



Strategic Foresight and Cost Effective Leadership in Organizations:

A Case Study of the UAE Manufacturing Sector

الاستشراف الاستراتيجي والقيادة الفعالة من حيث التكلفة في المؤسسات:
دراسة حالة عن قطاع التصنيع في دولة الإمارات العربية المتحدة

by

REEM MOHAMMED AL HARANKI AL MARZOOQI

**A thesis submitted in partial fulfilment
of the requirements for the degree of
DOCTORATE IN BUSINESS ADMINISTRATION (DBA)**

at

The British University in Dubai

June 2023

الجامعة
البريطانية في
دبي



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DECLARATION

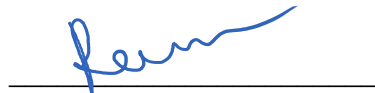
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ABSTRACT (in English)

The current thesis sought to critically investigate the not-so-common relationship between strategic foresight and costs saving leadership practices in manufacturing organizations in the UAE. The lack of previous studies scrutinizing this relationship and the research's hypothesis of the possibility of a relationship between the two constructs provided impulse for the study. The aim was to justify whether there is a relationship between strategic foresight and cost savings in manufacturing organizations and use this knowledge, if affirmative, to come forth with a framework for the effective application of strategic foresight on costs savings efforts in manufacturing companies in UAE. The methodological approach adopted for the research was deductive based on the positivist philosophy, using a survey questionnaire to collect quantitative data from a sample of the population.

Analysis of the data gathered was conducted using structural equation modeling (SEM) critical path analysis via SPSS AMOS v.26. The results from the critical path analysis of the structural model revealed a strong relationship between strategic foresight and costs savings approaches. This confirmed the hypothesis of the study that there is a relationship between strategic foresight and cost saving leadership efforts in manufacturing organizations. Other relationships between sub-constructs in the study were also tested and the study was able to culminate with the development of a model for the integrated successful application for strategic foresight on cost savings efforts in the manufacturing sector in the UAE. A framework for the effective application of strategic framework on cost saving efforts in manufacturing companies in the UAE was developed that would assist manufacturing companies in effectively managing their costs through the application of strategic foresight tools. The broad base nature of the research was identified as one of its major limitations and recommendations were made that

future studies should focus efforts on one manufacturing organization while actually studying the quanta of costs savings that can be arrived at through application of strategic foresight.

Keywords: Strategic foresight, cost savings, strategic management, manufacturing sector UAE

ABSTRACT (in Arabic)

سعت الدراسة الحالية إلى بحث العلاقة غير الشائعة بين الاستشراف الاستراتيجي والممارسات القيادية الموفرة للتكاليف في مؤسسات التصنيع في الإمارات العربية المتحدة، وما دفع الباحث إلى إعداد هذه الدراسة هو عدم وجود دراسات سابقة تمحص هذه العلاقة وهذه الفرضية المتعلقة بإمكانية وجود علاقة بين هذين العاملين، حيث تمثل الهدف منها في تبرير ما إذا كانت هناك علاقة بين الاستشراف الاستراتيجي وتحقيق توفير في التكاليف في مؤسسات التصنيع، واستغلال هذه العلاقة -إن ثبتت- للتوصل إلى إطار للتطبيق الفعال للاستشراف الاستراتيجي على جهود توفير التكاليف في شركات التصنيع في الإمارات العربية المتحدة، وقد كان المنهج المتبع في البحث استنتاجياً مبنياً على الفلسفة الوضعية، باستخدام استبيان استقصائي لجمع البيانات الكمية من عينة من أفراد المجتمع.

SPSS AMOS أجري تحليل للبيانات التي جمعت باستخدام تحليل المسار الحرج لنموذج المعادلة الهيكلية من خلال برنامج 26. كشفت نتائج تحليل المسار الحرج لنموذج المعادلة الهيكلية عن وجود علاقة قوية بين الاستشراف الاستراتيجي ونهج v توفير التكاليف بدرجة ترجيح لمعامل الانحدار قدرها عند القيمة الاحتمالي . وهذا يؤكد فرضية الدراسة بأن هناك علاقة بين الاستشراف الاستراتيجي ونهج القيادة الموفر للتكاليف في مؤسسات التصنيع. وكذلك، عملت الدراسة على اختبار العلاقات الأخرى بين العوامل الفرعية في الدراسة، واستطاعت أن تتوصل إلى تطوير نموذج للتطبيق الناجح المتكامل للاستشراف الاستراتيجي على جهود توفير التكاليف في قطاع التصنيع في دولة الإمارات العربية المتحدة، مع تطوير إطار للتطبيق الفعال للإطار الاستراتيجي على جهود توفير التكاليف في شركات التصنيع في دولة الإمارات، والذي من شأنه أن يساعد شركات التصنيع في إدارة التكاليف إدارة فعالة من خلال تطبيق أدوات الاستشراف الاستراتيجي. وقد وجد أن اتساع قاعدة البحث قد شكل واحداً من أهم أوجه القصور، حيث قدمت الدراسة توصيات بأن تركز الدراسات المستقبلية الجهود على شركة تصنيع واحدة وأن تدرس فعلياً مقدار وفورات التكاليف التي يمكن تحقيقها من خلال تطبيق الاستشراف الاستراتيجي.

الكلمات المفتاحية: الاستشراف الاستراتيجي - توفير التكاليف - الإدارة الإستراتيجية - قطاع التصنيع في دولة الإمارات.

DEDICATION

I'm dedicating this dissertation to God Almighty, who gave me strength, ideas, wisdom, knowledge, and understanding. He has strengthened me throughout this journey.

This thesis is dedicated to my dear people who have meant and still mean the world to me. My loving husband, who has always been there for me and made sure I did everything I could to finish what I started. I want to thank my husband from the bottom of my heart, for his support in reaching my goals and given me the time and space to work towards attaining my Doctorate.

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Chapter 1 Introduction

1.1 Introduction

The development of knowledge in the field of strategic management of organizations and its importance to exemplary organizational performance has permeated management practice and studies for a considerable time now. There have been different angles to strategic management that have emerged as sub-perspectives of the parent notion. This study is concerned with the angle of strategic foresight which as preliminary evidence hints, is related to the effective management of business prospects in anticipation of market trends, changes and volatilities (Adegbile, Sarpong and Meissner, 2017). A quick review into the research on strategic management of organizational activities shows that, strategic foresight is one of the least considered tenets of strategic management (Laan, 2008; Adegbile et al., 2017). Laan (2008), cites the deficiency in knowledge and application of strategic foresight and notes that it emanates from the four-element basic consideration of strategic management to include environmental scanning, strategy formulation, strategy implementation and evaluation.

According to Laan (2008), while strategic management is generally understood and applied by management professionals globally, there is evident lack of understanding amongst practitioners of how strategic management is related to strategic thinking and strategic foresight as independent tenets to the former. This position is further advocated for by recent scholars in the field of business strategy, who make it clear that strategic foresight is an imperative to strategic thinking (Durand et al., 2016). Further research asserts that all efforts of strategic management are based on strategic foresight which, therefore, makes it necessary upon any

organizational leader to develop, pursue and harness the capabilities of strategic foresight in an effort to effectively lead the organization forward (Trigeorgis & Reuer, 2016; Durand, Grant, & Madsen, 2016). Concurrent evidence of research from Adegbile et al. (2017), mentions that in the tumultuous market environment, the skill of anticipating different probabilities is critical to organizational success. The above cited scholars are in agreement that strategic management is underlined by strategic foresight despite the fact that it may be unknown to business management and strategy practitioners owing to paucity in literature (Laan, 2008; Trigeorgis and Reuer, 2016, Durand et al., 2016; Adegbile et al., 2017). Deductively therefore, it is noted that strategic foresight is an underlying concept that prompts success during strategic management activities. The paucity in the literature on strategic foresight and the fact that the term is mainly found in studies on strategic management as a precursor to the same, as opposed to an independent tenet of strategic management, provide justification for present study

While research repositories are arguably replete with evidence of research on strategic management, this research notes that there is potential knowledge lacuna in terms of exploration of strategic foresight. One reason jointly acknowledged by Laan (2008) and Adegbile et al. (2017) is the fact that strategic foresight is an abstract and philosophical strategic management component. Therefore, it is probably only possible to establish the strength and importance of strategic foresight through studying its connection to another important interest of strategic business management. To counter the foregoing statement and establish a strong research that will put a spotlight on strategic foresight as a distinctive strategic management tenet, the current research elects to study the relationship between strategic foresight and costs effective management practices. Cost effective management practices also interchangeably referred in

the current study as cost savings and/or cost cutting strategies have been selected to study alongside strategic foresight because they represent arguably one of the most important preoccupation of management practice since the advent of industrialization all the way to post-industrialist capitalist societies' activities.

With the above understanding therefore, the current research will investigate the relationship between strategic foresight and cost-effective leadership in the cross-industrial context of the manufacturing sector in the UAE. The gist of the investigation is to establish the importance of strategic foresight in strategic management of costs in manufacturing organizations and by extension, all other organizations. The paucity in literature as seen in the brief preliminary investigations into strategic foresight as a tenet of strategic management provides this research with a novel opportunity to effectively contribute to the understanding and consequential use of strategic foresight in planning in the capital-intensive manufacturing sector organizations especially, in view of the market-inherent volatilities, uncertainties, complexities and ambiguities (VUCA environment). While taking note of the paucity as far as expounding understanding of strategic foresight in extant literature is concerned, the current study acknowledges the efforts and works of previous scholars in illuminating the sphere of strategic foresight. Apart from Laan (2008), Durand et al., (2016), Trigeorgis and Reuer (2016) and Adegbile et al. (2018) who have been cited in buttressing the introductory observations of the current study, the research also acknowledges recent works of scholars including but not limited to Andresen et al., (2022), Fagnani et al. (2022) and Wenzel (2022) all whom will be consulted and regularly referred to throughout the research for their wealth of information

regarding strategic foresight, its complexities and areas of integrative implementation in the organization.

1.2 Motivation of the Researcher

The current research is triggered by a number of motivations on the part of the researcher, top among which is the professional experience of the researcher. Currently, the author is involved in the national housing program for the Government of the UAE, which ideally keeps her in proximity with operations of great costs. Through experience, the researcher notes that even though most of the requirements for instance, materials for different projects groundbreaking, continuation or finishing, are fulfilled, there is always a continuum of rising costs. These is despite the fact that bulk purchases are the order of the day which ideally should help to reduce or minimize the rising costs based on the doctrine of economies of scale. To this extent therefore, the researcher is motivated to mount an in-depth investigation of how to utilize strategic foresight to enhance and foster positive outcomes on the efforts of cost savings in the construction industry.

The research is convinced that with contemporary technology-centric construction and construction manufacturing industry operations, the construction and construction material manufacturing industry is one of the critical manufacturing sectors especially in an economy like the UAE where the construction industry enjoys a sustained boom (Mpofu, Ochieng, Moobela, & Pretorius, 2017; El Sayegh, Manjikian, Ibrahim, & Abouelyousr, 2018). This therefore presents an opportunity to utilize strategic foresight to understand the manufacturing costs involved in the manufacturing of construction materials required for the completion of

construction projects. According to research, the current construction industry presents better opportunities to manage costs than the traditional construction industry where the use of technology was sparse (Mpofu et al., 2017). Nonetheless, typical costs management efforts and strategies have not been effective and for this reason, the researcher has been witnessed to rising costs from project after project despite at times projects bearing fundamental similarities. Some of the causing factors of rising costs and consequent delays in construction projects in the UAE, as professionally experienced and repeatedly documented, include poor labor choices, poor productivity, contractor laxity, unrealistic contractual timelines, change in materials costs and supplier delays or inabilities to deliver among others (Mpofu et al., 2017; El-Sayegh et al., 2018; Zahmak, Ghannam, & Nofal, 2020). With practical knowledge and understanding, it dawns on the researcher that probably, a different method and approach towards costs savings in the construction industry is the only way to achieve costs savings. The researcher is motivated that cost savings hereby can be achieved through application of strategic foresight.

The second motivation of the researcher is the entire UAE manufacturing industry which plays a critical role to the economy of the UAE. According to evidence from the Department of Economic Development (DED) (2019), the manufacturing sector of the UAE contributed a collective sum of AED 122 billion to the UAE GDP in 2018. This accounts for about 10% of the GDP for the year 2018 which places the manufacturing sector of the UAE at the center of the economic prosperity of the UAE especially when considering the non-oil economy of the UAE. To this extent therefore, the author, holds a conviction that there is need to play a role through research, on resources management improvement in the UAE manufacturing industry as a whole. This is because, the study in its attempts, will bring forth knowledge that would

contribute to better management of the resources of the UAE, making it better placed to compete with other countries globally through costs savings and resource optimization.

The third motivation is further cemented by the changing tides in the economic environment for instance the recent global pandemic of COVID-19, which destabilized businesses and resulted in skyrocketing costs in different industries. Owing to the high-level contribution of the UAE manufacturing sector to the country's economy, the researcher is motivated to investigate the cross-industry case of the UAE manufacturing sector based on the concern that, if the manufacturing industries do not have the proper strategic foresight capabilities to costs savings, then they will not be able to survive the VUCA market environment. The stem of the concern is the fact that the manufacturing sector operations across industries are all capital-intensive. This makes cost saving and management very important especially in light of destabilizing occurrences like the COVID-19 global pandemic. Evidence of research on the pandemic reports that the global supply chain was severely disrupted and therefore costs of raw materials went up for each industry (Deloitte 2020).

Subject to the above occurrence, research from Deloitte (2020) reports that global manufacturing industries will have to really reflect on their future planning and preparability. Despite the fact that the disaster hit all sectors of the global economy by surprise, the researcher is convinced that better strategic foresight and scenario planning would have helped organizations remain resilient in situations such as these. This, is agreed by Deloitte (2020) research which categorically informs that even if bail out plans are arranged for organizations, those that do not take up this with a cautious look into the future would be susceptible to failure as soon as the next market volatility strikes. In the case of the UAE, there are many

manufacturing industries and the researcher is motivated to conduct an intensive study of how strategic foresight can be used to enhance the ability of manufacturing organizations to manage their resources through effective cost-management and costs-change anticipation techniques. These techniques, according to the researcher, would be instrumental in case of uncertain occurrences – meaning that manufacturing organizations would typically have enough to sustain their operations. On the other hand, the application of strategic foresight would provide an opportunity for preparation and necessary adjustments to ensure adaptation to new economic situations as they unravel.

1.3 Research Background

The premise of the current study is the manufacturing industry in the UAE as a whole. The manufacturing industry in the UAE accounts for 10% of the GDP of the UAE and is the fourth largest contributor to the GDP (DED, 2019; Gov.ae, 2019). This makes it a very important facet of the economic wheel of the UAE, which in turn makes a study on the manufacturing industry's resilience in times of turmoil and uncertainty very critical and timely. The current study believes that a comprehensive review of the manufacturing industries performance and value is critical to foster proper understanding of the importance of strategic management of costs in this industry. So far, there is no doubt that the UAE has a strong and valuable manufacturing industry across different sectors and that the government, has put in place robust efforts to establish an enabling environment for the operation of local as well as global manufacturing industries (DED, 2019; Gov.ae, 2019).

Despite the optimism on the part of the leadership and the robustness of policy to support healthy inter-sector industrial development, the research develops from the backdrop of the missed insight on the part of practitioners and academia to connect the innovative strategies and approaches in the manufacturing sector to resilient measures for the management of costs amid economic volatility occasioned by among other things the global health pandemic, which crippled manufacturing operations in multiple places globally through supply chain disruptions and exposed the high vulnerability levels of the manufacturing industry.

1.4 Definitions of Strategic Foresight, Cost Savings and their Touchpoints

Considering the need for clarity in understanding the terms of research, prior to proceeding with the delineation of the research aim, objectives and questions, it behooves the research to present the definitions of the main terms of the research – strategic foresight and costs savings.

Strategic foresight – While there are numerous definitions of strategic foresight occasioned by the rapidity of the growth of the field of knowledge around strategic foresight as will be seen later on in the extended review of literature, the current research’s working definition for strategic foresight comes from Kononiuk, Sacio-szymanska, and Gaspar (2017) who define strategic foresight as all the organizational activities that entail undertaking an environmental scanning, development of final choice of strategic options, and integration of capabilities that enable a firm to detect any discontinuous changes in a timely manner for determination of consequences and immediate implementation of mitigation strategies.

Costs savings – Costs savings as a management term has been used in organizations since time immemorial and therefore, as in the case of strategic foresight, multiple definitions evolved as different scholars attempted interrogation and deconstruction of the term to find its meaning. Accordingly, for the current study, the working definition of the term costs savings is presented by Mahfod et al. (2017) who define costs savings as a strategy that firms deploy to develop competitive advantage over competitors by gaining market share based on reduced cost of products or services which are as a result of internal improvements including streamlined processes and waste reduction among other supporting efforts.

Touchpoints – Based on the individual working definitions of the primary constructs of the current study as captured above, several things are clear. One is that strategic foresight is concerned with the external environment with the aim of examining, identifying and acting on any discontinuities and/or shocks based on an integration of a raft of internal strategic options. The second one is that costs savings, is an internal strategic approach of ensuring that the costs of products and services remain low and competitively so to the extent of usurping the market share or guarding ones share to the disadvantage of competitors based on streamlined processes. The third clear insight from the above definitions is the touchpoint between the two constructs – while strategic foresight starts from outside but ventures inside for mitigating strategies in case of foreseen uncertainties and volatilities, costs savings starts inside and ventures outside to competitively secure the market share of an organization respective of external environmental situation. The foregoing therefore implies that strategic foresight and cost savings are interdependent.

The above identification of the interdependence of these two constructs at this early stage in the research is especially critical considering the focus is on manufacturing companies. Deloitte (2020) research noted that manufacturing companies' operations rely on raw materials and tend to be capital intensive. In the recent global health pandemic, the volatility of global supply chains for raw materials was exposed with supply chain disruptions leading to higher costs of raw materials and consequently, finished goods. A combination of strategic foresight and other internal planning and mitigation strategies was suggested by Deloitte (2020) evidence which indicated that, with poor internal planning for aspects like cost changes of raw materials and lack of strategic foresight into the environmental trends, companies across sectors are likely to suffer in the next market volatility. This interdependence of strategic foresight and cost savings as suggested from extant literature based on their definitions (Kononiuk et al., 2017; Mahfod et al., 2017) and their joint importance to organizational success in the VUCA environment as external-internal (strategic foresight) and internal-external (costs savings) organizational strategies (Kononiuk et al., 2017; Mahfod et al., 2017; Deloitte, 2020) is what the current study seeks to explore in the case of UAE manufacturing industry.

1.5 Research Aim, Objectives, and Questions

1.5.1 Aim

The primary aim of this thesis was to conduct an in-depth investigation into the role of strategic foresight and costs savings in promoting productivity, profitability and long-term sustainability in organizations through strategic planning, competition, technology and resource waste reduction in manufacturing industries in the UAE.

1.5.2 Objectives

In pursuing the above aim, the study will seek to fulfill the following objectives:

- Critically investigate the role of strategic foresight and cost-saving approaches in promoting productivity in the manufacturing sector in UAE.
- Determine the impact of strategic foresight and costs savings on the profitability of the manufacturing sector in UAE.
- Examine how strategic foresight and costs savings can be used to promote long-term sustainability in the manufacturing sector in UAE.
- Develop a framework for the effective application of strategic foresight and costs savings as tools for promoting productivity, profitability and long-term sustainability in the UAE manufacturing industry.

1.5.3 Research Questions

- In what ways does strategic foresight and cost savings help in improving productivity in the UAE manufacturing industry?
- What are the impacts of strategic foresight and costs savings on profitability in the UAE manufacturing industry?
- How can strategic foresight be used alongside costs savings approaches to promote long-term sustainability of organizations in the UAE manufacturing industry.
- What is the relationship between strategic foresight and cost-saving approaches in the manufacturing sector in UAE?

- What is the impact of strategic foresight on cost-saving efforts in the manufacturing sector in the UAE?
- What are some of the ways which strategic foresight can be used as a tool for cost-saving in the UAE manufacturing sector?

1.6 The UAE Manufacturing Sector

The critical investigation of the utility of strategic foresight in costs savings in the manufacturing industry is untenable without proper understanding of the sector of operation that the research seeks to study. Therefore, this research deems it imperative to effectively distil knowledge about the UAE manufacturing sector and touch on some of the industries that have a big share of the value of the manufacturing sector of the UAE according to the data earlier shared of the GDP contribution of the sector for the year 2018 (DED, 2019). The research underlines that this knowledge is handy in helping understand the origins of the research and will later come in handy in enforcing the trajectory of the study. The UAE is ranked 41st in the United Nations Industrial Development Organization (UNIDO) Industrial Competitiveness Index (John 2019). This shows that the UAE manufacturing industry is very competitive further providing impetus for the study of strategic foresight ways of how to better its costs efficacy.

Evidence of researcher from the Abu Dhabi Chamber of Commerce and Industry (ADCCI) (2018) reports in concordance with previously cited research from DED (2019) that the manufacturing sector of the UAE accounts for at least 9% of the total GDP of the country. This, the ADCCI report can be attributed to growth strategies laid down by the UAE government that seek to make the country non-reliant on the oil and gas industry revenues. The

diversification efforts of the UAE economy are enshrined in a number of the country's strategic development policies for instance the UAE Vision 2021, Dubai Vision 2021 and Dubai Industrial Strategy 2030, among others which have been noted to greatly improve the innovation of the different other non-oil sectors with the manufacturing sector being a top beneficiary of these strategic plans. Concurrent evidence of literature adds that the UAE manufacturing sector is strongly based on a number of key sectors and rallies closely with hospitality and tourism, and financial sector as the great contributor to the country's GDP (Frost and Sullivan 2018).

The Frost and Sullivan (2018) report covers the Emirate of Dubai and notes categorically that, all across the UAE, the government has made significant effort to shape the future through strategic planning. This notation points out to the efforts of the government to shape the future through laying down of strategies that will help in the careful guidance of events towards desired results. This trend has been witnessed in the Emirate of Abu Dhabi too according to evidence from Abu Dhabi Chamber of Commerce, wherein, an enabling environment including infrastructure and innovation has been put in place to support operations of manufacturing organizations (ADCCI, 2018). It can therefore be attested that, this deliberate government effort to improve operational capacities of industries underpins the different long term strategies of government of the UAE (ADCCI, 2018; DED, 2019; Gov.AE, 2020; Gov.Dubai, 2020). However, to this point, a gap seemingly exists in this preliminary evidence of literature as to any strategic foresighted plans that deal with the cost-effective capabilities for purposes of fostering resilience.

The foregoing can be confirmed by the fact that, while reviewing evidences of research from DED (2019), ADCCI (2018), Frost and Sullivan (2018) and John (2019) on the UAE

economic performance which also cover the performance of individual industries. There is little to no mention of the role of strategic foresight in steering the economy into the future. Apart from this, most of the reports highlights the heavy investments injected by the UAE federal government and the different Emirates local governments for instance Abu Dhabi and Dubai, but without a single mention of strategies to ensure that there is prudent management of the resources thereof. While the current study makes no attempt to investigate governance across projects in the UAE, it highlights that, such heavy investment should be followed by a robust future oriented plan for costs savings and/or costs mitigations in case of change in economic tides. This is where the importance of strategic foresight in supporting and enhancing costs savings approaches come into play. A case in point was the advent of the COVID-19 pandemic in 2020 which stalled businesses globally for at least a whole year. Prior to this, the preparations for the Dubai Expo 2020 were in high gear only to be disrupted significantly. While the occurrence of the pandemic was in no ones control, the current study submits that it is only through strategic foresight that organizations can have multiple scenarios of operations for the mitigation of costs in case of occurrence of a major disruption during the planning of such mega projects. To this extent, considering the overview of the UAE manufacturing industry in general as captured in the previous three paragraphs there is clearly a gap in literature as far as acknowledging and highlighting strategic foresight plans for costs mitigations in UAE manufacturing industries solidly underpinning the need for strategic foresight for costs savings.

1.6.1 Abu Dhabi Manufacturing Industry

The above evidence gap notwithstanding, the statistics of the UAE manufacturing industry are overwhelming and understanding them is essential to understanding how critical it

is for this research to fill up the knowledge gap identified above. According to the ADCCI research, despite the rich oil deposits, the manufacturing industry of Abu Dhabi is thriving and accounts from at least 7% of the Emirates overall GDP. This figure is expected to rise by a solid percentage point to reach 8% by the year 2021. The manufacturing industry was credited by at least 22.6% of Abu Dhabi's gross output in 2016 which is also due for great expansion in the coming years. The growth projections have been attributed to the relentless effort of the government of Abu Dhabi of opening up the Emirate for business and foreign direct investment by leading the way in making capital investments across the Emirate. The ADCCI (2018) research indicates that while the Emirate of Dubai has in the recent years been the ideal investment hub for foreign firms, Abu Dhabi's new plan seeks to open up the whole UAE by significantly supporting investments in the other Emirates while making critical and strategic investments locally.

The strategic approach is enshrined under Abu Dhabi Economic Vision 2030 where the Emirate has earmarked a \$13.6 billion stimulus package for the non-oil sector for the next three years. The manufacturing industry being the third biggest non-oil industry contributor stands to benefit a lot from this but the question remains – will the funds be put in the hands of the best cost-effective leadership who have strategic foresight skills? The heavy investment into the non-oil industry by the Abu Dhabi government is reiterated by further evidence of research which notes that in attempt to diversify and mitigate reliance on the oil and gas industry, the government of Abu Dhabi has strengthened its resolved to support alternative industries (Oxford Business Group 2016). The Oxford Business Group report shares some important notions of how the Emirate of Abu Dhabi seeks to strengthen its manufacturing industry. Among the ways

which this is to be achieved include the development of industrial free zones like Khalifa Industrial Zone Abu Dhabi (KIZAD) and ZonesCorp. The Emirate is also hailed for strengthening the capacity and mandate of the Industrial Development Bureau (IDB).

OBG (2018) report indicates that the IDB has certain mandate which helps the Abu Dhabi emirate to effectively manage the strategy towards diversification. One of the mandate is the laying down of the framework towards industrial development through the establishment of industrial zones which attract foreign investments. Some of the prominent and fully functional industrial zones include the KIZAD and the ZonesCorp. For instance the KIZAD is outlined to be opening up the local manufacturing industry to a reach of 4.5 billion people globally. The targeted manufacturing sectors to benefit from this free zone include the food packaging and processing, healthcare equipment and pharmaceuticals and metal and construction equipment industries all of which are present in Abu Dhabi. On the other hand, ZonesCorp which has been established as the free zone entity and location for specialized industries has robust manufacturing industries operations that currently make up half of the Emirates manufacturing GDP. Some of the specialized manufacturing industries that benefit from the ZonesCorp free trading arrangement include food processing and packaging, textiles, construction and high technology equipment and chemicals among others.

1.6.2 Dubai Manufacturing Industry

The manufacturing industry in Dubai is none the lesser robust. According to evidence of research, the manufacturing industry enjoys governmental support across the board. Like in the case of Abu Dhabi, Frost and Sullivan (2018) economic report indicates that the manufacturing

industry tops among the five biggest contributors to the Emirates GDP. From 2016, the sector has displayed a promising growth trajectory by maintaining a growth rate of over 3.6% and contributing to 10% of Dubai's GDP. The projections of the sector indicate that by 2030, the sector will be accounting for at least AED 70 million expenditure on R&D while creating more than 27,000 specialized jobs. In terms of GDP contribution, the sector has a projected growth value of AED 18 billion. Frost and Sullivan indicate that the Dubai market has been an attractive destination for manufacturing enterprises and the registration department of the government of Dubai businesses recorded a steady rise in the number of registration requests for manufacturing related organizations of 3% between the years of 2011 and 2016. This steadily growing interest was attributed to the continued effort by the Dubai government to establish enabling environment through the adoption of robust economic measures including the Dubai Vision 2021.

Researchers Shaikh, Worku and Rao (2017) report that together with the strategies of the government to establish enabling environment, the role of the government in attracting investors through numerous global fora on business cannot be understated. According to Shaikh et al., the Government of Dubai has for a good time mastered the art of convening people together from different places of the world in a calculated move to sell the opportunity to invest in Dubai and therefore build different sectors with manufacturing being key among these. Apart from these, the Emirate has the biggest list of Free Zones which attract different manufacturing industries. For instance, Shaikh et al. (2017) note the strategic placement of the Jebel Ali Free Zone Authority (JAFZA), and how it plays a role in attracting specialized manufacturing industries, including aluminum manufacturing, construction equipment and high-tech

equipment manufacturing companies. The benefits afforded to foreign investors in the free trade zones in Dubai together with the infrastructural advantages of these free zones have attracted a considerable number of organizations most of which are in the manufacturing business.

The foregoing statement is justified by further research which indicates that a combined total of 75% of the over 7,500 companies registered in the popular Jebel Ali Free Zone (JAFZA) are operating in the manufacturing industry. The construction materials and high technology equipment, electronics, food packaging and processing, petrochemical products and healthcare equipment and pharmaceuticals being among the most common manufacturing enterprises in this prime business location. The joint contribution of this free zone manufacturing companies to the Dubai GDP has been noted to be an outstanding AED 330 billion which accounts for at least 8% of the Emirate's GDP. Other important statistics of the Dubai manufacturing industry include the fact that the government has heavily invested in the innovation of the economy and as such has attracted a lot of technology companies in the Emirate. These companies help facilitate manufacturing operations in the Emirate by coming up with new methodologies of operation that assist in the improvement of efficacy in operations (Frost and Sullivan, 2018).

1.7 The UAE Manufacturing Sector Industries/Segments

Just as it is important to understand the value stakes presented by the manufacturing sector in the UAE, it is important to understand the dominant UAE manufacturing sector industry segments. This information is critical and important to the purpose of this research since it will guide the understanding of which segments require more focus when seeking to

understand the need for strategic foresight in costs savings. The below is an explication of some of the manufacturing activities that are prevalent in the UAE.

1.7.1 Healthcare Equipment and Pharmaceuticals

Research finds that this manufacturing industry ranks as one of the highest in the Emirate of Dubai and has significant sway in the Emirate of Abu Dhabi too (U.S.-U.A.E Business Council 2018; D'Mello, 2019). According to the report from the U.S.-U.A.E Business Council in Washington, the pharmaceutical industry in the UAE is the biggest in the region and records the highest expenditure in the region. For these reasons, this industry consistently attracts international pharmaceutical manufacturing companies to set up operations in the UAE. The numbers indicate that in the year 2016, the combined pharmaceutical expenditure stood at AED 9.61 billion up from AED 8.84 billion in the year 2015. The projected rise of the pharmaceutical demand and spending is projected to be at 8.2% to hit AED 13.3 billion as of 2020. D'Mello (2019) in his investigation of the UAE pharmaceutical market informs that despite the fact that the UAE imports most of its medicine, it is the largest genetically modified medical manufacturer in the region. One of the prominent names in the UAE pharmaceutical manufacturing is the Julpha Gulf Pharmaceuticals Industry which has a production output of a million boxes per day with sales revenues surpassing AED 1.5 billion in 2016.

Other leading pharmaceutical manufacturing companies in the UAE include Neopharma which operates 100,000 square meter manufacturing plant in Abu Dhabi with at least \$100 million in a Japan manufacturing operation for Type II Diabetes Supplements. GlobalPharma with a production capacity of 300 million tablets annually. LifePharma which produces about 1

billion tablets of medicine annually (U.S.-U.A.E Business Council 2018). From this production, the UAE has exported at least AED 1.2 billion of medical products to among other countries – Saudi Arabia and Iraq (D’Mello, 2019). The overall deduction made from the research is about the enormity of the UAE pharmaceutical industries. According to D’Mello (2019), with the continued efforts by the government to establish the UAE as a prime healthcare tourism location, there has been significant arrangements to increase the capabilities of UAE to start manufacturing of major health equipment. These have been rolled over through different partnerships with renowned medical equipment manufacturing organizations like General Electric (GE) and Abbot Laboratories.

1.7.2 Building Materials and Non-metallic Mineral Products

The construction industry in the UAE has been identified as one of the most rapid construction industries globally. According to Rettab and Bakheet (2007) since the millennium, the UAE construction industry has experience a sustained boom which has ensured a growth in value and in investor interests over the years. Evidence from the Dubai Chamber of Commerce and Industry justifies the above assertion by mentioning that the building and construction industry alone contributed to more than 12% of the Emirate’s GDP as at 2005. By then, Rettab and Bakheet (2007) in their research report that the prospects of more contribution and percentage rises of more than 2.5% in terms of overall contribution were projected. The ADCCI (2018) research seconds the foregoing indicating that it can be attributed first and foremost to the relatively low costs of operation of construction industry operations in the UAE compared to other countries in the region. Apart from that, the country has made available opportunities to interested parties to enter the market to facilitate the development of the market from a

traditional construction methods-reliant market, to a leaner construction management and operations market through the use of technology and innovative construction measures. With this, came the setting up of construction materials and non-metallic mineral products like ceramics for the purpose of satisfying the rapidly growing need for pre-fabricated construction materials in the technologically-centric construction projects in the UAE.

In typical fashion of the UAE, there have been efforts from the government to ensure that the construction industry attracts the best investors from around the globe. Some of these efforts have been the creation of different cities across the UAE that offer opportunities for the construction industry. Examples of these cities are the Mohamed bin Zayed City in Abu Dhabi and the Silicon Oasis in Dubai. The government has also been responsible for hosting prominent construction related global events including the Hardware + Tools Middle East and the Expo 2020 which sparked a beehive of activities in the construction sector. Indeed as further concurrent evidence of research notes, the construction industry in the UAE is highly specialized and digitalized making it one of the primary reasons why most global construction materials manufacturing companies are setting shop around (Zigurat, 2019). In terms of value, the combined value of all ongoing construction projects in the UAE is said to be over \$820 billion (Guld Construction Online, 2018). The active projects considered in the above valuation totalled to about 11,755 with 9,972 of them being construction projects valued at \$537 billion, 533 utilities projects with a combined value of \$93.6 billion, 493 transport related projects at a capital value of \$87.4 billion, 92 oil and gas construction projects at a value of \$68.2 billion, and 665 industrial construction projects worth \$32 billion.

1.7.3 Food Packaging and Processing

Euromonitor (2018) handbook on the food and beverage industry in the UAE helps understand the dynamics of the highly valuable food and beverage industry. The report starts by informing that the fact that the UAE has a minimum area of arable land, compels it to import most of its food requirements. Nonetheless, the handbook notes that the high value of the UAE food and beverages industry which can be justified by the high value tourism and hotel industry renders the UAE a fertile economic spot for the establishment of food processing and packaging plants. Concurrent evidence of research notes that as of 2018, the food and beverages industry in the UAE had a total of 600 registered manufacturing firms with multinational food and beverages manufacturing firms like Coca Cola, Pepsico and Unilever among others topping the chart (Arpal Gulf, 2015). Arpal Gulf (2015) research on the food market seemingly concurs to Euromonitor's (2018) position that the UAE imports most of its food products. However, the research evidence from Arpal Gulf (2015) adds that, with the setting up of foreign manufacturing and processing companies in the UAE and the heavy investment of new technologies of manufacturing, the UAE food industry, exports a combined value of AED 11 billion to over 160 markets globally.

The country's vision of establishing the territory as a food independent territory has seen it invest in the radicalized development of the food and beverages industry which can be ascertained by the establishment of global food production giants. For instance, in 2014, Brazil Foods (BRF) launched its food production plant in Abu Dhabi to cater for the production of meat products and bread-based products (ADCCI, 2018). This establishment supports the reduction of imported meat products and as further evidence of research indicates, the projected

growth of the UAE overall spending on food products is estimated to top AED 40 billion with a compounded annual growth of about 6% (Arpal Gulf, 2015). Like in the case of the other industries, stimulus arrangements like the Dubai Food Festivals aimed at encouraging investment in the food and beverages industries in the UAE as well as sensitizing the masses against food waste have played a role in setting the UAE food and beverages industry as an attractive industry for setting up manufacturing and packaging plants. Arpal Gulf (2010) notes that the food processing and packaging industry accounted for at least 10% of the total industrial production of the UAE as of 2015.

1.7.4 Other Manufacturing Industries

There are a number of other well performing manufacturing industries in the UAE which include the metals manufacturing industry which records a total value of exports of around AED 14.3 billion for aluminum metal only making the UAE the fourth largest producer of aluminum globally (Frost and Sullivan, 2018). The petrochemicals industry is also a major manufacturing industry and the country's ADNOC corporation leads the way with an elaborate downstream petrochemical manufacturing operation that records percentage values of 20% of the entire manufacturing industry of the UAE (Tsetsonis, 2014). According to Tsetsonis (2014), in the year 2013, the UAE petrochemicals and chemicals production was valued at \$4.9 billion with an expected growth rate of 6%. The textile, fashion and toys industry in the UAE is also robust and accounts for 5% of the global textile, toys and fashion market valued at over AED 47 billion in 2017. The market is expected to grow exponentially over the coming years with different fashion related shows scheduled. Frost and Sullivan's (2018) research notes that at least 200

textile, apparel and toy manufacturing companies are set up in Dubai and the operations in the industry are highly automated.

1.8 Statement of the Problem

Considering the evidence shared so far and the comprehensive review of the UAE manufacturing industry, there is no dispute that it is stable and with significant potential. The study has noted significant investment in innovative ways of processing goods and products as well as, robust policies for the development of industries across the UAE. These have resulted in good performance of the manufacturing industry in the UAE across sectors for over a decade. Despite this, the current study notes that there is little to no evidence of strategic measures from the industry at large geared towards foreseeing volatilities and acting proactively to mitigate the effects thereof.

The current research therefore finds this a critical problem and worth to investigate owing to the high value operations in each of these industries. According to the current study there is need to conduct an empirical study that will survey members of organizations in these industries in an effort to find out how these organizations plan their future operations and ensure that they can be able to survive the dynamic and uncertain turn of the markets. For instance, taking the food processing and manufacturing market at a glance, the research has seen that most of the UAE food products are imported despite the fact that there are numerous manufacturing companies set up locally and which handle lucrative export operations. This logically implies that most of the raw products, which the locally set companies use to manufacture products, are

imported too. Therefore, it is critical for the research to study how these companies cope with the possibility of changing prices of raw materials.

On the other hand, the highly valuable construction industry is dependent on locally manufactured construction materials including bricks, cement and ceramic products. These products are subject to nuances of production costs and therefore can attract different costs from time to time. With this understanding, despite the fact that there is strategic positioning as far as technological capabilities are concerned, the ability to foresee and tackle changes in costs for these products and still maintain quality and timeliness of construction outputs and the costs to the end-users is critical piece of knowledge to study. The research notes that without the understanding of how to manage costs and mitigate cost changes in high value industries, the competitiveness of the industries is limited and there are no capabilities to shield the end-user from the increasing costs.

The above can be buttressed when looking at evidence from the capital intensive construction industry in the UAE wherein, in the recent past, there has been a trend of bankruptcy filing from companies that could prima facie be considered solvent (Khan, 2021). Khan (2021) highlights a number of cases from leading firms that were subject to bankruptcy proceedings with glaring amounts of debts unresolved. A case in point relative to the construction industry which is one of the industries of focus for the current research is the Arabtec Holding Company, a once prestigious construction contracting company holding the credit for the construction of the world's tallest building Burj Khalifa (Parasie & Fattah, 2020). Parasie and Fattah (2020) in a Bloomberg report indicate that the shareholders of this once prestigious construction contracting company voted to dissolve the company after it ran into

headwinds as far as servicing its debts is concerned. The bankruptcy file reports note that, Arabtec experienced mounting debts which it was not able to attend to and this was compounded by the effects of the COVID-19 pandemic.

The Dubai courts appointed trustees and experts after receiving the application to monitor the company's operations together with those of its subsidiaries and the company officially became insolvent 2 years later in 2022 (Hamed, 2022). At the time of filing the bankruptcy, the construction company had suffered over \$200 million in losses for the first half of 2020, which highlights the challenge that the COVID-19 pandemic brought to organizations (Parasie and Fattah, 2020). The current research notes that a number of similar such cases in the construction industry in the UAE exist and most have heaped blame on the ravages of the COVID-19 pandemic. Further examples of bankruptcy in the UAE construction industry include those of Al Jaber Group and Al Murjan Real Estate which according to Barbuscia (2020) and Stevenson (2010) which all bear a common script of having been exacerbated by a global economic crisis.

Hamed (2022) in making sense of all the above indicates that the continuing trends of bankruptcy in the UAE especially from capital intensive organizations in the construction industry mainly places a spotlight on the adroitness of company management and corporate governance. This clearly points put to the need for a reconfiguration of the strategic paradigm of organizational management from short-term soundness to long-term stability and resilience even in the face of volatilities. The current study submits that the integration of strategic foresight for purposes of monitoring and management of costs in the organization for future resilience, stability and sustainability is the only potent approach. To this end therefore, the lack

of research evidence that studies the relationship between strategic foresight and cost savings in organizations is considered the primary problem which the research will resolve by investigating and establishing the relationship between the two constructs.

While the above evidence of bankruptcies which raise concern of how strategic foresight for costs savings would have helped the organizations navigate tumultuous times in the market have focused on the construction industry. Research notes that there are multiple other examples of bankruptcy filings from companies in the manufacturing industry locally and globally including food and beverages among other industries. As evidence of research indicates, it is critical in the 21st century competitive business environment to be able to produce the highest quality goods at the most reasonable costs of production as this will enable the producer to provide the best prices in the market thereby increasing overall competitiveness (Godina, Matias and Azevedo, 2016). Therefore, through studying the relationship between strategic foresight and cost savings in manufacturing industry in the UAE, this research is intent on finding a solution to the problem of instability and lack of resilience in some organizations which the current study postulates to be as a result of lack of strategic foresight that supports cost saving measures in the organization.

1.9 Novelty and Significance of the Study

The current research trajectory is original in nature and of great significance to the business management practice. According to the research, most of the businesses undertakings portend to carry out strategic planning but most of these are based on short-term situations or projection (Adegbile et al., 2016; Mpofu et al., 2017). Additionally, there is no contemporarily

defined approach to effective costs savings, apart from the old models of cost-savings, which have long been proven inefficient in the contemporary business environment (Mpofu et al., 2017). The research notes that strategic foresight, which is an underlying aspect of any form of strategic management, should now be used more actively to help in the anticipation of the future through examining different possible occurrence, potential routes to situations, and preparing the organization to navigate whichever routes become apparent.

Evidence of research in the background study of the industrial context of the research has shown clearly that there is hefty investment in the manufacturing sector in the UAE. The investments have generally been seen to follow the direction of improved technological and innovative operations, which in turn improve the production capacities. However, there is little focus on how to safeguard the investments in the event of uncertainties in the market environment for instance in the recent case of COVID-19 global health pandemic. Across all economies globally, the situation points out to governmental efforts to raise funds to bail out different organizations whose revenues had been very significant before the disaster. Based on experience, the current study believes that the lack of planning and foresight has been a contributing factor to the off guard situations that most companies have been found in. The current research is also incessant that the manufacturing sector, owing to the fact that it is capital intensive and relies on raw materials some of which are imported to produce finished products for sale, need to be more prudent in terms of costs efficacy.

Therefore, in order to achieve the cost efficacy capabilities sufficient to withstand a disaster such as the COVID-19 global disaster, there needs to be a whole new dimension to cost efficacy especially on the part of the manufacturing industry. The dimension proposed hereby

is the use of strategic foresight to enhance preparation, cost variations anticipation and the ability to implement a raft of premeditated measures to handle uncertain situations as they arise. With the above regard, the current research believes the study explores a significant area of knowledge that will help in enlightening business operations management. Strategic foresight as preliminary evidence of research has shown is minimally applied as a part of strategic management and therefore, the investigation of how it may be of importance to cost-savings in manufacturing organizations will help in its active adoption in strategic management.

1.10 Chapter Summary and Thesis Structure

This chapter has been responsible for setting the stage for the research into the application of strategic foresight in the management of costs in the manufacturing sector in the UAE. The manufacturing sector elected for this research, has been identified in the background information of the research as a big and highly valuable industry in the UAE. To this extent therefore, the need to be able to effectively manage costs in the industry subject to the uncertainty of the contemporary market environment has been made never so eminent. The research has been able to break down the different industries and their values and show how the government has put in place enabling measures to ensure that the industries have the best operational environment. The industries themselves have been noted to significantly improve their operations through innovation in order to produce quality and minimize production costs among other benefits.

The above positive points in despite, the research has noticed a gap of knowledge in terms of how these highly valuable and capital intensive industries strategize in order to navigate

the dynamic economic environment. The recent COVID-19 global pandemic has been identified as one of the challenges that has impacted the global supply chain and directly impacted manufacturing firms globally. The importance of having strategic foresight and future expectation plans to enable to management of uncertain situation and costs in this case has been firmly accentuated. The following is a delineation of the rest of the theses.

Chapter 2 – Literature Review – Will shift focus from the sector of operation to the actual constructs of the research – strategic foresight and cost-savings. The purpose will be to conduct an in-depth investigation of the two constructs in a bid to gather sufficient knowledge to be able to connect the core tenets of the two and see how to apply them in the case of the manufacturing sector in the UAE.

Chapter 3 – Research Methodology – This section will involve the planning of a consistent and research-based approach of how to study the aspects found from the literature review in chapter two in the context of the background knowledge in chapter one. It will basically be the blue print of the current research and how the study seeks to answer the research questions and fulfill the research objectives.

Chapter 4 – Research Findings and Analysis Section – This section will be responsible for outlining the evidences gathered from the implementation of the blueprint of the research developed in chapter three.

Chapter 5 – Discussion of Findings – This section of the research will involve an extensive descriptive study of the quantitative findings of the previous chapter in relation to the hypotheses developed by the research in chapter two, evidences from extant literature, and

experiential knowledge of the background context of one of the key industries in the UAE manufacturing sector.

Chapter 6 – Conclusion – This will involve the overall summary of the research in clear details. The finding, the contributions, the weaknesses and future direction of the research will be clearly detailed in this section of the research.

Chapter 2 Literature Review, Conceptual Framework and Research Hypotheses

2.1 Introduction

In the preceding chapter, the constructs of study for this research – strategic foresight and cost-savings were intermittently outlined. The chapter, however, mainly focused on the background and context of the study. This was identified and reiterated as important to the conduct of informed and objective research that would later have specific contributions to the sector, which can be modified for adoption in other business sectors. The lack of consideration of the importance of strategic foresight as one of the core elements of the success strategies in the sectors overviewed was established as a core concern for this study. On this note therefore, this section of the research focuses on advancing knowledge on strategic foresight and cost-savings in organizations. The knowledge will fill aspects such as antecedents of the terminologies and their application in the organization, theoretical underpinnings of the terms and the different probable elements of the constructs. The chapter will culminate with the development of hypotheses to be tested in the research which will be formed based on developed knowledge of the constructs and the overall objectives of the research.

Preliminarily, this research finds evidence that, extant literature consists of a shallow and slowly growing body of writing on strategic foresight. On the contrary, there is more than sufficient literature on the effectiveness of cost-effective management strategies as far as sustaining organizational operations is concerned. However, all the available literature seems to border on the isolated strengths of these two strategic organizational approaches and none of the

evidence of research available pursues a study concerned with the relationship between the two constructs. Effectively therefore, the current study is concerned based on experience that current knowledge fails to bring about the much imminent connection between strategic foresight and cost-effective leadership strategies in safeguarding and increasing the productivity, profitability and long-term sustainability of organizations.

As far as strategic foresight is concerned, most theoretical evidence on the topic have revolved around shallow reasoning attributed to the limited nature of literature and lack of empirical data. This provides impetus to this research on the importance of expanding the body of knowledge on strategic foresight, which as earlier cited evidence of research indicates (Laan 2008), should be the underlying mantra of all strategic management efforts of any organization that seeks to retain long-term profitability, sustainability and productivity. The following theoretical background would provide a systematic review of key concepts in literature regarding strategic foresight and its impact on organizations.

The literature review will also be interested in pointing out key concepts relative to the application of cost-effective techniques in organizations. The basis of the theoretical review will be on Gaston Berger's school of thought, which emphasizes the need for organizations to have a collaborative approach to the understanding of their future, taking initiatives to deal with the situations that they might face in their future through tactics like shrewd and farsighted management of costs (Rohrbeck, Battistella, & Huizingh, 2015). The review will be instrumental in elaborating Gaston Berger's school of thought especially as it relates to having collaborative approaches and taking initiatives like management of costs to guide the future.

2.2 Antecedents of Strategic Foresight and Cost-Savings

2.2.1 Strategic Foresight

The future can be deemed uncertain in the highly competitive environment that modern organizations operate in. Despite this, there are a considerable number of developments that can be foreseen, to which; best strategies applied in a timely manner, are able to forestall the negative actualization of the uncertainties foreseen (Laan, 2008; Andresen, et al., 2020). This implies that there is a possibility of preparing for the future or doing something to shape it. This perception that the future can be calculatedly projected, measured and perceived and proper measures put in place to ensure a desired turnout of events, forms the basis of the notion of strategic foresight (Kuosa, 2011; Csaszar & Laureiro-Martinez, 2018). Previous research shows that the background of strategic manipulation of the future through sheer anticipative and preparatory tactics and foresight itself, together with its significance in strategic planning can be traced back as far as the early 20th century, as it is seen in the works of Fayol (1949) and Whitehead (1967). Both researchers in their extensive works on strategy and organizational management contend that, foresight is a concept that is constantly linked to performance and that it is impossible for organization to reach the helm of their success without effective leadership based on farsighted visionary planning (Fayol, 1949; Whitehead, 1967; Fergnani, 2022).

According to Fayol (1949) and Whitehead (1967), exemplary performance in an organization is pegged on the calculated strategic techniques of planning ways to manage the changing environment. This points to the much undocumented opinion that foresight has developed more as a tool for managing change and innovation on top of its already known role

in contribution to incremental improvements. The foregoing seems to be in concordance with earlier noted evidence of research that emphasized the imperative of strategic foresight to strategic planning in the organization (Laan, 2008; (Mastio & Dovey, 2021)). Tracing the development of foresight and its relevance for organizational development in the contemporary world would be remiss without understanding how foresight has been designed to underpin strategic management. According to Laan (2008), previous periods of development have not been half as fast as the last five decades of development. As such, the application and/or consideration of foresight in the organizational management was at the backdrop of a slow changing and somewhat stagnating market environment.

Andresen et al. (2020) in concurrence with Laan (2008) further reports that this regularly made it possible to perceive time as a type of straight forward directional movement. It is due to the foregoing fact that the changes that many companies faced were considered to be more or less some type of extrapolations on the past. Implicatively, it means that they were used to stability and less than rapid and regular changes which made their organizational strategic plans less critical, swift or futuristic. In real sense, there was no threat of major uncertainties, high level of competition or any other sort of market volatilities. To this extent, most of these organizations could not predict their own future or the best ways to align the operations of the organizations with the changing dynamics in their operative environment (Kuosa, 2011).

In the 21st century knowledge-based environment however, it is impossible to operate in so much oblivion as it was decades back. Laan (2008) and Kuosa (2011) are in concomitance that, the 21st century business environment's susceptibility to rapid unannounced chances, nuances of market volatility and uncertainties together with high levels of competition call for

better approaches to the management of business operations globally. The situation in the earlier periods of business helped shed more light on the significance of strategic foresight and the need for organizations to develop ways to think about their own future and the best ways to manage uncertain events in their future business environments.

In concordance with the foregoing, Csaszar and Laureiro-Martinez (2018) in agreement with philosopher Whitehead (1967), contended that in the future, businesses would be in great need of philosophical minds that would be key in providing them with the skills to combat and deal with complex and unforeseen issues within their environment. This philosophical business-oriented opinion was credited with challenging businesses to build their imaginative foresight to focus on creating the necessary capabilities that would catapult them into much stronger positions to effectively compete with others in the uncertain business environment (Rohrbeck, Battistella, & Huizingh, 2015; Mastio & Dovey, 2021). Rohrbeck et al. (2015) further educates that, with the philosophical challenge to business owners suggested by Whitehead, strategic foresight immediately gained relevance and became a key subject of research in the 1950s business environment.

Two schools of thought developed with the first being prospective and based on the work of Gaston Berger. The prospective school of thought entailed the application of components of system that afforded decision makers the necessary flexibility to look into the future. It was necessary due to the inherent complexity that is present in the decision-making process of organizations. The prospective Berger-based school of thought supposed that system thinking would be helpful in fostering the application of collaborative thinking, sense, and decision-making (Rohrbeck, Battistella, & Huizingh, 2015). In this way, Berger called for the

involvement of key decision makers at all stages of the decision making process concerned with the future of the organizations. The second school of thought was foresight as advanced by scholar Herman Kahn. Kahn differed with the Berger in the perception of decision-making process in the future (Rohrbeck, Battistella, & Huizingh, 2015). Kahn disagreed with the involvement of decision makers when it came to forecasting the future options available to an organization. According to Kahn, the involvement of multiple decision makers would hinder the capability of strategic, insightful forecasting.

The 1960s and 1970s were significant times that saw strategic foresight becoming even more essential as more knowledge on it was developed (Rohrbeck et al., 2015; Fergnani, 2022). Particularly, the 1960s was a time when there was successful application of the strategies and methodologies of strategic foresight in many organizations. For example, in 1968, the Royal Dutch Shell was one of the first companies to integrate strategic foresight methodologies in practice (Rohrbeck, Battistella, & Huizingh, 2015). The company was able to do this by utilizing the “looking into the future” scenario program. The resultant effect of this was that the company was better placed to withstand the future market shockwaves such as declining oil prices and navigate the tumultuous recession time to emerge at the top of the value chain in its sector of operation.

The ability to effectively integrated strategic foresight practices in to the strategic plan of the organization to enable the organization maneuver tough economic times and emerge victorious in the case of Royal Dutch Shell was readily hailed and adopted across the globe with other companies. Rohrbeck et al. (2015) noted that it was an essential lesson for other companies, such as United Parcel Services and Motorola who readily adopted the application of

strategic foresight in the management of their uncertain future. Further evidence of research from Carleton, Cockayne and Tahvanainen (2018) reports that with the advent of globalization, the 1980s and 1990s provided further justification as to the importance of strategic foresight and proved to be a vital period for the growth of strategic foresight and its application in organizations. With the rapid development of transportation technology, the movement of people from one place to another and the advancement of communication efficiencies that enjoined the world as a small village, it became necessary that the then organizational leaders make critical organizational decisions based in strategic foresight.

Carleton et al. (2018) note that globalization led to increased competition in many industries and that it is due to this fact that innovation and continued organizational learning became crucial as means of gaining competitive advantage. Scholar Auerbach (1988), shares an important documentation titled '*Competition: The economics of industrial change*' which serves to provide an earlier explication of the role of the growing competition occasioned by globalization on the way organizational leaders would react. According Auerbach (1988), leaders started focusing on the future trends that globalization would lead to including the diversity in labor and the opportunity cost in talent. Shrewd leaders used this strategic focus to make landmark decisions that led to a turnaround for their organizations. It is at this point that strategic planning started been readily applied to hiring decisions as well as to organizational innovation. As a consequence of rapid innovation, new methods of strategic foresight became apparent, which included technology road mapping. These new methods have since inception been considered as some of the most novel advancement in strategic management as they are continually useful in fostering successful organizational forecast. Auerbach (1988) provides

examples of companies such as Toyota, Daimler and the Deutsche Bank that developed the think tanks for the purpose of informing strategic planning and key prospective innovations.

2.2.2 Cost Savings

The concept of cost-savings has been in existence since time immemorial, and there is no specific time of its origin from literature. It is worth noting that it has been a preoccupation of both traditional and contemporary organizations to work towards the promotion of cost minimization, revenue maximization, and the avoidance of any potential wastage in the course of their operations (Menon & Yao, 2014; Sachenko, 2020). Therefore, literature does not clearly point to a particular event in history as the time when the concept of cost-savings came about.

Regardless of the lack of literature on the specific origins of the concept of cost-savings in organizations, there is the appreciation of the fact that cost is one of the most critical issues that organizations have to manage effectively to survive in their respective industries and markets. Companies are in constant pressure to manage their expenses to ensure that they do not consume the revenue and eventually undermine organizational profitability. Some of the most common methods of cost saving that are applied by many enterprises include de-layering of the organizational chart, layoffs, and budget cuts. However, sometimes, these methods are not adequate to achieve effective cost saving (Menon and Yao, 2014). Literature has shown that in this case, organizations resort to trying to find a sustainable solution since many of these decisions tend to offer only superficial answers that fail to address the root cause of the problems (Kerdini & Hooge, 2013).

A case in point of the foregoing fact is that, all traditional cost-cutting strategies have generally addressed only structure of the cost related problems (Ellram & Tate, 2021). However, this remains ineffective as far as key aspects, such as decision rights or key reasons, behind the problems remain impossible to provide noteworthy cost reduction. Arguably, overly centralized decisions were identified as one of the key drivers of high costs in organizations. Such fact emanates from the situation that the solutions tend to result in the development of a narrow span of control (Ribeiro, 2007). At the same time, decentralized decision rights can also be problematic as far as effectiveness and timely delivery is concerned leading to the creation of high costs. The foregoing is attributed to the fact that the decisions are likely to result in inadequate distribution of resources.

The above point to the fact that, there is a need to strike a balance in the process of establishing decision rights and applying them in organizational settings if at all the issue of cost problems is going to be resolved. Thus, organizational decisions should not be overly centralized nor decentralized in nature. While these arguments appear sound, they fail to provide any empirical evidence to support them. For this reason, this emerges as a vital research gap regarding the cost saving techniques in organizations. The research notes that cost-savings techniques have remained traditional despite the fact that organizations have developed over the years and that the contemporary market environment demands a totally new look into the cost structuring of organizations for the purposes of competitiveness and survival.

In further discussing of the drivers of costs savings, Ellram and Tate (2021) in agreement with Chauhan (2010), identifies the specific reasons as to why traditional cost management initiatives have failed over and over again. According to Chauhan's (2010) study, the board cuts

that have been widely recommended for organizations rarely work. For example, the board-based initiatives tend not to be effective in cost reduction due to their disregard of the suggested strategies of cost reduction in the working process and the accompanying difference in customer value as well as behavior. Thus, it means that services to customers become affected during such practice, thus resulting in reduction of profitability. It is due to this fact, that the affected customers move to other companies that are able to meet their needs.

Ellram and Tate (2021) expound further that traditional cost reduction methods fail to work since the accounting tools can be misleading. The high reliance on tools and methodologies that are based on traditional accounting and mathematical extrapolation rules are ineffective in tackling cost reduction in the contemporary business environment. The reason is that they do not usually incorporate the various means of value creation within a company nor do they look into the future operational costs that organizations may have to incur. It is indicative of the fact that these accounting rules are only useful for financial reporting, but they are ineffective as decision-making tools especially pertinent to cost-savings in the organization. This is additionally because all the accounting reports are based on the current business position and pay no mind to the future or how the reports may help in informing the cutting of costs in the future.

2.3 Definitions and Organizational Applications

2.3.1 Strategic Foresight

There has been a considerable amount of interest into how organizations envisage the future as per existing literature. Strategic foresight is the emerging theme in many of the

researches conducted on this issue (Wyrwicka & Erdeli, 2018; Adegbile, Sarpong, & Meissner, 2017). This line of research has come about as a consequence of more and more organizations developing interest into knowing and understanding the manner in which change takes place within their environment and how bests they can make use of these changes. Accordingly, strategic foresight is meant to enable this understanding. In the view of Gavetti and Menon (2016) strategic foresight organizations can increase their chances of making informed decisions on the basis of an assessment of alternative future scenarios.

Kononiuk, Sacio-szymanska, and Gaspar (2017) define strategic foresight in terms of all the organizational activities that entails undertaking an environmental scanning, developing final choice of strategic options, and integration of capabilities that enable a firm to detect any discontinuous change in a timely manner for realization of consequences. From these it appears that strategic foresight, is a process that entails a number of steps. In addition, strategic foresight is about organizations gaining understanding of their environment and all that is taking place in it. In further assessing the definition of strategic foresight as presented in literature, several studies have assessed the term foresight. Rohrbeck et al. (2010, p.11) define foresight as the ability that entails cultural and structural elements enabling companies to identify continuous change and respond to it adequately (cited in Kononiuk, Sacio-szymanska, & Gaspar, 2017, p. 23). This study further describes foresight as a methodological approach to the future with every means of disposal, development of perceptions of future options and then making choices between them. Thus, the definitions of foresight presented in literature brings about a key theme in the understanding of this term that is future. That is, foresight is all about gaining an understanding of the future.

There are innumerable other definitions of strategic foresight that reveal not only its meaning but also provide a means of gaining an understanding of its impact on organizations. Hamel and Prahalad (1994) provide one of the first definitions of strategic foresight. According to these researchers, strategic foresight is all about gaining insights into key trends, such as demographics, technology, lifestyle, as well as regulations and harnessing them with the purpose of rewriting the rules of the industry resulting in the creation of a new competitive space. The key word in this definition is insight. It implies that having an understanding of the mentioned trends can result in realizing the necessary competitive advantage and how to position for purposes of competing effectively.

Another essential definition of strategic foresight is offered by Becker (2002) who describes this phenomenon as the process of future intelligence gathering. It is further the medium and long-term vision creation process that aims at looking into the future of key fields of study, such as science, economy, and society. It is done with the intent of providing relevant support to current day decision-making and finding necessary ways of bringing them into realization. The definition goes into more detail of the particular insight of strategic foresight by introducing the aspect of future knowledge. Future, in this case, has been determined in terms of medium and long-term perspectives or goals. Therefore, as per this definition, the companies are positioned to make effective decisions now to secure their future outcomes.

Horton (1999) is yet another academic that has contributed considerably to the development of the field of strategic foresight. According to Horton (1999), strategic foresight can be defined in terms of its entire foresight process, which is made of various phases comprising of input, foresight, and output. Each stage is said to create greater value than the

previous one. However, this value tends to be realized only at the end. Even at the end of the process, a large time lag can occur before the realization of value. Apart from that, each of the phases can also be quite difficult and time consuming. Nonetheless, in a successful strategic foresight process, these phases lead to making decisions that would be different from those that would have been made in the absence of the process. It is a quite different definition of strategic foresight, but it is quite in-depth one, as it gets into its process, thus providing perspective into its application by organizations (Horton, 1999). Nonetheless, it would have been best for Horton (1999) to build on the impact of the decisions made in the presence and absence of strategic foresight to effectively determine its effect.

One more interesting definition of strategic foresight is present in the work of Slaughter (1997/2002) who defines strategic foresight as the ability to create and sustain a number of high quality forward views, including the application of emerging insights, in a manner that is organizationally useful. Slaughter (2002) further goes on to expand on his definition by presenting strategic foresight in terms of broadening the boundaries of perception in four significant ways:

- Consequent assessment of the impact of present actions or decisions;
- Early warning and guidance to help in detecting and preventing the occurrence of problem before they do;
- Proactive strategy formulation that entails taking into consideration the present impact of possible future events;

- Preparing scenario that encompasses envisioning the key aspects of desired future.

The above comprehensive definition of strategic foresight defines the key components of this phenomenon that companies need to employ in order to deal with current problems that may affect their future. The notion of future remains critical in defining strategic foresight, as it is referenced by Slaughter (1997/2002) in the term of “forward views” (Slaughter, 2002). The four boundaries of perception of strategic foresight are illustrations of the key methods that organizations can use to determine strategic foresight. The definition is, thus, essential in providing a better understand of this phenomenon.

A term that continuously emerges in strategic foresight research is corporate foresight. Ruff (2004) describes corporate foresight as those projects that are carried out by individual companies, industries, or groups of companies. This form of foresight is categorized as:

“long term technology foresight, technology assessment, product impact assessment, innovation and technology analysis, technology monitoring, strategic technology monitoring, strategic competition analysis, prospective economic analysis, strategic market research, advanced marketing and trend research, future oriented organizational research and global developments and trend monitoring” (cited in Kononiuk, Sacio-Szymańska, and Gáspár, 2017, pg 22).

From the above, corporate foresight entails adopting a long term perspective into the future. There seems to be a considerable amount of focus into technology. This is essential as organizations recognize the role of technology and its advancement for their future development and growth.

Bereznoy (2017) and Rohrbeck, Battistella, and Huizingh (2015) however indicate that corporate foresight is merely a synonym of strategic foresight. This is demonstrated by the

assertion that, the different names used for strategic foresight are indication of the different approaches utilized for it. There is a lack of consistent use of these terms to discern any recognizable pattern of strategic foresight. In the view of Dadkhah, Bayat, Fazli, and Tork (2018) this has resulted in these terms becoming used interchangeably and thus expanding literature on strategic foresight. At the same time, this has been responsible for creation of confusion over the actual meaning of this term and its significance in organizations.

Given the significance of strategic foresight researchers have placed a considerable amount of effort to develop tools and methods that can be used for its development. Spaniol et al., (2019) offer a number of these tools and methods that they assert are essential towards fostering innovation. One of the tools that is discussed in this study is trend audit in which case businesses can identify a few trends that appear to drive a substantial amount of change within sectors. This is significant because it pushes businesses to look beyond the scope of the current business in which case they are able to anticipate the future. The aspect of anticipating the future is a common interpretation of strategic foresight.

Another significant tool for strategic foresight that is discussed by Spaniol et al., (2019) is forecasting future markets. The keyword in this case is ‘future’, which affirms strategic foresight’s influence in understanding the status of things beyond the current state. This is a method that is all about creation of quantitative estimates of the market size. In this case, businesses can utilize value formulae and use them to estimate the values for variables. The principle of triangulation is thus utilized for production of any future market forecast. This study provides a substantial amount of insight into how strategic forecast can be achieved. However, the discussion is mainly based on the researchers’ understanding of achieving strategic foresight

with minimal empirical support. In addition, there are no examples demonstrating the use of the discussed tools and methods which make them seem more theoretical in nature as opposed to practical.

Due to the different definitions of strategic foresight in literature and use of interchangeable terms such as corporate foresight and foresight many organizations implement this differently as asserted by Bereznoy (2017) and Schwarz, Ram, and Rohrbeck (2018). In addition, there remains many others who lack knowledge over the meaning of strategic foresight and its significance. Literature indicates that this is a situation that can have disastrous outcome for such organizations (Schwarz, et al., 2018). One such case in point is, not being able to anticipate the future which will mean that these organizations will not be able to respond adequately to any emerging changes within their environment. These kinds of organizations will be disadvantaged in relation to emerging trends as they remain disconnected over the future.

Strategic foresight can be perceived as a means through which organizations can achieve the future that they desire for themselves. Wyrwicka and Erdeli (2018) explain, this is possible via identification of a strong vision of the future and taking action towards influencing the development of such a vision. That is, such a vision can serve to increase the likelihood of the future turning out to be true. However, caution is provided that organizations should work towards developing a variety of scenarios for their future. Accordingly, this is essential in ensuring that the organizations remain alert for any possible future outcome. At the same time, this is a means of protection against a different future outcome.

Research indicates, successful implementation of strategic foresight is dependent on a number of factors (Rhisiart, Miller, & Brooks, 2015; Spaniol, Bidmon, Holm, & Rohrbeck, 2019). The study by Spaniol et al., (2019) investigates some of the factors whose consideration plays a role in strategic foresight implementation within organizations. One of the factors identified by Rhisiart et al. (2015) and agreed to by Spaniol et al. (2019) is setting of goals and expectations that are realistic. This will be essential in developing plans that are in a manner that will be able to closely deal with future problems. Another essential factor identified by the cited research is careful implementation which is identified as essential success factor of strategic foresight. Accordingly, organizations need to develop some of precise steps that they can use to implement the strategic foresight ensuring that each of the steps is well respected.

This discussion has demonstrated that strategic foresight is essential within organization as it can be used to foster competitive advantage allowing organizations to remain leaders within their industries in the future through shaping the future. One of the keyways that organizations are able to maintain this competitive advantage is through innovation. For this reason, existing literature has strived to demonstrate the relationship between strategic foresight and innovation. For instance, Adegbile et al., (2017) in their study show that strategic foresight can act as precursor for innovation. In this case, strategic foresight can be used to facilitate organizational innovation. While Adegbile et al. (2017) study is able to demonstrate the impact of strategic foresight towards development of innovation, it however fails to demonstrate how this takes place. That is, it does not explicitly show how strategic foresight as a practice can enable innovation. Nonetheless, this study highlights organizations' focus on contextual environmental scanning and development of new capabilities which work together to assist organizations not

necessarily become innovative but identifies opportunities that have been overlooked by competitors. It is these opportunities that organizations can use to develop innovative measures that enhance their competitiveness. All these goes back to reiterating strategic foresight as a source of competitive advantage.

Further, strategic foresight is essential towards assessing the innovation performance of an organization. Organizations that carry out scenario planning are able to enhance their strategic foresight. This in turn helps them to register some improvement in their innovation performance. While this is implied in literature, there has not been any clear illustration more so because of the amount of skepticism that is expressed in this case about the factual claim made by researchers (Rhiasart et al., 2015). One of the arguments developed in research that aims to provide some evidence of these claims is that by Chelanga, Rono, and Boit (2017) which shows, development of an optimal strategy for innovation is a function of effective strategic foresight. Thus, strategic foresight can be used to facilitate the generation of needed future oriented knowledge which then can influence the management of identified technologies and trends. Within this context, it is possible to make the argument that strategic foresight can have an impact on innovation performance.

2.3.2 Cost-Savings

According to Nyauncho and Nyamweya (2015) cost leadership can be defined in terms of Porter's generic competitive strategies that affirm this takes place when a firm makes plans to emerge as a low cost producer within an industry. Mahfod, Al-Haddad, and Uppadyaya (2017) expand this definition further by adding, cost leadership acts as a strategy that allows

firms to develop competitive advantage over competitors by gaining market share based on reduced cost. The common theme that stands out from these definitions of cost leadership is all about achieving low pricing for the purpose of emerging competitive.

In addition, the implication provided by the definitions of cost leadership presented in the above paragraph is, for firms to be able to develop cost leadership it is paramount that they find and exploit all sources of cost advantage. In this case, when a firm is successful in achieving and sustaining an overall cost leadership then it can be considered as an above average performer. However, this depends on whether the firm is able to command prices that are near the industry average. This is further in tandem with the argument developed by Kharub, Mor, and Sharma (2019), who note that cost leadership takes place within an industry when an organization sells its products at a price that is considered as average for the industry but results in a profit that is higher than competitors.

So far, it appears that developing a cost effective leadership is an essential component of developing competitive advantage among organizations. Marangu, Mwiti, and Thoronjo (2017) opine, cost leadership has an impact on organizations' competitiveness. Therefore, there is a relationship between cost leadership and a firm's level of competitiveness. Particularly, cost leadership facilitates development of a competitive advantage. Nyauncho and Nyamweya (2015) define competitive advantage as the ability to stay ahead of current or potential competition ensuring superior performance and therefore market leadership. In this case, the resources that a firm has are essential towards generation of this advantage. At the same time, this can depend on the structure of the industry (Nyauncho & Nyamweya, 2015).

This discussion has demonstrated the significance cost leadership in development of competitive advantage. One of the key aspects of developing this competitive advantage as explored in literature is differentiation. Mahfod et al., (2017) in their study show this by defining differentiation strategy as a way of creating a unique business proposition that is able to add value to an organization enabling it to stand out from others. To a considerable degree, this is a description of competitive advantage. Differentiation is a strategy that can be derived from an organization's innovation. In this case, the organization can be innovative and develop a concept that cannot be imitated by others. However, differentiation as a factor facilitating competitive advantage within organization is costly in comparisons to application of cost leadership (Mahfod et al., 2017). Therefore, organizations must take time and assess the outcome of each differentiation value proposition before reaching a decision to undertake their application.

Developing cost leadership is essential towards ensuring that cost remains as low as possible at the same time maintain high manufacturing quality. This is according to Kharub et al. (2019) who postulate that, this is necessary in order to ensure that customer taste and expectations are adequately met. Therefore, this confirms the argument presented by Mahfod et al., (2017) that while cost leadership serves as a pioneer it does not necessarily mean that products will have low cost althrough. Thus, organizations can consider charging a normal cost and thus reinvest any additional benefits. This to an extent demonstrates a limitation of cost leadership. Because of this strategy and the focus of organizations towards lowering cost, there develops a danger to other essential variables resulting to loss of vision. Accordingly, this brings to question the significance of the strategy of cost leadership in organizations.

Marangu, Mwiti, and Thoronjo (2017) in their study also provide a different understanding of cost leadership in relation to its impact illustrating its negative impact. As per their study, cost leadership has the potential of lowering customer loyalty. This can take place because customers that are price sensitive will make a switch the moment there is an availability of a lower price substitute. Another disadvantage of cost leadership is the creation of the notion that a low cost represents poor quality. This thus hinders an organization from carrying out any kind of rebranding.

One of the key components of achieving cost leadership as identified by Marangu, Mwiti, and Thoronjo (2017) is modern technology. This is in line with the role of innovation in fostering the development of cost effective leadership among organizations. As cost leadership can be used to build competitive advantage, literature indicates that this can in turn be useful in the production of innovation. However, there is empirical evidence presented in literature that supports this notion. Nonetheless, many of the studies that have looked into this have shown that innovation is vital for the long term success of organizations.

The relationship between innovation and cost leadership is further investigated by the study undertaken by Chelanga, Rono, and Boit (2017) that indicates that these two concepts can be combined for the purpose of impacting performance in organizations. This relationship is explained as follows - the study defines innovation in terms of product innovation. Product innovation in this case consists of elements such as evaluation of new idea, reward culture for new ideas, and an empowerment culture for new ideas (Chelanga, Rono, & Boit, 2017). As for cost leadership this is defined in terms of cheaper prices and trade discounts. An integration of these two is essential in resulting in improved performance. The evidence of this performance

as per this study takes the form of improvement of annual reports, profits, return on equity, and return on assets Chelanga, Rono, & Boit, 2017).

Similarly, Kharub et al. (2019) show the existence of a relationship between cost leadership and firm performance. Just as Marangu, Mwiti, and Thoronjo (2017) in their study, Kharub et al. (2019) indicate cost leadership is a means of mediating quality management. Thus, cost leadership enables effective supplier management, information analysis, design and development, and allows for continuous improvement. For this reason, this results in improved firm performance. This improvement takes place particularly in product quality improvement and process improvement. In a similar study by Nyauncho and Nyamweya (2015) a cost leadership strategy is found to have an impact on performance of firms. This takes place through the strategy allowing companies to reduce price and therefore resulting in high volume sales, reduced wastage, reduced cost of operation, and increase in service delivery.

Extant studies show interest in the development of a cost effective strategy by exploring methods that can be used. Nyauncho and Nyamweya (2015) identify one of the methods as developing a high asset turnover. Within the manufacturing industry this can mean producing very high volumes of output. This results in fixed cost spreading over a larger unit of products or services therefore leading to a lower unit cost. In this case, firms that apply this method do so with the hope of taking advantage of economies of scale and for this reason they experience curve effects. Another method is achievement of low direct and indirect operating costs. Doing this involves providing high volumes of standardized products and limiting customization and the personalization of service. The cost of production is lowered by making use of fewer

components, standard components, and reducing the number of models that are produced. This is essential because it results in larger production runs.

Literature indicates, there is a strong drive among businesses to achieve continuous innovation while reducing costs (Chelanga, et al., 2017). This has created a situation whereby there is demand for simultaneous innovation and cost reduction. The shift has come about as customer demand for more but are willing to pay less. The resultant impact is companies having to provide more value at a less cost impacting all industries including manufacturing industry. It has become necessary for industries to undergo redefinition, merging of value chains and disintegration at a rather fast pace. In addition, this is leading to products morphing into what is referred to as ecosystems driven service based experiences. This is taking place at a time when companies are seeking new markets in which they may enhance their competitive advantage. The study by Nyauncho and Nyamweya (2015) recommends for companies to place more focus on utilizing what is already available instead of working towards reinventing the wheel. They should use this to apply to the current issue that they are facing. This can be done by identifying current tools and finding new ways of using them.

2.4 Theoretical Underpinnings

To further gain perspective on the theoretical background of the concept of strategic foresight and cost savings, a review of fundamental models relative to them is imperative. Different fundamental theories, ideas, and concepts have been developed to understand the aspects of strategic foresight and cost savings within organizations. The theories and concepts

lay the foundation for more in-depth explication of the aspects of strategic foresight and cost savings. The key theories, concepts, and ideas are as explicated below.

2.4.1 Strategic Foresight: Relevant Theories

Evolutionary Theory

The model is based on the work of Cyert and March (1963) who investigated the decision-making process in numerous business organizations. The theoretical underpinning of this model is a set of increased frontal attacks towards assumptions made regarding the standard economic theory of a company (Cyert & March, 1963). Cyert and March (1963) assume that managers usually avoid the requirement to correctly anticipate the events in the distant future. They do this by applying decision rules that focus only on short-term reactions, thus providing a short-run feedback as opposed to anticipating uncertain events that may happen in the future. It means that managers tend to think on problems that require immediate attention rather than develop strategies to solve the issues that may happen in several month or years (Cyert & March, 1963).

The above assumptions made about managers illustrate a hint of skepticism regarding the possibility of intelligent anticipation. It is further explored in the work of Nelson and Winter (2002) who postulate that it is clear that companies are more likely to behave in the future according to the given routines that they utilized in the past. The relevancy of this notion to the proposed study is that for a long-time, organizations were unaware of the value that strategic foresight could added to their well-being. Nelson and Winter (2002) go on to attribute this to the fact that learning is accomplished through the use of short-term feedback, and this kind of

learning can be quite powerful when it comes to addressing problems, including complex ones, thus hindering any kind of sophisticated foresight to develop.

Competition Theory

Researchers Stonehouse and Snowdown (2007) revisit Michael Porter's theory of competition and report that it is among the foundational theories of strategic foresight in organizations. According to the researchers, this theory is responsible for the insightful planning by managers owing to the market forces to come up with ways to stay ahead of the fray of competitors in uncertain environment. The competition theory is further attributed to challenging organizations to develop far-sighted strategies as a means of creating competitive advantage. Through this theory, organizational managers can move ahead with their daily strategic plans but also take time to implement ways of ensuring that the organizations are prepared for the uncertain future.

Core Competences/Innovation Theory

Research evidence further informs that strategic foresight is related to the theory of core competencies or innovation in organizations (Kawshala, 2017). This theory portends that all organizations involve their top employees in innovative exercises that aim at keeping the organization ahead of the unexpected future. Thus employees are encouraged to develop, exhibit and apply their core competencies in all areas of their duty. As a result, the organization is able to come up with greater ideas of handling different operational issues. When these magnificent ideas are continually applied to the daily operational issues and further applied to determine the direction of the future, then the concept of strategic foresight comes into play again.

2.4.2 Cost Saving: Relevant Theories

Cost-benefit analysis theory

The cost-benefit analysis theory is vital in understanding the aspect of costs within organizations, as they work toward the maximization of the levels of profitability and the consequent reduction of losses in the course of their operations. According to Dreze and Stern (1987), the cost-benefit analysis theory is vital, as it contributes to the understanding of the techniques that companies could use to make predictions about their costs and the best ways to control them while still meeting their targets in the market. Dreze and Stern (1987) affirm that the cost-benefit analysis theory is quite reliable and efficient, as it points to the ability of a company to make decisions related to its taxes, income policies, trade, the efficient provision of products to the target consumers, as well as the overall ways of maximizing their revenues.

Resource-based theory

According to research evidence, the availability of resources better known as the resource-based approach theory has been the focal reason for cost saving management decisions since time immemorial (Kato & Yoshida, 1998). Kato and Yoshida educate that resources and their availability thereof determine whether and how organizations will proceed with particular business operations. Essentially, this means that if the resources set aside for a particular operational activity are minute, then the management of the organization has to find ways to go ahead with the activity at the minimal costs. The opposite of the foregoing deduction also stands true and this justifies the fact that resource-based theory has been one of the foundational theories for cost saving practices in organizations.

Contingency-based theory

On the other hand, the availability of contingencies to a business operation also stands in its own place as a theory supportive of cost-effective business strategies. Contingency based approaches to cost reduction have been used in situations where managers have better options of doing business apart from the fore-fronted or normally preferred method(s) (Lajili & Mahoney, 2006). This theory helps in actualizing cost-effective strategies as it provides that organizations should for cost saving purposes evaluate a number of ways for reaching to a particular result and choose the appropriate ways in consideration of the costs involved. This way, organizations will always have an alternative that will be much more cost-effective.

2.5 Components of Strategic Foresight and Cost-Savings

In an effort to develop sufficient knowledge on the main constructs of this study, the research finds it imperative to dig deeper into evidence of literature on each of the constructs in an effort to find out whether extant literature offers any further details as to the components that potentially make up the constructs. These components could come in handy in hypothesizing the possible relationships between constructs and how they are bound to affect other sub-constructs of the study, for instance profitability, productivity and long-term organizational sustainability. The following is a discussion of the different components that make up the constructs.

2.5.1 Components of Strategic Foresight

A research report from (Agentielle 2013) Strategic Foresight Consultancy has a number of critical components that should be considered when researching or implementing strategic foresight. According to the literature evidence from Agentielle, understanding the components of strategic foresight helps in challenging the misconception that strategic foresight is a lesser component to strategic management. This is supported by Ryan (2016), who reports that, while most of the definitions of strategic foresight are sufficient to help in the understanding of the concept, they do not provide as much concentration to the distinction between the two. Ryan distinguishes the two based on their focus informing that strategic planning focuses on the effective application of ways and methods that have been useful in the past in an effort to ensure that the organization is able to effectively meet the demands of the clients by improving on previous successful methods. Strategic foresight is concerned with looking head long ten years to twenty years and asking what will be the possible demands of our members then and how will we be able to provide their needs. Agentielle (2013) and Ryan's (2016) white papers propose the following key components of strategic foresight:-

Domain framing

Ryan (2016) shows that focus in strategic foresight is critical and therefore the first component of strategic foresight is the clear formulation of the domain of exploration in the future. This position finds solid support from consistent evidence of research which notes that, the scope of exploration in terms of time and breadth is important to measure in order to have the best results from strategic foresight endeavors (Coates, 2010; Mohamed 2020). Coates (2010) , in a research of the US business market perspective on strategic foresight, reports that

it is critical to intelligently assess the future through a narrow scope that provides proper positioning opportunity for the organizational resources in an effort to ensure the effective application to the determination of the future. In agreement to this, Mohamed (2020) investigates the cases of strategic intelligence in the Qatar industries and notes that organizations in framing the future should maintain focus on two aspects of the future – the time horizon and the domain of exploration.

Considering the assertion made by Ryan (2016) about the role of strategic foresight, this component makes sense by showing clearly that a major role of strategic foresight is to prepare for the future. Therefore, in an effort to be prepared, organization's strategic teams have to define the projected future in terms of timeline and the potential opportunities and trends that the future may hold based on strategic foresight. The above adds to the notions already conveyed by researchers Rohrbeck et al. (2015) among other scholars of strategic foresight focus on anticipating the future. The evidence of research shared here are in concomitance that the anticipation of the future in terms of strategic foresight has to be controlled through the deliberate framing and shaping of the future (Coates, 2010; Agentielle, 2013; Rohrbeck et al., 2015; Ryan, 2016; Mohamed, 2020). Strategic foresight apparently should inform the entire long-term future of the organization as this is the only way through which the organization will be able to remain competitive – through the charting of new paths that competitors have not foreseen or prepared for thanks to the efforts and working of strategic foresight.

Fore-scanning for trends and market forces

Having identified the timeline and the specific domain of exploration – for instance construction technology in the future, research informs that the second component of strategic foresight is the intensive scanning for trends, forces and opportunities in the future (Heger and Rohrbeck 2012; Farrington, Henson and Crews 2015). Farrington et al. (2015) reminds that the purpose of strategic foresight is to enable organizations to prepare for the future and according to the researchers, this is only possible through proactive ideation of the future. Farrington and team further add that the ideation should be supported by actual research and development explorations to attempt to find out what are the upcoming trends, changes in demands, technology and forces that stand to impact business in the timeline of exploration. Heger and Rohrbeck (2012) add the dimension of intentional research for the future exploration of new business fields. According to Heger and Rohrbeck (2012), the shrewd and most competitive management teams of the 21st century will need to develop new business concepts and opportunities in order to establish a strategic advantage over competitors.

Hojland and Rohrbeck (2018), report that while the determination of trends is a matter that could be done easily for an experienced strategy team, a lot of time should be taken at this point in the implementation of strategic foresight. According to Hojland and Rohrbeck (2018), strategy teams should not rely on hunches in the determination of which trends, forces and technological changes are bound to impact the domains they have narrowed down to in the timeline of exploration. This is because, the determination of trends will form the basis of the preparation for the future and therefore, if the organization needs to prepare its resources for a future business venture that is aimed at catapulting the organizations competitiveness, this needs to be based on pure facts (Fidler 2011). Fidler (2011) notes that an important part of the

exploration of the trends and the forces is to focus on their social, technological, economic, environmental and political dimensions.

Forecasting scenarios

Having identified the different potential trends and forces that are likely to impact the future of the business in the domain and timeline explored under strategic foresight, it is critical to forecast different possible outcomes of the future. Evidence of research intimates that forecasting scenarios is critical to the development of cogent plans of how to solve different scenarios and underscores the whole basis of strategic foresight (Riddell, et al. 2020; Haarhaus and Liening 2020). Riddell et al. (2020) brings this point very clearly mentioning that strategic foresight can be used both as a tool for future business expansion and growth strategy as well as a tool for the management of risk and disaster in the business environment. According to Riddell and team, this is all possible because of the principle of strategic foresight that allows the effective planning and assessment of different scenarios to help understanding the possible turn out of events and effectively position ones resources to be able to effectively deal with this.

Haarhaus and Liening (2020) perspective is all the more strengthening and supportive of the above component of strategic foresight as it adds the fact that in the planning of the future, the strategists have to consider the possibility of different scenarios based on their plausibility, relevance and level of impact. As far as plausibility is concerned, Haarhaus and Liening (2020) report that whether positive or bad, it should be a possibility that the scenario forecasted can actually happen in the course of anticipation. Then relevance of the approach implies the need for the forecasted scenario to be directly connected to the domain of exploration of the future

that the organization is engaged in or the trends of the future that the organization strategists have identified to be taking root in the specific domains. The challenging perspective on the other hand is concerned with the input that the scenario will demand. According to Haarhaus and Liening (2020), the impact of the scenario occurrence should directly demand strategic action from the strategic team.

Envisioning the future

The ultimate goal of strategic foresight as learned all across the review of different literature up to this point is to set an organization in a position where it will be able to take control of the future and use strategy to shape the future. Therefore, one of the main components of strategic foresight as unraveled from research is ‘envisioning the future’. According to Micic (2010), application of strategic foresight has been useful in multi-billion dollar projects funded by a large European corporation in the identification of future markets which the organization then strategized and entered to scoop billions worth of profits. Micic (2010) who developed the model that the corporation used in the identification of future markets indicates that the last straw of strategic foresight is the vision of the future. According to Micic (2010), the use of strategic foresight, through the first previous steps should at this point provide the strategic team a compelling vision of the future that will convince them that it is the proposed strategic trajectory is the right route to follow for better organizational yields.

Concurrent evidence of research justifies the above position mentioning that, ‘envisioning the future’ is a critical role of strategic foresight and helps the board of an organization have a clear picture of what the future looks like which the other previous

components provide different guidance on how to approach the future (Martin, 2010; Hines and Jess 2015; Hofmann 2015). The afore-cited evidences of research all review incidences where strategic foresight was applied and indicate that, having a clear vision of the future, helps organizations, in the event that things will turn out as planned to have an anticipation and work towards the pleasing self-created future. Martin (2010) in his research indicates that while the scenario forecasting may include some phases of worst case scenario, the fact that strategic foresight helps in the creation of options of maneuvering the harsh occurrences in the event of their actualization helps in the decision making towards strategic foresight-backed long term goals. Hofmann (2015) on his part reviews the creation of the future in the manufacturing of new automobiles and indicates that automobile companies have mastered the art of competing based on strategic foresight and venture into totally unconventional productions. According to Hofman (2015), the visualization of the future supports decisions such as these and when they come out as planned, organizations find themselves at vantage competitive points – an opinion strongly agreed to by Hine and Jeff (2015) in their research.

2.5.2 Components of Cost Savings

Research reports that costs-savings is an element and practice of business that is tied to the age-old practice of costs accounting (Brotcorne, et al. 2019; Dreyfus, Nair and Rosales 2019; Nubholz, Rasmussen and Milios 2019). A quick search on cost savings in organizations returns a large search of different industry research on costs savings and management in the organization. This gives a justification of the importance of cost savings in the organization and helps provide impetus to the purpose of research to study it from the lens of strategic foresight in manufacturing organizations in the UAE. For instance, Brotcome et al. (2019) present an

elaborate research on the measures through which organizations in the manufacturing industry pursue cost savings, in their efforts to ensure that the operational costs of the organization are at a minimal. The review of the different measures of approach by the different researches cited above from different industries provides an understanding of critical components and elements of costs in the organization as discussed below.

Automation

Research has repeatedly identified automation as one of the components synonymous with cost savings approaches across different organizations in different industries. Early evidences of research from Olson and Lucas (1982) and Boucher and Muckstadt (1983) reported on the importance of automation as a key cost saving approach. According to the concurring evidence from both researches, automation is a tool that can help the organization cut the time for the performance of tasks and therefore save the costs because the longer the time for performance of tasks, the higher the costs. Olson and Lucas (1982) look at the case for the automation of office functions through the introduction of computerized efficiencies in terms of sending communications and indicate that the efficiency potentially garnered from these automations would significantly help reduce the costs of doing business especially considering the fact that traditional forms of communication required numerous messengers and transport allocations. On the other hand, Boucher and Muckstadt (1983) reflect on the introduction of automation to the manufacturing process calling for a move from functional manufacturing layout to group technology. According to the researchers' findings, the group layout technology facilitated the benefits of costs in terms of the volumes of manufacturing operations that could be carried out by the organization at once as opposed to the fragmented functional layout.

Newer evidence of research on automation as a component of costs savings does not fall short of emphasizing the symbiosis between automation and cost savings in organizations. According to multiple evidences of researches covering different industries from warehouse management, manufacturing, healthcare to construction management, there is a consensus that automation helps in the establishment of the appropriate processes and measures of doing business which have higher efficiency at cheaper costs (Kirchmer and Franz, 2019; Garg and Garg 2019; Tuffnel, et al., 2019; Jadczyk, et al. 2019). A point of concurrence notable from the above evidences is that automation is technologically driven and value-oriented. The researchers also jointly note the initial intimidating costs of process automations across industries and the challenges such as the user perception and internal opposition. However, in agreement, they report that the ultimate path towards increased efficiency and costs savings is through automation. These approach, challenges the traditional ways of cost savings which are reliant on measures such as lay off and budget crunches whose aftermath is usually temporal costs savings at the expense of efficient service and goods delivery which ultimately will prove very expensive to the organization.

Productivity

A general understanding gathered from the research on automation as highlighted in the parting shot of the foregoing is that productivity and costs savings are related. This is why traditional measures of cost savings, which negatively affected productivity, did not end up being effective cost savings operations. Further concurrent research evidence that investigates the application of productivity pursuit as a measure of cost savings reveals that, devoting efforts to improve the productivity capacity of a software of an operation model would result in lower

costs for the maintenance of the same (Worrel, et al. 2003). According to Worrel et al. , the improvement of productivity of energy systems led to lower maintenance costs and replacement costs of the components of the systems and overly, these led to higher costs savings as opposed to the previous years when the replacement and maintenance costs of energy installation components used to eat up a great chunk of the revenues. This position is supported by further evidence of research, which agrees that costs savings benefits can be achieved through increased productivity in the organization (Gugler and Liebensteiner, 2019). Gugler and Liebensteiner's recent research considers the productive capacity of energy distribution organizations and the regulations and incentives surrounding the business area of operation. According to the researchers, the ability of an organization to utilize its entire output capacity helps it reduce losses of unutilized capacity as well as making it benefit from incentives from the authorities which go a long way in cementing costs savings for the organization.

The relationship between productivity and costs savings is further reiterated by Kapelko (2019) who in a study of productivity relationship to adjustment costs in the European Union food industry; determines that productivity increase has a negative correlation with adjustment costs. According to Kapelko, when firms increased their productivity, their relative adjustment costs were much lower than when they chose to decrease output as a measure of cost savings. In the long run therefore, Kapelko (2019) noted that while output reduction may be a budget-based option towards cost savings, it is usually myopic and results in greater costs problem in the short run and long run. On the other hand, the use of productivity and output increase as a tool towards costs savings would result in more opportunities for revenues and reduced overall adjustment costs thereby implying more costs savings on the latter than the former. Mulyadi,

Putri and Muhammad (2018) conduct a study on the designing of a system component for costs savings and indicate that the pursuit of efficiency in systems is the ultimate approach towards costs savings. The scholars in a desing study of a thresher's welding rig reported that there were as much as 40% reduction in costs of maintenance and replacement of the components of the systems and improvement of efficiency to as much as 65%.

Waste reduction

The efforts of cost savings have also been synonymous with the term 'waste reduction' for a significant period of time. Research into the components of costs savings in organizations reveals waste reduction as one of the main components of costs savings. Schmidt, et al. (2019) educate that wastes is one of the main causes of surging costs in all production processes. One of the main sources of wastes in the production processes according to the researchers is energy loss. With this regard, Schmidt and team report that in order to manage the costs of production, it is imperative that the whole manufacturing process be overhauled step by step in order to determining the sources of waste and put in place measures to reduce the waste per stage. The reduction of waste in the production process would result in savings which would in turn results in costs savings. The above opinion is shared by concurrent research evidence holding the notion that, in the case of the healthcare system in the US, there are numerous types of wastes that result in a lot of losses (Shrank, Rogstad and Parekh, 2019). According to Shrank et al. (2019), 30% of healthcare spending is wasteful spending and the system would benefit a milestone from the reduction of wastes in spending such as failure of care delivery, overtreatment and under-treatment, and administrative complexities wastes, which account to over \$700 billion in waste. Shrank et al, (2019) notes that the use of waste reduction in the management of costs is one of

the most effective methods available as some of the costs involved in any operation are sometimes not necessary for the actual objective of the operation.

In a research on the use of pre-fabrication in the construction industry in an effort to reduce wastages and therefore promote costs savings, Afzal, Maqsood and Yousuf (2017), report that, traditional construction methods were subject to a lot of wastes that come from repeated iterations because of lack of prior knowledge of important specifications of the construction projects. Therefore, Afzal et al. (2017) indicate that in the contemporary environment, it is critical for costs to be mitigated through efforts of mitigating wastes in the construction activities. They recommend the use of BIM technology in the determination of building specifications and the use of the specifications in the production of building materials for the project through pre-fabrication. According to Afzal et al. (2017), these measures would reduce the wastages in the construction activity and ensure that the costs of construction are kept at a minimum. In seconding the application of waste reduction efforts as a component of costs savings, Han, Chua and Hyun (2019) indicate that waste reduction techniques are effective even in environmental conservation efforts like water saving. According to the researchers, looking for instance on the hotel industry, a lot of cost savings can be attained through simply sensitizing the customers on the need to save on food and water.

Quality control

Process control or quality control is another component of costs savings that the research notes as important to highlight. According to evidence of research, the control of the production process is an important tool that can help organizations manage the production costs and

therefore ensure that they are able to produce the best quality at the most affordable costs which in turn afford the opportunity of competitiveness in the market (Bangert, 2016; Isaac, Nkoi and Douglas, 2018). The afore-cited researchers all contend on the need to continually evaluate the production process stage by stage to ensure that there are no issues of quality that would later result in issues of costs. This way, the organization can be able to effectively utilize quality control as a tool for the management of production costs and the more the effectiveness of the methods, the more the savings on the costs of production. Bangert (2016) in a review of the costs of quality in the manufacturing industry reports that the costs of quality need not to be computed as part of the costs of doing business as this is one of the major causes of high costs of operations. For instance a manufacturing plant that has numerous teams of inspectors and a warehouse floor full of rework personnel is not an effective manufacturing plant and is wasting a lot in terms of costs of reworks which are the costs of quality. In agreement, Isaac et al. (2018) indicate the need for the production team in a manufacturing plant to take time to ensure that the production systems have minimal deficiencies, as this will help in ensuring that the costs of rework are eliminated through simple quality control.

Further evidence of research notes that in the contemporary business environment the application of statistical quality process controls has helped in the reduction of quality costs in the production system (Shivajee, Singh and Rastogi, 2019). According to Shivajee et al., statistical process control tools like pareto control charts, histograms and check sheets, ensure that the production team can closely monitor for process stability and consistency of operations. Apart from these, these statistical processes provide the production team with an understanding of the quality of output stage by stage enabling the compounded measurement of the output

quality to ensure that the best quality is attained. Through these methods of costs control, the organization is able to limit defective production and therefore reduce the costs of the same. Apart from this, the automation of the systems through improvement of their capability and the utilization of real-time statistical data helps in the timely action to resolve any defects in the systems or the products before they become a major costs issue.

The review of the literature on the main components of the constructs of the research has been important in helping understand what measures can be taken in the organization to attain the ends of the constructs as conceptualized. This knowledge is important to go forward with as it will contribute to the formulation of the hypothesis and will also come in handy in the determination of the questions that the research will seek to use in conducting data collection from respondents.

2.6 Synthesis of Literature

Main studies on strategic foresight have been concerned with the development of strategic management, different forms of strategic foresight, and reasons for its implementation. In discussing the reasons for implementing strategic foresight, it is apparent that very little has been covered in extant literature on how it can be used to save costs for the organizations. The biggest gap in the past studies has been the general focus on the whole aspect of strategic management and planning without concentrating on the specific factors such as the impact that strategic foresight has on the aspect of saving costs within organizations.

Menon and Yao (2014) utilize the concept of repositioning costs as fostered by strategic change for cost-saving. Repositioning costs in this case is regarded as a strategic approach that

is linked with key strategic changes within a company, thus determining its market position or configuration. The perception of repositioning costs aligns well with argument of strategic choice, which makes reference to an organization's commitment. Accordingly, these costs can be insightful in revealing grand strategy of an enterprise. Menon and Yao (2014) add that repositioning costs are vital, as they play helpful role in shaping the strategic decisions that are made in an organization while looking into the future operations. Strategic foresight could be linked to the aspect of cost-savings with the application of repositioning costs to the planning process. With the understanding of repositioning costs, there is also an opportunity for a company to develop its competitive position in the industry, hence continuously attaining the set goals in the market.

Fink and Schlake (2000) affirm that scenarios that happen within companies are fundamental tools for setting the bar in terms of making decisions that affect a company's working process, as they offer the management a learning opportunity. Enterprises are learning how to reposition their costs and gain a competitive advantage through getting data on the scenarios that they face within the course of their operations. Fink and Schlake (2000) add that the result of cost-savings in organizations is not only profit maximization but also the subsequent increase in the level of competitiveness in the course of their operations. The researches by Fink and Schlake (2000) and Menon and Yao (2014) are fundamental in highlighting the significance of planning in leading to better savings on costs in organizations and focusing on the performance in the course of operations.

On the other hand, research by Vecchiato (2015) demonstrates that strategic foresight has gained relevance in cost due to a number of factors. Such parameters have forced

organizations to react to the changing environment and, therefore, adopt strategies for effective cost management. A knowledgeable consumer is one of these factors. The clients have become more knowledgeable about products and services, and for this reason, they constantly want to find manufacturers that offer better prices, thus resulting in the creation of a highly competitive business environment. Vecchiato (2015) continues to explain that the competitive landscape has been frequently shifting due to the various factors, such as globalization, the change in technology, the emergence of customer needs, and the continued employee mobility. With the focus on meeting these aspects in the industry, there is a suggestion that companies need to put in place the effective planning tools to reach the desirable targets. Strategic foresight becomes vital in the aspect of cost-savings since it plays a helpful role in guiding the management on the best ways to rationalize their costs and work toward better performance at any given moment.

The rise of companies that focus on single products and services has further been a contributing factor to the many economic pressures that modern businesses face. Such organizations are known as category killers that have a tendency to base their operating model on a single mind focus (Chauhan, 2010). The resultant effect is a lower cost position in the given market of operation. Vecchiato (2015) also adds to this argument by pointing out the view that strategic foresight has been developed with the focus on helping companies deal with the different issues that they are always bound to experience in the fast-changing environments. For instance, organizations that are dealing with specific products and services are always working toward continuously scanning the environment to identify opportunities for their own growth and meeting the needs of customers. Thus, strategic foresight is working in the best interests of the companies in terms of leading to better focus on product innovations and always being ahead

competition through the development of roadmaps. Without effective road maps for the production processes, there is always a risk of having to deal with excessive costs that affect the level of profitability that is realized by these companies.

Another significant piece of research in the area has been conducted by Ribeiro (2007), who focused on how companies could sustain the reduction of costs in the long-term perspective. Since strategic foresight is concerned with the future, it is vital for the management to understand how to deal with their costs, hence always working towards the realization of their set goals without significant losses. While explicating the connection that exists between strategic foresight and cost savings in organizations, Ribeiro (2007) points out that the factors that determine how strategic foresight could help reduce costs include the decisions rights, the availability of information, availability of motivators, and the structure. In the course of making decisions for their future operations, organizations could work towards maintaining a low cost environment in the course of their operations by broadening their spans of control and adopting the cross-functional processes.

The above approach, reduces the chances of errors and rework that tend to increase the costs of operation within companies. On the use of information for strategic foresight and cost-savings in organizations, Ribeiro (2007) is of the view that the management could use proper planning to implement market-like mechanisms and performance management processes to work with the costs within their environments. With a proper understanding of the different sources of costs that they face in their production and product management processes, organizations always need to remain cost-conscious to succeed in the market. Additionally, the consolidation of the shared service activities in the companies and the de-layering of

management in setting decisions about the future is crucial in the management of costs within a company. Therefore, organizations have an opportunity to save on their costs of operation if they are ready to adopt the best and the most effective approaches to their operations.

Nowadays, there has been limited research on the impact that strategic management has on the cost saving aspect in the organizations. However, from the limited literature, there is an indication that companies have the role to directly manage their own costs in the best ways possible by looking into the future. Most of the enterprises have not been strategic enough to focus on their future and the impact that their future costs are likely to have on the expenses that they incur.

2.7 Research Gap

The existing literature has significant gaps in regard to the explication of the topic and the understanding of the overall concept of strategic foresight and cost-saving in organizations (Isaac et al., 2018). The review of the literature highlighted the presence of gaps in the study of the application of strategic foresight in emerging markets for instance the UAE and moreso, the potential applicability of the same as a tool to support cost effective measures in an organization. One of the biggest drawbacks in the current literature is that it has mostly focused on the implementation of strategic foresight in majorly government organizations, thus leaving out the ordinary for-profit companies from the list. For instance, the study by Leigh (2003) focuses on the technique of strategic forecasts in the government organizations in Australia, the United States, and the United Kingdom and how these governments might plan for the future. The major emphasis in the current literature has been placed on how governments anticipate their

future and how they are able to deal with uncertainties that come in the course of operations. While only focusing on government entities, Leigh (2003) states that government institutions could utilize strategic foresight to anticipate emerging issues, identify the unanticipated consequences, build the bigger picture of their operations, involve members of the public, and use various sources of information.

In the same breadth, the proof of the gap is demonstrated in the study by Kuosa (2011), who focuses on how the governments of Finland, Singapore, and the European Union utilize strategic foresight to reach their own goals in the course of their operations. Therefore, previous literature has had gaps in terms of its focus, as there has been more concentration on the government institutions rather than the ordinary for-profit organizations. Since there has been no extensive focus on the for-profit companies that are not attached to the government, there has been limited commitment among these enterprises to utilize specific strategies in the course of making their decisions about their futures. The explication of the topic seems to be more focused on public organizations that are run by the governments, hence limiting the opportunities for the ordinary companies to understand how strategic foresight applies to their own operations. Such situation has posed challenges for many for-profit organizations to apply strategic foresight to their own operations due to the assumption that it is a reserve for government organizations.

Another significant gap in the literature is that there has been more focus on the overall concept of strategic foresight and general planning rather than specific concepts such as cost-saving techniques (Isaac et al., 2018; Shivajee et al., 2019). Moreover, there has been emphasis on the significance that strategic foresight plays in strategic management and planning while

leaving out the core areas, such as the impact of strategic foresight on cost savings, profitability, and the reduction of costs incurred by the company going into the future. The aspect of cost is quite significant to the success of any company in the future, as it determines the levels of profitability and also puts the company in a position where it has to deal with competition in its respective market.

The deficient explication of costs in regard to strategic foresight is an indication that previous literature has not looked for ways to help enterprises relate strategic foresight to independent aspects, such as the minimization of costs, as the biggest focus has been on how business entities can use it to plan their future operations (Han et al., 2019; Shrank et al., 2019). Therefore, with the gap in literature in terms of explicating the impact that strategic foresight has on aspects such as cost, most organizations continue to struggle with high costs due to the absence of understanding of the best strategies to utilize to predict the uncertainties in their costs. Apart from that, they continually have to deal with a high level of competition in their markets owing to the lack of understanding on how to deal with it using strategic foresight.

To date, current literature is trying to explicate the manner in which organizations could utilize technological planning as part of strategic foresight to enhance the cost-saving techniques (Vecchiato, 2015; Kapelko, 2019; Mulyadi et al., 2019). Vecchiato (2015) affirms that the application of technology to planning for the future would be significant in enhancing the saving of costs by companies through the promotion of efficiency in the production and even marketing processes. Current literature has gone on to extensively explicate the significant role that technology has in terms of giving organizations the opportunity to be more competitive by saving on the different costs that they incur in the course of their operations. Kapelko (2019) on

the other hand adduces that with the significantly changing trends, it is vital for organizations to remain competitive by understanding all factors that contribute to turbulence in their respective industries. Technology would be vital in enhancing the predictive abilities of a company in terms of the future landscape of the industry and the challenges that it is likely to face in the course of its performance. Therefore, current literature is not only emphasizing strategic foresight, but it also adds the technology aspect to it that would boost the ability of organizations to be efficient in saving on costs.

2.8 Conceptual Framework and Hypotheses

2.8.1 Definition of Concepts and their Relationships

The first key concept of this research is strategic foresight. According to the work by Leigh (2003), strategic foresight is specifically defined as the approach that is used by organizations to anticipate future challenges and identify the best possible strategies to deal with the uncertain future environment through scenario planning. Therefore, the concept of strategic foresight is seen as the ability of the management to prepare itself to deal with any particular issues that develops in the operational environment through the best possible strategies, hence leading to success in the market. Strategic foresight as a key concept of this research is anchored on several significant aspects that help understand how it assists organizations in dealing with the different challenges that they experience in the course of their operations as they move into the uncertain future. According to Leigh (2003), one of the aspects that help understand strategic foresight more is its ability to give companies the opportunity to anticipate future emerging issues. In foregoing regard, companies are not always shocked by what comes up in the course

of their operations, as they are always well-prepared on how to deal with these circumstances in the best way possible with the understanding of their unpredictability.

The second key concept for this proposed research is Cost Savings. As far as cost savings is concerned and the theories behind it, organizations need to always look at the most cost-effective measures of operation in order to save costs. Hamoud and Nash (2014) affirm that with the uncertain future, there is always the expectation of unique consequences for a company to survive in the turbulent business environment. Thus, it is critical for any organization to be ready for any unexpected consequences, thus being in a better position to handle all these circumstances in the best possible way and beating the competition while also meeting its established targets is the best ways possible. Further research evidence agrees that the only sure way to be on top of uncertainties inherent in the volatile market environment is through the utilization of cost-effective approaches that allow the organization to retain funds, reduce wastage and build up profitability (Lajili and Mahoney, 2006; Silva, Silberglit, Machado, Maia, & Cagnin, 2017). Both evidences of research contend with the fact that organizations that diligently utilize funds are bound to have proper shock absorbing mechanisms in the uncertain future when compared to organizations that spend funds unscrupulously.

The third key concept that is jointly associated with strategic foresight and cost saving strategies is building the bigger picture for an organization. According to Vecchiato (2015), building the bigger picture from the perspective of strategic foresight and cost saving entails seeing a company in a better position where it is able to handle all the uncertainties that it faces or may face in the course of its operations. Seeing the organizations from a bigger picture also leads to more appropriate decisions on how a company is supposed to handle its challenges and

remain strong competitively in the changing environment. The fourth aspect that helps understand the significance of strategic foresight and cost saving strategies for an organization is using diverse sources to gather information on the unpredictable future. Leigh (2003) holds the view that enterprises only succeed in dealing with aspects, such as the high costs in the environment, by drawing from a wide range of information sources. The latter, should be reliable and should be futuristic to give a company the best possible picture of the future and how to deal with all possible issues.

Respect to the foregoing, organizations should be more focused on the information sources that give them an understanding of their market and the elements of costs that they are bound to encounter in the course of their operations. It is the only way to succeed in the future. Research highlights the interdependence between strategic forecast and cost saving strategies and their effect on the productivity, profitability and long term sustainability of organizations (Iden, Methlie, & Christensen, 2017). According to Iden et al., (2017), the strategic application of foresight can help in the development of cost saving methods that will go hand in hand with the strategic positioning of the organization for increased productivity, profitability and reduced wastage. If this happens and the organization records better profits at lesser costs and with better positioning and anticipation of future uncertainties, then it can be stated that the organization has greatly improved its performance.

The foregoing guarantees that there is a significant relationship between strategic foresight and the concepts of cost, profits, and cost leadership. Strategic foresight helps predict the future and possible costs when organizations evaluate the uncertain environments that they are bound to deal with, hence ensuring the identification of the best possible strategies of

minimizing their costs while maximizing profitability (Amsteus, 2011). With uncertainties in the future business environment, businesses always have to design the efficient ways of saving on the costs that ultimately generate their opportunities for profits. One of the best possible strategies of enhancing cost-saving techniques and generating profits while moving into the future on the part of organizations is to reduce the wastage of resources that are used for purposes of production. Research further interpolates that technology comes in handy when a company wants to decrease the waste of resources inversely fostering reduction on costs and promoting opportunities for profitability (Andersen & Rasmussen, 2014). Thus, strategic foresight gives organizations a perspective of how their future operations would look like and provides them with an opportunity to work towards dealing with the uncertain environments through efficient cost savings and the generation of profitability by knowing how to use their available resources in line with the emerging technologies.

2.8.2 Identification of Key Elements

The current research will entail two independent variables – strategic foresight and cost saving strategies. The two are independent parameters given that they are the central focus of this research in the effort of understanding how they help bring about more productivity, profitability and ultimate long-term sustainability of organizations (Agentielle, 2013). The future is always dynamic, and it is vital for a company to understand how it can adjust to the emerging trends to be more strategic in its performance in the market and focus on the targets, such as profitability, by utilizing the most efficient ways.

The dependent variable for the research will include profitability, productivity and long-term sustainability, as all these parameters are interlinked. The research envisions that with strategic foresight and cost saving approaches, organization's productivity, profitability and long-term sustainability is likely to be increased. The mediator variables are defined by various key elements, including a strategic planning, competition, technology, as well as resource wastage reductions. The explanation here is that with an efficient strategic plan, a company sees into the future in terms of what it is going to do to save on costs and boost its chances of profitability in the market (Carleton, Cockayne, & Tahvanainen, 2013). Competition, as the mediator variable, gives companies an opportunity to look at what other profitable enterprises are doing in terms of dealing with the uncertain situations in their environment, hence adopting similar strategies or putting in place different measures that distinguish them from the rest, hence working towards success in the market.

The element of technology is important in setting the platform for cost-saving approach as well as strategic foresight in the organization. Technology in the current study and as seen from extant literature focuses on efficiency and setting standards for the best performance within an organization, especially with the understanding of the unpredictable future environment in an organization's operations. Operations are streamlined by the technological opportunities that a company adopts to define the direction that it wants to follow. More so, resource waste reduction is also a mediator variable in the sense that organizations have to align their resources with their target performance and production objectives for them to remain sustainable in the future where the environment is highly unpredictable.

2.8.3 Research Hypotheses

Subject to the broad-based review of literature covering different knowledge perspectives related to the subject matter of concern, the research developed a raft of hypotheses which are outlined below. The development of the hypotheses was as a result of deductive analysis of literature evidence from among other evidences of research cited Leigh (2003), Lajili and Mahoney (2006), Amsteus (2011), Agentielle (2013), Andersen and Rasmussen (2014), Vechiatto (2015), Iden et al. (2017) and Silva et al. (2017) who attempt different correlations of the constructs of strategic foresight and costs savings and establish that they would promote profitability, productivity and long-term sustainability in the organization. The different evidences of research shed light on some of the components that make up the constructs and the theoretical foundations of the constructs. For instance, the current study learned from Schmidt et al. (2019) and Shrank et al. (2019) that waste reduction and technology were critical components of cost savings and generally made up the resource based theoretical foundation on which costs savings efforts were anchored as per research gathered and undertook by organizations. To this extent, the adoption of components of costs savings namely waste reduction and technology as part of the mediating variables of the study was considered paramount as it would help to contextually solidify the study of its effects on the dependent constructs. On the other hand, the current study learned that in the case of strategic foresight, a key component was strategic planning which included aspects such as domain framing and scenario forecasting, and its entire theoretical underpinning was market competitiveness or as identified in the current study – competition theory. These were highlighted by research evidences from among others, Coates (2010), Agentielle (2013), Ryan (2016), Rohrbeck et al. (2015) and Mohamed (2020) who in

multiple cases reiterated the importance of strategic planning and competition in the business environment. As a result, the research deemed the adoption and consideration of strategic planning and competition as part of mediating variables to be critical to the contextual solidity of the examination of the relationship between the two main constructs of the study. Notably, the suggested interrelationships between strategic foresight and costs savings from one research evidence to another as noted above and across the extant literature review were an encouraging impetus as the current study continually found instances of potential relationships from one study to another and therefore the primary course of the study – to find the actuality of the relationship between strategic foresight and costs savings and how they can help organizations attain profitability, productivity and long-term sustainability was entrenched across the process of hypotheses and model development. The below were the developed hypotheses followed by a literature backed elaboration of in support:-

H₁ – Strategic foresight, has a direct impact on productivity in organizations in the UAE manufacturing industry.

A number of research evidence were found to support the role of strategic foresight in improving productivity. One such research came from Brooks and Place (2019) who indicate that in the global food production system, the use of foresight is critical as far as shaping global food security it concerned. Brooks and Place (2019) submission intimates that, through reviewing past evidence and using it in modeling future scenarios in food security and food production globally, organizations can be able to successfully apply foresight to guide the application of strategies and approaches towards better food security. This is agreed to by concurrent research on the same subject matter which establishes that, understanding past trends

in agriculture and using them to model multiple foresight scenarios can be the key to unlocking more sustainable food production mechanisms in the present and future, through better understanding the opportunities in the present, and the future as well as the challenges thereof in an effort to scaffold production (Prager & Wiebe, 2019). Researchers Vecchiato et al. (2020) provide a different perspective from agriculture but still in support of the relationship between strategic foresight and productivity. According to Vecchiato et al. (2020), the application of foresight in business can lead to growth and increased productivity. Vecchiato et al. (2020) indicate that in the increasingly rapid and technologically-oriented business environment, organizations can rely on technology to improve their foresight and this will in turn open them up to opportunities of growth and improved productivity. The current study notes that there are multiple other instances and dimensions through which strategic foresight can impact productivity and this fortifies the impetus to examine the said relationship in the case of UAE manufacturing industry.

H₂ – Strategic foresight, has a direct impact on the profitability of organizations in the manufacturing industry in the UAE.

D'Amico (2022) informs that, a study of the airline industry provides a lucid understanding of the role of strategic foresight on profitability. In making the case for the relationship between strategic foresight and profitability in the airline industry, D'Amico (2022) intimates that, through a data-driven understanding of consumer foresight and nature, as well as the travel seasons for different destinations, airline operations are strategically designed to ensure a maximum profits. This position is supported by concurrent evidence of research from Eskandari et al. (2020) note that, in private banking, the application of strategic foresight helps

in increasing profitability and competitiveness through effectively analyzing the future needs of clients and providing to them more value through personalized services. Another evidence of research in support of the above hypothesized relationship noted that, in pharmaceutical business, collaborations anchored on strategic foresight into future diseases and challenges to humans can lead to record profitability in the occurrence of the diseases thereof (Li, et al., 2022). The foregoing pieces of evidence concur that strategic foresight has a relationship with profitability and in the current research, the veracity of the relationship will be examined in the case of the UAE manufacturing industry.

H₃ – Strategic foresight, has a direct impact on the long term sustainability of organizations in the UAE manufacturing industry.

The nature of strategic foresight to look into the future and the environment and determine any changes so as to plan a timely reaction gives it a proclivity to long-term sustainability in business. This is confirmed by multiple evidences of research for instance Mao et al. (2020), Haarhous and Liening (2020) and Mohammadi (2023). According to Mao et al. (2020) the discourse of transition to more sustainable lifestyles among humans cannot be successfully carried on without the application of foresight to policy development for step by step milestones in the transition process. In agreement, Haarhous and Liening (2020) while focussing on a holisitcally different subject area indicate that, the application of strategic foresight in an organization directly influences the long-term sustainability of the operations through influencing the strategic flexibility, the rationality of strategic decisions and leveraging this against the environmental uncertainty. Finally, Mohammadi (2023) in agreement with the aforecited scholars intimates that strategic foresight promotes strategic planning into the future

through the dynamic capabilities that it affords organizations and this ensures that it is able to sufficiently and effectively guide the implementation of future strategies for long-term sustainability of organizational operations. Considering the evidence provided in the captured sources, it is clear that strategic foresight is directly related to long-term sustainability of organizations and in the current study, the same relationship will be investigated with specific reference to manufacturing industry in the UAE.

H₄ – Cost savings have an impact on the productivity of manufacturing organizations in the UAE

An early research by Thomas and Sanders (1989) helps put into perspective the relationship between costs savings and productivity in the construction industry. According to Thomas and Sanders (1989), a stringent cost control mechanism in construction projects saves on costs and improves the productivity of the operation thereof. This is supported by further literature focusing on a different field which underlines that, in healthcare, the cost savings mechanisms when properly computed and factoring in productivity costs vis a vis productivity costs without the factor of costs savings approaches reflect a sharp difference wherein the former, leads to better productivity at manageable costs while the latter, leads to productivity at higher costs (Krol, et al., 2011). Recent evidence of research supports the foregoing evidence noting that, in the case of labor productivity in large projects, the identification of costs and proper planning of timings as a costs cutting measurer ensures that there is more productivity in the course of the project (Hamza, et al., 2019). The above evidence from extant literature are testament to the relationship between costs savings and productivity in organizations. The

current study is intent on studying the same relationship in the case of the UAE manufacturing industry.

H₅ – Cost savings have a direct impact on the profitability of manufacturing companies in the UAE

Xu et al. (2019) and Le and Ngo (2020) provide a lucid description of the role of costs savings on profitability in the banking industry. According to their individual researches, the primary factor leading to profitability in the banking sector is the costs-income ratio. When the costs-income ratio is high, then the profitability of the banks is jeopardized. On the other end, when the costs-income ratio is low, then the banks score high on profitability. Concurrent evidence of research from Pervan et al. (2019) reports that in the construction industry, the labor costs are among the highest predictors of profitability. The research from Pervan et al. (2019) examines the Croatian construction industry and discovers the role that costs of production such as material and labor have on the overall productivity of the organization. The evidence from banking industry coupled with the foregoing from the construction industry prove the close relationship between costs savings and profitability in the organization and the current study seeks to investigate the same in the case of the UAE manufacturing industry.

H₆ – Cost savings has a direct impact on the long term sustainability of manufacturing organizations in the UAE

The impact of costs savings on long-term sustainability can be considered from multiple angles. For instance, Niinimäki et al. (2020) present a perspective of costs savings and its role in long-term sustainable from the lens of fast fashion industry. According to the researchers, the

fast fashion business is costly to the environment with a lost of waste. In order to reverse the impacts of fast fashion on the environment which include over 90 million tonnes of waste and over 79 trillion litres of water consumed to sustain fast fashion, there is need to cut down the costs completely starting from deceleration of manufacturing to improved fashion behavior among consumers including reduced purchase of garments and longer use of garments. This is the only approach to assist in maintaining a sustainable environment as well as practice safe and costs effective production. Gigli et al. (2019) agree with the foregoing while focusing on the tyre manufacturing industry hihglighting thr criticality of costs savings as far as recycling is concerned and how this promotes better sustainability of the organization and the environment all at once. This is further buttressed by Escursell et al. (2021) who postulate that, in the e-commerce business, there is need to consider the impact of waste generated from packaging and develop effective strategies to ensure that costs savings approaches towards e-commerce packaging waste including but not limited to life-cycle assessment of the waste are put in place to promote long-term sustainability. Considering the above evidence, the current study seeks to examine the role of costs savings in promoting long-term sustainability in the UAE manufacturing industry.

H₇ – Strategic foresight directly impact cost savings in the manufacturing companies in the UAE

This relationship has been examined earlier in the current study and research evidence including but not limited to Leigh (2003), Lajili and Mahoney (2006), Amsteus (2011), Agentielle (2013), Andersen and Rasmussen (2014), Vechiatto (2015), Iden et al. (2017) and Silva et al. (2017). According to these researchers, there was a correlation between strategic

foresight and costs savings in organizations. Based on these evidence, the current study seeks to use primary data to come forth with an understanding of the accuracy of the above hypothesized relationship in the case of the UAE manufacturing industry.

H₈ – Strategic foresight directly impacts strategic planning in the manufacturing industry in the UAE

The relationship between strategic foresight and strategic planning is indubitable and has been referred to by multiple researchers already cited in earlier parts of the literature. For instance, Vecchiato (2015) highlights how strategic foresight is the bedrock of all efforts of strategic planning. This is in agreement with earlier evidence from Rohrbeck et al. (2015) who highlight the traditions behind strategic management in the organization as being, entirely about the ability to foresee the future among managers. Multiple other concurrent evidence have been provided including but not limited to Hojland and Rohrbeck (2018) which underscore the relationship between strategic management and strategic foresight indicating that the former feeds on the latter so as to have a clear future oriented outlook to guide the planning and execution of organizational strategies. In the current study therefore, the veracity of the above hypothesis will be interrogated in the case of the UAE manufacturing industry.

H₉ – Strategic foresight directly impact competition in the manufacturing organizations in the UAE

The role of strategic foresight on competition and competitiveness has been reviewed and highlighted through multiple accounts in the literature. One profound account is shared by Coates (2010) in a report on strategic foresight in the US and its role on competition. According

to Coates (2010) submission, strategic foresight enhances the decision-making capacity of an organization based on future projections and this enables the effective positioning of the said organization, to take up opportunities as they unfold and lead their competitors. This postulation was supported by further research from Ryan (2016) in a guide to framing the future. In the detailed guide for future framing, Ryan (2016) establishes that, through strategic foresight, organizations are capable of shaping a future landscape that they can effectively dominate and thereby lead competition. In a study of the case of strategic foresight intelligence in Qatar industries, Mohamed (2020) in agreement with Coates (2010) and Ryan (2016) noted that, strategic foresight intelligence has been useful in guiding Qatar industries in the competitive business environment by leveraging data to come forth with market knowledge that rivals competition. The above evidence are testament to the relationship between strategic foresight and competition which the current study will seek to expound in the case of the UAE manufacturing industry.

H₁₀ – Strategic foresight directly impacts technology adoption and development in the manufacturing organizations in the UAE

Rohrbeck and Gemunden (2011) was one of primary evidences available supporting the relationship between strategic foresight and technological adoption or innovation in organizations. According to Rohrbeck and Gemunden (2011) research, strategic foresight impacts technological adoption in three ways namely – strategic, initiative and oppositive. In the strategic ways, characteristic of its name and concept as captured multiply in previous literature cited and elaborated, strategic foresight fosters the exploration of new opportunities in the business environment. In the initiative way, strategic foresight proposes technological

innovations and adoption ideas, while finally, in the opposite way, strategic foresight continually interrogates operational models and challenges their validity thereby leading to the first step once again and the cycle continues. Ruff (2015) concurs to the foregoing while giving an experiential case of the automotive industry. According to Ruff (2015), development in the automotive industry is and has over the years been reliant on two things, strategic foresight and technological advancement or innovation. Accordingly, Ruff (2015) intimates that through application of strategic foresight, organizations in the automotive industry have been able to commission technological innovations and execute their adoption and diffusion into the industry and all the way through to the market. In underscoring the relationship between strategic foresight and technological development and adoption in organizations globally, researchers Gordon et al. (2020) reflect extensively into the development of strategic foresight and the impacts it has had on organizations and overall economic development globally. According to Gordon et al. (2020), strategic foresight, despite being scarcely studied, has been the epicenter of all technological advancements and development. Gordon et al. (2020) acknowledge the challenge of lack of recognition of the role of strategic foresight in many momentous technological developments and indicate that, with the rise in appreciation of the role of strategic foresight organizations across sectors the technological impact of strategic foresight will be further felt in the future. From the extant literature, the impact of strategic foresight on technological adoption and development in organizations is significant, the current study seeks to ascertain this in the case of the UAE manufacturing industry.

H₁₁ – Cost savings directly impact resource waste reduction in the manufacturing industry in the UAE

The above hypothesized relationship is supported by evidence from literature for instance Brotcorne et al. 2019 who mention that different approaches are taken by manufacturing organizations among other organizations generally to reduce waste reduction such as automation and streamlining of the production processes. This is agreed to by Dreyfus et al. (2019) and Nubholz et al. (2019) who concurrently assert that costs savings have an impact on reduction of waste in the processes of an organization to ensure the lean utilization of resources for maximum output at minimal costs. The current study seeks to investigate the above relationship in the context of the UAE manufacturing industry to prove or disprove its veracity.

H₁₂ – Strategic planning affects productivity, profitability and long-term sustainability of organizations in the manufacturing industry in the UAE

Strategic planning as a component of strategic foresight was found to have multiple benefits including increased productivity, profitability and long-term sustainability in organizations. This was confirmed by a number of literature evidence such as Heger and Rohrbeck (2012) who highlighted the different instances of strategic planning including but not limited to scenario planning. According to Heger and Rohrbeck (2012), scenario planning in organizations had the effect of enhancing the productivity, profitability and long-term sustainability prospects of an organization because of the clarity of direction into the future occasioned by strategically planning. Hojland and Rohrbeck (2018) on the other hand inform on the role of strategic planning as far exploring new markets is concerned. According to Hojland and Rohrbeck (2018) strategic planning has significant impact on productivity and profitability during expansion into new markets and plays a critical role in the establishment of long term presence in new markets. Meyer et al. (2020) agrees to the assertions by Heger and

Rohrbeck (2012) and Hojland and Rohrbeck (2018) adducing that, based on different factors in the environment, organizations prepare for the future by ensuring strategic planning to safeguard their productivity, their profitability and establish the long term presence in a particular market. The current hypothesis could well be developed in the form of sub-hypotheses covering productivity, profitability and long-term sustainability but in the current study, the researcher elected, in the interest of brevity, considering the long list of hypotheses already, to retain this jointly and study it in the case of the UAE manufacturing industry.

H₁₃ – Competition, directly affects productivity, profitability and long-term sustainability of organizations in the manufacturing industry in the UAE

Carleton et al. (2018), Fink and Schlake (2000), Menon and Yao (2014) and Vecchiato (2015) are all evidence that can be alluded to when supporting the above hypothesis from literature. According to Carleton et al. (2018) in agreement with Fink and Schlake (2000), the growth of the global economy has resulted in a brutal competition for resources and not only that, there is also competition for market. To this end, business managers understand the importance of effectively managing competition in the business environment because this is what impacts the profitability, the productivity and the long term sustainability of the business. Menon and Yao (2014) in their research admit that, competition is a primary focal point in evaluating repositioning strategies in the business environment towards realizing more productivity, profitability and long term sustainability in the market. This is reiterated in a different way by Vecchiato (2015) whose study on strategic planning in turbulent environments highlights the importance of competitiveness in the business environment. According to Vecchiato (2015), proper analyzing of the competitive environment supports the development

of strategies towards improving productivity, profitability and long term sustainability in a particular market. The current hypothesis could well be developed in the form of sub-hypotheses covering productivity, profitability and long-term sustainability but in the current study, the researcher elected, in the interest of brevity, considering the long list of hypotheses already, to retain this jointly and study it in the case of the UAE manufacturing industry.

H₁₄ – Resource waste reduction directly affects productivity, profitability and long-term sustainability of organizations in the manufacturing industry in UAE

Nubholz et al. (2019) highlighted the different approaches towards resource waste reduction in organizations. According to Nubholz et al. (2019), the adoption of circular building models and business models in non-construction industries, had the capacity of transforming the operations of an organization into lean, waste-averse systems that lead to more productivity, better profitability and long term sustainability. This same notion was shared earlier by, Niinimäki et al. (2020) who reviewed the fast fashion industry and noted the importance of reducing waste to enhance savings through increased quality in productivity, which in turn increases the profitability while being considerate of the environment therefore leading to long term sustainability. Multiple other evidences that support the above relationship are available for instance, Brotcome et al. (2019) and Dreyfus et al. (2019) who critically discuss the different approaches to waste reduction including automation and process optimization whose resultant impact is improved products, increased profits and long term sustainability of organizations. The current hypothesis could well be developed in the form of sub-hypotheses covering productivity, profitability and long-term sustainability but in the current study, the researcher

elected, in the interest of brevity, considering the long list of hypotheses already, to retain this jointly and study it in the case of the UAE manufacturing industry.

The hypothesized relationships above, have been informed by the depth of the literature studied in an attempt to establish foundational knowledge on the subject matter. The relationships will be tested in order to come forth with objective falsification or assertion of their validity and the consequential development of an integrated implementation framework.

2.8.4 Conceptual Framework

The working conceptual framework for this study is diagrammatically represented as below;

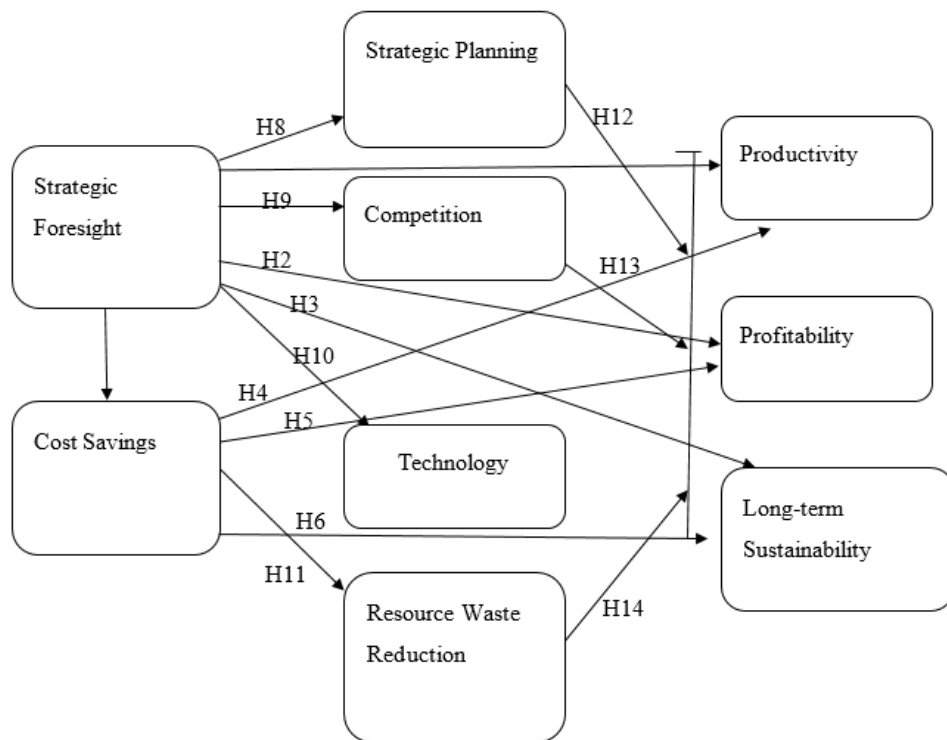


Figure 2.1: Conceptual Framework

Therefore, the conceptual framework above is demonstrative of the different key elements of this research and how they interact to lead to significant findings of this study. For instance, it is demonstrated from the conceptualized framework for hypotheses relationships that the productivity and profits realized in the organization depend on the function of strategic foresight and cost savings in an organization as well as all the mediator variables, such as strategic planning, competition, technology, and the reduction of wastage within the company. Noteworthy is the fact that strategic foresight and cost savings are on the same side of the equation all affecting productivity, profitability and long-term sustainability through the effect of the mediating variable, arguably implying their independence and inverse interdependence in the achievement of the results of increased profitability, productivity and long term sustainability. This on the other hand means that organizations have the chance of implementing cost savings on its own to reduce operational costs, cut down on waste and increase overall profits. As well as implementing strategic foresight independently to inform on ways to improve the same and establish organizational preparedness for future uncertainty. However, the joint application of the two strategies is hypothesized to bring more positive results in as far as achieving the dependent variables is concerned – this will be proven true or false through the testing of the hypotheses.

As demonstrated in the literature leading up to the development of the conceptual framework, strategic foresight is the ability of the company to have in place all key tools to look into the future in a more accurate way and understand the circumstances that it is supposed to face as well as the accompanying consequences of these environmental factors. If the environment is ineffectively scanned, an organization would find it challenging to deal with the

emerging conditions, hence making it difficult to survive in the dynamic and changing environment. Consequently, the proper scanning of the environment can inform cost saving methods to keep the organization on the right side of the future. Foresight provides an organization with a better opportunity to manage costs and improve the levels of profitability that it generates in instances where it has a clearer understanding of its environment. For instance, using foresight, cost savings can come about by deciphering how employment trends are to change in the future, how production materials are bound to change in future, and how technologies used in the manufacture of given products are bound to change in the future.

The presence of these characteristics means that organizations would be better prepared to address all the challenges that they face in their environments and appropriately account for each of the resources. This in turn increases productivity, profitability and reduces waste based on the resources that the company saves while working cautiously towards the future. The long-term advantage is that the organization will have more stability to withstand changes in the market and ideally be able to maneuver thanks to good strategic foresight and cost saving strategies. Through better prediction of the future trends, there is always a strong approach to dealing with competition, better planning in an organization, better usage of the available resources, and the application of technology to achieve efficiency across operations.

2.9 Conclusion

The extensive review of literature has attempted to explore the key aspects of the subject matter that would be helpful in providing the research with adequate working knowledge going forward. The review of the literature commenced with the exploration of the terminologies of

focus for the research. This then paved way for the investigation of the antecedents of these terminologies, their application in the organization and then different components that make up the constructs. The research in doing this has been successful in opening up other different related aspects of including but not limited to profitability in organizations, productivity, long-term sustainability, resource waste reduction and the indelible impact of technology on contemporary organizational operations and the whole research. The flow of the chapter then conducted an overall synthesis of the different works of literature which bordered on the potential joint application and/or relationship between the main constructs and how different other related aspects intermittently crisscrossed paths with the two constructs.

Subject to the above realized relationships, research embarked on the redefinition of critical concepts for the purpose of development of theoretical approach and framework and the ultimate formulation of the research hypotheses. The hypotheses were formulated based on the relationships that the research was convinced would be important to study and test from real data. The conviction came from the different relationships highlighted by the literature and experiential interests too. Together with the delineation of hypotheses of study, the research prepared a working framework of the main constructs, mediating constructs and the outcomes expected adequately explaining the hypothesized scientific relationships in the model.

The upcoming part of the research will seek to develop a systematic, objective and comprehensive methodological approach through which the research can base the study of the relationships between the constructs, the mediating constructs and the outcomes and ultimately test the hypotheses. The testing of the hypotheses is expected to inform the research about the strength and direction of the relationships between the constructs studied in the research. Based

on the strengths and relationships of the constructs studied as per the hypotheses tested, the research will be able to embark on the development of a working framework of the interaction between strategic foresight and costs saving activities in manufacturing organizations in line with one of the objectives of the research. This framework will act as a blueprint for the effective implementation of strategic foresight for cost savings in the manufacturing industries in the UAE and by extension, other manufacturing industries globally.

Chapter 3 Research Methodology

3.1 Introduction

The research design and methodological approach are key ingredients to the successful preparation and presentation of thesis. They are the primary reflection of the logic behind the research, the direction and steps that the research seeks to take in an effort to answer the questions raised, test the hypotheses and fulfill the delineated objectives of the research. Scholars Palinkas et al. (2015) review the contribution of the methodology to high level research and report that a clear methodology is an imperative for a high level research since without it, the research is unable to justify its contribution to knowledge. This essentially means that the research has to explain how it has conducted the study that it has postulated from the introduction and this is only achievable through the development of a clear and robust methodological approach.

With a clear understanding of the importance of the methodology to this research, this section seeks to ratify the afore-stated importance by presenting an operationalization of the variables of research in a way that will establish the importance of studying the variables and the potential connections that the variables may have. This will be accompanied by an in-depth and purposeful review of literature behind methodological principles and approaches all of which will serve to ensure that the final adopted methodology for this research is backed by evidence of research and rationale for the expectations, level and purpose of research. Among things that will be spotlighted in this chapter will include the sampling procedure, the methods of data collection and the challenges encountered in the process of research. These steps are

aimed to guide the decision of the approach of the research in a way that can be verified as informed and non-biased. Scholars Rajesakar, Pitchai and Veerapadran (2006) agree to the above foregrounding of the importance and scope of the methodology chapter of research informing that, the methodology section should front a clear and unbiased delineation of standards, procedures and techniques, and a process for the implementation of selected delineated approaches, techniques and procedures.

Palinkas et al. (2015) echo of the importance of the methodology in high level research was reflected in Rajeskar et al. (2013) scholastic work who noted that through the systematic review of different methodological options, standards, procedures and techniques, the research is able to make an informed choice of the best fitting methodological approach that suits the particular research questions, objectives and hypotheses. The need to contribute to knowledge is further made central in Rajesakar et al. (2006) review of the methodology of research and how to approach it. In their work, they quote earlier research on high level studies which note that, as a sign of systematic continuity of knowledge, the contribution to knowledge should be done in a systematic, valid and imputable way as this is the only way to enhance the understanding of all the chapters that follow after the methodology (Sekaran, 1984; Nachmias and Nachmias, 1996). According to Nachmias and Nachmias, this is precisely why in high level studies, it is discouraged to present descriptive knowledge since there is need to contribute to knowledge rather than to repeat what has already been discovered in different words.

With the above introductory understanding of the methodology, the research elected to use a positivist research philosophy that automatically elected a quantitative and deductive

approach for the entire research. The following sections of this chapter will shed some clarity on this.

3.2 Research Philosophy

Depending on research objectives and the approach that the researcher intends to take, there are different philosophies from which the research must choose and stick to. Saunders et al. (2007) despite not being the seminal scholars of research methodology made a groundbreaking research on the understanding of the process of research from the philosophy to the actual data collection and analysis stage.

According to Saunders et al. (2007) the research philosophy is the perspective of the researcher on what entails truth and as a result it is basically what the researcher thinks of as truth before breaking it down to ways of determination. This position is supported by further evidence of research which notes that, research philosophy is a definition of the epistemology of the study (Antwi and Hamza, 2015; Quiros, Faria and Almeida, 2017). According to Antwi and Hamza, this is referent to the way of thinking and knowing of an individual researcher.

Further on this, Quiros et al. (2017) inform that it refers to more of the ways in which the researcher would like the truth to appear or be presented. This covers the conception of the type of data that would be best to reflect the truth given a particular scenario, the way of collecting this data that would help achieve the expected result of truth and how this data can help in the answering of the questions that inform the research. The relationship between research philosophy, truth and its importance in the development of research methodology; is underscored by Johnstone (2014) who notes that, the research philosophy is the bedrock of all

other stages and aspects of the research methodology. The foregoing assertion is underpinned by further evidence of research which mentions that, it is impossible for a research to be able to effectively make selections of what the other aspects of the research methods will be without understanding the philosophy of research (Palinkas et al., 2015).

3.2.1 Positivism

This research philosophy counts on science and facts to determine truth. It remains one of the most used approaches in scientific research but there is no unified definition or agreement among scholars as to the actual definition of positivism or positivist philosophy of research (Crowther and Lancaster, 2008; Wilson, 2010; Khanna, 2018). The ambiguity of positivism is related to the different methods of application of the philosophy in scientific research. According to Crowther and Lancaster, these differences are occasioned by the difference in objectives in different researches which thus call for different applications of the same method. There is general understanding among the researchers afore-cited that despite the differences in application, the unifying and defining factor of positivism philosophical approach is the application of scientific methods to deal with numerical data in the effort of determining the truth. In concordance, Wilson (2010) notes that the positivism philosophy pursue truth only in numbers and based on standard scientific and statistical approaches to the determination of the relationships between constructs studied in a research. In this case, the researcher has a limited role which is the collection of the data, analysis and interpretation all of which are based on standardized approaches developed by scholars of positivism philosophy. Khanna (2018) concurs to the above and adds that positivism calls for a quantitative research strategy which

takes on a deductive approach aimed at investigating truth in a new area of knowledge through the development of hypothesized relationships.

Subject to the purpose of this research, which is to investigate an area of knowledge that has not yet been investigated, this research adopts the positivists philosophy of research. As mentioned earlier and supported by cited research evidence, the selection of research philosophy is guided by the conviction of the researcher about the truth and the objectives of the researcher. To this extent therefore, the conviction of the researcher is that numerical representations of truth are valid and can be passed down to different individuals while still retaining the same meaning. Together with this, the research has taken a topic where there are previously limited studies and this has been identified as a gap in earlier sections of this study. Despite the fact that there have been studies on strategic foresight and cost savings, research found that these have been isolated and bore no consideration of the relationship between the two. Therefore, the study ventures in a rather unknown area of knowledge and that is why through an in-depth review of literature and based on experience, the researcher developed 14 hypotheses to be tested. These hypotheses represent the relationships that the researcher believes exist between the two constructs and their relatable mediating and dependent constructs and/or components as found out from literature.

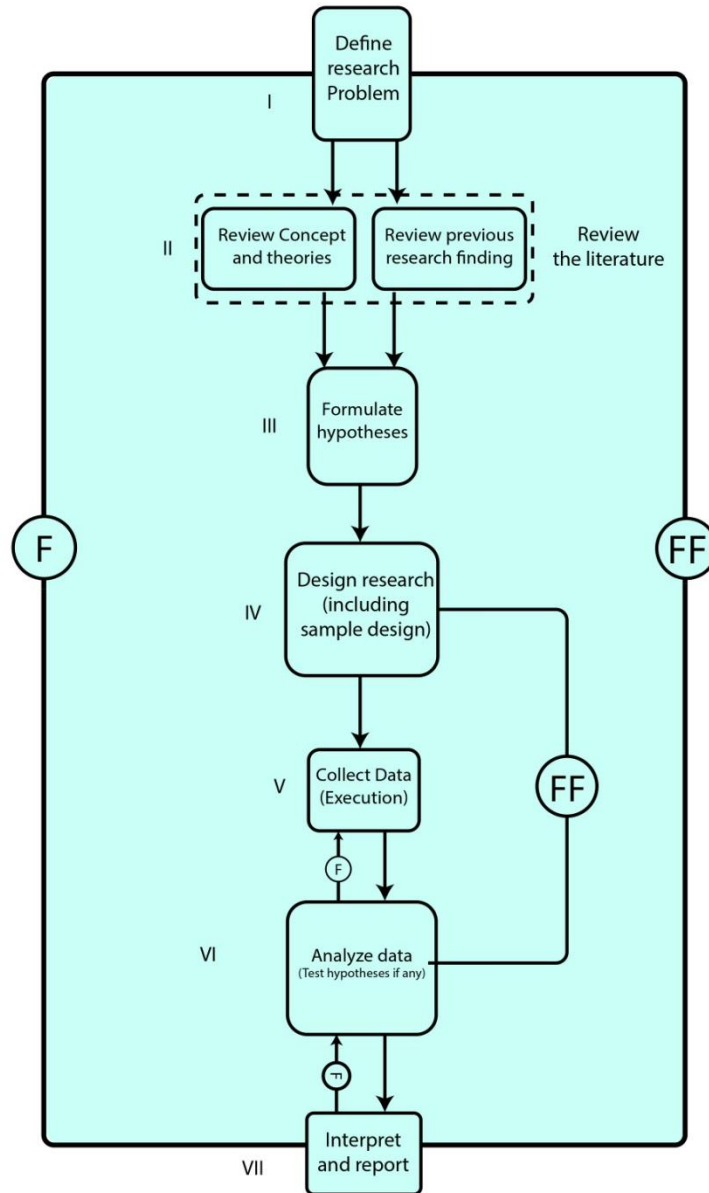
With positivism as the philosophy, the research will take a deductive approach which will seek to utilize numerical evidence to scientifically investigate the relationships between the constructs, mediating constructs and dependent constructs as hypothesized in an effort to validate or falsify the hypotheses thereof. A quantitative method of data collection based on a 5-point likert scale questionnaire that will be detailed further in the next parts of this chapter

will be used in the collection of data for the research. The methods of analysis will be quantitative and the details of the actual approaches will also be provided within this chapter. A mono-method focusing on single data collection method and analytical approach will be used. Apart from this, the research will be cross-sectional as it is studying the phenomenon at a given point in time. The chosen philosophy and the design of the research will help the research stick to its conviction of truth and pursue the objectives of the research in a manner that will minimize researcher bias and subjectivity of the study. This in itself will add value to the study as it will enable it to be adopted and used in other settings.

3.3 Research Process

Burns et al., (2008) reports that the identification of the research philosophy enables the development of the entire research strategy after which, the research has to lay down clearly the research process. According to Burns et al. (2008) , the research process is the roadmap for the conduct of the research and it enables the research to stick to the plan thereby eliminating any possibilities of retractions or confusions. Researcher Burns et al. (2008) in agreement with the above mentions that it is imperative that the research develops the research process which is the research plan as it helps in outlining the notion and conception of the research, definition of the research targeted problems and the steps towards the resolution or investigation of the problems thereof. This position is further fortified by Fisher and Bloomfield (2019) who report that in senior research, the research process is an individual model of how the researcher went about their research and it is incumbent upon researchers to develop a proper research framework that

they used in their research. With the above understanding, the following research framework was developed to idealize the current study's research process:-



Where (FF) = feed back (Helps in controlling the sub-system to which it is transmitted)
 (F) = feed forward (Serves the vital function of providing criteria for evaluation)

Figure 3.1: Research Process Framework

Source: Researcher's own development

Subject to the above framework, the research entailed the theoretical and the empirical parts. Unlike portrayed in the framework, the progression of the research was not entirely linear but would most of the times overlap between empirical and theoretical tasks of the research. However, it served as an important tool that the research would go back to now and then to determine exactly what the research had done, what was going on and what was yet to be done. The following is an elucidation of the different stages of the research as per the framework showcased above:-

Step I – The seminal step of the research involved the development of background knowledge about the industry of study, the definition of the problem and its contextualization within extant literature. The primary basis of this section was extant literature supported with experiential knowledge, and the section sought to highlight the fact that strategic management while being useful to contemporary organization, was limited in as far as preparing organizations for the future was concerned. The research highlighted the difference in definition between strategic foresight and strategic management which found the latter to be focusing on using passed successful approaches to manage the present and the upcoming while the later was concerned about developing the future and shaping it through looking far on. The challenge of the contemporary global environment and its VUCA nature was highlighted in the context of the manufacturing organizations. The role of the manufacturing organizations in the economy was made apparent and much so, the importance of these organizations to be resilient in the face of economic crises like the recent COVID-19 pandemic. To this extent, a case was made that since cost savings has been a time immemorial practice of businesses, then the best way to prepare manufacturing organizations for the future is to look at the possibility of these

organizations to be able to use strategic foresight to consider potential costs changes in future productions and adequately prepare for the same. Thus, strategic foresight and costs savings in the manufacturing sector in the UAE was conceptualized, the main importance being to help the organizations remain resilient since they are great contributors to the economy and most of their operations are capital intensive.

Step ii – The second step of the research was the in-depth development of the background knowledge related to the constructs under study – strategic foresight and costs savings. The research at this point has already identified the problem as the need for the synergetic and integrated application of these two constructs in the anticipation of the future however, knowledge about these constructs was still missing from the research. Saunders et al (2007) report that, in-depth literature review is critical to the development of sufficient background knowledge, which facilitates the effective study of a matter of knowledge. To this extent, the research embarked on an in-depth review of the literature behind strategic foresight and cost savings in organizations. Among the things reviewed were their development over the years, their definitions, their different applications, relatable sub-constructs and the components. The research at this point also attempted a synthesis of the two based on evidence of literature gathered and this proved that if the two were effectively applied, then probably, the outcome would be better future costs management. Since costs changes are one of the characteristics of a VUCA business environment, then this meant that the two would really be useful for the UAE manufacturing industry.

Step iii – Based on holistic cross-industry and experiential synthesis, the discoveries found in the literature review of how the constructs are used in different settings and other

relatable mediating constructs led to the formulation of fourteen hypothetical relationships by the research. Lavrakas (2008) indicates that in higher level studies, the development of hypotheses should be backed by a solid review of relevant literature to a field where the researcher already has experiential knowledge. According to Lavrakas, the research in developing the hypotheses has to filter through wealth of literature, interact experience, consider the research objectives, the research problem and the variables in the research. What follows then is the consideration of other relatable constructs, mediating and dependent constructs as found in the literature, and their effect on the relationship between the variables of the research. The research therefore has to build some relationships out of the variables and the potential sub-variables and consider the ability of measuring these. This section marked the culmination of the theoretical part of the research.

Step iv – The fourth step of the research process involved the shift from focusing on gathering literature and theoretical evidence to the development of a solid plan for the study of the relationships hypothesized and investigation of the problems of the research. It is at this point that the methods, approaches and techniques of the research were delineated. The research also sought to outline all the measurement approaches and data analysis approaches the research sought to take in an attempt to effectively study the matter at hand.

Step v – Part of the efforts in the previous step included development of the data collection tool which in this research was a 5-point likert scale questionnaire. This tool was deployed to collect data based on determination of information such as the sample design and the target which are ideally established in the previous step.

Step vi – A rigorous approach for data analysis was employed to analyze the collected data in step five. The specific methods of data analysis are subject to identification in the fourth step where all methods of measurement of the research are identified and delineated.

Step vii – This step involved the interpretation of the collected and analyzed data based on the scope of the research problem, objectives and developed hypotheses.

Bell and Bryman (2018) in a research on the methods of research in business reports that the development of a research framework helps in ensuring that the research is able to progressively review its progress and remain focused on the appropriate objectives at each step of the way. The research framework for this research played an important role in ensuring the same all through the research.

3.4 Operationalization of Research Design and Scale

To supplement the research plan/framework, it is incumbent upon the research to operationalize the scale of the research by explicating the extents of the research (Babbie and Mouton, 2001). According to Babbie and Mouton (2001), it is through the operationalization of the research design that the actual measurement of the research and approaches to the conduct of research as projected in step four of the research framework are explained and their utility foregrounded. Since the fourth step as highlighted in the research framework is the foundation of the empirical research, this sub-section of the methodology is of utmost importance as it will play a key role in bringing the audience to understanding how the research intended to, and conducted the study. Among the details of key importance that will be reviewed under this sub-section of the chapter include the design of the data collection instrument; its distribution and

collection; the extraction of data from the data collection instrument; and, the different analytical methods, measures and approaches used. The review and explication of these details will shed useful light on the understanding of the handling of the research process and the data in an effort to gather useful information from it.

Hair, Money, Samouel, and Page (2015) in justifying the need to proceed from the above trajectory mentions that the research operationalization and design is the most cogent part of the research process as it provides the ingredients to the actual execution of the research. Further, Hair et al. (2015) reveal that the research design operationalization's presentation is two-fold – one it is presented as a guideline to the research on what steps to take in collecting and handling the data while on the other hand, it helps in informing the audience as to the exact steps taken in the research and why (Orodho, 2003). Earlier in the introductory sections of this chapter, it was made apparent that a positivist, deductive and quantitative approach would be taken by the research. This section will go directly into highlighting the actual steps taken in a methodical manner. Evidence of research retorts that, the positivist, deductive and quantitative approach is effective in the study of phenomena that are not descriptively measurable and/or comparable, or whose descriptive measurements would suffer from lack of previous empirical evidences to base the descriptions (Hair et al., 2015).

The position of the current research is between constructs whose relationships has not been previously studied. This explains why the research formulated hypotheses based on a review of literature and experience. The reason for doing this, was to invoke potential relationships which could then be studied through the collection of numerical data and creation of comparison from these. Schunk (2012) and Pennings, Keman, and Kleinnijneinhus (2016)

report that, quantitative research approaches uses numbers to numerically relate phenomena and/or constructs in a study and see the strengths that the numerical relationships between these constructs score. Pennings et al. (2016) further intimate that the introduction of numbers into social sciences studies of phenomena is what is referred to as operationalization. This transforms a study from qualitative to quantitative focusing only on the numerical relationships and bringing forth an ability to measure the strength between social relationships.

In concomitance with the above stated, Lukyanenko, Parsons and Wiersma (2016) indicate that social sciences relationships are immeasurable without the involvement of numbers and statistical techniques. This, the researchers note would prove a challenge to higher level research and would make it such that only qualitative research can be conducted. However, thanks to the ability to operationalize variables, researchers can conduct empirical investigations of social sciences phenomena in an effective and objective manner. The first step to operationalization of variables and research design according to Lukyanenko et al. (2016) is the disintegration of phenomena into contiguous and relatable constructs and sub-constructs that can be used in the elemental investigation of the phenomenon. This is essentially done with the help of an in-depth review of literature surrounding the phenomena to find out the relatable aspects of the constructs that are relevant to carry on into further investigation of the matter based on objectives and overall goal of the research. The conceptualization of research and development of hypotheses is the acme of this operationalization, which is further taken on in the development of the questionnaire data collection instrument. In the current study, a 5-point likert scale was used to operationalize the variables and help in the close-up investigation of the

subject matter through the collection of the specific data. The following is the discussion of the questionnaire design:-

3.4.1 Design of the Questionnaire

As seen from the literature review, the research gathered evidence from a plethora of previous studies in related subject matter and by the close of the literature review, had already identified potential aspects and dimensions for the conduct of the study. In line with Lukyanneko et al. (2016), the research proceeded with the interaction of the dimensions found from literature in more fragmented forms to the development of a structured questionnaire to be used in the study. This approach is supported by multiple evidence of literature which advice on the development of measurement scale for priori-hypotheses based researches (Schriesheim et al., 1993; Hinkin, 1995; Burns et al., 2008; Carpenter, 2018). According to Schriesheim et al. (1993) most priori-hypothesis based researches are an offshoot of deductive reasoning that postulate a set of hypotheses which should be tested. In making these postulations therefore, it is usually the case that the researchers may find a hurdle in extant literature in terms of gaps of knowledge of the postulated relationships. Reflecting on Schriesheim et al. (1993) observation on the development of new hypotheses-based research, the current study already identified a research gap in this was the lack of studied in extant literature that examined strategic foresight in tandem with costs savings in the organization. A review of extant literature revealed multiple instances where strategic foresight was studied in relation to organization aspects including innovation, performance and competitive advantage just to mention a few. Similarly, multiple evidences have been reviewed in the research' literature review on the application of costs-savings to improve productivity, sustainability and overall organization profitability among other aspects

just to mention a few. What was found to be missing in literature any attempt to examine the relationship between strategic foresight and costs savings in organization and to how the two could be beneficially applied in organizations. To this extent therefore, Schriesheim et al. (1993) observation of the need for the self-development of measurement scales in priori-hypothesis based deductive reasoning oriented research firmly supported the current research's development of original measurement scale.

Hinkin (1995) research was used as one of the primary guidelines in the process of the development of the scale for the current study. Hinkin (1995) in appreciation of the complexities of certain research trajectories acknowledges that the development of measurement scale is critical in research. Hinkin (1995) emphasizes the importance of taking a rigorous approach towards the development of sources. In agreement with Schriesheim et al. (1993), Hinkin (1995) notes that, a critical understanding of elements of literature making up a particular subject matter and the relationships espoused between suggested constructs of research thereof, is critical to the successful development of a valid measurement scale. This, Hinkin (1995) identifies as content validity which in turn leads to construct validity. Supporting Hinkin (1995) assertions on the need for rigor in the development of original measurement scales, Burns et al. (2008) indicates that the design of new measurement scales has to be supported by qualitative and quantitative approaches where the face, content and construct validity of a proposed measurement instrument can be evaluated. Research from Carpenter (2018) provided the best guidance for the development of the measurement scale through steps agreed to by previous research evidence including the qualitative and the quantitative face to arrive at an objective and

valid measurement scale. Figure 3.2 below shows the stages that were followed in the design of the questionnaire for the current study:-

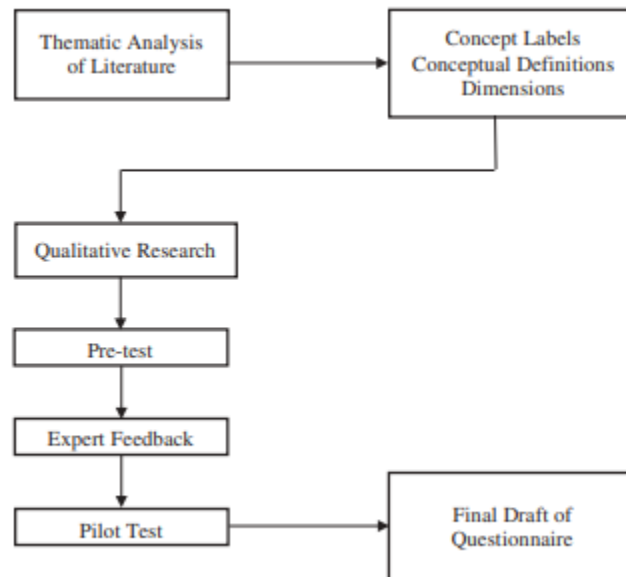


Figure 2.2: Steps taken for the development of measurement scale

Source: Carpenter (2018)

In strict keeping with the above steps for the development of the questionnaire, the questionnaire developed would be used in the collection of construct and sub-construct specific information, which would later be used in the measurement of causal, independent, dependent, or mediating relationships between the constructs and sub-constructs. Scholars Fassinger, Arseneau, Grzanka and Miles (2013) report that the study of relationships between variables in a research is collectively referred to as correlation research. This identification is supported by further research from Trochim, Donnelly and Arora (2016) which points out that, correlation research is instrumental in the study of cross-sectional cause and effect relationships between variables. The questionnaire designed was divided into 10 sections. The first section of the

questionnaire was used to gather the demographic data of the participants. Some of the important demographic information that the research sought to gather included – age, gender, job position, organizational department and job experience. According to Bell and Bryman (2016) demographic data is critical to any research as it helps in the profiling of the responses and understanding how different demographic data and patterns affect and/or reflect to the subject matter under study.

The following nine sections of the questionnaire included the different constructs and sub-constructs that had been operationalized for specific information collection. As researchers have contended, it is important to break down a phenomenon into different constructs and sub-constructs that can enable its study to the core (Fassinger et al., 2013; Trochim, et al., 2016). The main constructs of the study were Strategic Foresight and Costs Savings. From these, and based on the literature reviewed and experiential knowledge, sub-constructs such as Productivity, Profitability, Long-term sustainability, Strategic planning, Competition, Technology and Resource wastage reduction – all of which were included in the framework of the research were measured. These constructs and sub-constructs were considered relatable, measurable and the researcher hypothesized the existence of certain causal, dependent, independent and moderated relationships between and among them especially as far as the subject matter of research was concerned. Hence, this justified their operationalization and inclusion in the questionnaire for the purposes of collection of numerical responses in order to later determine the strength of their correlated relationships (Schunk, 2012; Lukyanenko et al., 2016; Pennings et al., 2016).

Accordingly, the nine constructs were symbolized as follows Strategic foresight (SF), Costs savings (CS), Productivity (P), Profitability (Pr), Long-term sustainability (LS), Strategic planning, (SP), Competition (C), Technology (T), Reduction of resource wastage (RRW). Each of these constructs was measured based on 8 items using a 5-point likert scale. Based on research evidence cited on the importance and goal of operationalization, all the 8 items of measurement used in each of the constructs were seeking to gather specific, simple and contiguous evidence of the constructs as per the participants.

Table 3.1 below shares the constructs and sub-constructs operationalization, the items measured and the scale and code used.

Table 3. 1: Operationalization of variables

Constructs	Items	Scale	Code
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Strategic Foresight	1. Monitoring strategic foresight goals is significant for my organization	5-point	A.1
	2. Strategic foresight entails monitoring the business sectors in which your organization operates	5-point	A.2
	3. There are impediments to strategic foresight implementation	5-point	A.3
	4. Implementing strategic foresight efficiently contributes to growth of the organization	5-point	A.4
	5. Implementing strategic foresight results in effective information management	5-point	A.5
	6. Careful implementation is a key factor of success in the implementation of strategic foresight	5-point	A.6
	7. Strategic foresight has an impact on the corporate decision making process	5-point	A.7
	8. Strategic foresight is necessary for the opening up of future competitive space	5-point	A.8

Cost Savings	1. Cost saving is perceived to be significant in your organization	5-point	B.1
	2. Your organization has a good understanding of the concept of cost saving	5-point	B.2
	3. The costs in the organization are influenced by strategic foresight	5-point	B.3
	4. There are implications of cost saving strategies for corporate managers	5-point	B.4
	5. Strategic foresight is essential for the identification of different types of costs	5-point	B.5
	6. Strategic foresight is able to shape the future of cost management	5-point	B.5
	7. Strategic foresight can be used for evaluation of cost	5-point	B.6
	8. Strategic foresight can be used to facilitate cost saving	5-point	B.7 B.8

Productivity	1. Your organization has a good understanding of productivity	5-point	C.1
	2. Your organization is highly productive		
	3. Productivity plays a considerable role in dealing with the competition	5-point	C.2
	4. Innovative productivity within the organization to an extent is influenced by strategic foresight	5-point	C.3
	5. Strategic foresight assists in shortening the production life cycle		
	6. Productivity becomes sustainable following implementation of strategic foresight	5-point	C.4
	7. Strategic foresight contributes significantly increases productivity in the organization		
	8. Strategic foresight boosts the product ranges within the organization	5-point	C.5
		5-point	C.6
		5-point	C.7
		5-point	C.8

Profitability	1. The organization recognizes the significance of profitability to its well being	5-point	D.1
	2. Strategic foresight contributes to the profitability of the organization		
	3. Careful consideration is taken in the course of defining profitability	5-point	D.2
	4. Strategic foresight facilitates the prediction of future profitability		
	5. Strategic foresight assist your organization to adjust to financial changes	5-point	D.3
	6. Strategic foresight increases the level of profitability within the organization		
	7. Strategic foresight can be used to prevent profit manipulation by managers	5-point	D.4
	8. Poor financial performance is an indicator of inappropriate application of strategic foresight	5-point	D.5
		5-point	D.6
		5-point	D.7
		5-point	D.8

Long-term sustainability	1. Sustainability contributes to the performance of the organization	5-point	E.1
	2. Managers have a good understanding of sustainability		
	3. The organization has achieved sustainability	5-point	E.2
	4. Long term sustainability has an impact on the future of the organization	5-point	E.3
	5. Strategic foresight can be used to plan the future to ensure sustainability	5-point	E.4
	6. Sustainability is key to the survival of the organization		
	7. Strategic foresight is key to the organization successfully navigating economic, environmental, and societal uncertainties	5-point	E.5
	8. The organization needs to urgently improve its long term sustainability	5-point	E.6
		5-point	E.7
		5-point	E.8

Strategic planning	1. The organization has a good understanding of strategic foresight	5-point	F.1
	2. Management has direct influence on strategic planning in the organization		
	3. Strategic foresight enhances the organization's strategic planning	5-point	F.2
	4. Enhancing the success of future strategic planning is a critical goal for the organization		
	5. There are various obstacles that affect the process of strategic planning	5-point	F.3
	6. Stakeholder involvement in strategic planning is significant		
	7. Management possess the knowledge, skills, and abilities to foster integration of strategic foresight with strategic planning	5-point	F.4
	8. Poor planning has a negative impact on the future of the organization	5-point	F.5
		5-point	F.6
		5-point	F.7
		5-point	F.8

Competition	1. Competition is an essential aspect affecting the organization	5-point	G.1
	2. The organization is exposed to high rates of competition		
	3. Lack of ability of foreseeing competition results in negative performance	5-point	G.2
	4. Strategic foresight helps the organization determine in advance strategies of dealing with competition		
	5. The role of strategic foresight towards monitoring competition is well understood	5-point	G.3
	6. Stiff competition affects the prediction of long-term operations in the organization		
	7. It is difficult for the organization to make strategic foresight decisions under competitive pressure	5-point	G.4
	8. Strategic foresight can be used to deal with competition that the organization faces	5-point	G.5
		5-point	G.6
		5-point	G.7
		5-point	G.8

Technology	1. Technology is an essential aspect of the organization	5-point	H.1
	2. The organization is receptive to technology		
	3. Technology can be used to boost innovation for realization of future organizational goals	5-point	H.2
	4. Technology can be used to realize effective future growth	5-point	H.3
	5. Enhancing technological success within the organization is significant		
	6. The future plans of the organization are influenced by technology	5-point	H.4
	7. Achievement of the future goals of the organization can be enabled through technology		
	8. The organization needs to be adopt rapid technological changes for a secure future	5-point	H.5
		5-point	H.6
		5-point	H.7
		5-point	H.8

Reduction of resource wastage	1. The organization has adequate understanding of the concept of resource wastage	5-point	I.1
	2. Resource wastage is an urgent issue for the organization		
	3. The organization is well aware of the negative impact of resource wastage	5-point	I.2
	4. The organization has strategies in place to prevent resource wastage		
	5. The organization has an awareness of the impact of resource wastage on its future	5-point	I.3
	6. Strategic foresight can be used to reduce resource wastage		
	7. The organization has developed and implemented strategies to monitor resource wastage	5-point	I.4
	8. Resource wastage undermines performance of the organization	5-point	I.5
		5-point	I.6
		5-point	I.7
		5-point	I.8

3.4.2 Variables of the Study

Despite the variables of the research having been intermittently stated and introduced with the introduction of the model of the study, research indicates that the clear statement of variables of a research especially during the operationalization of the research design is critical. This is because, at this point, the restatement and clear explanation of the variables invigorates the purpose of the research narrowing the focus towards the establishment of the actual direction

of the research, the main relationships (dependent and independent), causal relationships and mediating relationships (Flannelly, Flannelly and Jankowski, 2014; Skiera, Bayer and Scholer, 2017). With the above regard, the research reestablishes herein, the variables of the study:-

Independent variables

Independent variables according to Flannelly et al. (2014) are the variables of a study which remain unaffected by the directions and impacts of the relationships in the study. Flannelly indicates that the independent variables form the core of variables in a research as it is based on them that the research measures the variations in other variables. In this study, the variables that are independent have been identified as Strategic Foresight and Costs Savings, which happen to be the core variables and constructs of the research. Through these variables, the research will be able to orchestrate methodical manipulation using different items of measurement in an effort to measure the change in other variables in the research. Strategic Foresight and Cost Savings as indicated in figure 2.1 are the independent variables which the research integrates into the measurements of the relationships of each of the other variables in the research.

Dependent variables

Evidence from past literature defines dependent variables as the variables that are expected to exhibit a change depending on the changing measurements of other variables in a model (Skiera et al., 2017). According to Skiera et al. (2017), the dependent variables are representative of the purported effect in a research model due to the methodical manipulation of the measurements by the independent variables. In the case of this research, the purported effect of the study includes productivity, profitability and long-term sustainability which based on the

general hypotheses of the research, should be the results of an integrated application of strategic foresight and costs savings in the manufacturing organizations in the UAE. The purported effect will be investigated and measured through methodical manipulation of aspects of strategic foresight and costs savings. This will be based on the different items of measurement used and should lead the study towards finding how strategic foresight and costs savings affect profitability, productivity and long-term sustainability of organizations in the manufacturing industry in UAE.

Mediating variables

According to extant literature, mediating variables are variables related to the body of knowledge around the constructs studied which based on research and experience seem to close in on the main variables of the research (dependent and independent) (Skiera et al., 2017). To this extent, they end up being included in a research in order to ease the investigation of the statistical relationship between the independent and dependent variables. Flanelly et al. (2014) also notes the importance of mediating variables in quantitative research mentioning that they are usually hypothesized to be having a relationship with the mechanisms through which the independent and dependent variables relate. They therefore function as interlinks through which the relationship between the independent and dependent variables in research can be studied. In high level social science investigations, Skiera et al. (2017) concurs with Flanelly et al. (2014) that mediating variables are commonplace since most of the hypothesized relationships between independent and dependent variables usually exists through a medium of interlocutor relationships and variables. With this understanding, based on an in-depth investigation of evidence from literature and interaction of these with experiential knowledge, the research

identified Strategic Planning, Competition and Reduction of Resource Wastage as the mediating variables of the study (Coates, 2010; Agentielle, 2013; Ryan, 2016; Rohrbeck et al., 2015; Mohamed, 2020; Leigh, 2003; Lajili and Mahoney, 2006; Amsteus, 2011; Agentielle, 2013; Andersen and Rasmussen. 2014; Vechiatto, 2015; Iden et al., 2017; and Silva et al., 2017). The literature repeatedly revealed how these three variables were conceived, pursued and considered in the lenses of strategic foresight, costs savings, productivity, profitability and long-term sustainability.

3.4.3 Research Sampling

Myers (2009) investigates the approaches to collecting a sample for a research and notes that depending on the purpose of a research, there are different ways through which a research can proceed with the development of its sampling approach. As a part of the research and the ‘research design’ more specifically, the sampling of a research is critical as it is the source of the data that the research seeks to study on the variables operationalized. Based on the research purpose and its underlying design, a research sampling approach can be determined. Myers (2009) notes that there are a multiple sampling approaches which all seek to serve different purposes. Myers finally mentions the need for the research to clearly determine what type of data it wants to collect and to single out the type of sample that would readily have this data.

In agreement with the postulations of Myers (2009) about sampling and sample design, Bajpai (2011) indicates that sampling approaches despite being numerous, can be categorized broadly into two – probability and non-probability sampling approaches. For the former, Bajpai (2011) indicates that the underline criterion is simple that there is essential randomness in the

selection of a sample for data collection. Some of the major approaches that are under this broad category include stratified sampling, systematic sampling, cluster sampling and simple random sampling. Bajpai (2011) elucidates that despite the fact that these methods are popular in research especially research dealing with big populations, the risk of bias entailed is high to a fault owing to the lack of specificity in their targeting or broad-based approach to targeting.

In contrast to the above, further evidence of research expounds on Bajpai's (2011) non-probability sampling category and elucidates that this type of sampling uses a select sample to act as a representative of a larger population (Crowther and Lancaster, 2008). It contains a number of sampling approaches in itself just like the other broad category all of which have the common characteristic of seeking a particular select group to act as representatives of a larger population. Wilson (2010) clarifies this approach by adding that in most of the cases where this approach is used, the researchers usually seek to gather specific information from a specific group of people. This information is unlikely to be held by everybody in the general population and therefore, pursuing a select few of the people who may be privy to the targeted information becomes useful. In agreement, the researchers note that in non-probability sampling, members of a population do not have the same opportunity to participate in a research; this remains one of the main difference between probability and non-probability sampling.

In the non-probability genre of sampling, some of the sampling approaches include convenience sampling, purposive sampling, quota sampling and snowball sampling among others unmentioned. For the purpose of this research and subject to the evidence gathered hereby on sampling, the purposive approach to non-probability sampling is the most relevant. According to Crowther and Lancaster (2008) in agreement with other evidences of research

cited hereby, purposive sampling approach is useful to research which seeks to judge the fitness of participants based on the information that the research seeks to mint out of the participants. It is also referred to as judgment sampling and generally involves the determination of a sampling purpose and the appropriate population to fit this purpose, then the distribution of survey to this population only. In most cases, the selected population have a particular level of knowledge or information access that would be useful for the research and therefore the research only needs their exclusive participation.

The present study sought to collect information from top level employees in UAE manufacturing companies about their level of knowledge about their companies' involvement and efforts towards costs savings and to what extent strategic foresight was utilized to effect this or to approach any such organizational plans. The research therefore selected three manufacturing companies in the construction and building materials, food packaging and/or fast moving consumables, and healthcare and pharmaceuticals sectors. The selection of these three organizations in their distinct sectors of operation in the manufacturing industry in UAE was discretion based on the part of the researcher based on two main parameters – interests and level of importance. As far as construction and building materials manufacturing companies are concerned, the researcher was experientially interested to study the sector because it formed the basis of the identification of a problem through years of experience in the sector. Apart from this interest-based criterion, the level of importance of the industry to the UAE economy was highlighted in the initial stages in the research build-up justifying its identification and selection as one of the sectors of focus in the study of strategic foresight and costs savings in the UAE manufacturing industry. On the other hand, food packaging and fast moving consumables as a

well as healthcare were identified as important and essential day-to-day manufacturing activities that are required in the UAE. Considering one of the main case points of the research was the volatility of the business environment which may from time to time occasion shocks and surges to the global supply chain of raw materials leading to a rippled effect with the capacity of bankrupting leading organizations, the food and packaging, as well as the healthcare supply chain was identified as a critical focal point in terms of manufacturing. It is indubitable that without these two sectors or with a hitch in these two sectors, a country's economy may be critically impaired within a very short time of turmoil. Based on the review of the value chains of these three industries in the initial chapter of the study, the financial importance of each of the industries selected was shared acting as further justification of their importance as a focal point as a representation of the UAE manufacturing industry at large.

Therefore, in line with the purpose of this research as delineated clearly from the on-set, the pursuit of information from executives in these companies would help the research gather critical evidence about the level of importance that strategic foresight and costs savings has been given in their organizations. Further, the manipulation of the items of measurement along the lines of these two constructs with the help of the mediating variables at the variance of dependent variables will help the research in realizing results that will be useful to the study in general. Evidence of research agrees to the above mentioning that, purposive non-probability sampling approach helps a research correct near accurate information that can be used in the making of objective conclusions about a subject matter. The inclusion of only a select few, information-privy participants to represent a larger population, is also identified by further research to be pivotal in the gathering of objective, valid and verifiable evidence for research.

Sample size and population

The research from the on-set was certain that it sought to collect data from executives involved in strategy meetings, strategy formulation, current and future finance planning and general planning for the organization's success. Based on experience, the researcher acknowledged that these people, have the onus of ensuring that the organization was heading in the right direction and in case of a disaster, that the organization would remain resilient or if not, rise up from the disaster and forge on. The generalizable sample from the three identified organizations targeted, was large because most of them employ thousands of personnel and therefore the research noted that, if it was able to gather just a standard number from the three earmarked companies in the different sectors of the manufacturing industry in UAE, then it would no doubt be able to gather useful data. The research then made a judgment call to pursue 300 responses from the identified organizations in the three sectors which would be distributed equally to the each organization in order to bring a balance of information, perspective and responses. This was in line with advise from Sekeran (1984/2003) who advised that, in multivariate researches, for sample sizes whereby the generalized population is large, the sample size should be multiple times more than the number of variables and preferably between 30 and 500. Sekeran (2003) further elaborates that, when considering a large universe sample population of excesses of 1 million, a sample size of 384 suffices as a sample size representative of the generalized population because it allows the acceptable margin of error and fall prior to the point of diminishing returns. In agreement with Sekeran (2003), Kline (2016) reveals that, in studies adopting structural equation modeling to test hypothesis, the median minimum sample size is 200 and albeit not easy to ascribe, sample sizes between 200 and 500 responses can

suffice for even complex models with missing data and non-normal distribution. Therefore, the current research opted to go for a sample size of 300 participants from the healthcare and pharmaceuticals manufacturing sector, construction and building materials manufacturing sector, and the food packaging and processing manufacturing sector in line with the recommendations from extant literature. Out of the 300 survey questionnaires distributed, the research was able, within months of data collection to receive back 250 surveys. This indicated a response rate of 83.3% which according to scholar Fincham (2008) is a high response rate considering a threshold of 60% response rate is required to make a representative sample in high level research.

3.4.4 Research Validity

The research conducted a small pilot study internally in the researcher's field of expertise – construction and building materials manufacturing. The purpose of this pilot study was to gauge the validity of the data collection instrument in terms of its reliability towards the effective measurement of constructs. The process was based on Cronbach's alpha test for reliability and having collected data from a sample of 20 potential respondents, the research conducted the analysis for reliability of the data collection instrument. The results of the reliability analysis showed a strong reliability score of 0.798 which indicated strong internal consistency of the data collection instrument and the measured variables. This reliability score was stronger than the threshold score required from high level research of 0.6 according to Finchman (2008). Table 3.2 below displays the Cronbach alpha values for each of the variables during the reliability testing at the pilot stage of the research.

Table 3. 2 Reliability testing for variables at pilot stage

Item Code	Item	Cronbach alpha
A	Strategic Foresight	
A.1	Monitoring strategic foresight goals is significant for my organization	.852
A.2	Strategic foresight entails monitoring the business sectors in which your organization operates	.644
A.3	There are impediments to strategic foresight implementation	.843
A.4	Implementing strategic foresight efficiently contributes to growth of the organization	.945
A.5	Implementing strategic foresight results in effective information management	.664
A.6	Careful implementation is a key factor of success in the implementation of strategic foresight	.760
A.7	Strategic foresight has an impact on the corporate decision making process	.863
A.8	Strategic foresight is necessary for the opening up of future competitive space	.653
B	Cost Savings	
B.1	Cost saving is perceived to be significant in your organization	.976
B.2	Your organizations has a good understanding of the concept of cost saving	.858
B.3	The costs in the organization are influenced by strategic foresight	.732
B.4	There are implications of cost saving strategies for corporate managers	.640
B.5	Strategic foresight is essential for the identification of different types of costs	.611
B.6	Strategic foresight is able to shape the future of cost management	.817
B.7	Strategic foresight can be used for evaluation of cost	.756
B.8	Strategic foresight can be used to facilitate cost saving	.827
C	Productivity	
C.1	Your organization has a good understanding of productivity	.787
C.2	Your organization is highly productive	.650

Item Code	Item	Cronbach alpha
C.3	Productivity plays a considerable role in dealing with the competition	.854
C.4	Innovative productivity within the organization to an extent is influenced by strategic foresight	.755
C.5	Strategic foresight assists in shortening the production life cycle	.868
C.6	Productivity becomes sustainable following implementation of strategic foresight	.766
C.7	Strategic foresight contributes significantly	.670
C.8	Strategic foresight boosts the product ranges within the organization	.733
D	Profitability	
D.1	The organization recognizes the significance of profitability to its well being	.846
D.2	Strategic foresight contributes to the profitability of the organization	.621
D.3	Careful consideration is taken in the course of defining profitability	.730
D.4	Strategic foresight facilitates the prediction of future profitability	.966
D.5	Strategic foresight assist your organization to adjust to financial changes	.869
D.6	Strategic foresight increases the level of profitability within the organization	.862
D.7	Strategic foresight can be used to prevent profit manipulation by managers	.765
D.8	Poor financial performance is an indicator of inappropriate application of strategic foresight	.726
E	Long-term Sustainability	
E.1	Sustainability contributes to the performance of the organization	.627
E.2	Managers have a good understanding of sustainability	.846
E.3	The organization has achieved sustainability	.656
E.4	Long term sustainability has an impact on the future of the organization	.877
E.5	Strategic foresight can be used to plan the future to ensure sustainability	.866
E.6	Sustainability is key to the survival of the organization	.755

Item Code	Item	Cronbach alpha
E.7	Strategic foresight is key to the organization successfully navigating economic, environmental, and societal uncertainties	.812
E.8	The organization needs to urgently improve its long term sustainability	.678
F	Strategic Planning	
F.1	The organization has a good understanding of strategic foresight	.912
F.2	Management has direct influence on strategic planning in the organization	.632
F.3	Strategic foresight enhances the organization's strategic planning	.675
F.4	Enhancing the success of future strategic planning is a critical goal for the organization	.767
F.5	There are various obstacles that affect the process of strategic planning	.883
F.6	Stakeholder involvement in strategic planning is significant	.660
F.7	Management possess the knowledge, skills, and abilities to foster integration of strategic foresight with strategic planning	.691
F.8	Poor planning has a negative impact on the future of the organization	.711
G	Competition	
G.1	Competition is an essential aspect affecting the organization	.879
G.2	The organization is exposed to high rates of competition	.913
G.3	Lack of ability of foreseeing competition results in negative performance	.645
G.4	Strategic foresight helps the organization determine in advance strategies of dealing with competition	.667
G.6	The role of strategic foresight towards monitoring competition is well understood	.672
G.7	Stiff competition affects the prediction of long-term operations in the organization	.713
G.8	It is difficult for the organization to make strategic foresight decisions under competitive pressure	.897
H	Technology	
H.1	Technology is an essential aspect of the organization	.778

Item Code	Item	Cronbach alpha
H.2	The organization is receptive to technology	.989
H.3	Technology can be used to boost innovation for realization of future organizational goals	.960
H.4	Technology can be used to realize effective future growth	.731
H.5	Enhancing technological success within the organization is significant	.763
H.6	The future plans of the organization are influenced by technology	.716
H.7	Achievement of the future goals of the organization can be enabled through technology	.651
H.8	The organization needs to be adopt rapid technological changes for a secure future	.638
I	Reduction of Resource Wastage	
I.1	The organization has adequate understanding of the concept of resource wastage	.747
I.2	Resource wastage is an urgent issue for the organization	.861
I.3	The organization is well aware of the negative impact of resource wastage	.643
I.4	The organization has strategies in place to prevent resource wastage	.795
I.5	The organization has an awareness of the impact of resource wastage on its future	.763
I.6	Strategic foresight can be used to reduce resource wastage	.722
I.7	The organization has developed and implemented strategies to monitor resource wastage	.872
I.8	Resource wastage undermines performance of the organization	.710

Having conducted the reliability analysis for internal consistency of the data collection instrument and ascertained the reliability of the same, the research then embarked on the collection of the actual research data. This process was hectic and required the regular liaison

with different organizations in the manufacturing industry to get certain approvals to collect data from the employees. The ethical approval from the university needed to be presented leading on to sessions with some of the top managers to discuss the purpose of the research before permission was granted together with a list of names who would be potential participants. Having received a contact list for especially the two industries which were out of the author's field of specialty, the research proceeded swiftly to first cold-call the potential participants and explain the research to them. Explanation of why their support was needed was made and participants were also informed that the research had been allowed to go ahead from their organization to consider them as part of the research subject to their approval. In most of the cases, the support was overwhelming although the entire process was time and costs intensive. The management teams that allowed me access to data of potential participants also supported me by channeling an email to the participants to inform them about the research which helped the research data gathering process seem genuine.

The research distributed the questionnaire using a survey software – survey monkey to the emails of the participants after communicating with them. A waiting period of two weeks for responses before making the first round of follow up was taken. Owing to the fact that the research sought information from participants who were generally busy in meetings and the planning and oversight of organizational affairs, the researcher understood beforehand that it would take a long time before some of them, despite agreeing, had the time to sit down and actually complete the 5-minute survey questionnaire. Therefore when making the follow-ups, understanding of the participants' busy schedule was made coupled with subtly stresses and emphasis of how the research would be important to the UAE economy in general by

contributing to long-term nation and economy building. The entire data collection process took a minimum of three months and by halfway into the third month; the research had gathered 250 responses. The research, having reached the agreed threshold of questionnaire returns for representative populations as outlined by Fincham (2008) called the survey off and started working on the data clean up and analyses. Most of the remaining participants were those who had expressed difficulty and some type of reluctance to participate in the survey despite the follow ups.

3.4.5 Data Analysis

The collected data was to be analyzed by standard statistical methods in line with provisions of quantitative research. Having gathered the data, statistical approaches were employed immediately to start first off by cleaning the data. The statistical software used for the entire activity was SPSS v.23. The research first sought to review the responses to determine whether they were appropriately filled up. The research then entered the data into the statistical software to start some data cleaning and screening tests. These were followed by reliability tests including the Cronbach alpha reliability tests, validity tests like Barlett's test of sphericity and exploratory factor analysis. Having determined the reliability and validity of the data collected, the research adopted a multivariate statistical measurement approach whose aim was to utilize regression analysis to measure the relationship between the variables and constructs for which data had been collected. The core activity in the analysis of the data which essentially marked the culmination of the research work was the hypotheses testing. This sought to use individual constructs responses and a complementary confirmatory factor analysis to determine truth or falseness of the different hypothetical relationships that the research espoused earlier. A detailed

chapter with the data analysis, sharing the methodical approach from the cleaning to the hypotheses testing of the research is contained in the next chapter of this study.

3.5 Ethical Considerations

The premise of the research rendered its granting of approvals even in my current organization susceptible to close scrutiny since it sought to investigate an area of critical interest to managers and investors alike. Therefore, there were some ethical considerations that the research had to deal with in order to ensure that the research was approved.

The first of these issues was the gaining of approval from the British University in Dubai (BUiD) for the conduct of a doctoral research. This was an essential approval because the organizations managers sought this document as one of the most valid documents that ascertained the legitimacy of the research and that it was being conducted solely for academic premise. This ethics approval document was the key to the entire research especially as far as data collection was concerned.

Secondly, explicit approval from the author's organization was required to allow time to conduct research. This was essential in two ways, first and foremost, more time was needed in order to be successful in delivering a high level research. Secondly, there was need to liaise with some of our correspondents and partners in the manufacturing of construction and building materials in order to later collect data from them. With the author's organization's approval to conduct research, focus on the research work was attained and was also able – when the time came to approach our various partners and stakeholders for data collection from a confident and legitimate point of view.

A third ethical consideration came with the confidentiality of the participants. Since most of the information shared would expose the organizations strategy and practices, the participants had to be reassured that the research would not do anything to expose them or profile them based on information they provided. This was done in two ways, first, the communications and liaisons with the managers in the different organization touched in this critical issue. In understanding of the novel course of the research, and how it would support the future growth and preparedness of the UAE manufacturing companies and economy by extension, the managers agreed to support the research and provide the contact details of potential participants. This agreement was backed by an implicit understanding that the research was only academic, and that the participants had all the right to share any information, which they felt would be useful to the research without any fear of reproach from the organization.

The second was for ascertaining the confidentiality of the participants was through a guarantee that their identities would be kept anonymous and that the survey would be effectively destroyed after the data was retrieved from it. This was done through the presentation of a participant information sheet and consent form. The latter invoked a contractual agreement between the researcher and the participants to protect the privacy of the participants and that in the case any information that the participant shared would blow-back on them, the participants were free to sue the researcher specific to the matter. The information sheet and the consent form guaranteed the fact that the names of the participants would not be collected or stored anywhere and that their responses would remain anonymous even to the researcher herself. The forms also made clear the provision of free will in taking part in the research noting that the participants were free to take part or not take part in the research without any reproach. All

participants were presented with these forms and the participation of the 250 who shared data was voluntary.

3.6 Conclusion

This chapter of the research is central to the effort of the researcher in studying the matter presented in the introduction and whose information has been reviewed from different sources of extant literature in the second chapter of the study. Essentially, this chapter marks the start of the researcher's contribution to knowledge as it is the blueprint for the empirical investigation that the researcher purports to conduct. The chapter has laid down an intensive approach to the research from the philosophy, the strategy, the process, the sampling, data collection, analysis and the ethical consideration. The next chapter of the research will build on the results of this chapter from the 250 questionnaires returned to present the results and finding of the research in a quantitative and statistical manner.

Chapter 4 Research Results and Analysis

4.1 Introduction

The quality, accuracy, reliability and validity of numerical data lays at the core of successful quantitative research. This chapter of the research entails among other things, the data assessment and cleaning efforts conducted to ascertain the quality of the data gathered. A number of steps were conducted during the preliminary stages of ensuring that the data was clean and appropriate for used in the further investigation of the phenomena under study. Among these steps were, investigation of missing data, investigation of any presence of outliers in the data, verification of the accuracy of the data and the distribution assumptions, and the investigation of bias through checking for the availability of common method bias. After the cleaning of the data, the descriptive analysis of the data is presented through frequency analysis and these is important information that would later come in handy in the making of qualitative inferences about the data collected and the results realized thereof. The chapter makes emphasis of the importance of reliability of the data using the Cronbach alpha statistics and makes critical effort of elucidating all the calculations and measuring rationale used throughout the process.

With the cleanliness, veracity and validity of the data attained, the chapter embarks on a quest for the reliability of the data collected through the application of the factor analysis. The outcomes of the factor analysis are then used further in the hypothesis testing which is essential in the determination of the veracity of the relationships that the researcher based on literature and experience hypothesized. This chapter is singly devoted to the presentation of the findings

based on statistical approaches for analysis of statistical data. Therefore, this chapter will not involve itself in the drawing of any conclusions apart from those visible from the data analysis.

4.2 Screening of the Data

Tabachnick and Fidel (2007) report that after the data collection, in quantitative research, the screening of the data is an important step to ensure that the data is sufficiently aligned for progress to the next stages of study. To this extent, the research embarked in a procedural preparation of the inputs for data analysis which included the editing of the data, coding and the entry of the data into the statistical software – SPSS v.23. In these steps, the task of the research was to check the data for any variations and oversights and ensure that it all matched the pre-qualification requirements for use in the statistical tool. The coding of the items and constructs into formats that were understandable by the researcher and fit for SPSS was useful in ensuring that the data was effectively adopted to the SPSS spreadsheets ready for use in the making of analytical tests. This step made sure that the research could be able to further scrutinize the data and ensure its cleanliness.

4.2.1 Missing Values

Hair et al. (2013) shows that the presence of missing data in a statistical test stands the chance of affecting the quality of the tests conducted on a data set. The researchers note that despite the fact that the software would run the test; the results obtained may reflect a lot of deviation, unreliability and biasness. Apart from this, some statistical tests may not run completely as they require the data set to be completely full. Tabachnick and Fidel (2012) in an earlier research shared the same concern mentioning that it is imperative in quantitative research

that the investigators of quantitative data ensure that these data passes all preliminary test a first of which is the lack of numerous missing variables. Following the advice of these researchers, the study decided to investigate the data further to determine the fullness of the responses gathered. Depending on the extent and nature of the missing data, the researchers recommend a number of approaches to the resolve this - first, is to leave the missing data alone. This is especially possible if the missing data consists of few random missed entries along the data set. The second option involves the replacement of the missing values with other values which means essentially that the researcher is doctoring the data set. The third option of treating missing values in the data set is the elimination of the values in totality. Tabachnick and Fidel (2012) denote that, among the three options, the third option is the most appropriate especially when the data set consists of big population samples.

In the case of the current study, having distributed 300 questionnaires and garnered a return rate of 83.3% to receive back 250 questionnaires in time, the research carefully assessed the data set once uploaded to SPSS to assess whether there were any missing values and accordingly deal with any existent. In the process of clean up and assessment a total of 27 questionnaires lacked considerable portions of the responses. These portions of missed responses ranged from few measurement items in a construct to whole constructs. In line with evidence from research, the current study deleted these entries completely because as it were, they would affect the validity and reliability of the responses generated and would at some other instances lead to the inability of the software to perform analyses (Tabachnick and Fidel, 2012; Hair et al., 2013). This left the research with 223 completed questionnaire responses.

4.2.2 Outliers

According to evidence of research, outliers can be defined as values which exhibit extreme variation when compared to the rest of the data (Tabachnick and Fidel, 2012). The fact that outliers are extreme from the normal presentation of the data, they affect the normality of the data set. Tabachnick and Fidel (2012) in their intensive research on statistical methods report that, it is imperative that outliers are investigated in a data set since if present, and unresolved, then all the results that will be derived from the data set will be impugned. The researchers divide the outliers into two main categories which are – univariate outliers and multivariate outliers. The former are responses that are remarkably low or high which makes them totally different from other responses in the same item measurement, construct or category. The latter on the other hand, represents a distinctive pattern of extreme variations in the replies in a data set that deviate from the norms of the responses in the research. Concurrent evidence by scholars Osborne and Overbay (2004) indicates that since normality is one of the primary assumption of quantitative data analysis and the tools for the same for instance the SPSS software, it is imperative to highlight any outliers and effectively mitigate its effects earlier on in the research. Normally, the effect of outliers in a research data set would be characterized by, increase variance errors, bias and weak statistical scores.

Like in the case of missing values, the two different types of outliers, depending on their prevalence are subject to different modes of treatment. The first mode is the omission of the outliers especially if these outliers are few in number and random across the data set (Osborne and Overbay, 2004). The other form of treatment to outliers is the removal of an item in the case of univariate outliers, which occur as a result of extreme responses in a item when compared to

other responses for the same item. Osborne and Overbay (2004) also note that at times the treatment of the outliers may involve the treatment of the outliers through the shifting of outlying values to the closes lower or higher non-outlying values as per the researcher's discretion. Apart from this, the entire construct or item of measurement may be reworked or transformed in order to ensure that the outlier is deleted or treated (Osborne and Overbay, 2004; Tabachnick and Fidel, 2012; Hair et al., 2013).

In the current study, the investigation of univariate outliers was conducted using the Shapiro-Wilks and Kolmogorov-Smirnof tests for univariate outliers and normality. The two tests were used side by side to complement each other especially owing to the fact that the former test is identified as more effective in the assessment of univariate outliers for sample sizes that are less than 50 in number, while the later is the best used for the assessment of this type of normality for larger samples. Therefore, the assessment hereby, was done with specific focus on the results garnered from the second test. The output of the data from the tests is presented in table 4.1 below:-

Table 4. 1: Tests of Univariate Outliers Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
SF	.095	223	.000	.946	223	.000
CS	.114	223	.000	.947	223	.000
P	.125	223	.000	.947	223	.000
Pr	.183	223	.000	.914	223	.000
LS	.111	223	.000	.957	223	.000
SP	.126	223	.000	.957	223	.000
C	.096	223	.000	.951	223	.000
T	.111	223	.000	.934	223	.000
RRW	.214	223	.000	.821	223	.000

The results scored from the test of normality showed that the data did not at all adhere to the normal distribution of the dataset with a low significance of 0.000 indicating 100% certainty that the values were not normally distributed. The research in an attempt to verify the veracity of this finding, went ahead and conducted the skewness and kurtosis assessment of the constructs variation. According to evidence of research, the skewness and kurtosis tests, help in the assessment of the symmetry and tailing of the data to the normal distribution (Snedecor and Cochran, 1989). The skewness test, is positive or symmetric when the data tested represents the same value distribution on the left and the right of the normal. On the other hand, the kurtosis tailing, is positive when the data set has light tailing on either side of the midpoint such that there are minimal outliers that can be reflected from the data. Table 4.2 below, represents the results gathered from the skewness and kurtsois test of the data set:-

Table 4. 2: Skewness and Kurtosis Statistics for Normality

	SF	CS	P	Pr	LS	SP	C	T	RRW
N Valid	223	223	223	223	223	223	223	223	223
Missing	0	0	0	0	0	0	0	0	0
Mean	32.4529	32.6457	33.0942	33.0090	33.5516	33.1121	32.8969	33.6502	61.6457
Std. Error of Mean	.34143	.31758	.31374	.32115	.26426	.25717	.26871	.27178	.62232
Std. Deviation	5.09869	4.74247	4.68514	4.79582	3.94624	3.84040	4.01272	4.05853	9.29327
Skewness	-.783	-.786	-.758	-.881	-.328	-.226	-.695	-.784	-1.655
Std. Error of Skewness	.163	.163	.163	.163	.163	.163	.163	.163	.163
Kurtosis	.994	1.296	.869	1.677	.120	-.044	2.148	1.861	2.861
Std. Error of Kurtosis	.324	.324	.324	.324	.324	.324	.324	.324	.324

The skewness results returned for all the nine constructs measured in the study fell between -1.7 and 1.7. The values, except for the last construct resource waste management were all close to zero which pointed out to their symmetry. According to evidence of research from West, Finch and Curan (1995) and Kline (2010), the skewness and kurtosis values have to fall between -1.7 and +1 for large samples as this shows some sense of symmetry in the data responses recorded. As far as the kurtosis statistics were concerned, the values for all the constructs of the study fell between -3 and +3 which according to Bryne (2013), indicated a platykurtic tailing. This tailing refers to a situation where a data set responses' may exhibit some of form of flatness when figuratively extracted but this flatness is an indication that there are very few outliers in the data set. Hair et al. (2013) confirms the thresholds hereby referred to as

cited to West et al. (1995), Kline (2010) and Bryne (2013) mentioning that, for skeweness, values falling between -1.7 and +1.7 reflect a quasi normal symmetry while those falling between -3 and +3 under kurtosis reflect an acceptable kurtosis tailing.

With the univariate outliers sufficiently examined, the research went ahead to examine the multivariate outliers. For this purpose, the research utilized the Mahalanobis distance method which was conducted using SPSS AMOS. Oztuna, Elhan and Tuccar (2006) suggests that the Mahalanobis distance method is used to determine the distance that each construct has from the others combined. This way, statistical analysts are able to effectively investigate the multivariate variations in a data set and determine how to resolve them before progressing to further advanced stages of statistical analysis. Table 4.3 below contains the results found from the analysis of the Mahalanobis distance of the constructs in the data set:-

Table 4. 3: Mahalanobis (Mahal) Distance Test

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	19.3408	40.4660	33.0090	3.86819	223
Std. Predicted Value	-3.533	1.928	.000	1.000	223
Standard Error of Predicted Value	.233	1.642	.464	.210	223
Adjusted Predicted Value	20.9585	40.4822	33.0110	3.84145	223
Residual	-16.07043	9.10822	.00000	2.83497	223
Std. Residual	-5.592	3.169	.000	.986	223
Stud. Residual	-5.657	3.212	.000	1.008	223
Deleted Residual	-16.44804	9.35522	-.00206	2.96425	223
Stud. Deleted Residual	-6.115	3.284	-.002	1.027	223
Mahal. Distance	.466	71.428	5.973	8.194	223
Cook's Distance	.000	.139	.007	.021	223
Centered Leverage Value	.002	.322	.027	.037	223

According to Field (2000), the Mahalanobis distance method is used together with a Chi-Square Distribution Validity which helps in the validation of the distances arrived at in order to make conclusions of whether the data set includes any multivariate outliers. The Chi-Square distribution used in making the comparison of the findings from the Mahalanobis distribution was equated to the number of constructs tested in the research to form the degrees of freedom. According to concurrent evidence of research, an outlier is determined at this if the value arrived is less than 0.001 ($p < 0.001$) meaning that the cumulative probability of the Chi-square distribution with the degrees of freedom is less than a quant (Snedecor and Cochran, 1989;

Oztuna et al., 2006). The overall value for all the cases was found to be 1.000 for each case. This meant that there was no outlier among all the constructs.

4.2.3 Common Method Bias

Scholars Malhorta, Kim and Patil (2006) explain the premise of the common method bias as the understanding that the variance obtained in an endogenous construct, is occasioned by the measurement approach as opposed to common misperception of variance being only related to the constructs' relationships. The same information had been shared earlier by Podsakoff, Mackenzie, Lin and Podsakoff (2003) who noted that regularly, when respondents want their responses to portray a certain perception, or when the items of measurement are ambiguous, or when there is unstructured collection and grouping of data relative to the dependent and independent variables in a study, it is normal to have common method bias. The point of convergence between the two researches on common method bias is that there is usually a flaw in the instrument of measurement or collection of data rather than a flaw in the relationships between the constructs in the data (Podsakoff et al., 2003; Malhorta et al., 2006). A number of ways were used in the investigation of the common method bias in the current study, the below is the explication:-

Harman's single factor

The Harman's single factor is identified by scholars as an effective tool for the investigation of common method bias. According to Rogelberg and Stanton (2007) this analytical measurement approach proceeds from a simple premise of first subjecting all the constructs in a data set to an analysis of their impact on each other. The goal is to find out

whether one of the constructs has an impact of more than 50% on the other constructs collectively and in that case, there will be severe common method bias. Podsakoff et al. (2003) also weighed in on common method bias and noted that, the Herman's single factor analysis, is essential as it paints a clear picture of how much percentage a single factor in the data set could account for against all the other factors combined. The scholars are in concordance that if one factor accounts for more than 50% of the variance, then there is common method bias (Podsakoff et al., 2003; Rogelberg and Stanton, 2007). Table 4.4 below reflects the results of the common method bias of the constructs in the data set:-

Table 4. 4: Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.903	41.584	41.584	5.534	41.485	41.485
2	.742	8.250	73.834			
3	.527	5.855	79.688			
4	.456	5.062	84.751			
5	.437	4.853	89.604			
6	.277	3.076	92.680			
7	.247	2.741	95.420			
8	.213	2.370	97.791			
9	.199	2.209	100.000			

Extraction Method: Principal Axis Factoring.

The evidence gathered above reflected that a single factor could only account for as much as 41.5% of variance to all the other constructs combined. This statistic was within the

lee-way of 50% according to evidence of research as cited above and therefore the data instrument was identified as free from common method bias.

Common latent factor

To serve as a validation for all the above measures of validity testing, the common latent factor method using SPSS AMOS was employed to investigate the variance percentage relatable to a common latent factor. To do this, the research investigated all the items measured under all constructs through the introduction of a latent factor common to all constructs. The CFA process was useful in investigating the readiness of the data set for the hypothesis testing and formed the basis for the justification of the data's ultimate reliability. The full CFA is included and explained next in this analysis after the discussion of the descriptive statistics gathered from the study. This is because, this method is directly related to the final tests and analysis of the data. Preliminarily however, it is noted hereby that the common latent factor when linked to all the variables in the study explained only 32% of the variance shared among all observed variables. The fact that the total variance shared among variables in the data set under the lens of a common latent factor was less than 50% also concurred that common method bias was not an issue of the research's data set.

4.3 Descriptive Statistical Analysis

The research in order to ensure that it collected data from the appropriate participants as per the non-probability targeting approach adopted collected a number of critical demographical data. Apart from ensuring that the participants were the right target, this demographical data

would come in handy in making certain conclusions. Frequency analysis was used to profile the sample population along lines of:

- Age
- Job position
- Gender
- Organizational department
- Job experience

The following is the descriptive statistics of the participant's info along the following demographic profiles.

4.3.1 Age of Respondents

Table 4.4 below reflects the age distribution frequencies of the participants in the research. Participants between the ages of 35-44 were the most represented in the data set with a percentage of 39.5% followed by those between the ages of 45-54 who had a valid percentage representation of 22.9%. Younger participants below the age of 34 formed a collected percentage of 22 while older participants over the age of 55 made a representative percentage of 16.6%.

Table 4. 5: Age of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		3	1.3	1.3	1.3
	25-34	44	19.7	19.7	21.1
	35-44	88	39.5	39.5	60.5

	45-54	51	22.9	22.9	83.4
	55 and above	37	16.6	16.6	100.0
	Total	223	100.0	100.0	

4.3.2 Job Position of Respondents

The bulk of the participants who took part in the research were from middle level management which saw a percentage representation of 47.5%. Senior management also formed a considerable part of the sample population with a representation of 28.7% while lower level management constituted 19.7%. Due to the fact that the demographic questions were optional, a total of 4% of participants opted not to give a response to this question.

Table 4. 6 Job position of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
		9	4.0	4.0	4.0
	Lower-level management	44	19.7	19.7	23.8
Valid	Middle Management	106	47.5	47.5	71.3
	Senior Management	64	28.7	28.7	100.0
	Total	223	100.0	100.0	

4.3.3 Gender of Respondents

The data gathering effort of this study saw a domination of female respondents over their male counterparts with a solid 56.3% representation, to 42.8% for male. A small percentage of

approximately 1% of the participants did not identify as either male or female. Table 4.7 below contains the statistical distribution

Table 4. 7: Gender of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		2	.9	.9	.9
	Female	125	56.3	56.3	57.2
	Male	95	42.8	42.8	100.0
	Total	222	100.0	100.0	

4.3.4 Organization Department of Respondents

The research sought to find out which organizational department did the participants work in. Table 4.8 collected the frequency distribution of the participants based on the organizational department that they worked in. It was found out that, 24.8% of the participants worked in the accounting department, 24.3% in the marketing department, 23.9% in the human resource department, another 20.3% in the quality control department. A total of 6.8% of the participants worked in other departments in the organization other than the ones listed.

Table 4. 8: Organizational department(s) of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Accounting department	55	24.8	24.8	24.8
	Human resource department	53	23.9	23.9	48.6
	Marketing department	54	24.3	24.3	73.0

Other (please state)	16	6.8	6.8	79.7
Quality control department	45	20.3	20.3	100.0
Total	223	100.0	100.0	

4.3.5 Job Experience of Respondents

The research also collected job experience demographic data from the participants. This would come in handy in judging the quality of the overall information portrayed by the research. It was noted that 30.6% of the participants had an experience of over 10 years. This was followed by a lot of 27% of the participants who had been in their jobs for over 15 years. Apart from these, 25.2% of the participants had 5-10 years of experience while a small group of 16.7% had less than 5 years experience in their jobs. One of the participants representing around 0.5% of the population did not fill in the details of his/her experience. Table 4.9 below contains the summary of the information:-

Table 4. 9: Job experience of respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
	1	.5	.5	.5
Valid 10-15 years	68	30.6	30.6	31.1
5-10 years	56	25.2	25.2	56.3
Less than 5 years	37	16.7	16.7	73.0
More than 15 years	60	27.0	27.0	100.0
Total	222	100.0	100.0	

4.4 Reliability Analysis

The entire phase shared above involved the entry, cleaning and determination of the validity of the data. Subject to the completion of the process thereof, research embarked on the process of determining the reliability of the constructs and the variables measured. Research notes that reliability is critical to the conduct of scientific research as it augments the rigidity of scientific research, allows the opportunity to cooperatively triangulate results of a research, as well as providing clarity to the investigation for the audience and for the investigator too (Hair et al., 2014).

Taking the recommendation of Hair et al. (2014) on the appropriate methods of measuring reliability, the research relied on item-to-total correlation method. Hair et al. (2014) report that item-to-total correlation method of reliability analysis aims at removing items with low correlations especially if they do not directly affect a domain of interest. Earlier research from May (1997) reveals that item-to-total elimination technique is the most common technique used in the reliability analysis of multi-item scales. The relationship of each specific item to the rest of the items in a construct is investigated through this test with the primary aim being to establish that the items in a construct share strong correlation. In line with concurrent research from Cooper and Emory (1995) , this research will only retain items that have a correlation of 0.30 and above while those with lower than this will be eliminated.

Together with item-to-total correlation, the research complemented the reliability testing with investigation of the average correlation among items making up a construct. According to research evidence, this is termed as ‘internal consistency’ analysis which seeks to establish the

Cronbach alpha values of items within a construct (Nunnally, 1978). This approach is considered one of the most common and if values of average correlation among items in a constructs arrived at are higher than 0.60, then the reliability of the measurement instrument and the data thereof is certified.

Table 4.10 below contains the results of the reliability analysis which the research conducted for all the measured variables (items) under all the constructs namely – Strategic Foresight construct, items code A.1, to A.8. Costs Savings construct, items code B.1, to B.8. Productivity construct, items code C.1 to C.8. Profitability construct, items code D.1 to D.8. Long-term sustainability construct, items code E.1 to E.8. Strategic planning construct, items code F.1 to F.8. Competition construct, items code G.1 to G.8. Technology construct, items code H.1 to H.8 and Reduction of resource wastage construct, items code I.1 to I.8. The research in Table 4.10 have included a juxtaposition of the item-to-total correlation and the Cronbach alpha analysis of the average correlation per construct which evidence of research reports to be a self-correctional method of effectively analyzing the reliability of a data set in scientific research (Nunally, 1978; Price and Mueller, 1986; Cooper and Emory, 1995).

Table 4. 10: Reliability analysis of the research constructs

Item Code	Item	Item-total correlation	Cronbach's Alpha
A	Strategic Foresight		0.901
A.1	Monitoring strategic foresight goals is significant for my organization	.582	
A.2	Strategic foresight entails monitoring the business sectors in which your organization operates	.445	
A.3	There are impediments to strategic foresight implementation	.443	

Item Code	Item	Item-total correlation	Cronbach's Alpha
A.4	Implementing strategic foresight efficiently contributes to growth of the organization	.495	
A.5	Implementing strategic foresight results in effective information management	.634	
A.6	Careful implementation is a key factor of success in the implementation of strategic foresight	.640	
A.7	Strategic foresight has an impact on the corporate decision making process	.663	
A.8	Strategic foresight is necessary for the opening up of future competitive space	.623	
B	Cost Savings		0.892
B.1	Cost saving is perceived to be significant in your organization	.679	
B.2	Your organizations has a good understanding of the concept of cost saving	.658	
B.3	The costs in the organization are influenced by strategic foresight	.632	
B.4	There are implications of cost saving strategies for corporate managers	.410	
B.5	Strategic foresight is essential for the identification of different types of costs	.711	
B.6	Strategic foresight is able to shape the future of cost management	.718	
B.7	Strategic foresight can be used for evaluation of cost	.675	
B.8	Strategic foresight can be used to facilitate cost saving	.728	
C	Productivity		0.891
C.1	Your organization has a good understanding of productivity	.687	
C.2	Your organization is highly productive	.540	
C.3	Productivity plays a considerable role in dealing with the competition	.534	
C.4	Innovative productivity within the organization to an extent is influenced by strategic foresight	.505	

Item Code	Item	Item-total correlation	Cronbach's Alpha
C.5	Strategic foresight assists in shortening the production life cycle	.688	
C.6	Productivity becomes sustainable following implementation of strategic foresight	.676	
C.7	Strategic foresight contributes significantly	.760	
C.8	Strategic foresight boosts the product ranges within the organization	.633	
D	Profitability		0.893
D.1	The organization recognizes the significance of profitability to its well being	.646	
D.2	Strategic foresight contributes to the profitability of the organization	.656	
D.3	Careful consideration is taken in the course of defining profitability	.630	
D.4	Strategic foresight facilitates the prediction of future profitability	.696	
D.5	Strategic foresight assist your organization to adjust to financial changes	.639	
D.6	Strategic foresight increases the level of profitability within the organization	.642	
D.7	Strategic foresight can be used to prevent profit manipulation by managers	.607	
D.8	Poor financial performance is an indicator of inappropriate application of strategic foresight	.617	
E	Long-term Sustainability		0.896
E.1	Sustainability contributes to the performance of the organization	.726	
E.2	Managers have a good understanding of sustainability	.486	
E.3	The organization has achieved sustainability	.605	
E.4	Long term sustainability has an impact on the future of the organization	.677	
E.5	Strategic foresight can be used to plan the future to ensure sustainability	.686	
E.6	Sustainability is key to the survival of the organization	.655	

Item Code	Item	Item-total correlation	Cronbach's Alpha
E.7	Strategic foresight is key to the organization successfully navigating economic, environmental, and societal uncertainties	.612	
E.8	The organization needs to urgently improve its long term sustainability	.578	
F	Strategic Planning		0.896
F.1	The organization has a good understanding of strategic foresight	.649	
F.2	Management has direct influence on strategic planning in the organization	.532	
F.3	Strategic foresight enhances the organization's strategic planning	.705	
F.4	Enhancing the success of future strategic planning is a critical goal for the organization	.607	
F.5	There are various obstacles that affect the process of strategic planning	.483	
F.6	Stakeholder involvement in strategic planning is significant	.636	
F.7	Management possess the knowledge, skills, and abilities to foster integration of strategic foresight with strategic planning	.496	
F.8	Poor planning has a negative impact on the future of the organization	.611	
G	Competition		0.895
G.1	Competition is an essential aspect affecting the organization	.587	
G.2	The organization is exposed to high rates of competition	.493	
G.3	Lack of ability of foreseeing competition results in negative performance	.613	
G.4	Strategic foresight helps the organization determine in advance strategies of dealing with competition	.651	
G.6	The role of strategic foresight towards monitoring competition is well understood	.572	
G.7	Stiff competition affects the prediction of long-term operations in the organization	.613	
G.8	It is difficult for the organization to make strategic foresight decisions under competitive pressure	.597	

Item Code	Item	Item-total correlation	Cronbach's Alpha
H	Technology		0.899
H.1	Technology is an essential aspect of the organization	.678	
H.2	The organization is receptive to technology	.499	
H.3	Technology can be used to boost innovation for realization of future organizational goals	.590	
H.4	Technology can be used to realize effective future growth	.631	
H.5	Enhancing technological success within the organization is significant	.537	
H.6	The future plans of the organization are influenced by technology	.576	
H.7	Achievement of the future goals of the organization can be enabled through technology	.501	
H.8	The organization needs to be adopt rapid technological changes for a secure future	.608	
I	Reduction of Resource Wastage		0.931
I.1	The organization has adequate understanding of the concept of resource wastage	.577	
I.2	Resource wastage is an urgent issue for the organization	.561	
I.3	The organization is well aware of the negative impact of resource wastage	.543	
I.4	The organization has strategies in place to prevent resource wastage	.595	
I.5	The organization has an awareness of the impact of resource wastage on its future	.573	
I.6	Strategic foresight can be used to reduce resource wastage	.644	
I.7	The organization has developed and implemented strategies to monitor resource wastage	.572	
I.8	Resource wastage undermines performance of the organization	.410	

Table 4.10 above shows that the values of the item-total correlations all satisfied and exceeded the standard statistical threshold of .30 as noted from evidences of research cited earlier. As far as the cronbach alpha coefficient is concerned, all the constructs have a strong inter-item correlation as depicted by the strong cronbach alpha coefficients are above .80 and well in satisfaction of the standard cronbach alpha coefficient for reliability acceptance of a data instrument and set in scientific research.

4.5 Validity Analysis

A structure of steps was implemented by research to guide the study of validity of the research constructs. This methodical approach forming the basis of the scale development process of the analysis involved the exploratory factor analysis (EFA). Researchers support this approach as complimentary for the establishment of validity and reliability of the data subject to the use of the same in the testing of the hypotheses. Based on the findings of the data collection instrument used, this section reports the systematic approaches taken towards scale development.

4.5.1 Full Data Set

The research applied factor analysis to retractor the data and elicit critical insights as to the perceptions of professionals regarding strategic foresight and costs savings in their organizations. The study used 72 items in total to measure the perception of the professionals regarding strategic foresight and costs savings in their organizations. The core constructs and

variables were 9 in number with each being measured using 8 items which when loaded into SPSS tool formed the sub-variables of the study. To determine the validity of the variables, the sub-variables, which entailed 72 items used in collecting data on a 5-point likert scale from professionals in the manufacturing sector in UAE were submitted to confirmatory factor analysis. Hair et al. (2013) denotes that before submitting variables for factor analysis, certain conditions have to be met. First, the variable(s) should have been measured using interval scale. In the case of this study therefore, the use of the 5-point likert scale satisfies this requirement. The second requirement is that the sample population being investigated must be higher than 100 participants since factor analysis is untenable for participants lower than this or will not have the appropriate statistical threshold for informative power ($> .60$) (Madsen, 1998; Hair et al., 2014). Below is an explication of the factor analyses outputs.

Bartlett's test of sphericity

Following scientific research advice from Snedecor and Cochran (1989) the 72 items, representing the 9 different variables of the research were submitted for the Bartlett's test of sphericity (BTS). The results of the principle component exploratory factor analysis provided an 11 component extracted solution cumulatively accounting for 71.29% of the total variance extracted. As can be seen in Table 4.11, the Bartlett's test of sphericity rejects the null hypothesis that the correlation matrix is an identity matrix (p-value 0.000). To this extent, the data can be applied effectively for factor analysis.

Kaiser-Meyer-Olkin measure of sampling adequacy

Cooper and Emory (1995) indicates that the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is utilized hand in hand with the BTS measure. As identified by Hair et al. (2013) factor analysis is only possible for data with big number of samples. This is among the things that the KMO test measures and provides information on whether a research can be usefully informative when substituted to factor analysis. The results from the KMO test, provided a strong statistic of 0.932 which is way above the 0.6 threshold required for the determination of sampling adequacy and utility of factor analysis on a sample data (Cooper and Emory, 1995; Snedecor and Cochran, 1989). Since the below are joint tests in SPSS software, the following is the tabulated representation of the information:-

Table 4. 11: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.932
Approx. Chi-Square		13236.489
Bartlett's Test of Sphericity	Df	2556
	Sig.	.000

4.5.2 Strategic foresight construct (SF)

Following the propositions from previous experts in the subject matter as cited above, the study had to confirm the factor analysis fitness of each of the variables and/or constructs of the study. This was essential because it would guide the research in the development of the measurement scales, factor loading, naming and interpretation process. As in the investigation of the dimension reduction validity of the whole data set, the first step is to conduct the KMO

and BTS tests on the construct's data. The below is the output for the analysis of Strategic foresight construct of the study.

Table 4. 12: KMO and Bartlett's Test SF

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.882
Approx. Chi-Square		882.000
Bartlett's Test of Sphericity	Df	28
	Sig.	.000

The principal component exploratory factor analysis results provided an extraction of two components that collectively accounted for 70.806% of the extracted total variance. The BTS results recorded a significant 882.0 at a minimal degree of freedom and this was highly significant (p-value = .000). Nunally (1978) and Snedecor and Cochran (1989) among other researchers on statistical approaches and methods for scientific research agree that in the case of the above researches shared, the correlation matrix is not an identity matrix and can therefore be effectively reduced in factor analysis. The KMO results according to table 4.12 above also returned a significant statistic of .882 which justified the high potential of informative utility of the construct when submitted to factor analysis (Cooper and Emory, 1995).

Principle component analysis extraction SF

The Principle Component Analysis (PCA) was used for the factor extraction process of SF at the eigenvalue of 1.0. In line with Hair et al. (2014) insights, this eigenvalue was used as the threshold determinant for the number of variables. Table 4.13 below shares the numbers of

the two factors extracted with first component at 55.455% variance and the second component with 15.351% of the variance at eigenvalue 1.0:

Table 4. 13: PCA extraction for SF

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.436	55.455	55.455	4.436	55.455	55.455
2	1.228	15.351	70.806	1.228	15.351	70.806
3	.494	6.174	76.980			
4	.471	5.890	82.869			
5	.414	5.174	88.043			
6	.382	4.781	92.824			
7	.315	3.941	96.765			
8	.259	3.235	100.000			

Extraction Method: Principal Component Analysis.

Extraction method PCA

According to table 4.13, at the eigenvalue of 1.0, the un-rotated initial solution weighed the eight variables, reducing them to 2 extracted factors accounting for 70.806 cumulative percentage of the total extracted variance. Hair et al. (2014) indicate that the communalities scores for each of the items is imperative to investigate as part of the PCA extraction process in an effort to establish the degree of confidence. Table 4.14 below reflects the communalities scores at the eigenvalue of the eight sub-variables in the strategic foresight construct.

Table 4.14: Communalities SF

	Initial	Extraction
Strategic foresight A.1	1.000	.691
Strategic foresight A.2	1.000	.654
Strategic foresight A.3	1.000	.767
Strategic foresight A.4	1.000	.652
Strategic foresight A.5	1.000	.697
Strategic foresight A.6	1.000	.712
Strategic foresight A.7	1.000	.692
Strategic foresight A.8	1.000	.798

Extraction Method: Principal Component Analysis.

The results from the above table show that the communalities values for the eight sub-variables ranged from 0.652 – 0.798 which according to May (1997) reflects strong confidence way above the threshold 0.4.

Factor rotating and loading

The eight measurement items and sub-variables of the strategic foresight constructs provided satisfactory results in the previous investigation and allowed the research to conduct the Varimax rotated component analysis (RCA). Snedecor and Cochran (1989) advice that in using the Varimax RCA technique, a cut-off point of 0.50 or higher was used for interpretation of factors. Table 4.15 reflects the findings of the RCA for the strategic foresight construct:

Table 4. 15: Rotated Component Matrix^a SF

	Component	
	1	2
Strategic foresight A.1	.886	
Strategic foresight A.2	.816	
Strategic foresight A.3	.785	
Strategic foresight A.4	.745	
Strategic foresight A.5		.876
Strategic foresight A.6		.761
Strategic foresight A.7		.689
Strategic foresight A.8		.666

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

The factor loadings were appropriated to the variables that loaded well with the extracted two components of the data set. As can be interpreted from Table 4.15 above, all variables loaded impressively with the different components with scores way above the cut-off value of 0.5. Hair et al. (2014) supports the above understanding reporting that at the alpha value of 0.05, factor-loading values of 0.35 are still statistically significant and are supported by discriminate validity measurement.

Factor naming and interpretation

Four variables fitted well with the first component extracted while four other variables fitted well with the second extracted component of the factor analysis. It should be remembered that this component formed over 70% of the variances extracted when the confirmatory factor analysis of strategic foresight construct was investigated. The items are coded accordingly and can be retraced to the operationalization of the variables in a previous chapter of this study to enable understanding of which variables/items fitted with which component. As can be seen in Table 4.15, for component one, the strongest loading was 0.886 while 0.745 was the weakest loading. For component two on the other hand, the strongest loading was 0.876 while the lowest loading was 0.666. All these loading according to Snedecor and Cochran (1989), May (1997) and Hair et al. (2014) among other scholars were very strong and statistically significant.

4.5.3 Factor Analysis for All Constructs

Subject to the importance of validity especially in factor analysis, it was mandatory that the above process be conducted for all other constructs in the study. The following will be a succinct reflection of the above procedure for all the other constructs in the study namely – costs savings (CS), productivity (P), profitability (Pr), long-term sustainability (LS), strategic planning (SP), competition (C), technology (T) and reduction of resource wastage (RRW). The review will sequentially flow and the titles and tabulations hereby made will be bolded, numbered differently and excluded from inclusion in the thesis' table of content and list of tables as a measure to ensure non-saturation of the same. This has been decided as an alternative to referring these tables to the appendix owing to their importance to understanding the undertakings of the research as far as analysis of the data is concerned and since the constructs are critical to the study.

Cost savings construct (CS)

The factor analysis results returned an extraction of one component, which accounted for 63.447% of the total extracted variance. The BTS test-statistic is 1139.886 with 28 degree and p-value of 0.000. This justified the fact that the correlation was not an identity matrix and that the construct can be successfully reduced using factor analysis. The KMO value of 0.920 served to confirm and support the foregoing claim. The table below shows KMO and Bartlett test.s

CS KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.920
Approx. Chi-Square		1139.886
Bartlett's Test of Sphericity	Df	28
	Sig.	.000

CS Principle component analysis extraction

The PCA was conducted at an eigenvalue of 1.0 and the results of the same are shared below. One component accounted for over 63% of the variance.

CS PCA extraction

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.076	63.447	63.447	5.076	63.447	63.447
2	.776	9.696	73.143			
3	.644	8.049	81.192			
4	.470	5.877	87.069			

5	.304	3.804	90.873			
6	.271	3.388	94.261			
7	.241	3.006	97.268			
8	.219	2.732	100.000			

Extraction Method: Principal Component Analysis.

CS PCA extraction method

Investigation of the communalities at the eigenvalue being critical according to research by Hair et al. (2014), was conducted in an effort to establish the degree of confidence of the constructs relationships. The finding indicated that one of the items of measurement had low communality to the other factors recording a statistic value of 0.290 which is lower than the threshold > 0.4 . However, all the other items in the construct were much higher than the threshold with the highest communality score being 0.756.

CS Communalities

	Initial	Extraction
Cost saving B.1	1.000	.579
Cost saving B.2	1.000	.663
Cost saving B.3	1.000	.582
Cost saving B.4	1.000	.290
Cost saving B.5	1.000	.713
Cost saving B.6	1.000	.756
Cost saving B.7	1.000	.737
Cost saving B.8	1.000	.755

Extraction Method: Principal Component Analysis.

CS Factor rotating and loading

Apart from one of the sub-variable measurement items low statistic under communalities, the rest of the statistical validity of the cost savings CS construct was not in question. Hair et al. (2013) informs that one can delete items with lower communality, leave them or alter the model. This is especially if the communality is expected to greatly affect the rotation and loading of the construct and its variables and/or sub-variables. Therefore, before making the determination of how to deal with the low value communality item, the study conducted the Varimax RCA technique based on the cut-off value of 0.5 as shared by Snedecor and Cochran (1989) to find out the potential total effect of the low communality item on the loading of the cost savings (CS) construct. The finding made was, since only one component was extracted to be higher than the eigenvalue of 1.0 (total extraction variance) as highlighted in the PCA, the solution could not be rotated. Snedecor and Cochran (1989), Cooper and Emory (1995) and Hair et al. (2013) in this case inform that, the component matrix values arrived at suffice as the accepted solution for loading and rotation. The items in the construct were found to have high loading values ranging from 0.539 to 0.869 as shown below:-

CS Load component matrix

	Component
	1
Cost saving B.1	.869
Cost saving B.2	.869
Cost saving B.3	.858
Cost saving B.4	.845

Cost saving B.5	.814
Cost saving B.6	.763
Cost saving B.7	.761
Cost saving B.8	.539

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

CS Factor naming and interpretation

The codes B.1 – B.8 generated during the operationalization of the variables in a previous section of this study represents the names and correspond to specific items of measurement under the construct of cost savings. These, can be referred to in an attempt to find out the details of the items of measurement that scored higher and those which scored lower.

Productivity construct (P)

The productivity construct extraction factor analysis, returned an extraction of two components of the measurement items that collectively accounted for 71.911% of the total extracted variance. The BTS attest-statistic is 1052.432 and highly significant with p-value of 0.000. This provided justification for the lack of identity in the matrix and the possibility for the reduction of the matrix using factor analysis. The foregoing was affirmed by a strong KMO statistic of 0.859.

P KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.859
Approx. Chi-Square		1052.432
Bartlett's Test of Sphericity	Df	28
Sig.		.000

P Principle component extraction

A PCA based on the eigenvalue of 1.0 was conducted revealing the extraction of the principle components of the construct which were two and accounting for almost 72% of the extracted variance.

P PCA extraction

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.680	58.495	58.495	4.680	58.495	58.495
2	1.073	13.416	71.911	1.073	13.416	71.911
3	.687	8.584	80.494			
4	.512	6.396	86.890			
5	.354	4.431	91.321			
6	.268	3.347	94.668			
7	.250	3.119	97.787			
8	.177	2.213	100.000			

Extraction Method: Principal Component Analysis.

P PCA extraction method

The establishment of the confidence levels of the construct was sought through the investigation of the scores of different items in a construct at the eigenvalue 1.0. According to Hair et al. (2014), the communalities of the items in a construct should score above the cut-off value of 0.4. This would indicate that the items in a construct share a lot in common. The communality score for productivity construct of the study attested to the confidence of items in the construct with communality values ranging from a low of 0.538 to the high of 0.865 as shown below:-

P Communalities		
	Initial	Extraction
Productivity C.1	1.000	.839
Productivity C.2	1.000	.865
Productivity C.3	1.000	.538
Productivity C.4	1.000	.622
Productivity C.5	1.000	.768
Productivity C.6	1.000	.708
Productivity C.7	1.000	.748
Productivity C.8	1.000	.666

Extraction Method: Principal Component Analysis.

P Factor rotating and loading

Having realized satisfactory results from the above analyses, the study conducted a rotation and loading of the construct items around the principal components of the construct to

determine which items loaded well with which principle component (Snedecor and Cochran, 1989; Cooper and Emory, 1995). The cut-off for the interpretation of effective loading was set at 0.5 according to Hair et al. (2014) among other researchers. Items C.1 to C.6 were noted to load well with the first component of the construct as extracted through factor analysis. On the other hand, item C.7 and C.8 effectively loaded with the second component extracted of the construct. Item C.6 loaded effectively with both components with scores higher than the 0.5 threshold. The following is the result of the loading and rotation of the items in the productivity construct:-

P Rotated Component Matrixa

	Component	
	1	2
Productivity C.1	.834	
Productivity C.2	.801	
Productivity C.3	.779	
Productivity C.4	.726	
Productivity C.5	.699	
Productivity C.6	.684	.529
Productivity C.7		.916
Productivity C.8		.866

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

P Factor naming and interpretation

The codes C.1 to C.8 represent the different items and provide the statistic process with a way to guide the determination of the exact details of the factor through the correspondence of the codes with the items of measurement in the operationalization of variables and questionnaire of the study. Through this, the study and reader can be in position to know the details of item C.1 and attempt a process of understanding why it loaded well with component 1. On the other hand, item C.6 can be referred and scrutinize as to its ability to load well with both components.

Profitability construct (Pr)

The extraction factor analysis of profitability construct returned one component which accounted for 66.319% of the total extraction variance. The BTS test-statistic is 1167.525 and highly significant with a p-value of 0.000. According to research, this showed the appropriateness of the construct for factor analysis and the lack of identity in the matrix that provided it with the ability to be reduced in factor analysis (Hair et al., 2014). This was justified by a strong KMO statistic of 0.922, which is higher than the threshold of 0.5 required for factor analysis (Cooper and Emory, 1995).

Pr KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.922
Bartlett's Test of Sphericity	Approx. Chi-Square	1167.525
	Df	28
	Sig.	.000

Pr Principle component extraction

A PCA was conducted based on the eigenvalue 1.0 and only one principle component was extracted which accounted for over 66% of the extraction variance. This is shared in the following table:-

Pr PCA extraction

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.305	66.319	66.319	5.305	66.319	66.319
2	.542	6.775	73.094			
3	.518	6.473	79.567			
4	.440	5.505	85.072			
5	.413	5.157	90.229			
6	.329	4.108	94.336			
7	.239	2.986	97.323			
8	.214	2.677	100.000			

Extraction Method: Principal Component Analysis.

Pr PCA extraction method

The study sought to establish a confidence level through the investigation of the communalities of the items in a construct extracted based on an eigenvalue of 1.0 and using a cut-off statistic of 0.4. The communalities extraction scores ranged from 0.580 to 0.740 which indicated high communality among items in the construct and a high level of confidence on the construct's validity. The statistics are shown in the table below:-

Pr Communalities

	Initial	Extraction
Profitability D.1	1.000	.656
Profitability D.2	1.000	.740
Profitability D.3	1.000	.620
Profitability D.4	1.000	.661
Profitability D.5	1.000	.732
Profitability D.6	1.000	.708
Profitability D.7	1.000	.608
Profitability D.8	1.000	.580

Extraction Method: Principal Component Analysis.

Pr Factor rotating and loading

Since the principle extracted factor for this construct was only one, the statistical tool did not provide any rotation for the values of the construct. According to Cooper and Emory (1995), the loading of the different items in the construct was considered based on component matrix.

Pr Load component matrix

	Component
	1
Profitability D.1	.860
Profitability D.2	.856
Profitability D.3	.842
Profitability D.4	.813

Profitability D.5	.810
Profitability D.6	.788
Profitability D.7	.780
Profitability D.8	.761

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Pr Factor naming and interpretation

The codes D.1 to D.8 represent the different items that were under the construct of profitability and which, were used to measure the perspectives of the participants on the relationship between profitability and the core constructs. These codes can be used to refer to the details of the measurement items in an effort to interrogate aspects of loading as shared above among other aspects of the research. Item D.8 registered the lowest load score with the principal component extracted at 0.761 while item D.1 registered the highest score with the same at 0.860.

Long-term sustainability construct (LS)

The principle component factor analysis extraction for LS construct returned an extraction of one component, which individually accounted for 58.896 of the total variance extracted. The BTS value is 894.420 and statistically significant (p-value=0.000). This means that the construct is not an identity matrix and can be informative if submitted for factor analysis. A confirmation to the foregoing was provided by the KMO statistic, which recorded a significant 0.911 – way higher than the acceptable threshold of 0.4 (May, 1997). This can be seen in the table below

LS KMO and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.911
Approx. Chi-Square		894.420
Bartlett's Test of Sphericity	Df	28
	Sig.	.000

LS Principal component extraction

A PCA based on eigenvalue of 1.0 was done to reduce the dimension of the construct and extract the principle components. A single principal component which accounted for over 58% of the total extracted variance was arrived at as shown in the below table.

LS PCA extraction

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.712	58.896	58.896	4.712	58.896	58.896
2	.796	9.948	68.844			
3	.573	7.166	76.010			
4	.556	6.947	82.957			
5	.393	4.909	87.866			
6	.358	4.473	92.339			
7	.313	3.918	96.258			
8	.299	3.742	100.000			

Extraction Method: Principal Component Analysis.

LS PCA extraction method

Taking the cut-off point of 0.4 as provided for by Hair et al. (2014) among a host of other previously cited researchers, the study investigated the communalities of the items in the construct to determine the confidence of the relationship and therefore the validity of the construct. The score of communalities ranged from 0.418 to 0.687 thereby reflecting general confidence on the construct and the relationship between the items therein.

LS Communalities		
	Initial	Extraction
Long-term sustainability E.1	1.000	.636
Long-term sustainability E.2	1.000	.481
Long-term sustainability E.3	1.000	.638
Long-term sustainability E.4	1.000	.656
Long-term sustainability E.5	1.000	.635
Long-term sustainability E.6	1.000	.687
Long-term sustainability E.7	1.000	.418
Long-term sustainability E.8	1.000	.560

Extraction Method: Principal Component Analysis.

LS Factor rotating and loading

As in the case of the previous construct, the fact that the principal component was only one, the statistical analysis for rotation was not tenable. The loading of the items in the construct was thus considered based on the component matrix of the overall analysis. The

values from the component matrix showed that the items load to the component was rather strong at a low of 0.646 and a high of 0.829 as shown below:-

LS Load component matrixa

	Component
	1
Long-term sustainability E.1	.829
Long-term sustainability E.2	.810
Long-term sustainability E.3	.799
Long-term sustainability E.4	.798
Long-term sustainability E.5	.797
Long-term sustainability E.6	.749
Long-term sustainability E.7	.694
Long-term sustainability E.8	.646

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

LS Factor naming and interpretation

As in the case of the other constructs, the codes developed during the operationalization of variables and design of the questionnaire help in the naming and reference to items, factors and variables to enable the interrogation of certain aspects of the data. The codes bear reference to the details of the actual item of measurement used and one can check E.8 to see what the item inquired and develop some understanding of the score of the component matrix thereof.

Strategic planning construct (SP)

Strategic planning principal component factor extraction returned an extraction of two principal components which jointly accounted for 61.121% of the total variance extracted. The BTS test-statistic is 750.713 and significant with a p-value of 0.000. This confirmed the non-identity of the matrix and the possibility of the reduction of the construct through factor analysis. The foregoing was justified by a strong KMO score of 0.862.

SP KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.862
Approx. Chi-Square		750.713
Bartlett's Test of Sphericity	Df	28
	Sig.	.000

SP Principal component extraction

Two principal components were found to be above the eigenvalue of 1.0 and jointly accounted for over 61% of the variance as shown in the table below:

SP PCA extraction

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.145	51.810	51.810	4.145	51.810	51.810
2	1.145	14.311	66.121	1.145	14.311	66.121
3	.668	8.356	74.477			
4	.555	6.936	81.413			
5	.470	5.876	87.290			

6	.372	4.650	91.939			
7	.354	4.422	96.362			
8	.291	3.638	100.000			

Extraction Method: Principal Component Analysis.

SP PCA extraction method

Hair et al. (2014) recommendation and cut-off point was taken as the guideline to investigate the communalities of the data and find whether the items in the construct of strategic foresight shared a lot in common. All items in the construct reflected strong communalities scores ranging from 0.635 to 0.761, which reflected their strong confidence as fit for factor analysis. The below is the communalities extraction of the data:

SP Communalities

	Initial	Extraction
Strategic planning F.1	1.000	.640
Strategic planning F.2	1.000	.668
Strategic planning F.3	1.000	.657
Strategic planning F.4	1.000	.645
Strategic planning F.5	1.000	.635
Strategic planning F.6	1.000	.607
Strategic planning F.7	1.000	.761
Strategic planning F.8	1.000	.676

Extraction Method: Principal Component Analysis.

SP Factor rotating and loading

In line with research recommendation from Cooper and Emory (1995), the research rotated the results of the items in the construct around the components to determine which items loaded strongly with which components. The cut-off point for interpreting appropriate loading was 0.5 as provided by research by Cooper and Emory (1995) among other scholars. The research noted that items F.1, F.2, F.3, F.4 and F.8 loaded appropriately with the first principal component while items, F.4 to F.8 loaded appropriately with the second principal component. The table reflects the Varimax rotating component loading results for SP construct:-

SP Rotated Component Matrixa

	Component	
	1	2
Strategic planning F.1	.872	
Strategic planning F.2	.788	
Strategic planning F.3	.654	
Strategic planning F.4	.586	.549
Strategic planning F.5		.790
Strategic planning F.6		.762
Strategic planning F.7		.697
Strategic planning F.8	.545	.557

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

SP Factor naming and interpretation

The codes assigned to the different items provide a reference to the actual measurement item details traceable back to the operationalization of variables and questionnaire design in a previous chapter of this study. This helps the reader in interrogating the contents of the items against the item's and/or construct's results in the above factor analysis.

Competition construct (C)

The principal component extraction revealed two factors that accounted for 66.174% of the extracted variance of this construct. The BTS results returned an approximate Chi-square value of 777.899 with similar degrees of freedom as the other constructs and highly significant with p-value=0.000. The KMO sampling adequacy score also returned a strong value of 0.870.

C KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.870
Approx. Chi-Square		777.899
Bartlett's Test of Sphericity	Df	28
	Sig.	.000

C Principle component extraction

The two principle components extracted that were above the eigenvalue of 1.0 which was the variance threshold are show in the principle component extraction table below. They jointly accounted for over 66% of the variance.

C PCA extraction

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.221	52.761	52.761	4.221	52.761	52.761
2	1.073	13.413	66.174	1.073	13.413	66.174
3	.724	9.048	75.221			
4	.505	6.307	81.528			
5	.459	5.744	87.272			
6	.429	5.358	92.630			
7	.327	4.089	96.719			
8	.262	3.281	100.000			

Extraction Method: Principal Component Analysis.

C PCA extraction method

The level of confidence presented by the internal relationship of the items in the construct at an eigenvalue of 1.0 was investigated. The cut-off point for acceptable level of confidence was taken to be 0.4. The study found out that the constructs had strong communalities with the values ranging between 0.428 and 0.769. This reflected acceptable level of confidence as to the internal correlation of items in the construct and is reflected below:-

C Communalities

	Initial	Extraction
Competition G.1	1.000	.642
Competition G.2	1.000	.769
Competition G.3	1.000	.653
Competition G.4	1.000	.730

Competition G.5	1.000	.428
Competition G.6	1.000	.617
Competition G.7	1.000	.752
Competition G.8	1.000	.705

Extraction Method: Principal Component Analysis.

C Factor rotating and loading

The study used the Varimax rotating technique to investigate the relationship between the items in the constructs and the two principal factors derived from the PCA extraction of the construct. A cut-off point of 0.5 was taken to interpret acceptable loading. It was realized that, items G.1 to G.5 loaded perfectly with the first component while items G.6 to G.8 were well loaded with the second component:-

C Rotated Component Matrixa

	Component	
	1	2
Competition G.1	.867	
Competition G.2	.817	
Competition G.3	.773	
Competition G.4	.706	
Competition G.5	.526	
Competition G.6		.877
Competition G.7		.670
Competition G.8		.665

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

C Factor naming and interpretation

The codes provided were used as the guideline for the naming of the factors/items in the construct and the referent content of each code provided the actual interpretation of each.

Technology construct (T)

The PCA extraction for this construct extracted two principal components which accounted for 70.228% of the variance extracted. The BTS results of approximate Chi-square stood at 883.962 and highly significant with p-value=0.000. The KMO test of sampling adequacy confirmed the above with a strong value of 0.898. These statistics confirmed the constructs viability for factor analysis and can be seen in the below table:

T KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.898
Bartlett's Test of Sphericity	Approx. Chi-Square	883.962
	Df	28
	Sig.	.000

T Principal factor extraction

Two principal factors accounting for over 70% of the variance from the eigenvalue of 1.0 were extracted. The results of the variance is shown in the table below:-

T PCA extraction

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.513	56.411	56.411	4.513	56.411	56.411
2	1.105	13.817	70.228	1.105	13.817	70.228
3	.537	6.718	76.946			
4	.464	5.797	82.743			
5	.404	5.048	87.792			
6	.360	4.505	92.297			
7	.314	3.923	96.220			
8	.302	3.780	100.000			

Extraction Method: Principal Component Analysis.

T PCA extraction method

The study investigated communalities of this construct as in the case of other constructs to determine the confidence level of the relationships between the items in the construct. The cut-off point for acceptable communalities was taken to be 0.5. The study found that items in the construct shared communalities ranging from a low of 0.638 to a high of 0.869. This is reflected in the table below:-

Communalities

	Initial	Extraction
Technology H.1	1.000	.733
Technology H.2	1.000	.869

Technology H.3	1.000	.715
Technology H.4	1.000	.672
Technology H.5	1.000	.649
Technology H.6	1.000	.695
Technology H.7	1.000	.638
Technology H.8	1.000	.647

Extraction Method: Principal Component Analysis.

T Factor rotating and loading

The study rotated the factors around the principal components using the Varimax factor rotating technique to investigate the loading strengths of different factors to two different components. The cut-off point for the interpretation of the appropriate load was 0.5. The findings indicated that only item H.7 did not load well with principal component one while on the other hand, H.7 and H.8 were the only ones loading sufficiently with principal component two.

T Rotated Component Matrixa

	Component	
	1	2
Technology H.1	.834	
Technology H.2	.794	
Technology H.3	.792	
Technology H.4	.781	
Technology H.5	.753	
Technology H.6	.737	
Technology H.7		.932

Technology H.8	.543	.662
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Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

T Factor naming and interpretation

The codes assigned to each factor/item was assigned during the operationalization and can be referred to in the interpretation of the factor in an effort to understand the contents of the same.

Reduction of resource waste construct (RRW)

Two components were extracted from the principal component analysis which accounted for a variance of 86.254%. The BTS approximate Chi-square value stood at 1870.325 with similar degrees of freedom and a p-value = 0.000 significance. To support this, the KMO sampling adequacy score was at the strongest for all constructs recording 0.951. These statistics confirmed the non-identity of the matrix in the construct items providing it to be for reduction through factor analysis and the KMO provided that it had high adequacy of providing informative insights when subjected to the same (Nunally, 1978). The statistics are reflected in below tabulation:-

RRW KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.951
Approx. Chi-Square		1870.325
Bartlett's Test of Sphericity	Df	28
	Sig.	.000

RRW Principal component extraction

The two principal components extracted from the analysis of the construct accounted for a very high percentage of the variance over eigenvalue of 1.0. The PCA results are shown in the below table:-

RRW PCA extraction

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.894	73.680	73.680	5.894	73.680	73.680
2	1.006	12.574	86.254	1.006	12.574	86.254
3	.291	3.635	89.889			
4	.211	2.635	92.524			
5	.174	2.172	94.696			
6	.154	1.928	96.624			
7	.143	1.784	98.408			
8	.127	1.592	100.000			

Extraction Method: Principal Component Analysis.

RRW PCA extraction method

The confidence level of the internal relationships between the factors in the construct was investigated through the study of the communalities at the tested eigenvalue. The research found out that the confidence level of the construct was high with internal communality values of 0.809 to 0.908 as show below:-

RRW Communalities

	Initial	Extraction
Reduction of resource wastage I.1	1.000	.809
Reduction of resource wastage I.2	1.000	.861
Reduction of resource wastage I.3	1.000	.864
Reduction of resource wastage I.4	1.000	.871
Reduction of resource wastage I.5	1.000	.861
Reduction of resource wastage I.6	1.000	.814
Reduction of resource wastage I.7	1.000	.823
Reduction of resource wastage I.8	1.000	.998

Extraction Method: Principal Component Analysis.

RRW Factor rotating and loading

The factors were rotated and loaded to the two components using the Varimax factor rotating technique and the study considered factors that had a load value of 0.5 and above to a component as the appropriately loaded factors. The results showed that items I.1 to I.7 loaded only well with the first component while only item I.8 loaded well with the second principal component as shown below:-

RRW Rotated Component Matrixa

	Component	
	1	2
Reduction of resource wastage I.1	.933	
Reduction of resource wastage I.2	.928	
Reduction of resource wastage I.3	.928	

Reduction of resource wastage I.4	.927	
Reduction of resource wastage I.5	.907	
Reduction of resource wastage I.6	.900	
Reduction of resource wastage I.7	.899	
Reduction of resource wastage I.8		.999

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

RRW Factor naming and interpretation

The assigned codes were used as the names for the factors/items and provided a point of reference to the actual contents of the factor which could be used in understanding the loading statistics among other statistics of an individual construct or factor in a construct.

4.6 Hypothesis Testing and Modelling

The rigor in the tests conducted to this point and the fact that the instrument has passed most the tests with trivial random deficiencies; the research was confident to proceed with the testing of the hypotheses. As introduced in the preliminary chapter of the study, the aim of the research was to identify the relationship between strategic foresight and cost savings in manufacturing organizations in UAE. In the development running up to this point of the research, the study noted that there were a number of other aspects and considerations that seemingly related to the two constructs under studied. Based on some studies reviewed earlier, these aspects, sub-constructs and activities, would help in the achievement of the goals of the

two construct by bringing the relationship between the constructs to life. This led to the development of 15 hypotheses, which are tested at this point.

4.6.1 Measurement models

The research has already conducted an exploratory factor analysis for the main constructs and for the items in the constructs based on principal component analysis as a precursor to the hypotheses examination and model development. The nine constructs of the research have individually been investigated using PCA and Varimax rotation and the results have been shared previously. Most of the factors apart from three resulted in two component solutions with respective accounts to variance most of which were recorded to be over 60% of the total variance extracted.

Confirmatory factor analysis

From this point, in line with the hypotheses of the research, the study will focus on the nine constructs collectively and use the exploratory factor results of the nine constructs to proceed with the confirmatory factor analysis CFA. A CFA for the nine constructs acting as observables while the individual items in each of the constructs from code A.1 to I.8 acting as indicator variables was conducted. The study utilized SPSS AMOS version 26 to execute a structural equation modeling (SEM) and path analysis for the designed model in an effort to confirm its overall fitness for continued investigation. Based on the results of the standardized estimates of the CFA analysis, the study found that most of the hypothesized relationships had some effect and that the overall model fitness was acceptable. According to Anderson and Gerbing (1988), the below critical overall fitness indices are reported in table:

Table 4. 16: CFA nine construct model indices

Model	X²	DF	GFI	AGFI	CFI	RMSEA
Nine Factors	5966.972	2458	0.914	0.839	0.940	0.080
Statistic			Suggested			
Goodness-of- fit index (GFI)			≥0.90			
Adjusted goodness-of- fit index (AGFI)			≥0.80			
Comparative fit index (CFI)			≥0.90			
Root mean square residual (RMSEA)			≤0.10			

The model output is reflected in the figure below:-

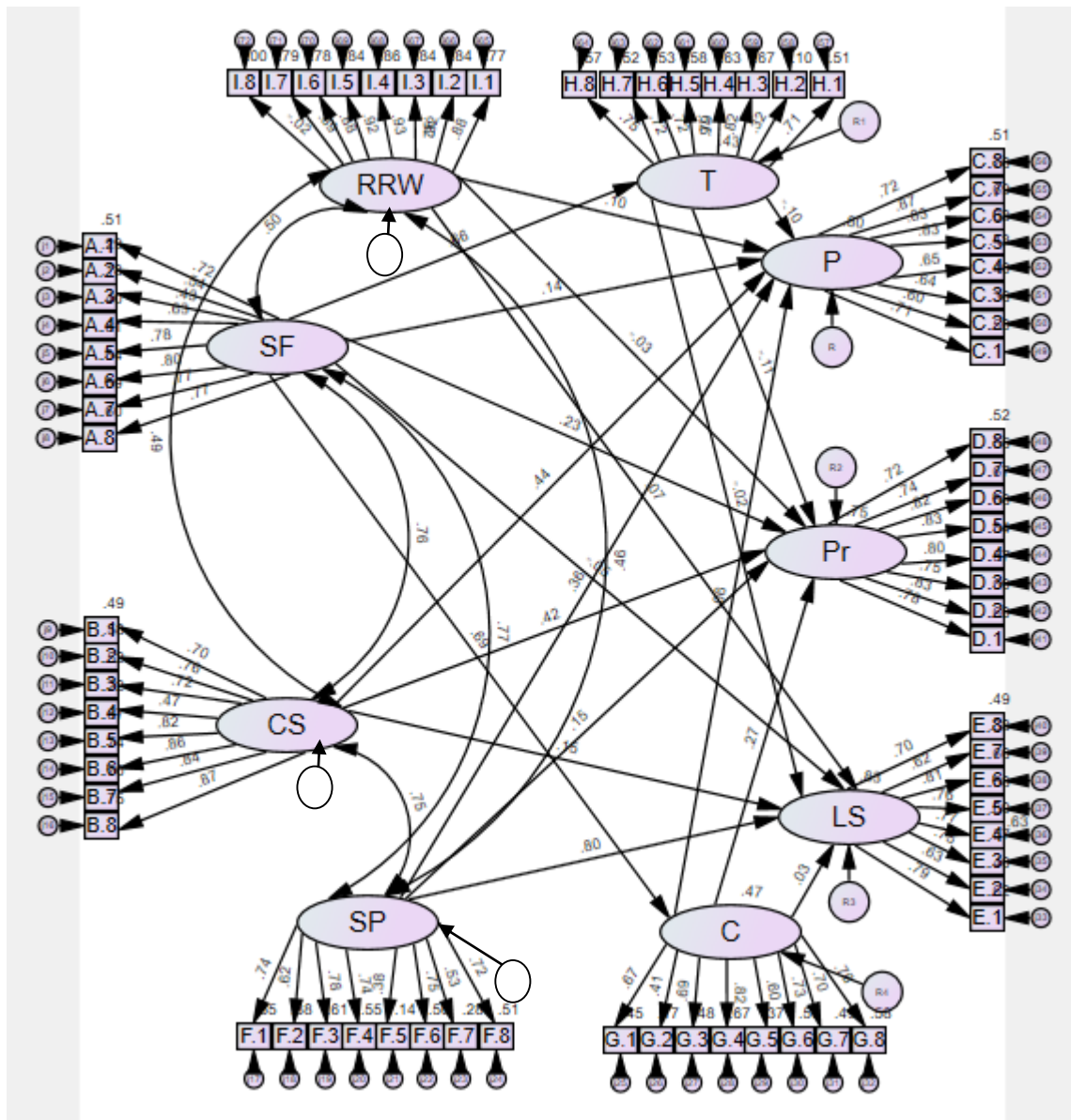


Figure 4. 1: CFA nine factor model

The above figure represents the confirmatory factor analysis output of all the variables in the study and their items of measurement. The abbreviations in the figure are representative of the constructs of the research. For purposes of clarity, their full form is provided as follows, SF – strategic foresight, CS – costs savings, RRW – resource waste reduction, SP – strategic planning, T – technology, C – competition, P – productivity, Pr – profitability, and, LS – long-

term sustainability. This confirmatory factor analysis was conducted prior to the path testing whereby critical indices for structural equation modeling were derived and assessed against acceptable minimums. The indices included the goodness of fit GF, comparative fit CF and the root mean square error of appropriation RMSEA among others – the values arrived at have been captured in Table 4.16 above with their explanations following hereon. The evidence from the model did not have a good Chi-square significance score but this according to researchers is normal for models with a huge number of variables (Joreskog and Sorbom, 1982; ; Anderson and Gerbing, 1988; Bentler, 1990). This is precisely why other indices including the goodness of fit index (GFI), comparative fit index (CFI) and the root mean square error of approximation (RMSEA) are used alongside the Chi-square significance score to determine the model fitness in structural equation modeling (SEM) CFA. Also, the Chi-square/degrees of freedom value CMIN/DF statistic overruled the Chi-square significance flaw as it was below the suggested maximum of 3, scoring 2.42. Together with the above indices, the loadings of the data set were found to be satisfactory for most of the observed constructs with loadings averaging at 0.7, which represented high loadings. This was a confirmation of the loadings found in the exploratory factor analysis.

Convergent validity and discrimination analysis

Research identifies convergent validity as the extent of variance of an observed constructs' indicators or items of measurement (Liang & Wang, 2004; Hooper, Coughlan and Mullen, 2008; Hair et al., 2014). The criteria for CVA include, factor loading of equal to or higher than 0.6, construct reliability (CR) score of 0.60 or higher and average variance extracted (AVE) score of not less than 0.5. The following table shows the CVA of the observed constructs

based on the CFA: All the constructs of the study scored satisfactory levels of construct reliability (CR) surpassing the standard threshold statistic of .60 with the minimum CR statistic being .623. On the other hand, the average variance extracted for all the constructs post confirmatory factor analysis stood between .561 at minimum and .907 for the highest effectively satisfying the statistical thresholds as found out from research. The research in an effort to validate the above findings also assessed the discriminant validity of the research using the Fornell and Larcker (1981) test for square root of AVEs and the results revealed that the data set had achieved discriminant validity whereby all the square roots of AVEs for each construct were found to be higher than the inter-construct correlations indicating the uniqueness of each construct in the model. Tables 4.17 and 4.18 contain the dispensation of the findings communicated above.

Table 4. 17: Convergent validity analysis

Constructs	Composite Reliability	AVE
SF	0.711	0.671
CS	0.779	0.730
P	0.723	0.831
Pr	0.840	0.699
LS	0.654	0.768
SP	0.831	0.561
C	0.623	0.579
T	0.715	0.674
RRW	0.975	0.907

Table 4. 18 Fornell and Larcker measurement for discriminant validity

	SF	CS	RRW	SP	P	Pr	T	LS	C
SF	0.751	0.642	0.217	0.617	0.623	0.633	0.496	0.584	0.511
CS	0.642	0.796	0.253	0.678	0.782	0.772	0.565	0.675	0.696
RRW	0.217	0.253	0.616	0.185	0.24	0.226	0.211	0.307	0.247
SP	0.617	0.678	0.185	0.722	0.701	0.656	0.625	0.783	0.647
P	0.623	0.782	0.24	0.701	0.77	0.731	0.557	0.748	0.647
Pr	0.633	0.772	0.226	0.656	0.731	0.814	0.528	0.671	0.69
T	0.496	0.565	0.211	0.625	0.557	0.528	0.753	0.564	0.669
LS	0.584	0.675	0.307	0.783	0.748	0.671	0.564	0.772	0.616
C	0.511	0.696	0.247	0.647	0.647	0.69	0.669	0.616	0.728

The abbreviations in the table are representative of the constructs of the research. For purposes of clarity, their full form is provided as follows, SF – strategic foresight, CS – costs savings, RRW – resource waste reduction, SP – strategic planning, T – technology, C – competition, P – productivity, Pr – profitability, and, LS – long-term sustainability.

4.6.2 Hypothesis Testing

The study utilized path analysis to test the research hypotheses and develop a working model for the relationship between the hypotheses. Snedecor and Cochran (1989) and Hair et al (2013) define path analysis as an analytical approach that investigates the multivariate relationships based on linear causal effects. Based on the theoretical concepts and experiential knowledge, a path analysis helps researchers examine postulated relationships. Researchers therefore concur that path analysis does not imply the certainty of any relationships but is useful in the investigation of the quantitative aspects of relationships which then can be used to make

statistical interpretation of their strengths. In developing the path analysis, a distinction between the exogenous (external) variables and endogenous (internal) variables is made. In the previous CFA, the opportunity was available but the research sought to test the fitness of the model rather than the hypothetical relationships of the research. With the fitness of the model confirmed, the research can now confidently move to the development of a path model which will further be adopted as the framework of the application of strategic foresight in cost savings in the manufacturing industries in the UAE depending on the findings thereof. The following figure represents the conceptual model based on the holistic understanding of the research to this point:-

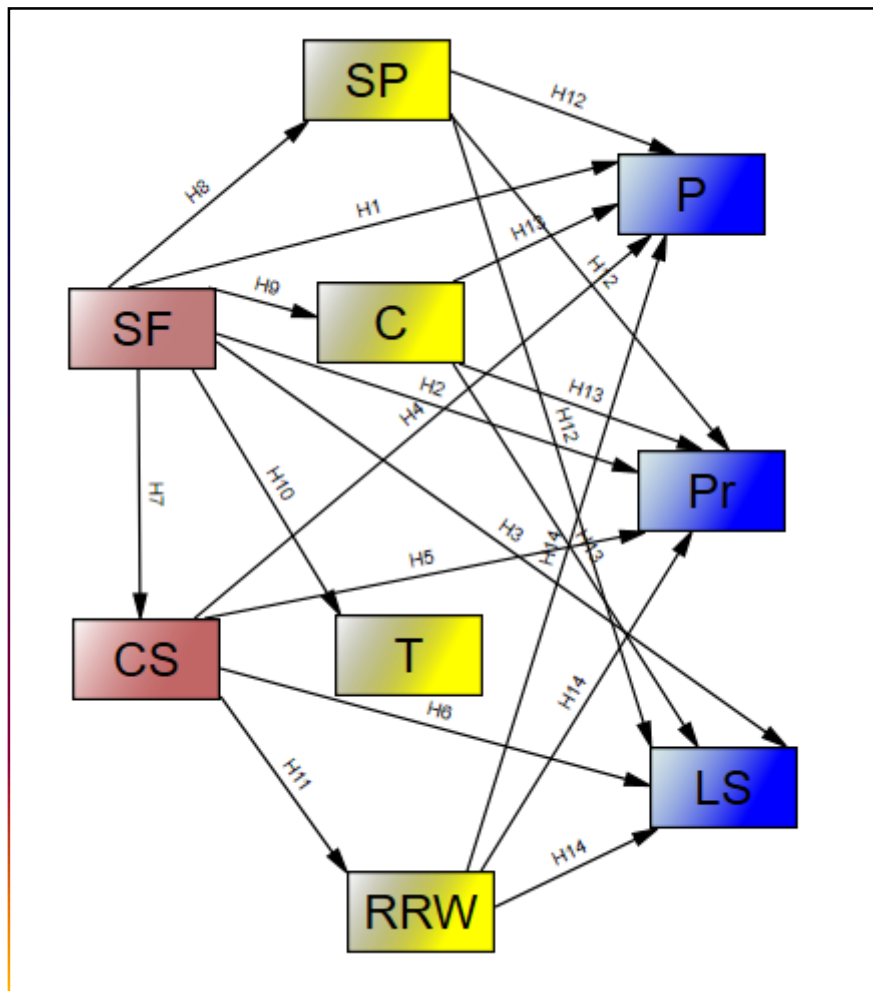


Figure 4. 2: Conceptual model for hypotheses testing

The above figure is a representation of the structural model diagram that the study used to conduct the path analysis on the nine main constructs in an effort to test the hypotheses. The abbreviations in the figure are representative of the constructs of the research. For purposes of clarity, their full form is provided as follows, SF – strategic foresight, CS – costs savings, RRW – resource waste reduction, SP – strategic planning, T – technology, C – competition, P – productivity, Pr – profitability, and, LS – long-term sustainability. Following the guidelines of Joreskog and Sorbom (1982), the study conducted the path analysis with application of the

maximum likelihood estimate. The direction of the arrow represented the different relationships as per the hypotheses of the study. Since the variables had satisfied all normality, validity and reliability tests, the hypotheses were tested and the below model with standardized estimates of the regression relationships between the variables was arrived at:

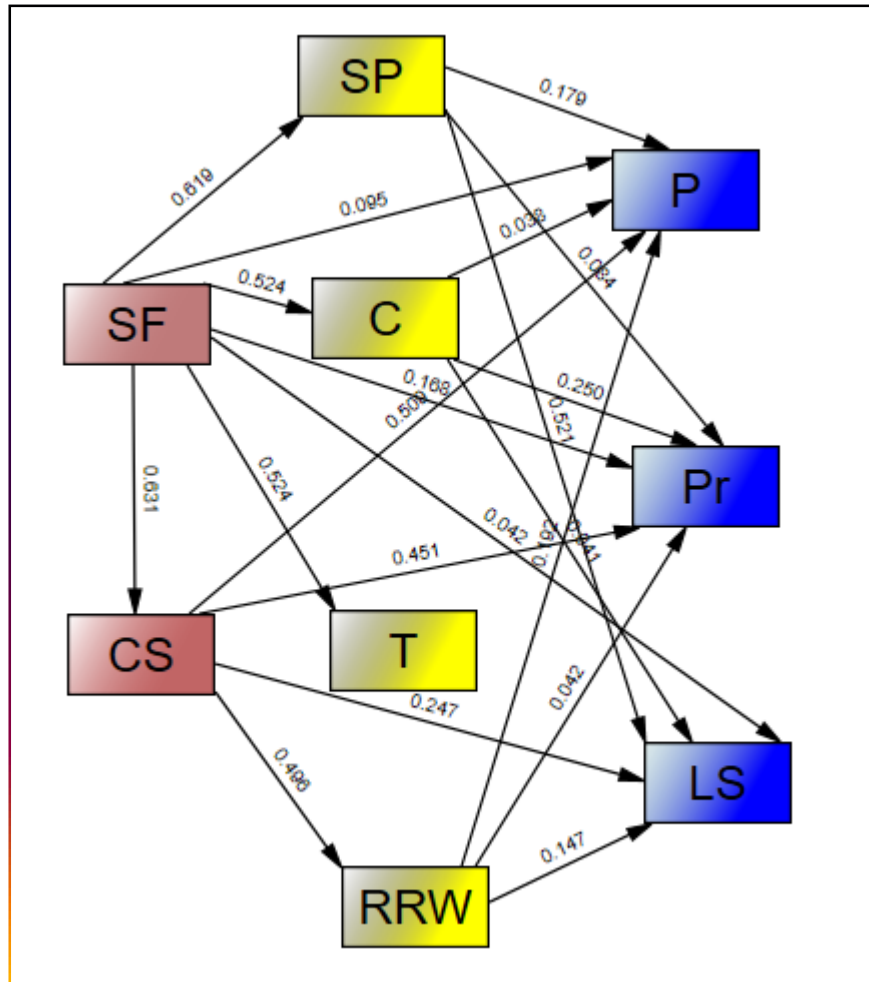


Figure 4. 3: Tested model

The hypotheses testing returned some insightful feedback for the study. A number of hypotheses were rejected while the bulk of them were accepted with some only being partially accepted through the mediating role of other endogenous variables. For instance, the

standardized regression coefficient estimate for strategic foresight impact on cost savings (**H7**), which formed the basis of the study, is 0.631 and statistically significant at less than 1% level (p-value = 0.000) which indicated strong relationship and therefore acceptance of the hypothesis. **H1** of the study which was relationship between strategic foresight and productivity registered a standardized regression coefficient estimate of 0.095 with p-value of 0.150, which implies that the hypothesis is not supported. **H2** of the study tested strategic foresight relationship to profitability and the standardized regression coefficient value from the path analysis is 0.168 with a p-value of 0.015, indicating that H2 is supported. **H3** of the research measured the relationship between strategic foresight and long-term sustainability and scored a standardized regression coefficient estimate of 0.042 at p = 0.552 which led to the rejection of the hypothesis.

H4 of the study tested the relationship between cost savings and productivity. The standardized regression coefficient estimate is 0.509 and statistically significant with a p-value = 0.000, suggesting a strong impact of cost saving on productivity. **H5** and **H6** measured cost savings and profitability and cost savings and long-term sustainability respectively, the standardized regression weight coefficient estimate are 0.451 (p-value = 0.000) and 0.247 (p-value = 0.000), respectively which lead to the acceptance of both hypotheses. **H8** tested the relationship between strategic foresight and strategic planning. The coefficient estimate (0.169) is highly significant with a p-value = 0.000, which led to the acceptance of the hypothesis that there is positive relationship between the two variables. **H9** investigated the relationship between strategic foresight and competition. standardized coefficient estimate is 0.524 with p-value = 0.000, suggesting that the hypothesis is supported. **H10** tested the relationship between

strategic foresight and technology. The standardized regression coefficient estimate is 0.524 and statistically significant (p-value = 0.000), therefore supporting the hypothesis.

H11 tested the relationship between cost savings and resource waste reduction. The result shows that the standardized coefficient estimate is 0.496 with a p-value of 0.000, indicating that the hypothesis is supported. **H12** tested the combined relationship between strategic planning, productivity, profitability and long-term sustainability – the path analysis results show that the standardized regression coefficient estimate is 0.261 with a p-value of 0.04 (significant at 5% level), which suggests that the hypothesis is supported. **H13** investigated the relationship between competition, productivity, profitability and long-term sustainability – the results reveal that the standardized regression coefficient estimate is 0.233 with a p-value of 0.280, suggesting that the hypothesis is not supported. Finally, the last hypothesis **H14** tested the relationship between resource waste reduction and productivity, profitability and long-term sustainability combined. The regression coefficient estimate is 0.127 with a p-value of 0.131, which also led to the rejection of the hypothesis. The research also noted some indirect effects on the dependent variables based on the mediating roles of the mediator variables. Table 4.19 summarizes the estimated regression coefficients of the variables as found from the path analysis conducted. The abbreviations in the table are representative of the constructs of the research. For purposes of clarity, their full form is provided as follows, SF – strategic foresight, CS – costs savings, RRW – resource waste reduction, SP – strategic planning, T – technology, C – competition, P – productivity, Pr – profitability, and, LS – long-term sustainability.

Table 4. 19: Summary of direct and indirect effects

Hypothesis	Direct Effects	Estimates	P-value
H7	SF -> CS	0.631	0.001
H8	SF -> SP	0.619	0.001
H9	SF -> C	0.524	0.001
H11	CS -> RRW	0.496	0.001
H1	SF -> P	0.095	0.150
H2	SF -> Pr	0.168	0.015
H3	SF -> LS	0.042	0.552
H6	CS -> LS	0.247	0.001
H4	CS -> P	0.509	0.001
H5	CS -> Pr	0.451	0.001
H10	SF -> T	0.524	0.001
H12	SP -> P + SP -> Pr + SP -> LS	0.261	0.04
H13	C -> P + C -> Pr + C -> LS	0.233	0.280
H14	RRW -> P + RRW -> Pr + RRW -> LS	0.131	0.131
Indirect Total Effects		Estimates	
SF->SP->P		0.80	0.001
SF-SP->Pr		0.70	0.04

SF->SP-LS	1.14	0.001
SF->C->P	0.56	0.001
SF->C->Pr	0.77	0.002
SF->C->LS	0.541	0.001
SF->CS->P	1.14	0.04
SF->CS->Pr	1.08	0.001
SF->CS->LS	0.88	0.001
SF->CS->RRW->LS	1.28	0.02

From the above table, it is clear that while some relationships registered low effects in the direct sense, for instance strategic foresight direct impact on productivity, their mediation saw them register stronger total effects. This justifies the role of the mediator variables in the relationship between strategic foresight, costs savings and profitability, productivity and long-term sustainability of organizations in the manufacturing industry in the UAE.

4.7 Conclusion

This chapter presented the rigorous process of data analysis in light of the objective of studying the relationships as construed in the study at formulation. The chapter set out with an intention to ensure that the data collected for the study is fit for the use in the testing of the hypothetical relationships espoused by the research earlier on. This is in line with previous literature teaching on the process of data analysis in high level research and the importance of rigor in the same as far as the pursuit of objectivity is concerned. The data collected for the study

when subjected to the numerous multi-layered processes of data analysis has proved to be suitable and fit for use in the testing of the hypothesis of the study.

Accordingly, the research having gained certainty of the usefulness of the data, subjected the data set for hypotheses testing and the results despite the rejection of some of the hypotheses, have provided insightful opening for the discussion of the matter of strategic foresight and cost savings in the UAE manufacturing industry from an informed point of view. The fact that the data was collected from a select group of participants whose specialty is in the manufacturing industry gives confidence when distilling the quantitative insights arrived at from the results hereby. This will be done in the chapter that follows which will seek to make references to literature and experience when discussion the findings from the research hereby. The following table summarizes the 14 hypotheses of the research with a highlight on the side on whether they have been accepted or rejected.

Table 4. 20: Summary of hypothesis testing results

Hypotheses	Standardized Estimates	Standard Error	Critical Ratio	P- value	Results
H₁ – Strategic foresight, has a direct impact on productivity in organizations in the UAE manufacturing industry	0.095	0.48	12.104	0.150	<i>Not supported</i>

H₂ – Strategic foresight, has a direct impact on the profitability of organizations in the manufacturing industry in the UAE	0.168	0.40	11.742	0.015	<i>Supported</i>
H₃ – Strategic foresight, has a direct impact on the long term sustainability of organizations in the UAE manufacturing industry	0.042	0.45	9.169	0.552	<i>Not Supported</i>
H₄ – Cost savings have an impact on the productivity of manufacturing organizations in the UAE	0.509	0.115	8.52	0.001	<i>Supported</i>
H₅ – Cost savings have a direct impact on the profitability of manufacturing companies in the UAE	0.451	0.58	2.440	0.001	<i>Supported</i>
H₆ – Cost savings has a direct impact on the long	0.247	0.61	4.078	0.001	<i>Supported</i>

term sustainability of manufacturing organizations in the UAE					
H₇ – Strategic foresight directly impact cost savings in the manufacturing companies in the UAE	0.631	0.51	8.931	0.001	<i>Supported</i>
H₈ – Strategic foresight directly impacts strategic planning in the manufacturing industry in the UAE	0.169	0.47	7.572	0.001	<i>Supported</i>
H₉ – Strategic foresight directly impact competition in the manufacturing organizations in the UAE	0.524	0.54	9.57	0.001	<i>Supported</i>
H₁₀ – Strategic foresight directly impacts technology adoption and	0.524	0.57	3.469	0.001	<i>Supported</i>

development in the manufacturing organizations in the UAE					
H₁₁ – Cost savings directly impact resource waste reduction in the manufacturing industry in the UAE	0.496	0.46	9.523	0.001	<i>Supported</i>
H₁₂ – Strategic planning affects productivity, profitability and long-term sustainability of organizations in the manufacturing industry in the UAE	0.261	0.60	5.035	0.04	<i>Supported</i>
H₁₃ – Competition, directly affects productivity, profitability and long-term sustainability of organizations in the	0.233	0.63	4.931	0.280	<i>Not Supported</i>

manufacturing industry in the UAE					
H₁₄ – Resource waste reduction directly affects productivity, profitability and long-term sustainability of organizations in the manufacturing industry in UAE	0.127	0.53	2.963	0.131	<i>Not Supported</i>

Source: Analysis of data

Chapter 5 Discussion of Results

5.1 Introduction

Taking up from the previous chapter, this chapter of the study is bent on elucidation and systematized discussion of the results found from the execution of the research methodology and the analysis of the results based on systemic statistical approaches as has been seen from the previous chapter. The discussion hereby will seek to review the results in conjunction with the evidences gathered from literature in order to determine whether there are any relationships of the fragmented relationship discussions in literature to the targeted constructs studied herein. The discussion of the results finds its bedrock in the rigorous methodological approach of the research, which laid down a plan for the collection of data to suit the goal of the research. Together with the foregoing, the statistical approaches utilized to ensure that all objective information could be derived from the data gathered and that the data fulfilled all threshold requirements studied and set forth by previous scientific scholars also provide the study a standing ground especially when making an elucidation of the findings in this chapter. Considering the process therefore, all statements made in the discussion of the findings will bear a scientific undertone and can, to the extent of the data collected and analyzed, as well as the design of the research, be considered factual. The study can thus be comparatively examined against other similar research to determine points of convergence and/or divergence and make scientific deductions thereof. In doing the discussion, the study will review each of the hypothesized relationships individually and seek to juxtapose the results with the evidences shared in literature previously.

5.2 Key Results of the Study

While the hypotheses were the beacons of the study, the research believes that presenting a generic summary of the findings from the research would be an important first step in ensuring that any reader going through this research will have the opportunity of grasping the key findings of the research early on in the discussion chapter. A number of key findings were revealed when the model for the relationships between the hypotheses developed was tested.

For instance, the first and most interesting finding was that, **H1** for strategic foresight direct impact on the productivity of manufacturing organizations in the UAE industry, was not supported. This relationship apparently scored a weak path analysis value of 0.095, which is almost close to 0.1 but still a less than impressive score for a direct effect. What this showed was that strategic foresight directly affected productivity but with minimal significance considering the hypothesis was that the effect was strong. The experiential analysis of the above situation is the fact that strategic foresight is a long term project and approach towards the future as highlighted by previous researchers and adequately captured in the literature review of this study. On the other hand, productivity as is known is more of a day to day utility of the work force. The low score between their hypothesized relationships is a justification that strategic foresight by virtue of focusing on the future is unable to actively impact a daily measured aspect of the organization like productivity.

As an extension to the above, the study found out that through the mediating roles of other constructs studied together in the model, strategic foresight seemed to have a stronger total effect on productivity in the organization. For instance, strategic foresight through strategic

planning had a stronger impact on productivity in the organization of 0.80 which is way higher than the 0.095 that strategic foresight had recorded on productivity as hypothesized in **H1**. Another instance which recorded much higher total effects is the mediating role of cost savings between strategic foresight and productivity with a score of 1.14. This meant that anytime strategic foresight increased by unit 1 and with the mediating role of cost savings, then overall productivity would increase by 1.14. Competition mediating variable also increased the overall effect of strategic foresight on productivity making it record a value of 0.56, which is still stronger than the value found for the direct relationship. While these mediating relationships were not considered part of the hypothesized relationships, the evidence show that the mediating variables are an important part of scientific quantitative research as they apparently strengthen the relationship between the independent and the outcome variables. (Flannelly et al., 2014; Skeira et al., 2017).

The results also reveal that the hypothesized relationship between strategic foresight and long-term sustainability (**H3**) was not supported in the path analysis. The value derived from the path analysis of this relationship based on the data studied was weak 0.042 and statistically not significant. On the other hand, cost savings, the other main construct in the study has a value of 0.247 in the same relationship under **H6**. According to the current study, it is explained that strategic foresight individually did not have any direct impact on long-term sustainability of organizations but costs savings had. Logic dictates that if an organization has effective resource management and costs savings approaches, it would automatically have the sufficiency of remaining for the long run however, the same is logically untrue for strategic foresight alone. This is because, no matter the amount of foresight that an organization may have, the lack of

other effective interlinks between this foresight and long term sustainable management of the organization would automatically render the organization to failure and effectively detract all farsighted strategies. This is confirmed by looking at some of the mediating relationships between strategic foresight and long term sustainability in the organization. For instance, strategic foresight and long term sustainability under the mediation of strategic planning construct scored a total of 1.14 in the path analysis – reflecting a strong regression correlation of of the strategic foresight on long-term sustainability because of the introduction of a mediating construct – strategic planning.

The mediating construct is what in the typical organizational environment connects the former to the latter and makes sure the interlink just as espoused by Flannelly et al. (2014) and expounded upon by Skeira et al. (2017). Without this interlinking construct acting as the mediator, then these two variables have no relationship and can therefore have no significant effect on each other. Similarly, strategic foresight through the mediating roles of cost savings, competition, and costs savings plus reduction of resource wastage was able to score impressive results on the path analysis which is a further justification of the importance of mediating variables to effect certain relationships.

Another finding of importance from this research was the prime finding that strategic foresight had a very strong impact on costs savings. This direct effect hypothesized by the research as **H7** returned an impressive path analysis value of 0.631 which was arguably the highest direct effect value of the study. This was a significant finding of the study as it confirmed the primary preoccupation of the research which was to find out the relationship between strategic foresight and costs savings in manufacturing organizations in the UAE. The data

cemented the assumption that there must be an inherent relationship and by all means this will be one of the strongest points for making recommendations to manufacturing organization leaders across UAE. The findings provided justifications on how manufacturing organizational leaders should ensure that they manage their operations using strategic foresight as this will enhance their anticipation of future uncertainties and promote their proactive action towards the same with an overall aim of remaining on top and competitive.

That the empirical evidence show that, strategic foresight has direct impact on cost savings especially considering the occurrence of changes in the market for instance the rise in the price of certain raw materials. If considering the FMCG industry and the raw materials are farm produce, to mitigate these inherent changes in price of raw materials which would occur one time or another, a strategically farsighted manufacturing leader would push for the establishment of upstream sources that are owned by the company. While this may require more investment in the meantime, they stand to save the organization a lot and establish its competitiveness in the market at cheaper costs when market uncertainties from the upstream start catching up with the other players in the market and the market in general. Thus the strategic foresight approach would have helped afford a lot of costs savings and establish the organization's competitiveness and even long term sustainability.

Finally, a lot of other relationships were tested and interesting insights were derived from the investigation of the strengths of different relationships hypothesized in the study using path analysis. Effective distillation of the different hypotheses and the findings derived is an important place to start in order to appreciate the entire effort of the current study as far as illuminating certain relationships that are related to the two main constructs of the study in the

co text of the manufacturing industry in the UAE is concerned. It is only through the understanding of the findings from the context of experience, the data collected and the previous studies that the research can be able to curve out the best contributions which to provide to the field of knowledge related to this study. The following section involves a review of each of the hypothesis in triangulation with evidence from literature and experiential insight in order to provide more understanding of the relationships thereof.

5.3 Discussion of Hypothesis

5.3.1 H1 - Strategic Foresight has Direct Impact on Productivity

The confirmatory factor analysis followed by the path analysis is identified as a reliable approach that helps verifying the factor structure among observed variables in an construct in an effort to study their interrelationships with other constructs in the study. In the case of the first hypothesis of the study, it was realized that the relationship between the main construct of strategic foresight and the dependent construct of productivity was weak. This was revealed by a weak path analysis value of 0.095 with a p-value 0.150. This led to the rejection of the hypothesis. The finding also revealed the possible fact that, in the manufacturing industry in the UAE, there was no direct relationship between strategic foresight and the productivity of the organization.

The explanation to this phenomenon is enshrined in part of the literature reviewed where scholars Iden et al. (2017) report on the relationship between strategic foresight and other sub-factors of overall organizational success including productivity. Iden et al. (2017) mention that, strategic foresight is critical to the long term successes of the organization and may not be

effectively manifested when the measurement is considering short term outcomes. In this case, productivity is a short term success metric which can be assessed on an hourly, daily, weekly or monthly basis cumulating into years. However, the fact that strategic foresight is focused on the future looking basically at more than one year all the way to 10 years and 20 year plans and directions of the organization, then the data path analysis results are true. This justifies also the fact that the respondents considered to take part in the study were Informed respondents as opposed to people with minimum knowledge on the manufacturing operations in the manufacturing organizations in UAE.

Amsteus (2011) cited earlier in the study also notes that most of the impact of strategic foresight in an organization can only be felt and measured through the mediating role of other constructs. This justifies why the study in developing the literature, arrived at different other constructs that interlink strategic foresight to organizational success metrics like productivity. Amsteus (2011) opines that strategic foresight is a futuristic planning endeavor and for the plans to be successful, they have to be supported by continued routine efforts which are part of the strategic foresight endeavor but are not strategic foresight in themselves. This brings the understanding of the lofty characteristic of strategic foresight and established more reason for understanding it from the lens of other constructs including costs savings. This suggests an implication where strategic foresight on its own, would never effectively impact productivity in the organization to the point of making the organization productive rather, the whole relationship would be more like retrogressive as more effort would be needed on strategic foresight in order to impact productivity when the hypothesis is suggesting the opposite.

5.3.2 H2 - Strategic foresight has direct impact on profitability

The case was different when looking at the relationship between strategic foresight and productivity. The path analysis of the relationships between the data recorded that strategic foresight had a strong value towards productivity at 0.168 and a significantly low p-value of 0.015. This led to supporting the hypothesis that strategic foresight directly impacts productivity. Research evidences had noted that through strategic foresight, organizations can put in place measures to scale their operations towards the profitable side (Agentielle, 2013; Carleton et al., 2013). According to the two distinct but otherwise concurrent evidences of research, strategic foresight helps an organization to lay groundwork for improved profitability of organization in the manufacturing industry. This is of course through among other things effective strategic planning towards increasing the organizations' profitability.

Otherwise, it may be an altogether occurrence that strategic foresight has a direct and strong impact on profitability while it does not have on productivity. To satisfy this need for understanding, Andersen and Ramussen (2014) report that strategic foresight relationship with profitability can be considered within the premise of how strategic foresight focuses far into the future on trends and eventualities, and sets up plans and operations to ensure that the organization stays abreast and is able to benefit from the trends as they occur.

According to Andersen and Ramussen (2014), this way, strategic foresight is able to influence any current and future plans towards the short-term, middle to long-term profitability of the organization based solely on insightful farsightedness that helps in the competitive positioning of the organization. The scholars are in agreement with other scholars that while strategic foresight does not directly impact some constructs, the fact that plans are set up in line

with a vision from the leader of the organization makes all positive outcomes from the execution of the plan attributable to the plan and strategic foresight specifically. The study by Rohrbeck and Kum (2018) lends credence to the foregoing observation and the finding of strategic foresight positive impact on profitability altogether. According to Rohrbeck and Kum (2018), in a longitudinal study of seven years in organizations pre-strategic foresight and post-strategic foresight implementation, it was noted that firms that were prepared for the future through the application and practice of strategic foresight benefited from 33% increase in profitability when compared to similar firms that did not apply or practice strategic foresight. The findings of Rohrbeck and Kum (2018) while in agreement with this hypothesis of the research and its findings thereof, advocates that strategic foresight also impacts productivity and growth in the organizations where it was practiced to the tune of 200% in comparison to those organizations that did not practice and apply strategic foresight. However, the current study noted that there is an understanding that while profitability may increase considerably due to application of strategic foresight, it does not automatically mean that productivity has increased. Andersen and Ramussen (2014) maintain that the fact that most strategic foresight is concerned with the use of new technologies and ways of doing business in itself may promote profitability without necessarily needing a proportional measure of increased productivity on the part of the human resource.

5.3.3 H3 - Strategic foresight has direct impact on long term sustainability

One of the questions asked in the survey questionnaire that bore a relationship between the two constructs being compared under the third hypothesis was ‘Strategic foresight is key to the organization successfully navigating economical, environmental and societal uncertainties’.

While there were a lot other related questions, this has come up as important to quote while making the discussion of the findings from the path analysis. According to the analysis, strategic foresight recorded a path analysis value of 0.042 with a relatively high p value reflecting a confidence level of only 45%. This meant that the hypothesis was rejected outright one because of a low standardized path coefficient and secondly because the confidence level was way lower than the 95% threshold. This was a surprising result from the study and can only be sufficiently explained through correlation with evidence of previous literature.

Earlier on Leigh (2003) noted that strategic foresight is a critical measure of future success direction of an organization without which, an organization is unable to scale the future and/or meet effectively meet and maneuver the uncertainties inherent in the typical market economy. Nonetheless, Leigh (2003) notes that strategic foresight can only do this through the interaction of other efforts like cost savings. Leigh's research is categorical that when looking at strategic foresight in public sector organization, all the energies should be channeled towards identification of new ways of generating revenues and identification of ways of reducing the costs of doing business. In this light therefore, it is understandable that strategic foresight needs to be wrapped up with more actual efforts in order to harness its abstract promises. The same view is peddled by Vechiato (2015), who inclines that strategic foresight is concerned with creating the future and is not attainable without the appropriate groundwork. In considering the role of strategic foresight on the long term sustainability of the organization, it can be deduced from the evidence of Vechiato (2015) that, strategic foresight by itself is unable to impact the long term sustainability of the organization.

To this extent, there is no denial that strategic foresight is an abstract concept that requires the interaction and interlinking of other activities and variables in the organization in order to effectively impact certain aspects of the organization. Vechiato (2015) agrees with earlier research from Leigh (2003) that the basis of sustainability is the development of new ways of operation which increase revenue while cutting the costs of operations. Logic dictates that while it is possible to think of this using strategic foresight and come up with solid plans, the execution of these plans would bear a different name for instance revenue generation or cost savings. This is where strategic foresight loses its direct impact on the long term sustainability as far as the data gathered and analyzed is concerned. The role of mediating factors like costs savings and especially how they significantly shift the matrix of the effect of strategic foresight on long-term sustainability and productivity as discussed in the summary of the findings earlier presented is therefore of key importance to consider.

5.3.4 H4 - Cost savings has direct impact on productivity

The positive, strong and direct relationship between costs savings and productivity in the organization was confirmed by a path analysis standardized regression coefficient value of 0.509 with a p-value of 0.000, suggesting that there is a significant relationship between the two variables. This was probably one of the strongest relationships between the variables in the path analysis and justified a fact reiterated by previous research evidences that costs savings was critical to the productivity of the organization. According to evidences from Lajili and Mahoney (2006), Hammoud and Nash (2014) and Couto et al. (2017), costs savings is a critical aspect in all organizational success since time immemorial. The researchers are in agreement that merchants and contemporary traders alike have been on the course of streamlining their

operations in order to realize more profits for them in the present and going in to the future. This continuous zeal, has led to the growth of costs savings as a professional strategy of reviewing organizational operations to determine areas of potential costs cutting.

This review of organizational operations in an effort to determine areas of costs cutting is what Lajili and Mahoney (2006) in previous research on costs savings in organizations identify as one of the causes for productivity rise or decline in organizations. The scholars note that the costs of operations control everything and if they are at levels which they should not be, then it means that some opportunity of increasing productivity through as little as making much more available to the employees is lost. To this extent, Lajili and Mahoney report that costs savings is a factor that directly relates to the productivity of the organization. This notion is supported by other scholars who note that, utilization of cost-effective operational approaches helps organizations to maintain a productive space that allows the company to readily take on new opportunities as they occur and convert this to more profits in the organization (Dreyfus et al., 2019) . This is what breeds productivity as it allows the organization to function at optimum while ensuring the costs are manageable therefore making sure that the organization is able to meet the demands of the market at a calculate and framed pace.

Considering the manufacturing industry scenario from an experiential perspective, it is no doubt that costs savings should or do have a direct relationship with the productivity of the organization. Through cost-analysis of the organization operations in the construction industry for instance, leaner approaches to production are established which may include bringing in new technology. This implies that the productivity of the organization will improve while the costs have been reduced to ensure that everything stays within the appropriate budgets. Coates (2010)

vouch for this noting that costs savings is increasingly been used as a tool for impacting the productivity of organizations through the identification of different measures of costs-effective operations and the execution of these measures and introduction to the normal operations of the organization to ensure better productive performance of the organization.

5.3.5 H5 - Cost savings has direct impact on profitability

The relationship between costs savings and profitability was also strong as evident by the standardized regression coefficient score of 0.451 with a p-value of 0.000.. Coates (2010) in expanding the teaching on the importance of costs savings in the organizations operating in the contemporary market place mention that cost savings is a precursor to any projected profitability. According to Coates (2010), costs of operation are part of the financial statements and reflect the cash outflows that the organization has to contend with in order to be able to deliver services in the market. According to the scholars therefore, without effective costs-analysis and subsequent costs saving approaches, it is impossible for organizations to be able to accrue more profit and lack of prudence in the management of the costs of operation will lead to the diminishing of the net cash flow which is a critical part of the profit.

Leigh (2003) in her research notes the importance of understanding the concept of cost savings in order to be able to effectively plan costs savings in an organization. According to her, costs of operations should always be put low but not infringe on the quality of the product or service delivered. This way, an organization can be able to benefit from attracting more customers and retaining them through low prices – occasioned by low costs of operations and relatively high quality of products which make it a boon for the clients. Leigh is quick to note

that in order to achieve this lean operational stage, the review of all the costs that an organization incurs as part of the production and delivery of service and/or good is critical. In making this review therefore, it is incumbent upon the organizational team to ensure that they capture all the value adding costs and the non-value adding costs and separate these accordingly. Doing away with the non-value adding costs means more room for profits in the organization because the resources used in the conduct of the business will be low and the costs of the good may actually remain the same by virtue of the quality.

The manufacturing industry especially construction manufacturing industry by all means portrays the same dynamics. The lower the costs of production due to the reduction of non-essential costs, the higher the chances of scooping higher profits and retaining more working capital which allows for the consideration of other projects that can help in increasing the profitability of the company. Therefore, the relationship between cost savings and profitability as found from the path analysis is in concordance with the results from the literature review and actual experiential knowledge that costs savings in the organization, opens up the organization to more profitability.

5.3.6 H6 - Costs savings has direct impact on long-term sustainability

By increasing the productivity and the profitability of the manufacturing organizations in the UAE as studied from the data, long-term sustainability for organizations is bound to be attained. The statistics from the path analysis recorded the strength of the relationship at 0.247 with p-value of 0.000. This was much weaker than the other two direct hypothesized relationships of costs savings with the dependent constructs of the study but was by all means a

significant relationship. Kuosa (2011) in a review of public sector operations in Finland, Singapore and the European Union notes the importance of cost savings in the establishment of long-term and flourishing public service organizations. The scholar however makes as strong note that effective costs savings is only attainable through future focused leadership that is able to look into the picture of the future and determine the challenges that the organization is likely to face and position the organization to effectively meet these challenges. The scholar relates costs savings and long-term sustainability to strategic foresight.

The relationship between the two variables is further expounded upon by Shivajee et al. (2019) who identifies some of the components of costs savings in an organization and seemingly supports Kuosa's (2011) argument. According to Shivajee et al., (2019) costs saving is approached through a number of ways in an organization. The underlying factor through is usually to ensure that the organization is able to deliver on its promises consistently in the future. This, Shivajee et al. (2019) note, makes costs savings and long-terms sustainability interrelated aspects. Through quality control of processes and automation which are components of costs savings, the organization seeks to ensure that its operations are watertight and agile in light of the volatile business environment. The lack of effective assessment of the operations of the organization in terms of costs and in light of the future is one of the causes of failed organizations (Shivajee et al., 2019). Therefore, organizations seeking to remain operational and avoid obsolescence in the contemporary operational environment should align their costs savings approaches with future trends and projections for purposes of long-term sustainability.

The facts shared above are true as far as experiential knowledge in the construction industry and the related manufacturing industry is concerned. The fact that these organizations

are capital intensive and the operations alike, means that the assessment of present and future costs is critical factor for success. To this end therefore, it is always incumbent upon organizations operating in the industry whether in manufacturing or construction itself to ensure that they understand the market and have proper arrangements with partners. This is to ascertain that the costs in the markets for raw materials do not change abruptly, as this would stymie the ability of the organizations to remain operational for the long-term

5.3.7 H7 - Strategic foresight has direct impact on costs savings

This was the main hypothesis of the study and especially the one that formed the better part of the entire concept as can be seen from the title of the study. Through the literature review, the development of other interlinking constructs as studied by other scholars led to the development of other variables and other potential relationships but the relationship between strategic foresight and costs savings was of great importance. The results scored supported the fact that strategic foresight is related to costs savings and registered the strongest path coefficient value which implied that as hypothesized from the beginning and as shared by countless authors cited previously, strategic foresight has a direct impact on costs savings in the organization. The standardized regression coefficient weight score of the relationship was 0.631 with p-value of 0.000.

One of the important questions asked to gauge the relationship between strategic foresight and cost savings was 'strategic foresight is essential for the identification of different types of costs'. A number of other related questions were asked and which collectively resulted in the above strong path relationship. Taking it from the lens of different authors, Vechiato

(2015) shows that strategic foresight helps in the effective assessment of the industry in which a company operates and this provides the organization with sufficient information that can be used in the effective analysis of trends, future costs and the setting up of plans to be able to maneuver any uncertainties. This notion was echoed by Ribiero (2007) and Chauhan (2010) who mentioned that contemporary operational management relied on the ability of the organizations to anticipate, predict and shape the future through effective preparation. According to Chauhan (2010) rather than focusing on a single product or service model, organizations should seek to apply strategic foresight to expound their operations and in doing this, apply cost effective mechanisms to ensure that all their operations are at an optimum and helping the organization benefit more from the production of goods and services.

Menon and Yao (2014) categorically highlight the importance of planning and the relationship of the same to costs savings. According to the scholars, while present planning and short-term planning is critical to the current stability of the organization, it is increasingly incumbent upon organizational management teams to seek to work on middle-to-long-term plans which will require strategic foresight. The scholars further note that it is the interaction between this strategic foresight and the costs-savings plans that help organization scale the heights of success and be able to approach the future from a position of confidence. The repositioning of organizational costs is part of this strategic approach and should be informed by a clear and farsighted understanding of the market, which helps the management to see future costs (Menon and Yao, 2014). This concept of repositioning of costs and its relationship to strategic foresight cements the understanding of the relationship between strategic foresight and cost savings as revealed from the analysis of the data gathered. Through the review of short,

middle and long-term strategies of the organization which are based on strategic foresight, the organization can be able to shape its future costs savings approaches by repositioning the costs and reconfiguring its operations to ensure an effective alignment between the organization, its futures strategy and its operational costs.

Based on the fact that this relationship was the key relationship of the research and the seconding fact that the data was gathered from experts in the field with an average of more than 10 years experience in different manufacturing industries, it is impossible to defeat the notion from an experiential perspective. There certainly lies a great and strong relationship between strategic foresight and costs savings which as researchers such as Menon and Yao (2014) seemingly share, if explored, stands to really benefit organizations in the manufacturing industry in the UAE.

5.3.8 H8 - Strategic foresight impacts strategic planning

The results from the analysis of the data collected from professionals working in different manufacturing industries in the UAE served to ascertain this fact. From the path analysis, strategic foresight relationship to strategic planning scored a standardized regression coefficient estimate of 0.619 and a p-value = 0.000, which was the second strongest scores among the path analysis scores in the whole model. This score reflected the relationship between strategic foresight and strategic planning. According to evidence of research, strategic foresight is related to the strategic planning based on the fact that both approaches are aimed at anticipating and planning for the outcome of events (Shivajee et al., 2019). The above two research evidences are among the lists of citations that have helped in building knowledge on

strategic foresight and costs savings. According to Shivajee et al. (2019) , strategic planning differs from strategic foresight on the basis of the source of knowledge which the organization depends on in shaping the future. For strategic planning, the organization depends on past successful practices and knowledge while in strategic foresight, the organization depends on visionary expectation o the future through the study of trends. Isaac and team review this from the point of quality control in organizations and notice that, in order to be successful in quality control for the purpose of costs savings, strategic foresight and strategic planning have to be all applied. This is supported by Schwarz et al. (2018) who note that strategic foresight and strategic planning go hand in hand in effectuating any organizational objectives. When considering long terms systematic cost reductions, both constructs have to function concurrently and therefore this justifies why they have reflected a very strong relationship in the path analysis.

Vechiato (2015) reports on the above matter adding that, the basis of strategy is to be able to shape the future and this is only possible through the use of previous success factors in conjunction with newer methods. In his research, Vechiato (2015) agrees that strategic planning and strategic foresight despite having different focuses and approaches to the determination of the future, are conjoined and it is impossible for one to be successful without the other. Concurrent evidence of research focusing on the lens of quality control in order to establish the relationship between strategic foresight and strategic planning notes that, when considering quality, previous measures of quality have to be evaluated against new measures of quality (Bangert et al., 2016). While one approach is relying on what has been successful previously, the other is relying on what the future holds in terms of measuring quality and therefore building

the inseparable link between strategic foresight and strategic planning as far as quality is concerned in the organization (Bangert et al., 2016; Isaac et al., 2018).

In a nutshell therefore, the two constructs of strategy considered in this research, one as an independent variable – strategic foresight and the other as a mediating variable strategic planning are technically inseparable and one cannot discuss one in isolation of the other. This seemingly stands true in the construction and allied products manufacturing industry and in all industries as revealed from the primary data of this study. Logic seems to dictate that with strategic foresight and the lack of strategic planning, then it is impossible to put the vision into executable format.

5.3.9 H9 - Strategic foresight directly impacts competition

Han et al. (2019) conduct an in-depth review of the components of costs savings and help in understanding critical relationships derivable from the study of the two main constructs of the study one of which is hypothesis nine of the research. One of the questions asked that directly related to strategic foresight and competition in the manufacturing industry was, ‘lack of ability of foreseeing competition results in negative performance’. Han et al. (2019) reviewed the aspect of waste reduction as a component of costs savings and provided an insight that, waste reduction helps in remaining competitive. This point was carried forth by concurrent research on the components of strategic foresight which noted that through strategic foresight, organizations are able to scan the market and reposition their operations based on in-depth insight into the market to ensure that they have reduced wastages and cut down their operational costs in order to remain competitive (Martin, 2010; Hines and Jess 2015; Hofmann 2015). These

researchers are in concordance that strategic foresight helps in the anticipation of competition and the evaluation of the competitive strengths of opponents which will lead to the development of robust plans to deal with the same.

Hoffman (2015) adds that, strategic foresight owing to the fact that it concentrates on the evaluation of the competitive strengths and premises of opponent organizations, it places an organization on the right road to the development of advanced approaches to tackle and thwart these competitors as they arise. This justifies why the standardized coefficient estimate score for the relationship between strategic foresight and competition was 0.524 and statically significant ($p\text{-value}=0.000$). According to Hoffman (2015), the development of the advanced strategies starts from the evaluation of the operations of the organization against that of the competitor organizations. At this point, there is agreement between Hoffman (2015) and Han et al. (2019) that some of the strategies may include the reconfiguration of operations to ensure that the organization is able to remain efficient while saving more on costs of production especially those which are not essential. This makes the first move towards competition that can ensure the organization is able to satisfy the market and even diversify into more products and services during the competitive period (Hines and Jess, 2015).

Considering the manufacturing sector in the UAE and based on the findings arrived at, strategic foresight no doubt has a positive and strong impact on competition. According to supporting evidence, strategic foresight enables an organization to effectively prepare itself to tackle challenging situations in the market and this acts as a tool for competitive advantage (Mark, 2010). The more the organization is prepared and improving its capacities, reducing its wastages and diversifying its operations in line with insight from the future trends (foresight),

the more competitively positioned to vanquish competitors in the market the organization will be. In the manufacturing industry where most operations and transactions are capital-intensive, this makes even the more sense ensuring that organizations that have robust strategic foresight remain ahead of the competition by capitalizing on prudent management of operations, resources and diversification of operation

5.3.10 H10 - Strategic foresight directly impacts technology

Strategic foresight and technology have been noted across the literature to be closely related (Isaac et al., 2018). The path coefficient standardized estimate value of 0.524 with p-value of 0.000 was recorded for the two constructs. One of the reasons that technology came in as one of the mediating variables in the research was the fact that across all the evidences of literature that the research reviewed in an effort to develop foundational knowledge on the subject matter, technology came forth as a key aspect of strategic foresight and even costs savings. In this regard therefore, in developing the hypothesis, it was expected that a positive relationship occurs, which did and thereby giving more validity to the findings of the research and the data collected itself.

According to scholars of strategic foresight, one of the main ways for looking into the future and shaping future operations is through investment in technology (Chelanga et al., 2017; Kawshala, 2017). In a review of effective strategies of strategic foresight in organizations, Chelange and colleagues reported that, optimal strategies for innovation and the adoption of technology are critical measures and approaches towards successful strategic foresight. The scholars expound that strategic foresight is entangled with the development of new technologies

and new methods of doing things as this is what helps futuristic leaders to venture deeper into the future and be able to adopt to innovative ways of operation early on to ensure that the organization benefits considerably from strategic foresight. Chelanga et al (2017) also acknowledge the fact that in the rapidly developing world where information technology has taken over all operations across industries, the adoption of technology and the ability to notice the trends in technology that affects ones organizational operations is a primary ability of strategic foresight.

The foregoing statement finds justification from Kawshala (2017) who studies one of the main theoretical underpinnings for strategic foresight which is the innovations and competency theory – earlier listed in the literature review of this study. According to Kawshala (2017), strategic foresight is underpinned with the development of innovative ways of doing business whose underlying fabric is technology and information. To this extent therefore, strategic foresight is directly related to technology and this is primarily why the analysis of the collected data through path analysis has returned a very strong relationship between the variables. Considering the manufacturing sector in the UAE, it is only fair to state that organizations which strategically position themselves to adopt to new technologies as they arise in the market environment are best placed to harness the best results of a competitive market environment that favors innovation. The construction manufacturing industry and the move to prefabricated construction materials and the use of Building Information Modeling is one of the examples that I can cite of technological innovations that come forth and impact the methods of operation. It therefore depends on the strategic foresight of the organizational leader to

determine the adoption of new technology and ways of doing business for the purposes of establishing the business' success path based on strategic foresight.

5.3.11 H11 – Cost savings directly impacts resource waste reduction

Han et al. (2019) extensively examine the relationship between costs savings and resource waste reductions in the manufacturing industry. Based on the analysis of the primary data, it was realized that costs savings and resource waste reduction scored a standardized regression coefficient of 0.496 with significant p-value of 0.000 – thereby statistically implying hypothesis is strongly supported. This is indicated by Han et al. (2019) who focus on costs savings in the manufacturing industry using quality control measures. According to the researchers, there is a lot of wastage of resources in most manufacturing plants and this is usually hidden together with the costs of doing business and therefore not effectively monitored. The costs that the researchers report on are costs associated with quality which they maintain that, they should not be part of the costs of doing business. Han and colleagues note that in the contemporary business environment, organizations should strive to ensure that their operational costs are not intertwined with quality costs and that automated systems of quality monitoring from step by step should be put in place rather than the use of more resources to monitor and re-fabricate products at the end of the production cycle.

The views of Han et al. (2019) are re-echoed by Schmidt (2019) and Shrank et al. (2019) all who attest to the fact that costs savings should start with reviewing the costs of wasted resources. Schmidt notes that wasted resources in an organization and/or manufacturing plant should be anything including wait times between production cycle which if reduced and an

integrated system is set up, more savings in terms of resources would be accounted for. On the other hand, Shrank and colleagues note that, wastes cause a surge in operational costs and which in turn shrinks the profit margin. According to Shrank et al. (2019) the first step towards costs cutting is the evaluation of the entire operation process to determine all types of wastes in all resources including energy and water. This, according to the scholars, is the only way through which an organization is able to successful cut costs since most of the costs are costs of wasted resources.

From the UAE manufacturing industry perspective, the same applies and it would be a lie to defend the fact that there are a lot of wasted resources. Understanding these resources and setting efforts to reduce the wastage of resources would no doubt help in cutting the costs of operations and would go a long way in helping the organization save and re-inject the resources in some other productive activity. Considering the statistics shared by Shrank et al. (2019) on the resource wastages in the US healthcare industry totaling up to \$700 billion annually, it is safe to agree with the fact that costs savings is directly related to resource waste reduction and there is arguably no attaining the former without seriously tackling the latter.

5.3.12 H12 - SP affects productivity, profitability and long-term sustainability

The total path analyses values of strategic planning paths to productivity, profitability and long-term sustainability were combined and averaged in order to determine the combined relationship of the mediating variables on the dependent variables of the study. The resulting value on regression path was 0.261 at a p value of 0.04 which led to the acceptance of the hypothesis. Based on a review of the literature and the relationships between strategic foresight

and strategic planning as well as strategic foresight and the other dependent variables, it was expected that strategic planning would have an impact on the dependent variables. Evidence of research supported this understanding with research from Agentielle (2013) and Ryan (2016) noting that strategic planning is a key element of strategic foresight and therefore this naturally means that it would have some relative effect on factors that the latter would otherwise affect.

Agentielle's (2013) research on strategic foresight indicates that planning is concerned with the modeling of the future based on strategies and plans that have been successful in the past. Therefore, when this is considered in the context of pursuing productivity and profitability, it automatically dictates that is an organization management will go headlong into the planning of productivity approaches of the organization in the next fiscal period based on successful productive plans in the previous fiscal period, then, the results would more often than not reflect some positive impact. The same can be said for profitability that an organization's previous approaches to profitability can be repeated to ensure that the organization is able to maintain its previous profitability.

As far as long term sustainability is concerned, studies reveal that strategic planners have to effectively utilize their previous strategies but with an open acceptance of newer proposals for future ways of doing business (Mohammed, 2020). According to Mohammed, typical strategic planning approaches are not able to help in the management of the long-term future but are sure certain to help in the management of short-term objectives of an organization for instance annual productivity and profitability. This provides impetus for the use of strategic foresight as part of the strategic planning processes and vice versa. This helps to ensure that the

organization is able to approach the future and manage it as it unravels rather than rely on previous methods of management to manage a rapidly dynamic environment.

The manufacturing industry in the UAE is no doubt an example of an industry which is highly reliant on strategic planning which by all means works out fine for the productivity and profitability constructs but does not really prepare the organization for the rapidly changing future. In that regard therefore, while strategic planning is an important component that helps the organizations rely on its previous success and strategies in an effort to manage the short and middle-term, it is important to note the need to interact it with strategic foresight in order to be able to manage for the long term and remain competitive. This however, does not take away the fact that strategic planning recorded a positive and significant path coefficient value towards productivity, profitability and long-term sustainability combined.

5.3.13 H13 - C directly affects productivity, profitability and long-term sustainability

The standardized path regression coefficient for the above hypothesized relationship was 0.233 and statically insignificant ($p\text{-value} = 0.280$) This led to the rejection of the hypothesis. As in the case of the previous hypothesis, the regression values for the combined relationship between competition which was a mediating variable and the dependent variables of productivity, profitability and long-term sustainability, were added up and averaged same as the $p\text{-value}$. The research noted therefore that there was no relationship between competition, productivity, profitability and long-term sustainability.

The above can be discussed and elucidated considering evidence of literature from Coates (2010) which talks about the conceptual approach towards the development of strategic

foresight. According to Coates, the operational environment is very wide and no one organization can be able to tackle all competitors in the environment. The scholar also notes that competition will always be there in the market environment and this does not mean that organizations should consider themselves to be at risk from all competitors. To this extent, therefore competition should not directly be able to affect productivity, profitability and long-term sustainability of an organization. Coates further explains that there is need for the narrowing of the operational framework to ensure that when planning for the future, organizations are able to focus on what is more important rather than be distracted by all the competition in the operational environment. This narrowed framework is what Coates (2010) among others cited identify as ‘domain framing’ which essentially makes an organization to focusing on the competition and to concentrate all efforts and focus on the productivity, profitability and long-term sustainability goals that the organization desires to attain.

Rohrbeck et al. (2015) supports the above notion mentioning that there is a clear need for organizations even while operating in a highly competitive market, to ensure that their focus is in improving their competitive advantage through the application of strategies aimed at improving competitive advantage including strategic foresight and costs savings rather than focusing on the competitive distraction of the competitors. This notion helps understand the lack of relationship between competition and productivity, profitability and long-term sustainability. Considering the fact that a majority of the respondents had more than 10 years of work experience in the manufacturing industry, it can be concurred to that, based on the questions in the survey which related competition to the other three constructs, the respondents saw no connection and therefore the lack of strong path relationship. This is concurrent with the logic

deduced from the evidences from Coates (2010) and Rohrbeck (2015) which all agree to the fact that competition despite being present and rampant, should not have a direct effect on aspects that are internal in the organization. It is therefore safe to state that, productivity, profitability and long-term sustainability by virtue of the premise of this study and by virtue of the fact that they are internal organizational aspects, should not be readily impacted by the external environment.

5.3.14 H14 - RRW directly affects productivity, profitability and long-term sustainability

Considering the fact that costs savings maintained positive relationships with all the dependent constructs and the fact that resource waste reduction has been identified as synonymous with costs savings, it is interesting to find out what the relationship espoused in hypothesis fourteen scored in the path analysis. According to the statistical analysis evidence, this hypothesis like the previous hypothesis was not supported scoring a regression coefficient value of 0.127 (p-value =0.131). The values for this analysis were combined and averaged in order to come up with one value to base the relationship between the mediator variable and the dependent variable. In an attempt to explain the rejection of this hypothesis keeping in mind that it is an internal factor which if the opposite stands true for the closing statements of the previous hypothesis should have an impact on the other internal constructs, the literature from Afzal et al. (2017).

Afzal et al. (2017) who studied the relationship between wastes in the traditional and modern construction organizations note that, waste reduction should be the key preoccupation of all sustainable business models. The research is quick to note that in the contemporary

business environment, organizations that seek to reduce wastes in the operations face a lot of challenges but have to be decisive. One of the challenges is that of productivity decline which with the introduction of more measures of waste and productivity in the organization will be much detectable. The flow of knowledge here directs to the aspect of a situation where employees and actors are used to a status quo and therefore, the introduction of a new measure of operations may not be the best thing for them and the result may include some go-slows and deliberate action to stall the progress. In a case such as this, then, it is no doubt that resource waste reduction will not have a significant relationship with productivity and this will automatically extend to profitability and long-term sustainability.

Han et al., (2019) supports the assertions by Afzal et al. (2017) citing the importance of application of resource waste reduction after proper communication of the advantages of the approaches to all the stakeholders. According to Han et al., most of the resource waste reduction approaches require whole scale system and operations overhaul which in most cases are not readily supported by the stakeholders without prior understanding of the advantages that these bring to the entire organization. In the case of the manufacturing industry and based on the survey conducted, it can be stated that despite the fact that this came forth as a hypothesis, it may not have been effectively measure considering the questions on each of the constructs which hardly pit resource waste management as the central concern for each construct. Nonetheless, through confirmatory factor analysis and as in the case of other variables in the study which were not central to the study, some connection was bound to occur and in this case, this was rejected connection. The rejected hypothesis justified the fact that resource waste

reduction could only serve as a mediating variable and did not individually have a significant impact on the dependent variables of the study.

5.4 Conclusion

This chapter of the study sought to highlight and interpret the statistics found from the previous chapter – analysis chapter. The chapter initially shared a summary of key findings that was premised on highlighting the key deductions from the analysis of the data. Further, the chapter focused on each of the hypothesis of research and presented a detailed explanation of what the findings from the data analysis meant drawing from literature and experience to explain the results. The overall finding is that most of the literature positions were accepted considering the relationships measured and the findings thereof. Among other relationships examined, the relationship between strategic foresight and costs savings was positively weighted which buttresses the whole premise of the current study.

Chapter 6 Conclusion and Recommendations

6.1 Introduction

This chapter seeks to provide a holistic reflective review of the study. The chapter will seek to review among other things, the initial premise of the study, whether the study has maintained its premise and sufficiently covered it to achieved the aspirations of the research as outlined in the aim, objectives and questions of research initial premise. This will be done through revisiting the introduction of the research and the setting of the research scope. The study will also revisit the research objectives and the research questions delineated in the introduction section of the research to determine the fulfillment and the sufficient response to the former and latter respectively. The research will overly seek to reflect on whether the literature gathered has been useful in providing critical information that has been used by the study to further the course of the study in the field of knowledge. All other aspects including the methodological approaches, the limitations of the research and the contributions to the field of knowledge will be of interest to this chapter. With the above formative regard of the chapter, the research deems it imperative to present a recap of each of the chapters of the research. This should facilitate the further systemic investigation of different achievements, implications, limitations and recommendations of the entire study.

The first chapter served as the foundation of the study which went through different steps to contextualize and conceptualize the study in the researcher's mind and to the audience. The topic of study for the current research was '*A critical investigation of the relationship between strategic foresight and costs effective leadership in organizations*'. The above topic was

considered under the premise of an inter-industrial study of the UAE manufacturing sector. In introducing the topic of the research and the research itself, the study focused on revealing the development of knowledge in the field of management and strategic management in organizations and how this is nowadays a core part of day to day management of organizations. During this introduction, the research makes the initial effort of pointing out the gap of knowledge regarding one of the primary constructs of the study – strategic management. It is revealed by the help of scholars including Laan (2008) and Adegbile et al. (2016) that, the tenet of strategic foresight which is directly related to strategic management is ignored as far as development of knowledge into its practice and utility in management is concerned. The study then raises the motivation for considering this topic which is the researcher's profession and experience in the UAE manufacturing industry and the fact that, strategic foresight being a strategic of anticipation of trends, it is essential that it is understood and practiced in the manufacturing industry owing to the fact that most manufacturing industry activities are financially-intensive. This motivates the researcher due to the fact that as an experienced personnel in the construction and allied manufacturing industry, it is important that strategic foresight is used especially when considering future costs where a slight un-anticipated change can totally shift the liquidity of an organization rendering it insolvent. To top up to the motivation, the research reviews the UAE manufacturing industry in detail and pinpoints the importance of the different manufacturing industries to the economy of the country further underpinning the importance of studying the industry especially to understand methods of surviving uncertain turn of events based on strategic foresight for costs savings. From here, the study proceeds with laying down the problem of the research, reviewing the background of the

study, the novelty and originality, ultimately culminating to the posing the research objectives and questions that the research will seek to respond to at the end.

With a clear understanding of the background of the research, the importance of the research etched in the motivation of the research, the novelty and the problem of the research – the study, in the second chapter vents into a broad-based, in-depth investigation of extant literature surrounding the two constructs of the study – strategic foresight and costs savings. This is an important section of the entire research as it builds up the knowledge of the main constructs and helps in the structuring of the research further by providing detail on the constructs under study from the perspective of previous scholars. In the review of extant literature, the research commences with review of antecedents of the two constructs, which is an important section that helps in understanding just for how long the two constructs have been in the domain of organizational management. It is confirmed hereby that strategic foresight was born with the birth of strategic management and that as highlighted in the introductory paragraph, it has not developed at pace with the development and adoption of strategic management. It is also revealed that costs savings as an individual construct has been in practice early on from as far as the early merchants in Venice and that it has and will always be the preoccupation of businesses to try and reduce their costs in an effort to increase the profit margin. The study in understanding of the antecedents moves to the review of the definitions and organizational applications of the two constructs. Here, the constructs start to get broader especially in the case of strategic foresight and a number of non-conflicting but differing definitions are coined by different authors. The Gaston Berger school of thought championed by Rohrbeck et al. (2015) is the most prevalent and underlies most of the definitions. Definitions

of costs savings and its application in organizations are also shared. With understanding of the definitions and different schools of thought on the constructs, the chapter presents an imperative section of the theoretical underpinnings of both constructs where it is realized that some common theories like competition theory and resource-based theory impact the constructs which brings the hypothesized relationship in the title upfront for the first time. This chapter then endeavors to provide knowledge on the components of strategic foresight and a subsequent synthesis of the literature which is whether the research gathers some interlinking constructs that can be used in the effective study of the relationship. A sub-chapter on the conceptual framework and development marks the icing on the second chapter and provides the research with a clear path to follow in the study of the title of the research. At this point, there are other sub-constructs which the research must use in order to come forth with meaningful relationships between the main constructs.

The third chapter of the research takes up the baton seeking to develop a clear, systemic and methodical approach that would help study the relationships developed and hypothesized in the last sections of the previous chapter. The chapter starts off with the presentation of a philosophical litany to help guide the research in the selection of the appropriate philosophy for the current study. The research at this point already had in mind the fact that data was to be collected via questionnaire. This however had to be fitted into the appropriate philosophy in order to add up. The study in understanding of the different philosophical options, selects a philosophy and moves ahead to develop the research process. The study develops an eight-stage research process and presents a figure with the process details together with an explanation of each of the steps. This leads the study to the operationalization of the research, which essentially

is the development of the conceptual framework in the last section of the previous chapter into a researchable and usable format. This included the operationalization of variables of the research as researched in the second chapter and the development of a coded questionnaire to help in the collection of data based on the variables. This section also involved the further explanation and grouping of the variables into the independent, dependent and mediator/mediating variables. With the questionnaire in place and the variables identified, the research methodology presented the research sampling, conduct, data collection and analysis procedures. The research resorted to a purposive non-probability sampling approach that helped in the effectuation of the philosophy and research strategy selected. The process for the conduct of the research and data analysis were highlighted together with the ethical considerations of the research. This chapter, was the blue print of the study.

The fourth chapter of the research was the presentation of findings of the research. This section was highlighted in the previous section and it mainly involved the analysis of the data based on statistical quantitative approaches that the research selected as the method of the research. The chapter entailed a rigorous process of data analysis which started with the screening of the data selected through different self-correcting steps to ensure that the data was clean and ready to be used in further statistical processes. All the data cleaning processes were backed by evidences of research from previous scholars of scientific research in order to guide the conduct of the research in line with already established standards. The screening was followed by a descriptive analysis of the research, which helped in grouping the data based on the demographic profiles collected. The most important of these demographic profiles was the years of experience and the level of operation in the organization which all returned a positive

result of a majority of the participants having more than 10 years of experience and in management positions. This justified the accuracy of the targeted sample and was important in later making discussions. After the demographics, study investigated the reliability of the data set using Cronbach Alpha coefficient and found that the data met the threshold. In an effort to enhance the rigor of the data analysis, the reliability analysis was followed by another self-correcting validity analysis through confirmatory factor rotation. This was done using SPSS AMOS v. 26, which helped in the reduction of the variables and the development of a testable model for the study of the relationships between the variables through a confirmatory factor path analysis. The developed model helped in the testing of the hypotheses of the study and the deduction of critical informative data on the hypotheses of the research.

The fifth chapter involved the distillation and recapitulation of the research results in elucidated form and in triangulation with extant literature covered in the second chapter as well as experiential opinion. This chapter helped in understanding of the numbers and values obtained in the previous data analysis chapter. The chapter did not waste anytime but summarized the key findings of the research highlighting the most important finding that – strategic foresight was strongly related to costs effective leadership in manufacturing organizations in Dubai. Part of the summary of the key findings also involved a revelation and slight discussion of the rejected hypothesis and the explanation of the role of mediating variables in the establishment of positive relationships between variables whose relationship as hypothesized had been rejected. Having shared the summary of the key findings of the study, the chapter then vented into the discussion of each of the hypothesis, the results from the confirmatory factor path analysis as well as the relationship between these results, extant

literature and experiential knowledge. This is the gist of the chapter as it helps in understanding the numbers and in painting a clear picture of how the constructs of the study relate in the UAE manufacturing industry. This knowledge of the relationships between the constructs studied in the UAE manufacturing industry and their relationship with evidence from extant literature is what opens up the way for the conclusion and recommendations chapter, where the study is at currently.

6.2 Achievements of the Study

In development of the premise of the study, the research listed goals and aims that it sought to achieve and which at the end would be the gauge for the measurement of the extent of success of the research. These goals and aims were identified in Chapter 1 of the research and will be recapped to find out the extent of their attainment. In order to determine whether the research has been successful, it is paramount to revisit these and explain their achievement at this point in the study:-

6.2.1 General Research Objective

The general overarching objective of the study was ‘to conduct an in-depth research into the utility of strategic foresight in supporting organizational cost saving efforts in the manufacturing industry in the UAE’. This objective has been met considering the fact that verifiable steps have been undertaken by the research. For instance, at the beginning an informative review of the background of the study, industry, and scope was conducted. This in-depth review of literature on the concepts of strategic foresight and costs savings, together with their sub-constructs in different industries provided the research with sufficient background

understanding on the subject matter. The foregoing was followed by the development of a robust methodological approach to investigate the expounded constructs in the case of the UAE manufacturing industry. The analysis of the data findings thereof and the revelation of positive results as to the impact of strategic foresight on costs savings. These steps, have shown sustained effort on the part of the research to maintain the scope and purpose and have consequently helped attain results that show the utility of strategic foresight in supporting organizational costs saving efforts in the manufacturing sector in UAE.

A key part of the fulfillment of the main research objective of the research was the finding of the relationship between strategic foresight and costs savings in the manufacturing sector in UAE. According to statistical evidence (see Chapters 4 and 5), the relationship between these two constructs was reflected as strong which provided a justification that with strategic foresight, then the UAE manufacturing industry can benefit from more costs savings.

6.2.2 Specific Research Objectives

The specific research objectives of the study are listed below together with an explanation of their achievement.

Specific Objective 1 – “ Critically investigate the role of strategic foresight and cost-saving approaches in promoting productivity in the manufacturing sector in UAE.”. The critical investigation of the relationship between strategic foresight and costs saving approaches in promoting productivity in the manufacturing industry in the UAE was investigated through the use of a questionnaire which bore questions seeking more information on organizational approaches and understanding of strategic foresight. For instance, a question was posed to the

respondents indicating ‘Strategic foresight can be used for the evaluation of costs’. This question is one among the many questions that relatively looked at strategic foresight and cost savings in the organization. The target sample population of the research as shown in Chapter 4 under descriptive statistics consisted of professionals with arguable knowledge in their fields of study. These participants had high level and years of experience in the fields with most of them being in managerial positions. To this extent therefore, the replies to questions such as the one above, and to other questions in the questionnaire used in the collection of the data; are deemed as informed responses by professionals in a field.

With the above defense in place, the objective of critically appraising the relationship between strategic foresight and costs savings in the manufacturing sector in the UAE was fulfilled by through a complete research process that investigated different other relationships between the two constructs and other related sub-constructs. The score from the confirmatory factor analysis for the path analysis remains as the strongest justification of the fulfillment of the above objective while the methodological approach supports the fact that the research was procedurally critical thereby giving the results more clout.

Specific Objective 2 – “ Determine the impact of strategic foresight and costs savings on the profitability of the manufacturing sector in UAE.”. The data collection questionnaire used in the collection of data from the participants contained a number of questions that inquired on the role of strategic foresight in promoting costs savings for better profitability in the manufacturing sector in UAE. Apart from the questions used in collecting data, evidences of literature gathered to inform this research shared countless instances of the different ways through which strategic foresight is able to shape the future of cost management in organizations

and thus promote profitability. For instance, Rohrbeck et al. (2015) noted that strategic foresight through the simple fact of anticipating the future is able to anticipate the changing costs and be able to support adjustments that can help in the management of the costs as they emerge in the future thus leading to profitability. The same notion is held by Adegbile et al. (2016) who note the importance of strategic foresight in the determination of trends and effective positioning of operations in order to be able to maneuver the trends and pursue profitable gains. The entire tenet of strategic foresight in this research is considered from the scope of anticipating the future in an effort to save costs and maximize opportunities of profitability.

Together with the above the research in asking questions that relate strategic foresight to costs savings approaches and their impact on profitability in the manufacturing industry in the UAE to manufacturing professionals, was able to justify the literature-based ways in which strategic foresight can impact costs savings approaches leading to profitability. While the research was not descriptive and could therefore not directly probe the methods in which strategic foresight could impact costs savings in the UAE manufacturing industry – the simple fact of finding relationships through statistical analysis of different measured items and a big sample is a justification that strategic foresight impacts costs savings. The exact ways are as mentioned in the literature which may not be directly relevant to the UAE manufacturing industry. Nonetheless, it has been determined beyond reasonable doubt that strategic foresight positively impacts cost savings in the UAE manufacturing sector to lead on to better profitability.

Specific Objective 3 – “Examine how strategic foresight and costs savings can be used to promote long-term sustainability in the manufacturing sector in UAE.”. Laan (2008) notes

that, strategic foresight is a critical tool for cost-effective leadership and helps support long-term sustainability by supporting the development of measures to tackle future costs and limit current costs. This notion extends into the Gaston Gerber school of thought of the use of strategic foresight for the determination of upcoming trends and acting effectively to manage the trends in a way that will retain the organization's solvency and competency (Rohrbeck et al., 2015). A number of other researchers and evidences gathered reveal the same thing and among the ways in which strategic foresight is seen as a tool for the management of future costs is through its ability to predict future changes in costs. This is why one of the questions asked in the questionnaire for purposes of gathering information on the relationship between strategic foresight and costs savings inquired on the ability of strategic foresight to shape the future of costs savings and promote long-term sustainability in organizations.

Another method which strategic foresight can be used as a tool for cost saving is through the introduction of technology and automation of processes. The research has uncovered the fact that strategic foresight and costs savings are directly related to technology and the recent gravitation towards automation in pursuit of long-term organizational sustainability (Olson and Lucas, 1982; Boucher and Muckstadt, 1983). Therefore, strategic foresight can be used as a tool for the management of future costs of organization through the adoption and application of automation in an organization. This would enhance efficiency in the operations of the organization and help save the organization costs of delays and reworks in the case of manufacturing organizations. The same aspect of strategic foresight support for cost saving measures is promoted by the use of reduction of resource wastage measures. Schmidt (2019) indicates that strategic foresight helps promote costs savings in organizations through the

reduction of resource wastages, which can be done through the introduction of quality control steps in the construction industry. Looking at these methods in the light of the manufacturing industry in the UAE, it can be confidently stated that by virtue of the positive relationship(s) between strategic foresight and cost savings in the manufacturing industry, then these measures can be effective as far as supporting the impact of strategic foresight on costs savings is concerned.

Specific Objective 4 – Develop a framework for the effective application of strategic foresight and costs savings as a tools for promoting productivity, profitability and long-term sustainability in the UAE manufacturing industry. The research used SPSS AMOS to examine the relationships in the hypothesized framework. The relationship examined were between strategic foresight and costs savings on the independent variables side, and productivity, profitability and long-term sustainability on the dependent variables side. In between, mediator variables of strategic planning, competition, technology and resource waste reduction were used to mediate upon the relationship between the independent and the dependent variables of the study. The tool developed included the different sub-constructs that the research developed in the course of investigating the literature on strategic foresight and costs savings. The constructs were modeled using SPSS AMOS v.26, which helped in the creation of the paths. The model was tested and the results discussed in the previous chapter. Some of the hypothesized relationships were not supported and accordingly, a new model, exclusive of the unsupported paths in the hypothesized relationships between constructs of the study was developed. This new model is the ultimate, research-based framework for the effective application of strategic foresight in the management of costs savings approaches in the manufacturing sector in the

UAE, to realize better productivity, profitability and long-term sustainability of manufacturing companies in the country. Through this model, organizations in the manufacturing sector in the UAE can be able to sufficiently and effectively apply strategic foresight to ensure that they benefit from more costs savings and are able to meet other organizational targets like productivity, profitability and long-term sustainability.

6.2.3 Research Questions

The research delineated the following questions earlier on and answered them as explained below:-

RQ1: What is the relationship between strategic foresight and cost savings approaches in the UAE manufacturing sector? Through an in-depth study of the manufacturing sector in the UAE, the research was able to collect and analyze data that showed that there was a positive relationship between strategic foresight activities and costs savings in the manufacturing organizations in the UAE. The relationship was apparently the strongest of the relationships in the model framework for the effective application of strategic foresight in manufacturing organizations for costs savings. This thus justified the positivity of the relationship and the fact that if manufacturing organizations in the UAE apply strategic foresight, then they will be able to effectively manage their future costs and as such benefit from better cost savings.

RQ2: What are some of the impacts of strategic foresight on costs saving approaches in the UAE manufacturing sector? The investigation into the relationship between strategic foresight and cost savings approaches in the UAE manufacturing sector show that strategic foresight can be able to impact costs savings by enabling organizations to anticipate and prepare

for changes in the market environment that can impact costs of operations. Strategic foresight can be able to promote the adoption of technology in the operations of organizations to help in the reduction of operational costs and increases efficiency on the part of the organization. Strategic foresight has also been seen to have a positive impact on resource waste reduction which in the short, middle and long-run help in ensuring that an organizations costs of operations are manageable and that a proper profit margin is maintained for the organizations thanks to saved costs.

RQ3: What are some of the ways through which strategic foresight can be used as a tool for costs savings in the manufacturing sector in the UAE? The visualization of further into the future and anticipation of changes in the markets has been identified as an impact of strategic foresight on cost savings as well a tool through which strategic foresight helps in promoting costs savings in the manufacturing sector in the UAE. On the other hand, the use of strategic foresight for the adoption of new technology is a tool for the effective management of costs of an organization and doubles up as an impactful factor of strategic foresight on costs savings. This also stands true when considering reduction of resource wastages through the introduction of quality controls in the operation of an organization. The application of reduction of resource wastages has been as a tool that indirectly helps support the relationship between strategic foresight and costs savings in the manufacturing sector in the UAE.

6.3 Contributions of the Study

In setting up the purpose and scope of the research, the study noted the need for the development of a working and adoptable framework for the implementation and application of

strategic foresight practice to inform cost-savings initiatives in the manufacturing sector in the UAE. The ability to develop an integrated framework that shows how the two would interact is recorded hereby as the main contribution of the study. Through an in-depth study of foundational literature regarding cost savings and strategic foresight, the research was able to come forth with an understanding of the interplays that affect or connect the two constructs and those that are affected by the two constructs too. At the closure of the literature review section, the research was certain that there are complex interactions between the two constructs effected, affected and mediated by other sub-constructs and variables making it all the more reason to pursue the objective of developing a framework for the integrated application of strategic foresight to cost savings in the manufacturing sector in UAE.

The literature review identified a gap in as far as the study of strategic foresight is concerned and noted that most of the studies focused on public sector and governmental organizations that had long fiscal plans. This fact further justified the need to divert the focus of the research on strategic foresight to other organizations in the market economy and in this case, based on the researcher's professional interests, the manufacturing sector. Despite lack of evidence on strategic foresight applications for costs savings purposes in private sector organizations and its rather thin-spread application across the general business environment, evidences from the studies referred to, showed that strategic foresight had some relationships with costs savings operation and bred the realization of other related factors like competition, reduction of resource wastage and technology. Subject to this understanding, the research formulated a purpose to develop a framework for the application of strategic foresight on costs savings in the manufacturing sector in the UAE. This was followed by a conduct of widespread

literature review on the constructs that paved way for the formulation and execution of a robust methodology that studied a sample population of manufacturing professionals yielding results on their perception of the relationship between strategic foresight and costs savings. The results arrived at led to the understanding of the most potent relationships between the constructs in the model and therefore the establishment of a path diagram framework that can be generalized for the application of strategic foresight on costs savings across manufacturing industries in the UAE.

The premise of arrival to the framework as described above accentuates the generalizability and transferability of the framework to other manufacturing sectors regionally. This is to state that, the relationships outlined in the model which are those of accepted hypotheses of the research, can be capitalized upon by organizations in the manufacturing industry to promote better successes of strategic foresight approaches on costs savings for organizations. This framework is thus the main contribution of the study to the field of knowledge hereby interrogated. It is worth remembering that all through the investigation of the literature on strategic foresight applications and the relationships to costs savings there was hardly found a research that directly focused on the two. This contribution may as well be a pioneer contribution in the scope of investigation of the relationship of the two constructs.

6.4 Implications for Practice

The findings of the study are pioneering and will therefore have significant impact on practice. The study sought to find out a relationship that despite been critical and inherent from a professional standpoint, has otherwise been ignored by most of the researchers who have

studied the constructs. One thing that was evident from the efforts of building knowledge for the study was that most of the researchers had studied the constructs in isolation and therefore it took a great deal of visualization and connectivity to be able to realize hidden underlying constructs like technology, competition, reduction of resource wastage and strategic management. The fact that the research has brought a seemingly elusive connection to light and objectively tested it, makes it indubitable that the management will have to start considering the reality of these relationships especially owing to the positive nature of the findings. This study currently notes that management, owing to the lack of empirical research connecting strategic foresight and cost savings in manufacturing organizations as well as other organizations was not inclined and/or informed to be able to consider the effects thereof – this is because conventionally, theory informs practice.

With the foregoing therefore, the first impact on management practice in manufacturing industries would be the need for management to take active measure in the assessment of the future from the lens of strategic foresight and costs savings. One of the findings of the research which was concurrent with previous literature was that strategic foresight promotes the ability of looking into future costs and aligning the organization operations to be able to take advantage of the future rather than succumb to its dynamism. In this light therefore, it is incumbent upon management to invest more effort in building strategic foresight competencies that are geared towards the investigation, prediction and anticipation of future costs that the company is likely to face. This ways, the organization can therefore use the strategic capabilities of foresight to examine possible scenarios through the scenario planning component of strategic foresight and position themselves to lead from the future as it emerges. This will in turn enable the

implementation of costs analysis and savings mechanisms that are aimed at shielding the management from upcoming costs or enabling the management to be on top of the upcoming costs. A case in point was shared earlier of the food processing and packaging industries which in order to shelter themselves from changing costs in the upstream can seek to develop their own sources and ensure that they control the upstream so that the downstream can benefit from a guaranteed production at cheaper costs on the organization.

In line with the first implication for practice, management may find that they need to follow up with the effective evaluation of their operations to ensure the reduction of resource wastages, the adoption of necessary technologies, strengthening of strategic management practices and the effective analysis of the competition. This is a critical implication for management practice because:-

(1) the four aspects mentioned as important for management to urgently consider in their efforts to use strategic foresight to support costs savings practices in line with the findings of these study are ideally, the critical success factors for the effectiveness of the relationship between strategic foresight and cost savings.

(2) the factors mentioned were found to collectively help contribute to the realization of the end results of increased productivity, profitability and long term sustainability of organizations.

To the above extent therefore, management function in the organizations are essentially informed to use the framework developed and seek to improve it based on other practice-based nuances to ensure that strategic foresight efforts indeed promote costs savings approach. This is

to state that without investing in technology and relying on strategic foresight to promote costs savings, organizations may find that they are not realizing the best results. The same applies to effective competitor analysis, reduction of resource wastages in the processing plants and the alignment of strategic planning with the long term goals of the organization.

Additionally, the study recommends that organization managers as at the current point take up the findings of the study and align them with the organization operations to ensure that what fits is selected and used to enhance better costs savings through the use of strategic foresight. The premise of this recommendation is the fact that the actual organization intricacies are subject to change from one organization to another and there is therefore hardly an instance of one-size fits all. In that light therefore, with a consideration of the different organizational requirements, organizational managers can effectively utilize their experience to make the findings of this research useful to their organizations.

6.5 Implications for Academia

The trailblazing research hereby conducted will be very important in informing current and future academic practice on the relationship between strategic foresight and costs savings in organizations. As seen from investigation of previous research, the study of strategic foresight and cost savings has been often in isolation with no attempts to make the connection between the two. Together with this, academic research has noted the continued lack of consideration of strategic foresight as a critical component of organizational long-term success, save for big public organizations and governmental organizations. This becomes evident when considering the findings of the research whereby, even though 10 of the 14 hypotheses of the current research

were accepted, the correlations were not as strong and this explains the little focus on strategic foresight and its organizational impact in extant literature as well as its application in management. Conversely, strategic management has taken center stage but research effectively notes that strategic foresight is a critical component of strategic management. The foregoing notwithstanding, the impact of costs savings and the growing need for the same in organizations especially in the VUCA market environment have provided impetus for a growing body of literature on cost savings. In the same breathe, this research seems to be just at the right time where it is seeking to address how to make cost savings much more effective through the use of strategic foresight capabilities. To this extent, the findings gathered from the current research have some interesting implications for academia.

One of the prevalent implications is that fact that, there is an established relationship between strategic foresight and cost savings. This has been seen from the findings of the research and has not interested any notable researches in the past but is no doubt of great interest now owing to the growing need for effective cost saving measures especially to organizations with costs-intensive operations. Therefore, academia have the duty to reflect on the found relationship and expound on this through the conduct of different other researches on the same field or different other fields using similar or different approaches in order to ratify the veracity of the finding or otherwise. This opens up other lines of investigation for academics in the field of strategic management and costs savings and provides a guiding light with the understanding of an existing relationship. Building on this, can help in the development of more objective and watertight knowledge on the relationship between strategic foresight and costs savings and the

wider field of strategic management for the profitability, productivity and long-term sustainability of organizations.

A second implication lies on the model of integrated application of strategic foresight to cost savings that has been developed by this research. The study shows that the above model is a roadmap and should therefore only serve as a guide for further academic exploration. It is therefore upon academia to take up the invented model for the effective application of strategic foresight to costs savings approaches in the manufacturing sector in UAE and scrutinize its applicability in different scenarios. The precursor to the development of the model has been the findings of other evidences of literature about the different factors that may have some relational connection between strategic foresight and costs savings. This implies that there may be other factors that the research may have not considered or that it may have considered to have little relational impact on strategic foresight and costs savings based on the focus of the study. Therefore, the investigation of a plethora of other relationships and possible arrangements of the model is a quest that academia will have to consider especially relative to the need to build up more knowledge on the field of study and promote better utility of the application of strategic foresight for costs savings capabilities.

6.6 Research Limitations

The current research is limited to some specific extent. The first challenge and limitation of the study was the data gathering which despite targeting 300 participant, was able to get only 250 responses more than 10% of which were found to have been blank. All through the research was skeptical whether the data set would meet threshold requirements for validity and reliability

of the data. This was luckily achieved but the fact that it was hard to gather data from the targeted respondents in a small span of time means that the research is limited and this may pose a negative challenge to any investigation that may not have sufficient time allowance. This limitation is also related to the limitation that only three companies in the manufacturing industry participated in the data collection yet it was quite a challenge to gather required data.

A second limitation of the research is the multiplicity of organizations studied. Based on the design and the need to investigate the subject of the research across the manufacturing industry in the UAE, the study went ahead to collect data from different individuals from different manufacturing organizations. While this is good as far as pursuing the generalizability of the study for the manufacturing industry is concerned, the research identifies it as a limitation owing to the fact that it probably shadows the effectiveness of strategic foresight in costs savings approaches in the organizations. For instance, if some of the respondents from one manufacturing organizations are in agreement with the fact that strategic foresight promotes costs savings and a similar quantity of other respondents from another manufacturing entity disagree with this, then this parameter is flattened and can therefore not be used to objectivity. This is a limitation that the research conceived of the whole approach and design after implementation and execution.

A third limitation of the research also lies in the approach and is heralded by the multiplicity of the organizations investigated coupled by the fact that it never crossed the researcher's mind to investigate. This is the actual quanta of costs savings that strategic foresight can be able to support through its integrated application. The research, in noting down this limitations acknowledges the fact that the research did not focus on this and that this is a whole

new other dimension and design of research that would require a longitudinal approach that supports the investigations of financial accounting function's quanta on costs savings achievements that an organization has garnered thanks to strategic foresight. Important to note about this limitation is that it is focused on a single organization as this is the only straight forward approach to go for it otherwise, it would open up another broadness contest if pursued across organizations. Despite the fact that the lack of consideration of the quanta is a limitation, it is wise to reiterate that it was not part of the design and essentially falls as part of future research implications for academia.

Finally, the research acknowledges that in the developed scale, there are several items that appear to be measuring the relationship between two variables rather than the variable itself. This is a limitation which is attached to the development of an original measurement scale. Despite the fact that the developed measurement scale met all thresholds and requirements for an original measurement scale including procedural approaches, this aspect of some of the measurement items seemingly measuring the relationship between variables as opposed to measurement within the variable is a limitation.

6.7 Recommendations and Directions for the Future Research

The first recommendation for the future would directly relate to the development of the research approach, which in the opinion of the research subject to critical reflection on the entire successful process, has been cumbered by the multi-organizational approach. It may be necessary that in the future, when scholars seek to investigate the impact of strategic foresight on costs savings approach, they focus on a single organization and critically seek to investigate

how the organization has been able or not to effectively apply strategic foresight to enhance cost saving approaches.

The second recommendation related to the multi-organizational approach and the entire research design is the need for the modify the design to more objectivity in order to be able to provide more quantifiable results that would convince business leaders to adopt the approach of strategic foresight to costs savings in organizations. Whole the research by virtue of design was focused on establishment of the relationship between strategic foresight and costs savings which it has been successful to do, actual cause for implementation still remains vague and encrypted in the sub-construct relationships. This therefore calls for the narrowing of the research scope to focus on one single organization and/or project, and modifying the research design to be focused on quantifying the efforts of strategic foresight on costs savings. The actual recommended design is an overhaul of the approach, timeline, focus and methodology of the research to ensure that the research investigates five to ten years the application of strategic foresight against the quanta cost savings benefits through reduction of resource wastages, technological efficiencies among others.

Finally, the current study makes the recommendation that future research should be focused on other international regions as opposed to the UAE alone, and while doing so, the research recommends that the framework model developed be considered as an experimental tool and thus open to different analysis and scrutiny. This as seen in a previous implication section of the research may lead to the understanding of different paths for stringer relationships or different mediating variables that would promote better connection between strategic foresight and costs savings in the organization.

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Appendices

Appendix A – Data Collection Instrument (Questionnaire)

A Critical Investigation of the Relationship between Strategic Foresight and Cost-Effective Leadership in Organizations: An Inter-Industry Study of the Manufacturing Sector in UAE

DATA COLLECTION INSTRUMENT

Dear Participant

This is a request to participate in an increasingly important aspect of your industry of interest – the manufacturing industry. As you may be aware, there has been a sustained concern regarding the increasing costs of production in the manufacturing industry year on year despite multiple efforts of curbing production costs.

With that regard, collecting information on how strategic foresight in the manufacturing industry can help in promoting costs savings will go a long way in improving the industry standards, costs and shape policy on production costs management for the manufacturing industry in the UAE.

You are therefore consensually requested to share your valuable input. The estimated time for completing the survey is 25 minutes. As part of ethical responsibility of the researcher, all responses will be collected confidentially and no names will be required. Further, the reporting will be generalized and summarized in order to reflect an objective view of the industry experts.

You can elect to avail a full copy of the study findings by emailing me at **(insert mail)** or calling me at **(insert contact)**. For any further inquiries on the research, feel free to contact my Director of Studies at **(insert contact)**.

Really thankful for your time and your valuable input.

Yours Faithfully,

Reem Haranki

Part A – Demographic Information

**Kindly tick appropriately to provide background details to help validate your responses.*

1. Gender

Male ☐

Female ☐

3. Job position

Supervisor ☐

Lower-level management ☐

Middle management ☐

Senior management ☐

5. Years in position

Less than 5 years ☐

5 – 10 years ☐

10 – 15 years ☐

15+ years ☐

2. Age

18-24 ☐

25-34 ☐

35-44 ☐

45-54 ☐

55 and above ☐

4. Department

Accounting ☐

Human resource ☐

Quality control ☐

Marketing ☐

Other ☐

Part B – Questions

**Kindly tick the scale value that most closely reflects your level of agreement with the statements*

Constructs	Scale				
	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
Strategic Foresight					
A.1 Monitoring strategic foresight goals is significant for my organization					
A.2 Strategic foresight entails monitoring the business sectors in which your organization operates					
A.3 There are impediments to strategic foresight implementation					
A.4 Implementing strategic foresight efficiently contributes to growth of the organization					
A.5 Implementing strategic foresight results in effective information management					
A.6 Careful implementation is a key factor of success in the implementation of strategic foresight					
A.7 Strategic foresight has an impact on the corporate decision making process					
A.8 Strategic foresight is necessary for the opening up of future competitive space					
Cost Savings					
B.1 Cost saving is perceived to be significant in your organization					
B.2 Your organizations has a good understanding of the concept of cost saving					
B.3 The costs in the organization are influenced by strategic foresight					
B.4 There are implications of cost saving strategies for corporate managers					
B.5 Strategic foresight is essential for the identification of different types of costs					
B.6 Strategic foresight is able to shape the future of cost management					

B.7 Strategic foresight can be used for evaluation of cost					
B.8 Strategic foresight can be used to facilitate cost saving					
Productivity					
C.1 Your organization has a good understanding of productivity					
C.2 Your organization is highly productive					
C.3 Productivity plays a considerable role in dealing with the competition					
C.4 Innovative productivity within the organization to an extent is influenced by strategic foresight					
C.5 Strategic foresight assists in shortening the production life cycle					
C.6 Productivity becomes sustainable following implementation of strategic foresight					
C.7 Strategic foresight contributes significantly					
Profitability					
D.1 The organization recognizes the significance of profitability to its well being					
D.2 Strategic foresight contributes to the profitability of the organization					
D.3 Careful consideration is taken in the course of defining profitability					
D.4 Strategic foresight facilitates the prediction of future profitability					
D.5 Strategic foresight assist your organization to adjust to financial changes					
D.6 Strategic foresight increases the level of profitability within the organization					
D.7 Strategic foresight can be used to prevent profit manipulation by managers					
D.8 Poor financial performance is an indicator of inappropriate application of strategic foresight					
Long-term Sustainability					
E.1 Sustainability contributes to the performance of the organization					
E.2 Managers have a good understanding of sustainability					
E.3 The organization has achieved sustainability					
E.4 Long term sustainability has an impact on the future of the organization					

E.5 Strategic foresight can be used to plan the future to ensure sustainability					
E.6 Sustainability is key to the survival of the organization					
E.7 Strategic foresight is key to the organization successfully navigating economic, environmental, and societal uncertainties					
E.8 The organization needs to urgently improve its long term sustainability					
Strategic Planning					
F.1 The organization has a good understanding of strategic foresight					
F.2 Management has direct influence on strategic planning in the organization					
F.3 Strategic foresight enhances the organization's strategic planning					
F.4 Enhancing the success of future strategic planning is a critical goal for the organization					
F.5 There are various obstacles that affect the process of strategic planning					
F.6 Stakeholder involvement in strategic planning is significant					
F.7 Management possess the knowledge, skills, and abilities to foster integration of strategic foresight with strategic planning					
Competition					
G.1 Competition is an essential aspect affecting the organization					
G.2 The organization is exposed to high rates of competition					
G.3 Lack of ability of foreseeing competition results in negative performance					
G.4 Strategic foresight helps the organization determine in advance strategies of dealing with competition					
G.5 The role of strategic foresight towards monitoring competition is well understood					
G.6 Stiff competition affects the prediction of long-term operations in the organization					
G.7 It is difficult for the organization to make strategic foresight decisions under competitive pressure					
G.8 Strategic foresight can be used to deal with competition that the organization faces					
Technology					

H.1 Technology is an essential aspect of the organization					
H.2 The organization is receptive to technology					
H.3 Technology can be used to boost innovation for realization of future organizational goals					
H.4 Technology can be used to realize effective future growth					
H.5 Enhancing technological success within the organization is significant					
H.6 The future plans of the organization are influenced by technology					
H.7 Achievement of the future goals of the organization can be enabled through technology					
H.8 The organization needs to be adopt rapid technological changes for a secure future					
Reduction of Resource Wastage					
I.1 The organization has adequate understanding of the concept of resource wastage					
I.2 Resource wastage is an urgent issue for the organization					
I.3 The organization is well aware of the negative impact of resource wastage					
I.4 The organization has strategies in place to prevent resource wastage					
I.5 The organization has an awareness of the impact of resource wastage on its future					
I.6 Strategic foresight can be used to reduce resource wastage					
I.7 The organization has developed and implemented strategies to monitor resource wastage					
I.8 Resource wastage undermines performance of the organization					