industry and another 15 million involve indirectly (Euromonitor, 2014).

Like other emerging and developing countries, Bangladesh has leveraged its abundant and low-cost labor to spur economic growth and attract domestic and foreign investment. Euromonitor (2014) pointed that, over the past decade, the country has positioned itself to take control of a large segment of global trade-in particular, the ready-made garment (RMG) market, where it is second to China in global export.

The competitive environment also seems favorable for Bangladesh's manufacturing sector. In particular, as China gradually shifts away from the production of low end product into higher-end manufacturing, this trend expands the export opportunities for Bangladesh's manufacturing firms (Ahmed *et al.*, 2014).

Restructuring of the Bangladesh manufacturing sector has been on the agenda of policymakers in drafting trade and industrial policies, little progress has been achieved

during these decades (Amjad *et al.*, 2015). There is no doubt that diversification is a necessary condition for achieving sustainable and long-term growth of the manufacturing sector in an economy (Furtado, 2018).

This study endeavored to delineate the antecedent factors of sourcing strategy (make or buy) within the context of manufacturing industry in Bangladesh. The focus has confined to the manufacturing sector where survey with self-administered questionnaires was done to isolate the impact of several strategic factors such as competitive strategy, strategic flexibility, strategic capability, sourcing strategy, and sourcing relationship quality on manufacturing firms' performance in Bangladesh. Outcomes of these strategic factors have several significant implications practically and theoretically that are discussed in next section.

1.7 Significance of the Study

The research contributes to several insights to the academic and practical area of strategy. This study reinforces the importance of competitive strategy, strategic flexibility and sourcing strategy and specific capability related to the specific strategy and their relationships to organizational performance. It is anticipated that adopting the factors appropriately will generate better competitive advantage or positive impact on manufacturing firm's performance.

1.7.1 Theoretical Contribution

This study found the positive effect of independent variables (cost-leadership, differentiation strategy, related product diversification, unrelated product diversification strategy, manufacturing capability, and purchasing capability) on

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sourcing strategy and firm performance. Sourcing strategy has positive effect on performance and mediate the relationship between independent variables and firm performance. Moreover, sourcing relationship quality strengthen the relationship of sourcing strategy and firm performance. This empirical evidence will help manufacturing firms in Bangladesh to improve their performance.

Aguinis *et al.*, (2017) found limited number of studies combined mediation and moderation within the same strategic management study. Present study filled this gap by combining the mediating effect of sourcing strategy and moderating effect of sourcing relationship quality. Previous studies focused on direct effect of sourcing strategy on firm performance. Empirical finding of this study sheds light in academia that sourcing strategy effect on firm's performance strengthen by sourcing relationship quality.

In previous studies, purchasing was considered as a low-key functional activity. This study investigated purchasing capability as strategic weapon to buy quality products, diminished delivery lead time, increased cost savings and lasting business competitiveness which in turn improve the efficiency and firm performance of manufacturing firms.

1.7.2 Practical Contribution

Manufacturing provides primarily important goods and services to support the quality of human life and mainly contributes to the world economy. It is actually something beyond production and includes all industrial activities from the customer to the factory and back to the customer. In other words, manufacturing lies at the core of

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industrial economies and contains all the different kinds of services that are connected to the manufacturing chain. For instance, highlighted up to 22% manufacturing contributions to Europe's GDP (Molamohamadi & Ismail, 2013). Whereas, in Bangladesh manufacturing contributes 17% only to the GDP. Therefore, from strategic point of view it was essential to carry a research in manufacturing sectors in Bangladesh which can give a tremendous breakthrough to upgrade the manufacturing sector.

Moreover, to overcome the challenge in manufacturing sector in Bangladesh mangers will get the prescription from this study to improve productivity and timely delivery. As noted in a report that productivity of Bangladesh manufacturer particularly lower than other countries, both on the production frontline and at the management level to ensuring quality and timely delivery (HKTDC Research, 2016). Hence, capability to cope with deliveries in question and it could greatly affect the performance of manufacturing firms in Bangladesh.

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This study gives the contemporary view of a manufacturing firm to improve the performance. Managers should decide whether a product should produce internally or buy from other firms to qualify the customer order. This decision can be based on the capability of a manufacturing firm. For instance, manufacturing firm's manager will be able to buy product/source to other firms if the firm has purchasing capability to ensure the timely delivery.

Most of main stream research of firm performance in the context of Bangladesh had focused on garments industry. Empirical evidence of firm performance of this study

will help practitioners in manufacturing sectors other than readymade garments industry. Adopting the holistic strategic framework of this study will help practitioners to improve the production and which in turn will improve the firm performance.

1.8 Operational Definitions of Key Terms

Firm Performance: Refers to the outcome of firm's structure, strategies, planning, and any other activities. Firm performance is multi-dimensional and can be accessed via economic, subjective, strategic, and other measures. This study operationalized the firm performance as a multidimensional (financial and non-financial) perspective of outcome of firm.

Sourcing Strategy: Sourcing strategy defined as a useful way to adapt the firm's boundaries by restructuring its activities in order to stimulate the growth of its core business (Bustinza, Arias-Aranda, & Gutierrez-Gutierrez, 2010).

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Competitive strategy: Competitive strategy represents the orientation of a firm's business strategy toward external environmental conditions, which including its competitors and customers (Dadzie *et al.*, 2012; Hitt *et al.*, 2011, Teeratansirikool *et al.*, 2014). This study conceptualizes the competitive strategy multidimensional construct (cost-leadership and differentiation strategy.

Strategic Flexibility: Strategic flexibility defined as a firm's ability to adjust its strategic decisions in response to either internal or external changes in a dynamic and uncertain competitive environment (Aaker & Mascarenhas, 1984; Hitt *et al.*, 2015). Related product diversification and unrelated product diversification have

operationalized to give the strategic flexibility to the manufacturing firm for strategic expansion to response to competitive business environment. Related product diversification refers to the expansion of a product within markets that is related to a firm's fundamental product offering. Whereas the unrelated product diversification refers to expansion into non-core product markets

Strategic Capability: the term strategic capability is conceptualized in this study as; the combination of manufacturing capability and purchasing capability of a manufacturing firm to improve their performance through sourcing strategy.

Sourcing Relationship Quality: sourcing relationship quality operationalized as the length of relationship with supplier or other firms, where pass through various phases and how regard each other to improve performance of firm.

1.9 Structure of the Thesis

This quantitative study is comprised and divided into five chapters, started with this introductory chapter. This introductory chapter is comprised of background of the study, motivation of the study, manufacturing sector overview of Bangladesh, problem statement, research questions, research objectives. Scope of the study has been addressed in this introductory chapter. Consequently, summary of the contribution of this study has been highlighted.

The rest of this study is organized as follows: presents a synthesis of the previous studies and related literature, and conceptualization of the study variables in Chapter Two. The detail explanation and synthesis are given in this chapter from previous literature about cost-leadership strategy, differentiation strategy, related product diversification,

unrelated product divarication strategy, manufacturing capability, purchasing capability, sourcing strategy, sourcing relationship quality and firm's performance.

Following the theoretical foundation of the study and proposed research framework. Hypotheses of this study are formulated and presented in this chapter to provide empirical evidence to proposed research framework.

Chapter three explains about the methodology of this study which is comprises of research design, population, sample selection, data collection procedures and data analysis technique.

Chapter Four represents the result of the findings from the collected data and analysis. Results of demographic information and hypothesis analysis are presented. Consequently, discussion about the result of hypotheses of this study is presented.

Finally, in Chapter five as a concluding chapter presents the summary of the research. Following that theoretical and practical contribution of the study has presented in detail. Future study recommendations and limitations of the study are presented in this chapter.

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CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The principal purpose of this study is to provide an integrated strategic model to the manufacturing firms to improve performance. The primary concentration is given in this chapter is to review relevant literature to form the basis of this study's variable. This chapter is comprised of six main sections; firm performance, competitive strategy, strategic flexibility, strategic capability, sourcing strategy and sourcing relationship quality.

Dependent variable of this study that is firm's performance is conceptualized in first section. Definition of firm performance, synthesis of previous studies related to firm performance, financial and non-financial performance are explained in this section. Second section is explained, synthesized and conceptualized competitive strategy. The third section provided a review of firm's strategic flexibility, precisely a synthesis on product diversification choice of manufacturing firms. Consequently, in fourth section strategic capability (manufacturing capability and purchasing capability) is reviewed from previous literature.

Fifth section explained and synthesized sourcing strategy as a mediating variable of this study. The sourcing strategy for manufacturing firms has been studied over the past decades and trend of literature were mainly focusing on performance. Sourcing relationship quality; moderating variable of this study is explained in sixth section in this chapter. Finally, summarization of the chapter is provided.

2.2 Manufacturing Industry

The manufacturing sector plays a critical role in stimulating a more robust economy. Now-a-days a little progress for increasing the competitiveness of the manufacturing sector. Recent changes in the global markets impose challenges for long-term policy and strategy making in industries (Singla, Sethi & Ahuja, 2018; Saritas *et al.*, 2016). Manufacturing industries have witnessed many challenges in last few decades, involving drastic changes in innovative capability, corporate strategy, export orientation, transforming capabilities, customer satisfaction and other related issues. Singla *et al.* (2018) have stated that, in the current times considerable exercises have been done by manufacturing industries to reduce the manufacturing expenses and to improve the performance and quality by adopting strategic orientation.

Manufacturing is production of products and can be defined as a process of transforming materials into products using raw materials, machines, workers, and tools. In worldwide manufacturing sector plays an important role to economic growth and improve overall economy. It includes the "hard" part i.e. activities where labors use the tools and machines to convert raw materials to final products, transfer products from manufacturers to venders, and carry out disposal of recycling of used goods (Zhong *et al.*, 2016).

2.3 Firm Performance

The notion that determine firm performance is on either efficiency or effectiveness of a firm. Firm performance in this study is defined as an outcome of a firm's attempt to leverage relevant strategies to achieve the goals. Generally, Firm performance is the final outcome that is observed across the literature. It refers to the success of a firm in

fulfilling its business goals. Operational performance has long been recognized as a complex, multidimensional, hierarchical construct that involves the improvement of supply chain-related organizational measures including logistics cost reduction, on-time delivery, inventory turnover, and cycle time reduction. Financial performance is the improvement of economic goals based on revenue minus cost-based measures such as profitability, return-on-investment, and return-on-sales.

Strategic performance is the improvement of market goals that is assessed with purely revenue-based measures such as sales, market share, and growth in sales and market share. Whereas, from the lens of the capability approach of a firm, Daft (2010) defined firm's performance as the capability to be effective and efficient in the deployment of the resources within firm to achieve goals. Firm's performance in the context of this study, therefore, defined as the outcome of executed strategies which is the combination of financial and non-financial measures.

The method by which it is measured is dependent upon (a) the industry in which the firm operates, and (b) the parameters of the research model used to characterize it. Typically, firms gauge organizational performance using financial and non-financial outcomes related to certain aspects of the quality and operations they employ (Lee *et al.*, 2015). To promote firm's performance, manufacturing firms may seek to improve product quality, limit costs, and improve operational efficiency. Improving operational efficiency and enhance performance, a close comparative examination of different level of economic conditions of countries such as developing, emerging, and industrialized countries can provide valuable insights for competitive advantages for manufacturing firms (Schoenherr *et al.*, 2012).

Firms performance is measured through different methods and indicators and varies across firms. Performance can be evaluated in financial and non-financial indicators (Bagorogoza & Waal, 2010; Bakar & Ahmad, 2010). A firm selects financial measures of performance based on Return on Investment (ROI), Return on Sale (ROS), Return and net profit.

However, evidence shows that there are some flaws in financial measures such as; financial measures is a short period basis, unbalanced and also abortive to imitate the strategic issues and performance of a firm. Though, ongoing debate over a decade, scholars from different field suggested that to measure firm's performance both financial and non-financial measures should be considered to get the actual performance of a firm (Gronum *et al.*, 2012; Saunila *et al.*, 2014). The following sub-topic discuss about financial performance of firms.

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2.3.1 Financial Performance

Financial performance is the improvement of economic goals based on revenue minus cost-based measures such as profitability, return-on-investment, and return-on-sales Chang, Ellinger, Kim, & Franke, 2016). Financial measurements enable decision makers to assess the economic condition of a firm via crucial information such as profit, sales, and cash flow (Horngren, Sundem, John, & Philbrick, 2012). And since businesses began, financial performance-profitability, sales, return on investment, and so forth has been used to judge their success (Gorgievski, Ascalon, & Stephan, 2011; Manikas & Kroes, 2018).

The aspirations of various firms differ and are dependent on the purpose for establishing the firm in the first place. Commercial establishments primarily prioritize

profitability, seek greater market share and work toward corporate survival in an increasingly competitive market. Daft (2010) stated the idea of profitability as an indication of a firm's operating efficiency that is profit oriented. Three main ways are normally adopted to assess profitability: net income, earnings per share, or ROI. Additionally, a firm's operational efficiency is also measured in relation to its goals, such as the rate of growth and size of output. Organizational growth mirrors increased sales and ultimately improved profit in the long-term. The quantum of output is in direct relation to overall sales or the production output of goods or delivery of services.

The traditional ratios which are an indication of a firm's performance mainly involve the level of profit and the extent of growth. They encompass means such as: ROA, ROI, ROE and ROS, increase of revenue and bigger share of the market, share price, increasing sales, liquidity, and operational efficiency (Chang & Chuang, 2011). Dess and Robinson (1984) also proposed two ways for evaluating increasing sales and profit objectively (actual amount), and subjectively (perception). It is normal practice to employ actual performance indicators, subject to their availability. The following section discuss about the non-financial performance of firms.

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2.3.2 Non-Financial Performance

Non-financial performance measures in recent years have been receiving growing attention among modern's organizations to provide additional information for managers. The use of non-financial performance measures in the manufacturing environment is even crucial where its normal operation is more complex than any other type of organizations (Ahmad & Zabri, 2016). There is also widespread adoption of nonfinancial measures as traditional financial measures are claimed to be narrow in

focus and historical in nature (Hoque, 2005; Kaplan, 1984). Researchers argued that nonfinancial performance is equally important as it reflects the ability of a firm to secure future revenues (Anderson & Fornell, 2000). Nonfinancial performance includes operational performance and/or strategic performance (Chang *et al.*, 2016).

Operational performance has long been recognized as a complex, multidimensional, hierarchical construct that involves the improvement of supply chain-related organizational measures including logistics cost reduction, on-time delivery, inventory turnover, and cycle time reduction. Strategic performance is the improvement of market goals that is assessed with purely revenue-based measures such as sales, market share, and growth in sales and market share.

Ahmad and Zabri (2016) asserted that the paucity of information relating to non-financial performance measurement in manufacturing firms leaves a significant gap in the body of literature especially from developing countries. From this point of view this study aims to investigate the application of non-financial measures along with financial measure in Bangladeshi manufacturing firms.

Nevertheless, many researchers have been carried out on non-financial evaluation which indicated that much of non-finance-based evaluation are leading indicators of future financial performance (Banker, Potter, & Srinivasan, 2000; Ittner & Larcker, 1998; Jusoh et al., 2008). While finance-based evaluations are mainly temporary and old fashioned, non-finance-based evaluations such as customer satisfaction are forward looking. They encourage long-term financial performance and therefore assist managers concentrate on the future aspects of the business (Ittner & Lareker, 1998, 2001).

Many authors argued that these non-financial performance indicators could predict the company's future goals better compared to short-term profits and financial measures (Ittner *et al.*, 2003; Johnson & Kaplan, 1987; Kaplan & Norton, 1992). Other researchers have promoted the same idea, for example, Howell and Soucy (1987) focused on non-finance-based factors such as quality, inventory, material scrap, equipment maintenance, and delivery. Johnson and Kaplan (1987) introduced a different non-financial performance, for example, companies should be aiming at improving product design and flexible processes such as measuring the total number of parts per product and the rate of common parts against unique parts. Following section discusses about the competitive strategy.

2.4 Competitive Strategy

Literature defines strategy as a set of related actions that managers make and take to attain superior company performance as to compete competitors (Hill, Jones & Schilling, 2015; Teeratansirikool *et al.*, 2014). Scholars have used different outlines to understand how firms may develop their strategic orientations. Competitive strategy epitomizes the orientation of a firm's business strategy toward external environmental conditions, which including its competitors and customers (Lorenzo *et al.*, 2018).

Competitive strategy represents that firm's business strategy orientation toward external environmental conditions that include competitors and customers (Dadzie, Winston & Dadzie, 2012; Hitt, Ireland & Hoskisson, 2015). To gain a competitive advantage, it is the "Holy Grail" of strategic management research. The literature suggested that Resource-Based View (RBV) and market-led view are useful but considered as oversimplify choices firms make to use resources and assets, identifying

external opportunities, either new and existing markets or market niches of globally connected economy that create opportunity to establish competitive advantage and achieve strategic fit for competitive firms (Espino-Rodríguez & Lai, 2014; Kang, Wu, Hong & Park, 2012; Porter, 1985).

Business-level strategies especially competitive strategy is significant in explaining variations in firm profitability and long-term performance (Teeratansirikool *et al.*, 2014; Kang *et al.*, 2012). Porter's model of competitive strategy is well-thought-out in this study because of its popularity, well-defined structure, clarity, simplicity and generality, and the way it complements two other approaches for the analysis at the aggregate level; main typologies are cost leadership and differentiation (Kang *et al.*, 2012; Hilman & Abidin, 2012; Liu, & Atuahene-Gima, 2018).

Instead, resource-based view emphasizes the strategic importance of a firm's resources and capabilities to maintain competitive advantages (Gumusluoglu & Acur, 2016). Henceforth, competitive advantage is therefore created not by the privileged if end-product market position but by unique, valuable firm-level resources align with firm's business strategy toward external environmental conditions, including its competitors and that competitors are unable to imitate customers (Dadzie *et al.*, 2012; Hitt *et al.*, 2015).

Generic competitive strategies are cost leadership, differentiation and focused strategies (firms pursuing a focused strategy target specific groups of buyers, product lines, or geographic areas; they emphasize either low costs or differentiated products or services) (Porter, 1980). According to Porter, businesses that attempt to combine

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cost leadership and differentiation typically become "stuck in the middle", a notion that received considerable early support (Lorenzo *et al.*, 2018; Porter, 1980).

Later studies questioned Porter's contention and even suggested that businesses adopting combination approaches-particularly those with a sophisticated alignment of supporting capabilities-might outperform their single strategy counterparts (Murray, 1988; Parnell, 2013; Wright, 1987). A firm may fail or stuck in the middle if failed to adopt most appropriate generic strategy (Porter, 1980). However, there were studies that found some firms do well when mixed, hybrid, or combined these strategies (Espino-Rodríguez & Lai, 2014). The cost-leadership strategy will be explained with extensive discussion on next section.

2.4.1 Cost Leadership Strategy

Cost leadership strategy is an integrated set of actions taken to produce goods with unique features that are sold to customers at the lowest cost compared to competitors or at reduced cost to achieve superior profitability. A cost leadership strategy in other words is an integrated action taken to produce products, goods and services at a low cost, emphasizing standardization and continually analyzing cost reduction processes.

A cost-leadership strategy seeks to provide customers with new products or services comparable to those offered by competitors but at lower prices. With this strategy, a firm exploit cost advantages to match or beat its rivals and still earn profits (Liu, & Atuahene-Gima, 2018).

Firms following a cost leadership strategy try to obtain the lowest costs in their production, offer good prices, and obtain profits (Salavou, 2015). Whereas, a

differentiation strategy develops a competitive advantage by creating strategy as unique or alleged to be product/services which driven from internal resources that comprised capabilities, knowledge, and skills (Dadzie *et al.*, 2012; Porter, 1980).

Cost leadership strategy focuses on cost reduction in the whole process of a business, beginning with the service introducing to the final sales. Any process which cannot be modified based on the goal of cost minimization is not included (Marx, 2015). The low cost of a product along with standard quality means that the company can have increased sales, leading to a considerable competitive edge over its competitors (Rashidirad *et al.*, 2017; Wu *et al.*, 2015). Such a competitive edge can lead to sustainable profit for the company concerned. Therefore, cost leadership organizations strongly emphasize efficient operations in order to make profit from sales of low cost products for extended periods of time (Marx, 2015).

Elmes and Barry (2017) have proposed that cost leadership strategy considered as to make an above-average return on investment within an industry by means of a high relative market share or other advantages such as favorable access to raw materials. This focus means that companies following cost strategy emphasize the supply side and not the demand side of the business market. Specifically, these companies must always keep track and compare their product costs with those of their competitors (benchmarking) in order to hold their market share. It requires these companies be highly competitor oriented (Day & Wensley, 1988).

Numerous theoretical viewpoints on potential benefits explain why firms engage in sourcing and found that cost saving is a primary reason for sourcing. According to Gonzalez *et al.* (2013), sourcing makes it possible to control costs and achieve greater

efficiency. Firms evaluate sourcing to determine whether current manufacturing costs can be reduced and whether the resources saved can be reinvested in a more competitive process by focusing on the core competences.

The main objective of a firm that follows a cost leadership strategy is to reduce costs when opt make strategy by increasing efficiency through incremental improvements in production (goods) and the sources of competitive advantage come from more standardized production, making it possible to take advantage of economies of scale (Hilman & Abidin, 2012; Porter, 1980). Differentiation strategy is discussed in following section.

2.4.2 Differentiation Strategy

A differentiation strategy is an integrated set of actions taken to produce goods or services (at acceptable cost) that customers perceive as being different in ways that are important to them (Soltanizadeh *et al.*, 2016; Porter, 1980). Prior researchers have refined and conceptualized the differentiation strategy across several dimensions, including product differentiation, marketing differentiation, quality differentiation, service differentiation and innovation differentiation strategies. Manufacturing firm in this study used a differentiation strategy as a competitive strategy because it is the most commonly used strategy in most sectors.

Manufacturing firms of mass production, which refers to a production line that produces massive number of units from a certain product. However, some manufacturers provide sets of unique products by awarding manufacturing contracts to vendors/manufacturers and such decision is made incapability of internal production facility (minimum efficient scale) (Lee, Rhob & Yoon, 2014; Porter, 1980; Yang,

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2013). Moreover, product that internally make usually lead to high fixed costs and this may make higher unit price. To address this problem has led to manufacturing firms to buy product from outside supplier, and this will make them to adopt differentiation strategy to remain competitive and profitable (Hilman & Abidin, 2012; Lee *et al.*, 2015; Yang, 2013).

To buy product from outside supplier differentiation strategy is considered strategic choice for this study that drives development of internal resources of a firm comprised of knowledge and creativity of management (Laosirihongthong *et al.*, 2013). Firms use differentiation strategy can charge a higher price for their products uniqueness (Allen *et al.*, 2007; Murugesan *et al.*, 2012; Schoenherr, 2012; Wiengarten *et al.*, 2011). Efficient firms are able to respond to uncertain changes to provide customers with desired products or address problems associated with a rapid surge in demand besides ensuring its competitiveness (Jacobs & Chase, 2010; Lee *et al.*, 2015). Thus, a firm recognizes for its differentiation for unrelated product to fulfill customer demand need to build capabilities securing competitive advantage based on flexibility (Jacobs & Chase, 2010; Lee *et al.*, 2015).

Banker, Mashruwala and Tripathy (2014) have added that differentiation strategy can encourage and sustain higher firm's performance as it generates a barrier for entry of new competition. It highlights the uniqueness of a premium product(s) made by a particular company to obtain increased profits.

2.5 Strategic Flexibility

Extent literature the notion of flexibility has attracted scholars' attention in academic across disciplines. Jones and Ostroy (1984) views from an economic perspective, the

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way flexibility is used to exploit approaching information may be dictated by attitudes toward risk; but flexible positions are attractive not because they are safe provisions of value, but because they are good provisions of options. On the other hand, Upton (1994) defines flexibility from manufacturing perspective as, the ability to change or react with little penalty in time, effort, cost or performance.

To describe the processes of extrapolation and grouping, consider the definition of strategic flexibility as the ability of an organization to respond to changes in the environment in a timely and appropriate manner with due regard to the competitive forces in the marketplace (Das & Elango 1995, p. 62). In this instance, the dimensions of 'response', 'a timely manner' and 'an appropriate manner' were sorted accordingly, while 'changes in the environment' and 'the competitive forces in the marketplace' were categorized under triggers (Brozovic, 2018). A growing literature suggests that strategic flexibility can help organizations address demand variation by softening the effects of environmental turbulence (Brozovic, 2018)

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According to Slack (1983), flexibility can be alleged as both a characteristic of a system and a condition for its objectives (such as product specification, cost and delivery). However, flexibility in overall, unless it is positioned in a specific context, the subtleties or the meaning of flexibility remain vague (Fayezi, Zutshi & O'Loughlin, 2015; Purvis, Gosling, & Naim, 2014). Henceforth, strategic flexibility in a wider view context of firm, it includes both internal and external conditions of a firm. Thus, firms that want to achieve strategic flexibility should consider all the factors that are related to firms' environment to achieve success and long-term sustainability in unpredicted

competitive environment (Aronsson & Abrahamsson, 2011; Blome, Schoenherr, & Rexhausen, 2013; Purvis *et al.,* 2014).

Strategic flexibility allows a manufacturing firms to respond more quickly and faster than ever before in competitive landscape and grab market opportunities by producing more of new products, offering broader product lines, and improving products (Wagner, 2014). According to Baum *et al.* (2013) a product suitable for one market by very least in terms of flexibility may not be attractive to other customers. Furthermore, demand shocks or arising of new competitors may pose negative impact on sales and profits of a firm.

Hence, to respond to these environmental changes a firm has to restructure itself internally and poses relationship with the external environment (Roberts & Stockport, 2009). A single-product firm highly vulnerable to adverse shocks that hit its market, whereas, multi-product firm can substantially reduce such vulnerability. Thus, by options, a manufacturing firms may reduce their risk and uncertainty by options through product diversification (Blome *et al.*, 2013; Fayezi *et al.* 2015; Wagner, 2014). Recognition of intrafirm linkages among business units was helpful for transitioning to strategies that emphasized customer-based similarities instead of asset-based (or production-oriented) ways of conceptualizing strategy (Manral & Harrigan, 2016).

Thus, the combination of flexibility of a firm through product diversification (related and unrelated) and strategic alignment with sourcing strategy (make or buy) will give strategic insight for senior management is to make better decisions. Therefore, to consider strategic flexibility to manufacturing firms this study conceptualizes product

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diversification to improve firm performance. The following subtopic discusses about product diversification strategy.

2.5.1 Product Diversification

Diversification is a strategic expansion to response to competitive business environment. Strategic management scholars have examined several types of diversification strategies for expanding different industries, markets and/or product. Product diversification, which refers to the scope and movement of a firm's product portfolio to enter into a new market, sector, industry, or segment (Ansoff, 1957 Batsakis, & Mohr, 2017; Kim, Hong, Kwon, & Lee, 2017; Wang, Ning, & Chen, 2014). This is considered one of the most important activities in strategy and operation management research.

Product diversification considers as a well-known diversification strategy to expand the firm's product portfolio (Batsakis, & Mohr, 2017; Kim *et al.*, 2017; Wang *et al.*, 2014) and a major strategic initiative in the manufacturing sector. Product diversification can be further categorized into related and unrelated diversification. Related product diversification refers to the expansion of a product within markets that is related to a firm's fundamental product offering. Whereas the unrelated product diversification refers to expansion into non-core product markets (Chang & Wang, 2007). The empirical literature has documented many dimensions along which multiproduct firms differ in their performance from single-product firms. Empirical evidences pointing that a notable lack of studies in emerging economies which focus on the examination of performance issues associated with divarication-until recently. To date the mixed views and findings, the inconsistencies in the relationship between

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diversification and firm performance have been documented (Gyan*et al.*, 2017; Wang *et al.*, 2014).

Ansoff (1957) first introduced the concept of diversification to illustrate the growth strategies of companies entering new markets with new products. Till today in academic and practical context this is an ongoing debate that how firms consider their product diversification strategy to improve performance. Recent studies also suggested that product diversification becomes the key issues of enquiry to improve a firm's performance (Claussen, Essling, & Peukert, 2017; Santarelli & Tran, 2016). Most scholars suggest that firms that have diversified into areas related to their core businesses demonstrate better performance than others that have diversified into unrelated business fields (Kang, Lee & Yang, 2011; Rumelt, 1982; Wang *et al.*, 2014).

Kang *et al.* (2011) opined that product diversification engenders a trade-off between potential risks of going beyond the reasonable capacity to effectively offer diverse products and the possible demand externalities generated by offering a broad range of products. This study concerns about product diversification (related and unrelated product diversification) and its potential benefits that a manufacturing firm can enjoy. Related product diversification has been discussed in following sub section.

2.5.1.1 Related Product Diversification

Previous researches demonstrated that firms that have diversified into areas related to their core businesses demonstrate better performance than others that have diversified into unrelated business fields (Deligianni, Voudouris, & Lioukas, 2017; Purkayastha, Manolova, & Edelman, 2012; Rumelt, 1982). However, for manufacturing firms, it is difficult to develop new product to increase product line, besides number of scholars

stated that diversifying through the development of new products within a firm is slow and risky method (Wagner, 2014; Wang *et al.*, 2014). In the context of Bangladesh, manufacturing firms get order from abroad or local customers which perhaps not related to own product. Based on the argument it is difficult for firm to develop new product. Then, to buy it from other supplier as to meet customer order is the best option.

On the other hand, according to the resource-based view, through coordination and allocation of core resources for competitive advantages, product diversification creates support for economies of scope and performance (Kang, Lee & Yang, 2011; Teece, 1980; Wang *et al*, 2014). Firm can make its related product as basis to secure economies of scale by using existing resources and manufacturing capability in producing more similar products or output. Therefore, related product diversification gives best strategic alignment or fit with make strategy that a manufacturing firm can adopt. unrelated product diversification has been discussed in following sub section.

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2.5.1.2 Unrelated Product Diversification

With increasing competition, a shortening of product life cycles, rapid technological changes, and a shortage of capital and government regulatory requirements, many firms are under pressure to develop new products at a much faster rate than ever before. The literature provides powerful reasons for and against product diversification strategies (Prada *et al.*, 2018). In terms of advantages, product diversification contributes to competitive advantages by leveraging strategic resources across different product lines or businesses. Thus, firms' ability to diversify, i.e., to introduce new products, becomes increasingly important for growth, profitability, and survival.

Strategic flexibility (firm level) to firms; it usually discusses the flexibility of new products (ability of the manufacturing system to introduce or manufacture new parts or products) (Gerwin, 1987, 1993; Gupta & Somers, 1996; Larso *et al.*, 2009) and market flexibility (ability of manufacturing system to adapt to or influence market changes) (Sethi & Sethi, 1990). More precisely, this research concerns more on measuring the level of flexibility which influences firms' long-term objectives and strategic competencies, which vastly related to firms' degree of competitiveness (Firm Level).

Manufacturing firms in Bangladesh get order from abroad or local customers which perhaps not related to firm's product line. Thus, to meet the order from customers, it is difficult to develop a new product within a firm because of slower and risky method (Wang, Ning & Chen, 2014; Wagner, 2014). A manufacturing firm which wanted to produce unrelated products to buy supplies or produce by external supplier (Abdullah *et al.*, 2011; Wagner, 2014). The following subsection discusses about sourcing strategy.

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2.6 Sourcing Strategy

Firms are now re-examining their business models and structures and sourcing is being seen as a tool for business transformation and for pragmatic reasons, firms would source domestically or internationally to gain capacity flexibility as well as competitive advantage (Farinas, López & Martín-Marcos, 2016; Größler *et al.*, 2013; Vagadia, 2012). Sourcing is not simply a purchasing decision also represents the fundamental decision to reject to do an activity in-house (make) and look for outside and its effect on organizational performance.

Sourcing is a key supply chain practice that is on the agenda of many organizations. Outsourcing can be defined as the allocation of business activities that were previously done internally by an organization, which are now sourced from outside of an organization. Recently, Handley and Benton (2013) reviewed the outsourcing literature and highlighted that 30-50 percent of outsourcing initiatives do not reach their full performance potential. In many instances outsourcing was initially implemented in non-core activities and then diffused into almost every function, even the core of a business.

In practice, both strategic and cost considerations enter into outsourcing decisions. It is not sufficient to make outsourcing decisions solely based on one single side of the TCE or RBV coin (Sims, Powell & Vidgen, 2016). The emphasis of TCE is on short-term cost efficiency and, conversely, a RBV focuses on long-term strategic vision with regard to value creation. In this case, a RBV and TCE could be seen as complementary, encompassing both efficiency and effectiveness (Arnold 2000, McIvor 2009).

Integrating a RBV and TCE into evaluating outsourcing decisions has been proposed to have a positive impact on improvement of business performance and organizational processes in the long term (McIvor 2009). This integration remains relatively unexplored in the outsourcing literature. Whether there is a true dichotomy between make-or-buy, and between a RBV versus TCE approaches is yet unanswered. The complexity of the modern marketplace would a priori suggest that such dyadic perspectives are an over-simplification of the processes taking place in the market. This is especially true in high-creativity industries where there are unclear relationships between small and large firms, and diffuse boundaries between creative's

themselves who work independently, contractually and as outsourced resources (Lin, Piercy & Campbell, 2013). The following subtopic discusses about strategic sourcing.

2.6.1 Strategic Sourcing

Previous literature addresses the need for sourcing to assume a more strategic role in this age of ever-increasing world competition (Su & Gargeya, 2012). Chiang *et al.* (2012) asserted that strategic sourcing has been increasingly recognized as an integral part of business strategies and practices. Carr and Pearson (2002) define strategic sourcing as the process of planning, evaluating, implementing, and controlling highly important sourcing decisions in an effort to meet a firm's long-range plans and goals.

Kocabasoglu and Suresh (2006) identify the four key elements of strategic sourcing: elevation of purchasing function to a strategic level, effective cross-functional communication and support within an organization, information sharing with key suppliers, and development of key suppliers. Incorporating previous literature and considering the purpose of this study, the theoretical construct of sourcing (make or buy) in this research is conceptualized by being proactive as well as long-term focus for manufacturing firms in Bangladesh.

2.6.2 Sourcing Strategy-Make Strategy

According to Daugherty (2011), the make-or-buy decision has been for a long time viewed from the manufacturing perspective. On the other hand, the literature describes the make or buy decision process as a way of finding the best way to effectively make the input component in-house (make) so as to position manufacturing firm competitively.

Prior research focused on a broader based on the premise that perceived risk for manufacturing firms to produce a product internally (make) is vitally important part of decision making as it certainly effects to firm performance (Bansal *et al.*, 2014; Quintal *et al.,* 2010; Sharifpour *et al.*, 2014). However, make a product internally by manufacturing firms, previous research suggests that many firms still struggle to incorporate sustainability initiatives into their business (Bansal *et al.,* 2014).

Prior theories TCE and RBV describes how a firm's critical internal resources contribute and cost related to make a product to sustain competitive advantage (Bruce & Daly, 2011; Kraaijenbrink *et al.*, 2010; Lockett *et al.,* 2009; MacCarthy & Jayarathne, 2012). Firms to recognize the strategic role that sourcing can play in achieving sustainable advantage. Transaction cost economics (TCE) suggests that firms should produce goods in-house (make) if the transaction cost of such product 'market-based contract' is higher and firm must focus to make a product internally concerning if it could achieve economies of scale which requires the firms to reduce cost and increase efficiency. Thus, a firm will opt make strategy especially when exercise cost leadership and make incremental improvements in production which will lead to minimize its production cost besides remain competitive (Allen *et al.*, 2006; Espino-Rodríguez *et al.*, 2015; Porter, 1980).

Prior research found that firm that opt for make strategy will have opportunities to reduce production cost, improve production efficiency and enhance quality through the use of advanced machinery (Jacobides & Winter, 2005; Ha¨tonen & Eriksson, 2009). The cost of updated technology required to initiate internal production of a product or input components (Bidwell, 2010; Jacobides & Winter, 2005). This clearly

indicates its strong association with related product diversification strategy and specific capability. Thus, in this study product diversification as a strategic flexibility for firm will be aligned with make strategy. Especially, manufacturing firm adopts make strategy and related product diversification. The following subtopic discusses about buy strategy.

2.6.3 Buy Strategy

Buy strategy or outsourcing refers to any goods and services that are procured from outside suppliers (Mol & Kotabe, 2011). Cost advantages of outsourcing has been the main reason for firm to opt for this strategy. Internal production of product may be at levels that are too low to be efficient (to achieve minimum efficient scale). Many goods and services for which an enterprise has low demand have high fixed costs. The lack of internal competition can make unit price inefficient too.

For the decade the buy option has become increasingly significant due to its potential benefits, which firms rely a lot on suppliers as to reduce firm's total costs besides enhance its competitive advantage (Hartman, Ogden, Wirthlin & Hazen, 2017). Sundquist, Hulthén & Gadde 2015; Weele, Gevers & Driedonks, 2014).

Manufacturing firms in Bangladesh get order from abroad or local customers which perhaps not related to firm's product line. Thus, to meet the order from customers, it is difficult to develop a new product within a firm because of slower and risky method (Wang, Ning & Chen, 2014; Wagner, 2014). A manufacturing firm which wanted to produce unrelated products to buy supplies or produce by external supplier (Abdullah *et al.*, 2011; Wagner, 2014). Therefore, it can be said that firm should adopt buy strategy when it diversifies to unrelated products.

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According to Williamson (1985), Transaction Cost Economics (TCE) focuses on transactions and the costs incurred via completing transactions by one institutional mode rather than another. The transaction either make or buy a product, is the unit of analysis in TCE, and the means of affecting the transaction is the principal outcome of interest (Tadelis & Williamson, 2012). TCE suggests that the costs and difficulties associated with market transactions sometimes favor hierarchies (make) and sometimes favor markets (buy). Based on TCE, manufacturing firm makes decision either to produce a product through market-based contract if this transaction cost is lower than producing internally (Jaklič *et al.*, 2012, Lin *et al.*, 2012; Mohiuddin & Su, 2010).

This lead firm to consider sourcing as it become strategic forefront of modern practice in enhancing firm performance and competitive advantage (Weele *et al.*, 2014). Sourcing practices in the ear of global supply chains, products are bought from multiple companies and across multiple continents in their path from material suppliers to the final consumer. According to Teece (2009), if the outside independent supplier has the capability of meeting the buyer's demands and can convince the buyer that a high degree of quality service is an exclusive property, then the buyer will continue to outsource instead of internally perform the activity. However, it requires firms to coordinate its interdependent activities as to ensure buy or outsourcing strategy function as intended (Tang & Rai, 2012; Shapiro & Varian, 1999). The following subtopic discusses about strategic capability.

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2.7 Strategic Capability

The concept of strategic capability is defined as the inimitability of each firm which are generally rare (varies across firms and industry), relatively secure (such as suitable to the firm compare to other firms), and difficult to copied (Di Benedetto & Song, 2003). Full utilization of resources and assets a firm must be coupled with capabilities, complex bundles of skills and accumulated knowledge that enable organizations to coordinate activities (Parnell, Long & Lester, 2015). Therefore, the term strategic capability is conceptualized in this study as; the combination of manufacturing capability and purchasing capability of a manufacturing firm to improve their performance through sourcing strategy.

Strategic capability as a higher order constructs (Parnell *et al.*, 2015) whereas, organizational capabilities defined as a second-order construct that develops from the interaction of a firm's resources (Amit & Schoemaker, 1993; Chin *et al.*, 2014). Other scholars define strategic capabilities as a collection of practices (Peng, Schroeder & Shah, 2008; Wang Dou, Zhu, & Zhou, 2015). Organizational capabilities are sometimes used in such a way that it overlaps, is interchangeable with, or includes other related constructs such as resources and practices (Wu, Melnyk & Flynn, 2010).

The literature stated that capabilities are complex. Firms with high level capability are more likely to attain better performance as they are capable to integrate activities in a way that meet market needs (Lun, *et al.*, 2015). Strategic choice of make-or-buy and flexibility that is either for related product or unrelated product should be developed strategically. Sourcing decisions depend on the fit between a firm's resources and capabilities and those available externally as well as other transaction conditions (Holcomb & Hitt, 2007). This study therefore, from the RBV and TCE point of view

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considered strategic capabilities as sources of competitive advantage and improve manufacturing firm performance (Barney, 1991; Barney, Ketchen, & Wright, 2011; Eisenhardt & Martin, 2000). The following subtopic discusses about Resource-Based View (RBV) of capability.

2.7.1 Manufacturing Capability

Manufacturing capabilities refer to the abilities of firms in the manufacturing system of mass production, materials purchase, inventory control, capacity management, process management, and product quality management to compete on basic dimensions such as quality, cost, flexibility, and time (Safizadeh *et al.*, 2000). Managers frequently omit a firms' manufacturing capability as important aspect in building competitive advantage (Gao, & Tian, 2014; Mukerji, Fantazy, Kumar, & Kumar, 2010). In today's dynamic, complex, and continually varying production environment, then manufacturing must be used as a strategic weapon (Vesalainen, & Hakala, 2014).

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Previous literature supports the notion that building manufacturing capabilities to exploit certain properties of the manufacturing function would lead to achieve sustainable competitive advantage (Gao, & Tian, 2014; Hayes & Wheelwright 1984; Mukerji *et al.*, 2010). Some scholars view manufacturing capability as a tool for building competitive advantage (Swamidass & Newell 1987). In addition, it is a pattern of decisions, both structural and infrastructural, which determine the capability of a manufacturing system and specify how it will operate, in order to meet a set of manufacturing objectives which are consistent with the overall firm goals (Liu, Jiang, & Cao, 2014; Mukerji *et al.*, 2010; Platts *et al.*, 1998).

Manufacturing capabilities should to support business and corporate strategies. It plays crucial role in guiding business toward obtaining competitive production capabilities which finally enable firms to have competitive advantage (Boucher, Bonjour, & Grabot, 2007; Rodriguez *et al.*, 2009; Göleç, 2014).

Make for sourcing strategy refers to firms' manufacturing capability is comprising of processing capability and production capacity in economics of scale and mass production (Liu *et al.*, 2014; Lun *et al.*, 2015). Manufacturing capability aligning with firm's strategy and positively influence overall firm performance (Helfat & Winter, 2011; Stadler, Helfat & Verona, 2013).

Another critical aspect of manufacturing capability is cost efficiency (Helfat & Winter, 2011). According to the economic theory, top performing firms operate the lowest average cost (Rose *et al.*, 2008). Several researchers have highlighted the importance of cost efficiency in an organization and its impact on performance (Porter 1985; Swamidass & Newell, 1987). Cost refers to the ability to produce product at low cost, less inventory besides greater use of equipment or capacity (Gao, & Tian, 2014; Corbett & Van Wassehnove, 1993; Mukerji *et al.*, 2010). From the RBV, firms with strong manufacturing capabilities can apply their collective knowledge, skills, and resources in manufacturing related domains as to produce or provide high quality and low cost of goods to customers (Hsiao & Chen, 2013; Lamming, 1993; Malik & Kotabe, 2009).

Association between right capability and right strategy is important for all firms and several studies suggested that firms would establish capability after formulating strategy (Amburgey & Dacin, 1994; Chandler, 1962; Miles & Snow, 1978; Wu, *et al.*,

2010). However, some studies proposed that strategy is selected based on firms' capabilities (Dı´ez-Vial, 2007; Hsieh & Tsai, 2007; Wan, 2005; Wu, *et al.*, 2010). These two streams of research provided different sequential on relationships between capability and strategy.

This study proposed a combination of specific capability (manufacturing) for specific firm's strategy such as make strategy, with related product and cost leadership as platform to secure better organizational performance. The following subsection explains about the purchasing capability.

2.7.2 Purchasing Capability

Procurement is a logistics function and is important in SCM. The terms "procurement" and "purchasing" are often interchangeably used in manufacturing. However, in the context of construction procurement is a much more complex system. Procurement encompasses all activities performed to deliver products from the supplier to the internal customer (end-user), whereas purchasing only involves the buying process (Kumar *et al.*, 2005). Procurement spend can consume a large portion of an organization's expenditure. Karthik (2006) claims that procurement spend can account for 40-60% of the total expenditure of manufacturing firms.

Evidence from existing studies confirmed that organizations' efforts in developing competitive capabilities have a positive impact on their business performance (White, 1996). Competitive capabilities for manufacturing companies include price, quality, delivery dependability, and flexible product innovation (Avella & Bustelo, 2010; Grobler & Gruber, 2006; Sarmiento, Byrne, Contreras, & Rich, 2007).

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In the context of this study, price refers to the extent to which an organization is capable of competing based on low prices (Koufteros, Vonderembse, & Doll, 2002). A manufacturer's ability to offer competitive prices depends on its ability to manage the costing aspects for its operations and supply chain (Davis, 1993). Hence, to be successful with a low-cost strategy, manufacturers need to continuously benchmark themselves against other manufacturing firms to assess their relative cost and position in the marketplace (Baroto, Abdullah, & Hooi, 2012) and lower their manufacturing costs relative to their competitors (Hitt, Hokkinson, & Ireland, 2013). Hence, the capability of a firm to produce quality products is important for it to compete successfully in global markets and maintain firm's performance (Hitt *et al.*, 2007; Robbins & Coulter, 2012).

Delivery dependability refers to the extent to which the manufacturing organization is capable of meeting customer delivery requirements (Koufteros *et al.*, 2002), such as quoted and anticipated delivery dates and quantities (Sarmiento *et al.*, 2007). Delivery dependability relies on two important factors, namely, delivery speed and manufacturing lead time (Großler & Grubner, 2006). Many companies try to achieve and maintain sustainable competitive advantage by placing emphasis on delivery speed and manufacturing lead time (Pena & Garrido, 2008; Lin, Ma, & Zhou, 2012). Besides that, customers nowadays have high levels of expectations in terms of delivery dependability, and hence this posed an important strategic implication for manufacturers to constantly improve their delivery dependability capability (Sarmeinto *et al.*, 2007).

In this modern era of global supply chains, products are exchanged to multiple companies and across multiple continents in their path from material suppliers to the final consumer (Lee *et al.*, 2015; Shmueli, 2011). Previous research as suggest that constantly effort on improving processes would increase efficiency, reduces costs, and usually results better performance (Lee *et al.*, 2015; Hammer & Stanton, 1999; Harry & Schroeder, 2000, Tan & Rai, 2014).

Process capabilities refers to leverage process alignment, which is defined as a firm's ability to coordinate interdependent activities and optimize operations with its suppliers (Jarvenpaa & Stoddard, 1998; Tang & Rai, 2012; Wong, Sakun & Wong, 2011). On the other hand, firms need to have the competences and skills for partnering flexibility which is defined as their ability to adjust its supplier portfolio according to its product line (Charter & Clark, 2008; Flynn *et al.*, 2010; Gunasekaran & Spalanzani, 2012; Shapiro & Varian, 1999).

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The importance of supply base management as a strategic tool to achieve competitive advantage is widely acknowledged both in practice and research (Choi & Krause, 2006; Gadde & Hakansson, 1994; Holmen *et al.*, 2007). The changing role of purchasing from a clerical function to a more strategic function (Carter and Narasimhan, 1996; González-Benito, 2007; Schoenherr *et al.*, 2012) contributed significantly to the increased emphasis on supply base management. A supply base can be defined as "the total number of suppliers that are actively managed by the focal firm, through contracts and purchase of parts, materials and services" (Choi and Krause, 2006, p.639). One of the most important strategic choices in purchasing is developing a supply base that supports the purchasing strategy (Gadde & Hakansson, 1994; Monczka, 2005). Das and Narasimhan (2000) call this "purchasing competence"

which they define as "the capability to structure the supply base in alignment with the manufacturing and business priorities of the firm" (Ateş, Wynstra, & van Raaij, 2015).

Moreover, a firm purchasing capability allows a firm to improve supply chain coordination and product quality (Gunasekaran & Spalanzani, 2012; Uddin, 2017). Manufacturing firms often demand their supply chain partners such as subcontractors or suppliers to implement common practice and product. Thus, process capability will allow a firm to collaborate with its supplier in reducing supply chain costs, and finally achieving competitive advantage (Cheng, 2013; Gunasekaran & Spalanzani, 2012; Jain, Wadhwa, & Deshmukh, 2009). Aligning processes with existing suppliers should enable a firm to leverage suppliers' resources and capabilities (Jain *et al.*, 2009; Kristal *et al.*, 2010; Wong *et al.*, 2011). Purchasing capabilities allows a firm effectively manage supplier relationships when firms decide to buy product from suppliers and reduce the variation and increase the efficiency of inter-firm processes with suppliers (Ittner & Larcker, 1997; Tan & Rai, 2014). The following subsection discusses about sourcing relationship quality.

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2.8 Sourcing Relationship Quality

Wagner (2011) mentions that the nature of buyer-seller relationship is dynamic where stages of relationship might moderate the relationship between sourcing strategy and firm performance. This study assume that manufacturing firms have collaboration with supplier regardless their sourcing strategy (make or buy). When a firm opt for make strategy that is to produce product internally also rely on supplier for materials or components of a product. On the other hand, a manufacturing when opt for buy strategy would have to depend on external supplier for finished product. Thus, empirical

researches are necessary to substantiate the field of sourcing relationship quality that will link antecedents, moderators and consequence performance.

Previous literature suggested that, given differences in strategic priorities, there are differences in the types of characteristic firms look for in supply chain partner's quality, relationship and integration (Anderson *et al.*, 2011, Roh, Min, & Hong, 2011; von Massow & Canbolat, 2014). When a firm engage in buy strategy, a critical concern within purchasing is the nature of the relationship between buyers and suppliers. Close relationships are generally recommended for value-in-production as seen in terms of high-quality, on-time delivery and low cost (Bildsten, 2014; Greenwood & Wu, 2012).

In the particular context of firm there is a drive to standardize as much as possible in the factory and benefit from economies of scale with close and long-term relationships with suppliers (Gann, 1996). Even so, close relationships are not appropriate for all purchasing situations. For example, Fernie and Thorpe (2007) argue that there exists no superior form for all relationships and that the degree of closeness is context dependent. Hence, a firm need to have quality relationship rather superior when firm is dependent on other firm for famished product or components.

Quality of relation with supplier depends on manager's pivotal role to develop a good relationship (Chiang *et al.*, 2012; Kocabasoglu & Suresh, 2006). A collaborative relationship is more desirable for the buying firm in the supply market which is full of uncertainty, risk, and turbulence. A good quality relationship is generally recommended for manufacturing firm as seen in terms of high-quality, on-time delivery and low cost (Greenwood & Wu, 2012). A good relationship allows manufacturing firms the exchange characteristics and induce specific supplier actions

such as investments in quality or capacity (Greenwood & Wu, 2012; Defee, Williams, Wesley, & Thomas, 2010).

Previous studies reveal that the value derived from their relationships, communication, information sharing, and trust are three prominent contributors for successful and desired relationship with supplier (Miocevic & Crnjak-Karanovic, 2012; Terpend *et al.*, 2008). Based on quality relationship with supplier firms can exploit the access of complementary resources and capabilities (Burke, Carrillo, & Vakharia, 2007; Iida, 2012).

Numerous disruption and lack of quality relationship between firms can mismatch the demand and supply of the firm. Consequently, the demand-supply mismatch caused by supply disruptions can have a significant negative impact on a firm's performance (Gledhill *et al.*, 2014; Martina, 2012; Yang, 2011).

Sourcing is critical to the overall success of the firm, literature suggested that, Schoenherr and Swink (2012) Provide evidence concerning the moderating effect of internal integration on external integration, whereas Zhao *et al.* (2011) showed a moderating role of supplier integration in customer integration. Moreover, previous studies revealed that the implementation of strategic sourcing will increase the firm's efforts in developing collaborative buyer-supplier relationship with respect to enhance communication and responsiveness from suppliers and will tend to develop a systems approach in managing suppliers including evaluating, recognizing and certifying suppliers and tracking supplier's performance. Strategic sourcing is critical to the overall success of the firm (Gledhill *et al.*, 2014; Schoenherr & Swink, 2012).

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Therefore, a significant part of supply chain (SC) management literature consists of managing competent inter-organisational relationships such as alliances or partnerships in an SC to gain competitive advantage. Efficient management of the supply chain relationships is one of the key indicators of firms' operational excellence as it integrates suppliers and customers to improve their responsiveness and flexibility (Thakkar *et al.*, 2012; Jayaram *et al.*, 2014). Relationships in an SC may range from single transactions to complex, interdependent relationships which may vary from arm's-length transactions (or market governance) to vertical integration (Uddin, 2017). Besides, the levels of this relationships and SC transactions usually depend on the levels of trust, commitment, mutual dependence, leadership and top management support; the higher the levels of transactions, the closer the firms are to an integrated relationship, superior business performance and more profit (Jain *et al.*, 2014; Uddin, 2017).

Relationship quality relies on length of relationship with supplier or other firms, where pass through various phases and how regard each other (Dwyer *et al.*, 1987). Several studies reveal that, relationship duration results in greater profitability when buy supplies or finished products (Reinartz & Kumar, 2003; Verhoef *et al.*, 2002).

According to Verhoef *et al.* (2002), it is evident in the extant literatures that firm's relationship passes through different stages. For example, Dwyer *et al.* (1987) explored that at the different phases in a relationship both parties treat each other differently and within these stages various factors play their key role to influence the relationship. As the relationship established in sourcing strategy dyad, both manufacturing firm and supplier invest in relational resources which make them mutually dependent on each other (Weiss & Kurland, 1997; Williamson, 1985) and when the parties are

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interdependent, lengthy relationship has more clear and better interactions, higher trusts, superior elasticity and better commitment (Anderson & Weitz, 1989; MacNeil, 1978; 1977; Ouchi, 1979).

Thus, in the long-run relationship a firm experience from recurrent interactions with customer that exerts powerful influence on relational outcomes (Jap, 1999). Wagner (2011) mentions that the nature of buyer-seller relationship is dynamic where relationship life-cycle might moderate the relationship between sourcing strategy and firm performance.

2.9 Theoretical Framework and Hypotheses

This section presents the theoretical underpinning of the study, developed research framework and consequently proposed hypothesis. Section begins by explaining Industrial Organization Theory which is related to the strategic behavior of the firm. Specifically, Transaction Cost Economies (TCE), Resource Based View (RBV) and Social Exchange Theory are used in this study.

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2.9.1 Underpinning Theories

Over the last three decades, three strategic approaches have dominated the strategy literature landscape. First, the industry level of competitive advantage approach (Porter, 1985); the industry level of competitive forces approach, which rooted in the structure-conduct performance paradigm of industrial organization economics theory (Bain, 1959; Mason, 1949; Teece, Pisano & Shuen, 1997). The following subsection discusses about the industrial organization theory.

2.9.1.1 Industrial Organization Theory

Industrial Organization (IO) is of economics-based theory that upholds study related to strategic behavior of firms, structure of industries and their interactions. It is also referred as "Industrial Economics". Tenets of IO economics significantly influenced the field of business policy and strategic management in the early growth phase. Originally, business policy was concerned with case-based or inductive studies that focus on single firm or industry (Hitt *et al.*, 2015). The IO economics has influenced the field to "swing" towards deductive studies which were based on large-scale statistical analyses that aimed at validating scientific hypotheses (Hoskisson, Hitt, Wan, & Yiu 1999).

Typically, IO suggests that firms can earn above-average returns by producing either standardized goods or services at costs below those of competitors (a cost leadership strategy) or by producing differentiated goods or services for which customers are willing to pay premium price (a differentiation strategy) (Hitt *et al.*, 2015). However, most firms are presumed to have similar valuable resources that are itinerant across companies. Their performance generally can be increased only when they operate in an industry with highest profit potential and use their resources to identify and implement strategy best suited with required by the industry's structural characteristics (Brauer & Wiersema, 2012; Posen, Lee, & Yi, 2013).

Proponents of IO economics hold industry structure is central determinant of firm performance and firm differences are considered against industry background (Porter, 1980). According to Bain (1968), IO economics is concerned with the economy and wide complex of firms of various functions as suppliers, sellers, or buyers, of goods

and services. This perspective influenced strategic thinking on the notion that industry structure (S) influences firm conduct (C), which in turn determines firm performance (P). Often referred to as S-C-P paradigm and also known as the Bain/Mason paradigm; (Bain, 1968; Mason, 1939). This perspective assumed that industries are homogeneous and firms within any industry are essentially the same except for size (Caves & Porter, 1977; Hitt *et al.,* 2015).

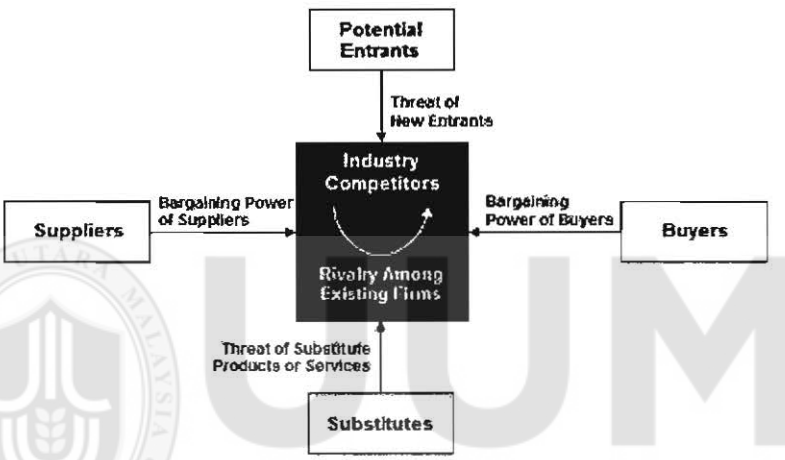

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Figure 2.1
Porter Five Forces Model (Porter, 1980)

Porter (1980) had significantly influenced the convergence of scholarly thinking in the fields of IO economics and strategic management. Porter's well-known five-force framework is intellectually indebted to IO economics even though there are several differences between IO economics and Porter's notions of strategy. These are in the areas of objectives (competition or antitrust policy versus business strategy), unit of analysis (industry versus firm), methodologies (nomothetic versus idiographic), and even model formulation (deterministic versus co-determined).

As summarized by Porter (1981), the central tenet of paradigm is that a firm's performance is primarily a function of the industry environment in which it competes. Because industry structure determines firm conduct (or conduct is simply a reflection of the industry environment), which in turn determines performance, conduct can be ignored, and performance can be explained by industry structure.

Interestingly, the foundations of IO economics were modified in latter academic discourse that came to consider that firms within an industry may differ on the basis of degree of vertical integration, breadth of product line, geographically served markets, nature of distribution channels, presence of in-house capability and so on (Porter, 1979, 1981). The widely adopted IO framework and its later modifications drive strong interest on research related to "strategic groups". For a firm, industry-level analysis implies that it is a major task to undertake an examination of the various competitive forces that exist within the focal industry and attempting to strategize in a manner that minimizes the effects of these forces (Porter, 1980).

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A stream of research has sought to explicate how various industry factors influenced firm performance and its sustenance over time. Research also showed that differences in attributes across industries may influence firms in widely different ways (McGahan & Porter, 1997). However, there have not been many attempts to understand how industry level competitive forces influence strategic orientation of firms within an industry. Specifically, very little study linking competitive forces, strategic orientation, sourcing strategy and firm performance. In sum, the central notion of IO economics is that industry attributes influence firms' conduct such as cost leadership strategy, differentiation strategy, sourcing strategy and performance will be used in this study.

2.9.2 Transaction Cost Economics

Transaction cost economics (TCE) has been the predominant theory used to examine business sourcing decision from a make versus buy perspective (Bajari & Tadelis, 2001; Poppo & Zenger, 1998; Rubin, 1990). TCE tenets imply that sourcing decisions involve a comparison of the production costs incurred from producing a process/product internally (hierarchy) with the transaction costs associated in purchasing a process/product from an external source (market) (Williamson, 1975, 1979). According to Williamson (1985), TCE focuses on transactions and the costs incurred via completing transactions by one firm mode rather than another. The transaction, a product that is the unit of analysis in TCE, and the means of affecting the transaction is the principal outcome of interest of a firm (Zikmund-Fisher & Williamson, 2012).

TCE as a conceptual framework has abandoned industrialized physical labor for twenty-first century innovative intellectual acumen (Gupta, Herath, & Mikouiza, 2005). As a result, manufacturing firms must make informed decisions about relative elements of efficiency that surround producing goods and services in-house (make) versus pursuing an outsourced solution (buy) (Williamson, 2010). Gregory (2011) describes TCE as a "continuum" between a regulated hierarchical (make) and an open market (buy) structure that provides synchronized internal and external governance mechanisms to control costs. The study of outsourcing through the lens of TCE has emerged as a preeminent model for examining organizational governance practices. In fact, in 1937, the dilemma about what efficiency factors are necessary to determine whether companies should make product internally or buy from outside vendors (Williamson, 2010).

The first theory, Williamson's (1975) Transaction-Cost Economics, a combination of economic theory and management theory. According to Humphreys *et al.* (2002), and attributed to earlier thoughts by Coase (1937), tells that the characteristics of a transaction-frequency of transactions, asset specificity, uncertainty in demand, limited rationality and opportunistic behavior determine the most efficient governance structure: market, hierarchy or hybrid. Many have accepted these reasons and the application of Transaction-Cost Economics sourcing decision making process.

Some argue that inter-organizational decisions that based on transaction costs alone could undermine the collaborative benefits and the transaction value of inter-firm collaborations. The application of transaction-cost economics to outsourcing implies that uncertainty in demand, asset specificity and frequency of transactions determine the governance structure. From these factors, specifically the frequency of transactions and uncertainty might have an impact on control mechanisms and performance management in manufacturing. The factor asset specificity contributes to taking outsourcing decisions but also might cause dependencies in the buyer-supplier relationship affecting operations management (Dekkers, 2011).

Sourcing transaction costs also increase with asset specificity, where the increased complexity of interactions required to monitoring and control costs to protect investments and ensuring better performance (Poppo & Zenger, 2002). Moreover, TCE offers a very rational view for evaluating make versus buy decisions, where the sourcing choice is made strictly based on the economic merits of market versus hierarchy costs associated with each individual sourcing transaction.

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Another example of a TCE based interpretation in strategic sourcing deals with plural sourcing, where a firm may engage in both internal and external sourcing relationships to acquire key resources/processes (Welch & Nayak, 1992). Instead of the traditional make versus buy decision, plural sourcers may engage in make and buy and ally decisions, where the firm is maximizing short-term flexibility in the sourcing decisions. In such cases, the assumption is that the maintenance of sourcing flexibility mitigates the additional transaction costs incurred by developing multiple make and buy and ally relationships.

Espino-Rodríguez and Padrón-Robaina (2006) describe outsourcing as strategic decision by a firm that recognizes the activities that require market invention based on internal resources using business processes that are exploited through a competitive advantage. In a climate of high-stakes testing, a firm must make a determination between whether the market or the hierarchies are more efficient which dependent upon the surrounding circumstances of a particular transaction where costs arise when firm's internal and environmental factors collide (Williamson, 1975). Moreover, TCE can be adapted to align both the markets and hierarchies to improve efficiency and improve firm performance.

However, since both hierarchical and market structures involve transaction costs, it is important to consider the related costs of reaching an external agreement compared to the costs of performing the services internally (Coase, 1937). High-stakes testing, and institutional sanctions require schools to create synergy between being "flexible, entrepreneurial, responsive, and efficient (Gupta, Herath, & Mikouiza, 2005).

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Though the frequency of the exchange may lower transaction cost, the medium used, time spent on task, and money spent on materials and labor can not only increase the material costs of the actual transactions, but also bottleneck the process and prevent more transactions from being completed (Harris, Hannah, Stones, & Morley, 2011). This means and unwritten codes of conduct with vendors are needed as to guide contractual relationship in terms of clearly defined goals and objectives (Milgrom & Roberts, 1992; Williamson, 1985). TCE gives the rational for strategic flexibility in this study. Product diversification (related and unrelated) considered as flexible strategic choice in this study. Moreover, TCE offers a very rational view for evaluating make versus buy strategy. The following section discusses about the resource-based view theory of firm.

2.9.3 Resource Based View Theory

The second theory in this study is the Resource-Based View. This view appeared in the 1960s and 1970s when organizational theorists combined research on inter-organizational relations and political economy of organizations. This theory defines resources as tangible and intangible assets that are tied semi-permanently to a firm (Wernerfelt, 1984).

Over the years, various scholars have recognized the potential of RBV as a useful lens to conceptualize various organizational issues and have continued to reinforce the foundations of the perspective (Barney, 2001) have tested the basic tenets of RBV and have come up with consistent results. Although there have been scholarly criticisms that have cast doubts on RBV to qualify it as a strong theory (and such criticisms are normal and healthy for the sake of continued academic conversation), recent

publications in top-tier management journals continue to base arguments on the foundations of RBV.

RBV emerged as an alternative approach to conceptualizing industrial organizations and their competitive strategies. This view represents a paradigm shift in strategy literature by redirecting focus from the external environment of firms to the inner resources that firms develop to compete in that environment. The development of this perspective drew heavily on Penrose's (1959) theory of firm growth and incorporates three research streams-mainstream strategy, organizational economics and industrial organization analysis (Mahoney & Pandian, 1992). According to RBV, firms are viewed as collection of various types of resources and capabilities; such as, internal factors that are semi-permanently linked to the organization, and these resources and capabilities are suggested as forming the basis of a firm's superior performance and competitive advantage (Barney, 1991; Wernerfelt, 1984).

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The resources and capabilities that firms can possess can be physical, human, technological or organizational. By utilizing these resources and capabilities, firms tend to capitalize on the environmental opportunities and neutralize the threats that exist and are, thereby, able to obtain competitive edge over those firms that do not possess useful resources or are unable to capitalize on them. While discussing RBV of firms, Barney (1991) discussed four attributes of resources that can create sustained competitive advantage. These are value, rareness, imperfect inimitability and non-substitutability. According to his argument, while the first two criteria-value and rareness-may generate competitive advantage for a firm, it is only through imperfect

imitability and non-substitutability (the remaining two resources) that sustained competitive advantage will result.

In the RBV of the strategic management pays specific attention to the genesis and development of the organization's internal resources and capabilities as a source of sustainable competitive advantage of firm (Barney, 1991, 1996; Grant, 1991; Hall, 1992; Teece, 1997). Resources in this context can be thought of as any prerequisite for action serving as a means to effectively change reality, in particular intangible assets such as organizational knowledge or competences to innovate and to flexibly react to market demands and customer requirements. The RBV focuses not only on the resources themselves, however, but also rather on the specific ways the organization puts them to effective use (Deker, 2011).

The RBV focuses on the unique and barely imitable competences an organization may develop to increase effectiveness and efficiency of its resources by using them in a specific way. High-performance organizations thus not only reduce the transaction costs for the resources they need, but they also exploit their potential more effectively by the specific way they make use of these resources. The constitution of the resource-based view of the firm has over the decades shifted its focus from more or less general resources and their firm-specific combination and use towards the generation and use of intangible assets such as capabilities and competences (Espino-Rodríguez *et al.*, 2014; Hitt *et al.*, 2015).

In sum, RBV allows conceptualizing the organization resource such as manufacturing capability and process capability (Hitt *et al.*, 2015). Therefore, that manufacturing firm, by allowing focusing on the quality and type of various resources and capabilities

possessed by the providers that may be useful to their clients. RBV also helps to understand how firm may develop their valuable resources and capabilities for current and future sources of competitive advantage after their non-core business activities and processes have been handed over to the providers operating on national or foreign shores. The following section discusses about the social exchange theory.

2.9.4 Social Exchange Theory (SET)

Social exchange theory is a broad conceptual paradigm that used in management research and share a number of common features (Cropanzano, Anthony, Daniels, & Hall, 2017). Social Exchange Theory provides a potential perspective in understanding the nature of relationship between outsourcing providers and their clients (Bottom, Holloway, Miller, Mislin, & Whitford, 2006; Emerson, 1976; Homans, 1958). Emerson (1976) defined SET as regarding actions that are contingent on rewarding reactions from others. According to Homans (1958) social interaction is "an exchange of goods, material goods but also non-material ones, such as the symbols of approval or prestige. Persons that give much to others try to get much from them, and persons that get much from others are under pressure to give much to them. This theory, with roots traceable in the 1920s, has remained very powerful in conceptualizing workplace behavior and has been used in diverse fields as anthropology, social psychology, and sociology, and in different settings like social power, networks, board independence, psychological contracts, and leadership (Cropanzano & Mitchell, 2005).

The relationship between a buy firm and its supplier is contractual, based on governing contract that lays out the expectations on both sides (Holm, Eriksson, & Johanson, 1996). The supplier is bound by obligations to perform according to the set clauses in

terms of pricing, quality, timeliness and other parameters, and likewise the client is bound to pay charges for the executed services or product in a timely manner. However, as their partnerships move from being merely tactical to strategic, and finally transformational implying greater interdependence between the two parties, there arises the need to look beyond the notions of contractual exchange and contemplate the relationship as being a social exchange process based on trust and commitment (Kedia & Lahiri, 2007).

Therefore, SET provides a useful lens to understand the nature of partnership between the providers and their clients. If the partnership outcome is value as positive, the relationship between partners will continue to be stable. On the contrary, a negative outcome value will inspire the partners to curtail in scope or terminate the partnership. Overall, evolution and continuance of outsourcing partnership may be described in terms of a social exchange process between two or more firms conceptualized as collective actors. Partners will be interdependent through socialization and will exhibit reciprocal behavior because they will be morally obligated to serve each other's purpose (Kingshott, 2006).

SET has been used by scholars in the domain of outsourcing. For example, Lee (2001) utilized this theory in explaining partnership quality between clients and providers and empirically showed that partnership mediated the relationship between knowledge sharing and sourcing success. Gainey and Klaas (2003) used this theoretical perspective to understand what factors influenced satisfaction of clients with their external vendors. They concluded (among other findings) that socially-oriented trust mediated the relationship between client satisfaction and the business relationship that was maintained with the outsourcing partner. This study uses this social exchange

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theory to support theoretically the sourcing relationship quality impact on the relationship between sourcing strategy and firm performance. The following section discusses about the research framework of this study.

2.10 Research Framework

Over the last three decades, three strategic approaches have dominated the strategy literature landscape. First, the industry level of competitive advantage approach (Porter, 1985); the industry level of competitive forces approach, which rooted in the structure-conduct performance paradigm of industrial organization economics theory (Bain, 1959; Mason, 1949; Teece, Pisano & Shuen, 1997).

Second approach is TCE, which is the transaction of an activity occur for a firm. Base on this theory firm firms make or buy decision make. Moreover, product diversification whether a firm will make the related product or buy unrelated product based on transaction. Thus, this theory will strengthen this present study base on this theory.

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The third approach is building competitive value through capabilities. The capabilities approach is based on; the Resource-Based View (RBV) which posits sustainable competitive value of product/ services through unique and difficult to reproduce resources (Adegbesan, 2009; Teece, *et al.,* 1997). The RBV use unique resources to position a firm in an industry which relates well to the competitive forces approach and the strategic conflict approach. The other theory used in this study is Social Exchange Theory which uphold sources relationship quality with other strategic factors.

The underlying theory that guides the conceptual framework of this research is resource-based view (RBV). The notion of RBV can be seen in research on capabilities and competitiveness conducted by Penrose (1959), where the author suggested that a firm should be viewed as a pool of resources or as an organized combination of competencies (Hodgson, 1998; Teece, 1982; Wernerfelt, 1984). RBV was developed to serve as a tool to analyze an organization's resource position to examine the relationship between profitability and resources (Wernerfelt, 1984).

RBV can be seen as an attempt to explain and predict why some firms are able to achieve sustainable competitive advantage which leads to superior returns (Grant, 1996). Based on the fundamental principle of RBV, the success of organization depends primarily on the utilizations of its bundle of valuable resources to achieve superior performance. In other words, RBV tries to examine the link between internal characteristics of an organization and organization's performance (Barney, 1991). Organizations are viewed as heterogeneous as the resources and capabilities that each organization possesses are different.

Day (1994), defined capability as a complex bundle of skills and accumulated knowledge, exercised through organizational processes. These skills and knowledge enable organizations to coordinate activities and utilize their assets. The same perspective of capability can also have been seen through the definition given by Hitt, Hokkinson, and Ireland (2013) where they defined capability as the capacity of a set of resources to perform a task or an activity in an integrative manner (Hitt *et al.*, 2013).

An organization needs a wide range of capabilities in many areas to enable it to create value. These capabilities must be unique, relatively immobile, and hard to imitate by competitors to achieve competitive advantage (Benedetto & Song, 2003; Hitt *et al.*, 2013; Johnson, Scholes, & Whittington, 2013). Competitive capabilities that were built over a period of time enable an organization to achieve sustainable competitive advantage that leads to superior firm performance (Day, 1994). Organizational capabilities are important source of sustainable competitive advantage. Based on the discussion above the following Figure 2.2 presents the research framework of this study

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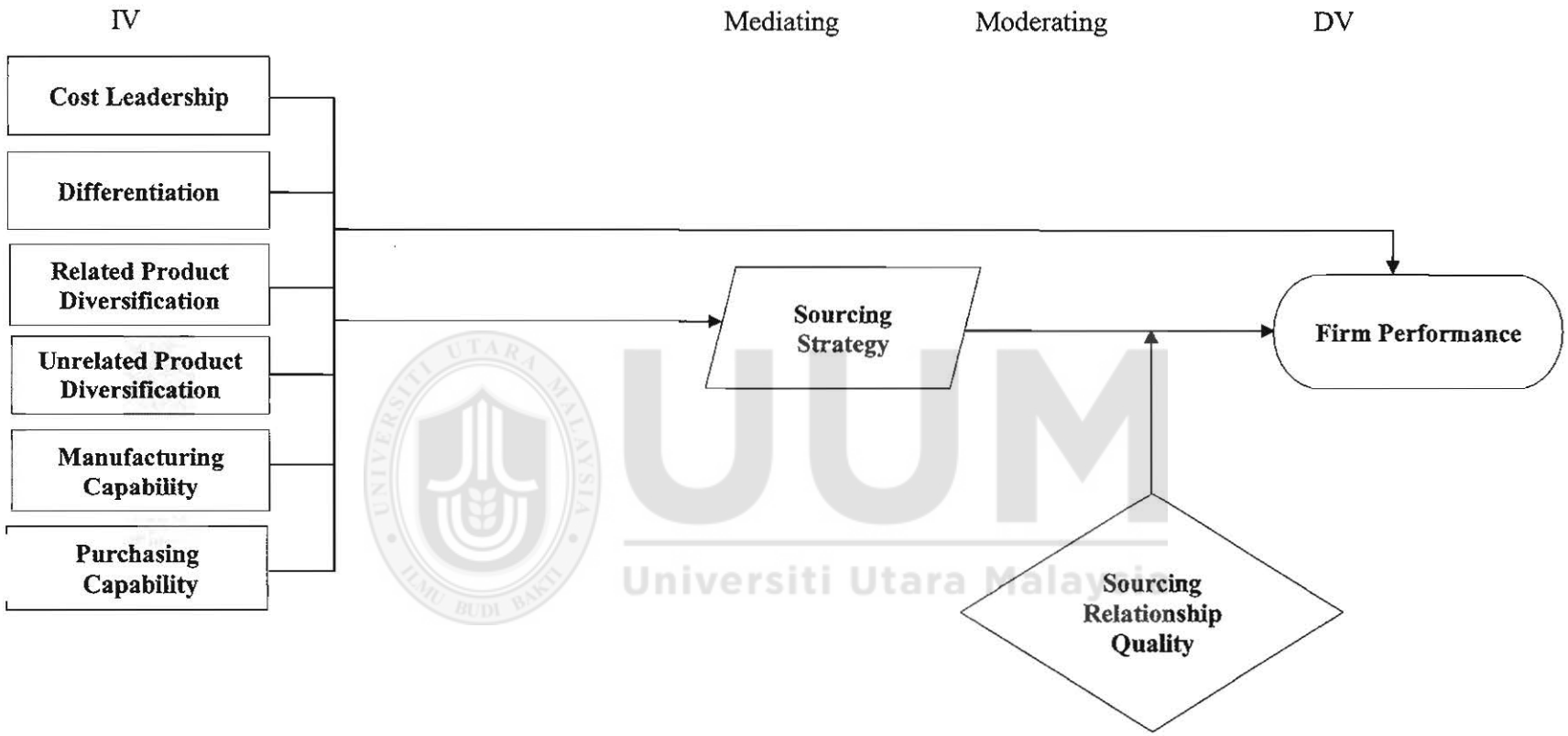

Figure 2.2: *Research Framework*

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2.11 Hypotheses of the Study

Based on the conceptualization and theoretical explanation, this study proposed the research framework. To provide empirical evidence and support this study developed twenty hypotheses. Following sections presents the hypotheses development discussions.

2.11.1 Competitive Strategy, Firm Performance and Sourcing Strategy

Manufacturing firms are expected to use strategies which could enable them to achieve overall goals which include greater added value and cost reduction on producing products via better efficiency and finally improve quality and services. According to Verbeek (2008), a firm's competitive strategy drives thereby leading to operations decisions that result in some desired performances which reduce the costs. However, the most important factors in the make-or-buy decisions are costs, availability of production capacity, and resources to effectively compete in the global marketplace and enhance performance (Dobler & Starling, 2003; Teeratansirikool *et al.*, 2014).

The relationship between firms' strategy and performance has been a major area of interest in strategic management research, and the RBV (Barney, 1991; Peteraf, 1993; Wernerfelt, 1984) has become a predominant theoretical framework. Apart from continuous trend to focus on firm resources, RBV has also generated new lines of research, for example, the relational view, the knowledge view and the dynamic capability approach for competitive advantage and performance. The RBV provides a theoretical framework for determining which resources and capabilities generate

sustainable competitive advantages and lead to above-normal rates of return (Andersen, 2011; Barney, 1991; Ortega, 2010; Wernerfelt, 1984).

Previous literature has suggested there have been two distinct lines of scholarly thinking: a firm needs to choose a strategy first and then acquire and deploy a set of resources to support that strategy, on the other hand a firm needs to acquire a distinct set of resources and capabilities first and then decide on a course of strategy that best utilizes the resource portfolio (Borch, Huse, & Senneseth, 1999; Finney, Campbell, & Powell, 2005).

The RBV postulates the importance of resources and capabilities to obtain competitive advantages as an end to a greater performance (Barney, 1991; Ortega, 2010; Peteraf, 1993). The RBV holds that competitive advantage comes from the firm's own resources and capabilities, focuses on identifying and determining the value of firm resources and capabilities and how firms can acquire, maintain, deploy, and develop resources and capabilities in a manner that establishes and sustains their competitive advantage (Ahuja & Katila, 2004; Berman *et al.*, 2002; Knott, 2003; Teng & Cummings, 2002; Zott, 2003;).

Enhance competitive advantage through cost leadership or differentiation literature suggest that some businesses can successfully integrate and combination of the two strategies and create synergies that eliminate the trade-offs associated and lead to superior firm performance (Andersen, 2011; Ortega, 2010; Spillan *et al.*, 2012).

Strategy literature provides numerous theories, research methodologies and ideas on the strategy-performance relationship. Strategy research has its roots in industrial organization (IO) theory which was discussed earlier in this section.Moreover, RBV

and TCE give the explanation of using a firm's resources and capabilities to specify the link with either firm has to produce a product internally through cost leadership strategy, or differentiate its competitiveness through buying from outside suppliers for greater its profit and performance. Core business outsourcing tends to be negatively related to capabilities (Hsiao *et al.*, 2010). RBV suggests that, when firms coordinate valuable, rare, and costly to imitate resources, diversification strategy based on related resources contribute to superior performance (Wan *et al.*, 2011).

RBV scaffold focuses on the specific characteristics of resources that provide sustainable sources of competitive advantage to diversified firms (Wan *et al.*, 2011). Hence, firms for related product diversification can exploit superior resources and manufacturing capability to enhance cost leadership strategy. On the other, hand deploying differentiation strategy for unrelated product diversification with purchasing capability, so they can take advantage of limitations to the resources and capabilities of the other firms in efficiently and effectively on the market. Obviously, if the superior performance of diversification is subject to the opportunities to share strategic assets, no single resource of diversification cannot assure competitive advantage indefinitely (Markides & Williamson, 1996).

H1a: Cost leadership strategy has positive effect on firm performance

H1b Cost leadership strategy has positive effect on sourcing strategy

H2a. Differentiation strategy has positive effect on firm performance

H2b Differentiation strategy has positive effect on sourcing strategy

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2.11.2 Strategic Flexibility, Firm performance and Sourcing strategy

Reflecting the continuously increasing trend of product diversification of firms in various industries, investigation of the effect of product diversification on firm performance has been a key research subject in diversification literature; however, evidence remains mixed. Regarding seemingly contradictory and inconclusive results of studies on the impact of product diversification on firm performance, the relationship between diversification and firm performance is complex, contingent on intervening factors, such as the type of diversification (Chatterjee & Wernerfelt, 1991; Chen & Chu, 2010; Hoskisson & Hitt, 1990; Miller, 2004; Palich *et al.*, 2000; Park & Jang, 2011).

The question of how firms should carry out product diversification to improve their performance has become the key issue in this line of enquiry. Most scholars suggest that firms that have diversified into areas related to their core businesses demonstrate better performance than others that have diversified into unrelated business fields (Markides &Williamson, 1994; Palich, Carini, & Seaman, 2000; Purkayastha, Manolova, & Edelman, 2012; Rumelt, 1982).

Following the above insight, scholars argue, implementing a diversification strategy is not a random walk (Pehrsson, 2006). That is, firms should choose to diversify by developing new products within the firms in areas surrounding their core competences and skills (Gemba & Kodama, 2001).However, this traditional insight has been criticized because a number of scholar's state that diversifying through the development of new products within a firm is a slower but risky route (Atuahene-Gima & Patterson, 1993; Caves, Crookell, & Killing, 1983; Killing, 1978).

In unrelated diversification, businesses invest in areas which have different range of technology, production process and market than theirs. (Koçoğlu, 2012). It takes place in a completely different market with different and new products. Unrelated diversification strategy provides businesses with advantage when they have low sales and profit rate in their existing branch of industry (Wheelen, & Hunger, 2012).

Kang *et al.* (2011) opined that product diversification engenders a trade-off between potential risks of going beyond the reasonable capacity to effectively offer diverse products and the possible demand externalities generated by offering a broad range of products. This study concerns about strategic flexibility (related and unrelated product diversification) its effect on firm performance (Browne *et al.*, 1984; Gerwin, 1993; Gupta & Somers, 1996; Taymaz, 1989). Thus, the following hypotheses were developed:

H3a: Related product diversification has positive effect on firm performance

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H3b Related product diversification has positive effect on sourcing strategy

H4a. Unrelated product diversification has positive effect on firm performance

H4b Unrelated product diversification has positive effect on sourcing strategy

2.11.3 Strategic Capability, Firm Performance and Sourcing Strategy

The notion of strategic capabilities does not necessarily preclude the existence of strategic groups, as members of groups often share common resources and similar capabilities (Assudani, 2008; Day, 1994; Teece *et al.*, 1990). Indeed, a number of studies have suggested links between organizational capabilities and business

strategies (Bowman and Ambrosini, 2003; Campbell-Hunt, 2000; Hoque, 2004; Hussey, 2002; Lopez, 2005; Pandza and Thorpe, 2009).

Capabilities of firms, strategy, and performance relationship are central issue to strategy management literature (Hsiao & Chen, 2013). Owing to its importance, many scholars have paid attentions to this issue and have examined the relationships from different approaches. Some scholars focused on investigating performance implications of different type of organizational capabilities in terms of R&D capability (Coombs & Bierly, 2006; Jayaram & Narasimhan, 2007; Lee *et al.*, 2015), manufacturing capability (Malik & Kotabe, 2009), marketing capability (Fang & Zou, 2009; Krasnikov & Jayachandran, 2008; Morgan *et al.*, 2009), and process capability (Benner & Tushman, 2003; Kristal *et al.*, 2010; Stoel & Muhanna, 2009). In general, these studies supported a positive association between organizational capabilities and firm performance and argued that firms need to develop and maintain unique capabilities to distinguish themselves from competitors and thus enables them to gain superior performance.

Empirical evidence provides in several studies suggest that there is strong and positive relationship between measures of operational performance and measures of financial performance (Britto, Corsi, & Grimm, 2010; Capkun, Hameri, & Weiss, 2009; Inman *et. al.*, 2011). Additionally, operational performance is often found to be an important preceding factor to financial performance (Inman *et al.*, 2011; Wouters, Kokke, Theeuwes, & Van Donselaar, 1999; Wu & Chuang, 2010). Moreover, in addition to having a direct relationship with financial performance, operational capabilities are often shown to help provide the linkage between resources and financial outcomes (Tallon & Pinsonneault, 2011; Vickery, Droge, Setia, & Sambamurthy, 2010).

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Several studies suggest that there is often a strong, positive relationship between measures of operational performance and measures of financial performance (Britto, *et al.*, 2010; Capkun, Hameri, & Weiss, 2009; Inman, Sale, Green, & Whitten, 2011). Additionally, organizational performance is frequently found to be an important preceding factor to financial performance (Inman *et al.*, 2011; Wouters *et al.*, 1999; Wu & Chuang, 2010). Indeed, in addition to having a direct relationship with financial performance, organizational capabilities are often shown to help provide the linkage between resources and financial outcomes (Tallon & Pinsonneault, 2011; Vickery *et al.*, 2010). Thus, in addition to a direct hypothesis between processing effectiveness and cost effectiveness, we also examine the role of processing effectiveness in the relationship between metrics and cost effectiveness.

Establishing an empirical link between organizational capabilities, and firm performance is challenging because organizational capabilities is a broad construct that is defined in many ways in the literature (Wu, *et al.*, 2010). Previous literature links process improvement to business performance, but such links contain certain degree of causal ambiguity (Linderman, Schroeder, & Sanders, 2010).

Apart from that, number of scholars agree that operational performance can be a source of competitive advantage (Tan, *et al.*, 2004; Wu *et al.*, 2010). Operational performance is commonly measured by manufacturing cost performance, delivery performance, flexibility, and product quality (Tan, Kannan, & Narasimhan, 2007). From this point of view this study assumes thatfirm with its manufacturing capability enjoy cost performance when flexible related product produces internally. Whereas, with process capability firm differentiate itself and will be financially benefited when buy unrelated product from supplier.

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Internal strategic resources represent the core capability of SMEs (Pang, 2008) and can be subdivided into three categories, strategic mindset capability, strategic resource management capability, and organizational self-adaption and renovation capability. Finding, recognizing, and making use of opportunities to improve decision making comprises an organization's strategic mindset.

Strategic managers are charged with the tasks of capturing and linking capabilities to strategic resources, and adapting to the changing external environment (Pang, 2008; Zhang, 2005). Previous studies that examined the relationship between competitive capabilities and business performance had revealed a significant association between these two variables (Avella & Bustelo, 2010; Grobler & Grubner, 2006; Rosenzweig, Roth, & Dean, 2003).

In an earlier study, Koufterous *et al.* (2002) reported that firms with competitive pricing capability have high levels of profitability. In another study Swink, Narasimhan, and Wang (2007) reported that delivery dependability, quality, and flexible product innovation posed a direct impact on a firm's financial performance. Given the considerable evidence that financial performance is positively influenced by multiple capabilities, as advocated by researchers Menor, Kristal, & Rosenzweig, (2007), Koufteros *et al.* (2002), Rosenzweig *et al.* (2003), and White (1996), this study conjectures:

H5a: Manufacturing capability has positive effect on firm performance

H5b. Manufacturing capability has positive effect on sourcing strategy

H6a. Purchasing capability has positive effect on firm performance

H6b. Purchasing capability has positive effect on sourcing strategy

2.11.4 Sourcing Strategy as a Mediating Variable

Previous researchers found that sourcing strategy (make or buy) has mix impact on firm's performance (Heide, Kumar, & Wathne, 2014). Sourcing is known for its effect on value chain or related manufacturing activities (Kotabe, 1998; Mol & Kotabe, 2011).

Literature suggested that sustainable competitive advantage and firm's performance can be affected by management capabilities to make strategic decision on sourcing strategy (Contractor *et al.*, 2010; Nyaga *et al.*, 2010). The costs of wrongful managerial decision to make or buy will eventually lead to firm failure (Leiblein *et al.*, 2002; Masten, 1993; Mol & Kotabe, 2011; Williamson, 1991). Thus, it is important to identify specific match between sourcing strategies and nature of products. The following hypotheses are established to address such strategic matters.

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H7. Sourcing strategy has positive effect on firm performance

H7a: sourcing strategy has mediating effect on the relationship between cost-leadership and firm performance.

H7b: Sourcing strategy has mediating effect on the relationship between differentiation strategy and firm performance.

H7c: Sourcing strategy has mediating effect on the relationship between related product diversification and firm performance.

H7d: Sourcing strategy has mediating effect on the relationship between unrelated product diversification and firm performance.

H7e: Sourcing strategy has mediating effect on the relationship between manufacturing capability and firm performance.

H7f: Sourcing strategy has mediating effect on the relationship between purchasing capability and firm performance.

2.11.5 Moderating Role of Sourcing Relationship Quality

Grounded in the social exchange theory, in this research defines the quality of relationship between buyer-supplier as a social relation which is; a buying firm and its supplier organizations formed and sustained because the dyads provide benefits to each other. When the benefits cannot be enjoyed by one side, the relation will discontinue (Lawler, *et al.*, 2000). A mutually beneficial relationship can be maintained by favor exchanges between supply chain partners. Social network and organizational linkages are significant factors in social capital (Eisenhardt and Schoonhoven, 1996).

Organizational trust and commitment are related to knowledge-sharing intention (Tsai and Cheng, 2012). Informed by social exchange theory, it suggests that supply chain partners focus on maintaining an enduring and reciprocal beneficial relationship together with the support of other constituencies for successful relationships with their partners. In the resource exchanges, partners in a supply chain are tied together through trust-based, active, and mutual bonds (Das & Teng, 2000). Therefore, this study developed following hypothesis:

H8. Sourcing relationship quality has moderating effect on sourcing strategy and firm performance relationship.

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This chapter presents the review of literature that explored the challenges and opportunities a manufacturing firm face as they strive to cope with contemporary competitive environment in the marketplace. The literatures on the sourcing of make and buy strategies highlight the intensity of the competition in the marketplace. To compete in this competitive marketplace firms, need strategically flexible. Product diversification (related and unrelated) posits in this study as strategic flexibility of manufacturing firms.

Manufacturing firms to achieve cost leadership can diversify to the related product whereas to differentiate and growth a firm can produce unrelated product by opting buy strategy. However, to make related product in-house a manufacturing firms need to have that manufacturing capability by which it can achieve cost leadership. Producing unrelated product to meet the customer demand in this competitive arena a firm will opt buy strategy because then firm need to have purchasing capability to coordinate the process of purchasing the product from suppliers. Combination of these strategies will enable manufacturing firm to enhance its desired performance.

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2.12 Summary of Hypothesis

Research Question	Research Objectives	Hypothesis
What is the effect of competitive strategy (cost-leadership and differentiation strategy) on sourcing strategy and firm performance?	To determine the choices of cost-leadership strategy and differentiation strategy of manufacturing firms in Bangladesh to opt sourcing strategy option. Therefore, this study investigated the effect of competitive strategy (cost-leadership and differentiation strategy) on sourcing strategy and manufacturing firm performance.	H1a: Cost leadership strategy has positive effect on firm performance H1b. Cost leadership strategy has positive effect on sourcing strategy H2a. Differentiation strategy has positive effect on firm performance H2b Differentiation strategy has positive effect on sourcing strategy
What is the effect of strategic flexibility (related product diversification and unrelated product diversification) on sourcing strategy and firm performance?	To understand the product diversification strategy of manufacturing firms as strategic flexibility whether related product or unrelated product should make internally or buy from other firms. To understand that this study investigated the effect of strategic flexibility (related product diversification and unrelated product diversification) on sourcing strategy and manufacturing firm performance.	H3a. Related product diversification has positive effect on firm performance H3b Related product diversification has positive effect on sourcing strategy H4a. Unrelated product diversification has positive effect on firm performance H4b. Unrelated product diversification has positive effect on sourcing strategy
What is the effect of strategic capability (manufacturing capability and purchasing capability) on sourcing strategy and firm performance?	To determine the strategic capability of a manufacturing firm to opt sourcing strategy which in turn achieve better performance. Therefore, this study investigated the effect of strategic capability (manufacturing capability and purchasing capability) on sourcing strategy and firm performance.	H5a: Manufacturing capability has positive effect on firm performance H5b. Manufacturing capability has positive effect on sourcing strategy H6a. Purchasing capability has positive effect on firm performance

		H6b. Purchasing capability has positive effect on sourcing strategy
What is the mediating effect of sourcing strategy on the relationship between strategic orientation, strategic flexibility, strategic capability and firm performance?	To determine that sourcing strategy as a strategic weapon to improve manufacturing firm performance. Therefore, this study investigated the mediation effect of sourcing strategy on the relationship between competitive strategy, strategic flexibility, strategic capability and firm performance.	H7. Sourcing strategy has positive effect on firm performance H7a: Sourcing strategy has mediating effect on the relationship between cost-leadership and firm performance. H7b: Sourcing strategy has mediating effect on the relationship between differentiation strategy and firm performance. H7c: Sourcing strategy has mediating effect on the relationship between related product diversification and firm performance. H7d: Sourcing strategy has mediating effect on the relationship between unrelated product diversification and firm performance. H7e: Sourcing strategy has mediating effect on the relationship between manufacturing capability and firm performance. H7f: Sourcing strategy has mediating effect on the relationship between purchasing capability and firm performance.
What is the moderating effect of sourcing relationship quality on the relationship between sourcing strategy and manufacturing firm performance?	To identify the quality of the relationship with other firms which can affect the manufacturing firm's performance when they consider sourcing decision. Therefore, this study investigated the moderating effect of sourcing relationship quality on the relationship between sourcing strategy and manufacturing firm performance.	H8. Sourcing relationship quality has moderating effect on sourcing strategy and firm performance relationship.

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2.13 Summary

This chapter presents the review of literature that explored the challenges and opportunities a manufacturing firm face as they strive to cope with contemporary competitive environment in the marketplace. The literatures on the sourcing of make and buy strategies highlight the intensity of the competition in the marketplace. To compete in this competitive marketplace firms, need strategically flexible. Product diversification (related and unrelated) posits in this study as strategic flexibility of manufacturing firms.

Manufacturing firms to achieve cost leadership can diversify to the related product whereas to differentiate and growth a firm can produce unrelated product by opting buy strategy. However, to make related product in-house a manufacturing firms need to have that manufacturing capability by which it can achieve cost leadership. Producing unrelated product to meet the customer demand in this competitive arena a firm will opt buy strategy because then firm need to have purchasing capability to coordinate the process of purchasing the product from suppliers. Combination of these strategies will enable manufacturing firm to enhance its desired performance.

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CHAPTER THREE
METHODOLOGY

3.1 Introduction

This chapter states the methodology that is used for the present study. An elaboration of the research design and operationalization of variables are given at the outset. Researcher then presents the list of measurements to measure the variables of the study. The next section explains the research design of the study. This is followed by data collection procedure. This chapter is organized around these sections before concluding the chapter with the explanation of various statistical techniques that was used for data analysis.

3.2 Research Design

Research design could be considered as a road map or a technique, which contains sequential decisions and strategies that the researcher should make at certain points of the research process; these decisions help in clarifying the research plan that should be adopted to answer the research questions (Creswell, 2013; Flick, 2009) and meet the objectives of the research. Avison and Fitzgerald (1995) discussed design of a research as a collection of procedures, techniques, tools and documentation. It is generally based on some philosophical paradigm; otherwise it is merely a method, like a recipe. Research design comprises of blueprint for collection, measurement, and analysis of data (Cooper & Schindler, 2008). Berry (1983) explains that the domain of research methodology is not confined within the limit of data collection and rules for confirmation but greater ways of explanations

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and producing those explanations are evident in the research design. Thus, research design helps to develop the knowledge of explanation in the field of research.

The design employed in this study is a quantitative research design. According to Leedy and Ormrod (2010), a quantitative research study was appropriate when attempting to measure a variable. The advantage of the quantitative research study is its appropriateness for correlation studies, regression analysis, trend lines, and statistics that gathered evidence concerning the relationship of variables (Rubin, 2007).

The basis for the cross-sectional survey research methodology is to produce quantitative or numerical descriptive statistics about the characteristics of the study population (Creswell & Miller, 2000). Notwithstanding, above discussion give insight and justification to conduct this research through survey questionnaire. Therefore, a questionnaire was administered to the subjects of the survey design study (Babbie, 2007). In this study, survey design was adapted, and a questionnaire was administrated to collect data from manufacturing firms. Considering the research questions and hypotheses of the study Structure Equation Modelling (SEM-PLS) approach was applied to analysis data.

Rationale for using quantitative method is it allows the researchers to find-out solution for research problem in a concerted manner (Frankfort-Nachmias & Nachmias, 1992). The quantitative research methods are suitable for understanding

what factors or variables influence an outcome. It can also be used to describe trends and explain the relationships among variables.

For the present study, a survey method was used to collect data. Kerlinger and Lee (2000) mentions that survey research is the best suited to collect facts, beliefs or attitudes relating to personal and social aspects. In the same vein, Kotler, Keller, Koshy and Jha (2009) mention that survey method is used to learn knowledge, beliefs, preferences and satisfaction. A cross-sectional study method for data collection is chosen over a longitudinal one because of the difficulty in getting the same participants over large time scales as the latter entails. Nonetheless, a cross-sectional study usually has the advantage of having a much more diversified sample than a longitudinal study, and therefore, the findings are more generalizable (Saunders *et al.,* 2000). In the context of manufacturing firms of Bangladesh, this approach was seemed suitable as several previous researches used this method.

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The researcher attempted to identify and obtain a good grasp of firm performance and strategic combination of the manufacturing firms in Bangladesh. As a cross-sectional study, data were collected once to response the survey questions which are identified and given in chapter one. In the cross-sectional studies data were gathered just once within a limited expanse of time where respondents were asked to reflect their past experience to answer the given questionnaire (Cooper & Schindler, 2006; Sekaran & Bougie, 2010; Zikmund, Babin, Carr & Grifin, 2010). The research questionnaire (see. Appendix B) was developed from existing instruments used in strategic management studies. Nature of the study is explained in next section.

3.2.1 Nature of the Study

The quantitative aspect of this study tends to be associated with the positivistic paradigm. The positivistic philosophy portrays the world as a fixed, measurable and objective reality with its historical background being the physical sciences. The positivist ontological view is reality is objective and singular apart from the researcher (Tuli, 2010). The epistemological assumptions are that knowledge is objective and measurable (Mack, 2010), and the axiological assumption is on the researcher's commitment to explanation (Fischer, 1990). Descriptive, comparative, correlational and causal comparative strategies and experimental research are generally the methodological assumptions for positivism (also called logical positivism and post-positivism) (Mustafa, 2011). From the positivism point of view relationship among the variables are measured in this study. Following section presents the operationalization and measurement of the study variable.

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3.3 Operationalize and Measurement of Constructs of the Study

In this section, all variables under study were operationalized and attempts were made to find out appropriate validated and suggested measures from the past literature for each of them. The dependent, independent, moderating, and mediating variables were estimated through reflective measures which were adapted from past studies and a total of 61 scale items (respondents' demographic information consists 7 additional items for demography) were thus used to fully measure the constructs under study.

Table 3.1
Summary of Variables, Dimensions and Total Number of Items

Variables and Sources	Dimensions	Total Items
Competitive Strategy (Allen *et al.* 2006; Hilman, 2009; Morrison, 1990)	Cost-leadership	6
	Differentiation	11
Strategic Flexibility (Aker & Mascarenhas, 1984; Swamidass & Newell, 1987; Hilman and Mohamed, 2013).)	Related product diversification	5
	Unrelated product diversification	5
Strategic Capability (Jao, 1996; Krasnikov & Jayachandran, 2008; Ruiz-Ortega & Garcı´a-Villaverde, 2008)	Manufacturing Capabilities	5
	Process Capabilities	4
Sourcing Strategy (kotabe & Omura, 1989)	Make strategy/Buy strategy	12
Sourcing Relationship Quality (Lee. 2001)	Relationship quality	5
Firm Performance Venkatraman and Ramanujam, 1986; Hilman & Mohamed, 2011; Lee & Miller, 1996 & Kaplan & Norton, 1996)	Financial and non-financial performance	7

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The constructs' operationalization of the study is explained in the consequent sections. Explanation of operational definitions and measurements are begun with the competitive strategy; independent variable of this study. In addition, constructs were operationalized in this study were adapted from previous studies and reported reliability of the constructs were above 0.70 as suggested by Nunally (1978). Operationalization of the competitive strategy variable is explained in following section.

3.3.1 Competitive Strategy

Competitive strategy was consisted of two dimensions in this study, namely; cost-leadership and differentiation. It refers to Porter (1985) generic strategies that a firm opt to generate above-average performance in the long run. The dimensions were measured by utilizing an existing instrument that are adapted from the studies conducted by Allen *et al.* (2006) Hilman, (2009) and Morrison. (1990). With minor modification on wording that cost-leadership strategy was consisted of 6 items and differentiation strategy was consisted of 11 items. Both constructs cost-leadership and differentiation were measured by using 7-point Likert scale, "1 = not at all important" to "7 = extremely important". Following Table 3.2 and 3.3 shows the measurement items for cost-leadership strategy and differentiation strategy respectively.

Table 3.2
Cost Leadership Strategy Measurements of the Study

No	Items	Source
1	Vigorous pursuit of cost reductions	Allen *et al.* 2006; Hilman, 2009; Morrison, 1990
2	Tight control of overhead and variable costs	
3	Minimizing distribution costs	
4	Emphasizing high capacity utilization	
5	Developing efficient manufacturing processes	
6	Price at or below competitive price levels	

Source: Allen *et al.* (2006), Hilman, (2009), Morrison, (1990)

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Table 3.3
Differentiation Strategy Items of the Study

No	Items	Source
1	Innovation in marketing technology and methods	Allen *et al.* 2006; Hilman, 2009; Morrison, 1990
2	Forecasting new market growth	
3	Forecasting existing market growth	
4	Utilizing advertising	
5	Fostering innovation and creativity	
6	Developing brand identification	
7	Refining existing products/services	
8	Building a positive reputation within the industry for technological leadership	
9	Extensive training of marketing personnel	
10	Developing a broad range of new products/services	
11	Building high market share	

Source: Allen *et al.* (2006), Hilman, (2009), Morrison, (1990)

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Strategic flexibility operationalized by two dimensions which is explained in detail in following section.

3.3.2 Strategic Flexibility

Strategic flexibility operationalized by two dimensions namely related product diversification and unrelated product diversification. The dimensions were measured by utilizing an existing instrument that were adapted from the study conducted by Aker and Mascarenhas (1984), Swamidass and Newell (1987), Hilman (2009).

Related and Unrelated product diversification both constructs were measured by five items each. To measure both dimensions related and unrelated product diversification this study similarly used 7-point Likert scale, Decreasing Substantially to Increasing Substantially used by previous study (Hilman, 2009). Following Table 3.4 and 3.5 demonstrates the measurement items for related and unrelated product diversification respectively.

Table 3.4
Related Product Diversification Items of the Study

No	Items	Source
1	Number of related products in primary industry	Aker and Mascarenhas (1984), Swamidass and Newell (1987), Hilman (2009)
2	Number of new and related product introduction	
3	Number of new and related product variety	
4	Number of new and related product features	
5	Investment in R&D for new and related product	

Source: Aker and Mascarenhas (1984), Swamidass and Newell (1987), Hilman (2009)

Table 3.5
Unrelated Product Diversification Items of the Study

No	Items	Source
1	Number of unrelated products in primary industry	Aker & Mascarenhas (1984) Swamidass & Newell (1987) Hilman (2009)
2	Number of new and unrelated product introduction	
3	Number of new and unrelated product variety	
4	Number of new and unrelated product features	

5	Investment in R&D for new and unrelated product

Source: Aker and Mascarenhas (1984), Swamidass and Newell (1987), Hilman (2009)

Following section demonstrates the operationalization of the strategic capability of the manufacturing firms.

3.3.3 Strategic Capability

Strategic capability was operationalized in this study as; the combination of manufacturing capability and purchasing capability of a manufacturing firms. Strategic capability is consisted of two dimensions namely manufacturing capability and purchasing capability. The dimensions were measured by utilizing an existing instrument that are adapted from the study conducted by Barney, (1991), Desarbo *et al.* (2005), Hall, (1993), Krasnikov and Jayachandran, (2008) and Ruiz-Ortega and Garcıa-Villaverde (2008). To measure strategic capability (manufacturing and purchasing capability) Seven-point Lickert scale 1 = strongly disagree to 7= strongly agree was applied. Items are presented in next Table 3.6 and 3.7 respectively.

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Table 3.6
Manufacturing Capability Items of the Study

No	Items	Source
1	Our company has better abilities than the competitors in mass production.	Barney, (1991),
2	Our company has better abilities than the competitors in materials purchase and inventory control.	Desarbo *et al.* (2005), Hall,
3	Our company has better abilities than the competitors in capacity management.	(1993), Krasnikov and

4	Our company has better abilities than the competitors in process management.	Jayachandran, (2008)
5	Our company has better abilities than the competitors in product quality management.	

Source: Barney, (1991), Desarbo *et al.,* (2005), Hall, (1993), Krasnikov and Jayachandran, (2008)

Table 3.7
Purchasing Capability Items of the Study

No	Items	Source
1	Our company has better abilities than the competitors in coordination among different departments to purchase.	Barney, (1991), Desarbo *et al.* (2005), Hall, (1993), Krasnikov and Jayachandran, (2008)
2	Our company has better abilities to purchase than the competitors in integration among different departments.	
3	Our company has better purchasing abilities than the competitors in coordination with other firms.	
4	Our company has better purchasing abilities than the competitors in integration with other firms.	
5	Our company has better abilities than the competitors in logistics supports to buy product from supplier or other firm	

Source: Barney, (1991), Desarbo *et al.,* (2005), Hall, (1993), Krasnikov and Jayachandran, (2008)

Operationalization of the sourcing strategy of the manufacturing firms is explained in next section.

3.3.4 Sourcing Strategy

Sourcing strategy was measured in this study as the choice of firms sourcing option either make or buy strategy. Sourcing strategy measurements items were adapted from the study conducted by Kotabe and Omura (1989) and Hilman (2009). Sourcing

strategy variable consisted of 12 items. To measure make or buy strategy 7 points Lickert Scale was used "Not at all Important to Extremely Important". Respondents were asked to respond either make or buy strategy when their respective firm's majority components of the one major product are produce in-house, whereas, if majority of components or full product of a major product are supplied by external suppliers. Following in Table 3.8 presents the items of sourcing strategy.

Table 3.8
Sourcing Strategy Items of the Study

No	Items	Source
1	Lower prices	Kotabe and Omura (1989) and Hilman (2009)
2	Better quality	
3	Better delivery performance	
4	Better availability	
5	Access to advanced technology	
6	Better customer service	
7	Easy to change product design	
8	Enhanced competitive position	
9	Helps meet countertrade obligation	
10	Easy to resolve problems	
11	Better communication	
12	Better geographic location	

Source: Kotabe and Omura (1989) and Hilman (2009)

Following section presented the explanation of the operationalization of sourcing relationship quality which is the moderating variable of this study.

3.3.5 Sourcing Relationship Quality

Sourcing relationship quality emphasize on the strength of firm's relationships that stimulate strong and more intimate partnerships with buying/suppling firms that

increase the effectiveness and improve performance of firm. Sourcing relationship quality is a moderating variable in this study and one-dimension variable. Sourcing relationship quality dimension was measured by utilizing an existing instrument that are adapted from the study made by Lee (2001). Sourcing relationship quality consists of five items. To measure sourcing relationship quality 7-point Likert (strongly disagree to strongly agree) scale was applied to answer the question in this construct. Following in Table 3.9 represents the items used to measure sourcing relationship quality in this study.

Table 3.9
Sourcing Relationship Quality items of the Study

No	Items	Source
1	We make mutually beneficial decisions in most circumstances	
2	We understand each other's' business well	
3	We share the benefits and risks of our business	Lee (2001)
4	We share compatible culture and policies	
5	We fulfill pre-specified agreements and promises in most cases	

Source: Lee (2001)

Dependent variable which is firm performance has been explained in following section.

3.3.6 Firm Performance

Firm performance is the out of an organization to measure its success. This is dependent variable of to measure outcome of strategic fit proposed in this study. Number of approach applied to measure firm performance. Financial and non-financial

performance of a manufacturing firm in this study were used and adapted from existing instrument (Hilman & Gorondutse, 2013; Hilman & Mohammed, 2011; Venkatraman & Ramanujam, 1986; Lee & Miller, 1996; Kaplan & Norton, 1996). Seven items were consisted to measure firm performance. Table 3.10 shows the items used to measure firm's performance in this study.

Table 3.10
Firm's Performance items of the Study

No	Items	Source
1	Return on Sales (ROS)	
2	Return on Investment (ROI)	
3	Market Share	Hilman & Gorondutse,
4	Sales growth rate	2013; Hilman &
5	Innovation and Learning Perspective	Mohammed, 2011
6	Customer Perspective	
7	Internal Business Perspectives	

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3.4 Population of the Study

Manufacturing firms in Bangladesh are the population of this study. Population of this study was estimated as comprised all types of manufacturing firms (All manufacturing sector) in Bangladesh. from the latest industrial census, estimated manufacturing firms in Bangladesh were 42,792 regardless of size (Bangladesh Bureau of Statistics, 2013). Following in Table 3.11 shows the total number of manufacturing firms.

Table 3.11
Number of manufacturing Firms in Bangladesh

Total	**42,792**

Source: Bangladesh Bureau of Statistics (2013)

3.4.1 Unit of Analysis Determination

To conduct social science research Hair *et al.* (2010) suggested that a unit of analysis can be considered as an individual, a social interaction or a group of organizations. Unit of analysis should be consisted and aligned with research problems, research questions and objectives of study (Hilman & Gorondutse, 2013). Objective of this study was to give a better strategic fit to manufacturing firms in Bangladesh to improve performance. This study considered "a manufacturing firm" as a unit of analysis of the study. Hence, a single manufacturing firm was a unit of analysis of this study.

3.4.2 Sample and Sampling Approach

To determine sample size Sekaran and Bougie (2010) suggests that to multiply the number of variables for a research with 10. Whereas, Hair, Anderson, Tatham and Black (2010) mentioned that the desired number sample for each variable should be between15 to 20.

Krejcie and Morgan (1970) suggest in their sample size table to select a sample size of 384 for the population of 1 million. Moreover, Hair, Black, Babin, and Anderson (2010) ideally suggest a sample size range of 100 to 400 for using structural equation modeling. Also, it is explained that a sample size of over 500 could be prone to Type II errors which means we might discover the hypotheses getting accepted whereas

they should have been rejected mainly since with larger sample size than this, there are chances that even weak relationships reach to significance levels (Sekaran, 2003, p.295). Moreover, by considering the complexity of the model which implies taking into consideration every free parameter to be estimated, the suggested minimum ratio for sample size to items is 5:1 (Bentler & Chou, 1987; Worthington & Whittaker, 2006), however, some scholars also further opine it to be 10:1 (Kline, 2005; Worthington & Whittaker, 2006).

However, Current study utilizes the statistical table provided by Krejcie and Morgan (1970) to select the sample size. In consonance with Krejcie and Morgan (1970), the population frame for the present study is 42,792 firms, then the number of sample in this study was determined 381 manufacturing firms in Bangladesh. To distribute the survey questionnaire to these 381, sampling design of this study thus explain in following section.

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3.4.3 Sampling Design Approach

The study used systematic random sampling technique to select each element of sample to distribute the questionnaire. In the systematic sampling technique, equal-probability method is used to pick the sample unit (Black, 2010). This procedure assures known and equal probability of selection of each element in the study population which makes it basically equivalent to simple random sampling technique (Black, 2010) and simple, flexible and versatile form of probability sampling technique (Cooper & Schindler, 2006). This above discussion was guided this study to use probability sampling method to select manufacturing firms in Bangladesh to

distribute the survey questionnaire. Following section presented detail about the distribution and collection of data in detail.

The study used systematic random sampling technique to select each element of sample to distribute the questionnaire. In the systematic sampling technique, equal-probability method is used to pick the sample unit. Within this method, three things are considered, namely sampling interval (*k=skip interval*), sample size (*n*) and size of population (*N*) (Black, 2010). To find out the *skip* or k^{th} element these three elements are used in the form of the following equation:

$$k = \frac{N}{n}$$

In this approach, every *k*th element is sampled started from the randomly selected element in the range of 1to *k*. Initially, to find-out the *k*th element population frame was divided by the sample size selected following the table suggested by Krejcie and Morgan (1970). Later on, a starting company name was selected from the *k*th element or skip interval through random basis by putting all the element numbers (skip interval) in a box. For the present study, this skip interval is 8 companies and 4th number company was selected on random basis and subsequent companies were selected by adding the 4th number with the skip interval and so on (Cooper & Schindler, 2006). This procedure assures known and equal probability of selection of each element in the study population which makes it basically equivalent to simple random sampling technique (Black, 2010).

3.5 Data Collection Procedures

For this study, data of this study were collected from manufacturers in Bangladesh through survey questionnaire with the help of some paid research assistant and personally. Veal (2006) mentions that in field of management research, questionnaire survey is the most general technique to complete the data collection stage. Similarly, in the management research this method facilitates the researcher to judge the collected information very quickly (Zikmund *et al.*, 2010). Sekaran and Bougie (2010) explained that data collection and following analysis is facilitated by surveys and by this way researcher can easily find out the answers relating to research question with more accuracy. According to Sekaran and Bougie (2010) this method is more suited when a particular survey is relating to a specified location and selected organization is ready to avail its employees to provide their responses to the queries.

Manufacturing Industry in Bangladesh is the population for this study. The unit of analysis is a manufacturing firm. In time of distributing the questionnaire a cover letter was accompanied that socialized the responding firms about the purpose of study, request for prompt response and an assurance of not disclosing the information provided and maintenance of anonymity.

To complete data collection fast and avoid errors in responding to survey questionnaire this researcher appointed 11 assistants in Bangladesh. Research assistants were well-educated and current students or graduate from university. Researcher explained about the research objectives to these assistants. Trained them before distributing the questionnaire to the manufacturing firms. Instruction was given

to assistants that remind respondents to complete survey instrument. Next section explains the ethical concern of this study.

3.5.1 Confidentiality and Consent

Informed consent is a legal and ethical requirement prior to conducting research that includes human subjects. Each participant was treated fairly and in an ethical manner. Prior to data collection, participants of this study were informed of the purpose of the study, retain the right to not answer questions at any time, and provide written and verbal consent (Appendix B Data Collection Approval).

Confidentiality methods and data protection must be reviewed before gathering data for a research project (Leedy & Ormrod, 2010). Laws and regulations related to confidentiality often restrict the availability of the data to be collected. Leedy and Ormrod (2010) stated a viable research must pursue information available and not protected by these regulations. Participants and organizations remain anonymous in the publication of gathered information. Therefore, this study ensured the confidentiality to the participant and explained the purpose of study. Design of the survey questionnaire used in this study is explained in detail in following section.

3.5.2 Design of the Survey Questionnaire

This study used a survey-based approach and used appropriate scales from the literature; a multi-items scale for each construct to offer a comprehensive evaluation of the constructs and the model in line with suggestions made by Churchill (1979), and Peter (1979). The survey instrument was pretested after adapted from literature.

Two stages pretest were conducted to validate before finalizing the survey questionnaire.

Firstly, two experienced researchers critiqued the questionnaire for ambiguity, clarity, and appropriateness of the measures used to operationalize each construct. The items were modified from in accordance with the experts. A professor of strategic management from University Utara Malaysia critiqued the questionnaire. According to his suggestions items of the questionnaire were modified. Secondly, survey instrument was validated through different measures during the pilot study. Moreover, the operationalization of constructs was measure by using a 7-point interval scale in accordance with the recommendations made by Krosnick and Fabrigar (1997), which ranged from 1(strongly disagree) to 7(strongly agree). Modified version of survey instrument with demography information as was deployed to collect data. Detail about the survey questionnaire is attached in Appendix A. Expert validation of the questionnaire was conducted which is explained in next section.

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3.5.3 Expert Validation of Instrument

After developing the questionnaire from the previous studies face and construct validity assessment was conducted. Questionnaire was sent to two strategic management professors to critique and check ambiguity, clarity, and suitability of the items used to operationalize each construct. Their assessment leaded to the further modification of the items to measure the construct. In accordance with expert's opinion rewording, re-arranging of the items was made. Consecutive edited instrument of the study was deployed to collect data for pilot test. Pilot test was

conducted to ensure the reliability of the constructs and understanding of the instrument by respondents. Subsequent section explains and presented the pilot test conducted for this study. After confirming the expert validation, a pilot test was conducted. The following section discusses about the reliability of pilot test.

3.5.4 Reliability of Pilot Test

Reliability is the assessment of the level of consistency among multiple measurements of a construct (Hair *et al.*, 2010). Therefore, to measure the consistency of items used to measure a construct, the reliability analysis of the instrument was conducted. The reliability of the instrument implies that the measure will produce the same results if used repetitively.

Following the mainstream of social science research, this study used the Cronbach's alpha method to evaluate the reliability of the measurements. The Cronbach's alpha coefficient indicates the consistency of the items that measure the same construct. In other words, a high Cronbach's alpha coefficient indicates that the items of the construct show high consistency and share high tendency to measure the meant construct. In determining the acceptable and threshold cut point of the Cronbach's alpha coefficient, Nunnally (1978) suggested some minimum standards for Cronbach's alpha. For instance, Cronbach's alphas 0.7, 0.8 and 0.9 for exploratory, basic and critical issue-based research respectively. Following in Table 3.12 shows the present study's pilot test result.

Table 3.12
Reliability Result of Pilot Test

Constructs	No of Items	Cronbach's Alpha (α)
Cost-leadership	6	0.747
Differentiation	11	0.938
Related Product Diversification	5	0.880
Unrelated Product Diversification	5	0.858
Manufacturing Capability	5	0.813
Purchasing Capability	5	0.788
Sourcing Strategy	12	0.958
Sourcing Relationship Quality	5	0.926
Firm Performance	7	0.967

Above result reported in Table 3.12 shows that all constructs operationalized in this study were above 0.70. Result of reliability test performed in this study was above threshold value suggested by Nunally (1978).

3.6 Measurement Error Control Approach

In terms of Hair *et al.* (2010), measurement error can be termed as the degree to which the variables we can measure do not perfectly describe the latent construct(s) of interest. Measurement error can arise from many sources like errors in simple data entry to definition and operationalization of constructs. Sometimes, it might arise even from the respondent 's answers. For example, some respondent answers that he would act in a certain manner. However, when he goes for buying, he behaves in a different manner than what he stated in the questionnaire. This kind of situation may also lead to measurement errors. Moreover, scaling techniques can also lead to measurement error.

As such, in this study, it was attempted to keep the measurement error at its absolute minimum by using interval scales for the items and by conducting different kind of

validity and reliability tests for both pilot test as well as for the main study. Face and content validity were conducted during instrument development stage whereas convergent and discriminant validity were conducted for the main study showing that the measures determined for this study are doing their job properly. Moreover, use of structural equation modeling (SEM) also considers the measurement error in making the estimates of relationships among the various constructs (Hair *et al.*, 2010). This study employed variance-based SEM using Smart PLS 2.0 (Beta) software developed by Ringle, Wende, and Will (2005) which seeks to ensure that measurement errors are minimized and duly accounted for, right from the beginning of drawing the measurement model. Ensuring the measurement model has leaded to the data analysis and hypotheses testing. Detail about the data analysis procedure is explained in following section.

3.7 Data Analysis Tools and Approach

Data analysis was done by employing a combination of descriptive and inferential statistics. Descriptive analysis was done using SPSS 22 which sought to explain the general understanding about the profiling, demography, etc. by summarizing the data and by offering various kinds of tabular presentations, and it attempted to describe the data by showing the frequency of occurrence of various outcomes (Agresti & Finlay, 2009). Moreover, in descriptive statistics, the center of the data as well as the variability of the data set was presented and discussed to bring in more understanding of the issues.

For analyzing data and testing the research hypotheses and the proposed model, the current research used Partial Least Squares(PLS) path modeling technique with

SmartPLS3. Previous research argued compare to other co-variance-based analysis tool PLS is less restrictive which can deal with small sample size, distributional assumption, and model complexity (Chaouali, Yahia, & Souiden, 2016; Chin, 2010; Hair *et al.*, 2014; Lowry & Gaskin, 2014; Ringle *et al.*, 2012). The analysis follows two steps; the first step evaluates the measurement model, while the second assesses the structural model. Statistical significances of item loadings and path coefficients are generated using a bootstrapping. Beginning of the analysis was with descriptive statistics and respondents profile.

3.7.1 Descriptive Statistics

Descriptive statistics are used to summarize data, and to describe phenomena of interest (Sekaran & Bougie, 2010). The major descriptive statistics are the mean, median, range, mode, variance, and standard deviation (Sekaran & Bougie, 2010; Tabachnick & Fidell, 2001). To serve the purpose of getting data in a clear shape, several descriptive statistical values will be obtained including mean and standard deviations values. These ensured easy understanding and interpretation of data. Additionally, several descriptive statistics will be run as to identify the sample population. These measures ensured the appropriate selection of the statistical analysis procedures and to allow characterization process of the sample in terms of socio-demographic factors.

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3.7.2 Confirmatory Factor Analysis (CFA)

This section discussed on confirmatory factor analysis (CFA), certified measurement scales are subjected to confirmatory factor analysis CFA as a technique to finalize the

scales (Hair *et al.*, 2006; de Vellis, 1991). CFA is conducted on the main survey data (Hair *et al.*, 2006; Gerbing and Anderson, 1988). CFA is used to authenticate that the number of latent constructs underlying the items tally with the figure that the researcher may expect (Hair *et al.*, 2006; de Vellis, 1991). Moreover, if the factor analysis discovers precisely the item groupings that researchers intended when creating the items, the researchers will have strong substantiation of their initial hypothesis relating to how the items should relate to one anotherl (de Vellis, 1991). In this study, CFA was used for testing whether the pre-specified association predicted by the theory is existing in the data (Hair *et al.*, 2010; Huang, 2001; Hair *et al.*, 2006). Like Explanatory Factor Analysis (EFA), CFA can be used to reduce the number of items (Netemeyer *et al.*, 1996).

3.7.3 Structure Equation Modelling (SEM)

The emergence and development of SEM was regarded as an important statistical development in social sciences in recent decades and this "second generation" multivariate analysis method has been widely applied in theoretical explorations and empirical validations in many disciplines (Doloi, Sawhney, & Iyer, 2012; Xiong, Skitmore, & Xia, 2015).

Recent literature suggested that, with other statistical tools such as factor analysis and multivariate regression, SEM carries out factor analysis and path analysis simultaneously (Doloi *et al.*, 2012; Ozorhon, Arditi, Dikmen & Birgonul, 2008; Xiong *et al.*, 2015).

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- Measure and accommodate errors of manifest variables (observed variables)
- Represent ambiguous constructs in the form of latent variables (unobserved variables) by using several manifest variables; and
- Simultaneously estimate both causal relationships among latent variables and manifest variables

Clearly, the best solution for addressing measurement error is to create and use more reliable measures (Aguinis & Edwards, 2014; Aguinis & Vandenberg, 2014). However, as a second-best option, some of the effects of measurement error can be offset by using structural equation modeling (SEM) with latent variables (Bollen, 1989), which has become increasingly prevalent in strategic management research (Shook, Ketchen, Hult, & Kacmar, 2004). SEM was applied to in this study to overcome some issues such as; to avoid the beset poor-quality measures or that using SEM gives researchers an excuse to disregard fundamental measurement issues such as reliability and construct validity. Moreover, conventional applications of SEM only correct for certain sources of measurement error (DeShon, 1998), and other sources require more elaborate model specifications. Nevertheless, SEM offers important advantages over procedures that ignore measurement error completely.

3.7.3.1 Partial Least Squire Approach (SmartPLS)

For analyzing data and testing the research hypotheses and the proposed model, the current research used Partial Least Squares(PLS) path modeling technique with SmartPLS3. Previous research argued compare to other co-variance-based analysis tool PLS is less restrictive which can deal with small sample size, distributional assumption, and model complexity (Chaouali, Yahia, & Souiden, 2016; Chin, 2010;

Hair *et al.*, 2014; Lowry & Gaskin, 2014; Ringle *et al.*, 2012). The analysis follows two steps; the first step evaluates the measurement model, while the second assesses the structural model. Analysis carried out for structural model to test direct effect, mediating effect and moderating effect.

3.7.3.2 Rationale of Using PLS

Several previous studies argued the suitability of using PLS over other co-variance-based analysis tool, and suggested that SmartPLS is less restrictive, small sample size applicable, distributional assumption, and gives advantage if model is good in testing moderation and mediation (Chaouali, Yahia, & Souiden, 2016; Hair *et al.*, 2014; Ringle *et al.*, 2012).

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3.8 Summary of the Chapter

This chapter provided a description of the methodology adopted for the conduct of this research and given the justification for choice of the research instrument. The philosophical construct of the research and positioning of its design has been highlighted. Detail discussion and justification on sample selection process and the survey design was given. Finally, it explained the measurement instrument and discussed the data analysis techniques used in this study. The main technique of data analysis was explained in detail.

CHAPTER FOUR
RESULT AND DISCUSSION

4.1 Introduction

This chapter deals with the analysis results pertaining to research objectives as stated in chapter one. It further seeks to present the results of hypotheses developed in chapter three. This study examined how the frequency distribution of respondents according to the demographic variables. Additionally, the main variables of the study were described with the aid of descriptive statistical tool SPSS.

Two stage process was applied to analyze the hypotheses effect of this research framework. Primary stage measurement model was assessed through confirmatory factor analysis. Consequently, Structural Equation Modeling was used by SmartPLS3 for hypotheses testing. The goodness of the outer model as it relates to the constructs of this study was established. Detail discussion is provided in this section. Discussion on result of direct effect of hypotheses as well as the mediating and moderating effect respectively.

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4.2 Overview of Data Collection and Response Rate

Primary data used for this study was collected by survey questionnaire from manufacturing firms in Bangladesh in between June 2015 to November 2015. Number of sample estimated in this study 381 manufacturing firms in Bangladesh. The sample size met the criteria by Hair *et al.* (2010); and Coakes and Steed (2003), that a good sample size should be 100 or more. In addition, the sample size collected achieved the

other criteria by Hair *et al.* (2010), that every parameter estimated needs 5-20 observations; in other words, at least five times the number of questions and observations.

A total 343 valid out of 381 questionnaires were collected from distributed questionnaires. Out of 343 filled questionnaires researcher observed that 13 questionnaires are incomplete and not usable to proceed for analysis. Finally, 330 filled, complete and usable survey questionnaires were used to analysis the data. The complete 330 usable questionnaires which represents 45.01% of response rate. Table 4.1 shows the demographic information of the study response rate of this study.

Table 4.1
Response Rate of Distributed Survey

Questionnaires Status	Count	Percentage
Distributed questionnaires	381	100%
Valid Response rate	343	45.01%

Source: Researcher Analysis

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Response rates of the study was sufficient to proceed for analysis. Hair *et al.* (2010) suggested that minimum sample size required to analyze data should fall into 5 to 10 times of the study variable and this research used 9 variables. Therefore, 45-90 sample size was enough to meet suggested threshold. the number of constructs in this research is five; a sample of 50 is enough for analysis. More importantly, the tool of analysis for the current study, which is PLS, requires a minimum of only 30 responses (Chin, 1998b) and 30% response rate considered as adequate for a survey suggested by Hair *et al.* (2010). Hilman and Warokka, (2011) reported 24% response rate in

manufacturing firms in Malaysia. Su and Gargeya (2012) reported approximately 23% response rate in relation to the sourcing strategy and firm performance in US textile industry. The following section presents the result of demographic characteristics of this study.

4.2.1 Demographic Profile of the Respondents

The frequency analysis of the study shows the demographic distribution of industry type that a manufacturing firm represent. Out of 330 firms 121 (36.7%) were garments manufacturing firms, 78 (23.64%) food and beverage manufacturer, 48 (14.54%) electrical and electronics manufacturer and 46 (13.94%) Leather products manufacturer. Rest 37(21%) of the fall into other industries. Most of the previous researches in manufacturing sector in Bangladesh were conducted on readymade garment industry. Empirical evidence of this study is given in different industries within the manufacturing sectors in Bangladesh.

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Table 4.2
Demographic Distribution of Respondents

Demographic Construct	Frequency	Percentage
Industry		
Garments Manufacturing	121	36.67
Electrical & Electronics	48	14.54
Leather	46	13.94
Food and beverage	78	23.64
Others	37	21.21
Number of Employee		
Less than 50	32	9.7
51-100	21	6.4
101-200	97	29.4
201-400	96	29.1

401-600	59	17.9
601-1000	19	5.8
More than 1000	6	1.8
Job Title		
Chief Executive Officer	49	14.8
Managing Director	57	17.3
Chief Operating Officer	48	14.5
Manager	50	15.2
Owner	126	38.2
Manufacturing Process		
Customized manufacturing	54	16.4
Small batch	76	23.0
Large batch	81	24.5
Mass production	50	15.2
Mass customization	49	14.8
Continuous process	20	6.1
Ownership		
Private Limited Company	61	18.5
Public Limited Company	109	33.0
Sole Proprietorship	82	24.8
Partnership	78	23.6
Product Produce		
Related	131	39.7
Unrelated	199	60.3

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The number of employee in corresponding manufacturing firms are varied. Large portion of manufacturing firms reported with 100 to 200 employees which represents 97 (29.45%) of the total firms where survey was conducted. Following with this 96 (29.1) firms reported that their number of employees are in the range of 201 to 400. This finding shows that large portion of the respondents were operating as a medium firm in Bangladesh. It implies that to grow manufacturing sector in Bangladesh they are key change makers.

The frequency analysis revealed that 14.8% of the person who responds to represent firm was an owner, 49 (14.8%) Chief Executive Officer, Managing Director 57 (17.3%)

Chief Operating Officer 48 (14.5%) and Manager 50 (15.2%). Following with this manufacturing firms process large batch production which is 81(24.5%) of the respondents. The result also revealed that 199 (60.3%) manufacturing firms produce unrelated products. This represents that, in Bangladesh most of the manufacturing firms are getting orders from abroad or other firms and does not match with the product producing. Therefore, in Bangladesh, manufacturing firms producing unrelated products. The following section presents the result of non-response bias.

4.2.2 Non-Response Bias

As mentioned earlier, survey questionnaire research design was employed for collecting data for this research. For effective outcome, the questionnaires were distributed in all the affected locations. However, ascertaining non-response bias was essential for some reasons. For instance, many respondents only responded to the questionnaires after several visits and reminders while the period of data collection spanned over 6 months (June 2015 to November 2016).

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Therefore, for assessing non-response bias, the T-test was carried out to compare early responses with late responses with respect to the variables of the study. Per Armstrong and Overton (1977) and Kannan *et al.*, (1999), the significant difference between early and late responses is an indication that marks underlying difference between non-respondents and respondents.

In addition, Amstrong and Overton (1982) equally maintained that feature of late respondents could be akin to non-respondents. It therefore connotes that if the

difference in response between the two groups is not significant, the assumption is that non-response bias exists. To determine the existence of a non-response bias, Pallant (2007) suggests that the independent samples t-test can be used for testing a non-response through comparison between the early and late responses.

There can be bias found due to unrepresented samples or due to any kind of shortcoming in the measurement process which can include the way questions are asked or even the state of respondents taking the survey (Bias in survey sampling). This study resorted to employing independent sample t-test to check that whether any kind of discrepancy exists between the two by comparing the means of the two groups (Pallant, 2009).

There are two parts of the output of samples t-test. The first part consists of Mean, Standard Deviation, and Standard Error (SE) scores of responses which were received before and after the reminders were sent. The second part which is Levene's test is a statistical indicator that employed to assess the equality of differences in different samples (Landau & Everitt, 2004; Pallant, 2007).

Following Table 4.3 shows the independent t-test result. Result has revealed that the differences between the two groups were not significant across all the constructs since the equality of the mean responses of the two groups were supported at the 0.01 level of significance. Therefore, it was observed that respondents from the two groups (early

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and late response) were not biased in terms of their responses and this has earlier been confirmed by Levene's test for equality of variances.

Table 4.3
Test Result of Non-Response Bias

Variables	Levene's Test for Equality of Variances		T-test for Equality of Means		
	F-Value	Significance	T-Value	df	Significance
Cost-leadership	0.165	0.668	1.24	330	0.164
Differentiation	0.2015	0.631	1.192	330	0.226
Related Product Diversification	0.0079	0.914	-1.720	330	0.863
Unrelated Product Diversification	0.436	0.532	-.541	330	0.54
Manufacturing Capability	0.513	0.323	1.340	330	0.11
Purchasing Capability	0.276	0.643	-.638	330	0.524
Sourcing Strategy	0.031	0.817	-1.537	330	0.125
Sourcing Relationship Quality	0.37	0.23	-1.373	330	0.116
Firm Performance	0.413	0.425	-1.115	330	0.465

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4.3 Descriptive Statistics

A descriptive analysis was performed in this study primarily to summarize and main features of the data set from the standpoint of survey respondents on every construct/dimension considered in the study. It was conducted mainly because the

descriptive statistics of dimensions explained through mean, standard deviation, variance, etc. collectively seek to offer a researcher a general view regarding how the survey respondents have responded to the survey instrument used in the study (Sekaran & Bougie, 2010). The purpose of descriptive analysis is to transform data into a form that can be used.

The descriptive statistics help to describe a set of constructs with purpose of making them simple and understood for interpretation (Zikmund *et al.,* 2010). In Table 4.4 is shown the descriptive result of the study's constructs and found that all the constructs have minimum value 1 and maximum 7 because all the constructs were measured on 7-point Likkert scale.

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Table 4.4
Descriptive Statistics Result of the Study Constructs

Construct	N	Min.	Max.	Mean	Std. Dev
Cost-leadership (COS)	330	1	7	5.832	0.756
Differentiation (DIF)	330	1	7	5.909	0.606
Related Product Diversification (REL)	330	1	7	5.917	0.655
Unrelated Product Diversification (UNL)	330	1	7	5.889	0.704
Manufacturing Capability (MCA)	330	1	7	5.385	0.596
Purchasing Capability (PCA)	330	1	7	5.851	0.804
Sourcing Strategy (SSO)	330	1	7	5.394	0.687
Sourcing Relationship Quality (SRQ)	330	1	7	5.776	0.679
Firm Performance (FOP)	330	1	7	5.9	0.826

Result has revealed that related product diversification has the higher mean value 5.917. consequently, differentiation strategy mean is reported 5.909 which is the second highest mean among all constructs. Following are the rest of constructs mean value; cost leadership strategy was 5.832, unrelated product diversification 5.889, manufacturing capability 5.383, purchasing capability 5.851 sourcing strategy 5.394, sourcing relationship quality 5.776 and firm performance 5.9. This result confirms that all variables mean scores obtain from the respondents are more than 5 which indicates positively agreed. Next section presented the result about common method bias of data collection. Following section presents the analysis result of common method bias.

4.4 Common Method Bias Test

Since the data on the endogenous and exogenous variables were collected at the same time using the same instrument, common methods bias could distort the data collected. Therefore, considering the potential problem caused by common method bias in social science studies, this study conducted a test to make sure that there is no variance in observed scores and correlations are not inflated because of the methods effect. Common method bias refers to the variance attributable exclusively to the measurement procedure as opposed to the actual variables the measures represent (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

There are many arguments on the extent of seriousness of common method bias on data (Bagozzi, 2011). It is therefore, an important consideration in this study. There are several procedures and statistical techniques to treat common method variance. These include wording questions in reverse, clarity of questions or items, confidentiality of

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the respondents and statistical Harman's one-factor test (Podsakoff *et al.*, 2003). In this study, un-rotated factor analysis with sixty-one items of all the variables of the study revealed that no single factor accounted for more than 50% of the variance. Ensuring the common method bias leads to the data screening preparation for further analysis procedure of the study.

The result produced nine distinct factors and only 33.83% of the total variance was accounted by a single factor, indicating the absence of common method bias in this study. This is in line with Podsakoff *et al*, (2003) and Lowry and Gaskin (2014), who argue that common method bias is present when a single factor explains more than 50% of the variance.

4.5 Data Screening and Preparation

Screening, editing and preparation of initial data are essential steps before any further multivariate analysis. Prior to conducting analysis, this study relied on data screening mainly for treating missing values. It is also important to conduct data screening to identify any potential violation of the basic assumptions related to the application of multivariate techniques (Hair Jr *et al.*, 2010). In addition, preliminary data examination enables the researcher to gain a deeper understanding of the data collected. Therefore, missing data, normality and multicollinearity are checked and treated accordingly.

4.5.1 Missing Value

It was necessitated from the fact that in PLS-SEM analysis, the available tools and techniques cannot function if there is any missing data available in the data set

(Schumacker & Lomax, 2004). Replaces all missing data points with the mean value of all remaining data points per column (i.e. indicator or variable). Moreover, it should also be noted that the quality of data analysis largely depends on the suitability of data organization and its further conversion into a form appropriate for analysis (Kristensen & Eskildsen, 2010) and which is why data screening is deemed extremely useful for making it sure that the data have been entered correctly. Missing data can arise in different situations like respondents' inability to understand questions, or difficulty in answering, or lack of willingness to answer (Sekaran & Bougie, 2010). It can be seen around that missing data is a commonly found situation in data analysis which was also advocated by Hair *et al.* (2010).

There are different methods suggested for handling missing data like one method says simply drop the case (Tabachnick & Fidell, 2007). Moreover, problem of missing data is a common phenomenon in research surveys (Hair *et al.,* 2010). However, it is highly essential that PLS is used because of its statistical proficiency since the data will not run if there is any missing data (Schumacker & Lomax, 2004). This study relied on checking missing data for adequate analysis procedure. However, in SmartPLS 3 there was no missing value found. During the data input researcher checked adequately missing values, moreover, SMART-PLS software does not run the data with missing values (Gorondutse, 2014). Following section shows the result of normality of the data.

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4.5.2 Normality Test of the Data

Normality assumption is a bell shape curve of the data distribution for an individual metric variable and its correspondence to a normal distribution (Hair *et al.,* 2010). A

normality distribution of sample data is explained as a symmetrical bell-shaped curve that has the highest range of frequency in the middle with smaller range of frequencies towards the extremes (Gravetter & Wallnau, 2000). In fact, it is essential to check the normality distribution of a variable especially for each multivariate analysis, such as multiple regression, factor analysis, and SEM. It is regarded as a standard for assessing other statistical methods (Hair *et al.*, 2010).

According to Pallant (2007), Skewness and Kurtosis are the main or only tests that researchers often use for the validation of normality assumptions. Accordingly, skewness is used to describe the extent to which the samples data distribution. It thus addresses whether it is balanced, unbalanced, shifted to the right, left, centered or symmetrical with about the same shape on both sides. On the other hand, Kurtosis refers to the measure of normality assumptions by comparing them with a "peakedness" or "flatness" of the sample data distribution (Hair *et al.*, 2010).

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Conservatively, Hair *et al.*, (2010) posited that if the test of Skewness values and test of Kurtosis values are between ±1.96 at the .05 significant level and ±2.58, at the significant level .01, the sample data is considered to be normal. Tabachink and Fiedell (2007) also support the rule of thumb by arguing that when Skewness values are within ±2.00 and the Kurtosis values are within ±7.00 the sample data is also considered to be normal. In addition, Kline (2011) also argued that Skewness values that are within ±3.00 and Kurtosis values are within ±10.00 are indications of normal distribution of data. However, in this study maximum absolute values of skewness and kurtosis of the scales in the dataset were 1.77 and 0.80 respectively (see Appendix C). The reported

values are well within limits (univariate skewness < 2, kurtosis <7) (Curran *et al.*, 1996). (Curran *et al.*, 1996). Therefore, the statistics does not indicate any significant deviances from the standard values of normality of the data. Next section explains and presents the result of multicollinearity.

4.5.3 Multicollinearity Assumptions

Multicollinearity happens when one or set of independent variables are closely correlated with other independent variables in a correlation matrix. When the problem of multicollinearity occurs, it is always difficult to ascertain the specific influence of each independent variable on the dependent variable (Hair *et al.*, 2010; Sekaran & Bougie, 2010). In this view, Hair *et al.*, (2010) recommend that multicollinearity among the variables should be established first before performing the hypotheses testing of the model.

It is generally agreed that multicollinearity assumptions can be consummated by testing the Tolerance value and Variance Inflation Factor (VIF) value (Pallant, 2007). Tolerance value is an indicator that determines the extent in which dependent variable is predicted by other independent variables in the regression variant. On the hand, VIF indicates the level in which other independent variables have influence on the standard error of a regression coefficient. It is Tolerance's inverse (Hair *et al.*, 2010).

It should be noted that multicollinearity occurs when the results reveal values of tolerance that below or equal 0.10 and VIF values that are higher or equal to 10 (Hair *et al.*, 2010; Sekaran & Bougie, 2010). Table 4.5 shows that none of the construct

exceed the suggested value above. All constructs reported the VIF value 1.258 to 2.703, and tolerance values are 0.245 to 0.698. Therefore, there is no multicollinearity problem among the exogenous variables to proceed multivariate analysis.

Table 4.5
Multicollinearity Assessment of Exogenous Variables

IVs	Collinearity Statistics	
	Tolerance	VIF
Cost-leadership (COS)	0.412	1.647
Differentiation (DIF)	0.391	1.992
Related Product Diversification (REL)	0.245	2.703
Unrelated Product Diversification (UNL)	0.713	2.641
Manufacturing Capability (MCA)	0.319	2.305
Purchasing Capability (PCA)	0.647	1.768
Sourcing Strategy (SSO)	0.698	2.117
Sourcing Relationship Quality (SRQ)	0.325	1.258

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4.6 Partial Least Squire (PLS) SEM Analysis

The study estimated and analyze the proposed model using partial least squares (PLS) path modeling which is able to confirm more theoretical parsimony and less model complexity (Wetzels *et al.*, 2009). To be specific, the study applies PLS because this approach is consistent with the objective of the study, which aims to develop and test a theoretical model through explanation and prediction.

Indeed, PLS is more suitable for estimating a hierarchical model than covariance-based SEM (CBSEM) because PLS can successfully avert the constraints on distributional properties (multivariate normality), measurement level, sample size, model complexity, model identification and factor indeterminacy (Hair *et al.*, 2011). SmartPLS 3.0 (Ringle *et al.*, 2014) was used to estimate the model with a path weighting scheme for the inside approximation. The study applied nonparametric bootstrapping (Chin, 1998; Efron & Tibshirani, 1993; Tenenhaus *et al.*, 2005) with 5000 replications to obtain the standard errors of the estimates (Hair Jr. *et al.*, 2013). In following section measurement analysis of the study has been presented.

4.6.1 Measurement Model

Using Smart PLS, in the first step, the measurement model (outer model) was examined to ascertain the appropriateness of loadings of the indicators (items) on the theoretically devised respective constructs. Outer model is evaluated in order to affirm that items measure the construct they were supposed to measure, consequently ascertaining that the instrument used is reliable. Moreover, the purpose of outer model is to diagnose the relationship between observable and underlying constructs. As such, it becomes important to trace appropriate indicators for ensuring a proper operationalization of a construct (Churchill, 1979) which further necessitates estimation of construct validity which can be justified in SEM through content validity, convergent validity, and discriminant validity (Hair *et al.*, 2010). Construct validation of measurement mode has been presented in next section.

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4.6.2 Construct Validation

Content validity signifies the appropriateness and ability of items generated for a construct in measuring the main concept under study (Hair *et al.*, 2010). Moreover, Bohrnstedt (1970) and Vinzi, Lauro, and Tenenhaus (2003) suggest using Principal Component Analysis (PCA) method for assessing the indicators' underlying factor structure. Smart PLS is based on PCA method as such, the factor loadings were created for all indicators in Smart PLS.

It is a basic requirement that all indicators must exhibit highest loading values on their respective constructs than that on other constructs. Theoretically it was already ensured through a comprehensive literature review that indicators belong to their respective constructs. However, to support it statistically, factor analysis was performed which is shown in Table 5.6. It can be seen in Table 5.6 that the loadings of indicators are highest on their respective constructs as compared to their loadings on other constructs, and they consist of significantly and acceptably high loadings. These two leads to confirmation of content validity.

The 9 constructs that make up the measurement model are: cost-leadership, differentiation, related product diversification, unrelated product diversification, manufacturing capability, purchasing capability, sourcing strategy, sourcing relationship quality and firm performance. At first attempt three 3 items (DIF 9, DIF 10, DIF 11) of differentiation strategy construct were deleted for low loading (see Figure 4.1). In second run calculated all the item loadings which exceeded the cut-off values of 0.7 and were significant at $p < 0.001$ (see Figure 4.2).

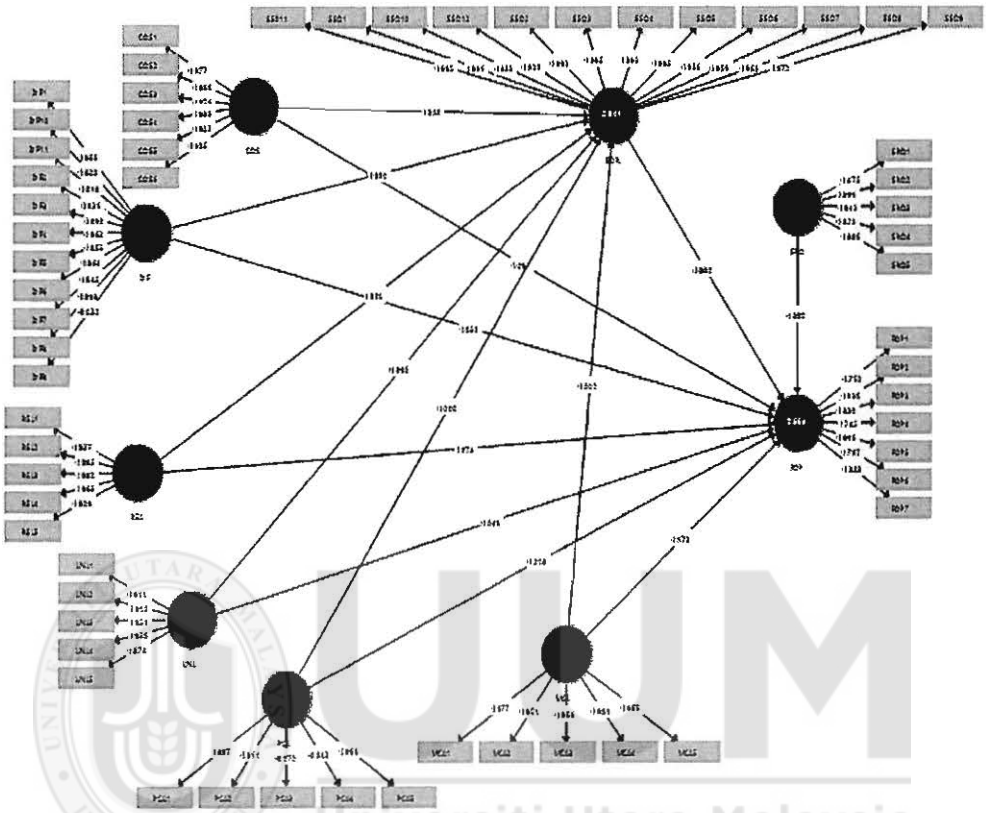

Figure 4.1:
Measurement Model with All items

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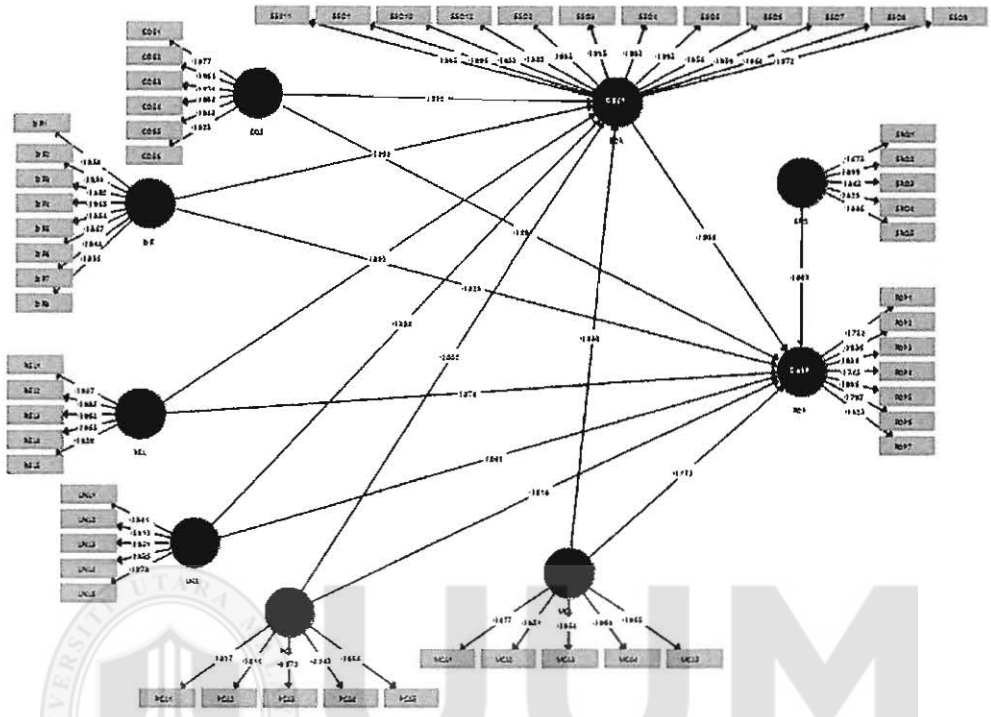

Figure 4.2
Corrected Measurement Model

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The cross-loading and factor loading respectively (Appendix C) of the study constructs cost-leadership, differentiation, related product diversification, unrelated product diversification, manufacturing capability, purchasing capability, sourcing strategy, sourcing relationship quality and firm performance. Result indicates that all items fall under the relative constructs and exceed the cut-off value 0.70 and $p < 0.001$.

4.6.3 Convergent Validity

In an attempt to ensure convergent validity, researchers try to show that the constructs 'measures which should theoretically be related to each other are actually found related in such manner after the analysis. The three types of estimations viz. factor loadings, composite reliability (CR), and average variance extracted (AVE) have been suggested to establish convergent validity (Hair *et al.*, 2010).

The higher average of the item loadings (40.80) and a narrower range of difference provide strong evidence that respective items have greater convergence in measuring the underlying construct (Chin, 2010). The study also calculated average variance extracted (AVE) and composite reliability (CR) (Chin, 1998; Fornell and Larcker, 1981) to confirm the reliability of all the measurement scales. Average variance extracted (AVE) measures the amount of variance that a construct captures from its indicators relative to measurement error, whereas CR measures internal consistency (Chin, 2010). Basically, these two tests indicate the extent of association between a construct and its indicators. Composite reliability (CR) and AVE of all scales are either equal to or exceed 0.80 and 0.50 cut-off values, respectively (Fornell & Larcker, 1981; Hair *et al.*, 2013).

Firstly, all of the item loadings are examined and a loading value of 0.50 or more is suggested as acceptable in the literature of multivariate analysis (Fornell & Larcker, 1981; Hair *et al.*, 2010). It can be seen in Table 4.6 that all items consisted of a loading higher than 0.50. Secondly, the composite reliability was examined which shows the degree to which the items consistently seek to indicate the latent construct (Hair *et al.*,

2010). The suggested ideal value for CR has been 0.70 (Fornell & Larcker, 1981; Hair *et al.*, 2010) and it can be seen in Table 5.8 that the CR values for all constructs were in the range of 0.839 to 0.996 which is well above the prescribed values.

Thirdly, average variance extracted (AVE), which is extent of common variance among the study's latent construct indicators (Hair, Anderson, Tatham, & Black, 1998) was examined whose value should be ideally more than 0.50 (Fornell & Larcker, 1981; Hair *et al.*, 2010). As it can be seen in following Table 4.6, this condition was also fully met wherein the AVE values ranged between 0.711 and 0.950. As such, the study confirmed that all the item loadings and values for CR and AVE exceed their respective cut-off values, thus ensuring adequate reliability and convergent validity (Fornell and Larcker, 1981)

Table 4.6
Convergent Validity Result of Constructs

Construct	**Cronbach's Alpha**	**Composite Reliability**	**Average Variance Extracted (AVE)**
Cost-leadership	0.979	0.983	0.906
Differentiation	0.973	0.977	0.840
Related Product Diversification	0.931	0.945	0.711
Unrelated Product Diversification	0.981	0.985	0.929
Manufacturing Capability	0.851	0.839	0.795
Purchasing Capability	0.976	0.981	0.913
Sourcing Strategy	0.995	0.996	0.950
Sourcing Relationship Quality	0.917	0.938	0.751
Firm Performance	0.957	0.967	0.853

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4.6.4 Discriminant Validity

Discriminant validity is aimed at confirming the construct validity of the outer model which seeks to ensure that the measures which shouldn't be related, are not found related after conducting the analysis. It further means that each measure is more related to their own respective constructs than to other constructs. For that, the square roots of average variance extracted (AVE) is examined with correlations among the constructs of the study in line with suggestions made by Chin (2010), and Fornell and Larcker (1981). The discriminant validity reveals the extent to which items of the study are differentiated with respect to the constructs. Simply put, it shows that the items used different constructs and they do not overlap. In this respect therefore, even though the constructs are correlated, they measure different concepts. This concept was clearly explained by Compeau *et al.*, (1999) where he reached a conclusion that if the discriminant validity of the measures was established, it means that the shared variance between each construct and its measures should be greater than the variance shared among distinct constructs. This study employed the method of Fornell and Lanker (1981) to confirm the discriminant validity of the measures.

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Discriminant validity is aimed at confirming the construct validity of the outer model which seeks to ensure that the measures which shouldn't be related, are actually not found related after conducting the analysis. It further means that each measure is more related to their own respective constructs than to other constructs. For that, the square roots of average variance extracted (AVE) is examined with correlations among the constructs of the study in line with suggestions made by Chin (2010), and Fornell and Larcker (1981).

Table 4.7
Discriminant Validity of the Constructs

Variable/Dimension	COS	DIF	REL	UNL	MCA	PCA	SSO	SRQ	FOP
Cost-leadership	**0.952**								
Differentiation	0.614	**0.917**							
Related Product Diversification	0.575	0.496	**0.956**						
Unrelated Product Diversification	0.810	0.658	0.843	**0.924**					
Manufacturing Capability	0.336	0.222	0.636	0.664	**0.964**				
Purchasing Capability	0.747	0.583	0.393	0.299	0.301	**0.753**			
Sourcing Strategy	0.875	0.697	0.576	0.791	0.368	0.654	**0.975**		
Sourcing Relationship Quality	0.369	0.343	0.671	0.630	0.260	0.356	0.420	**0.867**	
Firm Performance	0.677	0.566	0.689	0.416	0.310	0.674	0.786	0.271	**0.924**

To confirm the discriminant validity of the study Fornell-Larcker criterion and Heterotrait-Monotrait Ratio (HTMT) were considered. HTMT results shows that discriminant validity is exist as all the values are less than cut off value 0.90 suggested by Henseler, Ringle and Sarstedt (2015).

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Table 4.8
Heterotrait-Monotrait Ratio (HTMT)

	COS	DIF	FOP	MCA	PCA	REL	SOR	SRQ	UNL
COS									
DIF	0.627								
FOP	0.600	0.520							
MCA	0.825	0.673	0.663						
PCA	0.383	0.262	0.455	0.313					
REL	0.762	0.598	0.604	0.808	0.355				
SOR	0.885	0.707	0.697	0.642	0.388	0.866			
SRQ	0.383	0.358	0.740	0.433	0.317	0.371	0.433		
UNL	0.699	0.585	0.598	0.751	0.345	0.697	0.805	0.389	

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The HTMT criterion results in Table 4.8 shows that all the values are below the cut off value 0.90. Therefore, discriminant validity has been established between two constructs (Hair *et al.*, 2017). As illustrated in Table 4.7, the square root of average variance extracted (AVE) for all the constructs were placed at the diagonal elements of the correlation matrix. Having established the construct validity of the outer model, it is assumed that the obtained results pertaining to the hypotheses testing should be valid and reliable.

As such, in overall terms, the construct validity of the outer model was established, and it was further presumed that the subsequent results of hypothesis testing would be valid and reliable mainly because the valid constructs offer conclusions which lead to generalization of thesis' results. To conclude, construct validity was established in this study by confirming content validity, convergent validity, and discriminant validity.

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4.7 Revised Research Model

The theoretical model of this study integrated with moderation and mediation variables, to understand this complex structural, there is need to revise the proposed theoretical model as some of the indicators had been removed. The proposed model was modified based on the CFA conducted, as stated above. The PLS CFA caused some modification in the previous proposed model because of elimination of some items. The previous theoretical model had six independent variables namely: cot-leadership, differentiation, related product diversification, unrelated product diversification, manufacturing capability and process capability and outcome/dependent variable firm performance, which were connected through the mediating role of sourcing strategy. Moderating

variable is sourcing relationship quality which influence the relationship of sourcing strategy and firm performance. Following Figure 4.3 shows the revised model.

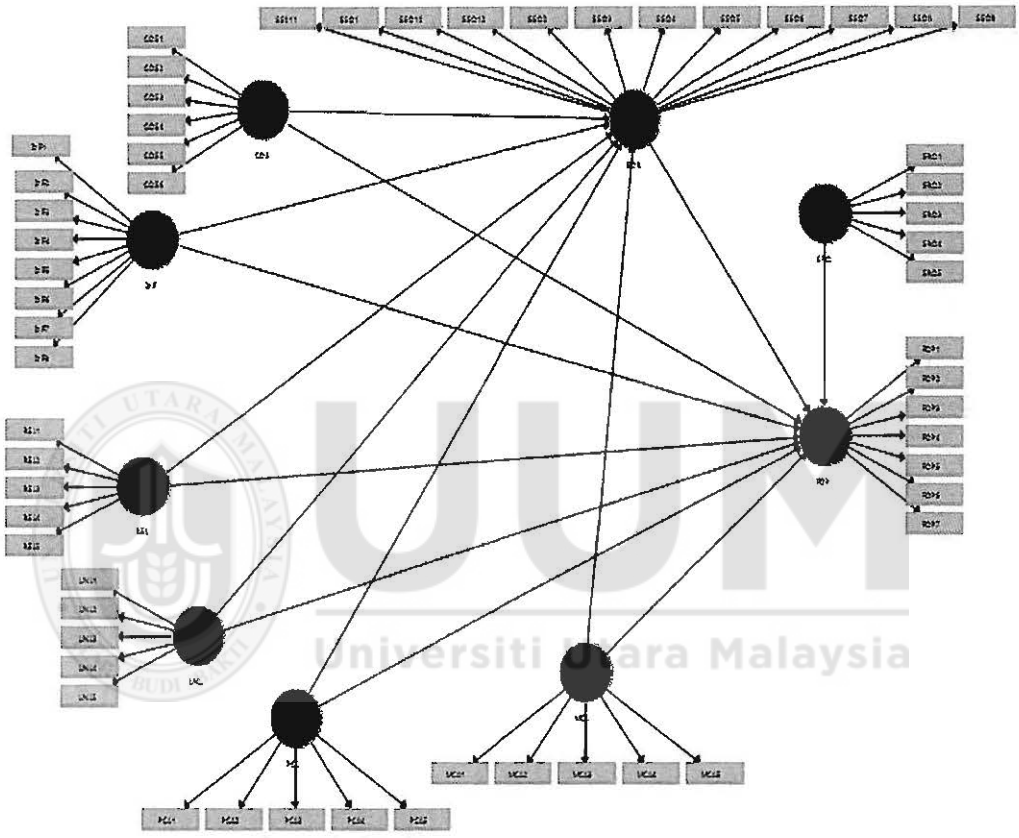

Figure 4.3 *Revised Model of the Study*

Revised model presented here without the three items incorporated in differentiation strategy in proposed theoretical model. Differentiation variable measured using a scale developed by Morrison (1990) and Allen *et al.* (2006) with minor modification on

wording that consists of 11 items. In revised model in Figure 4.3 shows that 8 items are remained to differentiation construct.

4.8 Goodness of Fit of the Overall Model

Lohmöller (1989) already offers a set of fit measures. But he states that they have been introduced to provide a comparison to LISREL results rather than to represent an appropriate PLS-SEM index. More specifically, Lohmöller (1989) states that some fit measures imply restrictive assumptions on the residual covariances, which PLS-SEM does not imply when estimating the model. For example, certain fit measures assume a common factor model, which requires uncorrelated outer residuals. In contrast, the outer residuals of composite models are not required to be uncorrelated. Hence, they are inappropriate for PLS-SEM.

4.9 Predictive Relevance of the Model

While conducting, analysis using PLS SEM, researchers have been suggested to rely on measures demonstrating the model's predictive abilities in order to evaluate the model's quality (Hair *et al.*, 2010). A model's predictive quality can be assessed (Fornell & Cha, 1994; Hair, Sarstedt, Ringle, & Mena, 2012) by cross-validated redundancy measure which is denoted as Q^2, a commonly found sample re-use technique (Geisser, 1974; Stone, 1974). Furthermore, in order for the model to have predictive validity according to Fornell and Cha (1994), the redundant communality should be bigger than zero for all endogenous variables which was also found to exist in this study (Table 4.9). In absence of that, a model is said to contain no predictive relevance.

In Smart PLS software, predictive relevance of a model can be estimated by using blindfolding technique. This technique is tailored to estimate the parameters by excluding some of the data and by handling them as missing values (Fararah & Al-Swidi, 2013). Thereafter, the estimated parameters are processed to rebuild the raw data which were assumed previously as missing and consequently, the blindfolding technique creates general cross validating metrics (Q^2) (Chin, 1998). Chin (2011) pointed out that there can be diverse forms of Q^2 depending upon the form of desired prediction. When the underlying latent variable score cases are used for predicting data points, a cross-validated communality is achieved, whereas, a cross-validated redundancy is obtained when the latent variables which predict the block in question are used for predicting the data points (Chin, 1998; Duarte & Raposo, 2010; Wold, 1982). Table 4.9 and Figure 4.4 represents the predictive validity of the study's model.

Table 4.9
Predictive relevance of the Model

Construct	R^2	Cross-Validated Redundancy
Firm Performance	0.541	0.434
Sourcing Strategy	0.663	0.83

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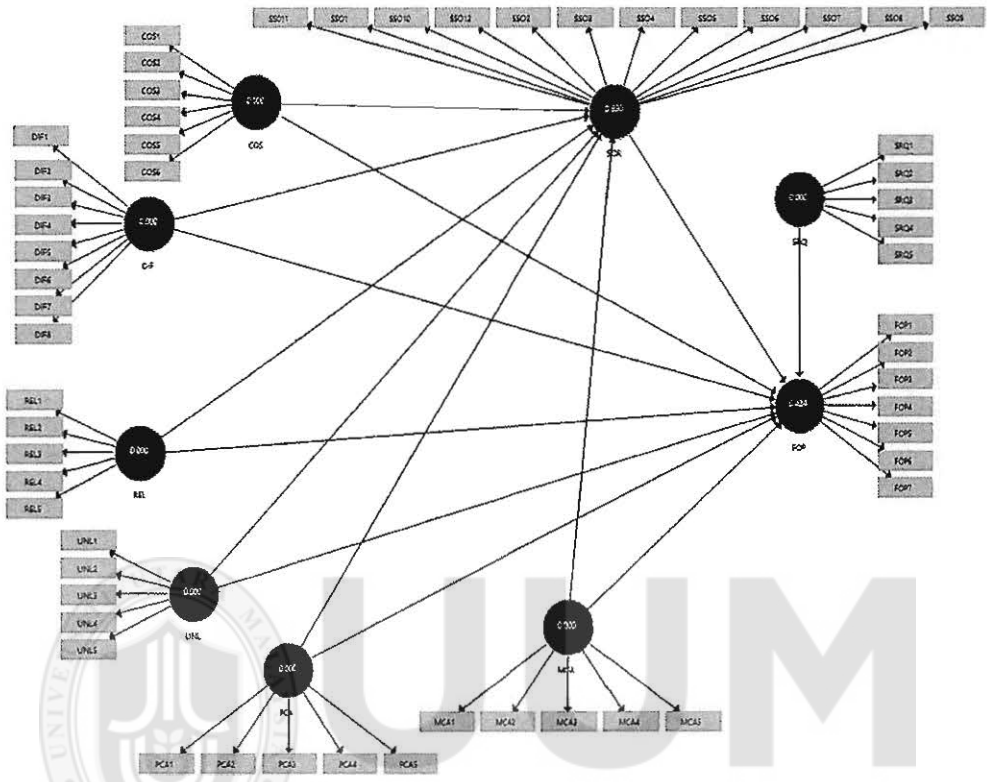

Figure 4.4
Predictive relevance of the Study

Table 4.9 shows that the cross-validated redundancies for the two endogenous variables firm performance and sourcing strategy are 0.434 and 0.83 respectively. These values reflect adequate predictive capabilities of the model based on Fornell and Cha (1994) criteria which necessitated these values to be larger than zero.

4.10 Effect Size

R^2 values of endogenous constructs reflect the model's strength. However, it can also be useful to estimate the substantiality of impact of an exogenous construct on the endogenous construct which is assessed by running the model once by omitting the exogenous construct (generating R^2 excluded) and once by retaining the exogenous construct (generating R^2 included) (Hair *et al.*, 2013). The change in R^2 obtained as such is used to estimate the effect size (f^2).

The guidelines suggested by Cohen (1988) for assessing f^2 values are: 0.02, 0.15, and 0.35, respectively, represent small, medium, and large effects (Hair *et al.*, 2013). As such, the exogenous constructs affecting their respective endogenous constructs were considered one by one for calculating effect size as shown in Table 4.10. SmartPLS 3 incorporated with to calculate the effect size of the model.

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Table 4.10
Effect Sizes of Latent Variables (f^2)

Constructs	Total Effect
Cost-leadership	0.264
Differentiation	0.049
Related Product Diversification	0.112
Unrelated Product Diversification	0.322
Manufacturing Capability	0.031
Purchasing Capability	0.216
Sourcing Strategy	0.228

Based on the result it is observed that differentiation strategy and manufacturing capability have small effect on firm performance. Whereas, all other constructs have medium effect on firm performance. Next section presents the result of the hypotheses testing of the study.

4.11 Structure Equation Modelling

After the goodness of fit of the outer model was established in the previous step, the next step included inspecting the standardized path coefficients for the purpose of testing hypothesized relationships considered in the study. Moreover, as mentioned previously, the Smart PLS 3.3.2 software was used to test the hypothesized model.

Conventional t-tests are not calculated in PLS SEM as a part of PLS algorithm for ascertaining the statistical significance of the loadings and that of the path coefficients as the underlying data is not assumed to be essentially normal (Barclay *et al.*, 1995).

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For such situations, Chin (1998), and Tenenhaus *et al.* (2005) supported the use of nonparametric resampling procedures like bootstrapping or jackknifing for inspecting the accuracy of the estimates and for generating significance tests results. Therefore, this study relied on using bootstrapping technique which is embedded in Smart PLS software for reaching to a conclusion that whether the path coefficients are significant or not from statistical point of view.

4.11.1 Summary of Direct Effect of Hypotheses

Based on the model for this study, thirteen direct effect hypotheses were formulated. The formulated hypotheses involve the relationships cost-leadership strategy, differentiation strategy, related product diversification, unrelated product diversification. Manufacturing capability, purchasing capability as the exogenous constructs, sourcing strategy as the mediating construct and firm performance as the endogenous variable:

Hypothesis H1a: Cost-leadership strategy has positive effect on manufacturing firm performance.

Hypothesis H1b: Cost-leadership strategy has positive effect on sourcing strategy.

Hypothesis H2a: Differentiation strategy has positive effect on firm performance.

Hypothesis H2b: Differentiation strategy has positive effect on sourcing strategy.

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Hypothesis H3a: Related product diversification has positive effect on firm performance.

Hypothesis H3b: Related product diversification has positive effect on sourcing strategy.

Hypothesis H4a: Unrelated product diversification has positive effect on firm performance.

Hypothesis H4b: Unrelated product diversification has positive effect on sourcing strategy.

Hypothesis H5a: Manufacturing capability has positive effect on firm performance.

Hypothesis H5b: Manufacturing capability has positive effect on sourcing strategy.

Hypothesis H6a: Purchasing capability has positive effect on firm performance.

Hypothesis H6b: Purchasing capability has positive effect on sourcing strategy.

Hypothesis H7: sourcing strategy has positive effect on firm performance.

4.11.2 Hypothesis Testing of Direct Effect Hypothesis

SmartPLS 3.0 (Ringle *et al.,* 2014) was used to estimate the model with a path weighting scheme for the inside approximation. The study applied nonparametric bootstrapping (Chin, 1998; Efron & Tibshirani, 1993; Tenenhaus *et al.,* 2005) with 5000 replications to obtain the standard errors of the estimates (Hair Jr. *et al.*, 2013). Firstly, PLS algorithm was run in order to generate the path coefficients which are shown in Figure 4.5.

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The path model results yielding β-values as shown in Figure 4.5, and the path model significance results yielding t-values as shown in Figure 4.6 generated from bootstrapping technique further led to calculating p-values for all direct relationships (H1a, H1b, H2a, H2b, H3a, H3b, H4a, H4b, H5a, H5b, H6a, H6b, H7) which finally became a basis for reaching to the conclusion about whether a hypothesis is supported or not. Table 4.11 shows the detail result of the direct hypotheses testing of this dissertation.

Table 4.11
The Results of the Inner Structural Model and Direct Path

Hypothesis No.	Hypothesized Effect	Path coefficient	Standard Error	T-Value	P-Value	Decision
H1a	Cost-leadership Strategy -> Firm Performance	0.297	0.048	2.008	0.022**	Supported
H1b	Cost-leadership Strategy-> Sourcing Strategy	0.230	0.058	3.984	0.000***	Supported
H2a	Differentiation Strategy -> Firm Performance	-0.145	0.053	0.078	0.233	Not Supported
H2b	Differentiation Strategy -> Sourcing Strategy	0.173	0.030	2.432	0.017**	Supported
H3a	Related Product Diversification-> Firm Performance	0.125	0.056	2.211	0.015**	Supported
H3b	Related Product Diversification -> Sourcing Strategy	0.197	0.063	3.137	0.002***	Supported
H4a	Unrelated Product Diversification-> Firm Performance	0.012	0.055	0.529	0.219	Not Supported
H4b	Unrelated Product Diversification -> Sourcing Strategy	0.040	0.041	3.040	0.003***	Supported
H5a	Manufacturing Capability > Firm Performance	0.290	0.060	4.860	0.000***	Supported
H5b	Manufacturing Capability > Sourcing	0.435	0.088	4.965	0.000***	Supported
H6a	Purchasing Capability -> Firm Performance	0.113	0.041	3.728	0.008***	Supported
H6b	Purchasing Capability -> Sourcing Strategy	0.046	0.013	3.640	0.000***	Supported
H7	Sourcing Strategy -> Firm Performance	0.396	0.161	2.458	0.016**	Supported

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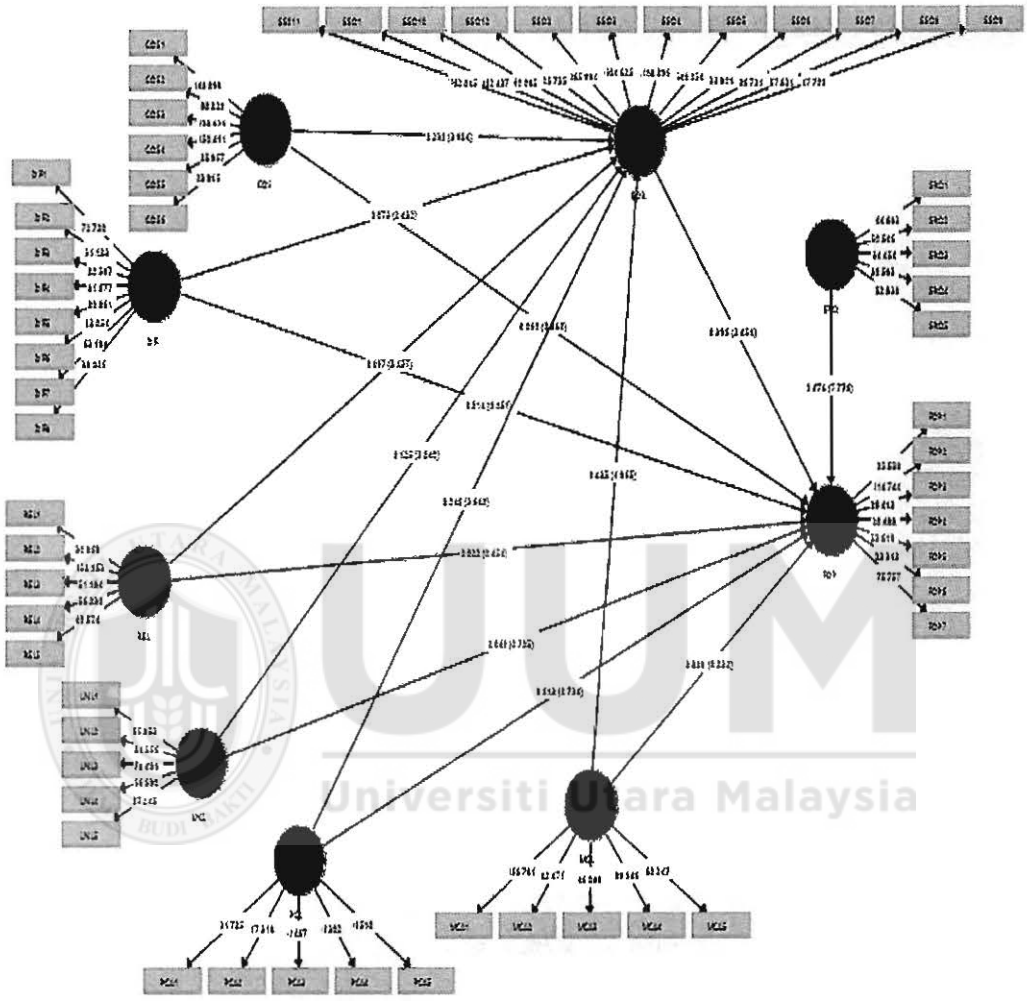

Figure 4.5
Path Coefficient and Significance Direct Effect of Exogenous Variables

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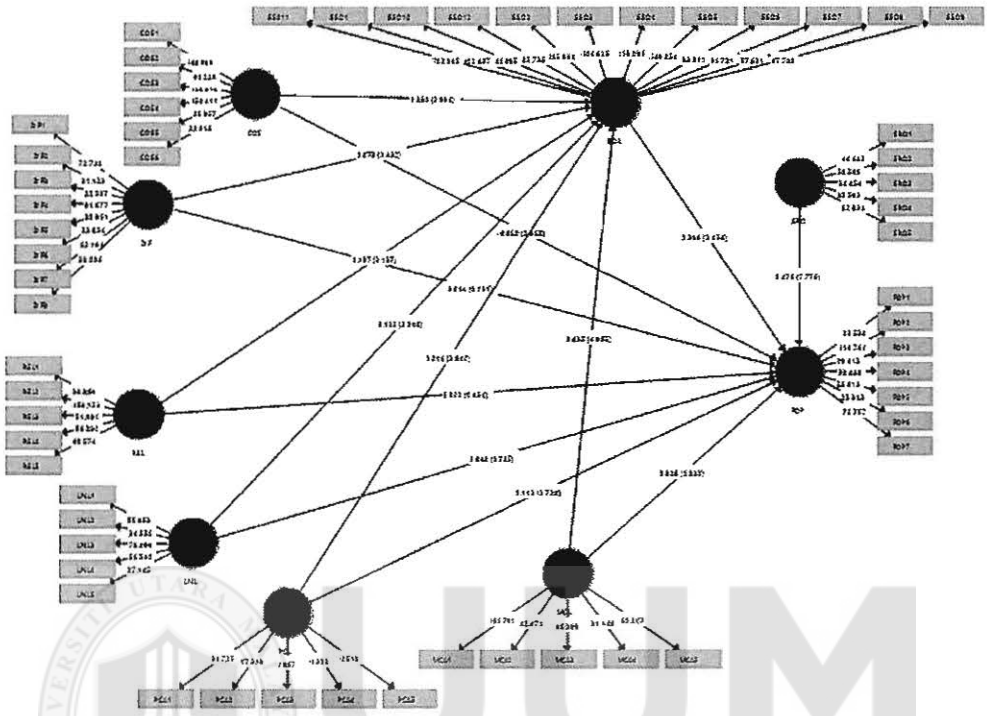

Figure 4.6
T-value and Significance of Direct Effect of Exogenous Variables

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4.11.3 Direct Effect of Exogenous variables on Firm Performance

Hypothesis 1a: *Cost-leadership has positive significant effect on manufacturing firm Performance.* Cost-leadership has a compelling positive impact on manufacturing firm performance providing strong support to H1a. The data analysis here provides evidence that hypothesis 1a is accepted. The result reveals that path coefficient from cost-leadership strategy to firm performance (COS -> FOP) is statistically significant with a strong beta (β) value and t-value (β = 0.297, t = 2.008, p = 0.022).

Hypothesis 2a: *Differentiation strategy has not supported significant effect on manufacturing firm Performance.* Results from PLS output shows that this hypothesis is not accepted. The result reveals that path coefficient from differentiation strategy to firm performance (DIF -> FOP) is statistically not significant with a beta (β) value and t-value (β = - 0.145, t = 0.078, p = 0.233).

Hypothesis 3a: *Related product diversification has positive significant effect on manufacturing firm Performance.* Results from PLS output shows that this hypothesis is accepted. The result reveals that path coefficient from related product diversification strategy to firm performance (REL -> FOP) is statistically significant with a strong beta (β) value and t-value (β = 0.125, t = 2.221, p = 0.015).

Hypothesis 4a: Result of direct path between unrelated product diversification and firm performance found not significant. It is observed that unrelated product diversification has no significant effect on manufacturing firm performance. The result reveals that path coefficient from unrelated product diversification strategy to firm performance (UNL -> FOP) is not statistically significant with a beta (β) value and t-value (β = 0.012, t = 0.529, p = 0.219).

Hypothesis 5a: *Manufacturing capability has positive significant effect on manufacturing firm Performance.* Results from PLS output shows that this hypothesis is accepted. The result reveals that path coefficient from manufacturing capability to firm performance (MCA -> FOP) is statistically significant with a strong beta (β) value and t-value (β = 0.290, t = 4.860, p = 0.000).

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Hypothesis 6a: Purchasing *capability has positive significant effect on manufacturing firm Performance.* Results from PLS output shows that this hypothesis is accepted. The result reveals that path coefficient from purchasing capability to firm performance (PCA -> FOP) is statistically significant with a strong beta (β) value and t-value (β = 0.113, t = 3.728, p = 0.000).

Hypothesis 7: Sourcing strategy *has positive significant effect on manufacturing firm Performance.* Results from PLS output shows that this hypothesis is accepted. The result reveals that path coefficient from sourcing strategy to firm performance (PCA -> FOP) is statistically significant with a strong beta (β) value and t-value (β = 0.396, t = 2.458, p = 0.016).

4.11.4 Direct Effect of Exogenous variables on Sourcing Strategy

Hypothesis 1b: *Cost-leadership has positive significant effect on sourcing strategy* Results from PLS output shows that this hypothesis is accepted. The result reveals that path coefficient from cost-leadership strategy to sourcing strategy (COS -> SOS) is statistically significant with a strong beta (β) value and t-value (β = 0.230, t = 3.984, p = 0.000).

Hypothesis 2b: *Differentiation strategy has positive significant effect on sourcing strategy.* Results from PLS output shows that this hypothesis is accepted. The result reveals that path coefficient from differentiation strategy to sourcing strategy (DIF -> SOS) is statistically significant with a strong beta (β) value and t-value (β = 0.173, t = 2.432, p = 0.17.

Hypothesis 3b: *Related product diversification has positive significant effect on sourcing strategy.* Results from PLS output shows that this hypothesis is accepted. The result reveals that path coefficient from related product diversification strategy to firm sourcing strategy (REL -> SSO) is statistically significant with a strong beta (β) value and t-value (β = 0.197, t = 3.137, p = 0.002).

Hypothesis 4b: Result of direct path between unrelated product diversification and sourcing strategy found significant. It is observed that unrelated product diversification has positive significant effect on sourcing strategy. The result reveals that path coefficient from unrelated product diversification strategy to sourcing strategy (UNL -> SSO) is statistically significant with a strong beta (β) value and t-value (β = 0.226, t = 6.929, p = 0.000).

Hypothesis 5b: *Manufacturing capability has positive significant effect on sourcing strategy.* Results from PLS output shows that this hypothesis is accepted. The result reveals that path coefficient from manufacturing capability to sourcing strategy (MCA -> SSO) is statistically significant with a strong beta (β) value and t-value (β = 0.435, t = 4.965, p = 0.000).

Hypothesis 6b: Purchasing *capability has positive significant effect on sourcing strategy.* Results from PLS output shows that this hypothesis is accepted. The result reveals that path coefficient from purchasing capability to sourcing strategy (PCA -> SSO) is statistically significant with a strong beta (β) value and t-value (β = 0.146, t =

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3.640, p = 0.000). Mediating effect of sourcing strategy was tested and result of the mediating effect has been presented in following section.

4.11.5 Mediating Effect of Sourcing Strategy

Mediation analysis assesses the indirect effect of the independent variable on the dependent variable via an intervening variable. However, Preacher and Hayes (2008) observe that the techniques for assessing mediation are numerous, which include: Causal steps strategy or serial approach (Hoyle & Robinson, 2004), which also refers to the four conditions of Baron and Kenny (Baron & Kenny, 1986).

Other approaches for mediation analysis include product of coefficient method or Sobel test (Sobel, 1982); distribution of the product approach (MacKinnon, Fairchild, & Fritz, 2007; MacKinnon, Fritz, Williams, & Lockwood, 2007; MacKinnon, Lockwood, & Williams, 2004); and bootstrapping approach (Hayes, 2009; Preacher & Hayes, 2004). However, the most recent mediation analysis approach is the bootstrapping method, where the bootstrapping generates an empirical representation of the distribution of the sample of the indirect effect (Hayes, 2009; Rucker, Preacher, Tormala, & Petty, 2011).

Commonly, for mediation to hold in the four steps of Baron and Kenny (1986) some conditions need be met. The first condition is defining the total effect (X-Y) relationship between the independent variables and the dependent variable (c). However, it is not always necessary for total effect to be significant. Significant indirect effects can occur in its absence and mediation could happen (Hayes, 2009; MacKinnon,

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Lockwood, Hoffman, West, & Sheets, 2002; Rucker *et al.*, 2011; Shrout & Bolger, 2002; Zhao, Lynch, & Chen, 2010).

The second condition is the significant effect of the indirect relationships. In other words, the effect of the independent variables on the dependent variable through the mediator variable (Preacher & Hayes, 2008). That is the effect of the independent variables on the mediator variable and the effect of the mediator variable on the dependent variable (a and b). Therefore, if any of the indirect effects through the mediator variable is not significant, then the mediator variable cannot mediate the effect of independent variables on the dependent variable (Preacher & Hayes, 2008).

Finally, the direct effect of independent variables on the dependent variable should be insignificant or smaller than the relationship prior the inclusion of the mediator variable (c'). However, Rucker *et al.* (2011) question the emphasis on the importance of change in the direct relationship after including the mediator variable and the use of terms, such as full versus partial mediation. The bootstrapping method starts with estimating the path model of a direct relationship between the independent variables and the dependent variable without the mediator variable. These path models include the path coefficients and t-values using PLS-SEM algorithm and bootstrapping procedure, respectively (Hair Jr. *et al.*, 2013).

In the second stage, the path model is estimated with the mediator variable. The focus is on whether the independent variables and the mediator relationship and mediator and dependent variable relationship are significant. This is necessary but not sufficient to

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conclude mediation effect. Lastly, the product of the two significant path coefficients is divided by the standard error of the product ((axb)/sab) to examine the significance of the indirect effect.

The justification and advantages of bootstrapping method to test mediation have been highlighted by several studies, such as (Hair Jr. *et al.*, 2013; Zhao *et al.*, 2010). For instance, the four conditions of Baron and Kenny (1986) fail to involve the use of standard errors (Hayes & Preacher, 2010). The Sobel test requires the assumption of normal sample distribution of the indirect effect.

However, the sampling distribution of the independent variables' effect on the mediator and the mediator's effect on the dependent variable is asymmetric (Preacher & Hayes, 2007). The distribution of the product strategy is a little difficult to use without the aid of tables and requires some assumptions of normal sampling distribution (Hayes, 2009).

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Shrout and Bolger (2002) argue that bootstrapping methods could be used to take care of the flaws as it allows the distribution of the indirect effect to be tested empirically. Furthermore, Zhao *et al.* (2010) argue that bootstrapping approach solves these problems by generating an empirical sampling distribution (a x b). In addition, Hayes and Preacher (2010) and Preacher and Hayes (2008) conclude that the main advantage of bootstrapping approach is that it does not require any assumptions about the sampling distributions of the indirect effect or its product.

In other words, the confidence interval in bootstrapping method can be asymmetrical rather than at regular confidence intervals in other methods. This is because they are based on an empirical estimation of the sampling distribution of the indirect effect, unlike other methods that assume normal sampling distribution. Similarly, bootstrapping result provides interval estimate of a population parameter that cannot be obtained by using other mediation tests (Lockwood & MacKinnon, 1998).

Knowing the advantage of bootstrapping method over other methods, Hair Jr. *et al.*, (2013); and Hayes & Preacher (2010) suggest testing the significance of the mediation using bootstrapping methods. Hence, this study tested the mediating role of sourcing strategy in between cost-leadership and firm performance, differentiation strategy and firm performance, related product diversification and firm performance, unrelated product diversification and firm performance, manufacturing capability and firm performance and lastly purchasing capability and firm performance with SmartPLS 3.0 (Ringle *et al.*, 2014). Using the bootstrapping procedure with 330 cases and 5,000 sub-samples. Figure 5.8 shows the PLS-SEM algorithm after including the sourcing strategy as a mediator.

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After including the mediator constructs, sourcing strategy in the model, the bootstrapping result of 5,000 samples was used to multiply path a and path b. Then the product of the significant path was divided by the standard error of the product of the Path to get the t-value. SmartPLS 3 is convenient to analyze the mediating effect of the model.

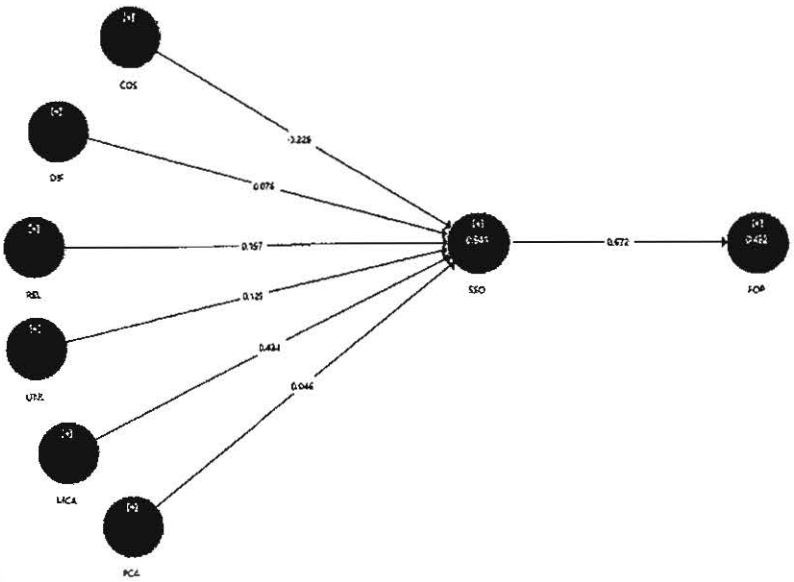

Figure 4.7

PLS-SEM Algorithm of Mediating Effect of the Study

This statistical analysis tool calculates indirect effect of exogenous variable on endogenous variable. Result of the mediating effect of sourcing strategy in between cost-leadership and firm performance, differentiation strategy and firm performance, related product diversification and firm performance, unrelated product diversification and firm performance, manufacturing capability and firm performance and lastly purchasing capability and firm performance is given on Table 4.12.

Following the result presented in Table 4.12, cost-leadership strategy has positive effect on firm performance via mediating effect of sourcing strategy. Result has revealed that positive association between cost-leadership strategy-sourcing strategy-firm

performance (β =0.154; t= 3.682; p = 000). Using the same process of PLS bootstrapping (Table 4.12), the result has revealed that sourcing strategy has significant mediating effect in between differentiation strategy and firm performance. The result demonstrates statistically significant, indicating mediating effect of sourcing strategy, (β= 0.051; t= 4.2415, p<0.016), the assessment of mediation is in line with Zhao *et al.* (2010) as this result reveals complimentary mediation, meaning that mediation exist significantly in both direct and indirect effects.

Following with this; a significant positive mediating effect was found of sourcing strategy in between related product diversification and firm performance (β = 0.133; t = 3.049, p<0.002) and unrelated product diversification and firm's performance (β = 0.084; t = 3.492, p<0.000).

Strategic capability dimensions; manufacturing capability and purchasing capability both implied the positive significant effect on firm performance trough mediating effect of sourcing strategy. A significant positive mediating effect was found of sourcing strategy in between manufacturing capability and firm performance (β = 0.292; t = 4.451, p<0.000) and unrelated purchasing capability and firm's performance (β = 0.31; t = 3.384, p<0.001).

As mentioned before the mediation analysis took place in the first model when the mediator variables were introduced. The path coefficients of six independent variables are found positive. Also, the path coefficient between the mediator and the dependent variable was found positive.

Table 4.12
The Results of the Mediating Effect of Sourcing Strategy

Hypothesis No.	Hypothesized Effect	Path Coefficient	Standard Error	T-Value	P-Value	Decision
H7a	Cost-leadership Strategy -> Sourcing Strategy -> Firm Performance	0.154	0.042	3.682	0.000	Supported
H7b	Differentiation Strategy-> Sourcing Strategy-> Firm Performance	0.051	0.021	2.415	0.016	Supported
H7c	Related Product Diversification-> Sourcing Strategy -> Firm Performance	0.133	0.043	3.049	0.002	Supported
H7d	Unrelated Product Diversification-> Sourcing Strategy-> Firm Performance	0.084	0.024	3.492	0.000	Supported
H7e	Manufacturing Capability -> Sourcing Strategy > Firm Performance	0.292	0.066	4.451	0.000	Supported
H7f	Purchasing Capability -> Sourcing Strategy -> Firm Performance	0.031	0.009	3.384	0.001	Supported

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4.12 Moderating Effect of Sourcing Relationship Quality

Esposito Vinzi *et al.* (2010) opine that to test moderation, firstly examine only the main effects of the independent variables on the dependent variable; then, examine the main effect of the independent variables, including the moderator on the dependent variable; and lastly, include the interaction terms, i.e., the multiplication of independent variables by the moderator variable. The product of the indicators of the variables is used to reflect the latent interaction variables (Chin *et al.*, 2003). Hence, the moderating effect holds only when these interaction terms are significant (Hair Jr. *et al.*, 2013). See figure 4.8 PLS-SEM Algorithm Moderator.

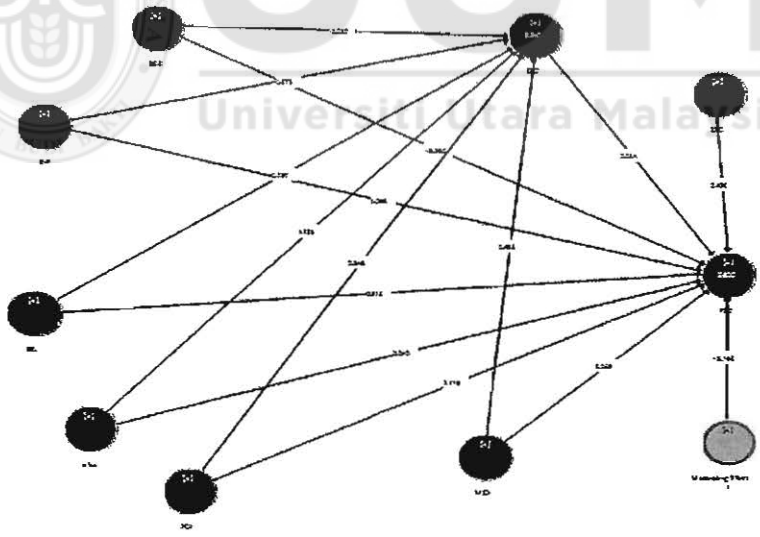

Figure 4.8
PLS-SEM Algorithm of Moderating Effect of the Study

Following the above-mentioned procedure, the results of the interacting effects of sourcing relationship quality (SRQ) on the relationship between sourcing strategy and firm performance were examined and reported. The moderation model in Figure 5.9 tests whether the prediction of firm performance can be improved when SRQ as a moderating variable becomes significant. Table 4.13 indicates a significant moderating effect of sourcing relationship quality on the relationship between sourcing strategy and firm performance ($\beta = 0.70$; $t=3.406$; $p = 0.000$). Hence, it is concluded that sourcing relationship quality strengthen the relationship of sourcing strategy and firm performance. See Table 4.13 for PLS-SEM Moderation results.

Table 4.13
The Results of the Moderating Effect of Sourcing Relationship Quality

Hypothesized Effect	Path Coefficient	Standard Error	T-Value	P-Value	Decision
Sourcing Strategy*SRQ> Firm Performance	0.070	0.021	3.406	0.001	Supported

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Table 4.14
Effect Size of Moderating Model of the Study

Constructs	Total Effect
Cost-leadership	0.369
Differentiation	0.257
Related Product Diversification	0.267
Unrelated Product Diversification	0.382
Manufacturing Capability	0.154
Purchasing Capability	0.316
Sourcing Strategy	0.362

Effect size of the model shows that after including moderating variable sourcing relationship quality increase the effect size of latent construct in endogenous variable. It shows that sourcing relationship quality can increase the firm performance of manufacturing firms ibn Bangladesh.

4.13 Discussion on Findings

4.13.1 Discussion on the Findings of Competitive Strategy

This study finds that generally, competitive strategy (cost-leadership) positively and significantly enhance firm performance. Specifically, manufacturing firms' cost-leadership strategy not only has a direct and significant impact on firm performance but also has indirect and significant impact on firm performance through sourcing strategy. However, the direct effect of differentiation strategy is not significant on firm performance. Differentiation strategy has significant effect through sourcing strategy on firm performance.

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Although cost-leadership strategy and differentiation strategy were hypothesized to have positive effect on firm performance. Unexpectedly, differentiation strategy does not support firm performance within the context of Bangladeshi manufacturing firm. Finding of positive effect of cost-leadership strategy on performance in the context of Bangladeshi manufacturing firms are in line with the Chang and Chuang (2011) and Liu and Wu (2011), Hilman (2009). In addition, Chuang, (2011) researched on the correlation between Porter's generic business strategy and the firm performance and concluded that all three types of strategies positively influenced the performance of a

firm. In contrast, Bayraktar *et al.*, (2017) found that there is no association between manufacturing firm's competitive strategy and performance.

Findings of the competitive strategy of this study confirms and in line with previous cost-leadership strategy that firms pursue does not directly affect firm performance. However, it does so indirectly and significantly through financial performance measures (Bereznoi, 2015). Liu and Wu (2011) performed a similar study to manufacturing firms in China and found that positive effect of differentiation strategy on firm performance.

Differentiation strategy has significant effect on sourcing strategy. Results from PLS output shows that this hypothesis is accepted. This result also resonates with the findings of Amoako-Gyampah and Acquaah (2008) that competitive strategy influences firm performance with an indirect effect. The result is in line with the findings of Amoako-Gyampah and Boye (2001) who asserted that consideration for environmental factors is key in determining operations strategy for organizations in a developing economy. The results therefore suggest that competitive strategy fully mediates the effects of environment on organizational performance, and partially mediates the effects of organizational characteristics on the performance of organizations.

Empirical evidence of this study more similar with the study conducted by Hilman (2009) in Malaysia. Hilman (2009) reported that there are positive association of cost-leadership and differentiation strategy with firm performance. However, enhance

competitive advantage through cost leadership or differentiation firms can successfully integrate and combination of the two strategies and create synergies that eliminate the trade-offs associated and lead to superior firm performance.

Manufacturing firms thus can opt cost leadership strategy to avoid trade-offs. Bangladeshi manufacturers can opt to produce goods with unique features that are sold to customers at the lowest cost compared to competitors or at reduced cost to achieve superior profitability. Moreover, as earlier in chapter 1 stated that most of the Bangladeshi garments manufacturer get contracts from abroad with specific requirement. Sometimes manufacturer has received excessive orders, or product order that they are not able to produce. Therefore, they can opt differentiation strategy by focusing on product to buy it from supplier's firm. Thus, this can be concluded that manufacturing firms can deploy hybrid competitive strategy.

Competitive strategy in this study concerns about the manufacturing firm's competency of competing based on lower prices of product. In order to offer competitive prices to its consumers, manufacturing firms in Bangladesh usually have to manage the costing dimensions of its operations and the supply chain.

Therefore, for successfully achieving a low-cost strategy or differentiation strategy, a manufacturing firm in Bangladesh should constantly benchmark their products with the competing firms to determine their relative cost and position in the market so that costs can be lowered accordingly. Therefore, manufacturing firms in Bangladesh will have

more competitive position in market and can offer competitive price. Following section presents the discussion on the finding of strategic flexibility.

4.13.2 Discussion on the Finding of Strategic Flexibility

Related product diversification has positive significant effect on manufacturing firm Performance. Results from PLS output shows that this hypothesis is accepted. The result reveals that path coefficient from related product diversification strategy to firm performance.

Empirically in this study, effect of unrelated product diversification on firm performance is not significant. It is observed that unrelated product diversification has not significant effect on manufacturing firm performance. The result reveals that path coefficient from unrelated product diversification strategy to firm performance is not supported.

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Related product diversification has positive significant effect on sourcing strategy. Results from PLS output shows that this hypothesis is accepted. The result reveals that path coefficient from related product diversification strategy to firm sourcing strategy. This study also found unrelated product diversification effect on sourcing strategy. It is observed that unrelated product diversification has positive significant effect on sourcing strategy. This relationship conceptually redefines a firm's performance as an indicator of strategic flexibility instead of a direct firm performance to better theoretically link the RBV and the TCE.

Findings of this study supported by previous findings; demonstrated that firms that have diversified into areas related diversification improve performance (Chavas & Kim, 2010; Su & Tsang 2015; Rumelt, 1982). Hilman (2009) found the positive link between related and unrelated product diversification and firm performance among Malaysian manufacturing firms. However, this study differs from previous study that unrelated product diversification has found not significant effect on manufacturing firm's performance in Bangladesh.

Manufacturing firms in Bangladesh instead of developing new product they can buy from other firms to reduce risk, increase cost and become less competitive. Empirical evidence in this study provided that related and unrelated product diversification have effect on firm performance. Firms adopt buy strategy in order to extent product line through coordination and allocation of core resources for competitive advantages, unrelated product diversification creates support for economies of scope (Kang, Lee & Yang, 2011; Li & Greenwood, 2004; Teece, 1980; Wang *et al.*, 2014). Manufacturing firms can opt unrelated diversification to reduce the risk and uncertainty instead of relying on one product to avoid the surprising demands that deter the market share.

According to Baum *et al.* (2013) a product suitable for one market by very least in terms of flexibility may not be attractive to other customers. Furthermore, demand shocks or arising of new competitors may pose negative impact on sales and profits of a firm. Addressing these issues, empirical finding of this study confirms that manufacturing firms can rely on unrelated product diversification to extend its product line to meet the customer requirements and avoid demand shocks. It is cautious that product

diversification may incur certain costs, which depreciates firm performance. Some scholars (Berger and Ofek, 1995; Lang and Stulz, 1994; Wernerfelt and Montgomery, 1988) found a negative impact from product diversification on firm performance.

Therefore, to avoid the high cost, instead of developing new products a manufacturing firms can diversify unrelated products through buy option to shape opportunities in the market and remain competitive. In continuously searching for opportunities and improve performance manufacturing firms in Bangladesh would rely less on new product development (Gumusluoglu & Acur, 2016; Wang *et al.*, 2014) to increase profit and improve performance.

An interpretation of such a finding lies in the notion of 'order winners' and 'order qualifiers'. Originally developed by Hill (1993) in the manufacturing strategy literature, this view suggests that 'order qualifiers' are product features or organizational capabilities that only allow firms to enter or remain in the market. However, to outcompete competitors a business must possess specific capabilities that Hill called 'order winners'. The connection of this notion to our findings is critical because it suggests that *quality* and *delivery* may be seen as 'order qualifiers', and thus a precondition to market participation. Conversely, *flexibility* and *cost* can be considered as 'order winners' (Hill, 1993).

Findings support the notion of potential disadvantages caused by divergence of Bangladesh manufacturing firm's operations from core businesses when implementing product diversification strategy. Because complexities arise in organization and

operations of new lines of business associated with product diversification, to deal with such complicated factors as distribution, coordination, and governance across diverse businesses, a firm has to bear increased internal transaction costs and managerial information processing demands (Hitt *et al.*, 1994; Jones & Hill, 1988). Discussion on the findings of strategic capability has been presented in following section.

4.13.3 Discussion on the Findings of Strategic Capability

Manufacturing capability has positive significant effect on manufacturing firm performance. Results from SmartPLS output shows that this hypothesis is accepted. Purchasing capability has positive significant effect on manufacturing firm Performance. Results from PLS output shows that this hypothesis is accepted.

Manufacturing capability has positive significant effect on sourcing strategy. Results from PLS output shows that this hypothesis is accepted. Purchasing capability has positive significant effect on sourcing strategy. Results from PLS output shows that this hypothesis is accepted.

Finding of this empirical study is supported and in line with the previous evidences (Chavez *et al.*, 2017; Helfat & Martin, 2015; Yu *et al.*, 2014), these studies had found the positive effect of manufacturing capability on firm performance. for the positive association between manufacturing capabilities and organizational performance. however, results are mixed (e.g. Lau Antonio *et al.*, 2007; Swink *et al.*, 2007).

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This study provides the empirical evidence that if manufacturing firms in Bangladesh overcome the challenge to improve performance they should have bundle of capabilities. Internal capability such as, manufacturing capability is needed to make product internally to contribute in building competitive advantage of the company as a complement to the traditional industrial economic perspective which was found in the several studies (Genchev & Willis. 2014; Kraaijenbrink *et al.*, 2010; Lockett *et al.*, 2009; MacCarthy & Jayarathne, 2012). Manufacturing capability refers to the manufacturer's actual competitive strength relative to primary competitors (Swink *et al.*, 2007), which should be aligned with the strategic goals of the organization (Ho *et al.*, 2002).

A firm as a collection of unique capabilities that enable a firms' evolution and maximize strategic growth, flexibility and capabilities (Genchev & Willis, 2014; Helfatand & Peteraf, 2009; Zhou & Wu, 2010). Thus, the manufacturing firms should have equipped with important capability that allows to constantly create and recombine resources in novel ways to produce large variation on key product and economic of scale or lower cost.

There are three primary competitive strategies: price, differentiation, and responsiveness. The findings of the present study suggest that capabilities around flexibility are facilitating responsiveness and possibly even differentiation. The capabilities around cost are facilitating a price strategy. Capabilities around quality are not sufficient to differentiate the products in the market and reliability of delivery is not

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as important as the ability to modify delivery dates, quantities, and item configuration (Chavez *et al.*, 2017).

Importantly, since the dynamic capabilities view is inherently about unique types of organizational capabilities and the utility they provide in different contexts, theoretical advances in our understanding of the heterogeneous performance outcomes of dynamic capabilities can develop by further looking into these key elements-the natures of the capability and the role of the environment in which the firm operates (Zahra *et al.*, 2006).

At the same time, dynamic capabilities involve building new resources or problem-solving capabilities for the future (Danneels, 2015), which may confer a competitive advantage by initiating change in the competitive environment (Sarkar *et al.*, 2001; Teece, 2014). Manufacturing firms can posit competitive when the dynamic capabilities reside in their ability such as manufacturing capability and purchasing capability.

This study confirms that manufacturing firms enhance performance basically, dynamic capabilities are means to ends manufacturing firms. Therefore, as Pavlou and El Sawy (2011) have postulated, their impact on performance is always indirect. Scholars have distinguished dynamic capabilities from ordinary capabilities. Ordinary/operational/zero-order capabilities allow an organization to make a living in the present, while dynamic capabilities alter the way an organization makes its living (Helfat & Winter, 2011). Discussion on sourcing strategy as a mediating effect is presented in following section.

4.13.4 Discussion on the Mediating Effect of Sourcing Strategy

Significant positive mediating effect of sourcing strategy was reported in between cost-leadership, differentiation strategy, related product diversification, unrelated product diversification manufacturing capability and purchasing capability. This study provides statistically empirical significant evidence that supports research hypothesis, indicating that strategic sourcing leads to greater emphasis on capability such as manufacturing capability and negotiation skills and abilities for purchasing. This research supports the notion that companies that have developed and implemented sourcing are more likely to put greater emphasis on developing the other strategic fit as well. This study supports previous study (Petersen *et al.*, 2000).

There is statistically significant evidence to support the research hypothesis indicating that sourcing strategy positively impacts the firm's performance by adding value to the firm. The strategic sourcing, which includes developing relationships with key suppliers in sourcing's long-range plan, being emphasized by company's top management, and having active interaction with other functions (e.g. manufacturing, marketing, customer services, etc.) to support the company's overall strategies, leads to improvements in the firm's performance. There have been some reports showing that integrating sourcing leads to higher business performance (González-Benito, 2010, 2007; Chen *et al.*, 2004; Carr & Pearson, 2002, 1999).

This strategic fit between of competitive strategy-sourcing-performance, strategic flexibility-sourcing-performance, strategic capability-sourcing-performance will give

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better choice to Bangladeshi manufacturing firms. Because as a low-cost country Bangladesh will attract more companies, such as apparel manufacturers, with lower labor rates, low costs for material, availability of certain skills, subsidies, tax benefits and fewer regulations (Fang, 2010; Senft, 2014).

Organizational capabilities combining with its strategy subsequently affect firm performance. Owing to its importance to the theory and practices, many scholars have paid attentions to the issue and have examined the relationships from different approaches. Pavlou and El Sawy (2011) and Chryssochoidis, *et al.*, (2016) postulate that capabilities effect on performance is always indirect. With this line, this study found the indirect effect of capability on manufacturing firm performance.

This study provides the empirical evidence to link the specific capability-sourcing strategy-performance. Sourcing strategy mediate the relationship between strategic capability (manufacturing capability and purchasing capability) and firm performance. Scholars have distinguished dynamic capabilities from ordinary capabilities. Ordinary/operational/zero-order capabilities allow an organization to make a living in the present, while dynamic capabilities alter the way an organization makes its living (Helfat & Winter, 2011; Rashidirad *et al.*, 2017).

Sourcing has evolved as one of the enablers for supply chain performance enhancement in recent years (Dey *et al.*, 2014). However, many studies have revealed that it's still in nascent state in both developed and developing economies (Ho *et al.*, 2011; Scott *et al.*, 2014). Although many scholars see the need of strategic sourcing and its positive

impact on organizations' performance and competitive advantage (Kocabasoglu & Suresh, 2006; Chiang *et al.*, 2012). Focusing on external sourcing, recently, Van de Vrande (2013) found a positive relationship between its diversity and firm innovative performance. Sourcing relationship quality hypothesized as a moderating variable in this study and discussion of the findings are presented in following section.

4.13.5 Discussion on Moderating Effect of Sourcing Relationship Quality

This study found the positive significant moderating effect of sourcing relationship quality on the relationship between sourcing strategy and firm performance. Sourcing relationship quality helps manufacturing firms to acquire potential risk's information about the uncertainty of the market. Third, the supply chain level of analysis contributes to the sustainability-related uncertainty; firms must consider the sustainability-related information from potentially anywhere in their supply chains, but cannot control them entirely (Carter *et al.*, 2015; Rauer & Kaufmann, 2015).

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The emergence of sustainability-related information processing needs from buying firms' complex supply chains (Busse, Meinlschmidt & Foerstl, 2016). If firms direct their attention only to the economic dimension, considering product quality, price, and the supplier's delivery capabilities, they neglect this important process-related information, which is crucial for the buying firm's stakeholders (Hofmann, Busse, Bode & Henke, 2014).

A good relationship with supplier can influence of information processing on the effectiveness of supply chain practices and cycle time variance (Hult, Ketchen & Slater, 2004). Moreover, relationship quality helps to process integration in the outsourcing of business processes (Narayanan, Jayaraman, Luo & Swaminathan, 2011), and the influences of a culture of competitiveness and knowledge development on supply chain performance (Hult, Ketchen & Arrfelt, 2007). Besides, the levels of the relationships quality in supply chain, transactions usually depend on the levels of trust, commitment, mutual dependence, leadership and top management support; the higher the levels of transactions, the closer the firms are to an integrated relationship, superior business performance and more profit (Jain *et al.*, 2014; Uddin, 2017).

Quality relationship can give advantages of manufacturing firms in Bangladesh as; supply chain integration (Flynn, Koufteros & Lu, 2016; Schoenherr & Swink, 2012; Williams, Roh, Tokar & Swink, 2013). In addition, sourcing relationship quality might help to responses to supply chain disruption risks (Bode, Wagner, Petersen & Ellram, 2011) and enhance better performance of manufacturing firms in Bangladesh.

On the other hand, common understanding between the buying and selling firms has a positive effect on the performance of manufacturing firms in Bangladesh. In turn, this can increase the level of confidence among the suppliers and can reduce many unexpected frictions which are important for developing a long-run relationship.

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4.13.6 Summary of Discussion on the Findings

Overall, findings confirm that successful firms need to enhance and improve performance with the specific competitive strategy, choice of strategic flexibility and bundle of strategic capability. In addition, manufacturing firms exhibit statistically significant and positive effects on performance through the mediating effect of sourcing strategy. Analyses of this present study indicate that a business strategy based on cost leadership must have manufacturing capability to produce related product internally focused on cost reduction and improve firm performance. On the other hand, unrelated product and purchasing capability focused on strategic flexibility that essential to manufacturing firm to focus on differentiation strategy to buy product form supplier. This contingency of strategic stand out of manufacturing firm that can help explain the relationship between business strategy, strategic flexibility, strategic capability and performance.

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One of the significant findings of this study is that differentiation strategy does not have direct effect on manufacturing firm performance. Though, through the mediating effect of sourcing strategy found the positive link between differentiation strategy and firm performance. of this study was to investigate an important gap in the competitive strategy literature, which has mainly focused on understanding the determinants of the competitive strategy choices of firms in developed economy contexts. This is concerning because the distinctive economic, social, and institutional context of developing economies may include determinants that remain largely unexamined.

CHAPTER FIVE
RECOMMENDATION AND CONCLUSION

5.1 Introduction

This study gives a proper empirical reason by highlighting that the manufacturing firm lies in understanding the relationships between a firm's strategic choice, strategic flexibility and its strategic capability to improve performance through the mediating effect of sourcing strategy. This chapter concludes the results of the data analysis from the previous chapter. It reviews the major findings, theoretical and managerial implications, limitations of the study and presents suggestions for future research.

5.2 Recapitulation of the Study

The purpose of this study was to provide an integrated strategic framework to manufacturing firms to improve performance and remain competitive. Therefore, to achieve this, and to give direction to present study, the specific objectives were formulated as follows:

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1. To determine the choices of cost-leadership strategy and differentiation strategy of manufacturing firms in Bangladesh to opt sourcing strategy option. Therefore, this study investigated the effect of competitive strategy (cost-leadership and differentiation strategy) on sourcing strategy and manufacturing firm performance.
2. To understand the product diversification strategy of manufacturing firms as strategic flexibility whether related product or unrelated product should make internally or buy from other firms. To understand that this study investigated

the effect of strategic flexibility (related product diversification and unrelated product diversification) on sourcing strategy and manufacturing firm performance.

3. To determine the strategic capability of a manufacturing firm to opt sourcing strategy which in turn achieve better performance. Therefore, this study investigated the effect of strategic capability (manufacturing capability and purchasing capability) on sourcing strategy and firm performance.
4. To determine that sourcing strategy as a strategic weapon to improve manufacturing firm performance. Therefore, this study investigated the mediation effect of sourcing strategy on the relationship between competitive strategy, strategic flexibility, strategic capability and firm performance.
5. To identify the quality of the relationship with other firms which can affect the manufacturing firm's performance when they consider sourcing decision. Therefore, this study investigated the moderating effect of sourcing relationship quality on the relationship between sourcing strategy and manufacturing firm performance.

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5.2.1 Recapitulation of Key Findings of the Study

This study finds that generally, all competitive strategies positively and significantly enhance firm performance. Specifically, manufacturing firms' cost-leadership and differentiation strategy not only has a direct and significant impact on firm performance but also it has indirect and significant impact on firm performance. Finding of this study suggests that manufacturing firms in Bangladesh is able to improve performance by

opting competitive strategy. In addition, deciding the in-house production or buy from other firms will increase the performance than before.

Related product diversification has positive significant effect on manufacturing firm Performance. Results from PLS output shows that this hypothesis is accepted. The result reveals that path coefficient from related product diversification strategy to firm performance.

Unrelated product diversification and firm performance found significant. It is observed that unrelated product diversification has positive significant effect on manufacturing firm performance. The result reveals that path coefficient from unrelated product diversification strategy to firm performance.

Related product diversification has positive significant effect on sourcing strategy. Results from PLS output shows that this hypothesis is accepted. The result reveals that path coefficient from related product diversification strategy to firm sourcing strategy. This study also found unrelated product diversification effect on sourcing strategy. It is observed that unrelated product diversification has positive significant effect on sourcing strategy.

Empirical evidence of this study confirms that manufacturing firms in Bangladesh can differ their performance by offering multiproduct. Increasing flexibility by adopting unrelated product diversification manufacturing firms can offer multiple products. In addition, this study confirms the positive effect of diversification on sourcing strategy.

To offer multiple product therefore, manufacturing firms can opt the buy strategy. Previous studies suggested that the multiproduct firms are larger than single-product firms (Bernard *et al.*, 2006) as well as more productive (Schoar, 2002).

Manufacturing firms can achieve their expected performance by focusing on related product. This study confirms the effect of related product diversification on firm performance and sourcing strategy. Most diversification strategies fail to deliver value and most successful companies achieve their growth by expanding into logical adjacencies that have shared economies, and not from unrelated diversification or moves into "hot" markets (Chen & Chang, 2012; Markides, 1997; Zook & Allen, 2001). Since diversification generates both benefits and costs (Benito-Osorio *et al.*, 2012), a fuller understanding of the effectiveness of diversification could help manufacturing firms to formulate appropriate diversification strategies to improve performance in Bangladesh.

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Manufacturing capability has positive significant effect on manufacturing firm performance. Results from PLS output shows that this hypothesis is accepted. Purchasing capability has positive significant effect on manufacturing firm Performance. Results from PLS output shows that this hypothesis is accepted

Manufacturing capability has positive significant effect on sourcing strategy. Results from PLS output shows that this hypothesis is accepted. Purchasing capability has positive significant effect on sourcing strategy. Results from PLS output shows that this hypothesis is accepted.

The linkages between strategic sourcing, capability and firm performance are worthy of research to the field of strategic management and operations management research. Empirical evidence of this study shows that to opt sourcing strategy a manufacturing firm in Bangladesh needs to have manufacturing capability and purchasing capability. Purchasing is increasingly recognized as a strategic function and a strategic weapon. When a firm opt buy strategy and buy product from other firms, will need the purchasing capability. To improve firm performance in Bangladeshi manufacturing sector qualified personnel with the right knowledge, skills, and abilities is required to successful purchasing. Sourcing skills and behaviors are related to a firm's performance.

Significant positive mediating effect of sourcing strategy was reported in between cost-leadership, differentiation strategy, related product diversification, unrelated product diversification manufacturing capability and purchasing capability. Customization demands from consumers and the need for "quick response" in rapidly changing markets and through sourcing manufacturing firms in Bangladesh can achieve sustainable competitive advantage and improving the overall firm performance.

This study provides statistically empirical significant evidence that supports research hypothesis, indicating that strategic sourcing leads to greater emphasis on capability such as manufacturing capability and negotiation skills and abilities for purchasing. This study found the positive significant moderating effect of sourcing relationship quality on between sourcing strategy and firm performance. Sourcing relationship

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quality helps manufacturing firms to acquire potential risk's information about the uncertainty of the market.

5.3 Contribution of the Study

Manufacturing provides primarily important goods and services to support the quality of human life and mainly contributes to the world economy. It is actually something beyond production and includes all industrial activities from the customer to the factory and back to the customer. In other words, manufacturing lies at the core of industrial economies and contains all the different kinds of services that are connected to the manufacturing chain.

Many studies have evaluated the economic and social importance of manufacturing for the various regions of the world. For instance, highlighted up to 22% manufacturing contributions to Europe's GDP (Molamohamadi & Ismail, 2013). Whereas, in Bangladesh manufacturing contributes 11% only to the GDP. Thus, from strategic point of view it was essential to carry a research in manufacturing sectors in Bangladesh which can give a tremendous breakthrough to upgrade the manufacturing industries.

Most of past researches focused on the relative effects of industry, corporation or business unit have utilized samples of firms from the western world and at the same time used secondary data widely (Bowman & Helfat, 2001). This study gives new insight on better way to understand what factors determine firm's strategy and performance, and thereby contribute to the management literature in a meaningful way

for manufacturing firms in developing and emerging country like Bangladesh. Specifically, this study:

1. Used sample from a non-western nation.
2. Examined an industry that has not been hither-to adequately study before.
3. Used primary data as opposed to secondary data.
4. Identified specific capability relationship among strategic factors; make or buy, competitive strategy and product diversification

5.3.1 Theoretical Contribution

Long debate and questions on performance continue to baffle strategy scholars, despite decades of investigation. In a similar challenges and complexity firm's response differ on performance, sustain and long-term survival to remain competitive. This study provides an empirical evidence to the competitive strategy literature to fill the gap in between strategy and performance link.

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Although this approach has been a touchstone for several seminal studies (Foss, 2011) that were conducted under periods of stability, it has recently drawn a significant amount of critical attention. While some studies have postulated that competitive strategies and dynamic capabilities have a direct impact on a firm's performance (e.g., Parnell, 2011; Soto-Acosta & Meroño-Cerdan, 2008), other research evidence has supported an indirect relationship (Drnevich & Kriauciunas, 2011; Pavlou & El Sawy, 2011).

The root of this inconsistency could be in considering these organizational constructs as unidimensional and disregarding the fact that while a competitive strategy may be best supported by developing a specific dynamic capability to provide firms with a particular type of value, the other types of competitive strategies and dynamic capabilities may not be quite so helpful. since the publication of "Manufacturing – Missing Link in Corporate Strategy" (Skinner, 1969), manufacturing capability has gained recognition as a source of competitive advantage (Wheelright, 1984).

Cost leadership strategy is an integrated set of actions taken to produce goods with unique features that are sold to customers at the lowest cost compared to competitors or at reduced cost to achieve superior profitability (Soltanizadeh *et al.*, 2016; Teeratansirikool *et al.*, 2014). Till to date the literature, which has largely focused on understanding the factors of the competitive strategy choices of firms in developed economy contexts. First, from previous literature reviews of the field (Jiang, Qureshi, 2006; Bustinza *et al.*, 2010; Kroes & Ghosh, 2010), it is obvious that previous research in the area has been dominated by studies in a U.S. context, even though there are some noteworthy exceptions (Bustinza *et al.*, 2010; Bhattacharya *et al.*, 2013). Therefore, this study contributes to responds to such an appeal and consequently shed the light on competitive strategy literature in an emerging and developing economy context.

This research contributes to competitiveness theory improvement as it is expected to bring additional input to the sourcing strategy of firm specifically on make or buy for strategic choice, flexibility of product and firms' specific capabilities of manufacturing firms. The new framework, model, matrix or guidelines proposed should help firm's

managers make better decisions in pursuing the organizational goal and performance and at the same time remain competitive (Liu, & Atuahene-Gima, 2018; Dubey *et al.*, 2017; Lucianetti *et al.*, 2018)

Present study filled this gap by combining the mediating effect of sourcing strategy and moderating effect of sourcing relationship quality. Previous studies focused on direct effect of sourcing strategy on firm performance. Empirical finding of this study sheds light in academia that sourcing strategy effect on firm's performance strengthen by sourcing relationship quality.

This study contributes to the literature by developing a research model based on a multi-theoretical perspective for manufacturing firms. This study has enlightened the literature to provide the link between specific organizational capabilities and sourcing strategy and their relationship with performance of manufacturing firms.

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5.3.2 Contribution to the Resource Based View Theory

This study contributes to the RBV by considering the role of sourcing strategy in the manufacturing capability and firm performance link. Empirical evidence confirms and contributes to the RBV firm performance link, this study has explained how capability from the strategic point of view could be built and strengthen through sourcing strategy.

Knowledge in RBV has been extended by confirming the inconsistency of previous findings in which measuring dynamic capabilities as unidimensional and overlooking that strategy (i.e. competitive strategy) might be best supported by developing a specific

capability to enhance value and improve performance (Rashidirad *et al.*, 2017). Shortcoming in literature that suggested by (Barney, Ketchen, & Wright, 2011; Rashidirad *et al.*, 2017; Wang *et al.*, 2015) offers little insight as to what types of capabilities that are needed as to ensure successful collaboration. In this study adopted the resource-based view (RBV) to explain the effect of strategic capability specifically manufacturing capabilities and purchasing capability on firm performance.

RBV suggests that competitive advantage can be obtained and sustained over time from the internal organization and exploitation of resources such as manufacturing capabilities (Peng *et al.*, 2008; Terjesen *et al.*, 2011). Manufacturing capability with competitive strategy (cost-leadership) and related product diversification through sourcing strategy can be formed the basis of a firm's superior performance and competitive advantage. On the other hand, purchasing capability of manufacturing firms along with differentiation strategy and sourcing strategy improve the performance of manufacturing firms. These findings shed the knowledge in RBV that combination of strategy and specific capability does not have only direct effect but also indirect effect (Chryssochoidis *et al.*, 2016; Makkonen *et al.*, 2014; Parnell, 2011).

This study contributing to the RBV theory that how does resources as tangible and intangible assets (manufacturing capability and purchasing capability) that are tied semi-permanently to a firm (Wernerfelt, 1984). According to RBV, firms are viewed as collection of various types of resources and capabilities; such as, internal factors that are semi-permanently linked to the organization, and these resources and capabilities

are suggested as forming the basis of a firm's superior performance and competitive advantage (Barney, 1991; Wernerfelt, 1984).

In the RBV of the strategic management pays specific attention to the genesis and development of the organization's internal resources and capabilities as a source of sustainable competitive advantage of firm (Barney, 1991, 1996; Grant, 1991; Hall, 1992; Teece, 1997). The constitution of the RBV of the firm has over the decades shifted its focus from more or less general resources and their firm-specific combination and use towards the generation and use of intangible assets such as capabilities and competences (Espino-Rodríguez *et al.*, 2014; Hitt *et al.*, 2015; Rashidirad *et al.*, 2017).

This study contributes to the literature by developing a research model based on a multi-theoretical perspective and conducting a large-scale empirical survey in the manufacturing industry. This study contributed to the RBV by explicitly identifying manufacturing capabilities and purchasing capabilities as a concrete mechanism to collaborate with sourcing strategy of make or buy to transform firm resources into competitive advantage and improve performance. A Resource-Based View (RBV) of the firm has emphasized the need to build unique competencies as a basis of securing competitive advantage.

Moreover, this study provides an empirical insight to the RBV that moderating effect of sourcing relationship quality on the relationship between sourcing strategy and firm performance. This then allows the firm to focus on improving core competence to maintain the relationship with supplier and competitive advantage in the marketplace.

RBV and TCE literatures suggest diverse paths for the organization over a dichotomous choice of make-or-buy.

5.3.2.1 Contribution to the Industrial Economics Theory

This study contributes to the IO theory and extended the knowledge that differentiation and cost-leadership strategies particularly effect the performance of manufacturing firms. A noteworthy contribution of this study to IO literature is that differentiation strategy does not have direct effect on manufacturing firm's performance. Porter's generic business strategy and (low cost, innovation differentiation) and the firm performance and concluded that all three types of strategies positively influenced the performance of a firm.

According to Bain (1968), IO economics is concerned with the economy and wide complex of firms of various functions as suppliers, sellers, or buyers, of goods and services. In accordance with Bain (1968) statement, this study shed the light on IO theory that study was focused on specific economy (emerging economy context), focused on strategy, strategic capability (manufacturing capability and purchasing capability) and sourcing relationship quality.

In addition, context of manufacturing firms in Bangladesh increase the performance with specific strategy choice for example cost-leadership can be opting to produce product internally to meet the order of related product. Whereas, to meet the unrelated product order from the customer order manufacturing firms might opt differentiation strategy to increase profit and enhance performance. This finding extended the

knowledge in IO, asserted in previous researches that performance generally can be increased only when a firm operate in an industry with highest profit potential and use their resources to identify and implement strategy best suited with required by the industry's structural characteristics (Brauer & Wiersema, 2012; Posen, Lee, & Yi, 2013). Proponents of IO economics hold industry structure is central determinant of firm performance and firm differences are considered against industry background (Porter, 1980).

5.3.2.2 Transaction Cost Economics

According to Williamson (1985), Transaction Cost Economics (TCE) focuses on transactions and the costs incurred via completing transactions by one institutional mode rather than another. The transaction either make or buy a product, is the unit of analysis in TCE, and the means of affecting the transaction is the principal outcome of interest (Tadelis & Williamson, 2012). TCE suggests that the costs and difficulties associated with market transactions sometimes favor hierarchies (make) and sometimes favor markets (buy). This study provides empirical evidence to TCE that manufacturing firm makes decision either to produce a product through market-based contract if this transaction cost is lower than producing internally (Jaklič *et al.*, 2012, Lin *et al.*, 2015; Mohiuddin & Su, 2013).

Rather than focusing on the determinants, previous research tended to focus on the performance outcomes of the types and degrees of diversification activities (Doving & Gooderham, 2008; Hoskisson & Hitt, 1990). Thus, despite a common consensus among researchers that diversification deploys surplus resources and cash flows, they did not

account for the antecedents of resource deployment and, in turn, of the diversification decision. Considering this extended the knowledge to TCE that manufacturing firm decision to produce unrelated product does not have direct effect on firm performance. It does through the mediating effect of sourcing strategy.

Shortcoming of the previous TCE to deploying the resource has been overcome in this study. This study sheds the light in the area of TCE knowledge that a manufacturing firm opting buy strategy to qualify the unrelated product order to maximize the profit. Purchasing capability considered the strategic weapon of manufacturing firm for qualifying such orders. Therefore, this study provides a precious integrated strategic approach to TCE for maximizing profit and reduce cost.

This study provides an empirical insight to the TCE that moderating effect of sourcing relationship quality on the relationship between sourcing strategy and firm performance. Sourcing relationship quality positively influence the relationship between sourcing strategy and firm performance. From the TCE point of view, levels of this relationships and supply chain transactions usually depend on the levels of trust, commitment and mutual dependence. The higher the levels of transactions, the closer the firms are to an integrated relationship, superior business performance and more profit (Jain *et al.*, 2014; Uddin, 2017).

5.3.3 Practical Contributions and Managerial Implications

This research addresses some of the key issues and existing gaps in the literature related to the effect of the relationship between competitive strategy, strategic flexibility and

strategic capability, sourcing strategy and sourcing relationship quality affect as moderator on firm performance, especially for firms in the manufacturing sector.

This study contributed and give new insights to the development of firms' competitiveness in manufacturing sector. Findings from this research shall further enhance any existing strategic decision guidelines regarding to strategic choice (cost-leadership and differentiation) of manufacturing firms. In line with that, the framework, model, matrix or guidelines formulated as a result of this research will increase managers' confidence in making decisions.

From a policy perspective, the comprehensive approach applied in this research assures everyone affected by the sourcing decision that the final decision is prudently made with due consideration given to every aspect of the issue which in turn will increase the firm performance. In addition, this study gives an extent choice for the firm to decide to make or buy the product based on the capability they need to adopt as to enhance performance and increase profitability.

Textile and apparel manufacturing industries have been considered an important element in economic activity and growth since the beginning of the Industrial Revolution for basically two reasons: textiles and apparel are basic items of consumption in all countries, and apparel manufacture is labor-intensive, requiring relatively little fixed capital but can create a substantial employment opportunity (Joarder, Hossain, & Hakim, 2010). Finding of this study shows that integrated strategic approach allows firms to improve performance. Manufacturing sector in Bangladesh

will grow substantially by adopting the framework has been given in this study, in turn job market will be expanded not only in apparel and/or textile manufacturing industries but also in other industries.

Moreover, to overcome the challenge in manufacturing sector in Bangladesh mangers will get the prescription from this study to improve productivity and timely delivery. As noted in a report that productivity of Bangladesh manufacturer particularly lower than other countries, both on the production frontline and at the management level to ensuring quality and timely delivery (HKTDC Research, 2016). Hence, capability to cope with deliveries in question and it could greatly affect the performance of manufacturing firms in Bangladesh.

This study gives the contemporary view of a manufacturing firm to improve the performance. Managers should decide whether a product should produce internally or buy from other firms to qualify the customer order. This decision can be based on the capability of a manufacturing firm. For instance, manufacturing firm's manager will be able to buy product/source to other firms if the firm has purchasing capability to ensure the timely delivery.

On the other hand, this study guides the managers that not only buy the products from inter-firm level but should maintain the quality relationship with supplier to overcome the obstacle of delivery time and supply disruptions. Because this study empirically confirms that sourcing relationship quality positively influence the relationship between sourcing strategy and manufacturing firm performance.

This study aimed to provide managers with a more comprehensive and contemporary view of how firms can become optimally distinct-being different enough from peer firms to be competitive. This study equipped managers with an understanding of firms as complex, multidimensional entities, and encourage them to identify and orchestrate various types of strategies and resources to appropriately modify their positioning strategies in order to succeed and improve their firm performance in competitive market place.

5.3.4 Methodological Contribution

For decades, hypotheses that involve moderation and mediation have been central to strategic management research. Aguinis *et al.,* (2017) pointed that limited number of studies combined mediation and moderation within the same strategic management study. This study extends the knowledge from the methodological point of view to the strategic management study. In this study has combined the mediation and moderation effect of sourcing strategy and sourcing relationship quality respectively.

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In addition, this study has used primary data from an emerging country, contrary to most previous studies on outsourcing effects, they used annual report data to measure performance and tested for changes in operating performances as a result from outsourcing decisions. Moderating effect of sourcing relationship quality influence the relationship between sourcing strategy and firm performance.

This study contributes in manufacturing firms from methodological approach of analysis through structure equation modelling. This contribution gives the new insight

over traditional method such as regression technique is deployed for modeling the cause and effect to evaluate the predictive model when the regressor variable and criterion variable are continuous and measurable (Singla, Ahuja & Sethi, 2018). SEM has capability to clarify the direct as well as indirect effects among the interrelated variables and produce complete effects which is the final aggregate of both the direct and indirect effects, instead of multiple linear regression which just manages direct effects only (Agus & Hajinoor, 2012; Westland, 2012).

5.3.5 Contribution to Bangladesh Economy

The World Bank (2017) noted that Bangladesh needs to create jobs as a development priority. This study helps manufacturing sector in Bangladesh to perform better ever than before through sourcing strategy. While, manufacturing firms will perform better, this leads to export more products. Ultimately manufacturing sector will grow and more jobs will be available within this sector. In turn, Country's economy will grow, and burden of unemployment will be reduced.

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In addition, this study will help increase the manufacturing share of GDP and growth rate in Bangladesh. According to BBS (2016) the increasing trend in share of GDP from 2006 to 2016, the growth rate of the sector was not stable. Adopting the model proposed in this study by manufacturing firms in Bangladesh might ensure the steady growth and performance outcome ever than before.

Moreover, Bangladesh will be able to improve its image in word wide as the country promotes itself only as the "source of cheapest labor", although cost of labor is not the

main indicator of competitiveness. This study contributes to improve the manufacturing firm performance from the strategic point of view rather just concentrate on cheapest labor source. In turn Bangladesh economy will grow and improve the competitiveness rank as it was ranked 99 out of 137 countries in the Global Competitiveness Index (GCI) 2017-18 by the (World Economic Forum, 2017). This study will help policy makers in Bangladesh to restructure the industrial policy for overall manufacturing sector, despite garments manufacturing only.

5.4 Limitation of the Study and Recommendation for Future Study

Despite the findings of this study, it has some limitations. To the limited knowledge of the researcher, this is the first study that investigates the essence of manufacturing firm performance along with competitive strategy, strategic flexibility, strategic capability, sourcing strategy and sourcing relationship quality. In this view, the readers and those that may be applying the findings of this study should exercise caution due to its limitation.

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This study is to some extent related to decisions about a parsimonious research design. This study was based on a self-report by owner or top management in manufacturing firms in Bangladesh. This is because questionnaire was designed in such a way that from each firm can be represented by one person, therefore, the issue of common method variance was unavoidable. Although, result of The Harman Single Factor test this study confirmed that common method variance was not a major concern in the data. However, common method variance is still a shortcoming of this study.

Second, due to time and cost limitations, this study employed a cross-sectional study. Thus, it only portrays the phenomena at a single point in time and it will not be able to reflect the long-term effects of the change. In addition, this study only investigated the factors base on manufacturing industries. This study was conducted only in one emerging and developing country (Bangladesh). Indeed, this will affect the generalizability issue. Therefore, the justification of generalizability for all emerging countries is considered as the shortcoming of this study. It is important to note, therefore, that the results should be interpreted with caution when extrapolating to different cultural contexts. Accordingly, this study suggests several recommendations for future study.

Future research can be conducted in service sector. Moreover, to dwell the sourcing strategy, firm size, length and quality of the relationship with supplier can be influenced the proposed framework. Companies with different backgrounds and from different countries or regions have different operation strategies. As an example, US companies have different sourcing and location preferences compared to European and Japanese companies (Kakabadse & Kakabadse, 2002; Junyan, 2010). As a result, all these sourcing decisions depend on the company, its characteristics and its strategy. Therefore, the competitive strategy (cost leadership vs. quality leadership), the production and inventory strategy (e.g. just in time), outsourcing orientation (e.g. international or domestic), and the configuration of the other value-added activities (such as research and development etc.) will all have an impact on the determination of appropriate sourcing strategies (Morschet, 2010).

Future study in different cultural and economic context will be strengthen the findings of this study and provide more generalizability. In addition, the future study might use the longitudinal methodological approach to describe the phenomena in the long-term in the context manufacturing firm performance. Therefore, the longitudinal study might helpful to investigate the outcome of manufacturing firms from competitive strategy, strategic flexibility, and strategic capability. Data in a different point of time will be able to measure the relationship's consistency or validity of manufacturing firms. In addition, the longitudinal study may lead practitioners and academicians to understand the causal relationship between strategy, specific capability and performance link, and the influence of moderating effect of relationship quality.

When manufacturing firms concern about the sourcing to get advantage of the cost, a firm must have the bundle of competencies/capabilities to coordinate the process of sourcing options whether to buy or make. Therefore, future study can give clear picture of the sourcing relationship quality effect more on which option of sourcing strategy make and/or buy to achieve the firm's goals and performance.

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5.5 Conclusion

This research examines the effect of integrated strategies (competitive strategy, strategic flexibility, strategic capability and sourcing strategy) and moderated mediation effect of sourcing relationship quality on firm's performance. Findings of this study are different from previous studies based on the integrated strategic approach to enhance manufacturing firm performance. Limited studies have included moderated and mediated effect in strategic management research. This study was conducting in a

non-western country. The effectiveness of the proposed alignment of strategy in this study by applying it to manufacturing firms in Bangladesh should enhance their performance in comparison to the past.

The corresponding goal of this study was to address the quotation on how manufacturing firm can achieve better performance. To fill the gap of time until today, this study conducts a thorough overview and confirms that especially in developing country like Bangladesh suggest prevailing and high-performing strategic choices in the ever-increasing body of empirical evidence. Various approaches and multiple strategies, combined resources and organizational capability can deal with the competitive environment and contribute to achieve desired objectives of the firm. As an integrated approach of this context, sourcing strategy, and organizational capability ensure firms to adapt in a competitive environment and help to enhance firm performance.

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Model proposed in this study helps firms in the manufacturing sectors to decide whether products to make through internal effort or solicit from outside independent suppliers (buy) with a high degree of economies-of-scale to enhance efficiency and productivity (Espino-Rodríguez & Lai, 2014; Hilman & Mohamed, 2011; Lafontaine & Slade, 2007). Efficiency and productivity thru reducing costs, maintain high quality, flexibility, improved delivery dependability, and prompt quick response enable a manufacturing firm to achieve competitiveness and performance (Su & Gargeya, 2012).

Undoubtedly, various approaches with multiple strategies, combined resources and organizational processes should enable firms to compete competitively and achieve desired objectives. As an integrated approach of several factors like competitive strategy, sourcing strategy, strategic flexibility and organizational resources and capability ensure firms to adapt in a competitive environment and help to enhance manufacturing firm performance.

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APPENDIX A
QUESTIONNAIRE

PART 1: DEMOGRAPHIC DESCRIPTION OF RESPONDENT

*(Please **Circle** in appropriate box)*

1. Your job title in this Organization

   (a) Chief Executive Officer
   (b) Managing Director
   (c) General Manager
   (d) Chief Operating Officer
   (e) Manager (Please specify)

2. Type of company incorporated
   (a) Private Limited Company
   (b) Public Limited Company
   (c) Sole Proprietorship
   (d) Partnership

3. Which of the following best describes the sector of your company's business?
   (a) Garments Manufacturing
   (b) Electrical & Electronics
   (c) Leather

4. How would you describe the basic manufacturing processes for the product?
   (a) Customized manufacturing
   (b) Small batch
   (c) Large batch
   (d) Mass production
   (e) Mass customization
   (f) Continuous Process

5. Does your company currently produce RELATED PRODUCTS (share manufacturing facilities, components or technologies of the major product in producing other products)?
   (a) Yes
   (b) No

6. Does your company currently produce UNRELATED PRODUCTS (producing products totally beyond the boundaries of the industry producing the major product)?

(a) Yes
(b) No

PART 2: COMPETITIVE STRATEGIC ORIENTATION

In this section you have to answer about your company's strategic orientation to gain competitive advantage. Two methods of strategy are applied here in which your company complies with to survive in the industry.

a) Cost Leadership Strategy
b) Differentiation Strategy

Please indicate how important each item is to the current strategy of your company (***Please "√" on appropriate box***).

a) Cost Leadership Strategy

	Following items will examine your company's **Cost Leadership Strategy**	**Not at all Important**						**Extremely Important**
1	Vigorous pursuit of cost reductions	1	2	3	4	5	6	7
2	Tight control of overhead and variable costs	1	2	3	4	5	6	7
3	Minimizing distribution costs	1	2	3	4	5	6	7
4	Emphasizing high capacity utilization	1	2	3	4	5	6	7
5	Developing efficient manufacturing processes	1	2	3	4	5	6	7
6	Price at or below competitive price levels	1	2	3	4	5	6	7

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b) Differentiation Strategy

	Following items will examine your company's **Differentiation Strategy**	**Not at all Important**						**Extremely Important**
1	Innovation in marketing technology and methods	1	2	3	4	5	6	7
2	Forecasting new market growth	1	2	3	4	5	6	7
3	Forecasting existing market growth	1	2	3	4	5	6	7
4	Utilizing advertising	1	2	3	4	5	6	7
5	Fostering innovation and creativity	1	2	3	4	5	6	7
6	Developing brand identification	1	2	3	4	5	6	7
7	Refining existing products/services	1	2	3	4	5	6	7
8	Building a positive reputation within the industry for technological leadership	1	2	3	4	5	6	7
9	Extensive training of marketing personnel	1	2	3	4	5	6	7
10	Developing a broad range of new products/services	1	2	3	4	5	6	7
11	Building high market share	1	2	3	4	5	6	7

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PART 3: STRATEGIC FLEXIBILITY

In this section questions about your company's product related strategy (diversification). Listed below are several areas where your company may be making or planning to make changes. Please indicate if your company is decreasing or increasing the indicated areas. This part of the questionnaire will have to answer about two types of strategy of your company

a) Related Product Diversification Strategy
b) Unrelated Product Diversification Strategy

Please indicate if your company is decreasing or increasing the indicated areas. (***Please "√" on appropriate box***).

a) Related Product Diversification Strategy

	Following items will examine your company's **Related Product Diversification Strategy**	**Not at all Important**						**Extremely Important**
1	Number of related products in primary industry	1	2	3	4	5	6	7
2	Number of new and related product introduction	1	2	3	4	5	6	7
3	Number of new and related product variety	1	2	3	4	5	6	7
4	Number of new and related product features	1	2	3	4	5	6	7
5	Investment in R&D for new and related product	1	2	3	4	5	6	7

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b) Unrelated Product Diversification Strategy

	Following items will examine your company's **Unrelated Product Diversification Strategy**	**Not at all Important**						**Extremely Important**
1	Number of unrelated products in primary industry	1	2	3	4	5	6	7
2	Number of new and unrelated product introduction	1	2	3	4	5	6	7
3	Number of new and unrelated product variety	1	2	3	4	5	6	7
4	Number of new and unrelated product features	1	2	3	4	5	6	7
5	Investment in R&D for new and unrelated product	1	2	3	4	5	6	7

PART 4: Organization Capability

In this section, you are required to state your company's capability to compete in industry. Two capabilities of your company have considered.

a) Manufacturing Capability
b) Process Capability

Please indicate which capability your company has. (***Please "√" on appropriate box***).
(***Please "√" on appropriate box***).

a) Manufacturing Capability

	Manufacturing Capability	**Strongly Disagree**						**Strongly Agree**
1	Our company has better abilities than the competitors in mass production.	1	2	3	4	5	6	7

2	Our company has better abilities than the competitors in materials purchase and inventory control.	1	2	3	4	5	6	7
3	Our company has better abilities than the competitors in capacity management.	1	2	3	4	5	6	7
4	Our company has better abilities than the competitors in process management.	1	2	3	4	5	6	7
5	Our company has better abilities than the competitors in product quality management.	1	2	3	4	5	6	7

b) Purchasing Capability

	Purchasing Capability	**Strongly Disagree**						**Strongly Agree**
1	Our company has better abilities than the competitors in coordination among different departments.	1	2	3	4	5	6	7
2	Our company has better abilities than the competitors in integration among different departments.	1	2	3	4	5	6	7
3	Our company has better abilities than the competitors in coordination with other firms.	1	2	3	4	5	6	7
4	Our company has better abilities than the competitors in integration with other firms.	1	2	3	4	5	6	7
5	Our company has better abilities than the competitors in logistics supports to buy product from supplier or other firm	1	2	3	4	5	6	7

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PART 5: SOURCING STRATEGY

This part of the questionnaire will have to answer about sourcing strategy of your company. Indicate importance of each item. (***Please "√" on appropriate box***).

	Following items will examine your company's Sourcing Strategy	**Not at all Important**						**Extremely Important**
1	Lower prices	1	2	3	4	5	6	7
2	Better quality	1	2	3	4	5	6	7
3	Better delivery performance	1	2	3	4	5	6	7
4	Better availability	1	2	3	4	5	6	7
5	Access to advanced technology	1	2	3	4	5	6	7
6	Better customer service	1	2	3	4	5	6	7
7	Easy to change product design	1	2	3	4	5	6	7
8	Enhanced competitive position	1	2	3	4	5	6	7
9	Helps meet countertrade obligation	1	2	3	4	5	6	7
10	Easy to resolve problems	1	2	3	4	5	6	7
11	Better communication	1	2	3	4	5	6	7
12	Better geographic location	1	2	3	4	5	6	7

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PART 6: SOURCING RELATIONSHIP QUALITY

This part of the questionnaire will have to answer about sourcing relationship of your company. This is about how well you manage the relationship with supplier and buyer. (***Please "√" on appropriate box***).

	Following items will examine your company's **Sourcing Relationship quality**	**Not at all Important**						**Extremely Important**
1	We make mutually beneficial decisions in most circumstances	1	2	3	4	5	6	7
2	We understand each other's' business well	1	2	3	4	5	6	7
3	We share the benefits and risks of our business	1	2	3	4	5	6	7
4	We share compatible culture and policies	1	2	3	4	5	6	7
5	We fulfill pre-specified agreements and promises in most cases	1	2	3	4	5	6	7

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PART 7: FIRM PERFORMANCE

a) Please indicate the range which best describes the average performance of your company for the past three years (your responses will be kept strictly confidential):

		Much Lower						**Much Higher**
1	Return on Sales (ROS)	1	2	3	4	5	6	7
2	Return on Investment (ROI)	1	2	3	4	5	6	7
3	Market Share	1	2	3	4	5	6	7
4	Sales growth rate	1	2	3	4	5	6	7

b) Please indicate how strongly you agree or disagree with the following statements relation to your company performance.

		Strongly Disagree						**Strongly Agree**
1	**Innovation and Learning Perspective:** The company's ability to innovate, improve and learn increases new markets, revenues and margins in its bid to promote customer's concern.	1	2	3	4	5	6	7
2	**Customer Perspective:** The company always considers the customer's concern on time, Quality, performance and services and costs in order to pursue success.	1	2	3	4	5	6	7
3	**Internal Business Perspective:** The company always considers the business processes that have the greatest impact on customer satisfaction such as factors that affect cycle time, quality, employee skills and productivity	1	2	3	4	5	6	7

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APPENDIX B

SKEWNESS AND KURTOSIS

Skewness and Kurtosis

	No.	Mean	Median	Min	Max	Standard Deviation	Excess Kurtosis	Skewness
COS1	9	5.227	5	1	7	1.421	1.21	-1.076
COS2	10	5.173	5	1	7	1.488	0.887	-1.068
COS3	11	5.224	5	1	7	1.441	1.027	-1.069
COS4	12	5.197	5	1	7	1.452	1.018	-1.062
COS5	13	5.176	5	1	7	1.452	1.08	-1.078
COS6	14	5.07	5	1	7	1.597	0.723	-1.07
DIF1	15	5.433	6	1	7	1.197	1.212	-0.832
DIF2	16	5.421	6	1	7	1.261	1.773	-1.052
DIF3	17	5.403	6	1	7	1.323	1.715	-1.119
DIF4	18	5.403	6	1	7	1.255	1.712	-1
DIF5	19	5.306	5	1	7	1.393	1.464	-1.093
DIF6	20	5.339	6	1	7	1.351	1.374	-1.043
DIF7	21	5.394	6	1	7	1.278	1.518	-1.005
DIF8	22	5.361	5	1	7	1.314	2.044	-1.187
DIF9	23	4.694	5	1	7	1.787	-0.385	-0.771
DIF10	24	4.952	5	1	7	1.696	0.273	-1.017
DIF11	25	4.961	5	1	7	1.672	0.249	-0.981
REL1	26	5.279	5	1	7	1.358	1.092	-0.997
REL2	27	5.312	5	1	7	1.304	0.601	-0.833

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REL3	28	5.306	5	1	7	1.298	0.552	-0.8
REL4	29	5.294	5	1	7	1.319	0.707	-0.856
REL5	30	5.227	5	1	7	1.353	0.771	-0.869
UNL1	31	5.124	5	1	7	1.511	0.617	-0.974
UNL2	32	5.155	5	1	7	1.48	0.612	-0.949
UNL3	33	5.142	5	1	7	1.486	0.573	-0.943
UNL4	34	5.167	5	1	7	1.469	0.546	-0.936
UNL5	35	5.185	5	1	7	1.418	0.498	-0.855
MCA 1	36	5.148	5	1	7	1.477	1.06	-1.125
MCA 2	37	5.07	5	1	7	1.499	0.762	-1.047
MCA 3	38	5.07	5	1	7	1.525	0.809	-1.061
MCA 4	39	5.13	5	1	7	1.458	1.099	-1.106
MCA 5	40	5.103	5	1	7	1.484	0.608	-0.983
PCA1	41	4.791	5	1	7	1.699	-0.498	-0.605
PCA2	42	4.658	5	1	7	1.755	-0.709	-0.56
PCA3	43	5.039	5	1	7	1.565	0.307	-0.923
PCA4	44	5.094	5	1	7	1.545	0.322	-0.92
PCA5	45	4.924	5	1	7	1.724	0.102	-0.937
SSO1	46	5.018	5	1	7	1.61	0.516	-1.018
SSO2	47	5.218	5	1	11	1.514	1.397	-0.895
SSO3	48	5.227	5	1	7	1.431	0.808	-0.997
SSO4	49	5.015	5	1	7	1.615	0.201	-0.931
SSO5	50	5.233	5	1	7	1.434	0.852	-1.04
SSO6	51	4.852	5	1	7	1.809	-0.233	-0.867

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SSO7	52	5.012	5	1	7	1.648	0.291	-0.991
SSO8	53	5.255	5	1	7	1.417	1.167	-1.08
SSO9	54	5.13	5	1	7	1.531	0.527	-0.987
SSO10	55	5.197	5	1	7	1.498	1.061	-1.128
SS011	56	5.018	5	1	7	1.625	0.035	-0.876
SSO12	57	5.148	6	1	7	1.618	0.728	-1.131
SRQ1	58	4.761	5	1	7	1.756	-0.654	-0.551
SRQ2	59	4.939	5	1	7	1.934	-0.755	-0.663
SRQ3	60	5.215	6	1	7	1.957	-0.62	-0.828
SRQ4	61	4.621	5	1	7	1.758	-0.784	-0.44
SRQ5	62	4.794	5	1	7	1.896	-1.025	-0.431
FOP1	63	5.027	5	1	7	1.624	-0.036	-0.777
FOP2	64	5.306	6	1	7	1.732	0.18	-1.003
FOP3	65	5.673	6	1	7	1.65	1.057	-1.341
FOP4	66	5.145	5	1	7	1.464	0.14	-0.737
FOP5	67	5.164	6	1	7	1.769	-0.348	-0.791
FOP6	68	5.576	6	1	7	1.677	0.621	-1.192
FOP7	69	5.324	6	1	7	1.692	0.274	-1.016
COS	70	5.055	5	1	7	1.394	0.29	-0.651
DIF	71	5.106	5	1	7	1.46	0.015	-0.702
REP	72	5.006	5	1	7	1.421	-0.34	-0.533
UNP	73	4.939	5	1	7	1.52	-0.553	-0.438
SRQ	74	5.34	5	1	7	1.155	0.934	-0.759
PCA	75	5.372	5.5	1	7	1.153	1.057	-0.836
SSO	76	5.438	5.917	1	7	1.163	0.97	-0.809

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PRO	77	5.42 2	6	1	7	1.264	0.81	-0.892
FPR	78	5.32	5.714	1	7	1.407	0.645	-1.032

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APPENDIX C

CROSS LOADINGS OF THE CONSTRUCTS

Cross Loadings of the Constructs

Items/Construct	COS	DIF	REL	UNL	MCA	PCA	SSO	SRQ	FOP
COS1	**0.977**	0.616	0.576	0.803	0.323	0.739	0.869	0.365	0.668
COS2	**0.966**	0.643	0.584	0.826	0.358	0.761	0.890	0.367	0.680
COS3	**0.976**	0.614	0.568	0.796	0.328	0.735	0.861	0.372	0.663
COS4	**0.980**	0.580	0.554	0.777	0.323	0.716	0.841	0.360	0.643
COS5	**0.903**	0.539	0.506	0.717	0.284	0.659	0.771	0.303	0.605
COS6	**0.905**	0.500	0.487	0.697	0.297	0.644	0.753	0.333	0.605
DIF1	0.617	**0.958**	0.473	0.646	0.237	0.571	0.693	0.346	0.564
DIF2	0.570	**0.938**	0.482	0.611	0.215	0.577	0.653	0.324	0.522
DIF3	0.547	**0.900**	0.472	0.576	0.241	0.509	0.627	0.313	0.497
DIF4	0.596	**0.965**	0.460	0.632	0.216	0.557	0.674	0.342	0.547
DIF5	0.500	**0.854**	0.421	0.543	0.157	0.504	0.561	0.294	0.449
DIF6	0.545	**0.867**	0.454	0.579	0.193	0.495	0.610	0.285	0.533
DIF7	0.542	**0.948**	0.455	0.610	0.171	0.510	0.627	0.298	0.496
DIF8	0.576	**0.896**	0.416	0.620	0.190	0.547	0.653	0.311	0.534
REL1	0.685	0.593	**0.937**	0.716	0.248	0.535	0.782	0.346	0.634
REL2	0.741	0.567	**0.985**	0.781	0.303	0.568	0.845	0.342	0.656
REL3	0.726	0.553	**0.962**	0.773	0.268	0.557	0.825	0.334	0.642
REL4	0.732	0.553	**0.963**	0.775	0.328	0.558	0.834	0.334	0.677
REL5	0.682	0.520	**0.929**	0.731	0.290	0.533	0.791	0.345	0.609
UNL1	0.609	0.504	0.506	**0.941**	0.271	0.620	0.706	0.324	0.632
UNL2	0.614	0.502	0.531	**0.910**	0.281	0.616	0.710	0.353	0.543
UNL3	0.623	0.513	0.505	**0.951**	0.269	0.620	0.724	0.328	0.579
UNL4	0.644	0.561	0.557	**0.936**	0.325	0.636	0.743	0.375	0.610
UNL5	0.635	0.529	0.509	**0.878**	0.285	0.619	0.743	0.326	0.620
MCA1	0.791	0.636	0.634	0.237	**0.977**	0.774	0.908	0.425	0.717
MCA2	0.765	0.638	0.615	0.215	**0.951**	0.747	0.878	0.383	0.677
MCA3	0.780	0.609	0.594	0.241	**0.958**	0.763	0.892	0.384	0.718
MCA4	0.785	0.634	0.598	0.216	**0.969**	0.767	0.906	0.386	0.704
MCA5	0.784	0.652	0.623	0.157	**0.965**	0.760	0.899	0.427	0.691
PCA1	0.306	0.209	0.377	0.303	0.356	**0.897**	0.360	0.240	0.313
PCA2	0.263	0.172	0.283	0.197	0.321	**0.811**	0.260	0.199	0.208
PCA3	-0.061	0.023	0.035	0.017	0.340	**0.853**	-0.022	-0.056	0.006
PCA4	0.006	0.013	0.008	0.009	0.336	**0.862**	-0.017	-0.016	-0.029
PCA5	0.021	0.010	0.036	0.007	0.289	**0.833**	0.008	-0.004	-0.008
SSO1	0.874	0.696	0.665	0.323	0.374	0.850	**0.996**	0.418	0.777
SSO10	0.822	0.642	0.635	0.485	0.334	0.815	**0.953**	0.393	0.765

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SSO12	0.799	0.672	0.665	0.454	0.328	0.766	**0.920**	0.431	0.736
SSO2	0.872	0.692	0.666	0.419	0.377	0.846	**0.993**	0.418	0.773
SSO3	0.874	0.696	0.665	0.423	0.375	0.850	**0.995**	0.416	0.775
SSO4	0.874	0.693	0.661	0.519	0.365	0.849	**0.993**	0.415	0.774
SSO5	0.872	0.696	0.664	0.324	0.372	0.851	**0.995**	0.412	0.775
SSO6	0.840	0.665	0.634	0.398	0.317	0.826	**0.956**	0.390	0.744
SSO7	0.844	0.656	0.633	0.338	0.382	0.831	**0.959**	0.392	0.773
SSO8	0.839	0.657	0.635	0.231	0.340	0.829	**0.968**	0.388	0.765
SSO9	0.849	0.694	0.656	0.195	0.361	0.824	**0.972**	0.415	0.758
SRQ1	0.257	0.267	0.564	0.310	0.253	0.244	0.305	**0.875**	0.273
SRQ2	0.392	0.344	0.669	0.434	0.254	0.349	0.438	**0.899**	0.383
SRQ3	0.304	0.284	0.570	0.348	0.210	0.292	0.357	**0.843**	0.311
SRQ4	0.257	0.214	0.511	0.272	0.176	0.243	0.272	**0.829**	0.240
SRQ5	0.365	0.358	0.649	0.414	0.227	0.392	0.420	**0.886**	0.373
FOP1	0.390	0.361	0.352	0.420	0.326	0.423	0.472	0.650	**0.752**
FOP2	0.563	0.472	0.484	0.626	0.356	0.536	0.644	0.628	**0.936**
FOP3	0.487	0.424	0.393	0.540	0.321	0.485	0.582	0.525	**0.830**
FOP4	0.421	0.331	0.495	0.428	0.340	0.430	0.478	0.518	**0.745**
FOP5	0.513	0.445	0.462	0.576	0.336	0.546	0.596	0.602	**0.896**
FOP6	0.448	0.414	0.523	0.526	0.289	0.449	0.546	0.491	**0.797**
FOP7	0.550	0.463	0.484	0.611	0.346	0.518	0.623	0.631	**0.923**

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Factor Loading of the Constructs

Construct	Items	Loading	Standard Error	T-value	P value
Cost-Leadership	COS1	0.977	0.007	26.435	0.000
	COS2	0.966	0.012	79.536	0.000
	COS3	0.976	0.007	23.443	0.000
	COS4	0.980	0.005	29.873	0.000
	COS5	0.903	0.034	26.491	0.000
	COS6	0.905	0.036	25.199	0.000
Differentiation	DIF1	0.958	0.013	76.257	0.000
	DIF2	0.938	0.029	32.158	0.000
	DIF3	0.900	0.037	24.527	0.000
	DIF4	0.965	0.010	98.002	0.000
	DIF5	0.854	0.042	20.352	0.000
	DIF6	0.867	0.043	20.339	0.000
	DIF7	0.948	0.018	53.485	0.000
	DIF8	0.896	0.022	41.074	0.000
Related Product Diversification	REL1	0.937	0.030	31.032	0.000
	REL2	0.985	0.003	43.543	0.000
	REL3	0.962	0.021	46.340	0.000
	REL4	0.963	0.018	53.880	0.000
	REL5	0.929	0.022	41.879	0.000
Unrelated Product Diversification	UNL1	0.941	0.019	49.929	0.000
	UNL2	0.910	0.026	34.576	0.000
	UNL3	0.951	0.012	77.707	0.000
	UNL4	0.936	0.017	55.063	0.000
	UNL5	0.878	0.033	26.267	0.000
Manufacturing Capability	MCA1	0.977	0.007	23.224	0.000
	MCA2	0.951	0.025	37.651	0.000
	MCA3	0.958	0.021	45.270	0.000
	MCA4	0.969	0.014	71.236	0.000
	MCA5	0.965	0.018	53.906	0.000
Process Capability	PCA1	0.897	0.029	30.646	0.000
	PCA2	0.811	0.046	17.462	0.000
	PCA3	0.853	0.153	34.456	0.000
	PCA4	0.862	0.153	28.282	0.000
	PCA5	0.833	0.114	22.575	0.000
Sourcing Strategy	SS011	0.995	0.002	71.236	0.000
	SSO1	0.996	0.001	53.906	0.000
	SSO10	0.953	0.028	34.180	0.000
	SSO12	0.920	0.036	25.220	0.000
	SSO2	0.993	0.004	24.224	0.000
	SSO3	0.995	0.002	39.651	0.000

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	SSO4	0.993	0.004	44.271	0.000
	SSO5	0.995	0.002	71.236	0.000
	SSO6	0.956	0.032	30.251	0.000
	SSO7	0.959	0.026	36.270	0.000
	SSO8	0.968	0.020	47.752	0.000
	SSO9	0.972	0.042	26.220	0.000
Sourcing Relationship Quality	SRQ1	0.875	0.021	41.277	0.000
	SRQ2	0.899	0.017	53.340	0.000
	SRQ3	0.843	0.024	35.013	0.000
	SRQ4	0.829	0.029	28.856	0.000
	SRQ5	0.886	0.017	52.861	0.000
Firm Performance	FOP1	0.752	0.033	22.596	0.000
	FOP2	0.936	0.007	27.435	0.000
	FOP3	0.830	0.029	28.824	0.000
	FOP4	0.745	0.037	20.174	0.000
	FOP5	0.896	0.015	58.951	0.000
	FOP6	0.797	0.034	23.616	0.000
	FOP7	0.923	0.011	80.922	0.000

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