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**BUSINESS STRATEGY, DISTINCTIVE CAPABILITIES,
BUSINESS ENVIRONMENT AND PERFORMANCE OF
MANUFACTURING COMPANIES IN NIGERIA**



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ENVORNMENT AND PERFORMANCE OF MANUFACTURING COMPANIES
IN NIGERIA**

**BY
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**Thesis Submitted to
Othman Yeop Abdullah Graduate School of Business,
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In Fulfillment of the Requirement for the Degree of Doctor of Philosophy**

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ABSTRACT

Despite the contributions of manufacturing sector to economic and technological development of various countries, the sector is faced with many challenges leading to poor performance in many developing countries including Nigeria. Many factors are found to influence organizational performance of the sector. These include among others; poor electricity service, inadequate access to finance, competition from foreign goods and others. To address these challenges, strategic management academics and practitioners have conducted a lot of investigations focusing on business strategies, distinctive capabilities and organizational performance. However, it appears that very little empirical research efforts are available to address the issues in line with the peculiarity of the developing countries such as Nigeria. The objective of this study is to examine the relationships between business strategies, distinctive capabilities and performance of manufacturing companies with the moderating roles of electricity service and access to finance representing business environment. The study used adopted survey instruments to collect data from 309 selected manufacturing companies in Nigeria. Using SPSS 22.0, Multiple Regression and moderated analyses were employed to measure relationships between the predictor and criterion variables as well as determine the roles of the moderators. Results indicated that differentiation strategy, research and development capabilities and technological capabilities have significant positive relationships with organizational performance. Findings also revealed that both access to finance and reliability dimension of electricity service moderated only the marketing capabilities and organizational performance relationship. Whereas, responsiveness dimension of electricity service moderated marketing capabilities-performance relationship and technological capabilities-performance relationship. These results imply that manufacturing companies need to pay attention to access to finance and electricity service quality while implementing strategies and capabilities. Apart from contributing to the existing literature, this study also extended Resource Based View by incorporating finance and electricity as situational factors.

Keywords: Manufacturing, strategies, capabilities, Organizational performance and Business environment

ABSTRAK

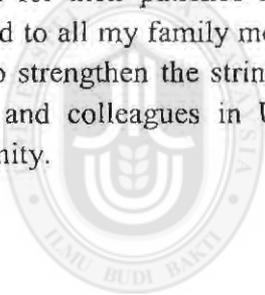
Sektor pembuatan yang menyumbang kepada pembangunan ekonomi dan teknologi di pelbagai negara masih menghadapi pelbagai cabaran yang menjurus ke arah kelemahan prestasi di kebanyakan negara membangun termasuk Nigeria. Terdapat banyak faktor yang didapati mempengaruhi prestasi organisasi sektor ini, antaranya adalah kelemahan perkhidmatan elektrik, kekurangan kemudahan kewangan, persaingan barangan asing dan lain-lain. Untuk menangani cabaran tersebut, ahli akademik dan pengamal pengurusan strategik telah menjalankan pelbagai penyelidikan yang menumpukan kepada strategi perniagaan, keupayaan tersendiri dan prestasi organisasi. Namun, hanya terdapat sedikit usaha penyelidikan empirik yang dijalankan untuk menangani isu-isu tersebut selaras dengan keunikan negara membangun seperti Nigeria. Objektif kajian ini adalah menyelidik hubungan antara strategi perniagaan, keupayaan tersendiri dan prestasi syarikat pembuatan dengan peranan penyederhana perkhidmatan tenaga elektrik dan kemudahan kepada kewangan yang mewakili persekitaran perniagaan. Kajian ini menggunakan instrumen kaji selidik untuk mengumpul data daripada 309 buah syarikat pembuatan di Nigeria. Dengan menggunakan SPSS 22.0, analisis Regresi Berganda dan penyederhana telah diguna pakai untuk mengukur hubungan antara pemboleh ubah peramal dan kriteria serta menentukan peranan moderator. Hasil menunjukkan pembezaan strategi, penyelidikan serta keupayaan perkembangan dan keupayaan teknologi mempunyai hubungan positif yang signifikan dengan prestasi organisasi. Dapatan kajian juga mendedahkan bahawa kemudahan kewangan dan kebolehpercayaan dimensi perkhidmatan elektrik hanya menyederhanakan hubungan keupayaan pemasaran dan prestasi organisasi. Manakala, dimensi responsif perkhidmatan elektrik menyederhanakan hubungan keupayaan-prestasi pemasaran dan keupayaan-prestasi teknologi. Hasil kajian ini menunjukkan syarikat pembuatan perlu memberi perhatian kepada kemudahan kewangan dan kualiti perkhidmatan elektrik semasa melaksanakan strategi dan keupayaan. Selain daripada memberi sumbangan kepada kajian literatur sedia ada, kajian ini juga memperluaskan *Resource Based View* dengan menggabungkan kewangan dan elektrik sebagai faktor keadaan.

Kata kunci: pembuatan, strategi, keupayaan, prestasi organisasi dan persekitaran perniagaan

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LIST OF ABBREVIATIONS

ATF	Access to Finance
CBN	Central Bank of Nigeria
CIP	Competitive industrial report
CLS	Cost leadership Strategy
DFS	Differentiation strategy
MAN	Manufacturers Association of Nigeria
MKT	Marketing Capabilities
NIPC	Nigerian investment promotion commission
OPF	Organizational Performance
RDC	Research and Development Capabilities
REL	Reliability
RSP	Responsiveness
TEC	Technological Capabilities
UNIDO	United Nations development organization

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Manufacturing sector is an important sector that is expected to play dominant role in shaping and defining the core path to industrialization not only in developing countries such as Nigeria but the world over. The sector has the reputation of being an important engine of growth, solution to unemployment, a source of wealth creation as well as a reliable driver of sustainable development (Mike, 2010). Improving performance of manufacturing sector in the emerging economies is of great importance as an attempt to improve the standard of living for their citizens and to attain the economic status of the advanced countries. One of the important characteristics of economic development in the traditional economy in which primary activities are prevalent, is the structural transformation of such economy into the one of high productivity activities in manufacturing (Naude & Szirmai, 2012). The transformation from traditional to industrialised economy becomes essential taking into consideration the comparative contributions of manufacturing sector to the world economy by broadly segregating the global economy into; advanced economies and developing economies.

The average contributions of manufacturing sector to the gross domestic product GDP in 21 advanced countries between 1950 and 2005 stood at 24.3%. While that of 68 developing economies within the same period is found to be 15.3% (Naude & Szirmai, 2012). Moreover, UNIDO report of 2002 cited in Olamide, Oyebisi, Egbetokun and Adebowale, (2011) indicated that in year 2000 alone, manufactured exports account for about 86% of the total world export for the year. As at 2009, the sector also, generated

over 16 per cent of the available jobs globally and it was expected to have risen by 6.4 per cent in 2013 (UNIDO, 2013a).

However, available data shows that despite the contributions of manufacturing sector to the global as well as various countries' economies, the sector in Nigeria recorded poor performance relative to agriculture and service sectors in terms value added measured in local currency unit. The data covers agriculture, manufacturing and service sectors. For example, in 2010, the value-added contribution by the service sector was 27.737 and that of agriculture was 13.049. However, manufacturing sector only contributed 3.579. It implies that the value added contributions of agriculture and service sectors re more than three times and five times the manufacturing contribution in the same year (WorldBank, 2018). Despite the consistent growth of the sector, it is far from getting close to the sectors under review. As at the end of 2016, the contributions of the two sectors have grown to 21.524 and 61.325 for agriculture and services sectors respectively. Manufacturing sector has only improved to 8.903 trillion naira (see Table 1.1 below).

Table 1.1
Sectorial value added (Current local currency unit)

Sector/Year	2010	2011	2012	2013	2014	2015	2016
Agriculture	13.049	14.038	15.816	16.817	18.019	19.637	21.524
Manufacturing	3.579	4.527	5.589	7.233	8.685	8.974	8.903
Services	27.737	31.089	36.31	42.422	48.812	55.319	61.325

Source: (WorldBank, 2018)

Similarly, the average annual industry contributions to growth of eleven west African countries, between 2011 and 2015 was 8.39%. The brake down shows that Sera lone has the highest contribution with 34.72% while Togo has the lowest average annual growth of -3.2% within the same period. Nigeria is the ninth on the table with a

contribution of only 3.52% (World Bank, 2017). The report indicates that even among the African countries, Nigeria is one of worst affected countries after Cote de voire and Togo. It also shows that Nigeria's average annual growth within the period is below the overall mean of the selected countries within the period covered by the review.

Table1.2

Comparative industry value added (annual % growth)

Country/Year	2011	2012	2013	2014	2015	Mean
Benin Republic	-1.8	2.5	8.7	7.0	10.1	5.3
Cameroon Republic	1.6	4.9	5.7	6.8	8.6	5.52
Chad Republic	8.7	8.5	20.9	8.1	-4.3	8.38
Cote de voire	-7.6	-1.4	8.8	4.1	8.7	2.52
Gambian Republic	5.5	6.4	4.5	2.7	8.2	5.46
Ghana	41.6	11.0	6.6	0.8	1.0	13.68
Niger Republic	5.2	49.6	12.9	-1.5	-8.1	11.62
Nigeria	8.4	2.4	2.2	6.8	-2.2	3.52
Senegal	6.3	3.6	4.0	5.3	7.1	5.26
Sera lone	10.2	127.4	97.5	13.5	-75.0	34.72
Togo	3.5	-35.8	5.2	0.8	10.3	-3.2
Over all mean						8.39

Source: World Bank, (2017)

The successful achievement of organisational objectives including manufacturing and their sustainability depend on the performance of the organisations. That is why all companies pay adequate attention to performance (Sahoo & Jena, 2012).

Generally, the concept of performance cut across every aspect of business organisations (be it small and medium firms or large companies). Performance such as sales performance, employees' performance, organisational performance, etc (Nandakumar, Ghobadian, & O'Regan, 2010; Ojokuku, Odetayo, & Sajuyigbe, 2012). Burja, (2011) asserted that performance is the direct outcome of managing organisational resources internally at the levels of policy making, operational, investment and financing. That is

why performance improvement and enhancement continue to attract the attention among the business managers, academics and policy makers across the globe.

Organisational performance plays a crucial role in the life of every business organization no matter how small or how big is the business. For instance, all organizations including manufacturing measure their performance irrespective of the nature of their Business (Syafriant, 2011). Murphy, Trailer, and Hill, (1996) in the study of entrepreneurial performance demonstrated that performance could reveal efficiency, growth, profit, size, liquidity, success or failure, market share and leverage. Olarewaju and Folarin, (2012) described organizational performance as a measure of organisational level of achievement or progress in relation to the established goals. Alarape, (2007) noted that performance reveals the operational efficiency and growth of the business. In another perspective, Jermias and Setiawan, (2008) stressed that performance provides information about the following; planning, investigating, coordinating, evaluating, supervising, staffing, negotiating, representing individuals, firms or organisations overall performance.

Nigeria was considered suitable for this study because of the general poor performance of manufacturing companies in the country. For example, out of sixteen textile manufacturing companies with over 7,000 work force that were operating in the North-west zone of Nigeria as at the end of 2007, by the end of 2008 only seven of these companies remained in operation (Gado & Nmadu, 2012). As at the middle of the year 2012 all the textile companies quoted on the Nigerian Stock Exchange have either closed down or lost their status as public companies due to poor performance (NSE, 2012). Recent available reports indicated that manufacturing contribution to Nigeria

gross domestic product between 2012 and 2016 was less than 10% for each of the five years consecutively (CBN, 2017). It showed further that the sector consistently experienced drops in its GDP contribution from 9.75% in 2014 to 9.53% in 2015 and to 8.77% in 2016. (See Table 1.3 below)

Table 1.3

Manufacturing sector contribution to Nigeria nominal Gross domestic product

Activity sector/Year	2012	2013	2014	2015	2016
Manufacturing	5,588.82	7233.32	8685.43	8973.77	8903.24
Total nominal GDP	71,713.32	80092.56	89043.56	94144.96	101489.49
Manufacturing contribution (%)	7.79%	9.03%	9.75%	9.53%	8.77%

Source: CBN, (2017)

These appears to be a serious issue considering the enormous potentials in the country inform of cheap labour and domestic market size as a result of the country's population. Nigeria population as at July, 2016 was estimated to have over 186 million (CIA, 2017). More so, the country is endowed with a lot of business opportunities which include among others: Oil and gas, agriculture, communications, tourism, manufacturing, mining and a host of others (NIPC, 2014). But the country's economic development has been sluggish partly due to poor performance of manufacturing organizations in the country and over concentration on the oil sector.

It is almost impossible for a single factor to be responsible for organisational performance. Combinations of factors usually influence manufacturing performance (Thompson, 2003; Schendel & Hatten, 1972). It is therefore, the obligation of managers to identify those factors and strike a balance between them to achieve optimum performance (Lenz, 1980). A lot of challenges being faced by manufacturing companies in Nigeria are environmental factors that are not within the control of these companies.

Some of the environmental challenges are poor patronage of locally manufactured goods as a result of domestic and international competition, poor infrastructural facilities such as electricity (Gado & Nmadu, 2012), lack of access to adequate funding (Onuoha, 2013) and, a host of others. However, in spite of the enormous challenges, some manufacturing companies in Nigeria although very few of them, still record appreciable performance (NSE, 2012). The fact that the few high performing manufacturing companies in Nigeria were able to cope with similar or the same challenges confronting others operating in the same environment indicate that some organisations have certain characteristics that place them ahead of others in terms of performance. In other words these companies can be said to have competitive advantage. Barney, (1995) opined that organizations should look inwards for sources of competitive advantage. In line with that therefore, this research considers business strategies and distinctive capabilities as internal factors that can be utilized to respond to environmental challenges such as poor quality of electricity service and lack of access to adequate funding.

Several factors such as business strategy, business environment and, distinctive capabilities have been attributed to the poor performance of many companies in Nigeria including the manufacturing companies. For example, Muogbo, (2013) found that many of the manufacturing companies in the country have not fully adopted strategic management and statistically significant relationship was reported among those firms that adopted strategic management and their performance. Also, environmental issues such as state policy inconsistencies, poor condition and inadequacy of infrastructures have been identified by Onuoha, (2013) as part of the factors militating against the global competitiveness of Nigerian manufacturing organisations. To corroborate these,

Manufacturers Association of Nigeria (MAN) also asserted that their poor business performance is due to the unfriendly nature of the environment which is in turn affecting their strategy, distinctive capabilities and making them often restructuring the organization. The unfriendly nature of the environment has also forced many of the listed manufacturing companies in Nigeria to relocate to the neighbouring country like Ghana (MAN, 2009). More so, It was stated that at least 272 manufacturing firms closed down in one year as a result of certain financial regulatory policy (MAN, 2016).

Availability or quality of some infrastructures and other important services such as road networks, telecommunication, banking, and electricity services are discovered to have strong influence on the performance of manufacturing companies in the developing economies including Nigeria (Datta, 2012; Dzobo & Herman, 2012; Sherazi, Iqbal, & Asif, 2013). Some of these services form part of the inputs to manufacturing organizations. For example, electricity is an important input to all manufacturing firms and its inadequacy is capable of reducing their production capacity or increase their cost of production if alternative sources has to be utilized.

Unfortunately, out of all these services, both the industrialists and researchers have identified electricity as a major issue in Nigeria. For example, Gado and Nmadu, (2012); Okpara and Kabongo, (2009) have opined that electricity problems not only hinders performance of manufacturing concerns, it has also led to complete close down of many of them. MAN, also mentions poor electricity as the main obstacle disrupting the performance of their members (MAN, 2011). In the regular opinion polls conducted by MAN, the result in 2014 shows that seventy-seven per cent (77%) of the manufacturing impediments in Nigeria is constituted by poor electricity (MAN, 2014).

Furthermore, there are abundant studies on the factors that affect organizational performance (Darwish & Singh, 2013; Dele, 2012; Iyanda, 2003; Koh, 2010; Patrick, 2012; Vithessonthi & Thourmrunroje, 2011). It is however very clear that these studies have not given adequate attention to factors such as business strategy, business environment, distinctive capabilities and, organizational performance that are strongly believed to be responsible for the current performance of manufacturing companies in Nigeria. To achieve a significant performance by these companies, there is a need to investigate business strategy, business environment, distinctive capabilities organizational performance and their influence on the organizational performance with a view to enhance the performance of the manufacturing companies in Nigeria.

1.1.1 Overview of Nigeria Economic and manufacturing Environment

Nigeria came into existence as a result of the amalgamation of the disjointed Northern and Southern protectorates in 1914 by the British colonialist. It gained independence in 1960 and became a republic in 1963 (NBS, 2011). The economic and manufacturing policies of the country cannot be completely divorced from the British system because of the country's colonial experience. The macroeconomic policies that have over the decades been pursued by Nigerian government in support of industrialization can be discussed chronologically.

The first is the pre-Independence to early independence period (before 1960 - 1966) – That was During the period, the colonial Development Welfare Act and other ordinances were enacted for the purpose of promoting Industrial development in Nigeria. Manufacturing sector grew by 12.2 per cent between 1958 and 1967 and it

contribution to GDP then improved from 0.4 per cent to 4.82 per cent from 1950 to 1960; 5.22 per cent in 1961 and 7.02 per cent in 1966. (Onimade, 1978).

Post-civil war period (1970 to 1979); Despite the country's independence, manufacturing activities were still in the hands of foreign companies. Nigeria generates 90 per cent of her foreign reserve from oil, 95 per cent of her revenue was also from the source. Onimade, (1978) asserts that between 1974 and 1975, manufacturing contribution to GDP was 4.7 per cent, agriculture 23.4 per cent while the highest contribution of 45.5 per cent came from the oil sector living other sectors with 26.4 per cent contribution.

Austere economic period (1980 to 1986): The country experienced drastic decline in her oil revenue which lead to high deficit financing that negatively affected the sector with the aggregate index of manufacturing sector dropped by 26 per cent in 1983 and capacity utilization in average decline from 73.3 per cent in 1981 to 38.2 per cent in 1986.

The economic liberalization period (1986 to 1999): The period featured the Structural Adjustment Program (SAP) and a guided economic liberalization. Nigerian manufacturing companies were exposed to increased competition as such the outcome was a drastic drop in performance with the rate of growth to 1.1 per cent in the sector's contribution to GDP in 1999.

The period of continued economic liberalization (1999 to 2010): The result of the policy is the improvement in the performance of manufacturing industry with an average

growth of 5.4 between 2000 and 2004 from 1.1 in 1999 which rose to 6.9 per cent in 2005. Moreover, capacity utilization for the sector increased from 34 per cent in 1999 to 53 per cent in 2007 (FGN, 2009). However, recent report indicates that the sector have over the years (2009 – 2013) been experiencing consistent poor performance with capacity utilization of less than 40 percent (World Bank, 2014).

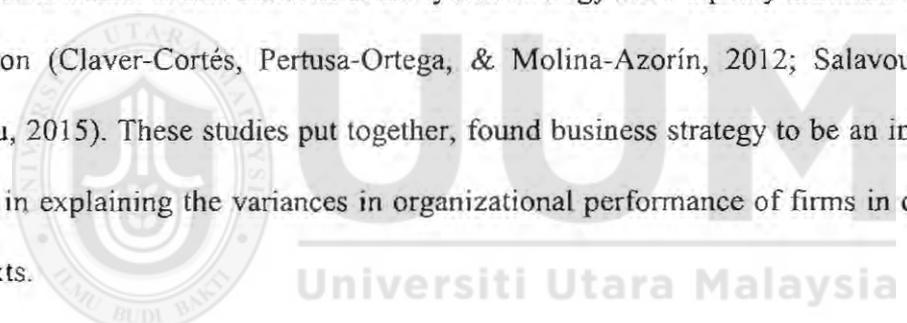
1.2 Problem statement

The poor performance of the manufacturing sector in Nigeria is an important motivation for conducting this study. For example, the world Competitive Industrial Performance (CIP) report of the United Nations International development organisation (UNIDO) for 2012 indicated that Nigeria is ranked 97th out of 145 countries that were examined. More so, the CIP assessment among developing countries categories showed that the country is number 25th out of 49 countries being considered (UNIDO, 2013b).

In addition to that, the Nigerian Stock Exchange report corroborates the UNIDOs'. For instance, out of 86 manufacturing companies quoted on the floors of the Nigerian stock exchange between 2007 and 2012, 45 of them had positive earnings per share EPS for the five consecutive years. This represents about fifty-two per cent of the quoted manufacturing companies within the period. However, about seventy per cent of the companies that appeared to have good performance tend towards performing poorly in the nearest future going by the declining nature of their EPS for the period (NSE, 2012).

In an attempt to address the issue, a number of research outcomes and industry reports have established the importance of organizational performance of manufacturing companies in relation to their determinants (Ayopo, 2013; Mike, 2010). One of the

major predictors of OPF is related to strategy. Business strategy have been an essential consideration in understanding organizational performance because findings have shown that it has significant positive relationships with performance among manufacturing firms (Bastian & Muchlish, 2012; Nandakumar, Ghobadian, & O'Regan, 2011; Zakaria, Hashim, & Ahmad, 2016). Generally, various aspects of Porters' generic strategy in relation to organizational performance have been studied over the years and they include cost leadership strategy and organizational performance (Atikiya, Makuku, Kihoro, & Waiganjo, 2015; Bastian & Muchlish, 2012; Gorondutse & Hilman, 2014), differentiation strategy in relation to performance (Pertusa-Ortega, Claver-Cortés, & Molina-Azorín, 2008; Spencer, Joiner, & Salmon, 2009) and stuck in the middle which is also referred to as hybrid strategy have equally attracted research attention (Claver-Cortés, Pertusa-Ortega, & Molina-Azorín, 2012; Salavou, 2013; Salvou, 2015). These studies put together, found business strategy to be an important factor in explaining the variances in organizational performance of firms in different contexts.



Despite the aforementioned empirical studies on the impact of business strategy on organizational performance, literatures indicate that not many studies have looked at the effects of cost leadership strategy and differentiation strategy on the performance of manufacturing companies precisely in the sub-Saharan African countries such as Nigeria. Past research works on these generic strategies concentrated their attention on combination of services and manufacturing companies and they are mostly conducted in Europe and Asia (Birjandi, Jahromi, Darabi, & Birjandi, 2014; Brenes, Montoya, & Ciravegna, 2014; Salavou, 2013; Zakaria et al., 2016). This research has therefore

focused on cost leadership strategy and differentiation strategy in Nigeria to confirm the previous findings in different context.

Additionally, distinctive capabilities have been considered in this study because they play important role in contributing to organizational performance (Constanza, Charmaine, & Mathews, 2017; Hsiao & Chen, 2013; Wu, Chen, & Jiao, 2016). Furthermore, various researchers have generally concurred that distinctive capabilities dimensions such as marketing capabilities (Tan & Sousa, 2015), research and development capabilities (Ghaffar & Khan, 2014), and, technological capabilities (García, Avella, & Fernández, 2012) have highly impacted on organizational performance.

Available literatures also indicate that electricity service quality is a crucial factor that exerts a significant influence on organizational performance. This factor is considered relevant to this particular study because poor electricity service is a peculiar challenge confronting many African countries such as South Africa (Dzobo & Herman, 2012), Ghana (Doe & Asamoah, 2014; Forkuoh & Li, 2015) and Nigeria (Ado & Josiah, 2015; Aliyu, Ramli, & Saleh, 2013). Inadequate supply of the service has specifically led to drastic increase in cost of production, capacity underutilization and profits reduction (Aliyu et al., 2013; Gado & Nmadu, 2012; Hensher, Shore, & Train, 2014). Previous studies on electricity service quality considered the factor as an independent variable. From the literatures, not much is known so far on the use of electricity service quality as a contingent variable.

Similarly, access to finance has also been incorporated into this research. This is because the literatures have shown that this factor has positive impacts on various dimensions of organizational performance in different parts of the world (Dutta & Folta, 2016; Harwood & Cheruyoit, 2015; Wamiori, Namusonge, & Sakwa, 2016). However, past research outcomes indicate that most of the studies concerning access to finance pay more attentions to small medium enterprises (SME), thereby showing little interest on large companies (Lee, Sameen, & Cowling, 2015; Osana & Languitone, 2016; Rahaman, 2011). Moreover, most of these studies used access to finance as an independent variable. Few studies have employed the factor as mediator (Agyemang & Ansong, 2017; Aminu & Mohad, 2016). But as far as this researcher is concerned no empirical study has so far been found in terms of using the variable as a moderator. This study therefore, filled that gap by using it as a contingent variable on all the predictor criterion relationships in this research.

From theoretical point of view, this study has integrated contingency theory into resources based view (RBV) in which the two dimensions of business strategy (cost leadership and differentiation) and three dimensions of distinctive capabilities (marketing, research and development and, technology) have been considered as resources that are used by manufacturing companies to achieve performance. This is in line with past research findings (Birjandi et al., 2014; Claver-Cortés et al., 2012; Hsiao & Chen, 2013; Nandakumar et al., 2010). Despite the abundance of studies in this area of strategic management, literatures show that little attempts have been made to jointly examine the predictors of organizational performance of manufacturing concerns particularly within the context the developing economies such as Nigeria with peculiar challenges from the operating environment such as access to finance and quality

electricity service (Oginni & Adesanya, 2013). The main theoretical gap is that out of all the available empirical research findings so far none have used electricity service quality and access to finance as moderating variables. It is on that basis therefore, that this study, have used these variables as contingency variables to fill the identified research gap.

1.3 Research Questions

The following research questions have been drawn to address the issues raised in the problem statement by examining the relationship between cost leadership strategy, differentiation strategy, marketing capabilities research and development capabilities and, technology capabilities in relation to organizational performance with moderating roles of access to finance, electricity reliability and responsiveness in electricity service. These questions have been prepared with a view to obtaining feedbacks from the chief executive officers, managers and owner-managers of all categories of manufacturing companies who took part in decision making at firm level.

1. Does cost leadership strategy relate positively to performance of manufacturing companies in Nigeria?
2. Does differentiation strategy relate positively to performance of manufacturing companies in Nigeria?
3. Do marketing capabilities have positive relationship with performance of manufacturing companies in Nigeria?
4. Do research and development capabilities positively relate to performance of manufacturing companies in Nigeria?
5. Is there any significant positive relationship between technological capabilities and performance of manufacturing companies in Nigeria?

6. Does access to finance moderate the relationship between cost leadership strategy and performance of manufacturing companies in Nigeria?
7. Does access to finance moderate the relationship between differentiation strategy and performance of manufacturing companies in Nigeria?
8. Does Access to finance moderate the relationship between marketing capabilities and performance of manufacturing companies in Nigeria?
9. Does access to finance moderate the relationship between research and development capabilities and performance of manufacturing companies in Nigeria?
10. Does Access to finance moderate the relationship between technological capabilities and performance of manufacturing companies in Nigeria?
11. Is there any moderating effect of reliability of electricity service on the relationship between cost leadership strategy and performance of manufacturing companies in Nigeria?
12. Is there any moderating effect of reliability of electricity service on the relationship between differentiation strategy and performance of manufacturing companies in Nigeria?
13. Is there any moderating effect of responsiveness of electricity service on the relationship between cost leadership and performance of manufacturing companies in Nigeria?
14. Is there any moderating effect of responsiveness in electricity service on the relationship between differentiation and performance of manufacturing companies in Nigeria?
15. Is there any moderating effect of reliability of electricity service on the relationship between marketing capabilities and performance of manufacturing companies in Nigeria?

16. Does electricity responsiveness of electricity service moderate the relationship between marketing capabilities and performance of manufacturing companies in Nigeria?
17. Does reliability of electricity service moderate the relationship between research and development capabilities and performance of manufacturing companies in Nigeria?
18. Does responsiveness of electricity service moderate the relationship between research and development capabilities and performance of manufacturing companies in Nigeria?
19. Does reliability of electricity service moderate the relationship between technological capabilities and performance of manufacturing companies in Nigeria?
20. Does responsiveness of electricity service moderate the relationship between technological capabilities and performance of manufacturing companies in Nigeria?

1.4 Research Objectives

To answer the research questions, this study was set to achieve four main objectives which include determining the extent to which all the independent variables positively relate to the dependent variable. Secondly, to determine the extent to which access to finance moderates these relationships. It is also set to examine the moderating role of reliability dimension of electricity service quality on all the predictor-criterion relationships. And lastly, to determine the moderating roles of responsiveness dimension of electricity service quality on all the independent variable-dependent variables relationships in this research. The major objectives were therefore divided into twenty sub objectives. This is in consonant with the previously listed research questions.

1. To examine the positive relationship between cost leadership strategy and performance of manufacturing companies in Nigeria.
2. To examine the positive relationship between differentiation strategy and performance of manufacturing companies in Nigeria
3. To examine the positive relationship between marketing capabilities and performance of manufacturing companies in Nigeria
4. To examine the positive relationship between research and development capabilities on the Performance of manufacturing companies in Nigeria.
5. To examine the positive relationship between technological capabilities and performance of manufacturing companies in Nigeria.
6. To investigate the moderating role of access to finance the relationship between cost leadership strategy and performance of manufacturing companies in Nigeria.
7. To investigate the moderating role of access to finance the relationship between differentiation strategy and performance of manufacturing companies in Nigeria.
8. To investigate the moderating role of access to finance on the relationship between marketing capabilities and performance of manufacturing companies in Nigeria.
9. To investigate the moderating role of access to finance on the relationship between research and development capabilities and performance of manufacturing companies in Nigeria.
10. To investigate the moderating role of access to finance the relationship between technological capabilities and performance of manufacturing companies in Nigeria.
11. To determine the moderating role of reliability of electricity service the relationship between cost leadership strategy and performance of manufacturing companies in Nigeria.

12. To determine the moderating role of reliability of electricity service on the relationship between differentiation strategy and performance of manufacturing companies in Nigeria.
13. To determine the moderating role of responsiveness of electricity service on the relationship between cost leadership strategy and performance of manufacturing companies in Nigeria.
14. To determine the moderating role responsiveness of electricity service on the relationship between differentiation strategy and performance of manufacturing companies in Nigeria.
15. To determine the moderating role of reliability in electricity service on the relationship between marketing capabilities and performance of manufacturing companies in Nigeria.
16. To determine the moderating role of responsiveness in electricity service the relationship between marketing and performance of manufacturing companies in Nigeria.
17. To determine the moderating role of reliability of electricity service on the relationship between research and development capabilities and performance of manufacturing companies in Nigeria.
18. To determine the moderating role of responsiveness of electricity service on the relationship between research and development capabilities and performance of manufacturing companies in Nigeria.
19. To determine the moderating role reliability of electricity service on the relationship between technological capabilities and performance of manufacturing companies in Nigeria.

20. To determine the moderating role of responsiveness of electricity service the relationship between technological capabilities and performance of manufacturing companies in Nigeria.

1.5 Scope of the Study

The scope of the study covers all manufacturing companies of different sizes and sub-sectors in Nigeria. The level of analysis for the work is institutional. Therefore, corporate members of the Manufacturers Association of Nigeria (MAN) have been considered for selection as participants in this research. Although, MAN has members that cut across all parts of Nigeria, this study however restricts itself to south-west geopolitical zone out of the six zones in the country. The choice of the region was necessitated by the overwhelming concentration of manufacturing companies in the zone. Over sixty-five per cent of all manufacturing companies in Nigeria are situated in that zone alone, living only about thirty five per cent to the remaining five geopolitical zones (MAN, 2014).

1.6 Significance of the Study

This study contributes to the body of knowledge through it elaborative literature review and empirical findings by providing a clear understanding of the combined relationship between business strategy, distinctive capabilities, and performance in the manufacturing sector with moderating roles of access to finance and electricity service quality especially within the context of developing countries such as Nigeria.

Accordingly, it enhances a better understanding of the theoretical relationships between performance and it independent variables on how the moderating variable environment factors (access to finance and electricity service quality) strengthen or

change the direction of the relationships. The uniqueness of this study is that it uses electricity service and access to finance as proxies for business environment which incidentally have been identified as major environmental challenges confronting manufacturing companies in Nigeria (Ado & Josiah, 2015; Aliyu et al., 2013; Gado & Nmadu, 2012; Obokoh, Goldman, & Africa, 2016).

Apart from the above, the empirical outcome of this study will serve as guides to the policy makers on manufacturing sector decision in Nigeria so that issues related to service input such as electricity and other services can be made available and efficiently. Moreover, the result can be of immense benefit to the managers of manufacturing companies as it provides them with insight on their resources allocation on the aspect of their capabilities that may require higher attention than others with a view to obtaining optimum performance. Lastly, it enhances the quality of decisions in terms of aligning them with the environmental challenges such as competition and poor supply of electricity so that such factors can be given adequate attention they deserve.

1.7 Definition of Terms

Cost leadership strategy: It is a cost minimization strategy in which manufacturing firms' produce large volumes at low cost. This is achieved through company superiority in market share, raw material accessibility and access to other inputs (Porter, 1985).

Differentiation strategy: It is a generic strategy in which manufacturing companies seek to identify valuable features and by positioning themselves to produce unique goods that satisfy those characteristics (Porter, 1985).

Access to finance: This is the availability of adequate funds from internal and external sources that is devoid of high interest and non-financial hindrances to manufacturing companies (Martin, Cullen, Johnson, & Parboteeah, 2007).

Reliability in electricity service: It is defined as the extent to which electricity service providers provide the service accurately to manufacturing companies such that customers can consistently depend on them (Satapathy, 2014).

Responsiveness in electricity service: It is the willingness of the electricity service companies to provide prompt service to manufacturing companies or provide same service internally (Satapathy, 2014).

Marketing capabilities: It is a collective process that has been planned to implement the combination of acquired intangible resources (knowledge and skill) and other firm resources to achieve the customer needs of the business with a view to adding value to its goods and services (Vorhies & Morgan, 2005).

Research and Development capabilities: This is the manufacturing firm's ability to innovate new products, better and more efficient processes of new products, new technology and improving the existing products through continuous investigation (Hsiao & Chen, 2013).

Technological capabilities: It is the manufacturing company ability to engage in the use of improved equipment and processes in response to the changing environment. Firm superiority in technology on continuous bases enhances their competitive advantage and performance (Ortega, 2010).

Organizational Performance: This is an integrated multi items dimension measure of performance which combines both financial and non-financial. The first set of items

determine the extent to manufacturing organisations have been able to achieve their long-term objective, predict future trends, avoid problem areas and a host other. The second set covers mostly objective measures such as; ROA, ROE, ROS and others (Nandakumar et al., 2010).

1.9 Organization of the thesis

This section covers a short review of the thesis 's structure. Firstly, chapter one sought to introduce the issues pertaining to the topic under study. Chapter two deals with an elaborated review of literature related to the variables identified in this study which concern business strategy (cost leadership and differentiation), distinctive capabilities (marketing, technology and, research and development) and the role of access to finance and electricity service quality. Also, the underpinning theory and supporting model are explained in this chapter and lastly in the chapter, hypotheses are developed covering all the variables

Following the literature described in chapter two, chapter three discusses research design presents the various aspects of research methodology and sampling, data collection and proposed analysis methods, it also includes the description on each aspect of the instrument formation along with pilot study reliability data output. Having collected the data, chapter four commences with data collection procedure after in a brief introduction of the chapter. This is followed by the reports of preliminary analysis, multiple regression and moderation analyses. Having collected the data, chapter four commences with data collection procedure after in a brief introduction of the chapter. This is followed by the reports of preliminary analysis, multiple regression and moderation analyses.

And finally, chapter five offers the implication of results and findings based on the hypotheses testing to answer the research questions. Managerial and theoretical implications have been derived from the results presented in chapter four. This chapter also presents the limitations of the study and offers suggestions for future studies. And finally, the conclusions are made emanating from the overall findings of this study.



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CHAPTER TWO

REVIEW OF LITERATURE

2.1 Introduction

This chapter gives a brief look at the manufacturing challenges in Africa and Nigeria followed by the definition and typology of strategy, description and type of capabilities. The review also covers comprehensive discussion of organisational performance which include of financial and non-financial measures. Moreover, it discusses past related frameworks, the model for this study and the detail outline of the relationship existing between business strategy, distinctive capabilities and organisational performance and the moderating roles of access to finance and electricity service quality on these relationships. The research model for the study and the hypotheses to be tested were also presented and finally the contingency theory and resource based view are also discussed.

2.2 Challenges of manufacturing organisations in Africa and Nigeria

The current challenges being faced by African countries in their efforts to achieve industrial development through manufacturing can be traced back to their political history. Since almost all of them were former colonies of European countries. The account of the linkage as highlighted by Nzau, (2010) are summarised as follows;

- a) The interruption of the Africa's developmental process halted by slavery.
- b) Foreign domination of the continent's economy after independence.
- c) Politicizations of the quest for industrialization on the part of African leaders.
- d) Confusion of the leaders on the industrialization strategy to be adopted.

Consequently, various governments had been responsible for manufacturing policy formulation and implementation. Unfortunately, bad leadership, weak political and social institutions appeared to have constituted serious impediments to the desired success in the sector. But since the beginning of the 1990s following the end of the cold war, almost all African countries have embarked on the adoption of market system which encourages high private sector participation and competition with minimum state interference (Nzau, 2010).

The current challenges confronting manufacturing organisations in African countries including Nigeria as identified in the joint report of the United Nations Economic Commission for Africa UNECA and the African Union Commission AUC are; poor infrastructural facilities, inadequate skilled manpower and access to finance. Others are high risk and uncertainty with regards to capital investment and poor technological innovation (UNECA & AUC, 2013). This is corroborated by the United Nations Industrial development Organisation UNIDO and UNCTAD, (2011) report which emphasize that poor and inadequate infrastructures as one of the obstacles to manufacturing performance. It adds that cost of infrastructural services in Sub-Saharan African is higher than other developing regions.

The issues being confronted by manufacturing organizations in Nigeria are not quite different from those of the entire African continent. For example, Omobowale, (2010) in his study determined the problems and opportunities of local manufacturers in Nigeria also identifies cost of material input, power supply and restricted market. Others are instability in government policies, indigenous bias against local products,

technology and a host of others. Additional discussions on these challenges are given below.

Access to financing, is highly essential to every manufacturing firm regardless of their size or life cycle stage requires finance. However, the choice of finance to a great extent depends on the need to which such funds will be put to and the stage of development of the venture. Research findings indicates that newly established manufacturing companies especially the SMEs, prefer the supports from friends and families and other traditional sources which are informal in nature (Calopa, Horvat, & Lalic, 2014). One of the sources of finance open to manufacturing companies in Nigeria is the Bank loans. Yakubu and Affoi, (2014), found that bank credits contribute significantly to growth of the real sector in Nigeria between 1992 and 2012. However, their investigation does not give specific contributions of manufacturing to GDP separately. Therefore, manufacturing contribution to gross domestic product cannot be precisely determined.

In contrast, Toby and Peterside, (2014) discovered that the average performance of manufacturing sector was not commensurate with the credit facilities extended to the sector in Nigeria between 1981 and 2010. Their research compares Bank credits given to agricultural and manufacturing sectors in relation to the performance of the two sectors within the period. This implies that access to finance alone is not enough to achieve the desired high performance of the manufacturing sector. Research outcomes have also indicated that there are some obstacles related to bank credits thereby reducing the ability of manufacturing sector to translate the loans into improved performance. For instance, Anyanwu, (2010) opined that awkward documentation process, inadequacy of long term loan mostly needed by manufacturers and non-availability of data on borrowers among others have also been identified as

impediments. These either cause delay in making the loans available at the appropriate time or getting insufficient volume. More so, Obamuyi, Edun, and Kayode, (2012) also found an inverse relationship between bank interest rate and capacity utilization of the manufacturing sector. In other words when the interest rate is high it tends to reduce financial performance of manufacturing loan beneficiaries.

To remove these impediments Nigerian government through the central Bank of Nigeria CBN introduced a number of incentives which include among others the provision of N200 billion guaranteed loans. The main objective of the scheme is to achieve rapid development in manufacturing and the agricultural sectors through easy access to credit facilities at relatively reduced costs (Anyanwu, 2010). Through various government interventions, Nigerian Banks gave an average of N732.38 billion to manufacturing sector between 2006 and 2008 representing 13.17 percent compared to total credits given to ten selected sectors within the period (Anyanwu, 2010). This appears to be inadequate. As such access to finance remains an issue to manufacturing sector in the country.

Poor infrastructure as previous mentioned, has been described by Ogbuozobe, (1997) as the interconnected physical and social services which are being provided to operate systematically for the mutual benefits of the population of people and organizations in a given environment including manufacturing companies (Woka, Chukwuemeka, & Bartholomew, 2014). Infrastructural facilities have been categorized into two. The first is the physical infrastructure which include; road networks, transportation, telecommunication and electricity. While the second category comprises of education and health care services (Olaseni & Alade, 2012). However, the focus of this research

is on physical infrastructure electricity service. Poor condition and inadequacy of physical infrastructures have been identified as a bunch of important factors militating against the global competitiveness of Nigeria manufacturing firms among others (Onuoha, 2013). For example, the declining electricity generation from the domestic power plants and its distribution in Nigeria exposed the country to a terrible energy crisis (Olaseni & Alade, 2012). About 60% of the Nigerian population was not connected to the national electricity grid. Even the connected segment of the society only enjoy about 40% of the time. This is due to the inadequacy of about 4000 megawatt MW generated through three hydroelectric and nine thermal plants which is just about a half of the installed capacity expected to be generated (Aliyu et al., 2013). One of the consequences is that the power outage is responsible for more than 39% of capacity underutilization in large manufacturing companies in Nigeria. The situation on ground compelled about 94% of the manufacturing companies in Nigeria to have alternative sources of energy to supplement the unreliable national electricity grid (Adenikinju, 2003).

Technology related challenges, Nigerian manufacturing companies import virtually all their machineries, equipment and service parts since most of the equipment are not produced locally. For example, as at the end of 2012 Nigeria import was valued at N5,624.9 billion from which machineries and equipment constitutes 23.5 percent of the amount making it the second largest import for the year after commodities with 34 percent (NBS, 2013). This implies that the sector had to contend with issues such as exchange rate and bilateral relationship with the country of sources. The findings of Azubuike, (2013) suggested that having a successful technology innovative competence goes beyond combining appropriate structural forms with the identified

market opportunities, it also needed to incorporate opportunity for learning and acquisition of new knowledge. This attracts additional cost especially if it involves overseas training or importation of expatriates.

Low patronage for locally manufactured products, one of the reasons associated with low demand for goods produced in Nigeria is lack of purchasing power as a result of poverty ridden condition affecting most Nigerians. More so, there is influx of foreign goods imported from various parts of the world into the country and most of these goods are relatively cheaper and of higher quality than the locally manufactured ones (Onuoha, 2012). Other reasons that have been adduced for low patronage of Nigerian locally manufactured goods. One of them is the poor competitive strength of their goods compared other countries. For example Nigeria was ranked 95th position in the UNIDO Competitive Industrial Performance report of 2012/2013 out of 135 countries that were considered (UNIDO, 2013b). Negative domestic consumers' perception of locally manufactured goods was also identified as being responsible for low patronage (Ogunnaike, 2010). They suggested the use of more marketing strategies and government protection policy. However, there is a limit in the extent to which trade regulation can be employed in Nigeria, bearing in mind that the country's economy has been liberalized.

Other challenges of manufacturing firms in the developing economies including Nigeria are confronted with a number of other issues which includes but not limited to high cost of raw materials, restricted market and instability of government policy. These specifically affect the industrial subsector (Omobowale, 2010). Corruption is also

mentioned as one of the impediments to performance of all organizations including manufacturing concerns (Okpara & Wynn, 2007).

While most manufacturing organizations in Nigeria experience poor performance due to seeming challenges in the operating environment, few of them were able to record good performance for many years running. For an instance, about sixteen per cent (16%) of the quoted manufacturing companies in Nigeria had positive earnings per share consistently between 2007 and 2012 (NSE, 2012). This implies that firms that exhibited good performance within an industry that was faced with competition and other environmental challenges have certain unique resources and capabilities from where they derive competitive advantage over and above their competitors (Barney, 1991). These unique resources have been categorized into three which includes; physical capital resources, human capital resources and organizational resources (Barney, 1991). This therefore draws researcher's attention to look at these resources by investigating the impacts of Business strategy, marketing capabilities, research and development capabilities and technology capabilities on organizational performance of manufacturing companies in Nigeria and to ascertain the moderating role of electricity service quality and access to finance.

This research was conducted in an attempt to address the manufacturing performance and some of the challenges mentioned above and to further extend the previous works on factors affecting manufacturing performance by reviewing previous works done on organizational strategy, distinctive capabilities, and, Organizational performance. This study therefore looks at the moderating role of electricity service quality in the

relationship between Business strategies, capabilities and performance of manufacturing companies in Nigeria.

2.3 Business strategy

Manufacturing companies require strategy formulation and implementation to improve and sustain their performance. Porter, (1996) described strategy as the firms' ability to create distinct and valuable position which comprises of various set of actions. He stresses that the unique position emanate from three major sources which includes serving many customers' few needs, serving elaborate needs of few customer and serving many needs of large number of customers. In order to achieve high level of manufacturing goals, companies adopt various types of strategies in Nigeria. Organisational strategy gives account of how the established goals are pursued taking into consideration the threats and opportunities in the external environment and the available resources and capabilities within the manufacturing concern (Nandakumar et al., 2010). Rue and Holland, (1989), opine that the strategy of an organisation described the way it pursues its goals given the threats and opportunities in the environment and its resources and capabilities.

A strategy was also described as the integration of elaborate and systematic action plan used by both service and manufacturing concerns to transform their intent into organisational competence or capabilities with a view to taking the best advantage of external opportunities and reduce the threats to the minimum possible (O'Regan & Ghobadian, 2004). Beamish, (2000) perceived business strategy as an integrated means through which managers in charge of units, departments, products or Strategic Business Units SBU pursue their goals within the context of their designations in consonant with

the corporate strategy of the entire organization. In line with the above, this study conceptualized business strategy as the way organization pursues its goals given the threats and opportunities in the environment and its resources and capabilities organizational level. Strategy is a combination of decisions and actions made and taken with a view to achieving company performance better than competitors (Teeratansirikool, Siengthai, Badir, & Charoenngam, 2013).

Business strategy relates to the deliberate decisions taken by organizations regarding the products and services to offer their customers in pursuance of competition and achievement of the financial objectives of the organization. Hitt and Ireland, (1985); Ward, McCreery, and Anand, (2007) also described it as a configuration of a well monitored set of commitments and actions that has been put in place to make best use of main competencies and gain a competitive advantage. The complexity of this concept is responsible for the proliferation of its definition and lack of consensus on its conceptualizations. It is however generally accepted as a very important factor upon which senior executives and managers were expected to exercise certain degree of discretion (Lenz, 1980).

Hambrick and Lei (1985) categorized Business strategy into three perspectives. The approaches were identified as the situation specific described strategy as the act of harmonising internal strengths and weaknesses of organisation with the external environmental opportunities and threats. The second was the universal perspective in which it was believed that universal laws of strategy exist and effective to certain level in all settings. And the third one was the contingency perspective and it described as

approach that tried to maintain a balance between situation specific and universal perspectives

A line of demarcation was drawn between corporate strategy and business level strategy. While corporate strategy relates to decisions taken at the organisational level which concerns all its strategic business units and their markets and which can be likened to the portfolio decision in investment theory. All decisions in corporate strategy are normally taken at the level of Board of directors. However, these are done with the inputs of the unit heads and other managers. Business strategy on the other hand is associated with decisions that concern competition within a specific product or market area. It is more focused and restricted to one or few segments of the organisational activities (Hatten & Cooper, 1978; Nandakumar et al., 2010).

The benefits of strategies can only be derived to a reasonable level if they are properly implemented. Implementation of strategies in organization involves the activities of putting policies of the organizations into action (Chen, 1997). According to Ibrahim, Sulaiman, Kahtani and Abu-jarad, (2012), it is the execution of the decision that have resulted from the formulation of the strategies. This was supported by Aladwani, (2001), who asserted that strategies implementation involves the act of putting planning into real actions in organization. Minzberg, (1983) asserts that efficiency and effectiveness of organizations tends to be positively influenced if organizational strategies are successfully implemented (Gómez & Ortiz, 2013). Many failures in organizational performances have been attributed to lack of implementation of meaningful strategies (Ali, Ahmadi & Salamzadeh, 2012; Baroto, Arvand & Ahmad, 2014). This is in line with in the report of Johnson (2004) which showed that about 66%

of formulated strategies were not eventually implemented by organizations. This problem lies in the middle of strategy-to- performance gap implementation in organizations (Crittenden & Crittenden, 2008). Homburge, Fassnacht and Guenther, (2003) submitted that the implementation of strategy was important to the survival of organizations. As such, a large and reasonable portion of organizational resources should be assigned to the implementation of strategies in organization.

Implementation of strategies has been facing a sort of war fare in organizations. This is evidenced in the study of Mankins and Steele, (2005) who reported that many organizations only realized about 63% of the performance of their finances as anticipated from the strategies applied. Kaplan and Norton, (1996) opined that up to 95% of the employees were not aware of the strategies of their organizations therefore adding to the strategies-performance gap in organizations.

Bonoma and Crittenden, (1988), provide that formulated strategies may be weakened by the habitual mode of strategy formulation which certainly results into neglecting the implementation of strategy and then poor performance of organizations both in the current and the long-run of execution. When this happens, this endless formulation-implementation-performance chain subsequently results in implementation of wrong strategy and the occurrence of this makes it difficult to identify if poor organizational performance is a result of wrong implementation of good strategy or good implementation of wrong strategy (Ibrahim et al., 2012).

In a study conducted by Hashim, Zakaria and Ahmad, (2015) to determine obstacles to strategy implementation within the context of Malaysian construction companies, it

identified eight factors that were responsible for strategy implementation. The three top most among them are environmental related obstacles, management information system related obstacles and human resources related obstacles. These are followed by financial related obstacles, sales related obstacles and operation related obstacles. The last two are construction facilities problems and material purchasing problems.

2.3.1 Typology of Business strategy

Typologies of strategy are the instruments through which sets of interrelated complex management ideas are conveyed in a way that describes outcomes as consequences of actions (Knott, 2005). There are many strategy typologies that being used by scholars and practitioners. But the most popular of these are;

1. Porter's (1985) typology for competitive strategy. He emphasized that, there are three generic strategies which are sought to be employed by organizations. The first is the cost leadership which is a type of strategy in which firms pursue market leadership position in low cost production in the industry. The company's product breath is usually an important cost advantage. The cost advantage come from different sources and this includes; economies of scale, preferential access to raw materials, proprietorship technology and a host of others.

The second strategy typology was the differentiation. In this strategy, a firm works towards distinguishing itself in terms of some parameters that are perceived to be of high value by its customers. In order to achieve differentiation strategy the company select, and focus on unique products that are of high quality compared to others. The focus strategy is the third typology. The focus strategies are of two categories, cost

focus and differentiation focus. Each of these generic strategies could be used differently in achieving organizational performance. However, achievement of performance becomes impossible for organizations that fail to effectively execute any of the above strategies (Porter, 1985). Such organizations are referred to as “stuck in the middle” (Porter, 1998). The companies appear to be in confusion of not knowing which specific strategy to adopt.

2. The characteristics of Miles and Snow's (1978) strategy types has been summarized by Blackmore and Nesbitt, (2012) as prospector which is described as having broad domain which it continuously develop in consonance with environmental conditions and events using flexible and multiple technology with low routine are instill in the people. The strategy creates changes in the industry which result in the firm growth through product and market development. The second type is the defender which is inherent with stable and narrow domain. While a lot of efforts are directed to domain maintenance in this strategy type, it tends to ignore development in the environment. Growth is achieved with caution via market penetration. Attention is paid to cost efficient, single core technologies which enhance efficiency maintenance. The third strategy type is the analyzer. It has a combination of both characteristics of Prospector and Defender which includes relatively stable and changing domain, dual technological core with moderate level of rationality in technology.

Previous literature has indicated that there was no one business strategy or a combination of strategies that can be considered suitable for all organizations in different contexts. For example, five types of business strategies were found to be in use by 125 selected manufacturing SMEs from Northern Malaysia. The strategies are

niche, growth, low cost, innovation, turnaround and market differentiation strategies (Hashim, Ahmad, & Zakaria, 2015).

A number of works have been done in Nigeria on organisational strategy in relation to performance of manufacturing companies. For example, a significant positive relationship was found between strategic planning and SME performance among 482 respondents in Nigeria (Olubisi & Olalekan, 2017). However, the data collection for the research was restricted to Lagos state and the number of manufacturing firms that participated in the research is unknown. As such generalization of the finding may be inaccurate. Similarly, Muogbo, (2013) examined the impact of strategic management on the growth of manufacturing companies in Nigeria and it was discovered that strategic management were not adopted by many firms in the country. It was only recognised as a performance factor. However, the sample size of 63 selected respondents from only 13 manufacturing companies used for the research works appear to be too small. More so, the data was collected from just a state (Anambra) out 36 states in Nigeria without clear justification.

This study has focused on cost leadership strategy and differentiation strategy taking into consideration that previous findings from the literature show that little attention has been given these generic strategies. For instance, Oghojafor, Kuye, Ogunkoya, and Shobayo, (2014) investigate the impact of competitive strategy and technological capabilities on manufacturing performance in Nigeria by employing a larger sample size (196). The relationships varied depending on the type of strategy (cost leadership or differentiation). While differentiation strategy was found to have no significant relation with performance, cost leadership strategy had a significant positive relationship with performance. But the study was restricted to Lagos metropolis.

Similarly, Uchebulam, Akinyelae, and Ibidunni (2015) also investigate impact of differentiation strategy on performance. It is submitted that all the dimensions of differentiations examined have significant positive relationships with SME performance. However, 135 SMEs were used for the research out of which only 25 belong to manufacturing sector.

2.4 Distinctive Capabilities

Ulrich and Smallwood, (2004) opined that most customers care less about the hierarchical structures or the strategies being adopted by organisations, rather their main concern was on the capabilities of the companies to innovate products or services that were capable of satisfying the changing needs of customers, hence the need for capabilities. Distinctive capabilities also regarded as competence were suggested by previous literatures in strategic management as one of the resources of organization's competitive advantages (Day, 1994). Capabilities are the organizational activities that make firms remain in competition within its rivals. The early use of the term can be traced back to Hitt and Ireland, (1985) which investigate the moderating role of grand strategy type on the relationship between distinctive competencies and performance. A 185 CEO sample was selected from the *Fortune* 1000 industrial firms and the findings indicate that the hypothesis was supported. Ulrich and Smallwood, (2004) referred to capabilities as what an organization is able to do and how it is been done such that resources are optimally utilised. Similarly, Mooney, (2007) described competence as a firm capability that is known to be the main value generating activity of the organization. It is obvious that every firm has various value generating activities. But core competence is identified within the organization for generating more values than other activities. He went further to explain the distinctive capabilities or competencies as those capabilities that are clearly identified by the customers for their superiority

when compared to other specific firms in the same industry or performing similar services.

Barney, (1991) added that competence of the employees within an organization plays a major role in achieving sustainable competitive advantage. In a conceptual study of distinctive competence and other related concepts. There is an association between the groups of individual competencies and capabilities that collectively turned into organizational competencies which provides organization with a source of competitive advantage and improved performance (Abu Bakar, Hashim, Ahmad, & Isa, 2009). The concept was referred to by some researchers as competence or core competence (Bacha, 2012; Ljungquist, 2013; Mooney, 2007). While some others described it as capabilities or distinctive capabilities (Awang, Ashgar, & Subari, 2010; Hsiao & Chen, 2013; Rahim et al., 2009). This study made use of these concepts interchangeably to mean the same thing.

Capabilities are of different types (Hitt & Ireland, 1985). Employee capability (Vidal-Salazar, Hurtado-Torres, & Matias-Reche, 2012), marketing capabilities (Wu, 2013; Yu, Ramanathan, & Nath, 2013), technological capabilities (Jonker, Romijn, & Szirmai, 2006). For example, Job related competency was operationalized by Sengupta, Venkatesh, and Sinha, (2013) as a combination of individual characteristics that can be measured. This comprises of behaviour, attitudes, skills, knowledge and abilities which are needed for the execution of a given task in order to attain the present and future organisational objectives and create competitive advantage. Barney, (1991) emphasized that if organisations were to be fully integrated into the fast changing business environment and achieve high level of competitive advantage and performance, managers need dynamic capabilities for the alignment and allocation of human, physical and organizational capital. The theoretical background of distinctive

capabilities as a source of competitive advantages could be traced back to the early work of (Hitt & Ireland, 1985). Similar terms are as well used, such as core or organizational competence, firm-specific competence, resource deployments, and invisible assets (Prahalad & Hamel, 1990). Thus, the concept of distinctive competence or organizational capability is not new in strategic management.

In Nigeria, many studies have been carried out on distinctive capabilities. But most of the works pay much attention to service industry using a single measure. For example, Ringim, Razalli, and Hasnan, (2012) found a positive relationship between information technology capabilities and performance of banks. In a similar work, Akinbola, Adegbuyi, and Otokiti, (2014) found strong positive relationship between market capabilities and organisational performance within telecommunication service industry.

Few researches on distinctive capabilities in relation to manufacturing performance in Nigeria also make use of single perspective to measure the relationship. For instance, Azubuike, (2013) examines the impact of technological innovation on manufacturing performance, significant positive relationship was found. Similar investigation conducted by Umar, Bakar, Hamid, and Mehri, (2014) indicated a positive relationship between manufacturing capabilities and performance in which cost control was used as a proxy for capabilities. However, the study was restricted to small and medium manufacturing enterprises in Nigeria.

This study therefore fills these deficiencies by investigating the impact of distinctive capabilities from three angles on manufacturing organisations of different sizes operating in various sub-sectors. This is in line with previous studies conducted in

different parts of the world (Day, 1994; Hitt & Ireland, 1985; Rahim et al., 2009). For example Tan, Mavondo and Worthington, (2011) identified marketing orientation, manufacturing capabilities, innovativeness and learning orientation. While Gebauer, Johnson and Enquist (2012) operationalized capabilities as dynamic capabilities and operational capabilities in study of public transport services. However, this study is adopting three aspects of capabilities from the work of Hsiao and Chen (2013); Huang, (2011) which are: Marketing capabilities, technological capabilities and research and development capabilities.

Moreover, investigation of three capabilities is justified by the suggestion of Teng and Cummings (2002) in which it was opined that firms should not limit itself to the development and employment of only one capability, it should rather consider having other complementary resources and capabilities bearing in mind that each resource or capability can decrease or increase firm values.

2.4.1 Marketing capabilities

Marketing capabilities was included in this research because it has been recognized as an important source of achieving competitive advantage and improved performance by firms (Day, 1994; Krasnikov & Jayachandran, 2008). Tan and Sousa, (2015) also suggested that more empirical research attention should be given to marketing capabilities in relation to performance. More so, the findings of Kamboj and Rahman (2015) in their review of marketing capabilities literature, indicated that most of research on the variable were conducted in the developed countries. It was therefore recommended the replication of similar works in developing countries was desirable.

Vorhies and Morgan (2005) described marketing capabilities as the firms' ability to utilize the marketing mix activities effectively in transforming their available resources into valuable outputs. From the resource based point of view, this research argues that manufacturing companies with better marketing capabilities tend to perform higher than those with inferior capabilities. This argument was based on the fact that marketing capacities are part of the intangible resources of manufacturing concerns and having it enhances their competitive advantage and performance (Barney, 1991). Marketing capabilities is a set of specific capabilities of interest to this study and it is identified as an important technique that can be employed by manufacturing companies to achieve sustainable competitive advantage (Afzal, 2009). It is described as the configuration of knowledge, skills and resources that are used in line with the market related needs of organization to add values to the goods and services of the organization in order to meet with those of customers' demand and to perform better than the competitors (Rahim et al., 2009).

The development of marketing capabilities was found to be prompted by the firms' business strategy, organizational structure and market information processing capabilities (Vorhies, 1998). Manufacturing companies that adopt differentiation strategy for example need to communicate with their customers on what makes their products uniqueness compared to those of their competitors in terms of value addition for which they may be expected to higher. It enables manufacturing companies to have a good knowledge and understanding of the current and the future needs of its customers and also the relevant factors that can help in forecasting the future actions of the competitors (Day, 1994; Srivastava, Fahey, & Christensen, 2001).

Kamboj and Rahman (2015) identified four contextual determinants of marketing capabilities. The first one is the industry characteristics which include different variables such as competitiveness, type of industry, concentration ratio and rate of growth in sales. Market characteristics is the second determinant and it has variables that comprise of market type, served area, attractiveness, volatility, dynamism, target market, turbulence, market share and expensive. The third determinant is environmental uncertainty and it consists of technology, demand, supply, market uncertainty, competitive environment and its intensity. Lastly, environmental turbulence and this has to do with government policies, financial condition, environmental challenges, technology and competitive turbulence.

The contextual determinants of marketing capabilities in Nigeria which is the focus of this research in line with the findings of Kamboj and Rahman, (2015) therefore, include high competition as a result of globalization and exposure to foreign products. The market is growing and dispersed due to the high population and geographical spread in terms residence and economic activities (CIA, 2017). It is also dynamic in nature because of the market interaction with international competitors which impacts on customer choice and change in taste.

Marketing scholars have utilized various perspectives to the development and measurement of marketing capabilities. Many of them have employed multiple dimensions in their assessment of the variable. Bazilian and Onyeji, (2012) for instance developed integrated theory-based conceptual framework that connects marketing capabilities to firm performance through which four marketing capabilities areas were identified. These include; specialized marketing capabilities, cross functional

marketing capabilities, architectural marketing capabilities and dynamic marketing capabilities.

Similarly, Ramaswami, Srivastava, and Bhargava, (2009) in their investigation to determine extent to which marketing based capabilities (MBC) impact on financial performance. It was found that all the selected MBCs for the study have significantly influenced new product development (NPD), customer management (CM) and supply chain management (SCM) performance measures. However, only customer management process has significantly impacted positively on the financial performance of the selected firms. The findings of Pérez-Cabañero, González-Cruz, and Cruz-Ros, (2012) also suggested that market planning and pricing capabilities positively related to financial performance and stakeholders' satisfaction measures of performance.

On the other hand, some researchers used single dimension to assess marketing capabilities. For example Dutta, Zbaracki, and Bergen, (2003) emphasized the importance of investing in pricing capability by manufacturing companies as part of marketing capabilities as it has the tendency of enhancing the companies realise the expected financial benefits from the values created through capabilities and other resources that may be lost due failure to set the right prices. Similarly, market skill and knowledge was employed as a single dimension of marketing capability to measure the variable in which it was found that technological capability was capable of resolving technological turbulence and marketing capability to address marketing turbulence (Su, Peng, Shen, & Xiao, 2013). Marketing capabilities was also found to have mediated the relationship between internal marketing orientation and organizational performance (Fang, Chang, Ou, & Chou, 2014).

This study has therefore, utilized an integrated single dimension of marketing capabilities that related to pricing, product development, distribution and communication in line with the previous empirical studies (Hsiao & Chen, 2013; Tan & Sousa, 2015).

2.4.2 Research and Development capabilities

The need for continuous research in manufacturing organizations was born out of the dynamic nature of the operating environment which is regularly reflected in customer change in taste and preference, technology, competition, factor inputs, etc. Wang, (2011) suggested that manufacturing concerns need to invest on Research and Development up to or beyond the minimum level if they want to earn the returns that is higher than their investment to improve organizational performance.

Research and development capabilities can therefore be described as organizational abilities to pursue perpetual investigation targeted at various environmental factors that are capable presenting it with threats or opportunities with a view to resolving the threats or opportunities to their advantage through innovation. Research and development capabilities enable manufacturing firms in emerging economies to acquire knowledge related to innovation and export from foreign manufacturing organizations operating in developing economies (Li, Chen, & Shapiro, 2010).

Existing literature indicated that investment in research and development capabilities have the tendency of boosting organizational performance. For instance, Bhagwat and Debrune, (2011), in their investigation to determine the association between Research

and Development and advertising on the performance of pharmaceutical companies, it was discovered that each one percentage increase in R & D expenditure results in additional one-quarter earnings per share EPS above the investment. Above finding aligns with the work of Ghaffar and Khan, (2014) which also examined the extent to which research and development affect firm performance. However, the two research works were limited to a single manufacturing sub-sector (pharmaceuticals). Research and development strategy was also found to be an essential factor that explained the variance in all performance dimensions which includes; innovation performance, financial outcomes, market position and growth in the research conducted in Greece in which 248 selected manufacturing firms from various sub-sectors were the participants (Trivellas, 2012). More so, significant positive relationship was also found between research and development investment and firm performance in the market place among 39 European firms that have invested in R&D (Pantagakis, Terzakis, & Arvanitis, 2012). However, caution should be exercised in generalizing the findings due to small sample used and the context in which the research was conducted.

Ayaydin and Karaaslam, (2014) investigated the impacts of R & D expenditures on the financial performance among 145 manufacturing companies in Turkey with the use of quarterly panel data which covered 6 years (2008-2013). The findings suggested that Research and Development expenditure significantly accounted for the variations in the performance of the selected manufacturing firms.

On the contrary, earlier findings by Erickson and Jacobson, (1992) submitted that expenditures on Research and development could not generate up to the estimated average revenue for a given period of study. Recent findings also found no significant

association between research and development capabilities and profitability of the selected pharmaceutical companies in Iran (Bayazidi et al., 2016).

Innovation of new product is an output of research and development capabilities. This is in conformity with the work of Hsiao and Chen, (2013); Kafetzopoulos and Psomas, (2015). Product innovation has been described as the creation of new products or introducing appreciable improvement into the available products. This implies that in the context of manufacturing firms, for product to be regarded as new it must be completely new to the market in terms of proffering solution to certain customer challenges or satisfying certain demand that no product has ever done (Polder, Leeuwen, Muhnen, & Ramond, 2006).

It was found that the more manufacturing companies become innovative the better their performance. All the dimensions of innovation that is; product, process, organization and marketing innovativeness used have direct relationship with organizational performance (Hassan, Shaukat, Nawaz, & Naz, 2013). This is corroborated by Bowen, Rostami, and Steel, (2010) in which it was suggested that innovation explain the variations in firm performance. Studies has indicated that even with conducive operating environment in terms of government policies, manufacturing firms that do not develop new products, still have the tendency of losing their market shares (Yousefi & Mehralian, 2016).

2.4.3 Technological capabilities

The importance of technological capabilities to manufacturing companies cannot be over emphasized. It is part of the essential valuable and rare kind of manufacturing firm

resources that cannot be easily imitated and substituted (Barney, 1991). Ortega, (2010) described technological capability as the firms' possession of quality that facilitates the accomplishment of relevant functions which include the development of new products and processes and effectively operate machineries and equipment within the firm. Continuous change is one of the major and important features of technology which distinguishes it from other capabilities. Krell, (2000) emphasized that technological change implied automation and other capital-intensive production equipment that can be used to reduce human efforts and improve efficiency and effectiveness.

Wernerfelt, (1984) asserted that technological capabilities enhanced the manufacturing firms' ability to earn high returns which empowers them to retain and attract highly skilled man power who in consequence generate more and better ideas than the competitors. Application of technology in business planning and operation was supported by Anton and Phelps (2000) who had reported that technologies such as telephones and business communication gadgets via internet have gained 45% increment in patronage by organisations. This shift in the conventional method of business and to advanced technological use has significantly improved businesses (Ray, Muhana, & Barney, 2005).

Technological capabilities have been categorised into two. The first category is the activities which encompasses; research and development, patenting, new product development and problem solving. While the second category concerns sourcing and acquisition of equipment, facilities and technology related knowledge (Ahmad, Othman, & Mad Lazim, 2014).

This study was restricted to new product development and problems solving which is part of the first category. Sobanke, Adegbite, Ilori and Egbetokun (2014) found that

employees' previous work experience, in-house training and networking with industry associations have strongly contributed to technological capabilities acquisition among 133 metal fabricating firms in Nigeria. While technological capability was found to be responsible for variances in the performance of 400 high-tech manufacturing firms in China and it also has indirect relationship with performance through customer value (Wang, Lo, Zhang, & Xue, 2011). Similarly, Adeoti's (2011) finding indicated that investment in technological factors such as; skill up grading, skill intensity and quality management, have positive and statistically significant relationship with firms export potential in Nigeria. However, due to the differences and dynamic nature of most business environmental factors and their impacts on technology- performance and other independent variables, this study looked at some factors in the business environment.

2.5 Business Environment

One of the approaches to business strategy analysis is the internal and external approaches. The external perspective submitted that organizational strategies should be created in consonant with the analysis of the factors in their operating environment. While the internal approached were of the view that strategies should be formulated based on the analysis of the internal factors in terms resources and capabilities (Hashim, 2015). This study therefore looked at the external environment in line the approach mentioned above. Lenz, (1980) pointed out that there was no agreement with regards to how organizational environment should be conceptualized and which segment of it impact more on performance. Being one of the factors responsible for the unstable performance in organization, Abimbola and Agboola, (2011) suggested that the trend of the business environment must be understood for business organization to succeed. Appropriate strategy can be chosen based on the understanding of the business

environment and which is achieved by scanning the environment by using SWOT analysis.

Business environment has therefore been defined by different authors in various ways. For example Oginni and Adesanya, (2013) defined environment as the external factors that influences individuals, business and communities. As no business operates within the vacuum of environment, it is thus, referred to as the totality of the factors that affect, influence and determines the operations and performance of business. In addition to explaining this, Azhar, (2008) regards environment as the combination of tangible and intangible factors that provides support for organizational performance. According to Lenz (1980), the concept of business environment includes market structure, regulated industry and the other relevant concept in the business environment as the factors influencing the performance of organization.

Ashghian and Ebrahimi, (1990) identified the economic, social-cultural and the physical factors while Adeoye and Elegunde, (2012) stated that the external variable of business environment are found right immediately outside the organization and the nearest to the environment of the organization with customers, suppliers, labour union, labour market, competitors, financial institutions and raw materials as the main elements of the environment which have direct influence on the organization unlike the other external environment that have indirect influence on the business organisation.

Daft, Sormunen and Parks, (1988) opined that business environment is characterized by the uncertainty that are related customer demand, economic condition and influence of competitors constitute a stronger sources of uncertainty in business compared to

socio cultural, regulatory and technological factors. This was corroborated by Adeoye, (2013) in which it was emphasized that the importance of organizations to maintain the rapid and dynamic changing environment within which they operate in gaining performance maintenance by applying an appropriate strategy.

In corroborating this, Ibidunni and Ogundele, (2013) provided a classification of business environment and it comprises of dynamic (continuous changes), stable (relatively slow and consistent changes) and unstable (frequent and inconsistent changes) which helps in repositioning the organisation through appropriate strategies. Further explanation was given that the extent of the influence of the environment on the performance of an organization depends on the size and the industry type the organization belongs to (Ibidunni & Ogundele, 2013). This implies that each organization has its own peculiar influence of environment (dynamic, stable or unstable) based on the industry size and type.

Analysis of business environment involves conducting the evaluation of the potential threat and opportunities posed on the organization including the business strength and weakness (Chittithaworn, Islam, & Yusuf, 2011). Oginni and Adesanya, (2013) stated that there is an association between external environment and opportunities, and threat while the internal environment has an association with the strength and weakness of an organization. These are consequently used by organization to combat the external forces of the organization.

The study of Abd Aziz and Yassin, (2010) on the investigation of the influence of business environment and performance in SMEs in Malaysia found that external

business environment was influential on performance. Similar study conducted by Pulendran, Speed, and Ii, (1993) on business environment and competitive performance of business asserted that organizations operated within a complex and rapidly changing external environment. The study however, pays specific attention to cultural difference in various operating environments. It found that the external business environment significantly characterized the performance of business organization.

Research of Nguimkeu, (2013) has revealed that the rapidly changing and dynamic environment (access to finance, regulatory issues, illicit trade, administrative obstacles, infrastructures and quality of labour) within which organization operates has a significance influence on the business performance (productivity). As such, more attention should be paid on the environmental condition through environmental scanning embankment. A related work on manufacturing environment and corporate performance by Adeoye and Elegunde, (2012) revealed significant influence of environmental factor on corporate performance of firms. A continuous pressure from the external environment of organization forces an implementation of strategies to reform and reorganize the distribution of manufactured products as such it was concluded that there is an interrelationship between environmental factors and performance of organization.

However, the relevance of understanding business environment in relation to managerial decisions and manufacturing performance is undoubted. This was evidenced by the contention of Gnyawali and Fogel, (1994) in which it was argued that the study of performance in organization is incomplete and deficient if environment is excluded in the study. It was also noted by Okpara and Wynn, (2007) that it is very

important to know the environment in which the firms are operating before any study on manufacturing organizations could be carried out successfully.

In an effort to comprehend business environment, Duncan, (1972) described business environment as a combination of perceptible factors to the sense and those factors that were related to human society and their members which are directly considered in the behaviour of the decision makers in organizations. Business environment simply means the situation and conditions including factors that are in the surrounding which are likely to affect and influence the business or firm performance.

This study therefore, paid particular attention to two of these factors; access to finance and quality of electricity service quality.

2.5.3 Access to finance

The choice of access to finance as a moderating variable in this study was based on the fact that globalization has intensified competition in most developing economies. As such access to finance has attracted more importance than before to the extent that entrepreneurial companies including manufacturing require more funding than before to cope with the challenge through the improvement of their strategies and distinctive capabilities with a view to achieving competitive advantage and improved performance. Access to important resources, such as finance, was among the significant and relevant factors that encourages manufacturing activities in any economy (Baldegger, Alberton, Brulhart, & Hackin, 2013). A research finding also indicated that access to finance was partly responsible for reduction in inequality and poverty (Bae, Han, & Sohn, 2012). Business firms including manufacturing require access to external finance for various purposes which include; commencement of business, expansion of

their operations, development of new products as well as capacity development of both manpower and production facilities (Atieno, 2009). More so, Sherazi et al., (2013) found that poor access to finance was the first major obstacle to SME performance in India out of the six identified factors regardless of industry sub-sectors.

Financial inclusion or broad access to financial services in general terms was described as access to finance by individual and firms devoid of price and non-price obstacles (Ganbold, 2008). Access to finance is sometimes distinguished from the use of finance. For instance, Bae, Han, and Sohn, (2012) described the use of finance as the actual utilization of financial services, while access was perceived as the availability of the financial services to the current and prospective users without discrimination or financial hindrance. This study adopted the conceptualization of access to finance used by Aminu and Shariff, (2015) as the prospect of manufacturing companies of acquiring financial resources from both internal and external sources with little or no financial and non-financial barriers.

2.5.3.1 Sources of finance

There are various sources through which different kinds of businesses including manufacturing concerns can gain access to finance and these can be categorised into two; the internal sources is the first one and it has to do with all the funding acquired from within the organization. These include among others personal financial resources of the owners represented by initial equity or capital and profit retained earnings. This is particularly common to small medium enterprises SMEs at start-up (Wu, Song, & Zeng, 2008). The main merit of this category of sources is that they provide a long-term finance which attracts little or no interest thereby minimizing cash outflows inform of

loan service costs. More so, internal equity also allows the owners retain full control of the companies and add to their credibility in terms of credit worthiness (Abdulsaleh & Worthington, 2013). However, the available finance from these sources is usually small and insufficient to cater for the financial needs of manufacturing companies especially for expansion unless firms choose to extend their access to equity finance to external sources (Ou & Haynes, 2006).

The second group of financing sources is the external sources. This concerned funding acquired from outside the purview of manufacturing companies. The first line in this category is the family friends and fools often called 3F (Calopa et al., 2014). This is followed by trade credit. Trade credit has been described as a contractual agreement between suppliers and manufacturing firms to defer payment for goods or services provided till a specific future date (Garcia-Teruel & Martínez-Solano, 2007). In that wise, it is a source of finance to the firm and an investment to the supplier company. It was found to be an efficient alternative source of finance in the developing economies such as Nigeria particularly among the SMEs (Yano & Shiraishi, 2012). It has the tendency of being a costly source of financing particularly when debtor firms fail to fulfil their financial obligations as agreed upon (Wilson & Summers, 2002). Even though trade credit may be identified with some potential problems, it has the capability to offer the needed protection to the manufacturing firms against economic shocks such as; cash crunch and monetary contraction policy (Berger & Udell, 2006).

Angel financier and venture capital are another external sources of financing (He & Baker, 2007). Based on the European Business Trade Association on Business Angels (EBAN)'s summarised characteristics of business angels, business angels can be

described as financially independent individuals who directly invest their money and strategic follow-up supports in predominantly start-up firms, on medium to long-term time frame and also respect the codes of ethics and fairness and rules of confidentiality (Dibrova, 2015). Even though business angel appears to be very suitable for start-up manufacturing SMEs, it tends to be of high risk, this was due to the fact that it lacked mutual understanding between the investor and beneficiary firms. Additionally, absence of unified and clear legislation to the operation of the source was capable of constituting a serious impediment (Dibrova, 2015). However, little is known about this particular source in many African countries including Nigeria. Similarly, venture capital which has been described as the kind investment which raises fund and subsequently redeploy same into high risk ventures with unclear information mostly start-up businesses (Abdulsaleh & Worthington, 2013). Venture capital as a substitute to other sources of finance is known to have tendency of resolving challenges related to lack of information in SMEs, thereby paving ways for accessing fund from other financial institutions such as banks and insurance companies (Kortum & Lerner, 2000).

Other external sources are the ones that are formal and they involve the use of intermediaries such as banks and other financial institutions. These group of fund accessible through this are bank loans and equity (Chittenden, Hutchinson, & Hall, 1996). Access to external finance of this nature, are mostly associated with a lot of complexities and stringent requirements such as collateral securities, guarantors and a host of others. Fatoki and Smit (2011) identified a number of factors militating against new SME access to external finance and these were grouped into two categories. The internal constraints which included lack of collateral, lack of business information, insufficient managerial competence and poor networking. Networking was found to be

a major facilitator in gaining access to finance especially under favourable financial investment condition (Sengupta, 2011). The external constraint is the second group of challenges and they comprised of inefficient legal system, corruption and crime rate. Anne, Gichuki, Njeru, and Tirimba, (2014) added others as; high credit cost, short repayment period and unwillingness of people to act as guarantor particularly concerning small and medium scale concerns. Poor financial system was also identified to be capable of being a serious impediment to access to finance (Claessens, 2006).

Access to finance varies from one country to the other depending on the cultural perception, the level of national wealth, better investor protection and ownership structure (Aggarwal & Goodell, 2014; Kounouwewa & Chao, 2011). For example, significant negative relationship was found between risk avoidance and gender segregation which are not the same in all countries. As such, it was concluded that companies operating in countries with greater national wealth and better investment protection tend to have more access to finance than the countries with less of these factors (Aggarwal & Goodell, 2014).

Kumar, (2005) suggested three main perspectives for assessing access to financial resources. The first one is the institutional perspective which has to do with the determination of the extent to which modern financial services meet certain established standard concerning reliability, objective efficiency, acceptable terms and conditions of financial service provisions and close monitoring. The second is the functional perspective. It is concerns non-institutionalized financial services available for a particular sector or user. The main feature is the ability and willingness of the provider to provide specific financial services with little rigidity. Lastly is the product

perspective which concentrates on measuring the rate at which basic financial services are available, it is a deeper measure of the levels of financial service.

Various manufacturing companies prioritize their choice of finance based on the peculiarity of their financial needs, the challenges being faced by them in gaining access to finance as identified in Fatoki and Smit, (2011) and their specific conditions of each firm in relation to their environment. For example, SMEs in China prefer owners' personal savings and loans from the family at start-up. While their preference changes with life cycle of the firms to bank loans followed by equity (Junjie Wu et al., 2008). Even though, the sample size of 60 entrepreneurs used for the research was too small for the findings to be generalised. The finding was corroborated by a later research conducted in the USA in which 1,050 samples were used. Personal savings topped their list of choice of access to finance (He & Baker 2011). These findings appeared to lend their supports to the Pecking order hypothesis (POH). In partial support of POH, also the findings of Paul, Whittam, and Wyper, (2007) indicated that that internal source was first on the list of finance sources, on the contrary when choosing from external, equity was preferred before debt. However, the sample size of 20 entrepreneurs was not only small but the research was also limited to only the start-up firms.

The literature has indicated that access to finance has been responsible in part for the variations in firm performance. For an instance, increase in venture capital on R&D was found to have accounted to more than twice improvement in the innovation performance of the selected companies (Kortum & Lerner, 2000). The finding is supported by Butler and Cornaggia (2011) in the research conducted in the US using state level panel data, it was found that access to finance was positively and

significantly related to productivity. Similar result was also found in a recent work by Wamiori, Namusonge, and Sakwa (2016) in which various sizes of manufacturing companies were the target, it revealed that access to finance was significant and positively related to financial performance. Similar result was found in Nigeria in which 302 managers of manufacturing companies were the participants (Alkali & Abu-Hassan, 2012).

On the contrary, Harwood and Cheruyoit, (2015) in their investigation carried out to determine effect of long term loan on the performance of sugar manufacturing companies in Kenya; they concluded that long term loan was negatively related to performance using return on assets as proxy for performance. Similarly, Sena (2006) found negative relationship between access to finance and technical efficiency among the Italian manufacturing companies, they stated that less emphasis tends to be given to optimum resource utilization when firms have access to finance.

Based on the literature, access to finance is a well-established factor that exerts a significant influence on organizational performance regardless of sizes and sectors (Álvarez & López, 2014; Hashim, Zakaria, et al., 2015; Lahr & Mina, 2016; Rahaman, 2011; Wamiori et al., 2016).

Thus, manufacturing companies with better access to finance are more likely to have higher performance than those companies with less access to finance. Despite these empirical studies on the role of access to finance in explaining variances in organizational performance, few numbers of studies have been conducted to examine the access to finance as a potential moderator on the relationships between organizational performance and its predictors. As such, this call for additional empirical

work on the moderating role of access to finance on the relationship between organizational performance and business strategy (cost leadership and differentiation). As well as, organizational performance and distinctive capabilities (marketing, research and development and technology) to enhance better understand of the predicting role of the said construct. Most research out comes employed ATF as a predictor variable (Álvarez & López, 2014; Dutta & Folta, 2016; Wamiori et al., 2016). Research attention has not been given to the use of access to finance as a contingency factor.

In this study therefore, access to finance have been incorporated as a moderator to see if this construct plays a significant role in strengthening the positive effect of cost leadership strategy-organizational performance relationship, differentiation strategy-organizational performance relationship and marketing capabilities-organizational performance relationship. Other relationships the construct was meant to moderate are research and development-organizational performance relationship and technological capabilities-organizational performance relationship.

2.5.4 Electricity service quality

The literature has identified service inputs as parts of the factors responsible for variations in the performance of manufacturing companies in the developing countries. These services include; transportation services (Datta, 2012), banking and financial services, (Sherazi et al., 2013). Others are electricity and communication services (Abeberese, 2013). This study has limited itself to one of the physical infrastructures, which is electricity supply.

One of the service inputs that manufacturing firms use for their production activities is, electricity service. Poor electricity has been found to be a major impediment to the performance of manufacturing companies in many developing economies (Brammah & Amponsah, 2012; Dzobo & Herman, 2012) Electricity supply challenge in Nigeria for example is such that the per capital electricity consumption is estimated at 125kwh compared to 4,500kwh and 1,934kwh in South Africa and Brazil respectively. Moreover, a survey conducted indicated that over 93% of manufacturing firms in Nigeria use other independent sources of energy to supplement electricity grid. It also revealed that power outages accounted for between 20% and 49% of capacity underutilization in the country (Adenikinju, 2005). In a similar finding, it was submitted that interrupted electricity power supply in Ghana was estimated at 10.3 hours per month as a result of which, up to 44% per cent of production time for micro and small scale industries were lost to redundancy (Brammah & Amponsah, 2012). More so, in the same manner another finding suggested that for one standard deviation in the assessment of electrification accounted for at least 14% increase in manufacturing output for a state in India (Rud, 2012).

Another finding from the research conducted in South Africa indicated that all categories of customers (household, commercial and industrial) of electricity service companies suffered losses generally as a result of interruption in power supply and the extent of their losses vary based on their investment on other sources of electricity. The loss incurred by industrial customers tends to be higher than those of the household customers. Because the former invest more on alternative sources of power supply which are mostly more expensive while the latter circumvent their comfort rather than spend more to procure power through alternative sources (Dzobo & Herman, 2012).

A lot of research attention has been given to electricity service in relation to performance of manufacturing companies (Dzobo & Herman, 2012; Gado & Nmadu, 2012; Olayemi, 2012; Oluwole, Samuel, Festus, & Olatunji, 2012). However, not much has been done by way of looking at electricity as a moderating variable between other variables manufacturing performance factors. One of the objectives of this study as stated in the previous chapter was to fill this vacuum.

To assess electricity service, this research has used service quality measures. It has been a very popular assessment that have over the decade, been utilized in various fields. The concept is based on behaviours of customers on how they determine the gaps between their expectations and their perceived actual service quality (Grönroos, 2001). Researchers have used the concept to determine the customer perception of various services. For instance, it was used to investigate how the tourists perceive hospitality management service in relation to their satisfaction (Rasoolimanesh, Dahalan, & Jaafar, 2016). Others used the measure to assess health care services (Kim & Han, 2012; Senarat & Gunawardena, 2011). It has also been widely employed to measure educational services (Abdullah, 2006; Ahmed & Mehedi Masud, 2014; Dado, Petrovicova, Riznic, & Rajic, 2011; Mamilla, Janardhana, & Babu, 2013; Palli & Mamilla, 2012).

It however appeared that the use of service quality in assessing electricity service is still in its infancy and few available works in this direction concentrate in Asia and some of them were at the instrument development level (Achchuthan, Sivathaasan, & Jayasundara, 2014; Satapathy, 2014; Zhang, Liu, Chen, Wang, & Zeng, 2009).

Even though, service quality measures are multidimensional, different researchers used a number of dimensions that suit their peculiar studies and context. For example, Ramaiyah, Md. Zain, and Ahmad, (2007) used five dimensions reliability, responsiveness, empathy, tangibility and, assurance to measure higher education services. Hensher, Shore, and Train, (2014) on the other hand used just one dimension as a measure of electricity service quality. To measure the quality of electricity service, this study utilized a combination of items related to two dimensions of service quality (reliability and responsiveness). The items were adopted from the work of Kang and James (2004).

Reliability has been broadly described as possession of mental and physical qualities that facilitate the delivery of specific services in a dependable and accurate manner (Mamilla et al., 2013). Electricity service quality has simply been defined as the extent to which electricity service organizations conduct their activities with a view to delivering the service accurately such that customers can consistently depend on them (Satapathy, 2014). Manufacturing companies take reliability of electricity service being supplied with utmost seriousness in terms of both the frequency and duration of outages. They frown at long duration and high frequency of outages (Hensher et al., 2014).

In the same manner, responsiveness measure of electricity is described as the extent to which electricity service companies are able to give prompt attention to customer request and complains partly determines the customer perception of electricity service quality (Satapathy, 2014). It was found that business customers of electricity service

companies suffer losses generally due to interruption in power supply and the extent of losses vary based on their investment on the alternative sources electricity (Dzobo & Herman, 2012).

Available research findings indicate that quality of electricity is to be an important factor that exerts a significant influence on organizational performance regardless of sizes and sectors especially manufacturing companies (Aliyu et al., 2013; Forkuoh & Li, 2015; Gado & Nmadu, 2012; Hensher et al., 2014). Thus, it implies that manufacturing companies with high electricity service quality tend to have higher performance than those companies with less electricity service quality. Despite these empirical studies on the role of quality of electricity in explaining variances in organizational performance, few numbers of these studies have been conducted to examine the access to finance as a potential moderator on the relationships between organizational performance and its predictors. As such, this call for additional empirical work on the moderating role of electricity service quality on the relationship between organizational performance and business strategy (cost leadership and differentiation). As well as, organizational performance and distinctive capabilities (marketing, research and development and technology) so as to enhance better understand of the predicting role of the said construct.

In this study therefore, electricity service quality have been incorporated as a moderator to see if this construct plays a significant role in strengthening the positive effect of cost leadership strategy-organizational performance relationship, differentiation strategy-organizational performance relationship and marketing capabilities-organizational performance relationship. Other relationships the construct was meant to moderate are

research and development-organizational performance relationship and technological capabilities-organizational performance relationship.

2.6. Organizational performance

Organizational performance is the focal point which is the outcome of combining all resources for value creation and to determine success or otherwise of firms. Several terms have been used by previous studies in describing performance. These include such terms as business performance, new venture performance, firm performance, entrepreneurial performance, financial performance, non-financial performance (Aguinis, Gottfredson, & Joo, 2012; Gunby Jr, 2009; Hoque, 2005; Khurshid, 2008). The reasons for using these terms in explaining performance is to gain direction in the conduct of research work in order to streamline to a particular area of research interest in performance. As such, using organizational performance in this study is in consonant with the terms used by previous studies (Bisbe & Malagueño, 2012; Roxas & Chadee, 2010; Subramaniam, Shamsudin, & Ibrahim, 2011; Tuanmat & Smith, 2011).

In addition, authors have emphasised the difficulties facing researchers in the conceptual definitions and the measurement of performance including the dimensions of organizational performance. Thus, there has been disagreement among researchers and practitioners regarding the conceptual definition and the measurement of organizational performance (Lenz, 1980). According to Morgan and Rego, (2009), the difference in the conceptual definitions of organizational performance stem from differences in the objectives to be achieved, multiplicity of such objectives and lack of clarity and concise objectives in organization. For example, organization facing the issues of varying objectives from different stakeholders such as the directors, managers,

employees and customers may have difficulties in conceptualizing the performance of its organization (Striteska & Spickova, 2012). Since the stakeholders in such firms tend to perceive organization performance from different angles.

Generally, the measurement of organizational performance is aimed at determining the extent of attainment of its objectives. Thus, the definition of organization performance was directed towards the achievement of some certain criteria of the organization (Lenz, 1980). Performance measurement discloses the values of all aspects of organization's assets. It revealed the strength and weakness of organization and the extent of the measurement of the organization. It also helps in ascertaining the organization's current situation by determining whether the organization is performing well or not. Sometimes, performance measurement indicates the efficiency and effectiveness of an organization. It therefore provides information as an indication if the organization will succeed or fail at a particular point (Richard, Devinney, Yip, & Johnson, 2009).

Jermias and Setiawan, (2008), assert that performance measure provides information for planning, investigating, coordinating, evaluating, supervising, staffing, negotiating, profitability and organization overall performance. These indicators are in relation to the performance of organization and the domain of human resources. Khandekar and Sharma (2005) affirmed that performance indicators such as efficiency, internal liquidity, strategic human resources effectiveness, profitability and leverage are used for the assessment of organizational performance.

2.6.1 Measurement of Organizational performance

Performance of individuals within organisations constitute the important integral parts upon which organisational performance depends (Aguinis, Joo, & Gottfredson, 2011). The desire of organisations to measure their performance was born out of the dynamic nature of operating environment which is aimed determining the extent to which the changing expectations of stakeholders are being met. The measurement should be designed and implemented in consonant with the interest of the external stakeholders such as suppliers, customers, creditors and others (Striteska & Spickova, 2012). This can be otherwise interpreted that conformity to the system of measurement is important for every measurement of performance in organization. Further argument was presented on the appropriate measurement of performance that should be used in organization.

In consistent with the argument of Tangen (2005) who stated that any measurement designed for the purpose of assessing organizational performance should be designed in such a way that it will reflect all the essential factors that are capable of influencing the productivity of the different process of the organization. Therefore, a situation referred to as non-congruent behaviours which is likely to result into employees' loss of motivation and conflict may occur from a situation in which measurement of performance is raised without due attention to the organizational productivity processes. Poor performance may arise as the consequence of this performance measure. Based on the aforementioned effect of a single measure of performance, a better way of performance measurement called multi-dimensional performance measurement including both the financial and non-financial measurement of performance was suggested (Murphy et al., 1996).

Researchers have used different approaches to measurement of organizational performance. Some pay particular attention to only financial aspects of performance (Adediran & Alade, 2013; Grafton, Lillis, & Widener, 2010; Nasrallah & Qawasmeh, 2009). Others placed their emphasis non-financial performance (Hoque, 2005; Udjo, 2013). Some researchers prefer a combination of both financial and non-financial measures as the most appropriate (Bisbe & Malagueño, 2012; Koseoglu, Topaloglu, Parnell, & Lester, 2013; Nandakumar et al., 2010). However, both financial and non-financial as well as other measures of performance such as productivity, absenteeism, employees turnover intentions, job satisfaction, subordinates' stress level, quality of product and service, trust in management, commitment etc. have also been utilized in human resources and other management researchers (Chenhall & Langfield-Smith, 2007; Hyvönen, 2007; Jr, 2009; Nandakumar et al., 2011; Nwokah & Ahiauzu, 2010; Pekuri, Haapasalo, & Maila, 2011; Tangen, 2005). Based on the discussion presented above, organizational performance was conceptualized from the multiple dimension comprising customer satisfaction, employee relations, turnover intention and organizational climate. Chenhall and Langfield-Smith (2007) affirmed that the integration of the multiple dimensions that take into cognizance various functional units and professions that make up an organisation is no doubt an improvement to the environmental fit of the study and adaptive organizational strategies.

2.6.1.1 Financial and Non-financial Performance

Many of the previous authors on performance measurement have argued in favour of the financial measurement of performance (Murphy et al., 1996; Venkatraman & Ramanujam, 1986). The financial indicator of performance is the most commonly used measure of performance because of its ease of use in explaining and making judgment

on organizational operations and activities. According to (Murphy et al., 1996) financial dimension of performance remains the appropriate indicator. This was considered based on the reasons that measure of financial performance such as profitability, measures the entire objectives of many organizations. Hence, he regarded the financial performance as the primary indicator of the success of organizations.

Conversely to the financial dimension of performance, the non-financial performance is also regarded as the operational measure of performance which measures how the stated objectives of firms are achieved (Hoque, 2005; Murphy et al., 1996). Non-financial performance is a measure that helps managers in determining business progress. Though it has been proved that the operational dimension of non-financial performance measurement is difficult to manipulate (Ittner & Larcker, 2003), however, it complements the measurement of the financial dimension in determining the overall organizational performance.

Referring to the above arguments, evidence has shown that it is inadequate to measure performance using a single unit of measurement in determining the operations and success of organization. As such, there is need to adopt both the financial and the non-financial measurement of performance in order to ascertain accuracy of measurement (Venkatraman & Ramanujam, 1986).

Further explanation provided by Murphy et al., (1996) that multiple dimension of performance measurement provides better result. This explanation was justified by (Dimitratos, Lioukas, & Carter, 2004) that measuring performance from the financial and the non-financial provides a better result. Following the thread of the argument

placed above and the consideration of the nature of the organization under investigation, the use of a single dimension of firm performance may not be appropriate. Therefore, this research adopts the use of both financial and non-financial objective measure of organizational performance.

Performance has been viewed from different perspectives by various authors. For instance, Lockett, (1992) regarded it as a multidimensional construct that concerns effectiveness, efficiency, quality, responsiveness, cost are the common factors that often link with organizational performance (Fisher & Härtel, 2004). Dawes, (1999) emphasized that the objective measure of performance are usually done independently. On the other hand, subjective measures are based on the subjective perception of the respondents. Therefore, it provides us with data for determining the worth of the object being evaluated accordingly, Al-turki and Duffuaa (2003) suggested that the measurement should be based on a set of objectives perception of the respondents that could be linked to the department mission and its visions for the future.

Supporting above assertion, Pritchard, Robinson, and Guy (1992) regarded performance measures as “the numerical or quantitative indicators through which the achievement of objective are arrive at, displayed and demonstrated. Within the limitation of the arguments, Kennerley and Neely (2003) alternatively stated performance measure as a parameter that could be applied in quantifying the efficiency and / or effectiveness of organizational previous activities. Therefore, this current research concludes that measurement is the process of quantification and action which therefore leads to performance. Thus, organizational performance could be measured

by the achievement of their goals that incorporates both subjective and objective measures.

In an attempt to define performance measurement, Kaplan and Norton (1996) argued that performance measures should be regarded as solid formulations of the firm's strategic choices involving the actual results being achieved for all various measures which represent how well the firm succeeds in achieving these strategic choices or its stated objective. As such, a successful performance measurement system should be regarded as set of performance measure (i.e. a metric used to quantify the efficiency and effectiveness of action) which is capable of providing organizations with the important information required for management and that will help in improving organizational activities. Therefore, performance measure should be designed to reveal all the necessary factors that can influence the productivity of different process of the organization (Tangen, 2005). To capture the above arguments all, a good measure of performance should be structured and systematically designed to accommodate collection, analysis and data reporting that will provide information that relates to performance in organization (Al-Turki & Duffuaa, 2003).

Despite the various arguments from different authors to support the inclusion of performance financial measurement, it is quite unfortunate that more attention is given to the use of quantitative financial measure in measuring performance which includes both profit and cost. However, the quantitative nonfinancial and qualitative performance measure has been greatly neglected, the quantitative nonfinancial measure also includes; market share, customer retention, cycle time, number of defectives, yield (Anderson, Fornell, & Lehmann, 1994). To support this discussion, the importance of

using multiple measures in measuring performance has been highlighted by several previous authors. It was also asserted that managers take cognizance of the group-level performance measure and cross-functional business process measurement of performance. It was emphasized that elements like quality, speed in relation to market, cycle time, complexity, innovation, productivity and flexibility have been enhanced by the current global situation (Hoque, Mia, & Alam, 2001).

Considering the above facts have been presented, no single method of performance measurement has been best for all contexts. This study therefore, used an integrated one-dimensional measure of performance. Bearing in mind that performance measure is not an issue to the participants in the study. The choice of integrated one-dimension is consonant with previous research outcomes. For example, Kaliappen and Hilman, (2014) used return on investment (ROI), market share, sales growth, customer perspective, internal process perspective, earning and growth perspective as one integrated measure of organizational performance. Other researchers have also utilized integrated measures (in various combinations) of performance in their empirical research works (Claver-Cortés et al., 2012; Hsiao & Chen, 2013).

2.7 Research gaps in the literature

A number of research gaps have been identified from the previous works in the literature. One of such gaps is that many of the available works on business strategy, distinctive capabilities and, performance actually utilized a combination of the service industries and the manufacturing concerns together (Amoako-Gyampah & Acquah, 2008; Arasa & K'Obonyo, 2012; Drnevich & Kriauciunas, 2011; Hassan, Qureshi, Sharif, & Mukhtar, 2013; Teeratansirikool et al., 2013). By so doing, their outcomes

may be incapable of specifically addressing peculiar issues that are related to manufacturing organizations due to the heterogeneity of manufacturing industry compared to the service sectors. For example manufacturing companies tend to make use of more energy in form of electricity or gas for their operations than the service organizations.

Secondly, other researchers who have carried out their investigations on the factors that impact on performance of manufacturing organizations have limited their research to Small and Medium Enterprises (SMEs) (Ahmad, 2005; Man, 2009; Tseng, Lin, & Truong Vy, 2012; Udjo, 2013; Yan, 2010). This is likely to impose a generalization challenge to their findings. This is because firm size has been found to have significant impact on organizational performance (Lee, 2009; Mas-ruiz & Ruiz-moreno, 2011).

Moreover, most of the research works done in this area were conducted within the context of either Europe (Nandakumar et al., 2011) or Asia (Hsiao & Chen, 2013; Man & Wafa, 2008). Not much research attention has been given to these factors in the sub-Saharan Africa particularly Nigeria.

Empirical studies on Business strategy, Distinctive capabilities and, organizational performance in relation to manufacturing companies within the Nigerian context are very scanty. The few available ones are done by examining each of the factors or independent variables individually. Examples are; Technological innovation and performance (Azubuike, 2013), Business environment and performance (Oginni & Adesanya, 2013; Olamide, Oyebisi, & Egbetokun, 2013; Olamide et al., 2011), Business and marketing strategy and, performance (Akinyele, 2010; Osuagwu, 2002,

2006). The problem with the findings of these works is that they cannot be used to determine which of the variables under consideration has more impact on performance than the other and which of them deserves more attention of managers and other decision makers than the other and under what circumstance.

2.8 Research frameworks

Review of the previous literature indicates that many frameworks have been published by researchers on investigating the relationships between business strategies, distinctive capabilities, business environment, and organizational performance. This study took a look at few of them with view to highlighting how the current work arrives at its own framework.

2.8.1 Model of Distinctive capabilities, strategy types, Environment and Export performance

Man, (2009) developed a research model that was used to investigate the relationship between distinctive capabilities, strategy types, environment and performance of SMEs among Malaysian manufacturing sectors. Strategy in the model was the action taken by the management of the business organization regarding the resources of the business skills and the environment affecting the business.

The model stressed that strategies are used by the management of an organization to face the threat posed by the rapid changing business environment. Several businesses operating within the same business environment may use different strategies to achieve competitive advantages and also performance. As such it was regarded that strategies influences the performance level of organizations. The study adopted low cost strategy,

differentiation strategy and niche strategy as the dimensions of business strategy types. The environment in the model is regarded as the uncertainty of firm's external task environment and the intensity of the competition affecting business activities. Distinctive capabilities are regarded as crucial contributors to the competitive advantages of business organization. This is indicated in the model as having influence on the performance of business organization (Man & Wafa, 2008) . The model measured distinctive capabilities from seven dimension of Hitt and Ireland, (1985) administrative, production/operations, engineering/R&D, marketing, finance, and public and government relations.

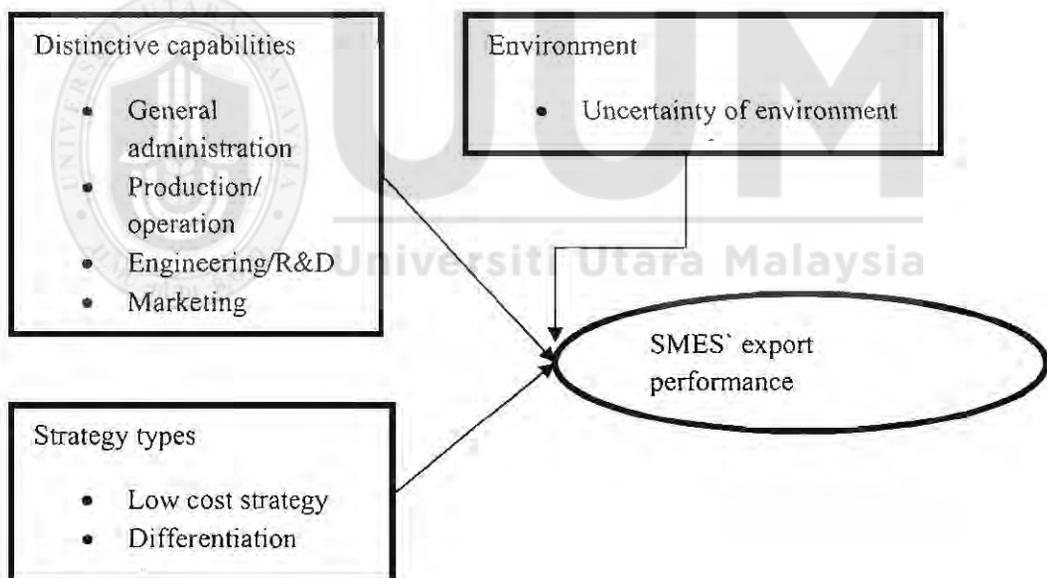


Figure 2.1
The research framework of Man (2009).

Miles and Snow's Typology of Strategy Orientation

In deciding the strategic behaviours of organization to further explain the success and failure of business, a number of typologies have been used; among these are the Miles

Snow's generic strategy typology and Porter's generic strategy typology. These two typologies as discussed in the previously are explained in this study to provide more enlightenment on the influence of business strategy on performance of organization.

Organization was evaluated based on engineering, entrepreneurial and administrative function and proposed four strategies that explain their functions and activities (R. E. Miles et al., 1978). These strategies were typically seen from the business perspectives and they are: the prospectors, analysers, defenders and the reactors. The prospectors are proactive and innovative in nature, they attach a high value to complexity and flexibility and this type of strategy is usually found in a decentralized structure of business. (Miles and Snow, 1978; Jennings, Rajaratnam, & Lawrence, 2003). They are aggressive and ready to compete in a rapidly changing business environment, thus they continuously monitor the environment to seek and leverage shifts in the technologically changing environment (Uncertain environment) (Tan & Litschert, 1994).

The protectors on the other hand prefers to stay focus on the challenges facing their present strategies by preferring security in a comparatively stable business area and redefine their strategy to protect their positions in the business. Thus, they provide better products and services to the customer in order to protect their business and therefore avoid taking risk and prefer to follow their business rivals rather than push hard perform better (Brunk, 2003). In addition to the protectors, the analyser is a hybrid of the defender and protectors that seek a stable and limited product and service ranges but sometimes engage in feasible product and services as well. One special characteristic of the analyser is the close monitoring of the activities of the prospectors to guide their actions as appropriate. They are regarded as cautious and analytical because they exhibit lack of confidence in their behaviours (Jennings et al., 2003;

Moore, 2005). The fourth typology of Miles and Snows (1978) is the reactors which are characterized by lack of consistent product-market orientation (Koseoglu et al., 2013). They often comply with the pressures from the environment and generally not successful (Koseoglu et al., 2013; Moore, 2005).

Many literatures have been published based on Miles and Snows typology and have also associated these typology of strategies to the performance of organization and it was affirmed that the type of strategy used by business organization has an association with the performance. The relationship between business strategy, distinctive competence and organizational performance was examined by Snow and Hrebiniak, (1980) and found that the selected types of strategies are present in some certain industries like plastic, automobiles and transportation. It was identified in the study that defenders, analysers and prospectors pose distinctive competences in financial management.

In addition, exploratory study was conducted by Hambrick, (1983) to investigate how business environment affect organization effectiveness. It was reported that business strategies of firm varied depending on business environment and the performance measured used. The result of the study revealed that defender and protector are different in their performance tendencies due to the environment within which the business operates. The result further indicated that the protector is outperformed in the aspect of current profitability and flow of cash in the entire business environment. However, the protectors were outperformed by the defenders in relating to market share gains.

2.8.2 Model of Business Level Strategy and Performance

The model was conceptualized by Nandakumar et al., (2010) to show the relationship between business-level strategy and organizational performance and the influence of external environment and organizational structure. Though literatures on strategic management have described business environment as consisting of three dimensions such as dynamism, complexity and hostility but this model only used the dynamism and hostility constructs (Miller, 1987). While hostility indicates hindrance tendencies against firm performance, inherent in the operating environment that high competition for productive resources and market opportunities (Ruiz-Ortega & García-Villaverde, 2008). The study also provided a distinction between the mechanistic and organic forms of business structure.

The mechanistic structure includes the centralized decision making and strict adherence to formal rules and procedures whereas the organic structure indicates the decentralized decision making addictiveness in organization which lay less emphasis on formal rules and procedures. The framework further explains the existing relationship among the variables used. It was asserted that a close relationship exists between business strategies and environment and also that some strategies are appropriate for some specific environments (Ward, Bickford, & Leong, 1996). This study further explained that the performance of an organization largely, thus it was concluded that organizational performance is contingent on the strategy and environment hence, depends on the fit between business strategy and environment. Figure 2.2 below presents the model of business-level strategy and organizational performance.

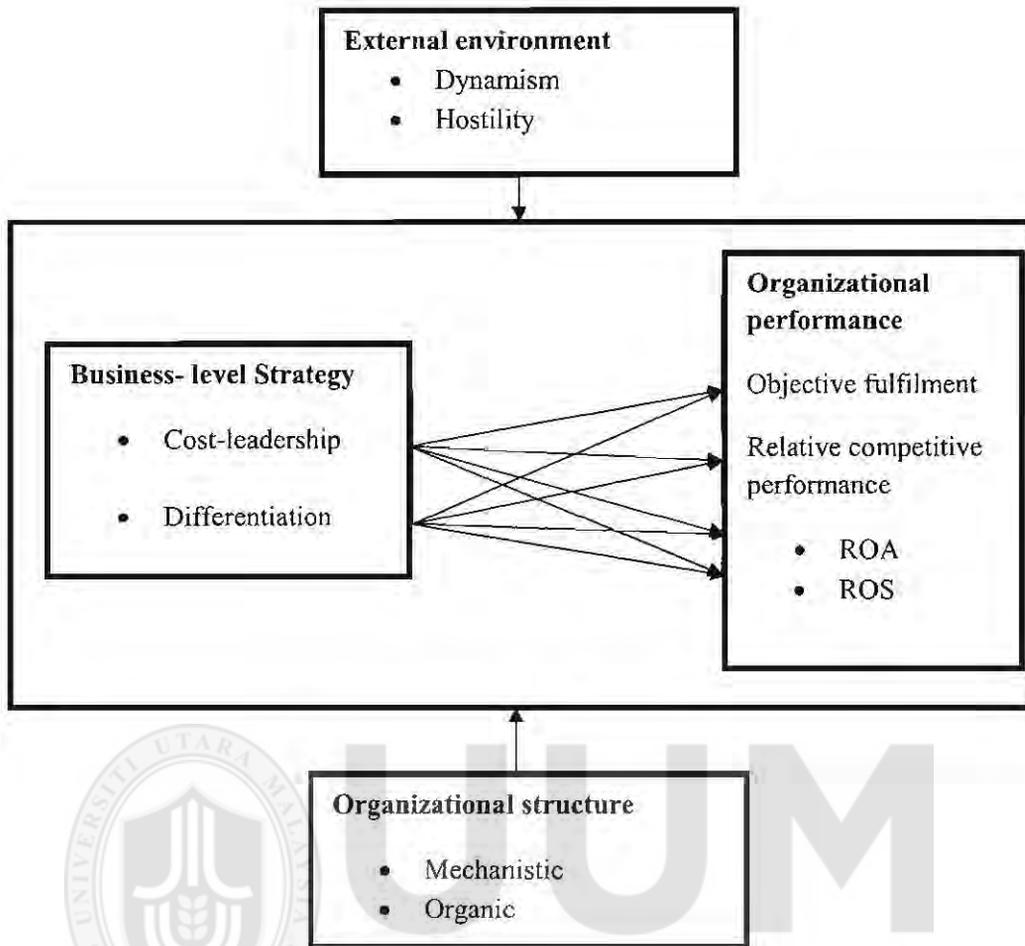


Figure 2. 2
 Model of business-level strategy and performance
 Source: Nandakumar, et al. (2010)

2.8.3 The research Model for this study

The research model is a configuration from the previous works of other researchers (Claver-Cortés et al., 2012; Man, 2009; Nandakumar et al., 2010). It is an empirical study that is theory testing in nature and it has to do with examining the impacts of Business strategy, marketing capabilities, research and development capabilities and, technological capabilities on organisational performance of manufacturing companies with the moderating roles of access to finance and electricity service quality. Findings from review of the previous literature and evidence from the industry attested to the

fact that business strategies, marketing capabilities research development capabilities and technological capabilities impact on performance of manufacturing organisations (Hsiao & Chen, 2013).

The framework for this study described the relationship between Business strategies, distinctive capabilities (marketing capabilities, research and development capabilities and technological capabilities) and organisational performance of manufacturing companies with the moderating roles of access to finance electricity service as proxies for business environment within the context of manufacturing companies in Nigeria. Access to finance is found and electricity service quality to have positive and significant impact on the manufacturing performance (Krishnan, Nandy, & Puri, 2013; Levine & Warusawitharana, 2014). The framework was built on the resource Based View RBV as the main theory and supported with contingency and Institutional theories.

Business strategy, marketing capabilities, R&D capabilities and technological capabilities as internal resources and capabilities that manufacturing companies in Nigeria require to achieve competitive advantage, and improved organisational performance. The aspect of these resources owned and utilized by each manufacturing companies vary and unique. This in line with resource based view (Barney, 1991). Access to finance and electricity service quality on the other hand, have been considered as the contextual or contingent environmental factors that are capable of interfering or moderating the contributions of the independent variables to the dependent variable. This is consonant with the contingency theory.

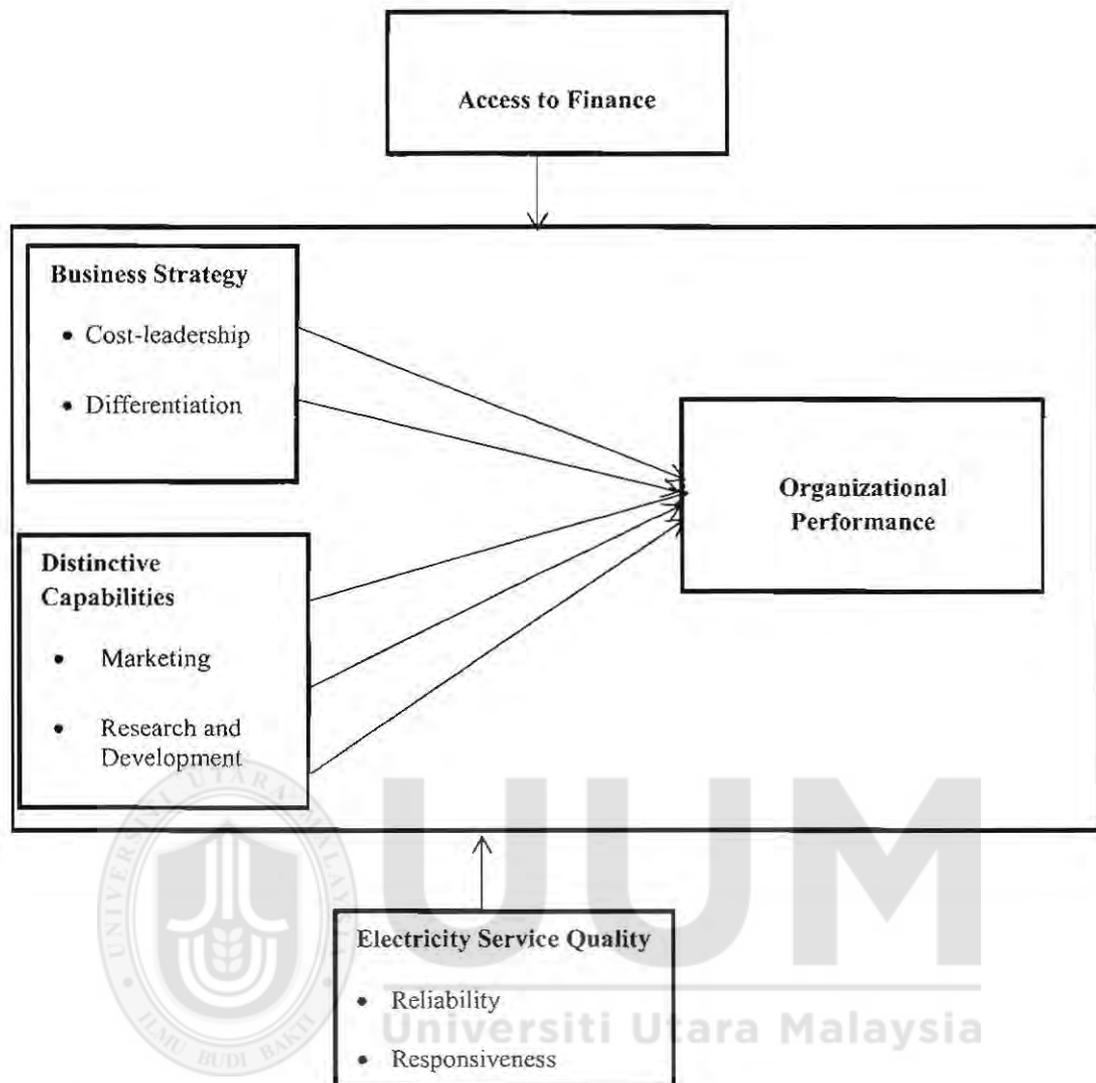


Figure 2.3
Framework for this research

2.9 Underpinning Theory

To understand the theoretical background of this study, the resource base view of firm (RBV) the contingency theory and the industrial organisation theory, were the underpinning theories that were used for this study. The RBV of firm postulated that the resources and capability of firm are important in achieving firms' competitive advantage and greater performance as an end result (Barney, 1991; Peteraf, 1993). While the contingency theory regards that certain effectiveness in organization can be

attained depending on some environmental factors that are contingent or situational in nature. Moreover, Institutional theory posits that organizations are affected by external institutions that possess certain resources that are needed by the firms (Dimaggio & Powell, 1983). The industrial organizational theory posits that firm performance is a consequence upon the resources of the industry and the behaviour of the firms operating within the industries. The next section therefore, presents the three theoretical perspectives.

2.9.1 Resource-based view (RBV)

The resource-based view was described as a model that perceived resources and capabilities as the major sources of competitive advantage and better firm performance provided such resources exhibit the characteristics of being valuable, rare, inimitable and un-substitutable (Rothaermel, 2012). RBV emerged in 1980s and 1990s and the proponents of the view argued that sustained competitive advantages were obtained by organizations using the internal resources and capabilities development. This theory affirmed that competitive advantage can be achieved by firms as a result of their resources and capability but not from activities in the market (Barney, 1995; Prahalad & Hamel, 1990; Wernerfelt, 1984).

Resources have been described as the factors that are owned and are at the disposal of or are accessible to an organizations (Amit & Schoemaker, 1993). More so, they were categorized into three. The first is physical capital resources and this concerned equipment, tools and other physical infrastructures. The second category is the human capital resources which has to do with the quality of manpower at the disposal of the firms in terms of knowledge, experiences and technical skills. The third is the

organizational capital resources. These are related to the reporting structure of the firms which include formal and informal decision making process, planning and implementation and, controlling as well as informal relationships among individuals and groups at the firm level (Barney, 1991). Resources within the concept of RBV were also described as the assets of organization (Warren, 2002). They can either be a tangible or intangible. For example, tangible assets are facilities or technological equipment, vehicles and buildings of manufacturing organizations that can be seen, touched and utilized. While the intangible resources are the brand name or the organizational reputation, managerial skills and expertise (Hall, 1992). The fundamental assumptions of RBV in relation to the resources were their heterogeneity and immobility.

The ability of manufacturing firms to reconfigure or manipulate and deploy organizational resources in appropriate manner to create value and improve performance is regarded as capabilities (Makadok, 2001; Teng & Cummings, 2002).

Firms' ability to achieve competitive advantage and better performance as earlier stated with the utilization of their resources was based on four major underlining characteristics of the resources (Barney, 1991). These are;

i) Valuable. Resources are said to be valuable when they are capable of combatting the current or anticipated threat and can also make the best out of the current and anticipated opportunities. In other words this has to do with the firm ability to produce better products or render better services to the customers than the competitors with use such resources and strategies (Barney, 1991).

ii) Rare- This assumption posited that the resources must in addition to being valuable, be unique among the present and the prospective competitors. They must not be possessed by or accessible to a large number of competing firms (Barney & Hesterly, 2010). This was based on the understanding that the resources that are all over the place cannot generate the expected competitive advantage or its values will be depleted in a short while.

iii) Imperfectly imitable- The fact that organizational resources are valuable and rare does not necessarily imply that such resources can generate the firm's competitive advantage especially when the resources can be perfectly copied or imitated. The difficulty in copying organizational resources may be derived from one or a mixture of the following sources; unique historical condition, the ambiguous causal link between the firm's competitive advantage and the resources and, the social complexity of the resources (Barney, 1991).

iv) Substitutability- For firm resources to provide competitive advantage, it should not have a close substitution. If there are different resources that can be used to replace certain firm resources, then the original resources will be incapable of generating competitive advantage.

Hence, RBV was used to provide explanations on the variation in the performances of manufacturing firms that were not able to explain by the industrial factors. Thus RBV focused its attention on identifying the distinctive capabilities and resources of firms and how firms can maintain and utilize these resources and capabilities to sustain competitive advantages (Teng & Cummings, 2002).

A lot of scholars have investigated the relationships between organizational distinctive capabilities, business strategy and performance using the theoretical perspectives of the resource based view (Armstrong, 2013; Hart, 1995; Ortega, 2010). It has been argued that effective business strategies and distinctive organizational capabilities have the features of being valuable, rare, inimitable, and non-substitutable resources that can produce sustained competitive advantage and thus enhance organizational performance (Armstrong, 2013; Ortega, 2010).

The study of Awang, Asghar and Subari (2010) also used the lens of resource base view theory to investigate the direct and indirect influence of distinctive competence on the entrepreneurial orientation. Furthermore, if business strategy leads to improved performance, organizational performance can be a rent-generating capability. Indeed, combining the resources and capabilities across different units in a firm could be even more advantageous (Ensign, 2004). Arguably, resource-based view implied that sustained distinctive capabilities of firms should be a rare, valuable, inimitable, and non-substitutable capability for it to achieve competitive advantage and enhance manufacturing performance.

More so, resource-based view has over the decades gained a lot of research attention by way of improvements and modifications. For instance, RBV was extended by dynamic capability perspective in providing explanations on how the values created by the resources in RBV can be refreshed. That was desirable so that firms can cope with the changing nature of their operating environment (Ambrosini & Bowman, 2009). A number of research works has incorporated contingency theory into the RBV (Nandakumar, Ghobadian, & O'Regan, 2010; Neneh, 2016; Njeru & Munyoki, 2014).

However, as far as this research was concerned no study was found that used access to finance and electricity service quality as environmental factors that are contingent on business strategy and capabilities.

This study has investigated the impact of marketing, technological and research and development capabilities as well as Porter (1985)'s differentiation and cost-leadership strategies as the resources of manufacturing companies that were combined to achieve competitive advantage and improved performance. The RBV was used to explain the relationship between business strategy, marketing capabilities, research and development capabilities and, technological capabilities as the independent variables that explained the variances in the dependent variable (organisational performance). While the three capabilities constituted the resources possessed by manufacturing firms, Business strategy was the process that was used for effective utilization of the resources at the disposal of manufacturing companies in achieving better performance than their competitors.

Several criticisms were put forward against RBV regarding its relationship to the performance of organizations. Kraaijenbrink, Spender, and Groen, (2009) for instance categorised the critiques into eight and asserted that five of the issues raised were capable of withstanding hit of the criticism. Among these, the most related to this study was based on the fact that resources of organizations need to complement each other in order to achieve sustained competitive advantage (Chan, Shaffer, & Snape, 2004). Moreover, the main underlining features of the resources in RBV that enhance firms' superior performance may not necessarily be applicable in all contexts (Teng & Cummings, 2002). By implication, organization effectiveness is contingent to some

other factors that are external in nature and beyond firm the control and manipulation. The proponents of RBV later on suggested the inclusion of contingency perspective determining the competitive value of organizational resources and capabilities (Barney, 2001; Priem & Butler, 2001a; 2001b) .It was based on this suggestion therefore that, this study had also utilized the contingency theory and Industrial organization theory to give further theoretical explanations to the research from the external environment and contingency point of view.

2.9.2 Contingency Theory

The contingency theory of organization posited that differences in organizational performance were normally accounted for by certain related factors. However, these relationships can be put to check by some other situational factors outside of the organization. The moderating factors were regarded as the contextual variables over and above having all forms of resources (Gerdin & Greve, 2004; Hambrick & Lei, 1985). The contingency theory focused on the ability of manufacturing companies to achieve fit between the characteristics of the organization or organizational management practices and the contextual variables to achieve effectiveness within the organization (Gerdin & Greve, 2004). The organizational effectiveness is regarded as the financial and other performance including the social and environmental performance known as the concept of triple bottom line.

One major assumption of the contingency theory is that businesses or manufacturing organizations should be managed based on the prevailing or current environmental conditions. Thus, the theory explained how business organizations are managed taken into consideration the direction of the environment in which the firms are operating. It

was stressed that factors or elements that affect business operations should be determined through the current environmental situations. It has also been reported that contingency theory always look for the best way or the best approach within the present situation in achieving its goals. In line with this assertion, Picard, Boddewyn, & Grosse, (1998) has explained situational theory stressing that the best way to organize actually depends on the nature of the environment in which the organizations operate. In other words all policies and actions of manufacturing concerns must be in line with the dictates of the environment. Therefore, organisational performance should be pursued based on the current environment situation at hand. The contingency theory assumed that there was no universal or single way of doing things. This was because organizations, people, and situations vary and change over time. Hence, the right thing to do depends on the complex variety of critical environmental and internal contingencies.

The contingency view was used as an alternative perspective view of an organization in both specific and universalistic perspective which was the commonly applied view in every settings of organization (Gerdin & Greve, 2004). One basic reason for the commonly approach used in contingency is because of its focus on the effectiveness of organization which is regarded as an important concept of organization. The accounting and strategic management literatures gave birth to the concept of fit in contingency theory. Following the review of literatures in this study, organization performance was made up of the business environment, business strategy and capabilities (Govindarajan, 1988; Gupta & Govindarajan, 1986; Gupta & Govindarajan, 1984; Hsiao & Chen, 2013; Langfield-Smith, 1997; Tan & Litschert, 1994). Several important studies were

conducted to examine the link between business strategy, with organizational performance (Husted, 2000; Bryan W Husted & Salazar, 2006).

Prescott, (1986) demonstrated that environment strengthens the relationship between strategy and performance where characteristics of market structure was use as a proxy for environment. It was noted that the contribution was also in line with the changes in the environment which can also affect the organizational capabilities. In order to aid the understanding of the nature of performance, Husted (2000) submitted that the fit between the strategy of business and the organizational structure influence organizational performance. In support of the above view, Olson, Slater and Hult, (2005), highlighted that corporate performance was highly influenced by the extent to which organizational strategies fit into the prevailing environment factors. More so, the behaviours of the employees with regards to strategy implementation in organization also influence manufacturing performance.

Hambrick & Lei, (1985) asserted that the existence of variations in the association between strategic features and firm performance in different situation was an indication of the presence of a significance contingency variable. Contingency theory normally comprised of three types of variables. The first is contingency variable that stood for situational features, it is external to the firms and managers have little or no influence over it. The second is the response variables. While the third is performance variables (Zeithaml, Varadarajan, & Zeithaml, 1988).

A number of studies have identified certain variables as moderators between strategy and performance as well as capabilities and performance as such contingency theory

was used to describe the moderating roles. For example, environmental turbulence and learning orientation were found to have moderated the relationship between technological capability and performance, technological capability and new product development and, technological capability and customer value among 400 Chinese firms (Wang, Lo, Zhang, & Xue, 2011). Recent research findings also indicated that market turbulence, technology turbulence and competitive intensity were used as moderators on market orientation-performance relationship in which 320 selected entrepreneurs were the participants (Neneh, 2016). Similarly, contingency cases was used to described the moderating role of competitive forces, market turbulence and government policy used as proxies for external environment factors on market orientation-firm performance among 60 selected tour firms (Njeru & Munyoki, 2014). However, not much is known about using electricity service quality and access to finance as moderating variables (Katircioğlu & Taşpinar, 2017). This study has therefore incorporated these variables as moderators to determine whether these constructs play significant role in strengthening or changing the direction of the relationships.

2.9.3 Industrial organization theory

Industrial organizational theory is a field of economics that concerned strategic behaviour of firms, regulatory policies in the operating environment, antitrust policies and market competition. It was built on a set of theories of the firm that forecast the nature of a firm related to its existence, structure, behaviour and its relationship to the market (Conner, 1991). It was also referred to as Institutional theory (Suddaby, 2010). While others call it Institution-based view (Garrido-Moreno & Padilla-Meléndez, 2011). Industrial Organization theory specifically deals with external business

environment related to firm behaviour operating therein. The theory has provided strategic management with a planned and orderly hypothetical explanation of a complex process (Porter, 1981).

In an efforts to review the foundation upon which Industrial Organizations theory was built, Conner, (1991) examined five schools of thought related to market structure and firm behaviours in the markets. They are as follows;

1. Neoclassical perfect competition theory: It argued that firms exist to produce goods and services by combining various resources based on the assumption that; the appropriate quality/quantity of input is known with their cost implication, additional contribution of each input can be easily estimated, all market participants have access to perfect and complete information and lastly, there is uninterrupted flow of resources in terms of movement and divisibility.
2. Bain type of Institutional organization: This school of thought associated firm's behavior to restriction of productive outputs by conniving to create artificial scarcity to enable price hike through the use of monopoly power by so doing the firms make abnormal profits.
3. Schumpeter's response: Contrary to Bain type, Schumpeter's response emphasized the dynamics of market structure and firm behaviors. It argues that firms can derive it superior performance through innovation of products, process and better distribution system that relegate the competitors' market position. It however caution against radical innovation as it lead to monopoly power.
4. Chicago response: While this school of thought agrees with Bains' idea of firms' collusion to form oligopoly for the purpose of maximizing joint profit, it however stressed that sustenance of oligopolistic power attracts high cost of monitoring and

enforcement of production volume restrictions. As such Chicago response argued that firms can only sustain their abnormal profit through better efficiency in production and distribution than competitors.

5. Coase/Williamsons' Transaction Cost Economics: The school of thought specifically emphasizes avoidance of cost of market exchange as the function of the firms. Effectiveness of transaction cost avoidance depends on the internal cost of performing the activities for which cost is being avoided compared to the external costs. These costs can be assessed from three parameters; the nature of the firm assets which compels the owner firm to depend on another firms for inputs, second is the number of input supplying firms and lastly, imperfect information.

Institutional theory posited that institutions were part of the crucial ingredient in the environment that has to do with laws, social norms, customs and ethics which impose some limitations on organizations (Miles, 2012). Institutions imposed three types of influences on organizations which includes; coercive, mimetic and normative isomorphic pressures. The one of interest to this research is the coercive isomorphism. This is the isomorphic pressure. It is a kind of influence that is being exercised by institutions with specific resources on which other organizations depend (DiMaggio & Powell, 1983).

One of the areas of attention for this study is the Nigerian's business environment that specifically relate to manufacturing sector. The factors considered are electricity service quality and access to finance. These two factors were chosen as a result of their importance to manufacturing firms (Ado & Josiah, 2015; Aliyu et al., 2013).

Electricity power is a major source of energy to the manufacturing sector in most developing countries particularly Africa. In many of these countries such as Nigeria, Malawi, Kenya and a host of others, electricity is mainly supplied by the state (Aliyu et al., 2013; Dzobo & Herman, 2012; Gilbert, Harry, & Gombachika, 2013).

The literature has also shown that access to finance is an essential contributor to firm performance including manufacturing concerns (Atieno, 2009; Sherazi et al., 2013).

The two environmental factors (ATF and ESQ) are external to the manufacturing companies and as are not within the control of these firms. Moreover, both of them constitute crucial service inputs to manufacturing organizations and the services are rendered by specific institutions.

Institutional theory is relevant to this study because the institutions such as Banks, stock exchange, insurance companies and others render financial services which enhance manufacturing companies' ability to have access to finance. The Nigerian financial system which is an institutional arrangement that enhances smooth operation of all financial institutions and the individual policies, procedures and general operational guidelines are capable of constituting hurdles to manufacturing firms' access to finance (Fatoki & Smit, 2011). In the same manner, electricity service is provided by institutions that are external to manufacturing companies in Nigeria and these companies depend on the electricity service institutions. The literature indicated that failure of the institutions to provide quality electricity service actually hampered the performance of manufacturing companies (Adenikinju, 2003; Gilbert et al., 2013). Considering the importance of these services and the institutions that are responsible for providing them, this study advanced that ATF and ESQ as moderators on the

relationship between all the predictor variables (BST, MKT, RDC and TEC) and organizational performance.

2.10 Hypothesis Development

In line with the objectives of this study and available evidence in literature, the following hypotheses were developed. Hypotheses (H1-H5) were developed based on the first five research objectives of this study which were concerned with the direct relationships between the independent variables and the dependent variable. The second set of objectives provides grounds for hypotheses (H6-H10) which were related to the moderating role of access to finance on the relationships between the independent variables and dependent variable. The next set of hypothesis (H11-H15) were developed in line with the research objectives 11 to 15 which concerned the moderating role of reliability (REL) dimension of electricity service quality (ESQ) on the relationship between business strategy dimension, distinctive capabilities dimensions (independent variables) and organizational performance (dependent variable). The last set of hypotheses H16 to H20 have been formulated based on the research questions 16 to 20 and they related to the moderating role responsiveness (RSP) dimension of electricity service quality on all the predictor-criterion variables in this study.

2.10.1 Business strategy and Organisational Performance

Business strategy referred to a bundle of chosen plans and actions aimed at achieving organizational goals taking into consideration its' resources that constitute unique capabilities in relation to available opportunities in the operating environment. Porter (1985) suggested three generic strategies; cost leadership, differentiation and focus

strategies. He concluded that organizations that make the appropriate choice among the generic strategy tend to achieve competitive advantage.

The focus of this research as far as generic strategies are concerned is limited to Porter's cost leadership and differentiation strategies. One of the reasons is that Porter's typology coincides with other competitive strategy typologies. For instance, cost leadership looks like Miles and Snow's (1978) defender strategy and Hambrick's (1983) efficiency strategy. Similarly, Porter's differentiation strategy is also similar to Miles and Snow's prospector strategy. The second reason is that, Porter's typology has been employed by many strategic management researchers due to its popularity in relation to organizational, environmental, and performance-related factors (Atikiya, Mukuku, Kihoro, & Waiganjo, 2015; Zehir, Can & Karaboga, 2015; Gorondutse & Gawuna, 2017; Josiah & Nyagara, 2015). Porter's framework suggests that firms that utilize any of these competitive strategies tend to develop a competitive advantage that would enable them to perform better than competitors in their industry. However, companies must make a specific choice between a cost leadership and differentiation strategy in order to avoid contradictions that are inherent in the use of combination of these two strategies for such companies to earn superior profits and outperform its competitors (Porter, 1985).

Previous studies have investigated the relationship between cost leadership strategy and differentiation on organizational performance in different contexts. For example; Ouma and Oloko, (2015) Examine the relationship between cost leadership, differentiation and performance among transportation service providers in Kenya. It was found that both cost leadership and differentiation strategies have positive and significant relationship with performance. The study however used very small number of

respondents (28) which tends to reduce the quality of the findings in terms of generalization. Similarly, Amoako-Gyampah and Acquah (2008) also submitted that cost leadership and differentiation strategies are positively related to organizational performance through the mediating role of manufacturing strategy and they recommend inclusion of other performance related factors and replicate the research in other developing economies. But the study was restricted to SME manufacturing firms in Ghana as respondents as such generalizing the finding may not be valid for large manufacturing companies. Tuanmat & Smith (2011) like the previous studies, found a significant positive effect of organizational strategy on performance of small and medium manufacturing firms but the research were limited to small and medium enterprises as such the findings may not also be applicable to large manufacturing organizations. The findings was corroborated by Pertusa-Ortega, Molina-Azorin, & Claver-Cortés, (2010) on their investigation of the effect of competitive strategies on firm performance found a positive significant influence of differentiation strategies on firm performance. The 250 respondents used were however, selected from large firm from different sectors in Spain. Research out comes from Europe need to be generalized with caution because of the differences in the operating environment when compared to sub-Saharan Africa such as Nigeria. Furthermore, Teeratansirikool et al., (2013)'s study indicated that all competitive strategies are positively related to organizational performance. This is in alliance with the works of (Arasa & K'Obonyo, 2012; Ibrahim et al., 2012; Pertusa-Ortega et al., 2010).

Contrary to the above findings, a study conducted in Spain among 391 SME manufacturing companies give an indication of negative significant relationship between product differentiation and financial performance (Pérez-Cabañero et al.,

2012). Based on these seeming inconclusive results, replication of the research in a different is necessary. This study therefore hypothesized that:

H₁: Cost leadership strategy has significant positive relationship with organizational performance of manufacturing companies in Nigeria

H₂: Differentiation strategy has significant positive relationship with organizational performance of manufacturing companies in Nigeria.

2.10.2 Marketing capabilities and organizational performance

Day (1994) opined that organizations require variety of capabilities if they need to create economic value, sustainable competitive advantage and achieve better profitability than competitors. Since strategy implementation involves the use of resources and capabilities. As such marketing was considered as one of the capabilities being investigated in this research.

Marketing skills has to do with the abilities of companies to understand their customers (current and potential), create relationships with them by recognizing their product needs, providing them with suitable channel distribution and logistics supports (Day, 1994). Vorhies and Morgan (2005) also described it as the firms' ability to utilize the marketing mix activities effectively in transforming their available resources into valuable outputs. From the resource based point of view, it was argued that manufacturing companies with better marketing capabilities tend to perform higher than those with inferior marketing capabilities. The authors based this argument on the fact that marketing capacities are part of the intangible resources of manufacturing concerns and having it enhanced their competitive advantage and performance (Barney,

1991). The main assertion here is that the growing volume of acquired marketing skills and knowledge gave impetus to manufacturing firms to clearly comprehend the preferences of customers in relation to competitors' response which enable such firms provide most suitable products than competitors (Ripollés & Blesa, 2012).

Findings from other investigations posited that manufacturing companies that possess better marketing capabilities in the area of appropriate product design, pricing, place of distribution and communication tend to outperform their competing firms in the same industry (Shantanu, Dutta et al., 2003; Hsiao & Chen, 2013; Kafetzopoulos & Psomas, 2015). This position was in line with previous studies. For example, findings of Ngo and O'Cass (2012) in the research conducted in Australia in which manufacturing and service companies were the participants indicated that marketing capabilities improved organizational ability to deploy available resources efficiently and gain optimum performance. However, only 90 respondents belong to manufacturing sector as such the findings cannot be generalized on manufacturing companies. Dutta et al. (2003) also opined that values created through other capabilities may not necessarily generate the expected financial benefits to manufacturing companies until the right prices were set for such values.

A similar finding in the work of Tan and Sousa, (2015), submitted that there was a positive relationship between marketing capabilities and export performance mediated by competitive advantage. This was in agreement with the finding of Karanja, Muathe and Kuria (2014) in a research conducted in Kenya which indicated that marketing capabilities and choice of distribution had joint significant and positive contribution to performance of mobile service provider intermediary organizations. Moreover, above

outcomes align with the findings of Akinbola et al., (2014) in which the researchers made use of customers of telecommunication companies in Nigeria as the participants and found a positive and strong relationship between marketing capabilities and performance. However, findings from telecommunication service companies may be suitable for manufacturing sector.

On the contrary, some research outcomes indicated insignificant and significant negative relationships between marketing capabilities and organizational performance. For example, market communication capabilities was found to have negative significant relationship with financial performance among 391 SMEs manufacturing companies in Spain (Pérez-Cabañero et al., 2012). On the other hand, a research conducted in Portugal among 254 selected manufacturing companies, it was reported that marketing capabilities was not significantly related to export performance (Lisboa, Skarneas, & Lages, 2011). It was also submitted that the contribution of advertising capability to performance among 155 furniture manufacturing companies in North America (Mexico, Canada and USA) was not significant (Akdeniz, Gonzalez-Padron, & Calantone, 2010). Lastly, pricing and communication capabilities were also found to be insignificantly related to organizational performance in an investigation conducted among 176 managers of manufacturing exporters in China (Zou, Fang, & Zhao, 2003).

In view of the conflicting reports concerning marketing capabilities and organizational performance, and the recommendation of Kamboj and Rahman (2015) for replication of this research in other developing economies such as Nigeria, this study, therefore, hypothesized that:

H₃. Marketing capabilities have a positive and significant correlation with the performance of manufacturing companies in Nigeria.

2.10.3 Research and Development capabilities and organizational performance

Manufacturing companies need to invest on Research and Development up to or beyond the minimum level if they want to earn the returns that are higher than their investment to improve organizational performance (Wang, 2011). Research and development were usually the primary sources of innovation and new product development. As such it forms part of corporate resources and a source of sustainable competitive advantage and performance.

Research and development capabilities (RDC) referred to the skills and knowledge derived from purposeful investigative activities manufacturing firms conduct to improve existing products and procedures which lead to the development of new products and procedures and result to improved performance. The main argument in this investigation is that manufacturing firms with superior capabilities in research and development tend to achieve better organizational performance than those firms with less. Existing literature indicated that investment in research and development is capable boosting organizational performance. For instance, Bhagwat and Debruine, (2011), in their investigation to determine the contribution of Research and Development and advertising to the performance of pharmaceutical companies, it was discovered that each one percentage increase in R & D expenditure resulted in additional one-quarter earnings per share EPS above the investment. The above finding agrees with the work of Ghaffar and Khan (2014) which also investigated the extent to which research and development affect firm performance. However, the two research

works were limited to a single manufacturing sub-sector (pharmaceuticals). Research and development strategy is also found to be an essential factor that explained the variance in all performance dimensions which includes; innovation performance, financial outcomes, market position and growth (Trivellas, 2012).

On the contrary, earlier findings by Erickson and Jacobson (1992) indicated that expenditures on Research and development could not generate up to the estimated average revenue for a given period of study. Attention of research concerning this factor, appear to be focused on Europe and Asia. Few available investigation in the area concentrate on SME firms. For instance, in-house research and development have been found to have significantly influence technological innovation and performance in Nigeria based on perception of 134 SME firms sampled (Adeyeye, Jegede, & Akinwale, 2013). The research however, collected data from the service sector only as such generalization of its finding to include manufacturing sector may be inaccurate. Similar finding was also reported by Akinwale, Adepoju and Olomu (2017) in a survey conducted in Nigeria among 520 SME manufacturing firm performance in which R&D expenditure, process and product innovation have significant positive relationship with manufacturing performance. The cater for all sizes of manufacturing companies of various sub-sectors, this study, therefore, hypothesized that

H₄ Research and development capabilities are positively related to the performance of manufacturing company

2.10.4 Technological capabilities and organizational performance

Most manufacturing organizations have been operating in highly competitive business environments such as Nigeria in which technological change is rapid (Agha, Alrubaiee, & Jamhour, 2012). Continuous changes in the operating environment orchestrated by customers, competitors and technologies have compelled manufacturing organizations to acquire and utilize technological capabilities. As such it is necessary for all firms to invest in technical skills if they want to remain in business (Gouvea da Costa & Pinheiro de Lima, 2009). The technological capability has to do with the ability of manufacturing companies to engage in the use of improved equipment and processes in response to the changing environment to achieve optimum results. Firm superiority in technology on continuous bases was found to have positive impact on their competitive advantage and performance (Hsiao & Chen, 2013).

Available research findings indicated that advanced manufacturing technology has substantial impacts on flexible manufacturing competence (Zhang, Vonderembse, & Cao, 2006). For example, the research conducted by Ortega, (2010) reported that firms with greater technological capabilities tend to have better performance compared to others with less. However, the investigation was carried out in Spain and it was restricted to the Information and Communication sub-sector of manufacturing. Similarly, research conducted in Nigeria showed that there was a strong positive relationship between technological innovation capabilities and performance (Azubuike, 2013). The sample size of ten (10) firms was however too small and the participating companies were restricted to plastics manufacturing sub-sector. Such finding therefore cannot be generalized. Ringim et al., (2012)'s results also submitted that information technology capability has a significant positive relationship with the performance of

Banks in Nigeria. More so, the findings of a research conducted in Nigeria indicate that technology orientation has significance positive relationship with firm performance among the 226 SMEs in North-western Nigeria (Nura, Naala, Nordin, Ahmad, & Omar, 2017).

On the contrary, technological capability was found to have negative significant relationship with export performance among 233 selected SME firms in Chile (Bianchi, Glavas, & Mathews, 2017). Reichert and Zawislak, (2014) also reported that firms do not necessarily have to acquire high technology to improve performance particularly SMEs in the developing country. It was found that most of this category of firm with medium and low technological capabilities recorded good performance. Moreover, technology acquisition was found to have significant negative impact on the productivity of manufacturing firms in Nigeria in a research conducted in which 319 manufacturing firms were the participants (Joseph, Julius, & Olugbenga, 2014) . However, the main weakness of the study is that it was limited to furniture manufacturing firm which is just a sub-sector out of 10 going by the classification of MAN. The finding is corroborated by the work of Oluwadare, Obembe and Olayungbo (2016) in which the respondents were selected from various manufacturing sub-sector of companies quoted on the Nigerian stock exchange. Negative but insignificant relationship was found between technological capabilities and performance. The contradictory findings from the literature are indications of inclusiveness of the research and call for more investigation. In view the above findings this study, therefore, hypothesized that:

H₅: Technological capabilities have a significant positive relationship with the performance of manufacturing companies.

2.10.5 The moderating role of access to finance on the relationship between business strategy and organizational performance.

Even though, most outcomes of research works on business strategy relationship with organizational performance were positive, the extent of their positivity or strength still remains a source of concern. While most of the findings indicate significant positive relationship of both cost leadership and differentiation strategies on performance (Amoako-Gyampah & Acquah, 2008; Ouma & Oloko, 2015; Pertusa-Ortega et al., 2010; Teeratansirikool et al., 2013), few empirical research findings has also indicated significant negative or insignificant relationship between these generic strategies and performance (Oghojafor, Kuye, Ogunkoya, & Shobayo, 2014; Ogunkoya & Shodiya, 2013; Mohammad, 2012)

Review of previous literature showed that variations in the performance of organizations including manufacturing companies, was due to the variations in the business environment (Oginni & Adesanya, 2013, Oginni, 2012,; Lenz, 1980). In line with the above findings, Baines and Langfield-smith, (2003); Hoque, (2004); Hyvönen, (2007) suggested that the achievement of organizational performance of manufacturing firms is contingent on situational factors such as access to finance. According to Baines and Langfield-smith, (2003) it was affirmed that there must be a good match among the environmental factors and organizational strategies in order to achieve better organizational performance. Having access to finance (internal and external) has been reported to have drastic influence on organisational performance (Krishnan, et al, 2013).

Manufacturing companies require finance to implement their strategies. For example, a company that have adopted the use of differentiation strategy actually need funds to produce products of high quality and distinct such that customer standard can be met. Similarly, those that go for cost leadership strategy which encourages mass production there will be need for the expansion of their capacity and more marketing efforts in terms advertising and promotion. This is in agreement with the finding of Hashim, Zakaria and Ahmad, (2015) which identified problem of finance as one of the obstacles to strategy implementation. In line with this therefore, this study hypothesized that:

H₆: Access to finance moderates the relationship cost leadership strategy and organizational performance of manufacturing companies

H₇: Access to finance moderates the relationship between differentiation strategy and organizational performance of manufacturing companies.

2.10.6 The moderating role of access to finance on the relationship between marketing capabilities and organizational performance

From the literature, marketing capabilities has been known to account for organizational performance improvement. For example findings in a research conducted using Egyptian companies as participants, to determine customer relation marketing CRM capability dimension on performance, indicated that CRM organisation dimension emerge as a predictor of performance (Elkordy, 2014). To improve organizational performance of manufacturing firms, marketing capabilities has to be employed which involve proper understanding of their customers (current and potential), create relationships with them by recognizing their product needs, providing them with suitable channel distribution and logistics supports (Hsiao & Chen, 2013).

All the listed marketing activities cannot be effectively and efficiently done to achieve the main goal of performance improvement without the companies having strong financial base. However, a number of insignificant relationships of marketing capabilities to performance found in the previous studies Akdeniz et al., (2010); Lisboa et al., (2011) indicate that the findings are inconclusive. And considering the influence access to finance on organizational performance (Álvarez & López, 2014; Supradeep Dutta & Folta, 2016; Harwood & Cheruyoit, 2015). This study therefore hypothesized that;

H₈: Access to finance moderates the relationship between marketing capabilities and organizational performance of manufacturing companies

2.10.7 The moderating role of access to finance on the relationship between research and development capabilities and organizational performance.

Research and development capabilities are usually the principal sources of innovation and new product development. As such it forms part of the resources of manufacturing companies and a source of sustainable competitive advantage (Day, 1994). From the literature results of many works indicated significant positive in RDC-performance relationship (Ghaffar & Khan, 2014; Trivellas, 2012; Wang, 2011), few findings gave inverse relationship about the relation (Erickson & Jacobson, 1992). Increased in venture capital on research and development was found to have positive and significant relationship with innovation performance (Kortum & Lerner, 2000). It was therefore suggested that manufacturing companies should invest in research and development up to or beyond the minimum level if they want to earn the returns that are higher than their investment to improve organizational performance (Wang, 2011). By implication,

companies that have less access to finance tend to invest below minimum level expected of them and by extension such firms may not be able to innovate and develop new products compared to their counterparts with better access to finance. Such companies tend to experience poor performance. On that basis therefore, this study hypothesize that;

H₉: Access to finance moderates the relationship between research and development capabilities and organizational performance of manufacturing companies

2.10.8 The moderating role of Access to finance on the relationship between technological capabilities and organizational performance

Technological capability was described as company's' ability to engage in the use of improved equipment and processes in response to the changing environment resulting in changes in customer demand, best prices and better product information to achieve optimum results. Firm superiority in technology on continuous bases enhances their competitive advantage and performance (Hsiao & Chen, 2013).

Available research findings indicated that advanced manufacturing technology has substantial impacts on flexible manufacturing competence (Azubuike, 2013; Zhang, Vonderembse, & Cao, 2006). Moreover, investment in technological capabilities concerning both equipment and human resources development are capital intensive. As such long term investment funding is essential for the manufacturing companies to gain competitive advantage and better performance. This study therefore hypothesized that;

H₁₀: Access to finance moderates the relationship between technological capabilities and organizational performance.

2.10.9 The moderating role of Electricity service quality on the relationship between business strategy and organizational performance.

The ability of the cost leadership and differentiation strategies to improve performance can be obstructed if such manufacturing companies experience unreliable and non-responsive electricity service. Traditionally, manufacturing companies assess the success of their products by examining the physical as well as the service qualities of such products. This includes quantity, quality, availability, accessibility, delivery and customer supports and these were found to have positively contributed to customer loyalty and profitability (Atalik & Arslan, 2009). For example, a company with cost leadership strategy which is expected to embark on mass production so as to serve the large segment of the market may fail to achieve its target if there is unreliability in electricity service. For example, Aliyu et al., (2013) found that manufacturing companies in Nigeria attributed more than 45% fall in capacity utilization to poor electricity service. This is in line with the findings of Gado and Nmadu, (2012) in which a 30% drop in capacity utilization among textile manufacturers in Nigeria was found to be the consequence of unreliable electricity service. This tends to result into problems related to availability; quantity and delivery of its products as such the manufacturing company may end up losing its loyal but disgruntled customers to the competitors, hence the reduction in performance.

Similarly, manufacturing companies that opt for differentiation strategy using time-based manufacturing practices to satisfy their customers especially those customers with special demand like product customization may not be able to satisfy such customers, bearing in mind that such production practices emphasize on reducing response time by way of compressing all areas of their production and delivery system

(Nahm, Vonderembse, & Koufteros, 2003). Poor responsiveness of electricity service is capable of hindering timely delivery to customers which in turn may lead to dissatisfaction and loss of loyal customers is found to be inversely relationship with organizational performance (Williams & Naumann, 2011). More so, many companies source for alternative from within and it is found to be too expensive (Foster & Steinbuks, 2009). Based on this therefore, this study hypothesized that;

H₁₁: Reliability of electricity service moderates the relationship between cost leadership strategy and organizational performance.

H₁₂: Reliability of electricity service moderates the relationship between differentiation strategy and organizational performance.

H₁₃: Responsiveness in electricity service moderates the relationship between cost leadership strategy and organizational performance.

H₁₄: Responsiveness in electricity service moderates the relationship between differentiation strategy and organizational performance.

2.10.10. The moderating role of electricity service quality on the relationship between marketing capabilities and organizational performance

Marketing capabilities as a source competitive advantage was known to have positively impacted on the performance of manufacturing companies. While most of the findings in respect of marketing capabilities-performance relationship are significantly positive (Akinbola et al., 2014; O 'cass & Heirati, 2012; Tan & Sousa, 2015), some research findings also reported insignificant relationships with same variable (Lisboa et al., 2011; Zou et al., 2003). The seeming conflicting results call for the introduction of a moderating variable. Taking into consideration the impact of poor electricity service on

the performance of various firms manufacturing inclusive (Aliyu, et al, 2013) and drought of literature on the use of electricity service as an interacting variable, this research introduced electricity service to moderate the marketing capabilities-organizational performance relationship. As previously stated, electricity service quality has been measured from two service quality dimensions (reliability and responsiveness) A lot of manufacturing companies that try to meet the dead lines to avoid losing their customers. This is usually done by creating reliable and responsive sources of electricity service using alternative sources of electricity (Adenikinju, 2005).

The use of alternative sources of electricity service aside from the national grid, have been found to attract very high additional cost to manufacturing companies (Dzobo & Herman, 2012), since the national electricity grid is the major and the cheapest source of electricity in Nigeria (Aliyu et al., 2013). The reliability and responsiveness created at firm level tend to enhance efficiency of manufacturing companies in the country in terms of prompt supply and availability of products to customers. By so doing therefore, organizational performance can be enhanced. This study therefore hypothesized that;

H₁₅: Reliability of electricity service moderates the relationship between marketing capabilities and organizational performance of manufacturing companies in Nigeria.

H₁₆: Responsiveness of electricity service moderates the relationship between marketing capabilities and organizational performance of manufacturing companies in Nigeria.

2.10.11. The moderating role of electricity service quality research and development and organizational performance

A number of findings regarding the relationship between research and development and organizational performance shows that most of them indicate significant positive relationships (Bhagwat & Debruine, 2011; Ghaffar & Khan, 2014; Trivellas, 2012). However, there are few of insignificant relationships between the predictor variable and the criterion variable (Erickson & Jacobson, 1992). In view of the inherent contradictions reported in the findings, this study has introduced electricity service to the relationships to address the conflicting results.

Studies has shown that electricity service is an important contributor to variances in organizational performance of both manufacturing and service sectors (Abeberese, 2013; Hensher et al., 2014; Olayemi, 2012). However, research works on the use of electricity as a moderator is to the best of the researchers' knowledge, are unavailable. This research used reliability and responsiveness as dimensions of electricity service quality. It is therefore hypothesized that;

H₁₇: Reliability of electricity service moderates the relationship between research and development capabilities and organizational performance.

H₁₈: Responsiveness of electricity service moderates the relationship between research and development capabilities and organizational performance.

2.10.12. The moderating role of electricity service quality on the relationship between technological capabilities and organizational performance

From the literature, technological capabilities have drawn a lot of research attentions. Many of the studies have reported significant positive contribution of technological

capabilities to performance of different firms including manufacturing (Azubuike, 2013; Joseph et al., 2014; Nura et al., 2017) Some others found either insignificant or negative relationships between the two variables (Bianchi et al., 2017; Reichert & Zawislak, 2014). The inconsistencies in the findings from the literature signify that research on technological capability-organizational performance relationship is inconclusive and it necessitates the introduction of the contingent variable electricity service.

Electricity service quality have been described as the extent to which electricity service providers have been able to offer high quality service to their customers based in terms of reliability and responsiveness from the customer point of view (Satapathy, 2014). Electricity is a major service input to all categories of manufacturing organizations. Quality of power supply tends to affect the quality of output by these companies. Available literature has shown that poor quality of electricity in many developing countries has negative impacts on the manufacturing firm performance (Adenikinju, 2005; Gado & Madu, 2012).

Almost all the machines used by manufacturing companies regardless of their sophistications are electricity dependent and negatively allergic to power fluctuation and instability (Aliyu, Ramli & Saleh, 2013). Instability of electricity power supply was found to have significant negative relationship with financial performance of manufacturing companies (Doe & Asamoah, 2014). Similarly, a positive correlation was equally found between poor electricity and cost of production among 250 respondents also in Ghana (Forkuoh & Li, 2015). The high cost recorded translated into reduction profit and other financial measures. Moreover, manufacturing firms have

suffered enormous losses as a result of capacity underutilization due inadequate electricity supply (Adenikinju, 2005). However, all the investigations conducted on electricity service-performance relationships, to the best the researcher's knowledge, none has employed electricity service as a moderating variable. This study has tried to fill this research gap by examining the moderating role of electricity service from two dimensions of service quality, reliability and responsiveness. This study therefore hypothesized that;

H₁₉ Reliability of electricity service moderates the relationship between technological capabilities and organizational performance of manufacturing companies in Nigeria.

H₂₀ Responsiveness of electricity service moderates the relationship between technological capabilities and organizational performance of manufacturing companies in Nigeria.

2.11 Summary of Chapter

This chapter has reviewed the literature on business strategy, distinctive capabilities, business environment and organizational performance. In the review, cost leadership and differentiation strategies have been discussed as proxies for business strategy in line with Porter's (1985) generic strategies. While marketing, technology, research and development capabilities have described to represent distinctive capabilities. The five dimensions have used as predictors of organizational performance which has been described as the integration of financial and non-financial measures of performance (Claver-Cortés et al., 2012; Hsiao & Chen, 2013). Access to finance and electricity service quality are also reviewed as contingent variables in which reliability

and responsiveness are the dimensions of electricity service quality. Three are reviewed to describe the relationships and they are resource-based view, contingency theory and industrial organization theory. Finally, two hypotheses have been raised for business strategy, three for capabilities and five for each of the three contingency variables.



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter examined two popular research philosophies within social and management science researchers while it expatiated positivist which is the philosophy underpinning this research. The chapter went further to discuss methodology and method employed to collect data and to provide answers to the research questions in order to achieve the research objectives that had earlier on been listed. In this regard, the chapter has covered related sub topics such as research philosophy, the research design, population and sampling of the study and the sample size. Other areas that have been covered in this chapter include the measurement of variables and questionnaire description, data collection procedure, the unit of analysis, the response rate and analysis techniques that have been utilized to analyse the data collected for this study.

3.2 Research paradigm

A research philosophy was described as a combination of reasonably linked assumptions, propositions or concepts that give orientation to thinking and research. It is also referred to as paradigm comprising various interrelated components. These includes ontology, epistemology, methodology and methods (Scotland, 2012). Ontology was simply referred to as one's perception of what constitute reality and being. While epistemology has to do with how knowledge can be created, acquired and disseminated (Mack, 2010). Ontology and epistemology put together can therefore be defined as the descriptive tools for differentiating various philosophical perspectives based on their features which serve as guides to research methodology.

Methodology was described as the plan of action or strategy that determined the method to be adopted in data collection, analysis and interpretation of the outcome based on facts and logical justifications (Scotland, 2012). Research scholars have identified many research paradigms. These includes among others; positivist/post positivists, interpretivist/constructivists, pragmatic and transformative (Mackenzie & Knipe, 2006). This study has however restricted itself to positivist/post positivists and interpretivist. This is because these two paradigms are the main philosophical views from where others derive their arguments.

The positivist paradigm equally referred to as scientific paradigm is very popular among social science researchers (Neuman, 2011). The paradigm posited that real life situations can be presented in quantitative manner through the use of experimentation and correlation such that cause-effect between variables being studied can be determined (Cresswell, 2009). The main function of the paradigm is proving or disproving hypothesis relying on the scientific method of data collection and statistical analysis with generalizable findings (Mack, 2010). Moreover, it relies on the use of deductive inquiry to investigate hypothesis that signalled cause-effect relationship between variables based on empirical evidence and theories to arrive at absolute truth (Cresswell, 2009). The paradigm was however criticised on the bases that even pure science research cannot lay claim to achieving absolute truth not to talk of social science. The post positivist therefore opined high level of objectivity in social research rather than absolute objectivity is attainable.

On the contrary, constructivist or anti-positivist equally referred to as interpretive philosophical approach presumed that researchers can use qualitative method to study

human social life through a number of means which include; interviews, case studies and, direct observation among others (Neuman, 2011). This paradigm also perceived what constitutes social reality as subjective and it is socially put together or agreed upon through the interaction of various individuals. As such the interaction of both participants and researchers are essential for proper understanding of a given phenomenon based on individual perspective (Creswell, 2009; Guba & Lincoln, 1994).

The purpose of this particular study was to test a structural model that has been hypothesized. The model has four independent variables and it includes; business strategy, marketing capabilities, research and development capabilities and technology capabilities with organizational performance as the only dependent variable, while, access to finance and electricity service quality constituted the two moderating variables. The model has been theorized that the four independent variables (CLS, DFS, MKT, RDC and TEC) were had significant positive relationship with organizational performance. Where access to finance and electricity service quality has significant moderating effects on the relationships between business strategy, marketing capabilities, research and development capabilities, technological capabilities and organizational performance of manufacturing companies in Nigeria. It has twelve objectives and twelve hypotheses.

In line with the developed research model, this study emphasized on theory testing, verification and extension rather than development of new theory thereby utilizing deductive research approach. Therefore, going by the philosophical assumptions discussed above, this study has to a large extent adopted the positivist paradigm, based on objectivism as the underlying ontological and epistemological stands.

3.3 Research Design

According to Zikmund, Babin, Carr and Griffin, (2013) a research design is a master plan that specifies the methods and procedures for collecting and analysing the needed information. It is concerned with the methods and structures a researcher decides or chooses to adopt in getting his/her research done (Quinlan, 2011). Thus, it is a guide that provides the procedures to be used by the researcher in order to accomplish his research work. Although, there are quite a number of types of research designs available for researchers to use, however, this study will briefly highlight a few of them (Sekaran & Bougie, 2013).

First is the cross-sectional research design. Here, the observation was done at one specific point in time and also data collection was carried out at a single point at a particular time (Zikmund et al., 2013). This design was widely used in the social sciences domain and it can be done relatively quickly while the research data was all gathered at the same point in time. Second is the longitudinal research design. This is the exact opposite of cross-sectional research design. The observation for longitudinal research design is done at different point in time and also data collection is done at several points at different times. With this design, data collection may cover several years (Zikmund et al., 2013).

Case study research design is also referred to as a case report. It is commonly used in conducting social sciences research. It is used for an exploratory or explanatory analysis of an event, a person or group. This research design is peculiar to a selected individuals or organizations or events. It tends to determine event in its real-life context without any form of distortion or influence. Case study can assume a single case or multiple

cases depending on the situation. Finally, comparative research design deals with the comparison of different countries or cultures. Thus, its data set is from different countries and different cultural research setting. In the light of the above descriptions, the proposed study will adopt the cross-sectional study design because it intends to gather its data at the same point in time.

With respect to the above, the research approach for this study was cross sectional design. It was chosen because it is relatively economical than other designs, it is capable of estimating widespread result of interest since sample is being taken from the study population. It is also good for business research and it requires no follow up.

Cross sectional design is suitable for pure quantitative technique which is the choice for this work. According to Sekaran and Bougie, (2013) the quantitative approach is highly recommended and widely applied in the field of social sciences and business field. The approach uses quantitative data and applied statistical techniques in analysing the collected data. Therefore, this is line with the present study which sort of artist quantitative data to achieve its objectives. Authors such as Amin and Khan, (2009) have concurred that quantitative research approach is very relevant in the social science studies of this nature.

3.4 Measurement of Constructs

In this study, all variables were measured using the 7-point scale, ranging from 1 (strongly disagree) to 7 (strongly agree) based on the reviews of works of (Hsiao & Chen, 2013; Nandakumar et al., 2010). In all, there are a total of seven (7) variables in this study comprising four (4) independent variables, one (1) dependent variable and two (2) moderating variables. Details about their measurement are explained below.

3.4.1 Business strategy

To measure business strategy which is one the independent variables, 12 items adopted from Nandakumar, Ghobadian and O'Regan (2010) have been used and it was a reflection of the way organizations pursue their business activities in terms of their choice of strategies. The items measured cost leadership strategy and differentiation strategy separately (Porter, 1985). The internal consistency of business strategy was 0.94 thereby, suggesting high internal consistency reliability. The instrument was later measured separately and recoded by using CLS1 to CLS6 for cost leadership strategy and DFS1 to DFS6 to represent items for differentiation strategy. More so, the instrument has been used by other researchers (Köseoglu, Topaloglu, Parnell, & Lester, 2013; Teeratansirikool, Siengthai, Badir, & Charoenngam, 2013). In this research, respondents were asked to choose the extent to which their companies emphasize the use of mixed strategies of cost leadership and differentiation by circling between options 1 to 7 which represent very low to very high respectively.

Table 3.1
Survey instruments related to Business strategies

Constructs	Item code	Survey items	Sources
Cost leadership strategy	BST1	Our company emphasis on efficiency of securing raw materials and components is.....	Nandakumar, Ghobadian and O'Regan (2010)
	BST2	Our company emphasis on cost reduction in all activities is....	
	BST3	Our company emphasis on operating efficiency is.....	
	BST4	Our company emphasis on production capacity utilization is....	
	BST5	Our company emphasis on price competition is....	
	BST6	Our company emphasis on tight control of selling expenses, general expenses and administrative expenses is.....	

Table 3.1 (continued)

Differentiation strategy	BST7	Our company emphasis on new product development or existing adaptation for better customer service is.....	
	BST8	Our company place high importance to the rate of new product introduction to the market.	
	BST9	The intensity of our company advertising and marketing is high.	
	BST10	Our company emphasis on the development of utilization of sale force is...	
	BST11	Our company's' interest on building strong brand identification is...	
	BST12	Our company's interest in the number of new products offered to market is....	Nandakumar, Ghobadian and O'Regan (2010)

3.4.2 Marketing capabilities

The instrument used for measuring marketing capabilities was adopted from the work of Hsiao and Chen, (2013) and it comprises of five (5) items. It has to do determining the extent to which managers of manufacturing companies in Nigeria perceive their organizational use of marketing capabilities in relation to their competitors. The Cronbach's alpha for the instrument arrived at during pilot testing was 0.88, indicating high internal consistency reliability. The participants were asked to choose one option that suits their perception from the provided seven scales 1 to 7 which ranged between strongly disagree, to strongly agree. Table 3.2 below gives details of the items.

Table 3.2

Survey instrument related to Marketing capabilities

Constructs	Item code	Survey items	Sources
Marketing capabilities	MKT1	Our company has better abilities than our competitors in channel distribution	Hsiao and Chen, (2013)
	MKT2	Our company has better abilities than our competitor in product recognition	
	MKT3	Our company has better abilities than our competitor in logistics supports	
	MKT4	Our company has better abilities than our competitor in international marketing	
	MKT5	Our company has better abilities than our competitor in responsiveness to customer needs.	

3.4.3 Research and development capabilities

The survey instruments utilized for the assessment of Research development capabilities were adopted from Hsiao and Chen, (2013). It was aimed at determining manufacturing company managers' perception of the extent to which their firms utilize research and development compared to their competitors. The instrument has been tested for internal consistency reliability and it has Cronbach's alpha of 0.83 which is an indication that it is reliable. The respondents were required to choose one option that suits their perception from the provided seven scales 1 to 7 which ranged between strongly disagree, to strongly agree. Table 3.3 below shows all the items in details.

Table 3.3

Survey instruments related to Research and development capabilities

Constructs	Item code	Survey items	Sources
Research and development capabilities	RDC1	Our company has better abilities than our competitors in the development of new products	Hsiao and Chen, (2013)
	RDC2	Our company has better abilities than our competitors in the development of new process.	
	RDC3	Our company has better abilities than our competitors in new product development.	
	RDC4	Our company has better abilities than our competitors in the improvement of the existing products.	

3.4.4 Technological capabilities

The instrument employed in measuring technological capabilities was adopted from Huang, (2011) and it was intended to assess the extent to which individual manufacturing company make use of technological capabilities when compared to their competitors. It has five items that have been tested for internal consistency with the outcome of 0.78 which is an indication of good reliability. In addition to that, the instrument has also been used by other researchers (Martín-Rojas, García-Morales, & Bolívar-Ramos, 2013). The participants in this study were asked to choose an option that best suits their opinion where 1 represent strongly disagree and 7 represent strongly agree.

Table 3.4

Survey instrument related to Technological capabilities

Constructs	Item code	Survey items	Sources
Technological capabilities	TEC1	Our company is among the first to introduce new products in the market.	Haung, (2011)
	TEC2	Our company is the industry leader in introducing new product.	
	TEC3	Our company is known for introducing break-through type products.	
	TEC4	Our company is one of the best in terms of product innovation in the industry.	
	TEC5	Our company is one of the best in terms of process innovation in the industry	

3.4.5 Access to finance

To assess access to finance which is one of the moderating variables in this study, a survey instrument was adopted from the work of Martin et al., (2007) and it has six items. It is meant to determine the ease with which manufacturing companies have access to finance. To ensure reliability of the instrument, it was tested for internal consistency and it has 0.89 Cronbachs' alpha and that is an indication of good reliability. More so the instrument has been used in other research works (Aminu & Shariff, 2015). Participants were asked to select an option that best described their perception from 1, strongly disagree to 7 strongly agree. Table 3.5 below shows the details of the items.

Table 3.5

Survey instruments related to access to finance

Constructs	Item code	Survey items	Sources
Access to finance	ATF1	Our company has adequate credit/financial information	Martins, Cullen, Johnson and Parboteeah (2007)
	ATF2	Our company uses retained earnings as a source of finance	
	ATF3	Collateral requirement is not an obstacle to our company in securing Bank credit.	
	ATF4	Our company has access to other non-Bank finance.	
	ATF5	Our company has access to long-term for financing equipment	
	ATF6	High interest rate is not a challenge to our company in obtaining Bank loan.	

3.3.6 Electricity service quality

Moreover, to assess the second moderating variable, that is electricity service quality (ESQ) an instrument from the work of Kang and James, (2004) was adapted and it comprised of eight (8) items. To confirm the reliability of the instrument, it was subjected to internal consistency reliability test and was found to be highly reliable with a Cronbachs' alpha of 0.87. The instrument was later divided into two dimensions and used for measuring reliability in electricity and responsiveness in electricity service. It was recoded as REL1 to REL4 to represent reliability and RSP1 to RSP4 for responsiveness. More so, it has been used by many researchers (Ladhari, 2008; Nickson, Warhurst, & Dutton, 2007). Respondents in this study have been asked to rate their perception on the quality of electricity service their have access to in terms of reliability and responsiveness by circling an option that ranged from 1 strongly disagree to 7 strongly agree. Details items are shown below in table 3.6.

Table 3.6

Survey instruments related to Electricity service quality

Constructs	Items code	Survey items	Sources
Electricity service quality	ESQ1	Our company has no access to high quality and regular electricity without interruption	Kang and James (2004)
	ESQ2	Electricity service staff are not readily available to register complaint, enquiry and maintenance related issues	
	ESQ3	Applying for new electricity supply is not easy and it is not provided in time.	
	ESQ4	Bills are not served accurately based on power consumption and other acceptable charges	
	ESQ5	Our company is not informed in advance in case of power shutdown and shedding	
	ESQ6	Our company does experience electricity voltage fluctuation	
	ESQ7	Accidental benefits and subsidies are not given to customers for damages due to abnormal supply	
	ESQ8	Additional demand for electricity is not promptly supplied	

3.3.7 Organizational performance

Organizational Performance which is the dependent variable was also measured using fifteen items (15) adopted from the work of Nandakumar et al., (2010) and the instrument comprised of subjective items normally used as measures of performance. The instrument was tested for internal consistency reliability and was found to be highly reliable with a Cronbachs' alpha of 0.95. Moreover, it has been employed by several researchers in different aspects of management (Garcia-Morales, Jiménez-Barrionuevo, & Gutiérrez-Gutiérrez, 2012; Leidner, Lo, & Preston, 2011). The selected participants in the research were asked to rate their companies in relation to subjective items which

covered questions 1 to 6 by choosing an appropriate option from the choice provided starting from 1 “not at all successful” to 7 “very successful”. While in the remaining items 7 to 15 they were required to choose between 1” significantly deteriorated” and 7 “ significantly improved”.

Table 3.7

Survey instruments related to Organizational performance

Constructs	Items code	Survey items	Sources
Organizational performance	OPF1	Improvement in long-term performance	Nandakumar, Ghobadian and O'Regan, (2010)
	OPF2	Predicting future trends of your industry	
	OPF3	Evaluating alternatives based on relevant information	
	OPF4	Avoiding problem areas	
	OPF5	Resolving problems	
	OPF6	Enhancing management development	
	OPF7	Sales growth	
	OPF8	Growth in profit after tax	
	OPF9	Change in market share	
	OPF10	Return on Assets (ROA)	
	OPF11	Return in Equity (ROE)	
	OPF12	Return on sales (ROS)	
	OPF13	Current Ratio	
	OPF14	Overall firm performance and success	
	OPF15	Our competitive position	

3.3.8 Demographic Variable

This part of the instrument relates to respondent’s profiles or the demographic data collected from collected from the participants (Pallant, 2011). In this study, demographic variables such as gender, academic qualifications and job positions have been incorporated. Others are; company age, industry classification/nature of business,

gross annual income as well as number of employees. Gender and industry classification were measured as nominal variables. While academic qualifications and were assessed as ordinal variables. Lastly, company age, gross annual income and number of employees were measured as interval variables.

In that wise, dummy variable was used for coding gender with values “1” for male and “2” for female. The same goes for Academic qualifications in which “1” represents SSCE/WASC/NECO, “2” for National Diploma, “3” for HND/BA/BSC or Equivalent and “4” for Postgraduate qualifications. Lastly, “5” represented Academic and Professional qualifications. The third item in this part of the questionnaire concerned respondents’ job positions. Where 1, 2 and 3 were provided to stand for General Manager/CEO, senior manager and manager respectively. Other options are owner manager and others which are represented with “4” and “5” respectively. Company age was the next item in which respondents were asked to pick an age range to which their company fall from the provided list. It was coded in the same manner and “1” stood for Less than 10 years, “2” for Between 10 and 19 years, “3” for Between 20 and 29 years and “4” 30 years and above. The fifth item concerned industry classification and it was coded in the same manner with dummy value “1” for chemicals and pharmaceuticals, “2” for Basic metal iron and steel/Fabricated metal products, “3” for Domestic/industrial plastic rubber and foam. Others values are; “4” for Pulp paper and paper products/Printing and publishing, “5” for Electrical and electronics products, value of “6” represented Textiles, wearing apparels, carpet leather and foot wears. The last set of values under industry classification values are “7” for wood and miscellaneous assembly and lastly “10” for Food, beverages and tobacco.

The sixth items under demographic variables concerned organizations' gross annual income. Participants were asked to choose from any of the three provided options in which "Below N5 million" was coded as 1, "Between N5 million and N500 million" was coded as 2. And "above N500 million" stood for 3. The last item related to the number of employees in the company and they were coded just like the previous ones where "1" stood for "Not more than 10 employees", "2" for "Between 11 and 200 employees" and "3" for "Above 200 employees".

3.5 Questionnaire Description

This questionnaire used for this study was divided into two major parts; namely part A and part B. The part A will cover all the questions concerning the demographic information about the respondents and the company they represent. Accordingly, part B will also cover questions relating to all the variables (5) in this study. Table depicts the description.

Table 3.8

Questionnaire description

Purpose of Items/Questionnaire	Item No
Part A Respondents' demographic variables	7
Part B	
Variables names	
Access to finance	6
Business strategy	12
Electricity service quality	8
Marketing capabilities	5
Organizational Performance	15
Research and Development capabilities	4
Technology capabilities	5
Total number of items (Demography inclusive)	62

Source: The researcher

3.6 Population and Sample

The main reasons for studying a given population in a research, is to obtain current, accurate and relevant facts capable of answering the research questions. These efforts are often being hindered by some constraints. These are costs of undertaking the research when the entire population is to be covered, the available time at the researchers' disposal and the requirements of the research (Quinlan, 2011).

A sample of the research population is therefore recommended to reduce the stated constraints. A population sample is described as a selected representative of the entire population. According to Zikmund, et al (2013), research population is described as a set of individuals or objects of interest to the researcher. It includes the entire members the researcher wants to study. Population sample for a research is a sub set of the entire study population which must be selected in such a way that it can adequately represent the population set. It becomes necessary when the defined study population is too large beyond the scope of the researcher in terms available financial resources, time allocated for the research and the ease of accessing the total population to either conduct interview or administer questionnaires especially when the prospective respondents are geographically dispersed (Quinlan, 2011).

The population for this study was to cover the entire manufacturing companies operating in Nigeria. The list of participating organisations in this research is derived from membership Directory of Manufacturers Association of Nigeria MAN. The Association is considered appropriate for this research due to the size and diverse nature of its membership. It has 1733 members as at June 2014 (MAN, 2014). Companies in the associations belong to different sub-sectors of manufacturing and they are located

in various parts of the six Nigeria's geo-political zones. The zones are; North-west zone, North-east zone and North-central. Others are; South-west zone, South-south zone and the South-east zone.

However, the south-west geo-political zone has been selected for the purpose of this research. The choice of the zone is basically due to high concentration of the manufacturing companies in that zone. For example, as at December 2012, the total number of listed manufacturing companies in Nigeria was eighty six (86). Out of this number, seventy two (72) companies are in Lagos alone which is just a state out six states in the South-west zone (NSE, 2012). The number amounts to about eighty per cent (88%). Lagos State being the most populated African city has a structural population composition that represents every ethnic group, people and firms in Nigeria, thus a clear representation of the whole people in Nigeria (Lewis, 2009).

However, Lagos is the business and industrial centre of the nation (Lagos State Government, 2010; Lewis, 2009). Added to this, the Lagos State Government (2010) noted that 60% to 70% of business and industrial transactions in Nigeria were concluded and finalized in Lagos. Lagos State alone accounted for over 60% of the industrial value investment among the other six main industrial zones or centres in the country (Filani, 2012). Moreover, out of the 1,733 manufacturing companies that constitute members of MAN, 1,227 members are from the south-west zone (MAN, 2014).

In addition to that the presence of Boko harm insurgency in the North-east and part of the North-west pose a serious threat to smooth research conduct in the zones (Awojobi,

2014; Dauda, 2014). The south-south zone still has its own share of violence activities of the Niger delta militants (Dialoke & Edeja, 2017). Given the concentration of the manufacturing companies in the south-west zone and the current security situation in the country, the zone has been considered to be more conducive for this research than other zones.

Manufacturers Association of Nigeria MAN categorised their members into ten different sub-sectors based on the nature of each company's product. The sub-sectors are;

1. Basic metal, iron and steel, etc.
2. Chemicals and Pharmaceuticals.
3. Domestic and Industrial plastic rubber and foam.
4. Electrical and electronics.
5. Food, beverages and tobacco.
6. Motor vehicles and miscellaneous assembly
7. Non-metallic mineral products.
8. Pulp, products
9. Textiles, wearing apparel, carpets, leather, foot wears, etc
10. Wood products and furniture.

Sampling can be categorised into two major types which are probability and non-probability sampling technique.

3.6.1 Non probability sampling

In this category of sampling, the selected members of the population may not necessary serve as the actual representatives of the whole population in any statistical sense. This

is due to the procedures adopted for the selection (Quinlan, 2010, p.213). The following techniques have been identified as common to non- random sampling procedure.

- a) Judgmental or purposive sampling – In this technique, the researcher makes the selection base on his judgment or his initiative about what he or she believes to be the participant’s ability to give the needed facts.
- b) Convenience sampling – This technique is also called accidental sampling. The researcher decides on how many participants to be engaged and simply makes the choice of participants based on easy access and convenience
- c) Quota sampling – The researcher makes the choice of participants making sure that every sub-group in the entire participants are duly represented in the sample.
- d) Snowball sampling – In this technique, the researcher predetermines the number and the qualification of participants needed for the research. He then engages one participant, conduct the research with him and then the first participant is asked to recommend the second and the second recommends the third. The trend continues until the last participant is engaged.

Non-probability technique for data collection has a number of advantages. Samples can be selected using the technique where the researcher does not have access to the list of participants and their size. It is a cheaper technique compared to probability sampling. It also saves time, since the researcher does not have to travel around to collect data, convenience sampling can easily be used (Donijo, 2009). The main problem with non-probability technique is that it is not the best option to be used to drawing inferences about the population. In other words, such samples are not adequate representative of the population because the selection procedure is not scientific.

3.6.2 Probability sampling

The basic rule here is that each member of the population has equal chance of being selected for inclusion in the sample. Probability sampling enables the researcher to assess the sampling error. However, this method can only be used where the list of all members of the population is available. This list is called sampling frame. There are different sampling techniques in probability sampling.

- a) Simple random sampling- This involves a random selection of samples from all the listed members of the population continuously up to the predetermined number of samples is completed. It can be with replacement or without replacement.
- b) Systematic sampling- This has to do with systematic selection of samples at regular intervals from the sampling frame up to the last sample required to be used as sample population.
- c) Cluster sampling- This sampling technique is most suitable where members or items in the population are geographically dispersed. The process here follows the random selection of each cluster that is the geographical groupings and not that of the whole population as in simple random sampling.
- d) Stratified sampling- Selection of samples in this technique is based on identifiable features of the population. The characteristics which can impact on the research are considered.

Stratified sampling has been chosen for the purpose of this study. This was because Manufacturers Association of Nigeria from where the study population has been drawn has classified the study population into 10 based on their industry sub-sectors as earlier on stated and each of the groups has distinct characteristics that were capable of

affecting their responses to the questionnaire, as such they need to be stratified in line with the suggestion of (Quinlan, 2010, pp. 209-211).

This sample size chosen for this research was guided by Krejcie and Morgan, (1970) table to determine the sample size in which it was suggested that for a population of 1227, sample size of 300 was sufficient to represent the population. The segregation of manufacturing into sub-sectors has been the basis of stratification of the sample. (See table 3.9).

Table 3.9

Manufacturing subsectors, population, sample and percentages

S/NO	Manufacturing subsectors	Population	Sample	Percentage
1.	Basic metal, iron and steel, etc.	156	38	12.7%
2.	Chemicals and Pharmaceuticals	251	61	20.3%
3.	Domestic and Industrial plastic rubber and foam	194	47	15.7%
4.	Electrical and electronics	73	18	6%
5.	Food, beverages and tobacco	209	51	17%
6.	Motor vehicles and miscellaneous assembly	98	24	8%
7.	Non-metallic mineral products	38	9	3%
8.	Pulp, products	102	25	8.3%
9.	Textiles, wearing apparel, carpets, leather, foot wears, etc.	50	12	4%
10	Wood products and furniture.	56	15	5%
	Totals	1227	300	100%

Source: (MAN, 2014)

3.7 Unit of Analysis

Zikmund, Babbitt, Carr and Griffin (2013), described the unit of analysis as the key entity or subject of the research to be used for the purpose of data collection and analysis. Unit of analysis in research means what or who should provide the data and at what level of aggregation. This level of aggregation could be at the individual levels (such as customers, employees, managers, chief executive officers and owners) or

organizations (businesses, community, country, organisation and business units). It deals with what and who that is being studied by the researcher. Zikmund et al. (2013) classified unit of analysis into; individuals, groups, social organizations and social artefacts etc.

In line with the variables under consideration for this study, that is Business strategy, marketing capabilities, research and development capabilities, technological capabilities, business environment and organization performance, the suitable unit of analysis are institutions. That is manufacturing organisations. Manufacturers Association of Nigeria MAN was a major institution that incorporated all categories of manufacturing organisations in terms of sizes, geographical locations and nature of business (MAN, 2014).

The focus on all manufacturing organizations in Nigeria by this research becomes necessary because of the need to analyse organizational design policies in use that are actually based on the decisions of the organizations (Pertusa-Ortega et al., 2010). The choice of MAN can be justified by the composition of the association in that the membership of the association cut across all the geographical region of the country and it involve all manufacturing sub-sectors (MAN, 2014).

Despite the fact that, individuals (chief executives and or managers) have been used as the respondents for the study, however, these individuals actually responded to the questionnaire in their official capacity and as such their opinions were those of the companies they represent. Each individual was given a questionnaire to answer on behalf of his or her company. This was in line with work of James, (1982) in which it

was opined that simple aggregation of many responses from individual organisation is capable of producing unreliable and incomparable result. This is as a result divergent experience and unit level challenges that vary from one unit to the other.

3.8 Method of Data Collection

According to Zikmund (2013); Sekran and Bourgies (2013), there are many ways by which questionnaire can be administered. Some of them include post, email, self-administered, online etc. Brewerton and Millward, (2001) also affirmed that there are a number of methods which researchers can use to collect data and each method has its own advantages and disadvantages. It was noted that it was important for researchers to choose the right method for data collection in order to be able to collect the required and correct data from the respondents. Basically, this study is quantitative in nature and therefore seeks to collect a quantitative data.

For this reason, the study has chosen the self-administered procedure to distribute and retrieve the questionnaires from the respondents. Self-administered questionnaire was considered appropriate for social and management science studies such as this. The questionnaires were distributed to the selected manufacturing companies from MAN directory within the south-west geopolitical zone which comprised of six states. The states are: Ekiti, Lagos and Ogun states. Others include Ondo, Osun and Oyo states.

In view of the above therefore, four research assistants were employed to take part in the questionnaire administration. In order to ensure that qualified persons were appointed, the least academic qualification for the assistants was a diploma certificate and their familiarity with locations of the respondents that were covered.

Administration of the questionnaires commenced on the 3rd August, 2015 and it was scheduled to last for four weeks. (3rd to 28th August, 2015). But due to poor response within the period, the early response period was extended till 14th September, 2015 in order to improve the response. While we considered those questionnaires returned after 14th September were regarded as late respondents

3.9 Pre-Test/Pilot Test

The pre-test and pilot test of questionnaire was described as a survey rehearsal that was expected to be conducted prior to full field survey operation (Presser & Blair, 1994). The main purpose of conducting pilot test is to determine parts of the questionnaire that is likely to have one form of problem or the other that can hinder the respondent's ability to give accurate response and to eliminate such problems (Sanders, Lewis, & Thornhill, 2009). For instance, there is possibility that many respondents avoid filling some questions or on the other hand, provide invalid feedback due to faulty survey questionnaire design and implementation. Presser and Blair, (1994) discover expert panels were found to be the best in resolving problems in questionnaires in their investigation comparing four pretesting methods which includes; conventional pre-tests, behaviour coding, cognitive interview and expert panel.

In view of the above therefore, these questionnaire items has been given to four experts. Two of them are from the academics from Kwara state University and the other two were from manufacturing sector Lubcon oil Nigeria Plc and Kam Industries Nigeria Limited. This was for the purpose of evaluating the suitability of the research instruments in terms of language, linguistic and technicality for the potential respondents and it adequacy to obtain the needed data. The experts had gone through

the research instruments and actually made some suggestions for the improvement of the instruments. After this, the research instruments have been amended based on the expert's opinions. This was conducted to test the face and content validity of the research instruments.

In addition to that, the instruments have been pilot tested on the field by distributing 100 copies to selected respondents and also making sure that each industry sub sector of manufacturing was duly represented. This was in agreement with the suggestion of Fink, (2003) which stated that a few sample sizes respondents was acceptable in a pre-test though higher number was also considered okay. Out of the 100 questionnaires distributed, 67 were returned and all of them were found to be useful.

In testing the reliability of constructs in an instrument, this study utilised Cronbach's alpha and it is in agreement with the suggestion of Sekaran and Bougie, (2013) The outcome of the reliability test carried out using IBM SPSS version 22.0 to compute are thereby stated below (See table 3.10)

Table 3.10 Reliability coefficient for pilot test Cronbach's Alpha (n= 67)

Variables	Number of items	Cronbachs' alpha
Access to finance	6	0.84
Business strategies	12	0.94
Electricity service quality	8	0.87
Marketing capabilities	5	0.88
Organisational performance	15	0.95
Research and development capabilities	4	0.83
Technology capabilities	5	0.78

Source: The researcher

Each construct indicated in the table has a Cronbach's alpha index that is above 0.8 and this is considered very good internal consistency reliability for the scale. According to

Pallant, (2011); Crobach's alpha above 0.7 are acceptable. Even though, those above 0.8 are preferable.

3.10 Analysis Techniques

Before going ahead with the main analysis, preliminary analyses were conducted. Data screening was carried out to determine entry errors that can result into missing data and outliers. A test of non-response bias was also done. Moreover, other tests conducted were those related the basic assumptions in respect of linear regression analysis, specifically the parametric tests. They included; Normality test, linear relationship, multicollinearity test, auto-correlation and homoscedasticity test.

Factor analysis: The study employed this analysis technique in order to determine the number of items that loaded on a factor or on the other hand, determine the structure of a variable. Also, it played a very significant role in checking the construct validity of the instrument. So, owing to this, the study conducted a factor analysis in order to determine the number of items that loaded on a factor and at the same time check whether each item measured the variable. In this case, the study used the component factor analysis with a varimax rotation. As suggested by Pallant, (2011), all the items in study were all accepted, because, none of them had communality index below the threshold of 0.5. More so, the outcome of the factor analysis indicated the Eigen value for all the variables are greater than 1.

Descriptive analysis: This analysis is often used to quantitatively describe the respondent's profiles or the demographic data collected from the respondents (Pallant, 2011). In this study, the descriptive analysis such as frequency counts, percentage,

means and standard deviation were all employed to summarize the particulars of the proposed respondents that will participate in the study.

Correlation analysis: This is a statistical analysis that tends to measure the strength of the relationship between two continuous variables which may either be positive or negative. It helps the researchers to determine the degree and type of relationship between two or more variables. It further showed how strong or weak a relationship between two variables is (Field, 2009). Therefore, the use of correlation analysis in this study was aimed at determining the strength and degree of the relationship between all the variables that were being analyzed.

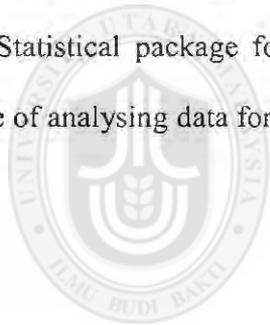
Regression analysis: This statistical analysis technique was used to determine the extent of the relationship between the relationships between the independent and dependent variables. Therefore, the researchers used this analysis technique to understand the relationship between the independent (business strategy, marketing capabilities, research and development capabilities and technological capabilities) and dependent variables (organizational performance) (Pallant, 2011). Researchers can always establish the relationship between the x and y through the application of the regression analysis. Hence, this analysis technique assisted this study to determine the relationship between the independent and dependent variables of this study.

Hierarchical analysis: This statistical analysis tool is used to find out the impact of an interaction variable on the independent and dependent variables (Baron & Kenny, 1986). It was used to understand the contingent effect on the independent-dependent variable's relationship (Sekaran & Bougie, 2013). Therefore, to adequately determine

the moderating effects of access to finance and electricity service quality on the relationship between business strategies, marketing capabilities, research and development capabilities, technological capabilities and organizational performance hierarchical regression analysis was being employed.

3.11 Summary

This chapter dealt with the methodology that was used in conducting the research. All the steps required to conduct this research were discussed in this chapter. They include research philosophy, research design and procedure for data collection of the study. It also showed the sampling technique that have been used and most importantly the method of data collection, data collection technique and data analysis of this present study. Statistical package for social sciences SPSS version 22.0 was used for the purpose of analysing data for this study.



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CHAPTER FOUR

RESULTS

4.1 Introduction

This chapter gives the description of the data and the analyses using SPSS version 22.0. The chapter commenced by presenting the response rate of participants in the field. It then proceeded to the preliminary data screening and initial analysis. The outcomes of the descriptive statistics for all the latent variables were reported. The initial analyses were conducted to determine the suitability of the data for regression analysis. Having satisfied the necessary conditions, hierarchical regression was run to test the twelve hypothesis and all the findings were reported accordingly.

4.2 Data collection procedure.

The first step taken was a visit to the Manufacturers Association of Nigeria (MAN) head office in Lagos seeking permission to collect data from their members. The researcher was given audience and a copy of their membership directory which contain names and office addresses of all members was released. It is from the directory that the list of those members from South-west zone was extracted and they are 1,227 that constitute the target population for this research. The list was divided into ten strata based on the classification of MAN in line with the line of business of each company. The sample size of 300 was predetermined using Krejcie and Morgan, (1970) table. The breakdown of the population sample expected from each stratum or sub-sector was clearly presented in table 3.9 of chapter three. Sample size from each stratum was calculated by dividing total population by the population of each stratum multiplied by the predetermined sample size. Thereafter, a systematic random approach was used in selecting the actual companies that

were eventually chosen for the study from each stratum. The outcome of this exercise produced a comprehensive list of participants based on stratified random sampling.

However, each sub-sector was eventually doubled in line with the suggestions from the previous studies Gregg, (2008); Hairs, Wolfenbarger, and Ortinall, (2008) in which it is recommended that estimated population sample should be increased by a hundred per cent to cushion the effect of poor response where poor response is anticipated. This study therefore distributed 600 questionnaires to make up for the likely anticipated non response. Poor response to the questionnaire was foreseen because of the nature of the selected participants. The chief executives officers, the owner managers or any other management staff of manufacturing companies located within the south-west geopolitical zone were chosen. The questionnaire administration covered; Ekiti, Lagos and, Ogun states. The remaining states covered in the research were Ondo, Osun and, Oyo states. Distribution and collection of questionnaire commenced on 3rd August through to 14th September 2015. At the end of the period, 319 questionnaires were retrieved out of 600.

4.3 Response rate analysis

In order to boost the response rate, many telephone calls were made and short message service SMS was also used to serve as reminders to the respondents or the contact persons in each company (Silva, Smith, & Bammer, 2002). The outcome of these efforts therefore resulted in the receipt of 319 completed and returned questionnaires out of 600 distributed to the qualified respondents. This number represents 53.17% response rate. This is an acceptable range in line with the suggestion of Sekaran and Bougie, (2013). More so, six out of three hundred and nineteen questionnaires received were found to be unusable because up to 50% of the questions were not responded to by three respondents and three

others were answered by unqualified respondents. The remaining 313 questionnaires were therefore utilized to further the data analysis. As such, the valid response rate is 52.17%. This rate was therefore deemed to be sufficient for the analysis in this research in line with the work of (Sekaran & Bougie, 2013) which suggested at least 30% response rate for analysis in structured survey research is adequate for research analysis (See Table 4.1)

Table: 4.1
Response rate

Response	Rate/Frequency
Number of questionnaire distributed	600
Number of questionnaire returned	319
Returned and usable questionnaires	313
Returned and excluded	6
Questionnaires not returned	281
Response rate	53.17%
Valid response	52.17%

Source: The researcher

4.4 Data screening and preliminary research analysis

The importance of preliminary data screening in any multiple regression research is to enhance a better understanding of the researcher on the nature of the data to be used for analysis. Initial data screening also assist the researchers in identifying the likely violations of any of the key assumptions guiding the application of the multiple regression analysis (Field, 2009). The outcome of the initial data screening in this research, lead to identification of six unusable questionnaires as previously stated.

4.4.1 Analysis of missing data

There were 17,215 data points in the original SPSS data set. Some missing data discovered as a result of entry error were corrected and the remaining randomly missing data were 148 and this accounted for 0.84% of the total data points. The missing data cut across all the variables in this research. Precisely, Access to finance has 16, Business strategy 33 and marketing capabilities 9. Others are; Electricity service quality with 17 missing data points, technological capabilities 9 and research and development capabilities 11. While organizational performance has 53 missing values. (See: Table 4.2).

Table 4.2
Total percentage of the missing data

Latent variables	Total data points	Missing values	Missing values (%)
Access to finance	1,878	16	0.85
Electricity service quality	2,504	17	0.68
Business strategy	3,766	33	0.88
Marketing capabilities	1565	9	0.58
Research and Development capabilities	1252	11	0.88
Technological capabilities	1565	9	0.58
Organisational performance	4695	53	1.12
Total		148 out of 17,215 data points	0.85%

Note: The percentage of the missing values was arrived at by dividing the total number of the randomly missing values by the entire responses in the data set and multiplied it by a hundred.

There is no precise consensus with regards to rate of acceptable missing value in data set for making a valid statistical inference. Many researchers have however suggested 5% and below as acceptable range (Tabachnic & Fidell, 2007). Moreover, median substitution has also been suggested for replacing randomly missing data provided the

missing data is 5% per cent or less (Pallant, 2011; Tabachnic & Fidel, 2007). The missing data in this work is 0.85% and have therefore been replaced using median substitution.

4.4.2 Assessment and treatment of Outliers

An outlier was described as any observation which distinguishes itself far from other responses in a data set by virtue of either being too high or too low relative to others (Hair Jr., Black, Babin, & Anderson, 2010). Determination of influential outliers is an essential step before a researcher can proceed to advance research analysis. The presence of outliers in the data set of a regression based analysis are capable of causing serious distortions in the estimation of the regression coefficient and which can translate into unreliable results (Verardi & Croux, 2009). In an attempt to determine the existence of responses which may be out of the value labels coded in SPSS as a result of wrong data entry, minimum and maximum statistics was used to construct frequency tables that contained all the variables. Seven values that were found to be wrongly entered were promptly corrected from the questionnaires.

There are three major processes for detecting and dealing with multivariate influential outliers. The stages include; Mahanalobis' distance, Cook's distance and Leverage's hat value (Hair, et al, 2010). Mahanalobis distance has been described as the extent to which one or more observations move away from the meeting mid-point of the remaining cases, where the centre point is the one created at the intersection of the means of all the variables in the research (Tabachnic & Fidel, 2007). This study determined Mahalanobis distance was run by entering all the items in the questionnaire into the independent variable box and the ID into the dependent variable box of the linear regression of SPSS. The output was arranged in an ascending order and checked up the total number of items

(55) under the chi-square table with 0.001 degree of freedom (Tabachnic & Fidel, 2013). The threshold of 93.17 was arrived at as a result of which four items (189, 61, 92 and 303) that were discovered to be above the threshold were deleted. The study therefore, proceeded with the remaining 309 responses (313-4) to further the analyses. Table 4.3 below gave details of the deleted respondents.

Table 4.3
Deleted cases as a result of outliers

Number	Cases ID	Mahalalobis's distance	Cook's distance	Leverage's hat values
1	189	99.466	.000	.319
2	61	99.901	.002	.320
3	92	100.439	.000	.322
4	303	151.013	.023	.369

Moreover, the corresponding values for Cook's distance and Leverage's hat value were examined to determine the extent to which the detected outliers were significantly influential outliers. According to Cook and Weisberg (1982) if the value of Cook's distance for any case is greater than 1.0, it is a source of concern and the case would be considered as an influential outlier. In case of leverage method for detecting outliers, leverage's hat value for any observation exceeding 0.50 such observations should be considered as influential outliers (Iglewicz & Hoaglin, 1993; Hair, et al, 2010).

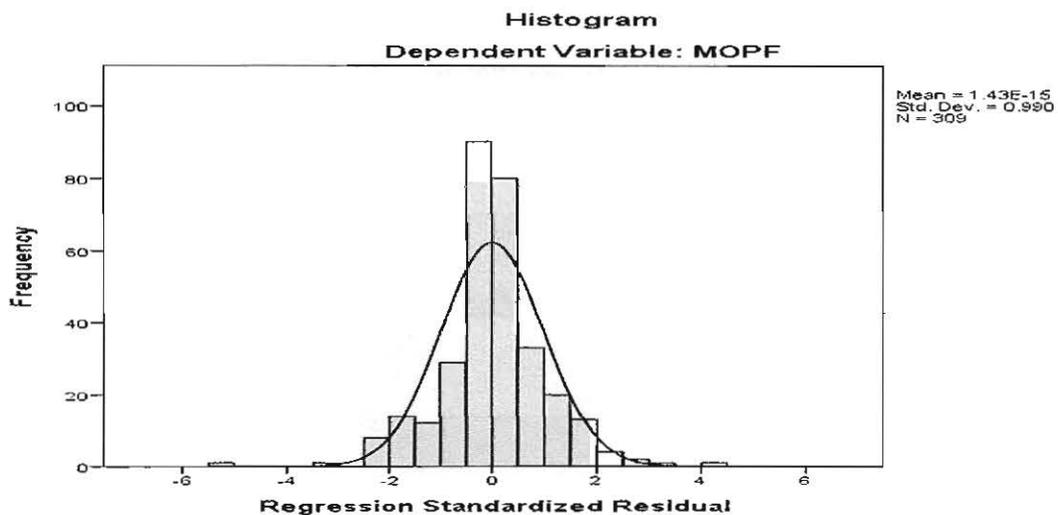
Table 4.3 above indicated that none of the deleted outliers in this study were up to the set thresholds greater than 1 and above .5 respectively. As such they were considered as non-influential. Going by the suggestion of Cohen, Cohen, West and Aiken, (2003), if the percentage of outliers is below 2% of total observations (313 in this research) and they do not have extreme values in Cook's distance and Leverage hat's value, the researcher

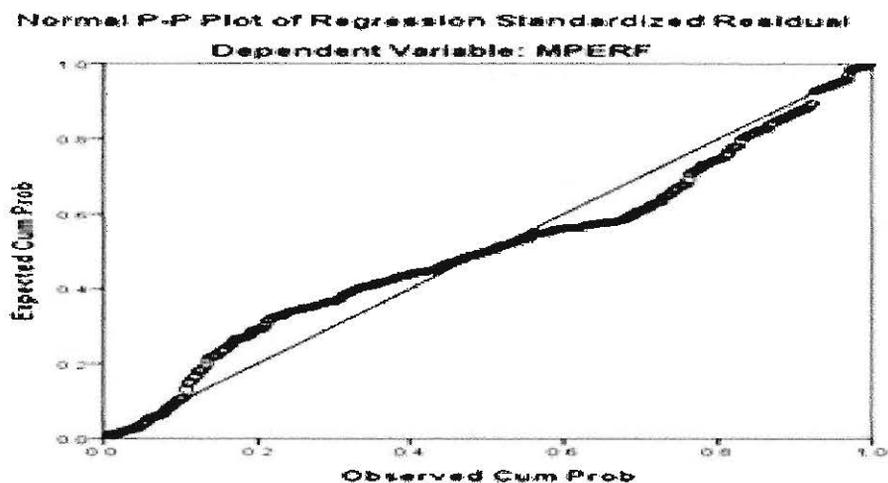
is at liberty either to retain or delete such outliers. As clearly shown in table 4.3, the number of detected outliers is not up to 6 (2% of 313) and there are no extreme value for Cook's and Leverage distances Therefore, all cases were deleted to avoid any doubt.

4.4.3 Normality test

Normality was describes as the Normality test is an essential part of initial data screening to be carried out before any data set can be analysed using regression. This is to ensure that the data set is approximately normally distributed on all the variables. Ringle, Sarstedt, and Straub, (2012) suggested that normality test should be performed on data before it is used for further analysis. A data set that is highly skewed or kurtotic is capable of inflating the bootstrapped error estimate and this can consequently result in underestimation of the statistical path coefficient (Ringle et al., 2012).

In line with the above suggestion therefore, this study utilized the graphical method in checking normality of the collected data set (Tabachnic & Fidel, 2007). This is to enhance a good view the data distribution graphically.





Figures 4.1
Graphical view of normal distribution of the data set

The histogram and the p-p plot visually indicate that the data set is approximately normally distributed (See figure: 4.1a and 4.1b). In that wise the normality assumption has not been infringed upon. Field (2009) emphasized the importance of checking the graphical distribution of the data rather than looking at the values of skewness and kurtosis especially when the sample size is more than 200. It was stressed further that the large sample size reduces the standard error and by extension shut up the values of skewness and kurtosis statistics.

4.4.4 Multicollinearity test

Multicollinearity has been described as a condition in which exogenous variables are highly correlated among themselves. This is capable of causing serious distortion in the estimates of regression coefficient as well as their statistical significance tests (Chatterjee & Yilmaz, 1992; Hair Jr. et al., 2010). Tabachnic and Fidel, (2007) emphasized that multicollinearity shoots up the standard error which further makes the path coefficient to be statistically non-significant. Determination of multicollinearity is an important

assumption that must be fulfilled in all linear regression analyses and particularly multiple regressions (Pallant, 2011).

In an attempt to determine the presence of multicollinearity, this study employed two methods (Chatterjee & Yilmaz, 1992; Peng & Lai, 2012). The first is correlation matrix which measured the extent to which each of the latent variable are correlated have been examined. The outcome showed that all the variables in this study were free from collinearity issue with the exception of differentiation strategy which has coefficient of 0.91. This was consonant with the work of Hair, et al, (2010) in which it was stated that a correlation coefficient of up to .90 and above is an indication of multicollinearity between the exogenous latent constructs. Table 4.4 below shows that only one out the four constructs has an issue.

Table 4.4
Correlation matrix for the predictor variables

Latent variables	RDC	TEC	ATF	MKT	CLS	DFS	REL	RSP
R&D Capabilities	1							
Technological capabilities	.738**	1						
Access to finance	.807**	.640**	1					
Marketing capabilities	.153**	.078	.347**	1				
Cost leadership strategy	.882**	.696**	.866**	.224**	1			
Differentiation strategy	.910**	.729**	.830**	.197**	.905**	1		
Reliability	-.664**	-.522**	-.853**	-.446**	-.771**	-.712**	1	
Responsiveness	-.720**	-.570**	-.849**	-.340**	-.796**	-.752**	.805**	1

** Correlation is significant at the 0.01 level (1-tailed).

The second examination was aimed at determining multicollinearity problem after correlation matrix were the variance inflation factor (VIF), tolerance value and condition index. The three have been put to test using collinearity diagnostics in SPSS by entering all the independent variables and moderating variables into the independent variable

column and the dependent variable appropriately. According to Hair Jr et al, (2010), collinearity becomes a source of concern if variance inflation factor VIF is greater than 10 and, tolerance value is less than 0.1. Table 4.5 below indicated that tolerance value ranges between 0.119 and 0.745 which was above threshold of 0.1. VIF scores also range from 1.342 and 8.421 it therefore fall within the acceptable range.

*Table 4.5
Tolerance and Variance Inflation Factor (VIF)*

Latent constructs	Tolerance	VIF
Research and development capabilities	.139	7.187
Technological capabilities	.430	2.323
Access to finance	.135	7.401
Marketing capabilities	.745	1.342
Cost leadership strategy	.122	8.227
Differentiation strategy	.119	8.421
Reliability	.218	4.593
Responsiveness	.243	4.107

Source: The researcher

4.4.5 Non Response Bias

Non response bias is a situation in which a considerable number of the selected samples of participants in a survey have failed to respond and they are observed to have distinct features in their anticipated responses (Lahaut, Jansen, van de Mheen, & Garretsen, 2002). The bias is capable of distorting the research findings thereby imposing validity challenges on the results (Clauser, Mazor, Field, Yood, & Gurwitz, 2002). Estimation of nonresponse bias is necessary in order to add strength to the research outcome concerning validity. Exploration method has been suggested for the determination of non-response bias and it was based on the assumption that the late respondents were more likely non-respondents. Therefore comparing their responses to the early respondents can be a useful estimates of the real non-respondents (Armstrong & Overton, 1977). Following this

suggestion, this study divided the respondents into two categories based on their response time. The first group of people were those who have completed and returned the questionnaires within the first six weeks and they were labelled as the “Early respondents” and they were 214 in numbers (69%). While those that submitted after six weeks were taken as “Late respondents” and there were 95 (39%) of them. (See table 4.6 below)

The output of the independent samples t-test as shown in table 4.6, indicated that the group mean and standard deviation for Early respondents and Late respondents were not very different. As such, non-response bias was not a source of concern in this study.

Table 4.6

Results of Independent samples – T-test for non- Response bias

Variables	Response time	N	Mean	Std Deviation
R&D capabilities	Early	214	3.343	1.561
	Late	95	3.385	1.426
Technological capabilities	Early	214	2.549	1.241
	Late	95	2.633	1.145
Access to finance	Early	214	3.786	1.391
	Late	95	3.822	1.324
Marketing capabilities	Early	214	5.000	1.547
	Late	95	5.229	1.339
Cost leadership strategy	Early	214	3.476	1.534
	Late	95	3.631	1.468
Differentiation strategy	Early	214	3.526	1.537
	Late	95	3.638	1.452
Reliability	Early	214	4.071	1.490
	Late	95	3.951	1.427
Responsiveness	Early	214	4.327	1.390
	Late	95	4.266	1.314
Organizational performance	Early	214	3.556	1.592
	Late	95	3.637	1.606

4.4.6 Common Methods Variance test

Common method bias was described as the variations in responses that are specifically associated with measurement procedure in contrast to the real variable the measure is expected to represent (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). It has the tendency of causing distortion on the collected data.

In this particular study, bearing in mind that a combined adopted survey instrument was used to collect data for both the exogenous and endogenous variables at the same time, it was therefore necessary that common method variance test be conducted to ensure that the data was not affected by the method, taking into consideration the potential problems that may be caused by the variance in the observed scores and the inflated correlations. A number of conflicting arguments have been put forward on the prevalence and magnitude of common method biases.

However, many researchers concurred that it is a major contributor to variance in any measure and the procedure for assessing it is partly responsible for taking positions on its presence and relative importance (Bagozzi, 2011). Procedural measures have been employed to prevent or minimize the bias which include among others; variation of the instructions for answering questions, the contents of the items and, the commonality of the response format (Podsakoff, MacKenzie, & Podsakoff, 2010).

This study has utilized several procedural steps as preventive measures to reduce the effects of common method bias to the barest minimum (Podsakoff et al., 2003, 2010). Firstly, the instrument did not request for personal identity of the respondents, they were rather assured that their responses will be kept highly confidential and that there was no

right or wrong answers to the questions asked. This was done to avert evaluation apprehension. The second step here was to enrich the scale items by using straight forward concepts and unambiguous expressions in the questionnaire. This study had taken care of that while validating the instrument used. More so options provided as answers were not similar such that each section required separate instruction.

In addition to the procedural measures described above, the study also used principal component factor analysis in which all the 55 items belonging to all the variables for this study were utilized (Podsakoff & Organ, 1986). The outcome of the analysis generated four factors that cumulatively explained 69.48% of the variance having 29.29% as the largest of all the generated factors. This result signified that there was no single factor that was responsible for the majority of the covariance of the predictor and criterion variables (Podsakoff, Mackenzie, & Podsakoff, 2012). More so, since the component with the highest percentage variance is more than 50%, it is an indication that common method bias was not a source of concern in this study (Lowry & Gaskin, 2014).

Table 4.7
Common method variance

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	30.198	54.905	54.905	30.198	54.905	54.905	16.110	29.292	29.292
2	4.486	8.156	63.062	4.486	8.156	63.062	12.690	23.073	52.364
3	2.022	3.677	66.739	2.022	3.677	66.739	4.977	9.049	61.414
4	1.506	2.739	69.478	1.506	2.739	69.478	4.435	8.064	69.478
5	.982	1.786	71.264						
6	.856	1.557	72.821						
7	.726	1.320	74.141						
8	.709	1.289	75.430						
9	.651	1.184	76.614						
10	.599	1.089	77.704						
11	.579	1.052	78.756						

Table 4.7 (continued)

12	.552	1.004	79.760
13	.536	.975	80.735
14	.511	.929	81.664
15	.495	.901	82.564
16	.474	.861	83.425
17	.453	.823	84.248
18	.436	.793	85.041
19	.419	.761	85.802
20	.411	.747	86.549
21	.368	.670	87.218
22	.366	.665	87.884
23	.359	.653	88.537
24	.344	.625	89.162
25	.330	.599	89.762
26	.319	.581	90.342
27	.314	.570	90.912
28	.301	.547	91.459
29	.286	.520	91.979
30	.270	.491	92.470
31	.267	.485	92.955
32	.255	.464	93.419
33	.249	.453	93.871
34	.240	.437	94.308
35	.226	.411	94.719
36	.225	.409	95.128
37	.221	.402	95.530
38	.198	.361	95.891
39	.197	.358	96.248
40	.182	.330	96.578
41	.180	.327	96.905
42	.177	.322	97.227
43	.161	.293	97.520
44	.157	.285	97.805
45	.143	.260	98.065
46	.137	.249	98.315
47	.133	.242	98.557
48	.124	.225	98.781
49	.116	.212	98.993
50	.113	.205	99.198
51	.100	.182	99.381
52	.098	.179	99.560
53	.090	.164	99.724
54	.084	.153	99.877
55	.068	.123	100.00
			0

Extraction Method: Principal Component Analysis.

4.5 Respondents' demographic profiles

This section gives a demographic description of the selected respondents for this study. The features being considered includes: gender, the highest academic qualifications and the official designation of the individuals responding on behalf of their companies. Other profiles are company age, industry classification, annual income and, number of employees. Below are the results of the responses given (see table 4.7).

The composition of respondents for this research concerning their gender shows that majority of respondents (82.8%) are males while the remaining 53 (17.2%) participants are females. This implies the managerial positions of manufacturing sector are dominated by men. When asked about their academic qualifications, their responses show that 12.6% of them have only degree or Higher National Diploma HND, 40.1% have different postgraduate qualifications and 45.9% are with academic as well as professional qualifications. Those managers with the least qualifications (National Diploma) are only 2.2%. There was indication that majority of managers of manufacturing companies in Nigeria have high academic as well as professional qualifications. They were also asked to indicate their job positions to determine whether they are qualified respondents. Their answers are General Managers/CEO were 13 (4.2%), senior managers 33 (10.7%), managers 126 (40.8%) and, 137 of them were senior managers. It shows that the highest category of respondents in terms of job positions were the managers, followed by the owner-managers, while the least of them were the CEOs. It should be noted that three unqualified respondents have been removed at the initial data screening stage.

The next aspect of the profile specifically concerns firm characteristics which includes the company age. The largest numbers of these firms (46.6%) are those between the age

of 20 and 29 years followed by those that are between the ages of 10 and 19 years and they constitutes 42.4% (131) of the participants. Others are the oldest companies that are 30 years and above they are 1.9% or 6 of them in number. Lastly, there are companies with less than 10 years of age with 9.3 % participation.

The next in the demography is respondent's data based on industry classification. The largest number of participants 19.1% came from chemical and pharmaceutical companies followed by Food beverages and, tobacco companies with 18.4% and Basic metal and iron/fabricated metal products companies that constitute 14.6%. Others are Domestic/industrial plastic rubber and foam companies 12.9%, Pulp paper and paper products/Printing and publishing firms 8.7% and Motor vehicles and miscellaneous assembly companies 8.4%. While the next set of industries are: Wood and furniture products, Electrical and electronic products and Textiles and leather products with participants' population of 5.8%, 5.5% and 3.6% respectively. The last and the least industry is the Non-metallic mineral products with a frequency percentage of 2.9

Table 4.8
Demographic characteristics of respondents

Description	Frequency	Percentage (%)
Gender		
Male	256	82.8
Female	53	17.2
Highest academic qualification		
National Diploma	7	2.3
HND/Degree	39	12.6
Postgraduate qualifications	124	40.1
Academic & Professional qualifications	139	45.0
Job position in the company		
General manager/C E O	13	4.2

Table 4.8 (continued)

Senior manager	33	10.7
Manager	126	40.8
Owner manager	137	44.3
Others	0	0.0
Company age		
Less than 10 years	28	9.1
Between 10 and 19 years	131	42.4
Between 20 and 29 years	144	46.6
30 years and above	6	1.9
Industry classification		
Chemical and pharmaceutical	59	19.1
Basic metal and iron/fabricated metal products	45	14.6
Domestic/industrial plastic rubber and foam	40	12.9
Pulp paper and paper products/Printing and publishing	27	8.7
Electrical and electronic products	17	5.5
Textiles and leather products	11	3.6
Wood and furniture products	18	5.8
Non-metallic mineral products	9	2.9
Motor vehicles and miscellaneous assembly	26	8.4
Food beverages and tobacco	57	18.4
Company annual income		
Below N5 million	86	27.8
Between N5 million and N500 million	172	55.7
Above N500	51	16.5
Number of employee		
Between 1 and 10 employees	91	29.4
Between 11 and 200 employees	169	54.7
Above 200 employees	49	15.9

Source: The researcher

4.6 Descriptive analysis of the Latent constructs

This section specifically contained the descriptive statistics of all the variables examined in this study. All the latent variables considered for this study have been measured using 7-point likert scale in which 1 represents strongly disagree, 2 means moderately disagree, 3 connotes slightly disagree and 4 implies neutral. While 5, 6 and 7 represent slightly agree, moderately agree and strongly agree respectively.

Table 4.7 below indicates that the overall means of all the latent variables in this study ranges between 2.575 and 5.071. While their standard deviations ranges between 1.211 and 1.595. Specifically, Business strategy has a mean of 3.558 and standard deviation of 1.469 and this implies that the respondents have moderate perception for construct. Secondly, Research and development capabilities have a mean of 3.356 and it means that it also has a received moderate perception of the research participants. Technological capabilities have means of 2.58 and standard deviation of 1.211 and it connotes that the respondents' perception of the construct is low compared to the two previous stated. More so, Marketing capabilities have the highest mean of 5.071 and deviation of 1.488 and it is an indication of high managers' perception of the variable through their response. This is followed by Electricity service quality with 3.83 and 1.35 mean and standard deviation respectively. With this figure, the variable received high perception. Lastly, Access to finance and Organizational performance have means of 3.80 and 3.58 respectively showing that respondents' perception of them is also moderate as indicted in Table 4.9.

Table 4.9
Descriptive Analysis of all the variables

Latent constructs	Number of items	Mean	Standard deviation
Research and development capabilities	4	3.356	1.519
Technological capabilities	5	2.575	1.211
Access to finance	6	3.797	1.369
Marketing capabilities	5	5.071	1.488
Cost leadership strategy	6	3.524	1.513
Differentiation strategy	6	3.561	1.510
Reliability	4	4.034	1.469
Responsiveness	4	4.309	1.365
Organizational performance	9	3.581	1.594

Source: Researcher

4.7 Constructs Reliability tests

Reliability is an essential feature in the measurement scale that should be considered, because it is capable of influencing the data quality (Pallant, 2011). More so the literature suggested the need to examine the reliability of each variable due to their interconnectivity (Hair Jr. et al., 2010). Reliability has been described as the extent to which measures are free from error when measured at different times (Tabachnick & Fidell, 2007). Pallant, (2011) emphasised that there are two reliability scales that are commonly being employed. The first is the temporal stability also referred to as test-retest. This requires that the instrument be administered on the same set of respondents at different times and thereafter compute the correlation between the two responses collected. High correlation implies good reliability and vice versa. The second aspect is the internal consistency and it is described as the extent to which the items that form the scale are all measuring the same variable. The common method of assessing internal consistency is Cronbachs' alpha.

For the purpose of this particular study, the Cronbach's alpha was employed to obtain the inter-item consistency reliability. As a rule of thumb, higher Cronbach's coefficient alpha demonstrates higher reliability. Studies suggested that the satisfactory level for reliability with Likert scale that is lesser than 10, should have a Cronbach's alpha ≥ 0.7 , nevertheless a Cronbach's alpha values of 0.60 to 0.70 are considered the minimum limit of acceptability (Hair, et al., 1998, p. 88). Similarly, Sekaran (2003) suggested that a Cronbach's alpha of 0.60 is acceptable. The initial results of this exercise showed that Cronbachs' alpha coefficient for all the variables in this work fell between the ranges of 0.88 and 0.97. This implies that each has good and acceptable reliability in line with 0.7 acceptable thresholds as indicated in table 4.10 below. However, some items () related to

Organizational performance were deleted. This is because their cronbach's alpha coefficients were above 0.95. This was in compliance with the suggestion of Pallant, (2011) in which it was stated that construct reliability index above .95 was an indication of the existence redundant items and such items should be deleted.

Table 4.10
Reliability coefficient (Cronbachs' alpha)

Variables	Number of items	Cronbachs' alpha
Access to finance	6	0.91
Cost leadership strategy	6	0.93
Differentiation strategy	6	0.93
Reliability	4	0.92
Responsiveness	4	0.85
Marketing capabilities	5	0.93
Organisational performance	9	0.95
Research and development capabilities	4	0.91
Technology capabilities	5	0.88

4.8 Factor analysis of the survey instruments for the Research

Factor analysis is part of the construct validation that should be done before further analysis is conducted. Child, (1990) asserted that factor analysis FA is employed to determine the possible underlying structure of a set of interrelated constructs without forcing any preconceived structure on the outcome. Basically FA is examined to achieve a set of objectives. Firstly, it was done to reduce a large number of factors into a smaller set of factors (also referred to as variables) (B. Williams, Onsmann, & Brown, 2010). Secondly, it also assist the researcher in ascertaining the important dimensions between measured variables, as such it enhances the formation and refinement of the model (Williams, et al, 2010). More so, it provides construct validity evidence of self-reporting scales (Thompson, 2004). This study has therefore, conducted factor analysis for the purpose of achieving all the aforementioned objectives.

Conducting factor analysis involves three steps. The first one has to do with the assessment of the suitability of the data for factor analysis and this is done by considering two issues; sample size and the extent to which the relationship among the items is strong (Pallant, 2011). Hair et al. (2010); Coakes and Steed, (2009) emphasized that for FA to be conducted, there should be a minimum of five respondents in every variable under examination. Hair, et al., (2010) suggested that a sample size of 100 and above is suitable for FA. Pallant, (2011) pointed out that at least 150 cases with minimum ratio of 5 cases per variable. However, a study conducted by Comrey and Lee, (1992) took into consideration a sample size of 50 as very poor, 100 as poor, and 200 regarded as fair while 300 are satisfactory. This particular study used 309 samples which is above all the suggested minimum requirements and therefore satisfactory.

To determine the strength of correlation among the factors, Kaiser-Meyer-Olkin KMO measure of sampling adequacy and Bartlett's test of sphericity should be conducted. The suggested significant level for Bartlett's measure should be less than 5% ($p < 0.05$) for the factors to be regarded as adequate. While the acceptable index for KMO is 0.6 and above (≥ 0.6), bearing in mind that the index ranges between 0 and 1 (Tabachnic and Fidell, 2007).

The second step in factor analysis is factor extraction. This has to do with determining the minimum number of items that is capable of representing the interrelationship among the variable set (Pallant, 2011). Principal component analysis is one of the approaches that are popularly being used by researchers. The decision criteria in PCA include; eigenevalue rule which suggested that only those factors with eigenevalue of 1.0 and above should be retained for further analysis. Another criterion is the Scree-test

which is a graphical presentation of the eigenvalue in which the point of change in direction is determined through inspection of the curve and all factors above the elbow are considered to have the highest contributions to the explanation of the variances in the data set (Cattell, 1966). Parallel analysis is another criterion. This extraction technique is the one in which the real eigenvalues for each factor is compared to the eigenvalues that are randomly generated data set through the use of "Monte Carlo" simulation process. The eigenvalue to be selected are only those that are greater than the original eigenvalues (Pallant, 2011).

The third and the last step in factor analysis is the factor rotation and interpretation. This represents the manner in which the factors were loaded so as to enhance easy interpretation. In this study, the framework has four independent variables which comprised of business strategies, marketing capabilities, research and development capabilities and, technological capabilities as factors responsible for variations in organizational performance. While access to finance and electricity service quality were the moderating variables in the relationships.

To confirm the validity of the instrument used in this study for each variable, factor analysis was conducted on each construct at a time in line with the suggestion of Meyers, Gamst, and Guarino, (2006) in which it stated that researchers are at liberty to conduct factor analysis either collectively or individually for separate constructs.

4.8.1 Factor analysis for Access to finance (ATF)

This variable has 6 items in the questionnaire coded ATF1 to ATF6 and were subjected to principal component analysis making use of SPSS version 22.0 For the purpose of

validating this construct access to finance ATF, KMO test of sampling adequacy and Bartlett's test of sphericity were examined. The result for the two tests are; 0.850 and 0.000 respectively. Both of them meet threshold of > 0.6 for KMO test and the significance level of < 0.05 for Bartlett's test respectively.

The result of PCA extracted one factor solution model with eigenvalues >1 , using Varimax with Kaiser's normalization rotation method. However, the factor could not be rotated given the nature of single factor. None of the items was deleted because all of them have communality index of between 0.60 and 0.79 and component index are between 0.776 and 0.886 which were all greater than threshold of 0.5. The results also indicated that the total Variance explained for ATF is 69.23% which is above the minimum of 60% acceptable for the test (Hair, et al., 1995). Moreover, the eigenvalue is 4.2 and this shows that it is above the minimum acceptable of > 1 (See table 4.11 below).

Table 4.11
Results of factor analysis for Access to finance

Item code	Description of items	Communalities
ATF1	Our company has adequate credit/financial information	.746
ATF2	Our company uses retained earnings as a source of finance	.786
ATF3	Collateral requirement is not an obstacle to our company in securing Bank credit.	.727
ATF4	Our company has access to other non-Bank finance.	.673
ATF5	Our company has access to long-term loan for financing.	.602
ATF6	High interest rate is not a challenge to our company in obtaining Bank loan	.620
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.850
Bartlett's Test of Sphericity		1224.883
Approx. Chi-Square		
df		15
Sig		.000

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

4.8.2 Factor analysis for Reliability dimension (REL) of electricity service quality

To test the internal consistency for this construct reliability dimension, KMO test of sampling adequacy and Bartlett's test of sphericity were examined. The result for the two tests indicates are 0.83 and 0.00 respectively. Both of them meet threshold of > 0.6 for KMO test and the significance level of < 0.05 for Bartlett's test.

This dimension has 4 items in the questionnaire coded REL1 to REL4 and were subjected to principal component analysis making use of SPSS version 22. The result of PCA extracted one factor solution model with eigenvalues > 1 , using Varimax with Kaiser's normalization rotation method. However, the factor could not be rotated given the nature of single factor.

None of the items was deleted because all of them have communality index of between 0.73 and 0.84 which are all greater than threshold of 0.5. The results also indicated that the total Variance explained for REL is 81.81% which is above the minimum of 60% acceptable for the test (Hair, et al., 2010). Moreover, the eigenvalue is 8.65 and this shows that it is above the minimum of acceptable > 1 (See table 4.12).

Table 4.12

Results of factor analysis for reliability dimension

Item code	Description of items	Communality
REL1	Our company has access to high quality and regular electricity without interruption	.825
REL2	Electricity service staff are readily available to register complaint, enquiry and maintenance related issues	.832
REL3	Applying for new electricity supply is easy and it is provided in time.	.843
REL4	Accurate bills are served based on power consumption and other acceptable charges.	.733
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.826
Bartlett's Test of Sphericity	Approx. Chi-Square	952.218
	df	6
	Sig	0.000

Extraction Method: Principal Component Analysis.

1 components extracted

4.8.3 Factor analysis for Responsiveness dimension (RSP) of electricity service quality

To test the internal consistency for this construct responsiveness dimension, KMO test of sampling adequacy and Bartlett's test of sphericity were examined. The result for the two tests indicates are 0.83 and 0.00 respectively. Both of them meet threshold of > 0.6 for KMO test and the significance level of < 0.05 for Bartlett's test.

This dimension has 4 items in the questionnaire coded RSP1 to RSP4 and were subjected to principal component analysis making use of SPSS version 22. The result of PCA extracted one factor solution model with eigenvalues > 1 , using Varimax with Kaiser's normalization rotation method. However, the factor could not be rotated given the nature of single factor.

None of the items was deleted because all of them have communality index of between 0.63 and 0.73 which are all greater than threshold of 0.5. The results also indicated that the total Variance explained for REL is 69.45% which is above the minimum of 60% acceptable for the test (Hair, et al., 2010). Moreover, the eigenvalue is 2.78 and this shows that it is above the minimum of acceptable > 1 (See table 4.13).

Table 4.13
Results of factor analysis for responsiveness dimension

Item code	Description of items	Communality
RSP1	Our company is informed in advance in case of power shutdown and shedding	.724
RSP2	Our company does not experience electricity voltage fluctuation	.694
RSP3	Accidental benefits and subsidies are given to customers for damages due to abnormal supply	.734
RSP4	Additional demand for electricity is promptly supplied	.626
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.786
Bartlett's Test of Sphericity		Approx. Chi-Square
		df
		Sig
		539.710
		6
		.000

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

4.8.4 Factor analysis for Cost leadership dimension of (CLS) Business strategy

This dimension CLS has 6 items in the questionnaire coded CLS1 to CLS6 and were subjected to principal component analysis making use of SPSS version 22. The result of PCA extracted one factor solution model with eigenvalues >1 , using Varimax with Kaiser's normalization rotation method. However, the factor could not be rotated given the nature of single factor.

None of the items was deleted because all of them have communality index of between 0.67 and 0.81 which are all greater than threshold of 0.5. The results also indicated that the total Variance explained for BST is 74.87% which is above the minimum of 60% acceptable for the test (Hair, et al., 2010). Moreover, the eigenvalue is 4.49 and this shows that it is above the minimum of acceptable > 1 (See table 4.14)

To test the internal consistency for this construct, KMO test of sampling adequacy and Batlett's test of sphericity were examined. The result for the two tests indicates are 0.89 and 0.00 respectively. Both of them meet threshold of > 0.6 for KMO test and the significance level of < 0.05 for Batlett's test respectively.

Table 4.14.

Results of factor analysis for Cost leadership dimension of Business strategy

Item codes	Description of items	Communalities
CLS1	Our company emphasis on efficiency of securing raw materials and components is.....	.776
CLS2	Our company emphasis on cost reduction in all activities is.....	.793
CLS3	Our company emphasis on operating efficiency is.....	.809
CLS4	Our company emphasis on production capacity utilization is....	.760
CLS5	Our company emphasis on price competition is....	.669
CLS6	Our company emphasis on tight control of selling expenses, general expenses and administrative expenses is.....	.686

Table 4.14 (continued)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.889
Bartlett's Test of Sphericity	Approx. Chi-Square	1479.524
	df	15
	Sig	0.000

Extraction Method: Principal Component Analysis.

1 components extracted

4.8.5 Factor analysis for differentiation dimension of (DFS) Business strategy

This dimension DFS has 6 items in the questionnaire coded DFS1 to DFS6 and were subjected to principal component analysis making use of SPSS version 22. The result of PCA extracted one factor solution model with eigenvalues >1 , using Varimax with Kaiser's normalization rotation method. However, the factor could not be rotated given the nature of single factor.

None of the items was deleted because all of them have communality index of between 0.67 and 0.80 which are all greater than threshold of 0.5. The results also indicated that the total Variance explained for BST is 73.71% which is above the minimum of 60% acceptable for the test (Hair, et al., 2010). Moreover, the eigenvalue is 4.42 and this shows that it is above the minimum of acceptable > 1 (See table 4.15)

To test the internal consistency for this construct, KMO test of sampling adequacy and Bartlett's test of sphericity were examined. The result for the two tests indicates are 0.89 and 0.00 respectively. Both of them meet threshold of > 0.6 for KMO test and the significance level of < 0.05 for Bartlett's test respectively.

Table 4.15.

Results of factor analysis for Differentiation dimension of Business strategy

Item codes	Description of items	Communnality
DFS1	Our company emphasis on new product development or existing adaptation for better customer service is.....	.675
DFS2	Our company's rate of new product introduction to the market is800
DFS3	The intensity of our company advertising and marketing is.....	.795
DFS4	Our company emphasis on the development of utilization of sale force is...	.756
DFS5	Our company's' interest on building strong brand identification is...	.725
DFS6	Our company's interest in the number of new products offered to market is....	.672
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.898
Bartlett's Test of Sphericity	Approx. Chi-Square	1414.409
	df	15
	Sig	0.000

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

4.8.6 Factor Analysis for Marketing Capabilities

Marketing capabilities is 5 item variable scales in the questionnaire coded MKT1 to MKT5 and were also subjected to principal component analysis making use of SPSS version 22. The result of PCA extracted one factor solution model with eigenvalues >1, using Varimax with Kaiser's normalization rotation method. However, the factor could not be rotated due to the nature of single factor.

None of the items was deleted because all of them have communality index of between 0.73 and 0.84 and factor loading ranges between 0.85 and 0.92 which are all greater than threshold of 0.6 and 0.5 respectively. The results also indicated that the total Variance explained for MKT is 79.13% which is above the minimum of 60% acceptable for the test (Hair, et al., 1995). Moreover, the eigenvalue is 3.9 and this shows that it is above the minimum of acceptable > 1 (See table 4.15)

To test the internal consistency for this construct, KMO test of sampling adequacy and Bartlett's test of sphericity were examined. The result for the two tests indicated 0.85 and 0.00 respectively. Both of them meet threshold of > 0.6 for KMO test and the significance level of < 0.05 for Bartlett's test respectively.

Table 4.16
Results of factor analysis for marketing capabilities

Item code	Description of items	Communalities
MKT1	Our company has better abilities than our competitor in channel distribution logistics supports	.783
MKT2	Our company has better abilities than our competitor in product recognition	.830
MKT3	Our company has better abilities than our competitors in logistics supports	.839
MKT4	Our company has better abilities than our competitor in international marketing	.771
MKT5	Our company has better abilities than our competitor in responsiveness to customer needs.	.733
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.846
Bartlett's Test of Sphericity		Approx. Chi-Square
		df
		Sig
		1370.771
		10
		.000

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

4.8.6 Factor analysis for Research and Development capabilities (RDC)

This variable research and development capabilities (RDC) has 4 items in the questionnaire coded RDC1 to RDC4 and were subjected to principal component analysis making use of SPSS version 22. The result of PCA extracted one factor solution model with eigenvalues >1 , using Varimax with Kaiser's normalization rotation method. However, the factor could not be rotated given the nature of single factor.

None of the items was deleted because all of them have communality index of between 0.77 and 0.84 which are all greater than threshold of 0.5. The results also indicated that all the components were above the acceptable minimum of 0.6. Moreover, the total Variance for RDC is 79.74% which is above the minimum of 60% acceptable for the test (Hair, et al., 2010). Moreover, the eigenvalue is 3.2 and this shows that it is above the minimum of acceptable > 1 (See table 4.15).

To test the internal consistency for this construct, KMO test of sampling adequacy and Bartlett's test of sphericity were examined. The result for the two tests indicated outcome of 0.77 and 0.00 respectively. Both of them meet threshold of > 0.6 for KMO test and the significance level of < 0.05 for Bartlett's test respectively.

Table 4.17
Results of factor analysis for Research and Development capabilities

Item code	Description of items	Communalities
RDC1	Our company has better abilities than our competitors in the development/acquisition of new technology	.770
RDC2	Our company has better abilities than our competitors in the development of new process.	.843
RDC3	Our company has better abilities than our competitors in new product development.	.807
RDC4	Our company has better abilities than our competitors in the improvement of the existing products	.769
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.774
Bartlett's Test of Sphericity		945.990
df		6
Sig		.000

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

4.8.7 Factor analysis for Organizational performance (OPF)

This variable has 9 items in the questionnaire coded OPF1 to OPF12 and were subjected to principal component analysis making use of SPSS version 22. For the purpose of validating this construct organizational performance OPF, KMO test of sampling adequacy and Batlett's test of sphericity were examined. The result for the two tests indicates are 0.95 and 0.000 respectively. Both of them meet threshold of > 0.6 for KMO test and the significance level of < 0.05 for Batlett's test respectively. The result of PCA extracted one factor solution model with eigenvalues >1 , using Varimax with Kaiser's normalization rotation method. However, the factor could not be rotated just like the previous variables given the nature of single factor.

None of the items was deleted because all of them have communality index of between 0.64 and 0.8 and component index are between 0.80 and 0.89 which are all greater than threshold of 0.5. and 0.6 respectively. The results also indicated that the total Variance for OPF is 69.47% which is above the minimum of 60% acceptable for the test (Hair, et al., 2010). Moreover, the eigenvalue is 6.25 and this shows that it is above the minimum acceptable of > 1 (See table 4.16 below).

Table 4.18

Results of factor analysis for Organisational performance

Item code	Description of items	Communalities
OPF3	Evaluating alternatives based on relevant information	.799
OPF5	Resolving problems	.664
OPF6	Enhancing management development	.687
OPF7	Sales growth	.638
OPF8	Growth in profit after tax	.655
OPF9	Change in market share	.674
OPF10	Return on Assets (ROA)	.667
OPF12	Return on sales (ROS)	.707
OPF13	Current Ratio	.762

Table 4.18 (continued)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.953
Bartlett's Test of Sphericity	Approx. Chi-Square	2137.859
	df	36
	Sig	.000

Extraction Method: Principal Component Analysis.

- a. 1 components extracted.

4.8.8 Factor analysis for Technological capabilities (TEC)

This variable Technological capabilities (TEC) has 5 items in the questionnaire coded TEC1 to TEC5 and were subjected to principal component analysis making use of SPSS version 22. The result of PCA extracted one factor solution model with eigenvalues >1 , using Varimax with Kaiser's normalization rotation method. However, the factor could not be rotated given the nature of single factor. None of the items was deleted because all of them have communality index of between 0.613 and 0.748 which are all greater than threshold of 0.5. The results also indicated that all the components were above the acceptable minimum of 0.6 (0.78 - 0.87). Moreover, the total Variance explained for TEC is 68.8% which is above the minimum of 60% acceptable for the test (Hair, et al., 2010). Moreover, the eigenvalue is 3.4 and this shows that it is above the minimum of acceptable > 1 (See table 4.17)

To test the internal consistency for this construct, KMO test of sampling adequacy and Bartlett's test of sphericity were examined. The result for the two tests indicates are 0.79 and 0.00 respectively. Both of them meet threshold of > 0.6 for KMO test and the significance level of < 0.05 for Bartlett's test respectively.

Table 4.19

Results of factor analysis for technological capabilities

Item codes	Description of items	Communalities
TEC2	Our company is the industry leader in introducing new product.	0.865
TEC3	Our company is known for introducing break-through type products.	0.843
TEC4	Our company is one of the best in terms of product innovation in the industry.	0.832
TEC1	Our company is among the first to introduce new products in the market.	0.823
TEC5	Our company is one of the best in terms of process innovation in the industry	0.783
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.799
Bartlett's Test of Sphericity	Approx. Chi-Square	918.010
	df	10
	Sig	0.000

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

4.9 Hypotheses Testing

This section contains the findings of hypothesis testing for this study. The data have satisfied normality and other conditions that are necessary for parametric techniques as indicated in the previous sections. The analyses of relationship were performed using multiple and hierarchical regression techniques. The tests were conducted to examine individual and overall influence of Business strategy, marketing capabilities, research and development capabilities and technological capabilities on organizational performance with the moderating roles of access to finance and electricity service quality.

The regression analysis was conducted in line with the stated hypothesis. Pearson correlation analysis was precisely employed to give clear understanding regarding the strengths of the relationship between the variables (Pallant, 2011). This is important in identifying the relationship between two variables with no regard to the causal effect

between them. The Pearson correlation can be achievable by considering any values from -1 to +1 (Field, 2009). Researchers are also acquainted with the extent to which two variables are directly related to each other (Tabachnick & Fidell, 2007).

4.9.1 Multiple Regression Analysis-(Hypotheses testing)

Multiple regression analysis serves as a platform for the assessment of the relationships between independent and the dependent variable (Sekaran & Bougie, 2010). The multiple regression analysis is also essential in identifying the relative contribution of each of the independent variable in the prediction of the dependent variable. That is specifically so when the independent variables are jointly regressed against the dependent variable, the size of each regression coefficients will reflect how much an increase in one unit in the individual variable would affect the dependent variable (Sekaran & Bougie, 2010; Zikinund, Babin, Carr & Griffin, 2010).

To understand the relationship between the independent and dependent variables for this study, a multiple regression analysis was conducted to examine the relationship between hypotheses cost leadership strategy (H1), differentiation strategy (H2), marketing capabilities (H3), research and development capabilities (H4), and technological capabilities (H5). The results of the multiple regression analysis indicated that hypotheses H2 and H4 were positively significant at level $p < 0.001$ while H5 have significant positive relationship at significant level $p < 0.05$. However, H1 and H3 have insignificant positive relationships with organizational performance. This implies that three out of five predictor variables have a significant positive impact on criterion variable in this study. The coefficient of determination R^2 value of 0.802 found in the model implied that 80.1% of variations in Organizational performance were explained

by the independent variables. This is an indication of a good model fit. Significant F change of 0.000 indicates that the model is significant at $p < 0.001$. Table 4.20 gives a summary of the findings of the multiple regressions for direct relationships.

The table also shows that the individual coefficients of the predictor variables differentiation strategy, and research and development were statistically significant to organizational performance organization at $p < 0.001$. Thus, hypotheses 2 and 4 were supported. Similarly, technological capability was also statistically significant at $p < 0.05$ thereby giving a support to hypothesis 5. However, cost leadership and marketing capabilities was not significant in predicting organizational performance.

In addition to the determination of predictor variables that were statistically significant in the relationships, multiple regressions also identifies the most contributing factor that predicts the outcome variable among a set of predictor variables. As such, the individual coefficient of the result in table 4.20 below showed that differentiation strategy have the highest contribution to the variances in the dependent variable with the highest standardized beta coefficient and T value ($\beta = .534$, $t = 6.890$, $\text{Sig.} = .000^{***}$). The second highest contributor to organizational performance in this model was research and development capabilities ($\beta = 0.256$, $t = 3.609$, $\text{Sig.} = .000^{***}$). This signifies that the RDC is one of the main factors in terms of contribution to organizational performance of manufacturing companies in Nigeria. The predictor variable with the lowest significant contribution is the technological capabilities ($\beta = 0.137$, $t = 2.672$, $\text{Sig.} = .008^{**}$).

Another important piece of information extracted from the findings is “part” correlation coefficient. The coefficient for each of the predictor variable is squared to obtain the unique contribution of each variable to variances in the DV (R^2). It specifically offers how much of the total variance in the dependent variable is uniquely explained by each independent variable (Pallant, 2011). To determine unique contribution of each independent variable to the differences in organizational performance in this study, part correlation for each statistically significant variable (.176, .092 and .068) was squared and the findings gave 3.1%, 0.8% and 0.5% for differentiation strategy, research and development capabilities and technological capabilities respectively.

Table 4.20
Summary of multiple regressions for direct relationship

Variables	Standard error	beta	t-test	Sig
Cost leadership strategy	.068	0.083	1.223	0.222
Differentiation strategy	.078	0.534	6.890	0.000***
Marketing capabilities	.028	0.043	1.499	0.135
Research and development capabilities	.071	0.256	3.609	0.000***
Technological capabilities	.051	0.137	2.762	0.008**
R square				0.802
Sig. F change				0.000
F value				246.019

* $P < 0.10$, ** < 0.05 , *** $p < 0.001$, Sig = Significant

4.9.2 Hierarchical moderating analysis of AFT on the relationship between CLS, DFS, MKT, RDC, TEC and OPF

To achieve the sixth to tenth research objectives, five research hypotheses were formulated and tested. Hierarchical moderating analysis was conducted to test hypothesis H6, H7, H8, H9 and H10 respectively. Hierarchical regression is also called moderator, (Frazier, Tix, & Barron, 2004).

To examine whether access to finance (ATF) which is the first moderator actually moderates the relationship between cost leadership strategy, differentiation strategy,

marketing capabilities, research and development capabilities, technological capabilities and organizational performance. Three (3) steps hierarchical moderation by Bryman and Cramer, (1994) was followed to determine if the percentage of variance in the dependent variable was explained by other variables when those variables were put into the regression analysis in a specific order. According to Bryman and Cramer (1994); Cohen and Cohen (1983) the following steps were taken in testing the moderating effect.

Step 1: The direct effect of the independent variables CLS, DFS, MKT, RDC and TEC was regressed against the dependent variable (organizational performance).

Step 2: The moderating variable (access to finance) was regressed against the dependent variable (organizational performance) as if the moderator is an independent variable to assess whether the moderator has a significant direct effect on the dependent variable.

Step 3: The independent variables, moderating variable and the five interaction variables were regressed against the dependent variable in blocks 1, 2 and 3 of the independent variable column. The third step was to determine the interaction terms (multiplication of the independent variable and moderator variable) these was regressed to see whether there is any additional variance explained. Before proceeding to get the interaction terms to measure the moderating effect, all the variables meant to be used were standardized. That is the mean of each variable was subtracted from all the values of that variable, subsequently all the values of the variable were divided by its standard deviations. For moderator effect to be present, the interactions terms should be able to yield at least small increase in R square (Chaplin, 1991). According to Baron and Kenny (1986) a moderating effect takes place if the test in step 3 is significant. Similarly,

Tabachnick and Fidell (2007) emphasized that researchers should examine the t-value or p-value under the coefficient table when establishing a moderating effect.

The findings of the interaction effect of access to finance on the relationship between all the independent variables (CLS, DFS, MKT, RDC and TEC) and organizational performance was presented in this section. The interpretations of the result of the moderating effect were based on the model summary and coefficients table derived through the use of SPSS with the main attention of the analysis in Model 3.

Model 1: When all the five independent variables (cost leadership strategy, differentiation strategy, marketing capabilities, research and development capabilities and technological capabilities) were first regressed in model one, the model was found to be significant at $p < 0.001$, accounted for 80.2% of the variance in organizational performance with a significant F change of 0.000 as shown in Table 4.21. Specifically, differentiation strategy ($P = 0.000^{***}$, < 0.001), research and development capabilities ($P = 0.000^{***}$, < 0.001) and technological capabilities ($p = 0.005^{**}$, < 0.005) had a positive effect on organizational performance. The result also indicated that cost leadership strategy ($p = 0.222$) and marketing capabilities ($p = 0.135$) were not significantly related to organizational performance.

Model 2: The moderating effect of access to finance was introduced in model two to determine whether the moderator (ATF) has a significant direct effect on the dependent variable (OPF). When the moderation variable was introduced in model two the variance explained increased to 80.4% which indicated that the moderator has a very little contribution to the variance explained in the dependent variable (OPF). The result

in model 2 was also supported by the significance F change of 0.103 for organizational performance R square changed to 0.002. Next, was to enter the interaction variable in Model 3.

Model 3: The four predicting variables were multiplied by the moderator variable and the products were entered to test the interaction effect and to know if there is any additional variance explained. At step 3, when the interaction terms were entered, an increase in R square was observed. The interaction terms accounted for increase in variance explained from 80.4% in model 2 to 81.2% in organizational performance. The model was confirmed to be significant at $p < 0.05$. As can be observed in model 3 (Table 4.21). The predictive power of the model increased following the introduction of the interactive terms with 0.8% differences in R^2 and a significant F change at 0.04 levels.

The significant incremental R square results reported in Table 4.19 implied that the influence of marketing capabilities was moderated by access to finance. The signs of the interaction terms were statistically significant in the predicted direction. Thus, inspection of individual interaction term between $ATF * MKT \Rightarrow OPF$ ($p = .020^{**}$) confirmed that access to finance moderate the relationship between marketing capabilities and organizational performance. Based on Sharma et al. (1981) this study concluded that access to finance serves as a significant moderator variable in the relationship between marketing capabilities and organizational performance.

However, the results also showed that the interaction terms between $ATF * CLS \Rightarrow OPF$ ($p = 0.873$), $ATF * DFS \Rightarrow OPF$ (0.853), $ATF * RDC \Rightarrow OPF$ (0.318) and $ATF * TEC \Rightarrow OPF$ (0.601) were not statistically significant. This shows that access to finance does

not moderate the relationship between cost leadership strategy, differentiation strategy research and development capabilities, technological capabilities and organizational capabilities at $P < 0.05$ level of significance. Hence, H6, H7, H9 and H10 were not supported. The result of the hierarchical moderation regression analysis of the moderating effect is presented in Table 4.19 below.

Table 4.21
Hierarchical Moderating Effect of Access to finance (ATF)

Variables in the models	Model 1 Independent variables	Model 2 Moderating variable	Model 3 Interaction variables
Cost leadership strategy	0.222	0.677	0.746
Differentiation strategy	0.000***	0.000	0.062
Marketing capabilities	0.135	0.389	0.092
Research and development capabilities	0.000***	0.001	0.996
Technological capabilities	0.008**	0.010	0.868
Access to finance	-	0.103	0.027
Access to finance*Cost leadership	-	-	0.873
Access to finance*Differentiation	-	-	0.853
Access to finance*Marketing cap	-	-	.020**
Access to finance*R&D capabilities	-	-	0.318
Access to finance*Technology cap	-	-	0.601
F change	246.019	2.670	4.459
Sig F change	.000	.103	.039
R ²	.802	.804	.812
Adjusted R ²	.799	.800	.805
R ² change	.802	.002	.008

4.9.3 Hierarchical moderation analysis on the role of REL of electricity service quality.

To achieve research objectives nine to twelve, four research hypotheses were formulated and tested. Hierarchical regression analysis was conducted to test hypotheses H11, H12, H15, H17 and H19 respectively.

To examine whether reliability (REL) dimension of electricity service quality which is the second moderator moderates the relationship between CLS, DFS, MKT, RDC, TEC and OPF. As done in the first moderation three (3) steps hierarchical regression by Bryman and Cramer (1994) was followed to determine if the percentage of variance in the dependent variable was explained by other variables when those variables were put into the regression analysis in a specific order. According to Bryman and Cramer (1994) the following steps were taken in testing the moderating effect.

Step 1: The direct effect of the independent variables CLS, DFS, MKT, RDC and TEC was regressed against the dependent variable (organizational performance).

Step 2: The moderating variable (reliability) was regressed against the dependent variable (organizational performance) as if the moderator is an independent variable to assess whether the moderator has a significant direct effect on the dependent variable.

Step 3: Both the independent and moderating variables were regressed against the dependent variable. The third step was to determine the interaction terms (multiplication of the independent variable and moderator variable) these was regressed to see whether there is any additional variance explained. Before proceeding to get the interaction terms to measure the moderating effect, all the variables meant to be used were standardized. That is the mean of each variable was subtracted from all the values of that variable, subsequently all the values of the variable were divided by its standard deviations. For moderator effect to be present, the interactions terms should be able to yield at least small increase in R square (Chaplin, 1991). According to Baron and Kenny, (1986) a moderating effect takes place if the test in step 3 is significant.

Similarly, Tabachnick and Fidel (2007) emphasized that researchers should examine the t-value or p-value under the coefficient table when establishing a moderating effect.

The findings of the interaction effect of electricity service quality on the relationship between all the independent variables (CLS, DFS, MKT, RDC and TEC) and organizational performance was presented in this section. The interpretations of the result of the moderating effect were based on the model summary and coefficients table with the main attention of the analysis in Model 3.

Model 1: The same results were found as obtained in the previous section concerning the first moderator (access to finance). When all the five independent variables (cost leadership strategy, differentiation strategy, marketing capabilities, research and development capabilities and technological capabilities) were first regressed in model one, the model was found to be significant at $p < 0.001$, accounted for 80.2% of the variance in organizational performance with a significant F change of 0.000 as shown in Table 4.22. Specifically, differentiation strategy ($P = 0.000^{***} < .001$), research and development capabilities ($P = .000^{***} < .001$) and technological capabilities ($p = .005^{**} < .005$) had a positive effect on organizational performance. The result also indicated that marketing capabilities ($p = 0.135$), was not significant at $p < 0.05$ significant level.

Model 2: The moderating effect of REL dimension of electricity service quality was introduced in model two to determine whether the moderator (REL) has a significant direct effect on the dependent variable (OPF). When the moderation variable was introduced in model two the variance explained still remain 80.2% which is an indication that the moderator did not directly form part of the variance explained in the dependent variable (OPF). The result in model 2 was also supported by the significance

F change of .898 for organizational performance R square remains constant at 80.2% variance. Next, is to enter the interaction variable in Model 3.

Model 3: The four predicting variables were multiplied by the moderator variable and the products were entered to test the interaction effect and to know if there is any additional variance explained. At step 3, when the interaction terms were entered, an increase in R square was observed. The interaction terms accounted for increase in variance explained from 80.2% to 81.1% in organizational performance. The model was confirmed to be significant at $p < 0.05$. As can be observed in model 3 (Table 4.22). The predictive power of the model increased following the introduction of the interactive terms with 0.008 differences in R^2 and a significant F change at 0.026 levels.

The significant incremental R square results reported in Table 4.8 imply that the influence of marketing capabilities was moderated by electricity service quality. The signs of the interaction terms were statistically significant in the predicted direction. Thus, inspection of individual interaction term between $REL * MKT \Rightarrow OPF$ ($p = .000^{***}$) confirmed that electricity service quality moderated the relationship between marketing capabilities and organizational performance. Based on Walsh, Evanschitzky and Wunderlich, (2008) this study concluded that electricity service quality serves as a significant moderator variable in the relationship between marketing capabilities and organizational performance.

However, the results also showed that the interaction terms between $REL * CLS \Rightarrow OPF$ ($p = 0.586$), $REL * DFS \Rightarrow OPF$ ($p = 0.117$) $REL * RDC \Rightarrow OPF$ ($p = 0.183$) and $REL * TEC \Rightarrow OPF$ ($p = 0.757$) were not statistically significant. This shows that reliability dimension does not moderate the relationship between cost leadership strategy, differentiation strategy, research and development capabilities, technological

capabilities and organizational performance at $P < 0.05$ level of significance. Hence, H11, H12, H17 and 19 were not supported. The results of the hierarchical moderation analysis of the moderating effect is presented in Table 4.22 below.

Table 4.22

Hierarchical Regression Result for Moderating Effect of REL dimension of electricity service quality

Variables in the models	Model 1 Independent variables	Model 2 Moderating variable	Model 3 Interaction variables
Cost leadership strategy	0.222	0.245	0.332
Differentiation strategy	0.000***	0.000	0.250
Marketing capabilities	0.135	0.161	0.001
Research and development capabilities	0.000***	0.000	0.008
Technological capabilities	0.008**	0.008	0.187
Reliability	-	0.898	0.004
Reliability*Cost leadership	-	-	0.586
Reliability *Differentiation	-	-	0.117
Reliability *Marketing cap	-	-	0.003***
Reliability *R&D capabilities	-	-	0.183
Reliability *Technology cap	-	-	0.757
F change	246.019	204.353	115.571
Sig F change	0.000	0.898	0.026
R ²	0.802	0.802	0.811
Adjusted R ²	0.799	0.798	0.804
R ² change	0.802	0.000	0.008

* $P < 0.10$, ** < 0.05 , *** $p < 0.001$, Sig = Significant

4.9.4 Hierarchical regression analysis of the moderating effect of RSP dimension of electricity service quality.

To achieve research objectives sixteen to twenty, five research hypotheses that have earlier on been formulated were tested. Hierarchical regression analysis was conducted to test hypotheses H13, H14, H16, H18 and H20 respectively.

To examine whether responsiveness (RSP) dimension of electricity service quality which is the third moderator in this study moderates the relationship between CLS, DFS, MKT, RDC, TEC and OPF. As done in the previous moderation, three (3) steps

hierarchical regression by Bryman and Cramer (1994) was followed to determine if the percentage of variance in the dependent variable was explained by other variables when those variables were put into the regression analysis in a specific order. According to Bryman and Cramer (1994) the following steps were taken in testing the moderating effect.

Step 1: The direct effect of the independent variables CLS, DFS, MKT, RDC and TEC was regressed against the dependent variable (organizational performance).

Step 2: The moderating variable (responsiveness) was regressed against the dependent variable (organizational performance) as if the moderator is an independent variable to assess whether the moderator has a significant direct effect on the dependent variable.

Step 3: Both the independent and moderating variables were regressed against the dependent variable. The third step was to determine the interaction terms (multiplication of the independent variable and moderator variable) these were regressed to see whether there is any additional variance explained. Before proceeding to get the interaction terms to measure the moderating effect, all the variables meant to be used were standardized. That is the mean of each variable was subtracted from all the values of that variable, subsequently all the values of the variable were divided by its standard deviations. For moderator effect to be present, the interactions terms should be able to yield at least small increase in R square (Chaplin, 1991). According to Baron and Kenny, (1986) a moderating effect takes place if the test in step 3 is significant. Similarly, Tabachnick and Fidel (2007) emphasized that researchers should examine the t-value or p-value under the coefficient table when establishing a moderating effect.

The findings of the interaction effect of electricity service quality on the relationship between all the independent variables (CLS, DFS, MKT, RDC and TEC) and

organizational performance was presented in this section. The interpretations of the result of the moderating effect were based on the model summary and coefficients table with the main attention of the analysis in Model 3.

Model 1: The same results were found as obtained in the previous section concerning the first moderator (access to finance). When all the five independent variables (cost leadership strategy, differentiation strategy, marketing capabilities, research and development capabilities and technological capabilities) were first regressed in model one, the model was found to be significant at $p < 0.001$, accounted for 80.2% of the variance in organizational performance with a significant F change of 0.000 as shown in Table 4.23. Specifically, differentiation strategy ($P = 0.000^{***} < .001$), research and development capabilities ($P = .000^{***}, < .001$) and technological capabilities ($p = .005^{**}, < .005$) had a positive effect on organizational performance. The result also indicated that marketing capabilities ($p = 0.155$), was not significantly related to organizational performance at $p < 0.05$ significant level.

Model 2: The moderating effect of RSP dimension of electricity service quality was introduced in model two to determine whether the moderator (RSP) has a significant direct effect on the dependent variable (OPF). When the moderation variable was introduced in model two the variance explained still remain 80.2% which is an indication that the moderator did not directly form part of the variance explained in the dependent variable (OPF). The result in model 2 was also supported by the significance F change of 0.973 for organizational performance R square remains constant at 80.2% variance. Next, is to enter the interaction variable in Model 3.

Model 3: The four predicting variables were multiplied by the moderator variable and the products were entered to test the interaction effect and to know if there is any additional variance explained. At step 3, when the interaction terms were entered, an increase in R square was observed. The interaction terms accounted for increase in variance explained from 80.2% to 81.2% in organizational performance. The model was confirmed to be significant at $p < 0.05$. As can be observed in model 3 (Table 4.21). The predictive power of the model increased following the introduction of the interactive terms with 0.010 differences in R^2 and a significant F change at 0.009 levels.

The significant incremental R square results reported in Table 4.21 imply that the influence of marketing capabilities was moderated by responsiveness dimension of electricity service quality. The signs of the interaction terms were statistically significant in the predicted direction. Thus, inspection of individual interaction term between $RSP * MKT \Rightarrow OPF$ ($p = .000^{**}$) and $RSP * TEC \Rightarrow OPF$ (0.019^{**}) confirmed that RSP moderated the relationship between marketing capabilities and organizational performance, as well as TEC-OPF relationship. Based on Walsh, Evanschitzky and Wunderlich, (2008) this study concluded that electricity service quality serves as a significant moderator variable in the relationship between marketing capabilities and organizational performance.

However, the results also showed that the interaction terms between $RSP * CLS \Rightarrow OPF$ ($p = 0.373$), $RSP * DFS \Rightarrow OPF$ ($p = 0.604$) and $RSP * RDC \Rightarrow OPF$ ($p = 0.723$) were not statistically significant. This shows that reliability dimension does not moderate the relationship between cost leadership strategy, differentiation strategy, research and development capabilities, technological capabilities and organizational performance at

P < 0.05 level of significance. Hence, H13, H14 and H18 were not supported. The results of the hierarchical multiple regression analysis of the moderating effect is presented in Table 4.23 below

Table 4.23
Hierarchical Regression Result for Moderating Effect of RSP dimension of electricity service quality

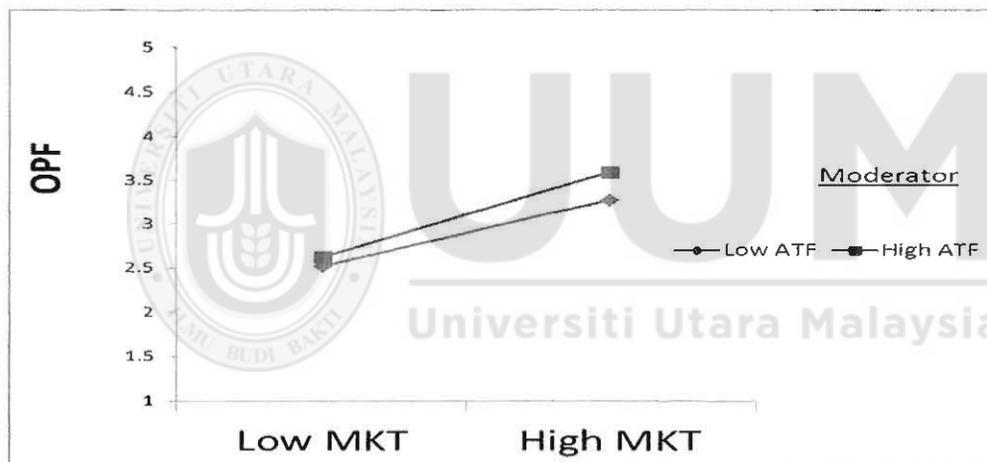
Variables in the models	Model 1 Independent variables	Model 2 Moderating variable	Model 3 Interaction variables
Cost leadership strategy	0.222	0.263	0.660
Differentiation strategy	0.000***	0.000	0.126
Marketing capabilities	0.135	0.155	0.001
Research and development capabilities	0.000***	0.000	0.081
Technological capabilities	0.008**	0.008	0.002
Responsiveness	-	0.973	0.003
Responsiveness*Cost leadership	-	-	0.373
Responsiveness*Differentiation	-	-	0.604
Responsiveness*Marketing cap	-	-	0.002***
Responsiveness*R&D capabilities	-	-	0.723
Responsiveness*Technology cap	-	-	0.019**
F change	246.019	204.019	115.809
Sig F change	0.000	0.973	0.009
R ²	0.802	0.802	0.812
Adjusted R ²	0.799	0.798	0.805
R ² change	0.802	0.000	0.010

4.9.5 Interaction Graph for Access to finance marketing capabilities-

Organizational performance relationship.

Drawing a conclusion may still be difficult despite the significant moderating effect that has been found in step 3 above. This is due to multicollinearity issue that tend to emanate from the regression of both the independent variable and the moderating variable on the dependent variable (Baron & Kenny, 1986). As such interaction graph becomes necessary to clearly show the moderating effect further. Moreover, Aiken and West, (1991) emphasize that interpretation of interaction effect may be difficult if it is not illustrated with graphs. Interaction graph enhances clear presentation of the independent-dependent relationships at different level of the moderator.

Table 4.19 shows the interaction between access to finance and marketing capabilities on organizational performance. The result of the interaction effect was found to be significantly positive ($P= 0.002^{**}$, $p<0.005$). Therefore, a graph was plotted to demonstrate the moderating effect. It was evident in the interactional plot (Figure 4.1) that improvement in access to finance tends to higher marketing capabilities-organizational performance relationship compared to low access to finance. This implied that the relationship between marketing capabilities and organizational performance would be stronger when ATF is high compared to when it is weak. Hence, the results support hypotheses H6. The graphical representation of the result is presented in figure 4.1



ATF strengthens the positive relationship between MKT and OPF

Figure 4.1

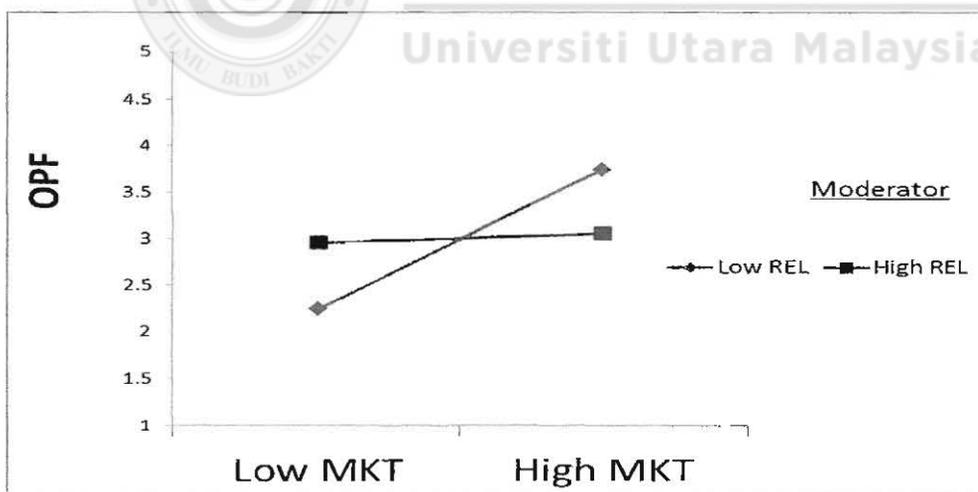
The interaction effect of Access to finance on MKT-OPF relationship

4.10 Interaction Graph for reliability dimension of electricity service on marketingcapabilities-Organizational performance relationship.

Baron and Kenny, (1986) recommended that interaction graph should be drawn to further confirm the moderation effect. This is to ensure that it is free from

multicollinearity issue that may arise from the regression of both the independent variable and the moderating variable on the dependent variable.

The results of interaction between reliability of electricity service on marketing capabilities and organizational performance was found to be significant ($P= 0.003^{**}$, $p<0.005$), therefore, a graph was plotted to demonstrate the moderating effect. It is evident in the graphical interactional plot (Figure 4.2) that improvement in reliability of electricity service dampens the marketing capabilities-organizational performance relationship as a result of change in the direction of the relationship from positive to negative. This implies that the relationship between marketing capabilities and organizational performance would be weakened when REL is high compared to when it is low. Hence, it can be said that the results support hypotheses H13. The graphical representation of the result is presented in figure 4.2 below.



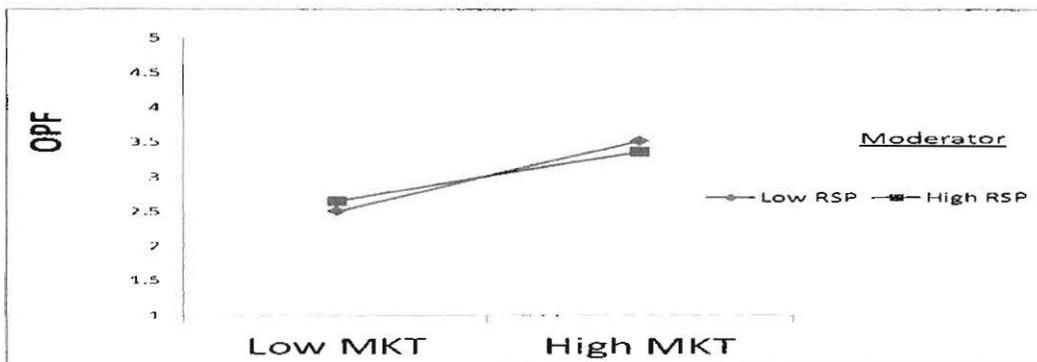
REL dampens the positive relationship between MKT and OPF

Figure 4.2
The interaction effect of REL dimension Electricity service on MKT-OPF relationship

4.10 Interaction Graph for responsiveness dimension of electricity service on marketing capabilities-Organizational performance relationship.

In line with the recommendation of Baron and Kenny, (1986) This study presents interaction graph to further confirm the moderation effect. It is to ensure that the effect is free from multicollinearity issue that may arise from the regression of both the independent variable and the moderating variable on the dependent variable.

The result of interaction effect concerning responsiveness dimension of electricity service and marketing capabilities on performance as shown in table 4.21, indicates a negative significant relationship. Therefore, a graph was plotted to demonstrate the moderating effect. It was evident in the interactional plot (Figure 4.3) that improvement in responsiveness dimension of electricity service dampens marketing capabilities-organizational performance relationship. This implies that the relationship between marketing capabilities and organizational performance would be weakened when RSP is high compared to when it is low. Hence, the results support hypotheses H18. Since the hypothesis is non-directional in nature. The graphical representation of the result is presented in figure 4.3 below.



RSP dampens the positive relationship between MKT and OPF

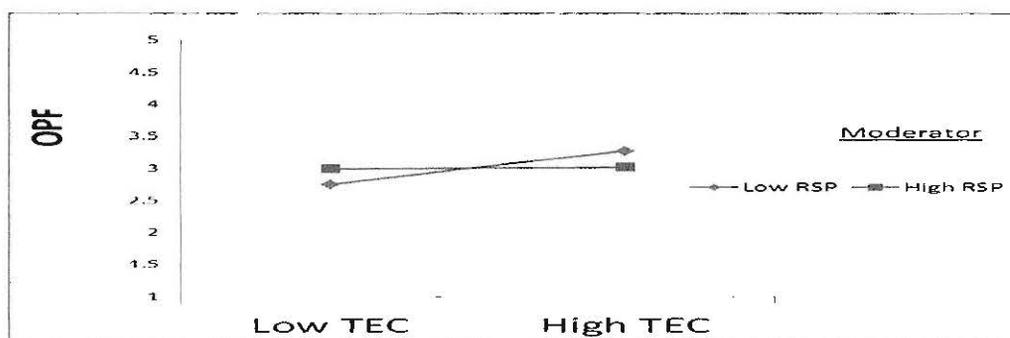
Figure 4.3

The interaction effect of RSP dimension Electricity service on MKT-OPF relationship

4.10 Interaction Graph of responsiveness dimension of electricity service on technological capabilities-Organizational performance relationship.

Baron and Kenny, (1986) recommended that interaction graph should be drawn to further confirm the moderation effect. This is to ensure that it is free from multicollinearity issue that may arise from the regression of both the independent variable and the moderating variable on the dependent variable.

Figure 4.4 shows the graphical interaction between responsiveness in electricity service and marketing capabilities on organizational performance. The result of the interaction effect was found to be significant ($P= 0.019^{**}$, $p<0.005$), therefore, graph was plotted to demonstrate the moderating effect. It was evident in the interactional plot (Figure 4.4) that improvement in responsiveness dampens technological capabilities-organizational performance relationship compared to those with low responsiveness electricity service. By implication, the relationship between technological capabilities and organizational performance would be weakened when RSP is high compared to when it is low. Hence, the results support hypotheses H20. The graphical representation of the result is shown in figure 4.4 below.



RSP dampens the positive relationship between TEC and OPF

Figure 4.4

The interaction effect of RSP dimension Electricity service on TEC-OPF relationship

$$\text{Moderating effect size } (f^2) = \frac{R^2_{\text{model with moderator}} - R^2_{\text{model without moderator}}}{1 - R^2_{\text{model with moderator}}}$$

The effect size of the interaction variable is described as the extent to which the moderating variable influences the predictor-outcome variable relationship at various levels of interaction (Aiken & West, 1991). The size of moderating effect (f^2) values have been categorized into three as follows; 0.02 is regarded as weak, effect size of 0.15 is considered as moderate while the effect sizes above 0.35 may be regarded as strong (Cohen, 1988; Henseler & Fassott, 2010).

In this research the result of the strength of the moderating effects concerning access to finance in Table 4.15. Following Henseler and Fassott's (2010) and Cohen's (1988) rule of thumb for determining the strength of the moderating effects, the table indicates that the effect size strength for access to finance on marketing and organizational performance is 0.1 and this implies small effect size.

The moderating effect size for access to finance is calculated as follows:

$$\begin{aligned} (f^2)_{ATF} &= 0.812 - .802 \div 1 - 0.812 \\ &= 0.01 \div 0.198 = 0.05 \end{aligned}$$

The calculation above, implies that the moderating effect size of access to finance on marketing capabilities-organizational performance relationship is weak (Cohen, 1988).

Similarly, the strength of moderating effect concerning access to finance on marketing capabilities and organizational performance was calculated as stated earlier and the outcome is 0.05. This is also an indication of weak strength of the effect size as reflected above.

Similarly, the effect size for reliability electricity service also indicates a weak size. As reflected in below.

$$(f^2)_{REL} = 0.811 - 0.802 \div 1 - 0.811$$

$$= 0.009 \div 0.189 = 0.05$$

Lastly, the effect size for responsiveness in electricity service is equally weak, going by the finding of the effect size calculation below.

$$(f^2)_{RSP} = .812 - .802 \div 1 - .812$$

$$= 0.01 \div 188 = 0.05$$

It should however be stressed that a low effect size does not necessarily imply that the moderating effects concerned are not significant (Chin, 2010).

4.11 Summary of Findings

Table 4.24 below shows a summary of all the tested hypotheses after presenting the main results including the moderating effects in the previous section.

Table 4.24
Summary of findings

Hypothesis: Statement		Findings
H1:	Cost leadership strategy is positively related to organizational performance	Not supported
H2	Differentiation strategy is positively related to organizational performance	Supported
H3	Marketing capabilities is positively related to organizational performance	Not supported
H4	Research and development capabilities is positively related to organizational performance	Supported

Table 4.24 (Continued)

H5	Technological capabilities is positively related to organizational performance	Supported
H6:	Access to finance moderates the relationship between cost leadership strategy and organizational performance.	Not supported
H7:	Access to finance moderates the relationship between differentiation strategy and organizational performance.	Not supported
H8:	Access to finance moderates the relationship between marketing capabilities and organizational performance.	Supported
H9:	Access to finance moderates the relationship between research and development capabilities and organizational performance	Not supported
H10:	Access to finance moderates the relationship between technological capabilities and organizational performance.	Not supported
H11:	Reliability of electricity service moderates the relationship between cost leadership strategy and organizational performance	Not supported
H12:	Reliability of electricity service moderates the relationship between differentiation strategy and organization performance	Not supported
H13:	Responsiveness of electricity service moderates the relationship between cost leadership strategy and organizational performance.	Not supported
H14:	Responsiveness of electricity service moderates the relationship between differentiation strategy and organizational performance.	Not supported
H15:	Reliability of electricity service moderates the relationship between marketing capabilities and organizational performance.	Supported
H16:	Responsiveness of electricity service moderates the relationship between marketing capabilities and organizational performance.	Supported
H17:	Reliability of electricity service moderates the relationship between research and development capabilities and organizational performance.	Not supported

Table 4.24 (Continued)

H18:	Responsiveness of electricity service moderates the relationship between research and development capabilities and organizational performance.	Not Supported
H19:	Reliability of electricity service moderates the relationship between technological capabilities and organizational performance.	Not supported
H20:	Responsiveness of electricity service moderates the relationship between technological capabilities and organizational performance	Supported

4.11 Summary of the chapter

The chapter gives a brief account of how the data was collected, examined the participant's response rate followed by the preliminary analysis of the data which included; determination of missing data, outliers and normality test. Others are assessment of multicollinearity, non-response bias and common method variance. The demographic features of respondents was also analysed and was followed by the descriptive analysis of all the constructs in the study.

The actual analysis was done using SPSS version 22 and the first aspect of it was checking the validity and reliability of the survey instruments. The second aspect of the real analysis for this study is the hierarchical regression. This involved four stages; first, was that the five independent variables (REL, RSP, MKT, RDC and TEC) were regressed against the dependent variable (OPF). The second step was that all the predictor variables plus the three moderating variables were regressed against the independent variable one after the other. Lastly, each moderator, plus five calculated interaction variables and the predictors were all regressed at once against the dependent variable. The outcome of all these processes indicated that three independent variables

(DFS, RDC and TEC) were positively and significantly related to the dependent variable organizational performance thereby supported three hypotheses (H2, H4 and H5).

Concerning the moderating variables (ATF, REL and RSP), the result indicated that out of 15 hypotheses H6 to H20, only four significantly moderated the relationships were found. Hypothesis 8, 15, 16 and 20 moderated the relationship as hypothesized



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CHAPTER FIVE

DISCUSSION

5.1 Introduction

This chapter starts with the main research findings presented in the previous chapter by logically connecting them to the theoretical perspectives and the previous studies related to organizational performance. Precisely, the remaining part of the chapter is structured in the following sequence. The second section briefly recalled the findings of the study. The third section moved further to relate the findings to the previous studies and the underpinning theories. Methodological, theoretical and practical implications of the research findings were discussed in section 4. Section, section five contained the identified research limitations and suggestions were offered for future research direction. Finally, conclusion was drawn in the last section.

5.2 Recapitulation of the research findings

The main objective of this study was to examine the relationship between business strategy, marketing capabilities, research and development capabilities, technological capabilities and organizational performance of manufacturing companies and also to investigate the moderating effects of Access to finance and Electric service quality using two dimensions (reliability and responsiveness) on these relationships. Overall, this work has succeeded in advancing the current understanding of the key determinants of organizational performance by providing answers to the following research compressed questions:

1. To what extent do Business strategy, Marketing capabilities, Research and development capabilities and, technological capabilities positively relate to organizational performance?

2. Does Access to finance moderates the relationship between Business strategy, Marketing capabilities, Research and development capabilities and, Technological capabilities and organizational performance?
3. Does Electricity service quality moderates the relationship between Business strategy, Marketing capabilities, Research and development capabilities and, Technological capabilities and organizational performance?

Considering the relationship between the exogenous latent variables and the endogenous latent variable, the findings of this study indicated that 3 out of 5 hypotheses were supported. The results of the hierarchical regression using SPSS version 22 showed that differentiation strategy (DFS), research and development capabilities (RDC) and technological capabilities (TEC) were positively and significantly related to organizational performance (OPF). However, marketing capabilities (MKT) was not significantly related to organizational performance.

Access to finance (ATF) was examined as a moderator on the relationship between the five independent variables and the dependent variable. The results indicated that ATF strengthen the relationship between marketing capabilities and organizational performance, while CLS, DFS, RDC and TEC were not significantly moderated by access to finance. The finding further revealed that electricity service quality dimension (REL) positively moderates the relationship between MKT and OPF. But its moderating effects on the relationships between CLS, DFS, RDC and TEC and, OPF were insignificant.

5.3 Discussion

This section discusses the study's findings in the light of relevant theories and findings of previous research. The subheadings of discussion section are structured in accordance with the research questions.

5.3.1 The influence of CLS dimension on Business strategy on OPF

The first research question was whether cost leadership strategy is one of the variables that explain variations in organizational performance of manufacturing companies. To answer this question, the first objective of this study was to examine the relationship between cost leadership strategy and organizational performance of manufacturing companies in Nigeria.

Hence this study hypothesize that cost leadership strategy is positively and significantly related to organizational performance. To achieve this, the hypothesis was tested using multiple regressions in SPSS. The findings however, revealed insignificant relationship between cost leadership strategy and organizational performance. The finding gives an indication that implementation of cost leadership strategy may not necessarily lead to a significant improvement in organizational performance. This is contrary to the position of resource based view which considered organizational resources as an important source of competitive advantage and performance (Barney, 1991). This finding therefore, suggests that cost leadership strategy is not significant in terms of contribution to variances in organizational performance among the participating manufacturing companies in Nigeria.

Even though the finding is in conflict with previous research out comes that give an indication that cost leadership strategy was positively related to performance (Beard &

Dess, 1981; Teeratansirikool et al., 2013). Logical explanation for the finding is that the perception of many Nigerian customers is that products that are cheap in price are perceived as sub-standard in terms of quality, as such those products may receive less patronage (Dudu & Agwu, 2014). Also, customers especially the fashion conscious among them prefer products that are unique and uncommon in nature over those that are easily found all over (Agu & Onuoba, 2016). Since part of the characteristics of cost leadership strategy is cost advantage which enable firms produce massively and offer their products at competitive price. These features are therefore in opposition with aforementioned influencing customer perception. Moreover, other contingent factors such as financial related challenges were also identified as one of the obstacles to strategy implementation among the real estate firms (Hashim, Zakaria, and Ahmad 2015). And no matter how good a strategy is if its implementation is hampered by access to finance, it may not make sufficient contribution to performance.

5.3.2 The influence of DFS dimension of Business strategy on OPF

The second research question was whether differentiation strategy accounts for variations in organizational performance of manufacturing companies. To answer this question, the first objective of this study was to examine the relationship between differentiation strategy and organizational performance of manufacturing companies in Nigeria.

Hence this study hypothesizes that differentiation strategy is positively and significantly related to organizational performance. To achieve this, the hypothesis was tested using multiple regressions in SPSS. As anticipated, the findings revealed a positive and significant relationship between differentiation strategy and organizational

performance. The finding gives an indication that those manufacturing companies that implement differentiation strategy tend to have better performance than those that do not. This is in line with the position of resource based view which considered organizational resources as an important source of competitive advantage and performance (Barney, 1991). It supports the work of Beard and Dess, (1981) which opined that business strategy is positively significant in explaining the variations in firm profitability as well as long term performance. Similarly, Teeratansirikool et al., (2013) submits that differentiation strategy positively contribute to firm performance.

This finding therefore, suggests that differentiation strategy as an essential organizational resource not only has the highest contribution ($\beta= 0.506$) to the variances in organizational performance in this study, it also has the largest unique contribution (3.1%) to the explanation of the existing variation in criterion variable. This implies that of all the independent variables hypothesized and tested, differentiation strategy is the most important variable concerning its joint and unique contributions to performance of manufacturing companies.

5.3.3 The influence of marketing capabilities on organizational performance

The third research question is whether marketing capabilities positively relate to organizational performance. To answer the question, the third objective for this study was to determine the relationship between marketing capabilities and organizational performance among the manufacturing companies that participate in the research.

Hence, this study hypothesized that marketing capabilities are positively related to organizational performance. The hypothesis was tested just like the first two. Contrary

to hypothesis 3 the finding indicates that marketing capabilities was not significantly related to organizational performance. It implies that the predictive variable marketing capabilities is not part of the independent variables responsible for explaining the variances in organizational performance of the manufacturing companies that participated in the research. Even though, the finding contradict previous work of Wu, (2013) in which it was found that marketing capabilities accounted for performance of 19,653 firms from 73 emerging economies even though the relationship was moderated by the levels of economic development of the selected countries. And Kamboj, Goyal and Rahman, (2015) in which 127 respondent were selected from both manufacturing service industries the findings indicated that marketing capabilities had significant influence on the financial performance of the companies.

The result is however in agreement with past previous research from the literature (Akdeniz et al., 2010; Lisboa et al., 2011). In addition to that, plausible explanations for this inconsistent finding might be due to some environmental challenges. For example, market risk which has to do with uncertainty related to the constant change in customer needs that should be satisfied in the areas of new product, channel distribution, pricing and a host of others (Mansor et al., 2016). These and other challenges are capable of impacting negatively on the market-performance relationships of manufacturing companies.

Consumer preference for foreign products also tends to affect patronage of the products that have been manufactured domestically and by extension impede on performance. This is corroborated by the findings in Omobowale, (2010) which identified bias against indigenous or locally manufactured products as one of the obstacles hindering

the performance of manufacturing companies in Nigeria. It was supported by the findings of Bankole, Babatunde and Kilishi, (2014) in which their result indicated that Nigerians were known to prefer foreign imported products over the locally manufactured ones and that their preference was instigated by perceived better quality and availability in favour of imported manufactured products. Most of these imported products come from developed countries that do not face similar challenges such as unstable electricity that can escalate their cost of production and performance. Insufficient funds to implement firms marketing activities, is also capable of impeding MKT- OPF relationship.

5.3.4 The influence of research and development capabilities

The next research question was whether research and development capabilities explain variation in organizational performance. Following this question, the next research objective of this study was to examine the relationship between research and development capabilities and organizational performance.

In line with hypothesis 4, the finding indicated that research and development capability is significantly and positively related to organizational performance. It also indicated RDC is the second in its contribution to the explanation of variations in performance. Apart from having a general contribution, it also has a unique contribution of 0.85%. This implies that those manufacturing companies in Nigeria that possess and implement research and capabilities tend to perform better than those that do not. Manufacturing companies operating in competitive environment such as Nigeria are normally confronted with in number of challenges which includes among others; delivering high quality products through continuous improvement in their product feature, bringing

new products to the markets and making product design changes faster and manageable (Ahuja, 2011). These companies find respite in research and development to resolve the issues since new product or process innovation and improvement in the existing ones are the main objectives.

The findings have been supported in the previous literature. For example, Research and development capability is found to be an essential factor that explained the variance in all performance dimensions which includes; innovation performance, financial outcomes, market position and growth (Trivellas, 2012). In the same vein, Bhagwat and Debruine, (2011) also found that one per cent additional investment in research and development, resulted in at least one-quarter in increase earnings per share EPS above the investment among the selected manufacturing pharmaceutical companies.

5.3.5 The influence of technological capabilities on the Organizational performance

The fifth research question was whether technological capabilities contribute positively to organizational performance of manufacturing companies. Following this question therefore, the research objective is to determine the relationship between technological capabilities and organizational performance.

In line with hypothesis 5, this study found that technological capability is significantly and positively related to organizational performance. By implication, technological capability is a crucial factor in achieving better organizational performance of manufacturing companies in Nigeria, such that firms with high technological

capabilities tend to achieve more impressive performance compared to those companies without competence in technology.

Technological capabilities in this study, not only show a statistically significant positive relationship with organizational performance, the contribution made by TEC includes both joint contribution made in collaboration with other significant independent variables (DFS and RDC). It also made a very little (0.5%) unique contribution to the description of difference in performance of the manufacturing companies.

Above findings is in line with the postulation of RBV that views research and development as a resource that firms use to achieve better performance (Ray, et al, 2005). It is also supported in the literature by many researchers. For instance, Azubuike, (2013) reported positive significant relationship between technological capabilities and performance of manufacturing companies using new product development as a measure of performance. A similar finding by Nura et al., (2017) concord with the result

5.3.6 The moderating effects of access to finance on cost leadership strategy and organizational performance

The next research question was whether access to finance moderates the relationship between cost leadership strategy and performance of manufacturing companies. In line with this question therefore, the research objective is to determine moderating role of access to finance on the relationship between business CLS and organization performance. To answer the question, hypothesis six H6 was formulated which stated that access to finance significantly moderates cost leadership strategy-organizational performance relationship.

In contrast to hypothesis 6, the finding of this study indicated that access to finance did not significantly moderate the relationship between cost leadership strategy and organizational performance. This implies that access to finance is incapable of improving the relationship or change the direction significantly. The finding gives an indication that there is no difference between those manufacturing companies with better access to finance in their CLS-OPF relationship compared to those with less access to finance.

Even though, the finding does not support hypothesis 6 and the previous findings in which environmental factors such as access to finance moderated the relationship between strategy and performance (Prescott, 1986). However, this current finding appears to have been supported by the work of Sena, (2006) in which access to finance was found to have negative significant relationship with performance as a result of neglecting technical efficiency. By implication, manufacturing firms that encounter challenges that has to do with access to finance tend to emphasize the use of various technical combinations of inputs that can offer maximum output to achieve high productivity and by extension improve performance. More so an alternative plausible explanation for this inconsistent finding might be due to the fact that some manufacturing companies in Nigeria are faced with tough competition in their industry that it threatens their market positions. Such companies tend to opt for access funding that attracts high cost of capital either to improve or retain their market share. Under such circumstance, the extra cost cannot be transferred to the customers due to price competition in the market. Hence, the cost eventually reduces the profitability. But since large sales volume must have been achieved which compensate for the negative

effect on the performance. This is line with the findings in which high interest rate as a proxy for monetary policy was found to have negative impact on manufacturing performance in Nigeria (Igbinedion & Ogbeide, 2016).

This is in line with the work of Toby and Peterside, (2014). It was documented that the mean performance of manufacturing companies in Nigeria between 1981 and 2010 was far less than the credit facilities granted the sector within the period.

5.3.7 The moderating effects of access to finance on differentiation strategy and organizational performance

The next research question was whether access to finance moderates the relationship between differentiation strategy and performance of manufacturing companies. In line with this question therefore, the research objective is to determine moderating role of access to finance on the relationship between business DFS and organization performance. To answer the question, hypothesis seven H7 was formulated which stated that access to finance significantly moderates differentiation strategy-organizational performance relationship.

In line with hypothesis seven, the finding of this study indicated that access to finance significantly and positively moderates the relationship between differentiation strategy and organizational performance. This implies that access to finance significantly strengthened the positive relationship between differentiation strategy and organizational performance. The finding gives an indication that better access to finance strengthens DFS-OPF relationship. Manufacturing firms with more ATF are in better position to effectively formulate and implement differentiation strategy.

The finding supports hypothesis 7 as expected. And it is in line with the position of contingency theory that recognizes uncontrollable factors external to manufacturing firms playing the interactive role. Even though, not much is known with regards to the use of access to finance as a contingent or moderating variable, previous studies that have employed other contingency factor as moderators. For example environment moderated the relationship between strategy and performance (Prescott, 1986). Moreover, this current finding is supported by the works of Wamiori et al., (2016) which finds a significant positive relationship between access to finance and financial performance of manufacturing companies in Kenya. Dutta and Folta, (2016) also found that venture capital and angel groups made equal contributions to innovation performance among 350 firms from North-America.

5.3.8 The moderating role of access to finance on the relationship between marketing capabilities and organizational performance

The eighth research question was whether access to finance moderates the relationship between marketing capabilities and organizational performance. To answer this question, the eighth research objective for this study was to determine the contingency role of access to finance on the relationship between marketing capabilities and organizational performance of manufacturing companies.

The result indicated positive and significant moderating effect on the relationship. It therefore, supported the hypothesis (H 8). By implication, manufacturing companies that has better access to finance tend to have improved performance through using their marketing capabilities than those with less access to finance.

Even though, not much is known from the literature concerning the moderating effects of access to finance. However, a plausible explanation for this finding might be that the finding in H3 which indicated insignificant relationship between marketing capabilities and organizational performance was as a result of insufficient funds to finance all marketing activities such as new product design, promotion and advertising. Marketing capabilities that would have enhanced manufacturing firms to earn competitive advantage and organizational performance were impliedly underfunded. Access to finance therefore, serves as a performance booster to manufacturing concern's marketing capabilities. While less access have the tendency of bringing down the performance.

5.3.9 The moderating role of access to finance on the relationship between research and development capabilities and, organizational performance.

The next research question was whether access to finance moderates the relationship between research and development capabilities and organizational performance. In pursuance of this question the research objective was to determine the extent to which access to finance could moderate the relationship between research and development organizational performance. An attempt answer the question, hypothesis seven H9 was formulated. It stated that access to finance moderates the relationship between research and development capabilities and organizational performance of manufacturing companies in Nigeria.

The finding indicated that access to finance did not significantly moderate the relationship between research and development capabilities and organizational performance. This is contrary to the hypothesis (H 9). It implies that access to finance has not moderated the relationship. This is an indication that the presence of the

hypothesized moderator made no difference in terms of contribution to boosting or redirecting the relationship. By implication, access to finance may not necessarily strengthen the research and development-organizational performance relationship of manufacturing companies. It means that changes in ATF make no difference in RDC-OPF variation.

Even though, research and development capabilities enhance innovation and new product development (Wang, 2011). But not much is known about access to finance being the being utilized as a moderating variable from the previous literature. However, rational explanation for the indifference exhibited by access to finance on the relationship between research and development and, organizational performance is the fact that if manufacturing companies that acquire external funds with high cost inform of interest and other charges in desperation to satisfy customers through innovation, these may have consumed the expected profitability by reducing it to a mere break-even. That means access to finance may not necessarily lead to improved performance.

5.3.10 The moderating role of access to finance on the relationship between technology capability and organizational performance

The next research question was whether access to finance moderates the relationship between technological capabilities and organizational performance. One of the research objectives of this study is to determine the extent to which access to finance moderates the relationship between technological capabilities and organizational performance.

Technological capabilities are achieved either through acquisition of better equipment and other facilities or through manpower training and development or both. Each of

these alternatives requires finance. In line with resource-based view, technological capability is one of the manufacturing resources which the firms can be utilized to gain competitive advantage and performance (Ray et al., 2005). Access to finance on the other hand is a situational factor in the environment that tends to moderate the relationship between resources and performance (Prescott, 1986).

It was hypothesized that access to finance moderates the relationship between technological capabilities and organizational performance. Contrary to hypothesis 10, the finding indicated that access to finance did not significantly moderate the relationship. However, alternative explanation on what may be responsible for the finding is that the relationship might have been influenced by other environmental factors like electricity as found in the past literature (Adenikinju, 2003; Aliyu et al., 2013). It implies that regardless of how much was acquired for financing technology by manufacturing companies and notwithstanding how efficient the technology might be if electricity to power or run the engines is unreliable and its stability cannot be guaranteed, organizational performance of manufacturing companies tends to be stagnant or deteriorated hence, the inability of access to finance to moderate the relationship.

5.3.11 The moderating role of reliability (REL) dimension of electricity service quality on CLS-OPF relationship.

The next research question was whether reliability moderates the relationship between cost leadership strategy and organizational performance. This is in line with one of the research objectives for this study which was to determine the moderating role of reliability on the relationship between cost leadership strategy and organizational performance. Hypothesis eleven was

Electricity service is an important input to all manufacturing companies for their production activities. The literature has indicated that the quality of electricity service reliability has positively and significantly impacted on the profitability and growth of manufacturing companies (Aliyu et al., 2013; Chigozie & Oluchukwu, 2013). Moreover, in another research finding, manufacturing firms, quality of inputs was found to contribute to the output quality and performance (Maina & Bwisa, 2014).

In contrast to hypothesis ten, (H11) which stated that electricity reliability moderates the relationship between cost leadership strategy and organizational performance of manufacturing companies. The finding in this study indicated that electricity service quality has no statistically significant moderating effect on the relationship.

However, a plausible explanation for this inconsistent finding might be due to the fact that manufacturing companies in Nigeria has two main sources of electricity supply. The first source is the Power holdings of Nigeria which is connected to national grid and its distribution has been privatized. It is widely used by both domestic and industrial customers alike because it attracts low tariff. The second source concerned the individually acquired electricity power generators, inverters and a host of others. This source may offer high quality electricity service in terms of reliability and assurance. It is however, very expensive to acquire and maintain. Many manufacturing companies that frequently utilize the most expensive alternative source may have positive electricity service quality that may eventually not result in improved performance due to higher cost of acquiring the service than the national grid. This is corroborated by the previous research in which alternative power sources in Nigeria were found to have

significant and negative relationship with performance of manufacturing companies (Adenikinju, 2003; Aliyu et al., 2013).

5.3.12 The moderating role of reliability (REL) dimension of electricity service quality on DFS-OPF relationship.

The next research question was whether reliability dimension of electricity service quality moderates the relationship between differentiation strategy and performance of manufacturing companies. In line with this question therefore, the research objective is to determine moderating role of reliability on the relationship between business DFS and organization performance. To answer the question, hypothesis seven H12 was formulated which stated that reliability significantly moderates differentiation strategy-organizational performance relationship.

As a follow up of hypothesis twelve, the finding of this study indicated that the moderating role of reliability on the relationship between differentiation strategy and organizational performance is insignificant. This implies that reliable electricity service does not make a significant difference in terms of either strengthening the positive relationship between differentiation strategy and organizational performance or weakening it. The finding gives an indication that manufacturing companies with better electricity measured in reliability are not better off when it comes to improving DFS-OPF relationship.

Even though, the finding does not support hypothesis twelve and not much is known with regards to the use of reliable electricity as a contingent or moderating variable on differentiation strategy performance relationship. However, a plausible explanation for this inconsistent finding may be due to the fact that manufacturing companies in Nigeria have two main sources of electricity supply. The first source is the Power holdings of

Nigeria which is connected to national grid and its distribution has been privatized. It is widely used by both domestic and industrial customers alike because it attracts low tariffs. The second source concerned the individually acquired electricity power generators, inverters and a host of others. This source may offer high quality electricity service in terms of reliability. It is however, very expensive to acquire and maintain. Many manufacturing companies that frequently utilize the most expensive alternative source may have reliable electricity service quality that may eventually not result in improved performance due to higher cost of acquiring the service than the national grid. This is corroborated by the previous research in which alternative power sources in Nigeria were found to have significant and negative relationship with performance of manufacturing companies (Aliyu et al., 2013). The high cost of alternative source of electricity increases the total cost of operating businesses generally including manufacturing, thus reducing the profit margin.

5.3.13 The moderating role of reliability (REL) dimension of electricity service quality on MKT-OPF relationship.

The next research question was whether reliability dimension of electricity service quality is capable of moderating the relationship between marketing capabilities and organizational performance. Following this question, the research objective was to determine the moderating role of reliability on the relationship between marketing capabilities and organizational capabilities.

This present study had predicted that reliable electricity service moderates the relationship between marketing capabilities and organizational performance. In line with the hypothesis (H13), the finding indicates that the relationship between marketing capabilities and organizational performance is significantly moderated by reliability of

electricity. The moderating effect is however, negative. This implies that manufacturing companies with higher reliability of electricity has the tendency of having improved deteriorating marketing capabilities-organizational performance relationship than those with less REL. It means the better the quality of electricity service the less the MKT-OPF relationship and vice versa. In other words, high reliable electricity service dampens the relationship between marketing capabilities and organizational performance.

Even though adequate research attention has not been given to electricity service reliability as a moderating variable on the relationship between marketing capabilities and organizational performance of manufacturing companies, this appears to account for the drought of literature to support the finding. Available literature that is seemingly related to the finding indicated that poor electricity top the list of service input that constitute obstacles to productivity in manufacturing sector of five African countries (Arnold, Mattoo, & Narciso, 2008). In that wise, improvement in electricity service reliability is supposed to contribute positively to enhancing all marketing activities contained in marketing capabilities. However, logical explanation for the finding that is contrary to the hypothesis is that, for many decades there has been higher demand for electricity service in Nigeria than the available supply from the national grid (Mandelli, Barbieri, Mereu, & Colombo, 2016). As such manufacturing companies have no option than to create a reliable and an expensive source for their operations and to meet customer orders. These alternative sources, particularly electricity generating engine powered with petrol or diesel raise cost of production and as such reduce profitability (Abubakar, et al, 2013). Therefore, manufacturing companies may have reliable electricity that is too expensive for them to enhance marketing capabilities to improve profitability.

5.3.14 The moderating role of reliability (REL) dimension of electricity service on RDC-OPF relationship.

The next research question was whether reliable electricity service significantly moderates the relationship between research and development capabilities and, organizational performance. In the same direction, the research objective related to the question is to determine the extent to which electricity service quality moderates the relationship between research and development capabilities and organizational performance. It was also hypothesized earlier on that reliability of electricity service moderates the relationship between research and development capabilities and organizational performance (H14).

Contrary to the hypothesis (H14), the finding of this study indicated that the relationship between research and development and organizational performance is not significantly moderated by reliable electricity service. This implies that the moderating variable does not contribute to strengthening or changing the direction of the relationship between research and development and, organizational performance of manufacturing companies in Nigeria.

Reliability dimension of electricity service as a moderating variable has not attracted much research attention. As such there seems to be lack of literature to support the finding. However, logical explanation in favour of the finding may be due to the fact that even though, continuous development of new products through R&D capabilities and their subsequent market introduction constitute new opportunities for manufacturing companies as well as it is a source of sustained performance (Blundell,

Griffith, & Van Reenen, 1999). The high risk associated with new products should also be a source of concern to organizations (Ernst, 2002). Findings from empirical research works indicated that the failure rate of new products is very high especially among consumer products (Crawford, 2007; Wong & Tong, 2011). In that wise, about 50% of the participants in this research represent consumer manufacturing companies (See table 4.7). The implication of this is that the these consumer manufacturing companies added to some industrial products manufacturers tend to experience high rate of new failure even with highly reliable electricity service may not significantly moderate the RDC-OPF relationship.

5.3.15 The moderating role of reliability (REL) dimension of electricity service on TEC-OPF relationship.

The fifteenth research question in this study is whether reliability dimension of electricity service moderates the relationship between technological capabilities and organizational performance of manufacturing companies. To answer the question, the research objective is to determine the extent to which reliability moderate the relationship between technological capabilities and organizational performance. Hence, this study hypothesize that reliability dimension moderates the relationship between technological capability and organizational performance of manufacturing companies.

On the contrary, finding of this particular study indicates that reliability electricity service did not moderate the relationship. This implies that the moderating variable is not capable of significantly influencing the relationship between technological capabilities and organizational performance of manufacturing companies in Nigeria. Despite the inconsistencies between the hypothesis and the finding, contrary to previous result in which environmental factors such as reliability electricity service had

moderated a relationship (Prescott, 1986), apparently reasonable explanations can be given.

Plausible explanation for the finding are; Firstly, many manufacturing firms opt for alternative sources of electricity without considering the cost implication of the option (Aliyu et al., 2013). Such manufacturing firms end up getting reliable electricity for their operations. They may however, have to contend with additional cost that goes with that decision. An attempt to transfer the extra cost to customers in form price hike may be unacceptable to the customers bearing in mind that other competitors that used relatively cheaper electricity input offer similar products for less price. This is line with work of Chukwuma, Azu, and Chinedu, (2015) in which additional input cost was found to have significant negative effect on the profits of manufacturing firms. Aside from that, the challenges in the operating environment with regard to competition from foreign imported products. Most of these imported products come from countries with no similar environmental challenges such as poor electricity service and that gives them the opportunity to charge low prices compared to the locally manufactured ones.

Moreover, Nigerian customers have been found to placed high patronage on foreign manufactured products based on their imagination of getting better quality (Bankole et al., 2014). With the highlighted challenges above, improved electricity may not be capable of improving the relationship between marketing capabilities and organizational performance of manufacturing companies.

5.3.16 The moderating role of responsiveness (RSP) dimension of electricity service quality on CLS-OPF relationship.

The next research question was whether responsiveness in electricity service moderates the relationship between cost leadership strategy and organizational performance. To answer this question a research objective was set. And it is to determine the moderating role of responsiveness on the relationship between cost leadership strategy and organizational performance of manufacturing companies. Hypothesis sixteen (H16) therefore states that; responsiveness in electricity service moderates the relationship between cost leadership and organizational performance of manufacturing companies.

Responsiveness to the electricity service needs of manufacturing companies for their production activities is essential in enhancing their production activities. The literature has indicated that the quality of responsive and flexible electricity service has positively and significantly impacted on the profitability and growth of manufacturing companies (Aliyu et al., 2013; Chigozie & Oluchukwu, 2013). Moreover, in another research finding, manufacturing firms, quality of inputs such as electricity is found to contribute positively to the output quality and performance (Maina & Bwisa, 2014).

In contrast to the hypothesis, (H16), finding in this study indicated that responsiveness in electricity service has no statistically significant moderating effect on CLS-OPF relationship.

However, a plausible explanation for this inconsistent finding might be due to the fact firms that are employing cost leadership strategy mostly derive their competitive advantage from their cost reduction in all the inputs (material, manpower and services) used for production activities (Porter, 1985). And electricity service is an essential input to manufacturing sector. Manufacturing companies in Nigeria has two main sources of

electricity supply. The first source is the Power holdings of Nigeria which is connected to national grid. It is widely used by both domestic and industrial customers alike because it attracts low tariff. The second source concerned the individually acquired electricity powers generators, inverters and a host of others. This source may offer high quality electricity service in terms of reliability and assurance. It is however, very expensive to acquire and maintain. Many manufacturing companies that frequently utilize the most expensive alternative source may have responsive electricity service quality that may eventually not result in improved performance due to higher cost of acquiring the service than the national grid. This is corroborated by the previous research in which alternative power sources in Nigeria were found to have significant and negative relationship with performance of manufacturing companies (Adenikinju, 2003; Aliyu et al., 2013).

5.3.17 The moderating role of reliability (RSP) dimension of electricity service quality on DFS-OPF relationship.

The next research question was whether responsiveness in electricity service moderates the relationship between differentiation strategy and performance of manufacturing companies. In line with this question therefore, the research objective is to determine moderating role of responsiveness on the relationship between business DFS and organization performance. To answer the question, hypothesis seven H17 was formulated which stated that responsiveness significantly moderates differentiation strategy-organizational performance relationship.

Contrary to hypothesis seventeen, the finding of this study indicates that responsiveness of electricity does not significantly moderate the relationship between differentiation

strategy and organizational performance. This implies that as important as responsive electricity service to manufacturing concerns, its presence does not lead to improvement in differentiation strategy- performance relationship. In other words there is no difference between manufacturing companies that have access to responsiveness in electricity service and those that don't when it comes to performance.

Although the finding contradicts the hypothesis (H17) and not much is known with regard to the use of responsiveness in electricity service as a moderator, however, logical explanation can be adduced for the research outcome. One of the main features of differentiation strategy is the creation of unique values that cannot be easily copied by competitors from the customer perspective (Porter, 1985). In the operating environment such as Nigeria where the electricity service providers are inefficient in terms of responsiveness, manufacturing companies using differentiation strategy may be enticed into acquiring responsive electricity service regardless of the cost implication. This is to enhance their ability to deliver their distinct products promptly. These may eventually be confronted with negative responses from their customers if such customers wrongly perceive the differentiated products as not enhancing their well-being. Or if changes in the price are considered too high, in that wise, improved responsive electricity may not significantly moderate the relationship between differentiation strategy and organizational performance of manufacturing companies.

5.3.18 The moderating role of responsiveness dimension of electricity service quality on marketing capabilities and organizational performance

The next research question was whether responsiveness in electricity service is capable of moderating the relationship between marketing capabilities and organizational

performance. Following this question, the research objective is to determine the moderating role of responsiveness of electricity service on the relationship between marketing capabilities and organizational performance.

This present study had predicted that electricity service quality (responsiveness) moderated the relationship between marketing capabilities and organizational performance. In line with the hypothesis (H18), the finding indicates that the relationship between marketing capabilities and organizational performance is significantly moderated by responsiveness in electricity service. This implies that manufacturing companies with higher electricity service that is responsive to their needs has the tendency of having improved marketing capabilities-organizational performance relationship than those with less RSP. It means the better the quality of electricity service the higher the MKT-OPF relationship and vice versa.

Even though adequate research attention has not been given to responsiveness in electricity service as a moderating variable on the relationship between marketing capabilities and organizational performance of manufacturing companies, this is responsible for the drought of literature to support the finding. Available literature that is seemingly related to the finding indicated that poor electricity top the list of service input that constitute obstacles to productivity in manufacturing sector of five African countries (Arnold, Mattoo, & Narciso, 2008). In that wise, improvement in electricity service quality contributes positively to enhancing all marketing activities contained in marketing capabilities. Responsiveness of electricity therefore, serves as a contingency factor in the operating that tends to modify the MKT-OPF performance of manufacturing companies in Nigeria.

5.3.19 The moderating role of responsiveness in electricity service on the relationship between research and development and, organizational performance

The next research question is whether responsiveness in electricity (RSP) service significantly moderates the relationship between research and development capabilities and, organizational performance. In the same direction, the research objective related to the question is to determine the extent to which responsiveness in electricity service moderates the relationship between research and development capabilities and organizational performance. It was also hypothesized earlier on that responsiveness in electricity moderates the relationship between research and development capabilities and organizational performance (H:19).

Contrary to the hypothesis (H:19), the finding of this study indicates that the relationship between research and development and organizational performance is not significantly moderated by responsiveness in electricity service. This implies that the moderating variable does not contribute to strengthening the relationship between research and development and, organizational performance of manufacturing companies in Nigeria.

Not much research attention has so far been given to responsiveness in electricity service serving as moderating variable. As such there seems to be lack of literature to support the finding. However, logical explanation in favour of the finding may be due to the fact that even though, continuous development of new products through R&D capabilities and their subsequent market introduction constitute new opportunities for manufacturing companies as well as it is a source of sustained performance (Blundell

et al., 1999). The high risk associated with new products should also be a source of concern to organizations (Ernst, 2002). Findings from empirical research works indicated that the failure rate of new products is very high especially among consumer products (Crawford, 2007; Wong & Tong, 2011). In that wise, about 50% of the participants in this research represent consumer manufacturing companies (See table 4.7). The implication of this is that the these consumer manufacturing companies added to some industrial products manufacturers tend to experience high rate of new failure even with high responsiveness in electricity service as such their performance improvement may be insignificant.

5.3.20 The moderating role responsiveness dimension of electricity service on TEC-OPF relationship

The last research question in this study is whether responsiveness in electricity service moderates the relationship between technological capabilities and organizational performance of manufacturing companies. To answer the question, the research objective is to determine the extent to which responsiveness in electricity service moderate the relationship between technological capabilities and organizational performance.

Hence, this study hypothesized that electricity responsiveness moderates the relationship between technological capability and organizational performance of manufacturing companies (H20). The outcome of this research indicates that responsiveness dimension of electricity service significantly moderates the TEC-OPF relationship. The result however shows a negative beta value. This implies that interaction changes the direction of the relationship from positive to negative. It

practically means that manufacturing with reliable electricity tend to their technological capability-performance relationship dampens.

Even though, the result looks awkward. But plausible explanation for it is that the inverse relationship found due to the moderating role of responsiveness of electricity is likely to be the consequence of using alternative source of power supply by the Nigerian manufacturers apart from the national grid. These sources are very expensive to acquire and maintained (Aliyu, et al, 2013). Such companies may succeed in getting responsive electricity for their operations. They may however, end up having a unit cost of their output greater than the market price and may be unacceptable to the customers bearing in mind that other competitors that used relatively cheaper electricity input offer similar products for less price. This is line with work of Chukwuma, Azu, and Chinedu, (2015) in which additional input cost was found to have significant negative effect on the profits of manufacturing firms.

Secondly, the challenges in the operating environment with regard to competition from foreign imported products. Most of these imported products come from countries with no similar environmental challenges such as poor electricity service and that gives them the opportunity to charge low prices compared to the locally manufactured ones.

Moreover, Nigerian customers have been found to placed high patronage on foreign manufactured products based on their imagination of getting better quality (Bankole et al., 2014).

With the highlighted challenges above, improved electricity may translate into negative organizational performance of manufacturing companies regardless of the quality of technology.

5.4 Contributions and implications of the Study

Business strategy, distinctive capabilities, business environment and performance in relation to manufacturing companies have attracted a lot of attention from both the academic researchers and practitioners globally. This research is one of the efforts. Based on the findings of this research work, the study has a number of important implications, specifically in terms of performance of manufacturing companies in the context of Nigeria. The results of this study provide practical, theoretical and methodological implications. These implications are discussed in the following sub-sections.

5.4.1 Practical implications

From the research findings, the present study has contributed several practical implications in terms of strategic management practices within the context of Nigerian manufacturing industry. Firstly, the results suggest that differentiation strategy is an important consideration in improving the performance of manufacturing companies. Firms are expected to make concerted efforts in formulating and implementing more of differentiation strategy than the cost leadership strategy since the former is more effective in its contribution to organizational performance.

Secondly, the findings suggest that research and development capabilities and, technological capabilities variables are positively and significantly related to organizational performance. Thus, managers of manufacturing companies can intensify their efforts to improve these capabilities in a complementary manner so that these can enhance the improvement of the organizational performance of their companies.

The third practical implication is that the results of the current study suggest that besides business strategy and distinctive capability factors that were considered as internal resources of the companies, external environmental variables in the Nigerian context such as electricity service quality and access to finance need to be given serious consideration by the management while taking strategic decisions. In particular, the moderating role of access to finance suggests that the factor is capable of enhancing the positive contribution of marketing capabilities to organizational performance. Similarly, finding concerning access to finance suggests that managers need to inject more funds into their company marketing capabilities since ATF strengthens MKT-OPF relationship. However, the finding related to electricity service quality for both reliability and responsiveness dimensions should be implemented with caution. Since the moderating effects of the two dimensions reflect negative significant effects. As such, it implies that even though, the two dimensions show significant moderating effect on marketing capabilities and technological capabilities, the effects however, change the direction of the positive relationship in MKT-OPF and TEC-OPF respectively. Reason for this as previously stated is the high cost of acquiring alternative source of electricity that was found to be common among manufacturing companies in Nigeria. Managers should therefore consider the cost implication of these alternative sources on their organizational performance. These findings are pointers to the fact that every operating environment tends to have its own peculiar challenges which the management should look out for in the cause of taking decisions related to strategic planning, implementation and control. Bearing in mind that challenges that concern electricity service and access to finance are mostly beyond the control of manufacturing sector, policy makers should prosecute and implement policies that will enhance the availability of electricity service and access to finance at reasonable cost to all users.

Finally, as stated from the outset in the report that hypotheses H1 and H3 are not supported. It means that a good number of customers are not responding to price changes in their demand for locally manufactured goods which is the main benefit of cost leadership strategy. In that line, managers should use more of differentiation strategy than the cost leadership. As for H3 that has to do with marketing capabilities, an indication of underfunding of the capability was reflected and confirmed by the positive moderating effect in hypothesis eight (H8). Similarly, hypotheses H6, H7, H9 and H10 that are not supported by the findings point to the fact that access to finance is not capable of moderating the predictor variables and the criterion variable OPF. So also are H11, H12, H14 and H15 respectively. The outcome of this work, is an indication that reliability dimension of electricity service has insignificant moderating effect on the relationship between CLS, DFS, RDC, TEC and OPF. From the result also responsiveness dimension of electricity service does not moderate the relationship between CLS, DFS, RDC and OPF. It should be stressed here that the moderating power of access to finance and electricity service quality may be rendered ineffective in moderating the aforementioned predictor-criterion variable relationships given certain conditions. For example high cost of capital can erode the moderating power. That may probably have been the reason behind the failure of the access to finance to moderate business strategy, research and development capabilities and, technological capabilities. In that wise management should not look at the likely moderating variables alone rather, they also need to consider the related circumstances capable of limiting the moderating power of the identified variable.

5.4.2 Methodological implications

This particular study has some methodological implications. One of the methodological contributions is visible in the selection of the target population for the research. This study focussed on managers of manufacturing companies as respondents. By so doing, it enhanced the collection data of undiluted perception by sticking to manufacturing organizations and to be focussed on the findings that strictly concern factors of performance in manufacturing companies. Unlike the previous works where a combination of research participants were chosen from both the service and manufacturing industries (Arasa & K'Obonyo, 2012; Hassan, Qureshi, et al., 2013; Teeratansirikool et al., 2013).

Moreover, this study collected data related to all categories of manufacturing companies without restrictions related to sizes or industry sub-sector classification as was the case in many of the preceding works (Lang et al., 2012; Udjo, 2013; Yan, 2010). This research had also covered micro, medium and large manufacturing companies. It also took into considerations all the industry sub-sectors as categorized by manufacturers association of Nigeria. By implication the study had collected data from very large and all-encompassing participants that were treated separately in the previous works. Therefore, findings of this study tend to be more valid when it comes to generalization of research output on diverse manufacturing sub-sectors.

5.4.3 Theoretical implications

This study was conducted in a different context that is quite unique from those used by the previous researchers. While more research interest appeared to have been focussed on Asia and Europe by the preceding researchers (Hsiao & Chen, 2013; Man & Wafa,

2008; Nandakumar et al., 2010), this study paid specific attention to sub-Saharan region of Africa precisely Nigeria. The theoretical contribution here was to replicate the research conducted in a different setting with a view to confirming the extent to which the previous findings can be generalised in the light of the results of this study. Findings from this study as stated earlier on, supported the three direct relationship hypotheses (H1, H4 and H5), thereby confirming the similarities of previous findings (Ayaydin & Karaaslam, 2014; Bhagwat & Debruine, 2011; Ghaffar & Khan, 2014; Ouma & Oloko, 2015; Teeratansirikool et al., 2013; Trivellas, 2012; Jie Wu, 2013a) and this present findings.

Secondly, taking into consideration the nature of the operating environment in Nigeria concerning the performance of manufacturing companies and the peculiar challenges therein, this study has specifically, highlighted the moderating role of ATF, REL and RSP on the relationship between CLS, DFS, MKT, RDC and TEC and Organizational performance of manufacturing companies in Nigeria.

The two factors served as the situational factors or contextual variables in line with the contingency theory (Gerdin & Greve, 2004; Donald C Hambrick & Lei, 1985). This implies that the extent to which CLS, DFS, MKT, RDC and TEC contribute to the performance of manufacturing companies is contingent on the companies' access to finance and electricity service quality. The use of ATF, REL and RSP as moderators constituted a major contribution because as far as this study is concerned no previous study has used them as contextual variables.

Out of the fifteen hypothesized moderations, only four has significantly moderated the relationships. Explanations have been offered in respect of both the significant

moderations and insignificantly moderations as justifications for the findings and the effect on the acceptable relationship of the variable. This is line with the suggestions of Whetten, (1989) in which it was asserted that theoretical contribution is not limited to changing the framework by way of subtraction or addition of the constructs but that such changes should be justified with logical explanations regarding how such changes affect the previously accepted relationships among the variables.

5.5 Limitations and suggestions for future research direction

Despite the number of important contributions highlighted in this study regarding the performance of manufacturing companies, the research has several limitations that need to be addressed. Firstly, this study focused only on manufacturing companies in the South-west geo political zone of Nigeria. Even though the zone has the largest concentration of manufacturing companies in the country as far manufacturers association of Nigeria's membership is concerned. It should be noted here that the population sample used for the study was drawn from the membership directory of manufacturers association of Nigeria which is a voluntary association of manufacturers. It is not clear if the population actually proportionately represent all manufacturing companies in Nigeria including non-members. This research did not include manufacturing companies operating in the remaining parts of Nigeria. Notwithstanding the fact that all manufacturing companies in Nigeria share similar characteristics, such as ownership type, number of employees, etc. The result obtained may be slightly different if other regions had been included in the study. Therefore, findings of this study should be generalized with caution to manufacturing firms operating in other parts of the country.

Secondly, even though this research targeted all types of manufacturing companies. There is a need to examine the performance of these companies based on industry sub-sectors, such as wood products and furniture, food beverages and tobacco, chemicals and pharmaceuticals, electrical and electronics etc. Despite the fact that, data was collected based on the classification of MAN, (2014) the analysis was not done along that pattern. Hence, the study is limited by neglecting the fact that enterprise characteristics can be different according to type of business or sub-sector. Future studies should consider investigation of organizational performance companies in other parts of the country and sub-sector activities, which may provide more in-depth results.

The third limitation of this study is that it had used cross-sectional design for the survey of respondents in which the perception of participants was captured at one specific period of time. Thus, the design by nature is restricted in proving causal relationships between the variables (Sekaran & Bougie, 2013). Since the data was collected at one time, this might not permit the data to represent long-term behaviours of the firms. In view of these restrictions, a longitudinal study is suggested for future research. This may help researchers to get more understanding on the subject matter and validate the findings from cross-sectional studies.

As earlier on indicated that most of the hypotheses concerning moderations were not supported by the findings, there may be some other interaction variables and possible intervening variables not covered by this study. This research therefore recommends that future research may consider looking at other moderators and likely mediators that are tend to play significant role on those relationships.

Lastly, the data used for this study was collected through self-report and the top level management staffs were the focus. There is a potential source of problem that is peculiar to behavioural research. Such as common method variance and social desirability bias which constitute one of the possible limitations of this study (Podsakoff et al., 2003). However, using Harman's single factor analysis to test the common method bias, it was established that the study is free from this problem. Notwithstanding, future research can collect data from multiple participants (middle level managers and low level managers) separately per enterprise, which can minimize the measurement errors.

5.6 Conclusion

In summary, this study has provided additional evidence to the growing body of knowledge concerning the moderating role of access to finance and electricity service quality on the relationship between marketing capabilities, research and development capabilities and technological capabilities and, organizational performances of manufacturing companies. Results from this study, has supported the key theoretical propositions. Precisely, the current study has succeeded in answering all the research questions and objectives despite the presence of some limitations. While there have been many studies examining the underlying causes of variations in manufacturing performance, however, the present study addressed the theoretical gap by incorporating access to finance and electricity service quality as significant moderating variables.

This study also lends theoretical and empirical support for the moderating roles of ATF and REL and RSP on the relationship between BST, MKT, RDC and TEC and, organizational performance. The study has also managed to evaluate how access to finance and electricity service quality theoretically moderate the relationships between the exogenous and endogenous variables. The theoretical framework of this study has

also added to the field of resource-based view and contingency theory by examining the influence of business strategy and distinctive capabilities on organizational performance as well as the effect of access to finance and electricity service quality on the relationships.

In addition to the theoretical contributions, the results from this study provide some important practical implications to manufacturing organizations and managers. Furthermore, on limitations of the current study, several future research directions were drawn. In conclusion, the present study has added valuable theoretical, practical, and methodological branches to the growing body of knowledge in the field of strategic management.



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APPENDIX A

Academic Questionnaire Survey



University Utara Malaysia,
College of Business, 06010
UUM Sintok, Kedah,
DarulAman, Malaysia.

Dear Sir

Survey Questionnaire on “Business Strategy, Distinctive Capabilities, Business administration and Organisational Performance of Manufacturing companies”.

I am Muhammed Abdulrahman, a PhD research candidate of Business Management at Othman Yeop Abdullah (OYA) Graduate School of Business, University Utara Malaysia. I am currently conducting a graduate research titled: “Business strategy, Distinctive Capabilities, Business Environment and Organizational Performance of manufacturing companies in Nigeria”.

I would therefore like to ask a few questions about you and your organisation as a CEO, a member of the management team or the owner manager of a manufacturing company. Please endeavour to tick the appropriate box suitable for each of the questions. Kindly note that there is right or wrong answers to these questions, all information collected in this research will be treated as highly confidential and strictly meant for academic purposes.

Thanks for your anticipated cooperation.

Muhammed Abdulrahman

(Researcher)

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E-mail: s94611@student.uum.edu.my or gracious65@hotmail.com

QUESTIONNAIRE

PART A: Background information about you and your organisation.

Instructions: Please tick (✓) in box in line with your choice from the available options.

1. Your gender

Male Female

2. Your academic qualifications

SSCE/WAEC/NECO
National Diploma
HND/BSc/BA or It equivalent
Postgraduate qualifications
Academic & Professional qualifications

3. Job positions

General manager/CEO
Senior manager
Manager
Owner manager
Others

4. Your company age

Less than 10 years
Between 10 and 19 years
Between 20 and 29 years
30 years and above

5. Your Industry classification/Nature of business;

Chemical and pharmaceuticals
Basic metal iron and steel/Fabricated metal products
Domestic/Industrial plastic rubber and foam
Pulp paper and paper products/ Printing and publishing
Electrical and electronics products
Textiles, wearing apparels, carpets leather and footwear
Wood products and furniture
Non-metallic mineral products
Motor vehicles and miscellaneous assembly
Food, Beverages and tobacco

6. Your organisation's gross annual income

Below N5 million
Between N5 million and N500 million
Above N500 million.

7. Number of employees in your organizations

- Not more than 10 employees
- Between 11 and 200 employees
- Above 200 employees

PART B.

Section A instructions: The questions in this section concerns measurement scale for **Access to finance:** Please answer the following questions by circling one that best suits your opinion in line with the listed scale below: 1 = Strongly Disagree, 2 = Moderately Disagree, 3 = Slightly Disagree, 4 = Neutral, 5 = Slightly Agree, 6 = Moderately Agree and 7 = Strongly Agree.

Code	Statements	Scale						
ATF1	Our company has adequate credit/financial information	1	2	3	4	5	6	7
ATF2	Our company uses retained earnings as a source of finance	1	2	3	4	5	6	7
ATF3	Collateral requirement is not an obstacle to our company in securing Bank credit.	1	2	3	4	5	6	7
ATF4	Our company has access to other non-Bank finance.	1	2	3	4	5	6	7
ATF5	Our company has access to long-term for financing equipment	1	2	3	4	5	6	7
ATF6	High interest rate is not a challenge to our company in obtaining Bank loan.	1	2	3	4	5	6	7

Section B

Instructions: The questions in this section are based on your company **Business strategies.** Please answer the following questions by cycling one that best suits your opinion in line with the listed scale below; 1 = Very low, 2 = Low, 3 = Fairly low, 4 = Neutral, 5 = Fairly high, 6 = High and 7 = Very high.

Code	Statements	Scale						
BST1	Our company emphasis on efficiency of securing raw materials and components is.....	1	2	3	4	5	6	7
BST2	Our company emphasis on cost reduction in all activities is....	1	2	3	4	5	6	7
BST3	Our company emphasis on operating efficiency is.....	1	2	3	4	5	6	7
BST4	Our company emphasis on production capacity utilization is....	1	2	3	4	5	6	7

BST5	Our company emphasis on price competition is....	1	2	3	4	5	6	7
BST6	Our company emphasis on tight control of selling expenses, general expenses and administrative expenses is.....	1	2	3	4	5	6	7
BST7	Our company emphasis on new product development or existing adaptation for better customer service is.....	1	2	3	4	5	6	7
BST8	Our company place high importance to the rate of new product introduction to the market.	1	2	3	4	5	6	7
BST9	The intensity of our company advertising and marketing is high.	1	2	3	4	5	6	7
BST10	Our company emphasis on the development of utilization of sale force is...	1	2	3	4	5	6	7
BST11	Our company's' interest on building strong brand identification is...	1	2	3	4	5	6	7
BST12	Our company's' interest in the number of new products offered to market is....	1	2	3	4	5	6	7

Section C

Instruction: This section relates to **Electricity service quality (ESQ)**. Please answer the following questions by cycling one that best suits your opinion in line with the listed scale below 1 = Strongly disagree, 2 = Moderately disagree, 3 = Slightly disagree, 4 = Neutral, 5 = Slightly agree, 6 = Moderately agree and 7 = Strongly agree

Code	Statements	Scale						
ESQ1	Our company has no access to high quality and regular electricity without interruption	1	2	3	4	5	6	7
ESQ2	Electricity service staff are not readily available to register complaint, enquiry and maintenance related issues	1	2	3	4	5	6	7
ESQ3	Applying for new electricity supply is not easy and it is not provided in time.	1	2	3	4	5	6	7

ESQ4	Accurate bills are not served based on power consumption and other acceptable charges	1	2	3	4	5	6	7
ESQ5	Our company is not informed in advance in case of power shutdown and shedding	1	2	3	4	5	6	7
ESQ6	Our company experiences electricity voltage fluctuation from time to time.	1	2	3	4	5	6	7
ESQ7	Accidental benefits and subsidies are not given to customers for damages due to abnormal supply	1	2	3	4	5	6	7
ESQ8	Additional demand for electricity is not promptly supplied	1	2	3	4	5	6	7

SECTION D

Instructions: This section concerns your company **distinctive capabilities**. Please answer the following questions by cycling one that best suits your opinion in line with the listed scale below; 1 = Strongly Disagree, 2 = Moderately Disagree, 3 = Slightly Disagree, 4 = Neutral, 5 = Slightly Agree, 6 = Moderately Agree and 7 = Strongly Agree.

Section D1: Research and development capabilities

Code	Statements	Scale						
RDC1	Our company has better abilities than our competitors in the development/acquisition of new technology.	1	2	3	4	5	6	7
RDC2	Our company has better abilities than our competitors in the development of new process through research efforts	1	2	3	4	5	6	7
RDC3	Our company has better abilities than our competitors in new product development.	1	2	3	4	5	6	7
RDC4	Our company has better abilities than our competitors in the improvement of the existing products.	1	2	3	4	5	6	7

Section D2: Marketing capabilities								
MK1	Our company has better abilities than our competitors in channel distribution	1	2	3	4	5	6	7
MK2	Our company has better abilities than our competitor in product recognition	1	2	3	4	5	6	7
MK3	Our company has better abilities than our competitor in logistics supports	1	2	3	4	5	6	7
MK4	Our company has better abilities than our competitor in developing and executing advertising programs Advertising management and creative skills Public relations.	1	2	3	4	5	6	7
MK5	Our company has better abilities than our competitor in responsiveness to customer needs.	1	2	3	4	5	6	7

Section D3: Technology Capabilities								
TEC1	Our company is among the first to introduce new products in the market.	1	2	3	4	5	6	7
TEC2	Our company is the industry leader in introducing new product.	1	2	3	4	5	6	7
TEC3	Our company is known for introducing break-through type products.	1	2	3	4	5	6	7
TEC4	Our company is one of the best in terms of product innovation in the industry.	1	2	3	4	5	6	7
TEC5	Our company is one of the best in terms of process innovation in the industry	1	2	3	4	5	6	7

SECTION E

Instruction: This section concern measures for **Organisational performance**. Please indicate the extent to which your company have been able achieve the following objectives by circling one option that best suits your opinion in line with the listed scale below; 1 = Not at all successful, 2 = Unsuccessful, 3 = Fairly unsuccessful, 4 = Neutral, 5 = Fairly successful, 6 = Successful and 7 = Very successful.

Section E1: Objective fulfillment

Code	Statements	Scale						
OPF1	Improvement in long-term performance	1	2	3	4	5	6	7
OPF2	Predicting future trends of your industry	1	2	3	4	5	6	7
OPF3	Evaluating alternatives based on relevant information	1	2	3	4	5	6	7
OPF4	Avoiding problem areas	1	2	3	4	5	6	7
OPF5	Resolving problems	1	2	3	4	5	6	7
OPF6	Enhancing management development	1	2	3	4	5	6	7

Section E2: Relative competitive performance

Please compare the performance of organization with that of your main competitors based on the following items. For each item please indicate your assessment by circling one number in line with the following scales. 1= Significantly deteriorated, 2= deteriorated, 3= fairly deteriorated, 4= neutral, 5= fairly improved, 6= improved and 7= Significantly improved

Code	Statements	Scale						
OPF7	Sales growth	1	2	3	4	5	6	7
OPF8	Growth in profit after tax	1	2	3	4	5	6	7
OPF9	Change in market share	1	2	3	4	5	6	7
OPF10	Return on Assets (ROA)	1	2	3	4	5	6	7
OPF11	Return in Equity (ROE)	1	2	3	4	5	6	7
OPF12	Return on sales (ROS)	1	2	3	4	5	6	7
OPF13	Current Ratio	1	2	3	4	5	6	7
OPF14	Overall firm performance and success	1	2	3	4	5	6	7
OPF15	Our competitive position	1	2	3	4	5	6	7

Thanks for your participation.

APPENDIX B

Replacement of missing data

Result Variables						
	Result Variable	N of Replaced Missing Values	Case Number of Non-Missing Values		N of Valid Cases	Creating Function
			First	Last		
1	ATF1_1	3	1	313	313	SMEAN(ATF1)
2	ATF2_1	3	1	313	313	SMEAN(ATF2)
3	ATF3_1	2	1	313	313	SMEAN(ATF3)
4	ATF4_1	3	1	313	313	SMEAN(ATF4)
5	ATF6_1	5	1	313	313	SMEAN(ATF6)
6	BST1_1	1	1	313	313	SMEAN(BST1)
7	BST2_1	3	1	313	313	SMEAN(BST2)
8	BST3_1	2	1	313	313	SMEAN(BST3)
9	BST4_1	2	1	313	313	SMEAN(BST4)
10	BST5_1	3	1	313	313	SMEAN(BST5)
11	BST6_1	3	1	313	313	SMEAN(BST6)
12	BST7_1	3	1	313	313	SMEAN(BST7)
13	BST8_1	4	1	313	313	SMEAN(BST8)
14	BST9_1	2	1	313	313	SMEAN(BST9)
15	BST10_1	4	1	313	313	SMEAN(BST10)
16	BST11_1	3	1	313	313	SMEAN(BST11)
17	BST12_1	3	1	313	313	SMEAN(BST12)
18	ESQ2_1	4	1	313	313	SMEAN(ESQ2)
19	ESQ3_1	4	1	313	313	SMEAN(ESQ3)
20	ESQ4_1	1	1	313	313	SMEAN(ESQ4)
21	ESQ6_1	4	1	313	313	SMEAN(ESQ6)
22	ESQ7_1	2	1	313	313	SMEAN(ESQ7)
23	ESQ8_1	2	1	313	313	SMEAN(ESQ8)
24	MKT1_1	1	1	313	313	SMEAN(MKT1)
25	MKT2_1	2	1	313	313	SMEAN(MKT2)
26	MKT3_1	3	1	313	313	SMEAN(MKT3)
27	MKT4_1	1	1	313	313	SMEAN(MKT4)
28	MKT5_1	2	1	313	313	SMEAN(MKT5)
29	OPF1_1	3	1	313	313	SMEAN(OPF1)
30	OPF2_1	4	1	313	313	SMEAN(OPF2)
31	OPF3_1	3	1	313	313	SMEAN(OPF3)
32	OPF4_1	3	1	313	313	SMEAN(OPF4)
33	OPF5_1	6	1	313	313	SMEAN(OPF5)
34	OPF6_1	2	1	313	313	SMEAN(OPF6)
35	OPF7_1	2	1	313	313	SMEAN(OPF7)

36	OPF8_1	7	1	313	313	SMEAN(OPF8)
37	OPF9_1	8	1	313	313	SMEAN(OPF9)
38	OPF10_1	1	1	313	313	SMEAN(OPF10)
39	OPF11_1	3	1	313	313	SMEAN(OPF11)
40	OPF12_1	1	1	313	313	SMEAN(OPF12)
41	OPF13_1	4	1	313	313	SMEAN(OPF13)
42	OPF14_1	4	1	313	313	SMEAN(OPF14)
43	OPF15_1	4	1	313	313	SMEAN(OPF15)
44	RDC1_1	3	1	313	313	SMEAN(RDC1)
45	RDC2_1	3	1	313	313	SMEAN(RDC2)
46	RDC3_1	2	1	313	313	SMEAN(RDC3)
47	RDC4_1	3	1	313	313	SMEAN(RDC4)
48	TEC3_1	2	1	313	313	SMEAN(TEC3)
49	TEC4_1	3	1	313	313	SMEAN(TEC4)
50	TEC5_1	4	1	313	313	SMEAN(TEC5)



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APPENDIX C

Reliability for all variables

Reliability Statistics for Access to finance

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.908	.910	6

Reliability statistics for Cost leadership strategy

Cronbach's Alpha	Cronbach's Alpha based on standardized items	Number of items
0.932	0.933	6

Reliability statistics for differentiation strategy

Cronbach's Alpha	Cronbach's Alpha based on standardized items	Number of items
0.927	0.928	6

Reliability statistics for electricity service reliability

Cronbach's alpha	Cronbach's alpha based on standardized items	Number of items
0.920	0.921	4

Reliability statistics for electricity service responsiveness

Cronbach's alpha	Cronbach's alpha based on standardized items	Number of items
0.850	0.853	4

Reliability Statistics for Marketing capabilities

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.930	.934	5

Reliability Statistics for Organizational performance

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.945	.945	9

Reliability Statistics for Research and development capabilities

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.914	.915	4

Reliability Statistics for Technological capabilities

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.884	.886	5

APPENDIX D

VALIDITY TEST FOR ALL VARIABLES

Factor analysis for Access to finance (ATF)

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.850
Bartlett's Test of Sphericity	Approx. Chi-Square
	1224.883
	Df
	15
	Sig.
	.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.154	69.225	69.225	4.154	69.225	69.225
2	.536	8.941	78.166			
3	.520	8.663	86.829			
4	.364	6.074	92.903			
5	.263	4.387	97.290			
6	.163	2.710	100.000			

Extraction Method: Principal Component Analysis.

Communalities

	Initial	Extraction
ATF1	1.000	.762
ATF2	1.000	.816
ATF3	1.000	.799
ATF4	1.000	.705

Extraction Method: Principal Component Analysis.

Factor analysis for cost leadership strategy (CLS)

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.889
Bartlett's Test of Sphericity	Approx. Chi-Square	1479.524
	df	15
	Sig.	.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.492	74.870	74.870	4.492	74.870	74.870
2	.462	7.701	82.571			
3	.357	5.953	88.524			
4	.304	5.059	93.584			
5	.239	3.991	97.575			
6	.146	2.425	100.000			

Communalities

	Initial	Extraction
CLS1	1.000	.776
CLS2	1.000	.793
CLS3	1.000	.809
CLS4	1.000	.760
CLS5	1.000	.669
CLS6	1.000	.686

Extraction Method: Principal Component Analysis.

Factor analysis for differentiation strategy

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.898
Bartlett's Test of Sphericity	Approx. Chi-Square	1414.409
	df	15
	Sig.	.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.423	73.711	73.711	4.423	73.711	73.711
2	.502	8.360	82.071			
3	.388	6.464	88.535			
4	.286	4.774	93.310			
5	.231	3.846	97.155			
6	.171	2.845	100.000			

Extraction Method: Principal Component Analysis.

Communalities

	Initial	Extraction
DFS1	1.000	.675
DFS2	1.000	.800
DFS3	1.000	.795
DFS4	1.000	.756
DFS5	1.000	.725
DFS6	1.000	.672

Extraction Method: Principal Component Analysis.

Factor analysis for electricity reliability (REL)

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.826
Bartlett's Test of Sphericity	Approx. Chi-Square	952.218
	df	6
	Sig.	.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.233	80.837	80.837	3.233	80.837	80.837
2	.382	9.559	90.396			
3	.223	5.573	95.968			
4	.161	4.032	100.000			

Extraction Method: Principal Component Analysis.

Communalities

	Initial	Extraction
REL1	1.000	.827
REL2	1.000	.839
REL3	1.000	.839
REL4	1.000	.729

Extraction Method: Principal Component Analysis.

Factor analysis for electricity responsiveness (RSP)

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.786
Bartlett's Test of Sphericity	Approx. Chi-Square	539.710
	df	6
	Sig.	.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.778	69.452	69.452	2.778	69.452	69.452
2	.535	13.385	82.837			
3	.395	9.881	92.718			
4	.291	7.282	100.000			

Extraction Method: Principal Component Analysis.

Communalities

	Initial	Extraction
RSP1	1.000	.724
RSP2	1.000	.694
RSP3	1.000	.734
RSP4	1.000	.626

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.423	73.711	73.711	4.423	73.711	73.711
2	.502	8.360	82.071			
3	.388	6.464	88.535			
4	.286	4.774	93.310			
5	.231	3.846	97.155			
6	.171	2.845	100.000			

Extraction Method: Principal Component Analysis.

Factor analysis for marketing capabilities (MKT)

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.846
Bartlett's Test of Sphericity	Approx. Chi-Square	1370.771
	df	10
	Sig.	.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.956	79.129	79.129	3.956	79.129	79.129
2	.464	9.288	88.417			
3	.274	5.483	93.900			
4	.183	3.654	97.554			
5	.122	2.446	100.000			

Extraction Method: Principal Component Analysis.

Communalities

	Initial	Extraction
MKT1	1.000	.783
MKT2	1.000	.830
MKT3	1.000	.839
MKT4	1.000	.771
MKT5	1.000	.733

Extraction Method: Principal Component Analysis.

Factor analysis for research and development capabilities (RDC)

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.774
Bartlett's Test of Sphericity	Approx. Chi-Square
	945.990
	Df
	6
	Sig.
	.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.189	79.736	79.736	3.189	79.736	79.736
2	.443	11.074	90.810			
3	.225	5.619	96.429			
4	.143	3.571	100.000			

Extraction Method: Principal Component Analysis.

Communalities

	Initial	Extraction
RDC1	1.000	.770
RDC2	1.000	.843
RDC3	1.000	.807
RDC4	1.000	.769

Extraction Method: Principal Component Analysis.

Factor analysis for organizational performance (OPF)

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.953
Bartlett's Test of Sphericity	Approx. Chi-Square
	2137.859
	df
	36
	Sig.
	.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.252	69.468	69.468	6.252	69.468	69.468
2	.462	5.132	74.601			
3	.436	4.847	79.448			
4	.411	4.569	84.017			
5	.366	4.068	88.085			
6	.344	3.817	91.902			
7	.298	3.315	95.217			
8	.242	2.693	97.911			
9	.188	2.089	100.000			

Extraction Method: Principal Component Analysis.

Communalities

	Initial	Extraction
OPF3	1.000	.799
OPF5	1.000	.664
OPF6	1.000	.687
OPF7	1.000	.638
OPF8	1.000	.655
OPF9	1.000	.674
OPF10	1.000	.667
OPF12	1.000	.707
OPF13	1.000	.762

Extraction Method: Principal Component Analysis.

Factor analysis for technological capabilities (TEC)

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.799
Bartlett's Test of Sphericity	Approx. Chi-Square	918.010
	Df	10
	Sig.	.000

Total Variance Explained

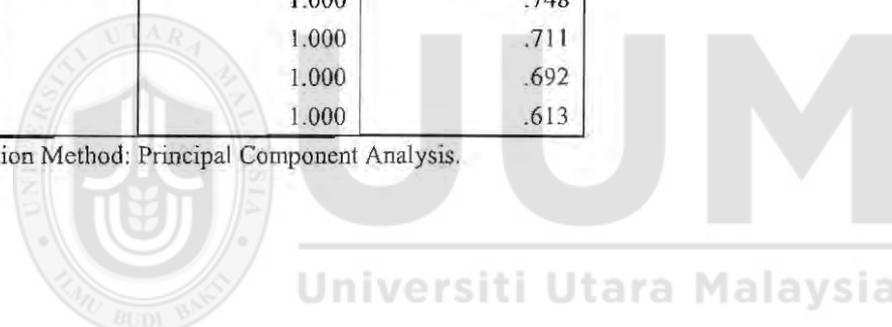
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
	1	3.440	68.804	68.804	3.440	68.804
2	.689	13.779	82.583			
3	.408	8.169	90.752			
4	.279	5.578	96.330			
5	.183	3.670	100.000			

Extraction Method: Principal Component Analysis.

Communalities

	Initial	Extraction
TEC1	1.000	.677
TEC2	1.000	.748
TEC3	1.000	.711
TEC4	1.000	.692
TEC5	1.000	.613

Extraction Method: Principal Component Analysis.



APPENDIX E

Multiple Regression Analysis

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.896 ^a	.802	.799	.71481	.802	246.019	5	303	.000	1.918

a. Predictors: (Constant), M, MMKT, MTEC, MCLS, MRD

b. Dependent Variable: MOPF1

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	628.520	5	125.704	246.019	.000 ^b
	Residual	154.819	303	.511		
	Total	783.339	308			

a. Dependent Variable: MOPF1

b. Predictors: (Constant), M, MMKT, MTEC, MCLS, MRD

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	-.039	.165		-.236	.814		
	MRD	.256	.071	.243	3.609	.000	.143	6.973
	MTEC	.137	.051	.104	2.672	.008	.432	2.316
	MMKT	.043	.028	.040	1.499	.135	.931	1.074
	MCLS	.083	.068	.079	1.223	.222	.158	6.331
	M	.534	.078	.506	6.890	.000	.121	8.278

APPENDIX F
Hierarchical Moderating Analyses for access to finance (ATF)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.896 ^a	.802	.799	.71481	.802	246.019	5	303	.000
2	.897 ^b	.804	.800	.71285	.002	2.670	1	302	.103
3	.901 ^c	.812	.805	.70487	.008	2.375	5	297	.039

a. Predictors: (Constant), MTEC, MMKT, MCLS, MRD, M

b. Predictors: (Constant), MTEC, MMKT, MCLS, MRD, M, MATF

c. Predictors: (Constant), MTEC, MMKT, MCLS, MRD, M, MATF, ATF.MKT, ATF.TEC, ATF.CLS, ATF.RDC, ATF.DFS

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	628.520	5	125.704	246.019	.000 ^b
	Residual	154.819	303	.511		
	Total	783.339	308			
2	Regression	629.877	6	104.980	206.591	.000 ^c
	Residual	153.462	302	.508		
	Total	783.339	308			
3	Regression	635.778	11	57.798	116.332	.000 ^d
	Residual	147.561	297	.497		
	Total	783.339	308			

a. Dependent Variable: MOPF1

b. Predictors: (Constant), MTEC, MMKT, MCLS, MRD, M

c. Predictors: (Constant), MTEC, MMKT, MCLS, MRD, M, MATF

d. Predictors: (Constant), MTEC, MMKT, MCLS, MRD, M, MATF, ATF.MKT, ATF.TEC, ATF.CLS, ATF.RDC, ATF.DFS

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.039	.165		-.236	.814
	MCLS	.083	.068	.079	1.223	.222
	M	.534	.078	.506	6.890	.000
	MMKT	.043	.028	.040	1.499	.135
	MRD	.256	.071	.243	3.609	.000
	MTEC	.137	.051	.104	2.672	.008
2	(Constant)	-.066	.165		-.398	.691

MCLS	.031	.075	.029	.417	.677
M	.519	.078	.491	6.650	.000
MMKT	.026	.030	.024	.862	.389
MRD	.243	.071	.232	3.429	.001
MTEC	.132	.051	.101	2.590	.010
MATF	.106	.065	.091	1.634	.103
3 (Constant)	1.214	.418		2.902	.004
MCLS	.092	.284	.087	.324	.746
M	.530	.283	.502	1.875	.062
MMKT	-.119	.070	-.111	1.690	.092
MRD	.001	.259	.001	.005	.996
MTEC	.044	.264	.033	.166	.868
MATF	-.333	.149	-.286	2.228	.027
ATF.CLS	-.010	.063	-.063	-.160	.873
ATF.DFS	-.012	.062	-.073	-.185	.853
ATF.MKT	.054	.023	.325	2.344	.020
ATF.RDC	.057	.057	.356	1.000	.318
ATF.TEC	.030	.057	.136	.524	.601

a. Dependent Variable: MOPF1

Hierarchical Moderation Analysis for electricity reliability (REL)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.896a	.802	.799	.71481	.802	246.019	5	303	.000
2	.896b	.802	.798	.71597	.000	.017	1	302	.898
3	.900c	.811	.804	.70675	.008	2.587	5	297	.026

a. Predictors: (Constant), MTEC, MMKT, MCLS, MRD, M

b. Predictors: (Constant), MTEC, MMKT, MCLS, MRD, M, MREL

c. Predictors: (Constant), MTEC, MMKT, MCLS, MRD, M, MREL, REL.CLS, REL.TEC, REL.MKT, REL.RDC, REL.DFS

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	628.520	5	125.704	246.019	.000 ^b
Residual	154.819	303	.511		
Total	783.339	308			

2	Regression	628.529	6	104.755	204.353	.000 ^c
	Residual	154.810	302	.513		
	Total	783.339	308			
3	Regression	634.990	11	57.726	115.571	.000 ^d
	Residual	148.348	297	.499		
	Total	783.339	308			

a. Dependent Variable: MOPF1

b. Predictors: (Constant), MTEC, MMKT, MCLS, MRD, M

c. Predictors: (Constant), MTEC, MMKT, MCLS, MRD, M, MREL

d. Predictors: (Constant), MTEC, MMKT, MCLS, MRD, M, MREL, REL.CLS, REL.TEC, REL.MKT, REL.RDC, REL.DFS

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.039	.165		-.236	.814
	MCLS	.083	.068	.079	1.223	.222
	M	.534	.078	.506	6.890	.000
	MMKT	.043	.028	.040	1.499	.135
	MRD	.256	.071	.243	3.609	.000
	MTEC	.137	.051	.104	2.672	.008
2	(Constant)	-.088	.420		-.211	.833
	MCLS	.087	.075	.082	1.164	.245
	M	.535	.078	.507	6.863	.000
	MMKT	.044	.032	.041	1.404	.161
	MRD	.255	.071	.243	3.588	.000
	MTEC	.137	.051	.104	2.669	.008
	MREL	.006	.049	.006	.129	.898
3	(Constant)	-2.358	.836		-2.819	.005
	MCLS	.186	.191	.176	.972	.332
	M	.231	.201	.219	1.152	.250
	MMKT	.399	.122	.372	3.282	.001
	MRD	.495	.185	.471	2.670	.008
	MTEC	.232	.175	.176	1.321	.187
	MREL	.418	.142	.385	2.935	.004
	REL.CLS	-.028	.052	-.072	-.546	.586
	REL.DFS	.088	.056	.233	1.570	.117
	REL.MKT	-.068	.023	-.351	-2.979	.003
	REL.RDC	-.067	.050	-.190	-1.336	.183
	REL.TEC	-.015	.050	-.040	-.310	.757

a. Dependent Variable: MOPF1

Hierarchical Moderating Analysis for electricity responsiveness (RSP)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.896 ^a	.802	.799	.71481	.802	246.019	5	303	.000
2	.896 ^b	.802	.798	.71599	.000	.001	1	302	.973
3	.901 ^c	.812	.805	.70370	.010	3.129	5	297	.009

a. Predictors: (Constant), MTEC, MMKT, MCLS, MRD, M

b. Predictors: (Constant), MTEC, MMKT, MCLS, MRD, M, MRSP

c. Predictors: (Constant), MTEC, MMKT, MCLS, MRD, M, MRSP, RSP.DFS, RSP.MKT, RSP.TEC, RSP.RDC, RSP.CLS

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	628.520	5	125.704	246.019	.000 ^b
	Residual	154.819	303	.511		
	Total	783.339	308			
2	Regression	628.521	6	104.753	204.340	.000 ^c
	Residual	154.818	302	.513		
	Total	783.339	308			
3	Regression	636.268	11	57.843	116.809	.000 ^d
	Residual	147.071	297	.495		
	Total	783.339	308			

a. Dependent Variable: MOPF1

b. Predictors: (Constant), MTEC, MMKT, MCLS, MRD, M

c. Predictors: (Constant), MTEC, MMKT, MCLS, MRD, M, MRSP

d. Predictors: (Constant), MTEC, MMKT, MCLS, MRD, M, MRSP, RSP.DFS, RSP.MKT, RSP.TEC, RSP.RDC, RSP.CLS

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.039	.165		-.236	.814
	MCLS	.083	.068	.079	1.223	.222
	M	.534	.078	.506	6.890	.000
	MMKT	.043	.028	.040	1.499	.135
	MRD	.256	.071	.243	3.609	.000
	MTEC	.137	.051	.104	2.672	.008
2	(Constant)	-.025	.427		-.060	.953

MCLS	.082	.073	.078	1.121	.263
M	.534	.078	.506	6.847	.000
MMKT	.042	.030	.039	1.427	.155
MRD	.255	.071	.243	3.601	.000
MTEC	.137	.051	.104	2.666	.008
MRSP	-.002	.052	-.002	-.034	.973
3 (Constant)	-2.463	.889		-2.769	.006
MCLS	-.106	.240	-.100	-.440	.660
M	.381	.248	.361	1.536	.126
MMKT	.441	.129	.411	3.415	.001
MRD	.356	.203	.339	1.752	.081
MTEC	.622	.200	.473	3.116	.002
MRSP	.458	.154	.392	2.981	.003
RSP.CLS	.052	.058	.139	.893	.373
RSP.DFS	.032	.062	.089	.519	.604
RSP.MKT	-.076	.024	-.416	-3.175	.002
RSP.RDC	-.018	.050	-.052	-.355	.723
RSP.TEC	-.124	.053	-.326	-2.358	.019

a. Dependent Variable: MOPF1



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