DURBAN UNIVERSITY OF TECHNOLOGY

THE INFLUENCE DURING COVID -19 ON STRATEGY FORMULATION FOR SUSTAINED COMPETITIVE ADVANTAGE OF SELECTED HEALTH CARE COMPANIES IN DURBAN

JUDY MOODLEY

AUGUST 2024

THE INFLUENCE DURING COVID -19 ON STRATEGY FORMULATION FOR SUSTAINED COMPETITIVE ADVANTAGE OF SELECTED HEALTH CARE COMPANIES IN DURBAN

Submitted in fulfilment of the requirements of the

Degree of Doctor of Philosophy in

Specialising in

Business Administration

In the

Faculty of Management Sciences

At the Durban University of Technology

JUDY MOODLEY

AUGUST 2024

APPROVED FINAL SUBMISSION

Supervisor (Affiliation):

Dr Khalida Akbar

Phd (UKZN)

Date: 21 August 2024

ABSTRACT

This research sought to explore the influence of the COVID-19 pandemic on strategy formulation for sustained competitive advantage of selected healthcare companies in Durban, South Africa. The study aims to understand the impact of COVID-19 on the healthcare industry, the factors influencing strategy formulation, and the strategies adopted to gain a competitive edge. The objectives of the study were: to determine the influence during the COVID-19 pandemic on the performance of the health care products industry; to explore the factors that influenced strategy formulation for sustained competitive advantage of selected healthcare products companies; to examine the strategies formulated by the health care products industry to gain a competitive advantage since the emergence of COVID; and lastly, to make recommendations to the senior management of selected companies in the health care products industry on effective strategies for gaining competitive advantage in the post-COVID-19 pandemic in South Africa. The research employed a mixed-methods methodology, concurrently using quantitative and qualitative research instruments for data collection. The target population comprised both managerial and non-managerial employees from six registered healthcare product companies dealing with medical equipment, protective clothing, and medical consumables. The companies that were included in the study were Renttech, ATB Supplies, Kendon, Zeta Lab and Clatten Supplies. Data collection involved structured interviews and questionnaires, which were analysed using both statistical and thematic approaches. The research findings illustrated that all the objectives of the study were met, revealing a multifaceted impact of COVID-19 on healthcare companies in Durban, emphasising the variability in company performance, financial outcomes, and operational disruptions. The research results demonstrated the achievement of all the study's goals, revealing a complex impact of COVID-19 on healthcare firms in Durban. This underscores the diversity in company performance, financial results, and operational disruptions.

The study's recommendations include the exploration of the effectiveness of strategies for competitive advantage, conducting longitudinal research, fostering global collaborations, advocating digital technology adoption, investing in employee training, and promoting policy frameworks that incentivise digital healthcare transformation. The research encourages collaboration within the healthcare sector and emphasises the importance of a regulatory environment conducive to innovation and sustainability.

Key Words: competitive advantage; strategy formulation; sustainability; innovation; digitisation

DECLARATION

I hereby declare that the work described in this thesis is my original work and has not previously been submitted either in part or in its entirety for a degree at any other university.

I also declare that this work does not in any way infringe upon or violate the rights of others, as all the sources cited and quoted by me are indicated and acknowledged by means of a comprehensive list of references.

Student Signature : **Date : 21/08/2024**

DEDICATION

This study is dedicated to both my late parents, Lutchmee Naidoo and Anthony Naidoo for your unceasing love and attention which you provided me with. It was your constant love and support which has enabled me to go against all odds and achieve my goals.

I also dedicate this study to my children Janelle Jade and Jared Owen. I thank you for your continued love and encouragement throughout this journey.

ACKNOWLEDEGMENTS

I thank God for granting me the wisdom and strength to undergo this journey.

I wish to express sincere appreciation to my Supervisor, Dr K. Akbar. Thank you for the remarkable and exceptional academic mentorship. I am forever grateful to you.

Thank you to Dr Mervyn Swamivel Pillay for your unwavering support and belief in me.

Thank you to the CEO's, and respondents of health care companies for your cooperation and participation in the study.

TABLE OF CONTENTS

Contents

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS

AI	Artificial intelligence
Chisq	Chi-squared
EFQM	European Foundation for Quality Management
IDA	Institute of Define Analysis
IOT	Internet of Things
OECD	The Organization for Economic Cooperation and Development
OKR	Objectives & Key Results
PPE	Personal Protective Equipment
RBV	Resource Based Theory
SEO	Search Engine Optimisation
SMEs	Small and medium enterprises
VRIO	Value, Rarity, Imitability, Organisation

CHAPTER ONE

BACKGROUND TO THE STUDY

1.1 INTRODUCTION

The COVID-19 pandemic has disrupted the world's social and economic order and has gravely affected the sustainability and growth of not only the healthcare services supply industry but also other industrial sectors (Ozili, 2020). This pandemic has inadvertently led to serious economic disruptions, and the smooth functioning of the South African economy has been adversely disrupted (Georgieva, 2020). COVID-19 is an infectious disease that has spread globally, leading to the death of hundreds of thousands of people (World Health Organisation COVID Report, 2020). The emergence of COVID-19 has unquestionably influenced strategy formulation as businesses have to become acclimatised to the new macro-environment impelled by this disease (Horowit, 2020:1). This is against the background of many millions of South Africans losing their jobs, resulting in the loss of traditional customers, which further led to declining demand for goods and services, further eroding profits (Business Tech, 2020). Undoubtedly, the effects of COVID-19 on the health care industry have been mixed. On the one hand, the pandemic has led to better opportunities while at the same time bringing about new threats for the healthcare industry. These COVID-19 effects undoubtedly influenced strategy formulation in the sense that the health care industry had to craft appropriate strategies to exploit new opportunities and minimise the impact of emerging with a key focus on sustained competitive advantage. The effect of competitive advantage on business performance is both positive and significant. (Nurwitono & Silvianita, 2023). However sustainability is vital for business survival. As global competition becomes more intense, the question of how to maintain develop sustainable competitive advantage is becoming more significant in business. (Mahdi & Nassar, 2021). The focus on strategy formulation and sustained competitive advantage is pertinent to the study as it is the main objective of strategy management, which are all the major learning and competence outcomes of doctoral administration studies.

1.2 PROBLEM STATEMENT

The COVID-19 pandemic led to serious adverse effects on the health care products industry in the sense that there has been increased pressure to innovate and streamline business processes towards complying with the "new normal" which is respecting social distancing by selling products and services online and coming up with new products and services with new performance features (El-Erian, 2020).

Most businesses in the health care products industry in South Africa became incapacitated due to disruptions in the global supply chains and also due to government imposed lockdowns, which had a devastating effect on the firm's liquidity and profitability (Omarjee, 2020). Regrettably, most businesses were unaware of the emergence of COVID-19 hence, they were caught unprepared for surviving in the new environment that emerged. Though business process innovation is desirable, most businesses in the health care services supply industry are not yet prepared for the massive financial investments required to fund innovations and gain a competitive advantage; hence, this is causing serious financial pressure on these companies (Georgieva, 2020). Despite the opportunities and threats posed by the COVID-19 pandemic, most companies in the healthcare services industry found it difficult to promptly engage in urgent initiatives needed to exploit the opportunities and formulate strategies to gain a competitive advantage; (El-Erian, 2020). This research is motivated by the desire to examine the problem of the lack of urgency by some firms in the health care products industry to develop and implement post-COVID-19 strategic initiatives to gain long term competitiveness that surpasses that of rivals in the global environment (El-Erian, 2020; Financial Times, 2020). The COVID-19 pandemic has brought about valuable lessons for industries to adopt new strategies and exploit new opportunities for businesses in the newly emerging 4th industrial revolution economies (El-Erian, 2020). Most businesses in the health care product supply industry are adopting a "business as usual" approach and are lacking urgency in the manner in which they are realigning and allocating resources and deploying resources to gain a competitive advantage in a post-COVID-19 South African economy (Elliot, 2020).

1.3 AIM OF THE STUDY

The aim of this study is to explore the influence of COVID-19 on the strategy formulation for sustained competitive advantage of selected healthcare companies in Durban.

1.4 RESEARCH OBJECTIVES

- To determine the influence of the COVID-19 pandemic on strategy formulation for sustained competitive advantage of the health care products industry in Durban, South Africa.
- To explore the factors that influenced strategy formulation for the sustained competitive advantage of selected healthcare products companies in Durban, South Africa.
- To examine the strategies formulated by the health care product industry in Durban, South Africa, to gain a competitive advantage since the emergence of COVID-19.
- To make recommendations to the senior management of selected companies in the health care products industry on effective strategies for gaining competitive advantage in the post, COVID-19 pandemic in South Africa.

1.5 RESEARCH QUESTION

The study will pursue the following questions,

- What is influence of the COVID-19 pandemic on the performance of the health care products industry in South Africa?
- What are the factors that influence strategy formulation for the sustained competitive advantage of selected healthcare companies in Durban South Africa?
- What strategies were formulated by the health care products industry in Durban, South Africa, to gain a competitive advantage during COVID-19?
- What recommendations can be made to the senior management of selected companies in the health care products industry on effective strategies for gaining competitive advantage in the post-COVID-19 pandemic in South Africa?

1.6 BACKGROUND TO LITERATURE REVIEW

Strategy formulation is a process in strategic management that is often influenced by changes in the operating environment (Gavrilova, Kubelskiy, Kudryavtsev & Grinberg, 2018). Volatility, turbulence, and unanticipated changes in the macro-environment highly influence senior executives of companies to engage in continuous strategy formulation and reformulation (Bolisani & Bratianu, 2018). Strategy formulation is the process by which an organisation selects the most appropriate courses of action to realise its distinct goals. This process is

essential to an organisation's success in that it offers a framework for the actions that will lead to the predicted results (Gavrilova et al. 2018). Strategy formulation influences an organisation to view the fluctuating environment, which prepares the organisation in advance for the potential changes that may occur (Webber, 2020).

1.7 THEORETICAL FRAMEWORK FOR THE STUDY

The study is underpinned by two theories; the resource-based theory (Rugman, 2002) and the adaptive theory of leadership (Lichtenstein & Plowman, 2009). The resource-based theory was initially developed by Edith Penrose (1959) and later reviewed by Barney, Ketchen & Wright (2021). The adaptive theory of leadership is made up of a collection of theories that emerged from propositions by Stacey (1996), Goldberg & Markoczy (1998), and Kelly (1999) and were recently reviewed and developed by Uhl-Bien et al. (2017).

The resource-based theory **(**RBV) related to assessing the influence of COVID-19 on strategy formulation for sustained competitive advantage of selected healthcare companies in Durban. This theory also supports evolving research interest in the influence of COVID-19 on strategy formulation for sustained competitive advantage of selected healthcare companies in Durban. The theoretical background helps in the understanding of the factors influencing strategy formulation and implementation in so far as resource mobilisation and deployment. (Kamardi, A.A., Mahdiraji, H. A., Masoumi, S & Jafari – Sadeghi, V, 2022).

The adaptive leadership theory is validated for enlightening this study on the premise that it proffers valuable insights into the need for visionary leaders to implement a leadership style that does not focus on conserving the existing situation but to also incorporate a highly dynamic method in the form of adaptive leadership styles used to confront complex situations that manifest in South African industry. (Garavaglia, C., Sancino, A. & Trivellato, B., 2021).

COVID-19 provided one of the examples of uncertainties that occur in the business environment. The COVID-19 pandemic was unforeseen, so leadership adaptation to the new environment that emerged was necessary. Strategy formulation in the context of the ravaging effects required the leader's adaptation to the new business environment. (Garavaglia et al., 2021). Leader adaptation was therefore necessary to formulate strategies that adapted to the demands of COVID-19.

1.8 RESEARCH METHODOLOGY

The most applicable research methodology for this study is the mixed-methods research approach. The mixed-method research approach has three distinct research approaches: convergent parallel mixed-method, exploratory sequential mixed method and transformative design (Creswell, 2014). This research will adopt the convergent parallel mixed method research strategy. A convergent parallel mixed-methods study design will be used to collect, analyse and interpret quantitative and qualitative data. Based on the definition provided by Sekaran and Bougie (2016) the convergent parallel mixed method research strategy entails conducting both quantitative and qualitative inquiries on the research questions as parallel processes during the same period. The convergent, parallel mixed-method research strategy involved the concurrent collection of data using quantitative and qualitative research instruments as parallel processes.

1.8.1 TARGET POPULATION

The target population of this study will consist of both managerial and non-managerial employees from six (6) registered companies involved in the provision of healthcare products, which include the supply of medical equipment, protective clothing, and medical consumables. The target population for managerial employees includes Rentech (6), E-Moyo (4), Clatten Supplies (4), Kendon (5), Zeta Laboratory (5) and ATB Supplies (4), while the target population for non-managerial employees includes Renttech (50), E-Moyo (21), Clatten Supplies (31), Kendon (33), Zeta Laboratory (35) and ATB Supplies (30). The reason for choosing managerial employees lies in the fact that they have relevant information regarding the influence of COVID-19 on strategy formulation for sustained competitive advantage of selected healthcare companies in Durban, while both managers and employees have detailed knowledge about the influence of the COVID-19 pandemic.

Table 1. 1: Inclusion and Exclusion criteria

Inclusion criteria	Exclusion criteria
Only privately owned companies involved in the supply of healthcare services operating in Durban	Public owned companies involved in the supply of healthcare services

	Privately owned companies involved in the supply of healthcare services outside Durban
Existing Non Managerial employees of privately owned companies involved in the supply of healthcare services operating in Durban	Existing Non Managerial employees of privately owned companies involved in the supply of healthcare services operating out of Durban
Existing Managerial employees of privately owned companies involved in the supply of healthcare services operating in Durban who were in employment prior to the emergence of COVID-19 and during the course of the COVID-19 period.	Ex managerial employees of privately owned companies involved in the supply of healthcare services operating in Durban who left the employment of their companies prior to the emergence of COVID-19.

1.8.2 SAMPLING METHOD

Selected companies were chosen using convenience sampling, which involved the selection of healthcare services companies whose management was willing to participate in the study. This study will adopt both the probability sampling method of randomness and the purposive non-probability sampling method to select respondents for participation in the study.

1.8.3 SAMPLE SIZE

Using Slovin's formula n = N/(1 + Ne^2)*, where n = 133, is the sample size of the population, N = 200 which is the total population, and e is the margin of error which is 0.05. The sample size n at the 95% confidence level was estimated for this investigation. The population size of prospective respondents was determined by the company's human resources departments.

A sample size of all six (6) businesses, namely Renttech, E-Moyo, Clatten Supplies, Kendon, Zeta Laboratory, and ATB Supplies, was calculated using Slovin's formula. The following sample sizes for quantitative research were calculated using the Slovin formula as follows: A total of 133 participants were obtained for the survey questionnaire from Renttech (29), E-Moyo (21), Clatten Supplies (20), Kendon (24), Zeta Laboratory (19), and ATB Supplies (20) at a 95% confidence level. A sample size of less than 100 should be considered representative

of the entire population for the study, according to the Slovin formula for calculating sample sizes.

For the interviews based on the company's organogram, the sample size for the qualitative research will be 18 senior managerial personnel of certain health care companies in Durban, South Africa.

1.8.4 MEASURING INSTRUMENT

The measuring instrument for the quantitative part of the research will be a Likert scale with dimensions measuring 1 to 5 and an open-ended interview guide, which will contain standardised open-ended interview questions for respondents. A pilot study will be conducted to validate both the interview guide for qualitative data collection and the questionnaire for quantitative data collection. As part of the pilot study, a minimum of two (2) respondents from managerial employees will be selected to participate in the pilot interviewing, while a minimum of ten (10) participants will be drawn from the target population of operational employees to participate in the completion of questionnaires.

1.8.5 DATA COLLECTION METHODS

Data collection will include the use of both a survey questionnaire with guided answers for the qualitative part and an interview guide. Interviews will be done through the following methods:

Face-to-face contact, maintaining the COVID-19 protocols

Video calling

Zoom

Online completion

Before collecting data from any of the above methods, the researcher will provide detailed explanations to respondents so as to get informed consent from them. A draft consent letter providing all explanations and technicalities of data collection will be available to respondents

as a pre-requisite precautionary measure for securing informed consent. During the explanations, the researcher will emphasise the expectations that will be required from the respondents, such as obligations to provide detailed explanations regarding each question and the respondent's rights to withdraw from the research process at any time without any repercussions. With respect to virtual interviewing, the researcher will expect those respondents who opt for this data collection procedure to avail themselves timeously of these virtual platforms and to ensure that their laptops and smartphones are in good working order. Upon request, the researcher will provide the cost of the data to be expended by the respondents. For participants who prefer face-to-face interviewing, data collection will be conducted either in the offices of respondents or at mutually agreed-upon venues where it is deemed safe by both respondents and the researcher. For respondents who choose video calling and virtual interviewing using Zoom, the researcher will further ask for permission from respondents to do audio recording of their responses. Interviews are scheduled to take between 20-30 minutes.

The questionnaires will be distributed online using a group email address created specifically for this research project, which will be communicated to participants in advance.

1.8.6 DATA ANALYSIS

Both thematic and statistical analysis will be employed in this study. Thematic analysis is a method of data analysis that undergoes several stages: arranging the data, sorting the data, searching for recurring and dominating ideas, coding the data, and converting the coded data into themes for interpretation (Vaismoradi, Jones, Turunen & Snelgrove, 2016). Data analysis will involve multiple examinations of the data. Recurring ideas, dominating ideas being repeated by two or more respondents, or general agreement between two or more respondents will be considered a theme in qualitative research, as per assertions by Clarke, Braun and Hayfield (2015). Before arriving at a theme, several steps of thematic analysis will be undertaken. The first step will involve the familiarisation process, whereby the researcher will engage in reading and re-reading the data multiple times so as to become familiar with the whole data set. The second step will involve looking for ideas or responses that are being repeated in the data or data from responses that show general agreement per question. This process will be followed by arranging and sorting the data into categories. These categories were coded, and themes were generated by the NVIVO software version 12, which was used to generate codes and themes. Quantitative data analysis will involve inputting the data into

in R Statistical computing software for the generation of inferential statistics, which will be used to analyse the data.

1.8.7 RELIABILITY AND VALIDITY OF QUANTITATIVE DATA

1.8.7.1 VALIDITY

There are several types of ensuring validity, such as criterion validity, parallel validity, construct validity, face validity, and concurrent validity. This research will be mainly concerned with ensuring face validity and construct validity since the other ones are irrelevant to the study. Face validity refers to the extent to which the research instrument is deemed to measure what it is intended to measure by merely looking at how the research instrument is structured (Cooper & Schindler, 2015). Construct validity refers to the extent to which the contents of the research instruments contain all the elements that cover all the research objectives and aims (Cooper & Schindler, 2015). Both face validity and construct validity will be ensured by giving the structured questionnaire to a research expert, preferably the research supervisor assigned to me, to have a detailed assessment of whether the research instruments are properly constructed and cover all aspects of the research necessary to achieve the aims and objectives of this study.

1.8.7.2 RELIABILITY

Reliability refers to the extent to which data collection tools are consistent (Cooper & Schindler, 2015). Reliability will be ensured by using the Cronbach alpha measurement to determine levels of internal consistency. The Statistical Package for R. Computing.2020. will be instructed to calculate the Cronbach alpha coefficient. A co-efficient of 0.7 will demonstrate that the findings are satisfactorily reliable. However, a Cronbach alpha coefficient above 0.7 implies that the findings are reliable, with the level of reliability increasing up to 1. The conduct of pilot testing will be another method that the researcher employs to ensure the validity and reliability of the research instrument.

1.8.7.3 PRINCIPLES OF TRUSTWORTHINESS:

Trustworthiness and authenticity of data will be ensured by triangulation, member checking, and the provision of explanations surrounding the context in which the study was conducted, which will be implemented to ensure credibility, transferability, dependability, and conformability of findings.

1.9 ETHICAL CONSIDERATIONS

The study will be designed in a way that attempts to focus on the expected ethical standards and principles related to research. These include the following: ensuring that participants have given informed consent, ensuring no harm comes to participants, ensuring no harm comes to participants, ensuring that permission is obtained, and ensuring confidentiality and anonymity.

Confidentiality will be ensured by locking all paper documents in cabinets whose access is restricted to third parties. For electronic data, confidentiality will be ensured by encrypting the data with passwords so as to restrict access to unauthorised third parties. Anonymity will be ensured by using pseudonyms in place of real names as a way to protect the identities of research respondents and participants.

1.9.1 IREC APPROVAL

The researcher will ensure that IREC approval is attained before the commencement of field work.

1.9.1.2 ETHICAL CONSIDERATIONS IN THE RECRUITMENT OF MANAGERS AND EMPLOYEES

Upon obtaining a gatekeeper's letter from the companies, the researcher will use two main methods to recruit respondents. Firstly, the researcher will ask permission to issue a letter of invitation to all participants to be circulated during management meetings, whereby all interested managers and employees will voluntarily insert their names, contact information, and email addresses in the spaces provided. The second approach will involve assigning a member of staff to distribute the letters of invitation to participate in the study with spaces whereby all interested parties will voluntarily indicate their names, contact telephone numbers, and email addresses for communication purposes. Where possible, those on WhatsApp will be instructed to join the research WhatsApp group through a link provided. Those potential participants who are not on WhatsApp will indicate how they can be contacted on the letter of

invitation. In order to avoid incidences of managers distributing questionnaires to employees and creating fear, a group email address created solely for the purpose of the research and password will be available to potential respondents and participants. The researcher intends to direct all participants to access the questionnaire for completion at the group email address created.

1.10 STRUCTURE OF THE THESIS

The thesis is organised into six (6) chapters. A brief overview of the chapters is as follows:

- **Chapter 1: Background and introduction**

This chapter introduces the research topic, explains what is expected from the entire research, and then identifies the research problem. This chapter gives the aim of the study, the objectives of the study, the justification of the study, and the organisation of the dissertation.

- **Chapter 2: Overview of the Theoretical Framework**

This chapter gives an overview of the theoretical framework pertaining to the COVID-19 impact and competitive advantage.

- **Chapter 3: Literature Review**

Chapter three is referred to as the literature review. The goal of the literature review is to basically issue a theoretical framework for the research study. The researcher will review books, journals, academic papers, academic literature, and academic videos to help formulate the logical reasoning for his or her case. Chapter two will provide information relating to the research objectives, which aim to explore the influence of the COVID-19 pandemic on the performance of the health care products industry in Durban, South Africa. Explore the factors that influenced strategy formulation for sustained competitive advantage of selected healthcare products companies in Durban, South Africa, and examine the strategies formulated by the health care products industry in Durban, South Africa, to gain a competitive advantage since the emergence of COVID-19.

- **Chapter 4**: **Methodology**

This chapter describes the research methodology. The chapter gives a detailed discussion of the research design, data collection methods, data analyses, the pretesting of research instruments, and other information such as ethical considerations, anonymity, and confidentiality.

- **Chapter 5: Data analysis**

This chapter presents the results and discusses the research findings from the primary research. The findings are analysed, discussed, and interpreted.

- **Chapter 6: Summary and conclusion**

This chapter summarises and concludes the study. Recommendations and policy implications of the study's findings are clearly explained in this chapter. The chapter will also give the limitations of the study and identify areas for future research.

1.11. SIGNIFICANCE OF THE STUDY/POTENTIAL OUTPUT

It is envisaged that the findings from this research will be presented to an academic community regarding the impact of the COVID-19 pandemic on enhancing the competitive advantage of the health care product supply industry in South Africa and subsequently published in a peer-reviewed journal. Publishing this work in a peer-reviewed journal entails contributing to the existing body of knowledge and acting as a reference in academic research. The research findings can also be valuable to institutions, as they can be incorporated into lectures and future research. This research will have a far-reaching impact in terms of the influence of the COVID-19 pandemic on enhancing the competitive advantage of the health care product supply industry. Finally, based on the research findings, a new business model will be developed for the health care supply industries to reduce the impact of future pandemics.

1.12 CONCLUSION

The study has been conducted with confidence and the expectation that the outcomes and recommendations will influence the controlled management of the health care supply industries during future pandemics. This chapter has determined the foundation for the thesis and provided a well-grounded structure for the thesis. The following chapter elaborates on the theoretical framework for the study.

CHAPTER TWO

THEORETICAL FRAMEWORK FOR SUSTAINED COMPETITIVE ADVANTAGE

2.1 INTRODUCTION

In the last chapter, the focus was to highlight the background to the research, the problem statement, and the research aims and objectives. In this chapter, the focus is on the theoretical framework underpinning this study, which is based on a theory or model and is discussed in conjunction with the objectives of the study. The relevance of the theoretical framework to the study objectives is also discussed in this chapter. The approach taken in this chapter involves three steps. The first step involves providing detailed explanations of the key ideas of the theory; the second step pertains to explaining the strengths and limitations of the theory, followed by a detailed explanation of the relevance of the theory to the study. The main theory underpinning this study is the integrated resource-based theory initially developed by Edith Penrose **(**1959) and later reviewed by Barney, Ketchen & Wright **(**2021). This study is also reinforced by the adaptive theory of leadership, made up of a collection of theories that emerged from propositions by Stacey (1996), Goldberg & Markoczy (1998) & Kelly (1999) and were recently reviewed and developed by Uhl-Bien et al. (2017).
The following section provides a background discussion on the resource-based view theory.

2.2 BACKGROUND TO THE RESOURCE BASED VIEW THEORY OF SUSTAINED COMPETITIVE ADVANTAGE

The resource-based theory **(**RBV) underpins this study related to assessing the influence of COVID-19 on strategy formulation for the sustained competitive advantage of selected healthcare companies in Durban. This theory supports emerging research interest in the influence of COVID-19 on strategy formulation for the sustained competitive advantage of selected healthcare companies in Durban. Further to this, the theoretical background helps in the understanding of the factors influencing strategy formulation and implementation in so far as resource mobilisation and deployment are concerned.

The resource-based view theory was originally developed by Edith Penrose **(**1959). However, in the later 20th century, Barney's (1991) treatise entitled "Firm Resources and Sustained Competitive Advantage" is extensively believed to have played a crucial role in the development of the resource-based view (RBV) theory, which was a marked improvement from

earlier theories by Penrose (1959). Recently, the RBV theory has been reviewed and further developed by Barney, Ketchen & Wright **(**2021). Beforehand, earlier attempts at developing the RBV theory were unsuccessful in terms of developing a theoretical framework that was useful for implementation by business strategists. This view is supported by observations made by Peng (2021), who asserted that earlier resource-based theories were fragmented and rudimentary. The theory emerged as valuable to the business community by virtue of the fact that it gave valuable insights that help strategic planners with the guidance and direction they need to take into consideration when formulating strategies for sustaining competitive advantage during such catastrophic phenomena as COVID-19 (Mahdi & Nassar, 2021).

2.2.1 MAIN IDEAS OF THE RESOURCE BASED THEORY

Drawing upon the RBV for the companies, this study examines how selected healthcare companies can utilise their strategic resources to achieve sustainable competitive advantage in the post-COVID-19 business environment. Using the RBV, it is contended that the distribution of valued resources and capabilities by the management of companies' is a key aspect that needs consideration during strategy formulation and, in turn, enhances healthcare companies 'competitive advantage over their competitors.

The main ideas of the RBV theory help to explore the factors that influence strategy formulation for sustained competitive advantage and also determine the influence of COVID-19 on the strategy formulation for sustained competitive advantage of selected healthcare companies in Durban. According to Wernerfelt, (2019), RBV can be defined as: *"…the identification and coordination of key resources, whether internal or external to the firm, tangible or intangible, and its eventual deployment to achieve firm objectives and organisational goals, in a bid to outperform competitors".*

Nikolaou et al. (2020) asserted that RBV is "a group of theories proposing that companies are able to establish competitive advantage through internal resources of the firm that are valuable, rare, not imitable, and organised for value capture".

However, Sharma, Alkatheeri, Jabeen & Sehrawat (2022) assert that RBV is a strategy model that considers an organisation's resources as key to sustainable competitive advantage.

It is evident that the resource-based view recognises the fact that key internal and external resources need to be identified and deployed for the achievement of organisational resources, and both tangible and intangible resources are key in terms of helping an organisation achieve competitive advantage. Wernerfelt (2019) further posits that the key purpose of deploying all manner of resources is to outcompete rivals.

According to the resource-based theory, organisations that own "strategic resources" have important competitive advantages over organisations that do not (Barney, Ketchen Jr & Wright, 2021). Some resources, such as cash and trucks, are not considered strategic resources because an organisation's competitors can readily acquire those (Barney et al., 2021). Instead, a resource is strategic to the extent that it is valuable, rare, difficult to imitate, and organised to capture value (Barney et al., 2021). The RBV recognises the heterogeneity of firms in terms of their resource endowments, hence explaining the need for different strategies. This assertion is plausible, given that firms have different resource mixes. A key aspect of the RBV is the argument that the existence of well-defined goals and the success of any organisation are influenced by resource availability. Thus, the RBV focuses on the deployment and utilisation of resources, giving rise to resource-driven competence and sustained competitive advantage. The RBV acknowledges that organisations possess both internal and external resources. However, the theory asserts that mere possession of resources is not enough for a firm to gain a competitive advantage. The theory goes on to assert that effective coordination and deployment of resources are key to the achievement of competitive advantage. According to Freeman, Dmytriyev & Phillips (2021) the process through which a firm coordinates and deploys these resources will eventually affect its competitive advantage. This assertion has found support from key scholars such as Davis & DeWitt (2021) who stated that strategy formulation should occur in the context of the resources and capabilities that an organisation possesses to give rise to competitive advantage.

The resource-based view strategy is relevant to the study as it provides vital insights regarding the deployment of resources during the strategy formation phase in periods of uncertainty like the present COVID-19 era. The theory is highly educative regarding the important role of allocating valuable resources to critical areas that leads to the gaining of sustainable competitive advantage when the unexpected occurs in the business environment (Nayal, Pandey & Paul, 2022). This theory is instructive as it aims to educate us on how organisation

operate in tough, volatile environments and can sustain competitive advantage through the use of their internal resources. The RBV theory provides useful insights into how extensive resource analysis, resource allocation, and cross-functional usage of resources can be harnessed during strategy formulation to provide an organisation with a competitive advantage during volatile times like COVID-19. Only when a firm unleashes its workforce's true potential can it innovate and stand out in the industry (Gupta, 2023).

Due to the nature of the research aims and objectives, the resource-based view (RBV) is a managerial framework used to explore the factors that influence strategy formulation for sustained competitive advantage of selected healthcare product companies and thus determine the strategic resources a firm can exploit to achieve sustainable competitive advantage. The RBV focuses managerial attention on the firm's internal resources in an effort to identify those assets, capabilities, and competencies with the potential to deliver superior competitive advantages (Seriki, Idowu, Schmidpeter, Capaldi,, Del Baldo & Abreu, 2023).

One of the characteristic features of the RBV theory is the assertion that rare, difficult, and non-substitutable resources are more valuable and more likely to put a firm in the best position for the achievement of long-term success (Dionysus & Arifin, 2020). These resources are deemed to be strategic and to provide a firm with the foundation to develop robust capabilities that can lead to sustainable competitive advantage over time (Dionysus & Arifin, 2020).

Capabilities are needed to bundle, manage, and otherwise exploit resources in a manner that provides value added to customers and creates advantages over competitors (Davis & DeWitt, 2021).

The RBV theoretical framework is premised on the assertion that firms that effectively utilise internal resources and core competencies have a higher chance of developing sustainable competitive advantage and achieving superior performance (Lockett et al., 2019). The theory is dismissive of generalising all manner of resources as being valuable for achieving competitive advantage (Lockett et al., 2019). Instead, the central theme of the theory is the advancement of the notion of the existence of distinctive and valuable resources that are deemed to be rare, difficult to imitate, and non-substitutable.

One key assumption behind the RBV is that management should direct their efforts toward gathering, developing, and exploiting strategic resources in order to gain a competitive advantage. In articulating the RBV theory, Barney (1991) expressed awareness of the fact that some businesses do not have enough resources to provide sustainable competitive advantages while others do. To have this ability to gain a competitive advantage, the resources of a firm must have four distinct characteristics: valuableness, rareness, imperfection (difficult to imitate), and non-substitutability.

2.2.2 RESOURCES AND CAPABILITIES

Since this study endeavours to explore factors that determine strategy formulation and implementation, a discussion about resources and their capabilities as an extension of the RBV theory provides useful insights into how healthcare companies can achieve sustained competitive advantage. The tangibility of a firm's resources is an important consideration within resource-based theory. Tangible resources are resources that can be readily seen, touched, and quantified. Physical assets such as a firm's property, plant, and equipment, as well as cash, are considered to be tangible resources. In contrast, intangible resources are quite difficult to see, touch, or quantify (Lockett, Thompson & Morgenstern, 2019). Intangible resources include, for example, the knowledge and skills of employees, a firm's reputation, brand name, exclusive rights to intellectual property, leadership traits of executives, and a firm's culture (Lockett, et al., 2019). In comparing the two types of resources, intangible resources are more likely to meet the criteria for strategic resources (i.e., valuable, rare, difficult-to-imitate, and organised to capture value) than tangible resources. Executives who wish to achieve long-term competitive advantages should therefore place a premium on trying to nurture and develop their firms' 'intangible' resources.

'Capabilities' are another vital concept within resource-based theory. An advantageous way to differentiate between resources and capabilities is this: resources refer to what an organisation possesses, and capabilities refer to what the organisation can perform. Capabilities tend to grow over a period of time as a firm employs actions that develop its strategic resources. Southwest Airlines, for example, has developed the capability of providing exceptional customer service by building on its powerful organisational culture (Barney, 1991). Capabilities are important in part because they reflect how organisations capture the potential value that resources offer. Customers do not merely offer payment to an organisation because it owns strategic resources.

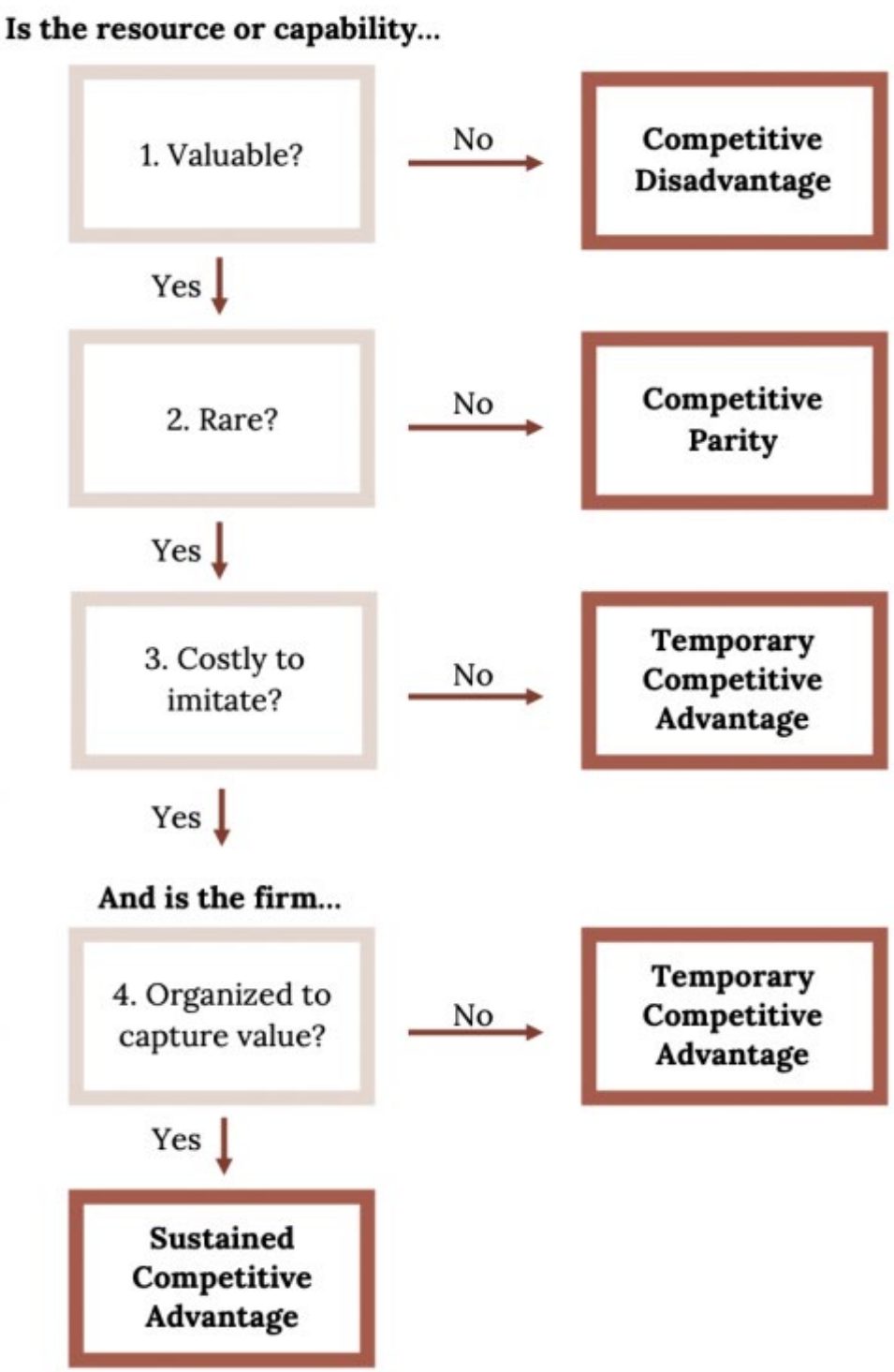
Instead, capabilities are required to bundle, manage, and exploit resources in an approach that provides benefit to customers and creates advantage over the competitors.

Value, Rarity, Imperfect Imitability and Organisation Framework (VRIO Framework)

The VRIO framework discovers resources that are valuable, rare, costly to imitate, and non-substitutable, and the company is organised to exploit these resources (Messineo, 2024). The significance of using the resource-based view is to assess a firm's resources and capabilities using the VRIO framework decision tree in terms of formulating strategies for sustained competitive advantage for selected healthcare companies in Durban. Using the VRIO framework depicted below indicates how the healthcare industry can gain a sustainable competitive advantage during and after the post-COVID-19 period.

The VRIO framework offers essential guidance for companies understand their unique value and maximise their finest potential. Moreover, it goes further than only identifying a competitive advantage. It is used as a strategic guide, permitting organisations to control their rare resources efficiently. By recognising and leveraging these distinctive assets in the market, businesses can re enforce their position and out perform their competitors (Walton, 2024).VRIO analysis advances to more accurate resource allocation, ensuring that valuable and rare resources are optimally utilised for a sustained competitive advantage in a constantly developing and highly competitive business environment. Refer to figure 2.1 below.

Figure 2. 1: VRIO Framework
(Source: Barney et al., 2021)



The decision tree is used to assess resources and capabilities, not a company's products, services, or the company itself. The evaluation occurs within the industry of the company being evaluated. Resource-based theory also emphasises the value of an old saying: the whole is greater than the sum of its parts (Singh et al., 2021). It is vital to recognise that strategic resources can be produced by taking various strategies and resources, each of which may be reproduced, and arranging them together so that they cannot be reproduced. This is particularly important for healthcare companies, as it allows them to gain a sustainable competitive advantage.

2.3 RELEVANCE OF THE RESOURCE-BASED THEORY TO THE STRATEGY FORMULATION AND GAINING COMPETITIVE ADVANTAGE

Each of these characteristics and their relevance to the study are discussed below:

- **Valuableness:** Barney et al. (2021) asserted that a firm gains a competitive advantage if it possesses valuable resources. These resources enhance the capacity of the organisation to become effective and efficient, while at the same time helping to neutralise opportunities available to competitors and threats posed by competitors. A strategic resource is an asset that is valuable, rare, difficult to imitate, and organised to capture value (Barney et al., 2021). A resource is valuable when it assists to create strategies that capitalise on opportunities and defend against threats. A resource is organised to capture value when the firm has organisational systems, processes, and structure in place to capitalise on the resource for a competitive advantage. This may provide bargaining power for the firm in the marketplace. The implementation of this strategic concept of identifying strategic valuable assets that a healthcare company possesses helps in the achievement of the study's objective of formulating and implementing strategies that enhance competitive advantage.
- **Difficulty-to-imitate**: Barney et al. (2021) pointed out that firms whose resources are legally protected under intellectual property rights such as trademarks, patents, or copyrights do indeed possess a competitive advantage. Other difficult-to-imitate resources, such as brand names, require time to ensure full development; hence, competitors have difficulty to imitate a firm's products by virtue of legally protected intellectual rights and the existence of a well-established brand (Barney et al., 2021).

Competitors endure challenges duplicating resources that are difficult to imitate. Other resources are challenging to reproduce due to their evolution over time and reveal the firm's uniqueness. The implementation of this strategic concept of making products and providing services that are difficult to imitate enables healthcare companies to enhance their competitive advantage and is in line with the study's objective of formulating and implementing strategies that lead to organisational sustainability.

- **Rareness:** is one of the characteristics that a resource must possess in order for a firm to gain a competitive advantage. Rare resources are those resources owned by limited or no other competitors (Barney et al., 2021). This concept of rareness embedded in the RBV theory helps management formulate strategies by identifying resources that are rare and valuable but that give healthcare companies a sustained competitive advantage. The successful identification and deployment of resources that are both rare and valuable is a crucial strategic initiative that helps healthcare companies enhance their competitive advantage in the industry and in the general global competitive environment.
- **Non-substitutable** resources exist when the resource combination of other firms cannot duplicate the strategy provided by the resource bundle of a particular firm (Barney et al., 2021). This concept of non-substitutability is key in strategy formulation and implementation, as the successful identification and deployment of resources plays a critical role in ensuring other firms cannot duplicate the strategy provided by the resources of a particular firm, hence leading to sustained competitive advantage in line with the objectives of this study.

As alluded to in the theory, healthcare companies should retain assets that are valued, rare, and difficult for their competitors to imitate. Hitt, Arregleb & Holmes (2021) affirm that companies must develop strategies to cope with short-term disruptions and survival. The resource-based theory (RBT) is viewed as one of strategic management's most influential and dominant theoretical perspectives. Although the disruption has been more forceful for certain companies than others, the company's resources are critical for survival and the subsequent economic disruption. Financial resources are an urgent requirement. Thus survival (i.e., existing competitive advantage and its value appropriation) has become a more critical concern than long term sustainable competitive advantage from valuable, rare, inimitable, and non-substitutable (VRIN) resources.

You, Lou, Zhang, Chen & Zeng (2023) focus on RBV theory and its role in leveraging resources and dynamic capabilities for organisational resilience amid COVID- 19 , of which the results indicate that during COVID- 19 businesses can successfully reach resilience through the RBV(VRIN and non VRIN resources). The RBV theory depicts great potential as an important business tool for companies to respond to crises and post-pandemic innovative developments. It is further suggested that in the future enterprises in various industries should further strengthen the collection of resources, particularly the development, collection and utilisation of resources in key fields. (You, Lou, Zhang, Chen & Zeng, 2023). Assensoh-Kodua, (2019) further postulate that distinctive strategy of the RBV is the acknowledgement that the organisational competence of a company (the capacity to function effectively) depends on its resource know-how (the quality of its resources and their potential to deliver results).They affirm that 'Knowledge' is a significant resource for organisations and is primarily generated by people (able ones). An organization's operational, technical, and practical knowledge can be stored in databases and found in reports, libraries, policy documents, manuals, and presentations. This unique strategy should have no boundaries, or any political intrusion if the full benefits of the RBV are sought after.

The study has further elucidated the essential steps involved in Knowledge Management , based on the RBV to achieve competitive advantage and has shown significance in that it explains the concepts of the resource-based view (RBV) strategy, which ideally focuses on the companies the internal resources, with the fundamental intention of identifying those capabilities, assets, and competencies which can provide greater competitive advantages. The concept of RBV is pivotal in assisting companies in achieving sustainable competitive advantage, which is the key focal point of the strategic marketing and strategic management plans (Assensoh-Kodua, 2019).

In the resource-based approach, supporters argue that each company has unique resources and skills to sustain competitive advantages (Dagnino & Cinici, 2016). Each theory relies on observations and forecasts about how industry competition will develop to gain a competitive advantage. The more accurately these theories and statements reflect current competitiveness in this sector, the more likely it will achieve a strategic edge by employing its strategies.

RBV enables the management of firms to understand why competences can be perceived as a firms' most valuable asset whilst appreciating how those assets can be utilised to enhance business performance. RBV of the firm accepts that attributes related to past experiences,

organizational culture and competences are critical for the success of the firm (Campbell & Luchs, 1997; Hamel & Prahalad, 1996). For example, Peteraf (1993) highlights the role of Barney's VRINE framework (Valuable, Rare, Inimitable, Non-substitutable, and Exploitable) as a set of necessary conditions for a resource to be a source of sustained competitive advantage. Amit and Schoemaker (1993) focus on the concept of strategic assets, which are resources that are valuable, rare, and difficult to imitate, and argue that these assets are essential for a firm's long-term survival and success.

In summary, while different authors have contributed to the development of the Resource-Based Theory, they generally agree on the importance of the characteristics such as Valuable, Rare, Inimitable, Non-substitutable, and Exploitable. However, there might be some variations in their interpretations and emphasis, and it's essential to consider the nuances of each author's work when applying RBT in a specific context.

The next section discusses adaptive leadership theory. This theory aids in complementing our understanding of the leadership styles required during periods of volatility, uncertainty, and gloom, such as the current COVID-19 period.

2.4 ADAPTIVE LEADERSHIP THEORY

Concept of Adaptability in Management

Unstable environments and the emergence of unexpected events such as COVID-19 require the greater ability of leaders to become adaptive to the new environments. Unexpected events, such as COVID-19, greatly influence strategy formulation. In essence, strategy formulation should be preceded by a stimulus event such as COVID-19. Uhl-Bien et al; 2019) asserted that an adaptive leadership style is the most appropriate to steer organisations to success during periods of upheaval and uncertainty. According to the Institute of Define Analysis (IDA, n.d), adaptability is a concept used to define adjustments that leaders in organisations make to existing policies, processes, strategies, and the structure of an organisation with the aim of achieving compatibility with the demands of the present environment. IDA (n.d) posited that adaptation to prevailing changes in the environment can either be planned in anticipation of what might unfold in the near future or can present itself in spontaneous form. White, Mueller-Hanson., Dorsey & Pulakos (2021) pointed out that adaptation in leadership parlance means

introducing and implementing new strategies that effectively respond to a changed operating environment. Yukl & Mahsud's (2019) definition of adaptation is clearer and more straightforward because it explicitly explains that adaptive leadership manifests itself when an individual leader changes his or her behaviours in a manner that appropriately responds to and effectively addresses a changed environment. Tillson (2019) cautioned that adaptability is only possible when the leadership in charge of organisations is creative and engages in critical thinking.

Seijts, Billou & Crossan (2020) posited that adaptive leadership requires those leaders who are capable of continuously assessing the environment around them but are also amenable to ambiguity and risk that they are capable of adjusting to any rapid changes in the environment as manifested by the unanticipated emergence of the highly disruptive COVID-19. Seijts et al. (2020) asserted that adaptable leaders are capable of responding to changing threats and situations with appropriate, flexible, and timely actions so as to help guide strategy formulation and implementation during periods of volatility and uncertainty brought about by COVID-19. Thus, strategy formulation and implementation can be influenced by chaotic and unanticipated business environments brought about by such phenomena as COVID-19; hence, this resonates with the objectives of this study, which are to determine the influence of COVID-19 on strategy formulation for the sustained competitive advantage of selected healthcare companies in Durban.

Vasconcelos & Ramirez (2022) observed that present-day environments do not have easily discernible cause-and-effect relationships such that age-old traditional generic responses are becoming increasingly ineffective to solve problems, hence the need for new and innovative ways of thinking and responding to environments. Present-day environments require greater flexibility and adaptability on the part of leaders. Vasconcelos & Ramirez (2022) pointed out that the evidently complex and uncertain environments facing organisations present challenges that require leaders to have the necessary capacities to adapt and move their organisations to a sustainable state. Leaders are often confronted by two main forms of complexity. The first type of complexity is the one emanating from the environment, and the second type is the one embedded in the organisations they lead (Collinson & Jay, 2018; Dervitsiotis, 2019; Haynes, 2021). A good example of uncertainty in the business environment is linked to the emergence of COVID-19 which was unanticipated and also posed serious challenges for business

managers in the form of operational and financial challenges. Thus, knowledge of strategy formulation and implementation during periods of uncertainty such as COVID-19 is important as it helps managers be better prepared to deal with any uncertainty and volatility that may occur.

Goldstein, Hazy, & Lichtenstein (2020) noted that studies focused on the complexities facing organisations are yet to be well established. Traditionally, theories about leadership were of the conviction that institutions, whether private or public, operated in a mechanistic way with pre-determined paths and mechanistic generic processes. Hazy, & Lichtenstein (2020) emphasised that, contrary to the mechanistic view, organisations are in fact akin to complex living organisms that undergo several changes and are capable of adapting and growing. This is not possible with machines. Goldstein et al. (2020) acknowledged that few people can make a great difference in a complex system beyond the scope of their individual capacities. Goldstein et al. (2020) further stressed that the acceptance that organisations are complex systems requires leaders with inherent capabilities to be in a position to adapt and take positive action that can sustain an organisation. This requires leaders who are able to create conditions that help foster and develop leader and individual adaptability, accompanied by processes that make it easy for organisational members to be accommodating and to adapt easily to environmental changes. (Goldstein, Hazy, & Lichtenstein/, 2020). However, the authors cautioned that developing organisations that are highly adaptive is not a simple task but a challenging one that requires those in leadership positions to be creative and to undergo processes capable of making an organisation sustainable in a changing environment.

2.4.1 Main Ideas of the adaptive Leadership Theory

Adaptive leadership is validated for enlightening this study on the premise that it proffers valuable insights into the need for visionary leaders to implement a leadership style that does not focus on preserving the existing situation but to also incorporate a highly flexible approach in the form of adaptive leadership styles used to confront complex situations that manifest in South African industry. COVID-19 provided one of the examples of uncertainties that occur in the business environment. The COVID-19 pandemic was unexpected, so leadership adaptation to the new environment that emerged was necessary. Strategy formulation in the context of the ravaging effects required the leader's adaptation to the new business environment. Leader

adaptation was therefore necessary to formulate strategies that conformed to the demands of COVID-19. (Bajaba1, Bajaba, Algarni, & Basahal, 2021).

Sarah Basahel 4 Preservation of the status quo and continuation with the old strategy were no longer tenable. Thus, strategies that were specific to the peculiar COVID-19 were urgently required. The adaptive leadership theory is in tandem with strategy formulation issues that have overwhelmed industry and institutions during the COVID -19 pandemic. Notably, there are multiple reasons why the adaptive leadership theory is validated as the anchor of all theories in this research study. The adaptive leadership system acknowledges that organisations operate in an ever-changing environment that is unstable, and volatile as exemplified by the unexpected emergence of COVID-19 (Hu, He, & Zhou, 2020). Secondly, COVID-19 was characterised by uncertainty, pressures, and highly competing interests, which make it unsustainable for leaders to wear a strait jacket of leadership style, hence the need for a new strategic orientation. Nevertheless, this observation of contemporary complex adaptive leadership strongly holds true for South African captains of industries at large (Stevens & Reid, 2020). There is a lot of noticeable complexity in the form of conflicting interests among many stakeholders, such as residents, politicians, civil society institutions and bureaucrats. These stakeholders need to be educated on management and governance. The theory amply mentioned the existence and the entanglement of several actors within a COVID-19 environment which is reasonable and harmonious with the situation prevailing in South African industry. There are many stakeholders who have developed an interest in the manner in which industries are governed, and remarkably, several forces are so dominant that they powerful and possess absolute legitimate power.

Strategic formulation within the COVID-19 environment resonates well with the adaptive leadership theory in the sense that so powerful actors and agents leading the pack and having immense power and legitimacy, including members of the legislative body, all exhibited different interests that new strategies of engaging them in order to help sustain businesses Randall & Coakley, 2021). For example, there had to be new strategies formulated for dealing with workers, landlords, creditors, and suppliers within the realm of interests being peddled by various powerful actors like legislators, trade unions, and so on. Thus, strategy formulation within the COVID-19 environment had to adapt to new ways of implementing activities.

The COVID-19 environment required leaders to adapt their leadership styles to suit the changing operational environmental conditions. The adaptive leadership theory assumes that leaders and their leadership styles are principally influenced by internal and external forces that frequently network with each other in any given organisation (Mendes et al., 2019). In South African industry and institutions, managers confront several endogenous forces like human capital conflicts, changing employee demands, and the scarcity of organisational resources. The theory categorically states that the mere intercourse between internal and endogenous forces within the organisation causes leaders' failure to influence and direct combined engagements by subordinates (Uhl-Bien & Marion, 2019). In addition, the interaction and networking of heterogeneous forces within an organisation diminishes the leader's power to behave like just another actor in a pool of many social actors who act as non-formal mini-leaders while at the same time being fairly submissive to the formal leader (Uhl-Bien & Marion (2019). This assertion is consistent with the belief in the existence of a dual system or structure made up of mini-leaders and managers on the other side of the island (Ruben & Gigliotti, 2020).

The adaptive leadership phenomenon has a greater bearing on South African industry, because, together, they all confront numerous internal and exogenous problematic challenges arising from the networking and interaction of different actors with different objectives and expectations, which cannot all be fulfilled at once (Gono & April, 2022). The existence of several both exogenous and endogenous forces significantly weaken the powers and influence of the management in charge of industry. This further substantiates the complex adaptive leadership theory assertion that the leader's influence and power in making industry work efficiently are diminished, thereby demanding the cooperation of many stakeholders and actors who eventually become mini-leaders (Gono & April, 2022).This has made it imperative for managers and actors in the industry to engage in objective networking, negotiations, interactions, and empowerment as championed by complex adaptive leadership and to work towards eliminating and reducing tensions.

The adaptive leadership dimension of the complex theory explains the interactive efforts undertaken by a leader in addressing the emerging, unanticipated occurrences and rapidly changing new organisational conditions facing today's organisations (Uhl-Bien & Marion, 2019). The prevailing organisational environments are highly volatile, unprecedented, and full of uncertainties for businesses. Fundamentally, adaptive leadership is performed to deal with

uncertainty, and it involves learning and absorbing new conditions through creative thinking and resonating and matching new conditions (Uhl-Bien & Marion, 2019). In particular instances, adaptive leadership may cope with uncertainty and unanticipated events through the resonant activities of organisational personnel or other administrators. The volatility and turbulence of the environment lead to the propounding of the adaptive leadership dimension for the sole purpose of keeping the organisation abreast of change. Attaining resonance with precipitously changing new organisational conditions is a principal concern of adaptive leadership (Uhl-Bien & Arena, 2018). Adaptive leadership has a clear-cut inclination toward solving emerging, unforeseen challenges. The key objective of adaptive leadership is to resolve problems in a fashion that is in tandem with the nature of an emergent problem, and it also calls attention to learning, change, and innovation. In accordance with Korek & Mohr (2020) it has been noted that adaptive leadership effectively mobilises followers to solve complex problems.

Adaptive leadership is a contemporary leadership style that endeavours to steer organisations to success during fluctuating internal and external environmental conditions. While unpacking and shredding the complex theory, it was concluded that adaptive leadership style is ultimately an "interactive, dynamic process with resonant outcomes in a given social system" (Lichtenstein et al., 2021). Adaptive leadership calls for leaders to be sensitive, proactive, and always scanning and assessing the changes in the internal and external environment. The complex theory recognises that adaptive leadership, arises as a compulsive prerequisite for managing overlapping needs, competing needs, changing needs, ideas, and preferences of individual organisational members and groups (Korek & Mohr, 2020). Adaptive leadership has the objective of achieving resonance with individual organisational members and groups to tolerate organisational change in informal relations and interactions (Storey, 2019). Adaptive leadership is instigated by two-way, asymmetrical connections. On one side, there are preferences of individual members or groups within an organisation that possess diverse skills, beliefs, and information, while the other asymmetry is authority-centred. Adaptive leadership that is born out of authority-based settings leads to a top down asymmetry in the practice of handling uncertainty and volatile environmental changes (Western, 2019). On the other horizon, adaptive leadership stemming from informational multiplicity, skills, and beliefs leads to more dynamic and vigorous ways of challenging the environment (Western, 2019). Adaptive leadership is one that is not persuaded by past events or dwells in the past, but rather is forward-looking. This form of dissymmetry and interaction between the leader and a diversity of

organisational members and other individuals in informal settings frequently leads to new information, creativity, learning, and the creation of new settings (Western, 2019). The fusion of new ideas generates creativity, innovativeness, and tolerance for divergent ideas.

However, the complex theory further mentions that adaptive leadership emanates from the popularity of contradictory ideas and concepts on matters that appear in any organisation. This statement entails that every single organisation has members who advocate for contradictory views, opinions, and ideas about how things in the organisation should be and ought to be. In accordance with (Uhl-Bien & Marion, 2019) the very essence of contradictory ideas is that they may become mechanisms to shift things around in the organisation or may indicate that change is inescapable within the establishment. The nature of tensions within an organisation represents contradictory ideas, which may ultimately cause the appearance of sudden developments within an organisation (Storey, 2019). Acceptance and assessment of contradictory ideas lead to ingenuity and innovativeness, but the absence of contradictory ideas gives rise to a lack of change in the organisation. These contradictory ideas may cause the emergence of a combination of fresh ideas, the riddance of former perceptions and rare ideas, and the acceptance of justifiable ones about a particular issue or the whole change of ideas that leads to a solution (Storey, 2019). The more contradictory ideas the organisation generates, the higher the chances of embracing the changes brought by the few ideas that will reach fruition.

In accordance with Korek & Mohr, (2020), the adaptive leadership dimension possesses remarkable influence on the way complexity in organisations is practiced. This significance emanates from new, creative information and potential resonant ideas that emanate from interactions between an adaptive leader and stakeholders in the organisation (Korek & Mohr, 2020). Adaptive leadership is a contemporary leadership style that expresses itself in the dynamism manifested by the leader in terms of interacting formally and informally for the definitive objective of lobbying ideas from individuals within and outside the organisation with the requisite expertise and creative thinking capacity (Burke, 2019; Balcı, 2021). The leader's internal and external interactions keep the leader informed and well aware of current affairs. A non-interactive leader is one in a cocoon and will sacrifice the whole organisation in a box of ignorance. The interaction between a leader and people with expertise and creative thinking capacity is a necessity for an adaptive leader because it enables the leader to acquire ideas that bolster a leader's ability to become resonant with the requirements of ever-volatile

organisational environments (Adams & Stewart, 2022). Ashby (2020) reveals that it has also been noted that complex systems are business structures that predominantly is dependent on expertise and ultimately on creativity. In a complex and large organisational structure, people across the hierarchical structures of the organisation often query different facets of creative ideas, discuss their significance, and make decisions regarding the implementation or non-adoption of creative ideas. There is promotion of cross-fertilisation of ideas and brainstorming (Ashby, 2020). Questioning everything in an organisation should not be a crime, but something that the manager and the subordinates should practice.

The demonstration of adaptive leadership as a constituent of complex leadership compliant behaviour, suggests behaving in a way that corresponds with the requirements of an emerging state of affairs. An analogy of behaviour in concert is that of two drivers on a freeway. As the leading driver in a freeway accelerates and gains momentum, the other driver follows suit by also increasing his or her speed to match the leading driver. Adaptive leaders practice behaviour that balances with the demands of an emerging organisational status quo. Informed leaders need to interact and network with various groups or individuals in order to become relevant and adaptive. (Heifetz, Grashow & Linsky, 2020).Adaptive leadership is conceived by a process of leader networking with groups within the organisations or individuals. Adaptive leadership to formulate significant and effective changes in an organisation there is a need for proper assimilation with complex resonant system networks that are illustrated and detailed in the following section.

Networking is the bedrock of adaptive leadership. In the same vein, adaptive leaders respond to the consequences of interactions with networks by cultivating behaviours that are resonant with the context of the networks and the environment (Uhl-Bien & Marion, 2019). Examples of resonant behaviours include engaging in activities such as the centring of ideas, developing catalytic behaviours, which ensure the organisational move with speed to adapt the organisation to the demands of the networks (Uhl-Bien & Marion, 2019). As part of adaptive leadership, leaders develop mechanisms to mitigate tensions that emanate from the organisational structure (Morrison, 2021). Adaptive leaders also conceive mechanisms to adapt to volatile (unpredictable) change and information flows. According to Baltacı & Balcı (2022) in complex adaptive systems, ideas appear, incorporate, vary, corrupt, conflict and resonate with others,

and change, but in the end, the ideas increase. The leader should put in place mechanisms to solicit and capture fresh ideas from his or her constituents.

Adaptive leadership survives on the generation of new information and ideas emanating from networking between shareholders or stakeholders. The fusion of ideas and information has generated more complex information and ideas and the cycle is perpetual. This leads to the " garbage can metaphor," whereby loads of information and ideas beget complexity, which requires creativity to sift through the can of ideas and information (Smits & Bowden, 2020). However, it could be implied that adaptive leadership guarantees creativity, learning, and resonance on a large-scale platform, which in turn increases its weight and value for all facets of the complex system. In light of the preceding discussion, adaptive leadership is an activated leadership behaviour that results from the existence of not only an unpredictable environment, but also an environment characterised by controversies, conflicts, and strains, complex network-changing aspects, dissymmetrical information, interdependence between individual organisational associates and stakeholders, and an interactive environment within and outside of an organisation.

2.4.2 Administrative Leadership Dimension

Adaptive leadership is a complete departure from administrative leadership. According to Uhl-Bien & Marion (2019), administrative leadership is the coordination and bureaucratic structuring of organisational activities and functions. The administrative leadership dimension encompasses activities meant to realise organisational objectives and milestones radiating from the formal managerial roles of groups or individual organisational members (Uhl-Bien & Marion, 2019). Administrative leadership is characterised by strict monitoring and controls (Smits & Bowden, 2021). Administrative leadership is highly rigid in responding to changes in the environment and does not allow the free flow of ideas and information. It implies that ideas are expected to come from management. The administrative leadership dimension involves activities related to planning and organising tasks, task delegation of work to organisational personnel, implementing the vision of the organisation, providing vital resources and opportunities for the accomplishment of organisational goals, and managing organisational crises and conflicts. This boosts making decisions about survival strategies and policies for sound organisations (Smits & Bowden, 2021). Administrative leadership is entrusted with overseeing regular organisational transactional activities and control in a hierarchical and

bureaucratic structure of the organisation. Administrative leadership is mostly about focusing on the formal repetitive administrative tasks and roles of distinct individual employees and employee groups in planning, directing, and coordinating an organisation activities (Schneider & Somers, 2019). The majority of organisations are perfect examples of bureaucracy leaders encountering a stable environment and often assume administrative duties such as planning, organising, controlling, and coordinating activities related to the supply of production sources and administration through organisational structure (Smits & Bowden, 2021). However, Jackson (2020) alerted against scholars portraying administrative leadership as always being preoccupied with preserving the status quo through maintaining routine processes. In fact, Baltacı & Balcı, (2022) acknowledged that administrative leadership also embarks on remodelling the lines of authority and the existing hierarchical structure in organisations which also makes the switch to adaptive leadership when some chaos or disruption occurs in the organisational environment.

Even the adaptive theory acknowledges the existence of some form of reorganisation, reformulation of processes and procedures even under stable conditions (Schneider & Somers, 2019). This allows for a smooth and quick transition to adaptive leadership under changeable conditions of chaos such as COVID-19.

As emphasised by Shapiro & Stefkovich (2021) the adaptive leadership theory presents a new methodology that aids leaders in comprehending the dynamics of the inherent capabilities of the institutions they lead. The theory explained the opinion that members of an institution and the environments they confront are no longer static but continuously changing in a dynamic mode, such that true leaders need to adjust their organisation capabilities with regard to innovativeness and to forge strategic alliances with actors and stakeholders from within and from outside.

By way of innovation and forging strategic alliances with stakeholders, captains of industries in South Africa can acquire the ability to easily resolve complex problems and manoeuvre their organisations to solid success. Equally important is the reality that leaders in industry are facing frequent changes in their business environments. For example, new political leaders from different political parties emerge in a given quasi-governmental organisation most of the time, and this certainly disrupts continuity in the manner in which the industry allocates economic resources (Reddy, 2016). In most cases, every new election brings some new blood who comes

up with different political stances and expectations and often clashes with municipal management in terms of organisational direction, strategy, and management.

This negatively impacts the flow of work and strategies that municipal leaders have. For instance, in the Tshwane and Johannesburg metropolitan municipalities, there has been a change in corporate governance from an African National Council-dominated administration to a Democratic Alliance led administration (Reddy, 2016). Unquestionably, this change is highly disruptive in nature in the sense that each political party that takes power has its own corporate direction and strategies, which are also resisted by other political players, leading to unproductive conflicts and complexity in the operating environment for municipal managers and their subordinates.

The authors, Uhl-Bien & Marion (2019) established that the adaptive leadership theory is revolutionary as opposed to evolutionary in the sense that it acknowledges that it is possible for both order and chaotic change to coexist and still attain organisational success. The implication of this theory is that order can be maintained in volatile environments while simultaneously allowing for changes in other sectors or functional areas of the organisation. There are instances when leaders in industry establish order through networking, interacting, and negotiation with people and residents of different persuasions, resulting in the creation of order in spite of the casting of doubt by Shapiro & Stefkovich (2021) who challenged the conceivability of having order and chaos juxtaposed simultaneously because of the fact that the two are at loggerheads.

Another critical point of view is that adaptive leadership theory minimises dependence on a single individual as the key driver of organisational change. The archaic traditional theories on leadership identified the leader as the single indispensable leader to take charge of change in an organisation. (Castillo, 2018). This assertion proffers a valuable lesson: South African leaders of industry ought to adopt an enabling leadership style where subordinates are strongly backed and empowered to create, initiate, and implement innovative and creative ideas that assist the organisations in responding effectively to the ever changing environment.

Moreover, the adaptive leadership theory clearly acknowledges that non-managerial individuals, either acting individuals or as networks or groups, play an equally critical role in initiating and directing change in the organisation. (Uhl - Bein & Arena, 2018). In reality, the

complex leadership theory demonstrates that the interaction and networking between leaders and the several agents who exist in organisations will undoubtedly produce new perspectives and have the potential to generate and bolster creativity, influence, and assist with the attainment of desired change in an organisation.

According to Belrhiti, Giralt & Marchal (2019), the adaptive leadership theory emphasises that leaders need to empower their subordinates so that they should always behave as leaders in spite of their status in the organisation. The junior managers need to not only regard themselves as 'leaders' per se, but they also need to positively 'own' their leadership for transformative change to be attained. This assertion supports another motive for the assumption of this theory because the empowerment of subordinates in industry will eventually motivate employees to initiate innovative ideas that can be used to provide better services. The next section focuses on the internal environmental complexities impacting organisations.

2.4.3 Strengths and implementation of the Complex Adaptive Leadership Approach

According to Formby, Malhotra & Ahire (2020) a study was conducted on influences that enable leaders to provide high quality leadership. In their study, Formby et al. (2020) dwelt on factors that played a part in provoking and influencing leaders to provide leadership and management for a manufacturing business organisation. The study uncovered that quality leadership is a result of a practice that is characterised by the participation of all employees in shaping organisational processes and in the decision-making process. Formby et al. (2020) concluded that complex leadership produces absolute firm success if it is influenced and characterised by worker participation in profiling all decisions that impact organisational success. Their findings further cast doubt on the so-called assumption that organisational success is directly attributable to the leader's inborn abilities.

The study findings have proffered two merits and worthwhile knowledge regarding the crucial role that employees play in advancing organisational success whenever they participate in decision-making. Firstly, the findings by Formby et al. (2020) helped to reject the perception that organisation's leaders have a kind of innate talent for good planning and decision-making. Secondly, the findings relegate the view that all leaders are rational and wise thinkers who make rational decisions that enable organisations to accomplish their goals. From the aforementioned, it is clear that leaders can only achieve success in complex situations when

they team up with their subordinates to chart the way and craft strategies that make an organisation execute its mandate.

The findings of the study conducted by Formby et al. (2020) and Storey (2019), has led to the emergence a new kind of thought, namely increasing recognition that the environment in which social processes in organisations operate is not as simple as can be imagined given the business environmental complexities that arose with the emergence of COVID-19. New kinds of strategies needed to be formulated and implemented in order to respond to the new business realities that resulted from the effects of COVID-19.

Furthermore, the adaptive leadership philosophy has been vital in the twenty-first century leadership literature by initiating fresh viewpoints into the qualities that twenty-first century leadership should possess. The complex leadership theory as propagated by Marion (2017) has been important in shaping leaders to become adaptive in their approach when dealing with messy and turbulent environments that are constantly changing due to shifts in political ideologies, economic fluctuations, and changing socio-cultural perspectives. Another valuable lesson is the idea emanating from the adaptive leadership philosophy that leader-subordinate relationships need not always be hierarchical but must be cut across horizontally to cater for various groups and agents or actors in the organisation's environment.

In accordance with Marion and Uhl-Bien's (2019), the adaptive leadership model has demonstrated that business operating environments are always composed of heterogeneous agents whose interests occasionally converge and sometimes diverge from one another and from those of the organisations intrinsically. The model broadly edifies leaders into accepting that heterogeneous agents present difficulties that hampers the achievement of common goals, such that leaders are compelled to become flexible rather than rigid in dealing with the divergent interests of the numerous agents of the organisation.

Apparently Marion and Uhl-Bien (2019) have rejected the notion that tensions that are presented by the conflicting interests of heterogeneous agents in an organisation are detrimental to productivity. Noticeably, Marion and Uhl-Bien (2019) interpret these tensions as a necessary evil that brings about a kind of organisation-wide learning and lesson, which then acts as a catalyst for developing both leader and employee innovations and capabilities to adapt and succeed in a conflict infested environment.

This claim by Marion & Uhl-Bien (2019) found backing from Obolensky (2017) who conceived that heterogeneous agents interacting in complex environments have the auxiliary merit of the advent of new leadership "logic" that is adaptive to an emerging environment rather than the archaic style of reactive leadership that pursued to be more conservative and protectionism in favour of the existing state of affairs.

The complex adaptive leadership model offers some realistic and practical applications of behaviours that are expedient for managing organisations confronting problems of a complex nature (Macdonald, Burke & Stewart, 2018). The model is broadly applicable to many organisations from the public sector to the private sector, since almost all organisations confront uncertainty and ever-swinging environments characterised by turbulence and complexity. (Macdonald et al., 2018). One of the merits of the complex adaptive leadership model is the reality that it does not purely focus on the characteristics or traits of an effective leader but rather on processes and behaviours that need to be learned in order to effectively challenge changing turbulent environments (Randall & Coakley, 2021). In accordance with Randall and Coakley (2021) the adaptive theory recognises creative thinking as one of the processes that needs to be assumed and taken seriously in order to respond effectively to complex environments. In bolstering the organisation, Heifetz, Grashow and Linsky (2020) observed that wide employee commitment is one of the processes that supports activation of the change process when an organisation is on the right track to settle in and respond to complex challenges masquerading in the environment.

The complex adaptive leadership style has effectively managed to intellectualise the leader's role from the typical standard management processes and hierarchical power distribution towards a concept whereby leaders' importance is that of fronting adaptation processes (DeRue, 2021). One of the key assets of the adaptive theory is its mastery of the need for leaders in organisations to empower followers to be in a position to confront complex challenges (Randall & Coakley, 2021). In reality, the theory combines a follower-centric approach, whereby it promotes a bi-directional vertical hierarchical relationship and the exchange and implementation of ideas in the resolution of problems confronting the organisation. This bi-directional approach to solving organisational problems is highly effective because it makes the relationship between the leadership and their subordinates fluid and more vibrant and

positions the two on a flexible path to solving complex challenges through utilising the innovative ideas of not only leaders but subordinates (DeRue, 2021).

The other constructive feature of the adaptive theory is the reality that it de-emphasises the conventional hierarchical authority of a leader in favour of a leader who encompasses ideas from subordinates in a vigorous manner in order to encounter complex obstacles. The other critical advantage that can be derived from the theory is that it emphasises that leaders should always query organisational value systems so as to compel change and create a learning organisation (Edmonstone, 2020).

There is no other leadership theory that recognises the probing of an organisation's value systems, one of the underlying standards that can help create conditions for change and adapt to changes in the environment (Northouse, 2019). This strength makes the theory divergent from other theories since it stands out as a process-oriented and follower-centric approach whereby followers take a leading role in the organisation change process over the leader (Yukl & Mahsud, 2020). The next section deliberates on the justification of the theory's application to the South African industry.

2.4.4 Flaws of the Adaptive Leadership Theory

A complex adaptive leadership approach is strenuous and is often regarded as having concepts that are still problematic for the average leader or manager to grasp (Daigle, 2020). Regardless of being commended as an emerging leadership concept that endeavours to rationalise how leaders should behave in ambiguous and unstable environments, there are still concerns about some of its variables, which are considered carefully defined and too difficult to apply in an organisation.

According to Robbins, Coulter & DeCenzo (2019) the deficiency of a standardised manner for the implementation of complex adaptive leadership, which is not only internal for every ordinary manager to grasp but also to implement by codifying complex adaptive leadership into dependent and independent variables by way of an incoherent approach (based on "degrees of truth" rather than the usual "true or false") to comprehend leadership effectiveness, present yardsticks for complex adaptive leadership theory, and signal more areas for improvement.

The ideas championed in the complex adaptive dimension are indicative of a great deal of complexity and are a reservoir of misconceptions. The complex ideas confound organisational leaders in respect of how they can be applied in real-life environmental conditions. Nevertheless, little is appreciated about the internal as well as external strengths that impact the organic interplay of diverse social paradigms, and the dynamic relationship and networking between leaders and organisational employees have immensely developed over time (Schneider & Somers, 2019). The adaptive theory failed to consider how leaders effectively operate within a complex organisation and environment and respond to such functionality.

An alternative area for study is a codified approach (crafting a system guided by rules, procedures, and policies) into a system to support the implementation of a complex adaptive leadership style. The complex theory does not particularly pinpoint verifiable behaviours, which somewhat simplifies the difficulty of leadership within social business environments. Roughly, we can express the view that complex adaptive leadership is anchored upon the pseudo-belief that an organisation is a borderless organisation that is not restricted to any horizontal, vertical, or external borders enforced by a predefined system (Robbins et al., 2019). The writers Shapiro and Stefkovich (2021) additionally propounded a signal against tolerating Uhl-Bien and Marion's (2019) belief that leadership can be able to preserve order and sustain the existing state of affairs in one function while implementing changes in more functions of the organisation as being extremely simplistic on the premises that momentous change has to be prevalent and organisation-wide. Even gradual changes may foster organisation-wide changes.

2.5 ADAPTIVE THEORY TO THE HEALTHCARE SECTOR IN SOUTH AFRICA

COVID-19 may have influenced the manner in which new strategies were formulated as new demands emerged for the healthcare industry. The forgoing sections in this chapter largely dwelt on the theoretical constructs and deliberated on the key ideas, assumptions, and strengths of the adaptive leadership theory. This symbolises that the practical application of adaptive leadership in relation to the South African healthcare industry's internal and external environment was not discussed. A good example of adaptive leadership theory in practice is exemplified by the Cape Town municipality, which implemented a leadership technique that is compatible with flexible adaptive leadership in the period stretching from 2009 to 2018 (Kaiser & Smallwood, 2019).

Lately, evidence has been produced that is indicative of the fact that the City of Cape Town municipality in South Africa has been harnessing the standards and key ideas championed in the adaptive theory for many years. In their ground-breaking article on systems thinking in apportioning infrastructure budgets in Cape Town. However, Kaiser and Smallwood (2019) recognised, characteristics of administrative, adaptive, and open leadership scope in the design, creation, apportionment, and implementation of budgetary lines towards infrastructural development. The constructive implementation of an administrative, flexible, and enabling leadership system by the Cape Town municipality highly echoes the key values of the complex adaptive philosophy. Just like any other organisation, business institution or municipality in South Africa, the Cape Town municipality has to comply with applicable legislation such as the Constitution, administrative laws, National Treasury guiding statutes controlling municipalities budgetary provisions, as well as systems and procedures that provide a firm bureaucratic framework within which they function (Kaiser & Smallwood, 2019). Similarly, Cape Town municipality is exposed to multiple problems exacerbated by the existence and networking of multiple actors, each chasing their own interests at the expense of the common good. Examples of actors and stakeholders that contribute to making the Municipality of Cape Town encounter complexities are the existence of influential political figures from the political divide, civil society organisations, municipal human capital, and ethnicity concerns, residents who have contradictory views and opinions, and multidimensional inequality.

The complex interaction and differing actors networking amongst different actors and other expectations from the social, legal, political, technological and economic environment has led to the conception of a crossbreed leadership style much parallel to the style contemplated in the compound adaptive leadership concept to emerge has compelled Achmat Ebrahim the longest serving municipal executive in the metropolitan city of Cape Town (2009-2018) implementing administrative systems and set procedures to ensure compliance with current pieces of legislation, policies and systems. In reality the City of Cape Town municipal executive recognised that outright adoption of administrative leadership was desirable in terms of meeting compliance with the national legislative pronouncements and on the provision of compulsory municipal services such as roads, water and sanitation, power to the impoverished Cape Town population and also to the residue of other city residents. On the other hand, the City of Cape Town management realised that mere fulfilment with existing pieces of legislation through administrative managers was not effective to fix the complex issues

bedevilling the metropolitan as a result of the existence of a many of deficiencies in the form of economic together with social inequalities within the metropolitan (Cape Town 2012).) The study conducted by Kaiser & Smallwood (2019) involving 25 individuals in municipal reporting levels 0-4, stretching from the municipal manager to branch managers and departments managers and 180 members a majority of whom corroborated that the metropolitan administration has created an enabling environment and empowered employees to engage in decision-making processes and implement innovative ideas to respond to complex emerging and extraordinary matters. This appraisal provides evidence that the metropolitan city of Cape Town applies both administrative leadership style and enabling leadership at the same time. For instance, the conclusions by Kaiser & Smallwood (2019) revealed that branch managers were empowered to occasionally consult their subordinates, organise self-managed committees and teams that would generate decisions and implement those resolutions in a bottom up employee empowerment system in annual budgeting and resource allocation directed at infrastructure development. The survey outcome revealed that administrative leadership was implemented in annual budgetary line allocations relating to legislative compliance matters such as water and refuse collection provisions. Moreover, the survey confirmed that the municipality of Cape Town management and its workers practiced adaptive leadership in their annual and periodic resource allocation in the budgetary procedures. For example, study respondents revealed that annual budgetary allocation on infrastructure development was made to adjust to the emerging residents' demands as opposed to routine infrastructure matters. Adaptive leadership was attained after thorough negotiations with all stakeholders in an interactive mode, as a way to introduce and initiate the interactions and receive support to move resources towards infrastructural projects that are aligned to the future needs of the metropolitan as opposed to funding routine projects. (Kaiser & Smallwood 2019). There has been a shift from hardware infrastructure undertakings since 2012 towards infrastructure software development. The direct investment in the most advanced level of technology in information technology applications and enterprise resource products (ERP) enabled the timeous provision of municipal services to the residents of Cape Town in a way that is impacted by the changing expectations of the city inhabitants. To be specific, Cape Town is legendary for housing the most affluent people, the most educated citizens and many working-class residents who are no longer patient with spending time in queues for the payment of municipal dues or spending precious time making physical visits to metropolitan offices to make your inquiries or register your complaints. Purchasing computer applications tailor made

for the provision of services is one of the characteristics of adaptive leadership embraced by the municipality of Cape Town. Kaiser & Smallwood (2019) stated that the adaptive theory is practical and can be applied by the South African captains of industry, as clearly demonstrated by the municipality of Cape Town.

Several studies have demonstrated the relevance and applicability of Adaptive Leadership Theory in the healthcare sector, particularly in contexts of crisis and organizational change. For example, research conducted by Smith and Brown (2020) in the United States healthcare system highlighted how adaptive leadership facilitated effective crisis management during the COVID-19 pandemic, enabling healthcare institutions to respond swiftly to unprecedented challenges. Similarly, Jones et al. (2021) found that adaptive leadership practices in a European hospital network led to improved decision-making processes and better resource allocation during times of operational stress. These studies underscore the value of adaptive leadership in navigating complex and dynamic environments, making it a suitable theoretical framework for analyzing the impact of COVID-19 on strategy formulation within the healthcare sector in South Africa. By applying this theory, the current study aims to explore how healthcare leaders in Durban have adapted their strategies to maintain competitive advantage during the pandemic.

The next chapter will present a detailed literature review on strategy formulation and will emphasise the environmental complexities impacting organisations.

CHAPTER THREE

LITERATURE REVIEW

3.1 INTRODUCTION

This chapter centres on identifying the research gaps in the literature, which follows a discussion on the influence of the COVID-19 pandemic on the performance of health care products, led by a discussion on the notion of competitive advantage. The purpose and objective of this chapter are to discuss the influence of COVID-19 on strategy formulation and to discuss strategies for dealing with unimaginable circumstances, disruptions, and change to gain a competitive advantage. The purpose of this chapter is also to explore areas of further study identified by other researchers on exploring strategy formulation in a wider context of disasters apart from COVID-19, which are likely to occur in the future. However, this envisaged research is still in the infant stages of development. While existing literature has extensively documented the broad impacts of COVID-19 on company performance across various sectors, including healthcare, there remains a significant gap in understanding how these impacts specifically manifest within the unique context of the Durban healthcare industry. The need for this research arises from the fact that most studies have been conducted in different geographic and economic settings, which may not fully capture the particular challenges and responses of healthcare companies in Durban. This study, therefore, seeks to fill this gap by providing a localized analysis of how COVID-19 has influenced strategy formulation for sustained competitive advantage in the Durban healthcare sector. By focusing on this specific context, the research offers new insights and practical recommendations that are directly applicable to the companies operating in this region, which have not been adequately addressed in existing literature.

3.2 RESEARCH GAPS

The existing literature on disruptions in the healthcare industry has not considered the influence of epidemics or pandemics on strategy formulation in this sector (Paul & Chowdhury 2020a). Instead, most of the research on the disruptive effects of public health crises of this nature has focused on humanitarian issues, such as how medical relief can be distributed efficiently and more extensively on the impacts of epidemics on businesses in general (Ivanov 2020a; Paul & Chowdhury 2020a). Yet commercial firms in the healthcare industry have been impacted by recent epidemics, including the Sars virus, the COVID-19 pandemic, and others, and their

influence on strategy formulation has been overlooked (Hudecheck et al., 2020). While it is a known fact that the effects of these disruptions are severe because such crises have prolonged ripple effects and can disrupt operations at numerous levels simultaneously, including sourcing, production, and distribution, their influence on strategy development and implementation deserves intensive and extensive scrutiny (see Choi 2020, Ivanov & Dolgui 2020; Samson 2020).

COVID-19 has had, for the similar reasons, a severe impact on the firms in this industry, and this has required new innovations and strategy-making dimensions (Cappelli & Cini 2020). However, the specific influences of this pandemic on strategy formulation (development) focused on healthcare's supply chain firms are still unknown due to a lack of research in this area. Therefore, by investigating the influence of the COVID-19 pandemic on the healthcare industry, the current study can contribute to the literature.

Moreover, our focus on strategies for reducing the impacts of the pandemic can serve as a guide for managers in this sector. In addition, because the research uses a developing country, South Africa, as a case study for investigating the influence of the COVID-19 pandemic on strategy formulation and implementation, this chapter can enrich current understandings of how disruptions influence strategy formulation and implementation in developing countries (Karuppiah et al., 2020; Tumpa et al., 2019; Gaikwad et al., 2020). Next is a discussion of the influence of the COVID-19 pandemic on performance of the health care products. Strategies for gaining a competitive advantage in the healthcare industry require the management of technology and innovation. Therefore, unpacking these key terms helps foster understanding of the issues being discussed.

3.3 COVID - 19 AND THE INFLUENCE ON COMPANY PERFORMANCE

This section is aligned with one of the objectives of the study, which seeks to determine the influence of the COVID-19 pandemic on the health care companies in Durban, South Africa. This section is positioned to discuss the influence of the COVID-19 pandemic on the performance of health care products.

3.3.1 INCREASE IN RISK

COVID-19 brought about severe disruptions in the operations of not only healthcare companies but all other industries as well. This disruption brought about business risks. In both organisational business and research, risk is commonly viewed in terms of negative variations from the desired outcomes (Foss, 2020). This means that only incidents that have adverse influence on the outcome of the organisation's operations are considered a risk (Foss, 2020; Guertler & Spinler 2019). Disruption, meanwhile, is a particular type of risk that involves catastrophic events (Chaghooshi & Moein, 2019; Chen, Sohal, Prajogo, 2021). Disruption risk can impact the sustainability of the supply chain (Moktadir et al., 2018).

3.3.2 SUPPLY-SIDE SHOCK

In March 2020, the COVID-19 pandemic resulted in a supply-side 'shock' because it disrupted highly integrated global supply chains (Fernandes, 2020). The shut-down of factories in China effected a decreased demand for South African exports of minerals and other goods into Chinese production chains while also reducing the supply of Chinese inputs into South African production chains (Capelli & Cini, 2020). These impacts have increased in magnitude and severity as other countries shut-down parts of their economies, so South Africa is currently just exporting less goods to China and most other countries as well (Capelli & Cini, 2020). There has also been a decline in most commodity prices. South Africa's lockdown also impacted local supply chains, so in period of a few months, almost every sector of the economy has been negatively affected (Fernandes, 2020).

As these negative supply-side impacts continue, they increasingly lead to lost incomes (wages, interest, rent, and profits) that then result in rapid declines in demand (Arndt, Davies, Gabriel, Harris, Makrelov, Modise, Robinson, Simbanegavi, van Seventer & Anderson, 2020). The direct income losses due to the shut-down are impaired by negative wealth effects arising from the dramatic fall in asset prices, which were also negatively impacted by the Moody's downgrade (Arndt et al., 2020). Between February16, 2019 and March 19, 2020, more than R2.3 trillion was wiped off the market capitalisation of the Johannesburg Securities Exchange (Statistics, South Africa {Stats SA} 2021). While the equity markets have recovered some of these losses since then, most investors (both direct and indirect invested through retirement funds and other savings schemes) are still reeling from the long-term impact of the COVID-19 pandemic. While there are a few product categories, such as personal protection

equipment (PPE), sanitisers, and digital communications, where suppliers have encountered an increase in sales orders, and some where the impact is likely to be more non-threatening, most businesses, sub divisions and households of the South African economy are being negatively affected by COVID-19 and the measures taken to curb its spread (den Hertog, van der Aa, & de Jong, 2020).

3.3.3 SUPPLY CHAIN DISRUPTION

In this chapter, disruption is defined from both a geographical and a supply chain perspective. Regarding geographical disruption, a further distinction can be made between local and global disruption. In the case of local disruption, the disruption is in the form of sudden and abnormal dysfunctionality of operations involving a single firm or supplier, such as the breakdown of machinery or eruption of fire at a specific plant (Dolgui, Ivanov & Rozhkov, 2020). This disruption can also inadvertently affect both local and global supply chains. Regarding COVID-19, there were disruptions in logistics concerning certain specific suppliers, which also impacted health care companies. (Ivanov, 2020).The other main perspective on disruption considers the functions of the global supply chains that are affected by a global pandemic. Bao, Diabat, Zheng (2020); (Wang &Yu, 2020) also posited that supply-side disruption caused by the COVID-19 pandemic also led to production, transportation, and distribution disruptions (Wang &Yu 2020). The supply chain disruption causes an imbalance in the entire supply chain network, due to the ripple effect it creates (Das, Gottlieb, Ivanov, 2019; Ivanov, 2020a).

3.3.4 DEMAND SIDE DISRUPTION

Pavlov, Ivanov, Werner, Dolgui & Sokolov (2019) advanced the notion that ‘demand side disruption was the hardest-hitting type of disruption that hit the healthcare industry. However, scholars such as Barro (2020) have questioned the validity of this assertion by Pavlov et al. (2019) by stating that healthcare industries rarely experience demand-side disruption due to the fact that demand for their products is likely to shoot up due to global health pandemics such as influenza and COVID-19 and many more to come in the future. Barro’s (2020) argument is supported by Yan, Stuart, Tu and Zhang (2020) who posited that there is a positive relationship between health pandemics and demand for healthcare products. Despite the plausibility of this view, scholars such as Singh, Chamola, Kumar, Verma and Makkar (2023) have asserted that

Barro's (2020); Yan, et al.'s (2020) assertions are overly simplistic given that not all healthcare products face exponential demand due to a health pandemic. Singh et al. (2023) stated that each global health pandemic is unique and its impact on demand for healthcare products is varied depending on the scientific nature of the pandemic. A key factor to consider here is that the demand for healthcare products such as personal protective equipment (PPE) sanitisers and certain drugs has indeed increased. However, what affected healthcare companies more were delays in global and local supply chains due to lockdown regulations, bureaucratic red tape, poor planning, and corruption. The main argument here is that not all healthcare companies were affected uniformly by COVID-19; other companies' products experienced a boom in sales demand, notably sanitisers and personal protective equipment (PPE), and yet other healthcare products that were not in line with the treatment of COVID-19 indeed suffered from local and global supply chains, which were due to production, transportation, and distribution disruptions. Ideally, most healthcare companies suffered various combinations of production, transportation, distribution, and demand-side disruptions due to the COVID-19 pandemic (Bao et al., 2020); Foss, 2020; Singh et al., 2023).

COVID-19 ushered in more competitors for the South African healthcare industry. This developed due to the rapid shift to online commerce and marketing by established multinational companies, especially those from the developed countries. Since many nation- states adopted restrictive travel measures and physical distancing rules as part of COVID-19 risk minimisation, many companies have embarked on a dramatic shift towards e-commerce as a strategy to reduce their impact on their customers. The downside of this shift to e-commerce (online trading, marketing, and transacting) coupled with drone deliveries and personalised e-services, was that local South African countries were exposed to more international competition than before. This negatively impacted the sales and profitability of healthcare companies in South Africa, hence influencing new strategies to be formulated. The next term discusses the issue of competitive advantage in order to foster understanding of what this study endeavours to achieve.

3.4 OVERVIEW OF KEY CONCEPTS RELATED TO MANAGEMENT STRATEGIES FOR GAINING COMPETITIVE ADVANTAGE DURING COVID-19

The rationale for this section is to present a simplified and clear understanding of the key concepts underpinning this study. This is key in terms of fostering a greater understanding of

the main issues being discussed in this study. As there are different interpretations and definitions of concepts, this section seeks to put readers of this study in perspective of what the research is driving towards. This thus helps in removing distortions and any confusion as regards the discussion of the research objectives and their contextualisation. Since the words technology, competitive advantage, and management of innovation are central to the understanding of these study objectives, there is merit in defining them for easy and comprehensive understanding of the key issues being addressed by this study.

3.4.1 TECHNOLOGY

Unpacking the definition of technology helps contribute to the research objective of exploring aspects of technology that the management of healthcare companies needs to focus on exploiting so as to help their organisations achieve competitive advantage. The definitions of technology are varied and revolve around mechanisms to convert inputs into outputs. Brockhoff (2017) defines organisational technology as the "processes within an organisation that help to convert inputs into outputs, as well as the supporting evaluation and control mechanisms. According to Singh et al. (2023) technology refers to the application of scientific knowledge, skills, tools, and techniques for practical purposes in various fields. Singh et al. (2023) further states that technology involves the creation, development, and use of tools, machines, systems, and processes to solve problems, improve efficiency, enhance productivity, and achieve desired outcomes. Technology encompasses a wide range of areas, including information technology, electronics, telecommunications, robotics, biotechnology, manufacturing, transportation, energy, healthcare, and more. It involves the use of scientific principles, engineering expertise, and innovation to create practical solutions and advancements in various industries and sectors.

The management of technology involves the planning, implementation, evaluation, and control of the organisation's resources and capabilities in order to create value and competitive advantage". Conley, Bican & Ernst (2021) define technology as "the branch of knowledge that deals with the creation and use of technical means and the application of this knowledge for practical ends." From the afore mentioned, it is clear that technology involves processes and mechanisms that lead to the application of knowledge and techniques for converting inputs and outputs to create value and competitive advantage. All authors implicitly or explicitly understand technology as a corporate resource that is used to create a competitive advantage when producing products and services. Overall, technology is an all-encompassing term that

incorporates the tools, methods, processes, and systems that humans create and utilise to solve problems, improve efficiency, and enhance our ability to achieve specific goals or objectives.

3.4.2 INNOVATION

As innovation includes a vast and diversified range of literature, it is necessary to clarify the focus of this study. The central theme of interest in this study is how companies can gain a competitive advantage during times of uncertainty and disruption. The unpacking of innovation as a key concept is relevant in this study. Innovation plays a pivotal role in driving economic growth, improving competitiveness, fostering creativity, and addressing societal challenges (Brockhoff, 2017). Innovation fuels progress and transformation across industries, sectors, and societies by bringing about positive change, unlocking new possibilities, and creating value for individuals, organisations, and communities; hence, this is the core focus of this study. According to Narayanan (2019), innovation refers to the process of creating and implementing new ideas, concepts, products, services, or processes that result in significant enhancements , advancements, or breakthroughs (Tidd & Bessant, 2020). Narayanan, (2019) further added that "innovation involves introducing something new or making significant enhancements to existing methods, products, or systems, resulting in improved efficiency, effectiveness, value, or competitive advantage."

However, Conley et al. (2021) asserted that innovation goes beyond mere invention or creation; it encompasses the successful implementation and adoption of new ideas or solutions that provide tangible benefits and address real-world problems or opportunities. Conley et al. (2021) further asserted that innovation involves taking risks, challenging conventional thinking, embracing creativity, and leveraging knowledge, skills, and resources to bring about meaningful change and value. According to Dodgson, Ash, Andrews & Phillips (2021) innovation includes "newness" in the development of products and/or processes within a firm or within an industry. Thus, the term 'innovation' has been used by Tidd & Bessant (2020) to refer to new inventions leading to new product development and process-improvement methods. An organisational innovation is defined according to the OECD (n.d:1) as "…a new organisational method in the firm's business practices, workplace organisation or external relations". Organisational innovations refer to value creation activities that result in process and product improvements (Goffin, Åhlström, Bianchi & Richtnér, 2019). In the context of this research, Al Suwaidi, Alshurideh, Al Kurdi & Salloum's (2021) definition of the term

innovation is adopted. According to Al Suwaidi et al. (2021) innovation is "the generation, acceptance, and implementation of new ideas, processes, products or services".

From the aforementioned, it is apparently clear that innovation can occur in various forms, such as technological innovation (developing new technologies or applying existing technologies in novel ways), product or service innovation (creating new or improved offerings), process innovation (reengineering or streamlining operations), organisational innovation (implementing new management practices or structures), or business model innovation (developing new ways to create and capture value). Following this is a discussion of the management of technology as a basic imperative for achieving competitive advantage during and after the COVID-19 pandemic.

3.4.2.1 PRACTICE INNOVATIONS

As discussed earlier under section 3.4.2, innovations are processes that creates value, brings about new processes, superior product/service value and finally superior organisational performance. Similar to other crises, COVID-19 provided an impetus for healthcare service providers to undertake practice innovations as a strategy to help their businesses to remain sustainable and to gain a competitive advantage in the wake of dwindling consumer demand and falling incomes (Wang, Voss, Zhao & Wang, 2022). Innovations in the healthcare consisted of any changes in the provision of healthcare services and products that are ascertained as new by consumers and other stakeholders (Wang et al., 2022). Practice innovations can be in the services themselves, the service process, or the service business model (den Hertog, van der Aa, W. & de Jong, 2020).

When confronted with unanticipated complexity within the business environment, strategic leaders often innovate in the form of coming up with new services or service bundles in order to gain a competitive advantage (den Hertog et al., 2020). This service innovation involves offering something new such as specialty customer service, finding new ways of reaching the customers or finding new customers all together. To this end, companies can develop an online ordering platform and introduce a speedy delivery system to deliver the products to end consumers in reasonable time. Alongside this policy, managers need to hasten the dispatch of healthcare products that are expiring first. This approach should be executed at the different stages of the downstream supply chain, including when products are delivered from the factory

to distributors, from distributors to traders (wholesalers or retailers), and from retailers to customers (Wang et al., 2022). During COVID-19 some healthcare firms began offering e-health services in order to circumvent the restrictive measures which were put in place by the government to curb transmission of the corona virus due to unrestricted movement and physical contact of humans. As part of service innovations, healthcare service providers introduced online health services and a system of home deliveries of medicines. The Zoom platform and Skype was used to facilitate interaction between patients and healthcare service providers as part of service and process innovations (Wang et al., 2022). More to door to door deliveries of health products and medicines were introduced on a massive scale in South Africa during the COVID-19 era and this programme still persists in the post-COVID-19 era.

3.4.2.2 Service process innovations

Service process innovations are changes in service operations and processes that influence the consumer experience and outcomes. Process innovations may alter the way information is communicated between parties, improve back–office processes, or alter the structure in which services are provided (Wang et al., 2022). Due to processes being so tightly aligned with the service offering, they frequently result in new service bundles too (Wang et al., 2022). For example, appointment-based pharmacy services, in which enrolled patients have a designated monthly appointment day to collect chronic medication, are both a change in service process and a new service provision. Like service innovations, service process innovations can be radical, consisting of fundamental changes to existing processes (e.g. appointment-based medication synchronisation) or incremental minor changes like altering the pharmacy workflow. Whether radical or incremental, process innovations either change the customer experience (e.g., greater convenience), achieve new customer outcomes (e.g., improved medication adherence) or both (Den Hertzog, Van der Aa, & de Jong, 2020). Furthermore, leaders can strategically formulate service process innovations as strategies to reposition a firm that is faced with negative consequences arising from unanticipated natural disasters.

Examples of service process innovations include improvements in the patient journey from home to the hospital and vice versa through making amendments in care programmes. Other improvements include introducing loyalty programmes as strategies to promote sustainable competitive advantage. Holdford and Inocenio (2019) pointed out that healthcare service providers have introduced artificial intelligence to personalise service provision to customers

and personalise care to patients. Furthermore, smart phone applications were developed as part of innovations, and these include combinations of medication reminders, tele-pharmacy, and other services on one device (Den Hertzog et al., 2020).

Electronic point-of-care technology that proposes discounted goods and services or other forms of value are some of the valuable strategies that help healthcare companies innovate. Holdford and Inocenio (2019) state that shopping in pharmacies using augmented and virtual reality technology was introduced and expanded.

3.4.2.3 SERVICE BUSINESS MODEL INNOVATION

The COVID-19 pandemic has presented significant challenges for service businesses, requiring them to innovate their business models to adapt to the new realities. Thus, organisations facing uncertainties or unanticipated emergencies should undertake business model innovations in order to thrive in the chaos, the uncertainty, and the disruption. Business model innovations are major changes in the way in which services generate revenues and become profitable (Wang et al., 2022). A service business model describes how service businesses (e.g., pharmacies) or their components (e.g., pharmacy departments) generate sufficient revenues to include the costs of providing services (Holdford & Inocencio, 2019). In the health care industry, business model innovation might be a move from the traditional practice of generating revenues by selling merchandise or providing services for a fee to new value-based, pay-for-performance, and other forms of business models (Van der Aa & de Jong, 2020; Gupta, Mejia & Kajikawa, 2021). Business model innovations frequently results in innovations in both service bundles and processes. The movement from fee-for-service to pay-for-performance pharmacy contracts, for example, has encouraged the bundling of unit dose packaging, smartphone apps, medication synchronisation, and patient counselling to improve patients' compliance to their medication regimens.

Service business model innovations during the pandemic have not only helped businesses survive but also opened up new opportunities for growth and customer engagement. By embracing technology, adapting service delivery methods, prioritising safety, and being responsive to customer needs, service businesses can navigate the challenges of the pandemic and emerge stronger in a post-COVID-19 world. Many service businesses have shifted to remote service delivery models, leveraging technology to connect with customers virtually.

This includes telehealth services, online consultations, virtual fitness classes, remote learning platforms, and digital entertainment services (Haleem, Javaid, Singh & Suman, 2021). By offering services remotely, businesses can continue to serve customers while adhering to social distancing measures.

To minimise physical contact and ensure safety, service businesses have introduced contactless and self-service options. This includes contactless payments, self-check-in kiosks, mobile ordering and delivery apps, and online appointment scheduling systems (Bose, Srinivasan, Tan, Goyal, Chung, Cheung & Ho, 2020).

By providing convenient and touch-less service experiences, businesses can meet customer needs while reducing the risk of virus transmission. Subscription and membership models have gained popularity during the pandemic as a way to secure recurring revenue and maintain customer loyalty. Service businesses have introduced subscription-based services that offer regular deliveries, access to exclusive content or resources, or ongoing support. This provides customers with convenience, value, and a sense of community.

Service businesses have diversified their offerings to adapt to changing customer needs and tap into new revenue streams. For example, restaurants offering takeout and delivery services, fitness studios providing online workout programmes, and event planners organising virtual events. By expanding their offerings, businesses can reach customers in new ways and mitigate the impact of reduced demand for their core services. Service businesses have formed collaborations and partnerships to enhance their offerings and reach new audiences. For instance, hotels are partnering with healthcare providers to offer quarantine facilities, restaurants are teaming up with food delivery platforms, and fitness trainers are partnering with wellness apps (Hernandes, 2020). These partnerships enable businesses to leverage each other's strengths, combine resources, and create innovative solutions. Gray & Kim (2023) assert that service businesses have prioritised implementing enhanced safety measures to build trust and reassure customers. This includes stringent sanitisation protocols, employee health screenings, transparent communication about safety measures, and visible signage to promote social distancing. By demonstrating a commitment to safety, businesses can instil confidence in customers and encourage them to engage with their services.

The next discussion is based on strategies for dealing with unimaginable circumstances, disruptions, and change to gain a competitive advantage,

3.4.3 MANAGEMENT OF TECHNOLOGY

The COVID-19 pandemic brought about considerable government regulations that restricted both the movement of goods and people between different geographical spaces. With respect to restrictions on people's movement, managers of companies had to be innovative enough and embrace the use of technology to reach out to customers and transact. Thus, the management of technology became a basic survival necessity that required companies to prioritise and operationalise as a panacea to achieving sustained competitive advantage. Since management of technology is a key variable underpinning one of the research objectives of this study, this section discusses key concepts underpinning this aspect, inspired by the fact that strategies for managing technology are a key imperative for gaining a competitive advantage during and after the COVID-19 pandemic.

COVID-19 ushered in a sense of utilising technology to mitigate the effects of the new regulatory environment, which was announced by world governments. Thus, it became necessary for companies to come up with innovative ways of managing technology to leverage their competitive advantage. Therefore, a discussion on the concept of the management of technology is critical, as it helps to focus our attention on how companies utilised and managed technology to enhance their competitiveness during COVID-19.

In the literature, there are differences in conceptualisation of the phenomenon of the management of technology. These differences are mainly due to the fact that the field is relatively new and fundamentally interdisciplinary. For example, Grindley (2018) uses the term 'management of technology' to refer to "a set of management activities associated with the procurement of technology, with research, development, adaptation, and accommodation of technology in the enterprise, and the exploitation of technologies for the production of goods and services". Whereas, 'management of technology' is defined by Amesho, Edoun, Naidoo & Pooe (2021) to refer to "a rational and systematic view of responding to technological opportunities and innovations and dealing with their consequences".

The US National Research Council (n.d) holds that management of technology involves the planning, development, and implementation of technological capabilities in order to shape and realise the strategic and operational objectives of an organisation. The goals of the activities of managing technology may differ and range from responding to technological opportunities

and innovations to shaping and achieving the strategic and operational objectives of an organisation to maximise customer satisfaction, corporate productivity, profitability, and competitiveness (Tohãnean, Buzatu, Baba & Georgescu, and 2020). The various definitions are at best complementary and at worst mutually exclusive. Instead of focusing on elements that exclude each other, the definitions also serve to draw attention to the fact that 'management of technology' includes issues of planning for the procurement of technology and accommodation of technology and technical knowledge within organisations so as to exploit or benefit from the opportunities that technology brings to an organisation such as competitive advantage and competitiveness. This is the adopted understanding that will underpin this study. The next section discusses the background to the management of innovation and its contribution to gaining sustained competitive advantage during and after the COVID-19 pandemic.

3.4.4 MANAGEMENT OF INNOVATION

Management innovation is one of the key variables underpinning the key objective of this study. Furthermore, knowledge of the key aspects of innovation management helps foster a greater understanding of how organisations can achieve competitive advantage in fulfilling one of the key research objectives of this study. Emphasising agility, customer-centricity, collaboration, and resilience will position organisations to navigate uncertainties, drive growth, and seize new opportunities in a rapidly evolving business landscape brought about by the COVID-19 pandemic.

The management of innovation during and after COVID-19 requires organisations to be agile, adaptable, and forward-thinking. The COVID-19 pandemic has accelerated digital transformation, making it crucial for organisations to embrace digital technologies and innovation and to invest in digital infrastructure, remote collaboration tools, and data analytics capabilities. Strategies involved in the management of innovation involve nurturing a culture that values and encourages innovation at all levels of the organisation, empowering employees to contribute ideas, experiment, and take calculated risks, and creating platforms for idea sharing, collaboration, and cross-functional innovation to leverage diverse perspectives. The management of innovation includes both change management and managing organisational processes that encourage innovation (Tohãnean et al., 2020). The management of innovation is more diverse than planning new products, services, brand extensions, or technological inventions, it is about imagining, mobilising, and competing in new ways (Tohãnean et al.,

2020). In the literature, Tidd (2021) maintains that “innovation management involves setting up systems and processes that allows newness so as to add value to emerge”. For example, Tidd (2021) cites the example of firms such as Google and 3M, which give some employees time during the workweek to work on their own ideas with the hope of sparking new ideas that will add value. Google News and 3M Post-it Notes are products that emerged from this practice.

In order to successfully manage innovations, management in the healthcare industry needs to understand the changing needs and preferences of customers during and after the pandemic, utilise customer insights and feedback to drive innovation efforts, and engage customers through surveys, interviews, and social listening to identify pain points and develop innovative solutions that address their evolving needs. Further to this, healthcare companies can only successfully innovate if they foster collaboration with external partners, including suppliers, customers, start-ups, research institutions, and industry peers. Collaborative partnerships enable access to new ideas, resources, and expertise. Therefore, managers need to engage in open innovation practices, co-creation projects, and joint ventures to drive innovation and expand capabilities.

However, Amesho et al. (2021) assert that a precursor to the management of innovation is that of extracting learnings from the crisis and leveraging them for innovation, identifying areas where the organisation demonstrated agility and adaptability during the pandemic and building on those strengths. Amesho et al. (2021) also asserted the imperative of reflecting on the challenges faced and implementing strategies to mitigate similar risks in the future.

Successful innovation management depends on the senior management of the organisation committing resources to empower individuals and groups to deliver on latest concepts. This commitment by the senior management to innovation, in turn, requires their recognition of several realities (Tohãnean et al., 2020). These realities are as follows: The management of technology encompasses the management of innovation and requires fostering an environment where innovative thought and work are encouraged. It involves leading a firm from existing processes and products to something that is more enhanced and valuable (Tohãnean et al., 2020). It is proactive and encourages creativity and risk-taking Therefore, management of innovation is a comprehensive approach to managerial problem solving and actions founded on an integrative problem-solving framework and an insight of the linkages among innovation streams, organisational teams, and organisational evolution. It is about implementation—

managing politics, control, and individual resistance to change (Dodgson et al., 2021). The manager is an architect/ engineer, politician/network builder, and artist/scientist.

3.4.5 COMPETITIVE ADVANTAGE

Although there is a plethora of scholars who have attempted to define competitive advantage, there is general consensus on the notion that it entails both a description of "isolated characteristics or particular properties of individual product markets that give a firm a strong competitive position, and the notion of the firm's ability to create superior value for its buyers" (George, Lakhani & Puranam, 2020).

The main purpose of this study is to assess how healthcare companies can gain a competitive advantage during and after the COVID-19 period. Therefore a discussion of what constitutes competitive advantage is quite necessary before delving into other issues related to the research problem and objectives. Competitive advantage occurs when a firm uses its resources and capacities to propose something innovative, current and valued that differentiates itself from competitors (Wheelen & Hunger, 2022). Competitive advantage only results from determinant attributes- those that determine choice between competitors. An innovation that is perceived as having a clear benefit on determinant attributes offers a competitive advantage (Wheelen & Hunger, 2022). For instance, personalised services offered by an independent pharmacy might give them a competitive advantage for customers who value customised treatment (Ivanov, 2020b). Competitive advantage results from an impression that is well defined, distinct, and valued in the minds of customers. Positioning also refers to the attributes of an innovation (e.g., convenient, personalised) that differentiates it from competition (Caballero-Morales, 2021).

Competitive advantage must be sustained over time to gain financial worth (Wheelen & Hunger, 2022). Sustainability means that innovation proffers an advantage that can be upheld in a market for a significant period of time (Wheelen & Hunger, 2022). This occurs when firms utilise resources and capabilities in ways that are difficult to imitate, as discussed above, and fend off competitors' efforts to diminish their competitive advantage (Thompson, Strickland & Gamble, 2019). Thus, competition is an endless struggle between firms to position themselves with a clear and unique value proposition. Firms with an advantage must continually innovate by investing in resources and developing competencies, as firms that have a broad range of unique competencies across different market segments may be able to outperform firms that

have relatively limited competencies (Thompson et al., 2019). This leads to a discussion of the influence of COVID-19 on strategy formulation for sustained competitive advantage.

3.5 COVID-19 AND STRATEGY FORMULATION FOR SUSTAINED COMPETITIVE ADVANTAGE

The influence of COVID-19 on strategy formulation for sustained competitive advantage resonates with the main objective of this study. Using inductive literature research methodology and analysis of various scholarly works on strategy formulation prior to during, and after a pandemic, notably COVID-19, this section discusses the influence of COVID-19 on strategy formulation for sustained competitive advantage by healthcare companies.

The discussion in this section is aligned with the objectives of this study, which seeks to determine the influence of COVID-19 on strategy formulation for sustained competitive advantage of selected healthcare companies in Durban. Thus, in this section, the focus is on discussing the influence of COVID-19 on strategy formulation. The quarantine and disruption of non-essential activities as measures to contain the COVID-19 pandemic have negatively affected all economies around the world. This has had a deeper impact on small and medium enterprises (SMEs) in emerging economies because they have very limited resources, a vulnerable supply chain, and business-to-business and business-to-client relationships. In this context, it is expected that after the pandemic, many of these enterprises will disappear as the "new normal" will require changes in business and infrastructure management. To reduce this risk, innovation is identified as a key aspect of business recovery in the ongoing and post-COVID-19 pandemic periods. In the context of the COVID-19 crisis, innovation has been identified as a powerful trigger for organisational resilience of small businesses and economic development in both the manufacturing and service sectors (Nah & Siau, 2020).

Competition is a fundamental aspect of business and innovation. Innovations in the healthcare sector occur in competitive markets in response to opportunities and threats to pharmacy firms. The types of innovations are determined by the strengths and weaknesses of the pharmacies offering them. Pharmacy innovations can only sustain themselves with positive financial performance (Holdford, 2018).

External forces in the healthcare market are causing greater urgency for healthcare companies to change their models of practice. Healthcare service providers such as pharmacists have known for a long time that a product focus is not a viable future for the profession. It is only in recent years, however, that product-centred business models have become increasingly unprofitable (Holdford, 2018). The status quo in the healthcare sector is not sustainable, but it is also not clear what practice models can succeed.

As alluded to earlier, COVID-19 was an unanticipated disruptive international health disaster that meant that businesses had to abandon the business-as-usual approach and formulate new strategies that, among other things, involved innovating business processes in a number of ways (Harris, Denyer, Harwood, Jude & Jeffrey, 2020). The intention of this study is that this section is not to over emphasise the influence of COVID-19 on strategy formulation per se. Doing so would render this study historic, as the COVID-19 pandemic is about to come to an end. Instead, COVID-19 is used to anchor the study, representing the influence of unanticipated natural disasters on strategy formulation. Thus, this discussion is intended to be generic in terms of providing insights to business leaders regarding leader behaviours, corporate behaviours, and the nature of strategies that firms or business organisations can formulate and adopt when confronted with unanticipated natural disasters or disruptive phenomena within the macro-environment.

One of the key corporate behaviours and responses that firms need to do when confronted with unusual occurrences, unanticipated disasters, or disruptive phenomena such as COVID-19 is to abandon the business-as-usual approach and innovate. For example, COVID-19 brought about several restrictive measures that negatively impacted businesses within the healthcare fraternity and which called for innovative measures that were meant to help the companies gain sustainable competitive advantages as postulated by Gopalakrishnan & Kovoor-Misra, (2021). Several innovations, notably practice innovations, service innovations, service process innovations, and business model innovations were a direct consequence of the impact of COVID-19 on strategy formulation.

The COVID-19 pandemic gave rise to disruption of normal business operations. Ristovska, Blazheska & Gramatnikovski (2023), affirm that the powerful nature of contemporary working conditions and the key role of change management approaches in steering this complex issue is explored .The study demonstrates an overview of the different positions how businesses

organisations have acclimatised to the challenges posed by the pandemic and is communicated emphasising the need for organisational changes in response to COVID - 19. The results indicate that business leaders are required to concentrate on sustainable and inclusive growth which requires innovations and will be based on flexible and agile management driven by data and technology. Each sector and industry should reinvent itself for recovery and advance in development, acknowledging the importance of resilience and flexibility to adapt immediately to varying conditions. The pandemic emphasised the importance of resilience, adaptability, innovation and long term planning. Businesses commenced including risk management strategies in preparation for impending crises. The teachings gathered during this perilous times are expected to influence business practices and strategies for many years. (Ristovska et al., 2023).

Denver, (2021), further claim that the companies had to engage in risk reduction strategies in order to gain competitive advantage. Risk reduction involved social distancing, stay at home regulations, sanitisation regulations, creating opportunities for online work, innovation and technology. According to Sigalas, & Pekka-Economou, (2013), companies must constantly revisit their organisation and pursue new strategic goals and execution approaches to address this dynamic climate. Hence the study focused on the factors which was pertinent during the Covid 19 Pandemic in order to gain understanding on the sustainability for competitive advantage.

During and post COVID - 19 pandemic , most companies that have flourished have taken initial steps to adapt to evolving technologies and VRIO to satisfy consumer needs . A swot analysis was done to capitalise on future opportunities and ensure success. As alluded in the factors tested on organisational, opportunities, weaknesses and threats, it was vital to ascertain product or service opportunities, market trends, shortcomings and threats so as to develop strategies to achieve competitive advantage (Kaizer, 2020).

3.6. STRATEGIES FOR GAINING COMPETITIVE ADVANTAGE IN THE POST-COVID-19 PANDEMIC

One of the core objectives of this study is to identify strategies for competitive advantage in the post-COVID-19 pandemic. Gaining a competitive advantage in the post-COVID-19

pandemic is of critical importance for businesses to thrive and succeed in the new normal. Gaining competitive advantage in the post-COVID-19 pandemic is key for businesses to differentiate themselves, adapt to changing customer needs, achieve financial success, attract talent, navigate disruptions, drive long-term growth, and create value for stakeholders (Xu et al., 2020:149). It is a strategic imperative for organisations aiming to thrive and succeed in the evolving business landscape. There are many reasons why gaining a competitive advantage during the post-COVID-19 era is of paramount importance. Firstly, gaining a competitive advantage allows businesses to differentiate themselves from competitors (Ivanov, 2020b). It helps position the organisation as unique and distinct in the eyes of customers, which can lead to increased market share and customer loyalty. In a post-pandemic landscape where markets may be saturated or disrupted, standing out from the competition becomes even more critical. The pandemic has brought about significant shifts in customer behaviour and preferences. Secondly, gaining a competitive advantage enables businesses to better understand and adapt to these changes, align their offerings with new customer needs, and tailor their strategies to meet evolving expectations (Ivanov, 2020b). Adapting quickly to changing customer demands positions a business as customer-centric and enhances its relevance in the marketplace.

Thirdly, a strong competitive advantage inspires an organisation's ability to invite and retain top talent. Businesses that are perceived as leaders in their industry and offer compelling value propositions can attract skilled employees who are seeking growth opportunities and a dynamic work environment (Ivanov, 2020b). Fourthly, gaining a competitive advantage helps build a positive employer brand, fostering employee engagement and loyalty. The post-pandemic environment remains uncertain, with potential for further disruptions (Ivanov, 2020b: Chaghooshi & Moein, 2019). Businesses with a competitive advantage are better positioned to withstand and navigate through uncertain times. They have the agility, resources, and capabilities to pivot their strategies, identify new opportunities, and manage risks effectively. Fifthly, competitive advantage enhances an organisation's resilience and ability to thrive despite ongoing challenges. Another reason is that gaining a competitive advantage is a crucial driver of long-term business growth (Chaghooshi & Moein, 2019). It enables businesses to build strong market positions, expand into new markets, and capture new customer segments. With a competitive edge, organisations can drive innovation, invest in research and development, and continuously improve their products, services, and processes. This sustained focus on growth fuels long-term success and sustainability (Chaghooshi & Moein, 2019). Also,

competitive advantage enhances investor confidence and creates value for stakeholders. Investors are more likely to support businesses that demonstrate a strong competitive position, growth potential, and the ability to generate returns (Ivanov, 2020b: Chaghooshi & Moein, 2019:5). Additionally, a competitive advantage can create value for other stakeholders, such as suppliers, partners, and the local community, contributing to positive relationships and shared success.

Thus, in this section, the focus is on discussing the strategies that can be adopted by health care companies to gain a competitive advantage in the post-COVID era in fulfilment of one of the study objectives. To overcome a company's vulnerability to disruptions caused by health pandemics such as COVID-19, it is essential to formulate and implement strategies for managing disruption. Several such strategies, which include inventory stockpiling, diversification of suppliers, and creating backup suppliers, have been recommendations for managing disruption risk (Ivanov, 2020b; Moktadir, Dwivedi, Rahman, Chiappetta,

Sultana and Madaan 2020). Moreover, strategies such as emergency sourcing (Chowdury, Sarkar, Paul, Moktadir,(2020:4); Huang, Zeng, Xu(2022:205), (Xu, Cai, Shen,Ni, Chen, Hu, Li, Huang & Qui, 2020:149) and reserve capacity (Walker, Whittaker, Watson, Baguelin, Ainslee, Bhatia, Bhatt, Boonyasiri, Boyd, Cattarino & Cucunuba-Perez, 2020:219), as well as collaborative strategies such as on-time and quality information sharing (Azizi, Atlasi, Ziapour, Abbas & Naemi, 2021; Chowdhury et al., 2020) and flexibility (Chaghooshi & Moein, 2019:6),have also been suggested for purposes of disruption management. The proper configuration of resources and infrastructure is also required, along with disruption orientation, to ensure that firms can manage disruptions efficiently (Currie, Fowler, Kotiadis, Monks, Onggo, Robertson & Tako, 2020). These strategies for managing disruption can make a supply chain more resilient.

The study proposes several strategies that managers in the healthcare sector can implement to improve resilience in this evolving environment during and after the COVID-19 era. Previous research has indicated that companies in the food and beverage industry are capable of enhancing their performance through effective disruption management strategies. Thus, Adeleke et al. (2020), for example, expressed that the implementation of appropriate disruption management strategies had widely improved the performance of healthcare companies in China, Bangladesh and Nigeria.

Scholars such as Kuckertz, Brändle, Gaudig, Hinderer, Morales-Reyes, Prochotta, Steinbrink & Berger (2020) have suggested several supply chain and operational strategies that could help address challenges brought up by destructive natural disasters such as COVID-19. One of the supply chain and operational strategies suggested by Kuckertz et al. (2020) is the innovation strategy, which is critical in enhancing a company's competitive advantage even during and after COVID-19. Kuckertz et al. (2020) asserted that the strategies for gaining competitive advantage during the COVID-19 and post COVID-eras include innovatively creating solutions to new problems by creatively combining existing technology and human capital, followed by activating network resources such as flexible staff rotation and payment options. Forsman (2021) also suggested that firms should channel resources to viable and value-generating activities and should temporarily reduce non-essential activities as a strategy of gaining competitive advantage.

3.6.1 Effective management of Technology and Innovation

The management of technology and innovation is critical to the organisation (Boylan & Turner, 2023). Because of innovations and new technologies, people have historically seen the emergence of innovative organisational structures and new ways of performing work (Boylan & Turner, 2023). Organisations have to be accommodating in the management of technology and innovation. Acer, in the opening case, has used various approaches to obtain new technology and to innovate and increase its platforms. There are numerous means that organisations can develop and manage technology and innovation (Narayanan, 2019). In order for a firm to develop a successful management of technology and innovation strategy, it is of utmost importance that the organisation be prepared for the effort (Narayanan, 2019). This requires agility because changes and adjustments to products and processes are compounded with risk and doubt. However, agility is inherently less efficient if it is to be effective. Therefore, the management of technology and innovation must create a balance with short-term efficiency and long-term effectiveness in the market if the firm is to add value and thrive in a changing environment (Biemans, 2018). Strong dynamic capabilities are required if the organisation is to address the challenges of innovation and dynamic competition (Biemans, 2018). Effective management of technology and innovation is indispensable for organisations to remain competitive, drive growth, and capitalise on opportunities. The following are the key principles and practices for managing technology and innovation effectively:

3.6.1.1 CLEAR STRATEGY AND ALIGNMENT

As part of managing technology and innovation, healthcare companies should develop a clear technology and innovation strategy that aligns with their overall business strategy. Kraus, Schiavone, Pluzhnikova & Invernizzi (2021) hold the view that clear strategy and alignment are tools that can assist healthcare companies gain a competitive advantage in the post - COVID-19 pandemic by enabling them to anticipate and prepare for long-term shifts in the healthcare industry, such as increased demand for digital health solutions, telemedicine, and preventive care, and to cushion the immediate impact of the pandemic by mitigating or absorbing the negative effects on their operations, finances, and reputation. Biemans (2018) also asserts that clear strategy alignment enables the healthcare industry to recover faster than the competition by quickly identifying and implementing the actions needed to restore and improve their services, products, and customer relationships and to adapt to the new normal post-pandemic by adjusting their business models, offerings, and capabilities to meet the changing needs and expectations of their stakeholders. Furthermore, clear strategy alignment is critical for enabling healthcare companies to shape the dynamics of the industry in the post-pandemic environment by influencing the regulations, standards, and best practices that will define the future of healthcare (Kraus et al., 2021). Some examples of healthcare companies that have used clear strategy and alignment to create a competitive advantage during the pandemic include Teladoc Health, Novartis, and Medtronic. Teladoc Health, a leading provider of virtual care services, acquired Livongo, a digital health platform for chronic conditions, to create a comprehensive and integrated solution for remote health management (Tonjang & Thawesaengskulthai, 2022). Novartis, a global pharmaceutical company, launched a COVID-19 Response Fund to support communities affected by the pandemic, and partnered with other organisations to accelerate the development of vaccines and treatments (Tonjang & Thawesaengskulthai, 2022).

3.6.1.2 STRONG LEADERSHIP AND SUPPORT

The use of superior change management processes to ensure a firm's success in introducing newness into the organisation is vital. (Chowdhury et al., 2020). Appoint leaders who understand the importance of technology and innovation and can provide vision, guidance, and support. Foster a culture that encourages risk-taking, experimentation, and continuous learning. Promote a mind-set that embraces change and encourages cross-functional collaboration to

foster innovation. Communication needs must be identified and data must be turned efficiently into information so that the correct information can be available for effective decision making within the prescribed time. The current interest in big data and the information it offers to firms is tied to the notion that we have a lot of bytes of data available because of computer technology that is not being used effectively or efficiently (Dodgson et al., 2021).

3.6.1.3 Robust Idea Generation and Evaluation

Establish mechanisms for generating and capturing ideas from employees, customers, partners, and other stakeholders. Implement a structured process for evaluating and selecting the most promising ideas based on strategic fit, feasibility, and potential impact. Foster a culture that values and rewards innovative ideas and contributions. Design systems and processes that can identify, assess, and develop technology-based opportunities (or protect from new technology threats). The systems and processes should be able to sense what imminent (Dodgson et al., 2021) is.

3.6.1.4 Effective Resource Allocation

Effective resource-allocation is a strategy that can support healthcare companies gain a competitive advantage in the post-COVID-19 pandemic by enabling them to optimise the use of their human, financial, and physical resources to deliver high-quality care and services to their patients and customers and align their resource allocation decisions with their strategic goals and priorities, as well as the changing needs and expectations of the market and society. Saidi, Thune & Bugge (2021) advised management to adapt their resource allocation processes to the new realities and uncertainties of the post-pandemic environment, such as increased demand for remote care, digital health solutions, and preventive measures, whereas Barlow (2021) advised management of healthcare companies to leverage data and analytics to inform their resource allocation decisions, monitor their performance, and identify opportunities for improvement and innovation.

Saidi et al. (2021) hold the view that collaborating with other healthcare providers and stakeholders to share resources, best practices, and insights, create synergies and efficiencies, and allocate resources, including budget, talent, and time, to technology and innovation initiatives strategically. Additionally, George, Lakhani & Puranam (2020) asserted that management should prioritise projects that align with strategic objectives, have high potential

for impact, and can deliver value in the short and long term. Some examples of healthcare companies that have used effective resource allocation to create competitive advantage in the post-COVID-19 pandemic are Cleveland Clinic, which used workforce planning to capture competitive advantage from new talent scenarios, such as remote work, skill clusters, and distributed workforce models, and Johnson & Johnson, which used resilient business practices to cushion the impact of the pandemic, recover faster than the competition, and thrive in the new circumstances by anticipating, cushioning, adapting, and shaping (Kraus et al., 2021). Roche also used data-driven resource allocation to optimise its research and development portfolio, prioritise its projects, and accelerate its drug development process (Kraus et al., 2021).

3.6.1.5 COLLABORATION AND PARTNERSHIPS

According to Lee and Yoon (2021), it is imperative for companies operating in the post-COVID-19 environment to foster collaboration and partnerships with external entities such as start-ups, research institutions, and industry peers. Yaqoob, Salah, Jayaraman & Al-Hammadi, (2021) support this view by positing that collaborative innovation can leverage external expertise, access new technologies, and drive breakthrough innovations. Lee and Yoon (2021) also asserted that establishing effective channels for open innovation, co-creation, and knowledge sharing would accelerate innovation and leverage collective intelligence. Yaqoob, et al. (2021) also assert that collaboration with other healthcare providers and organisations will accelerate the development of vaccines and treatments, share best practices, and influence the regulations and standards of the industry.

3.6.1.6 TECHNOLOGY ADOPTION AND INTEGRATION

Effective management of technology and innovation is a tool that can help healthcare companies gain a competitive advantage in the post-COVID-19 era by enabling them to leverage the power of artificial intelligence (AI) to improve diagnosis, treatment, and prevention of diseases, as well as optimise clinical workflow management, advanced surgery assistance, and medical diagnostics. Tonjang & Thawesaengskulthai (2021) also noted that the effective management of technology in healthcare involved utilising the Internet of Medical Things (IoMT) to connect devices, equipment, and infrastructure that enable applications such as automatic disinfection capabilities, smart diagnosis, and remote patient management. On the other hand. Kraus, Schiavone, Pluzhnikova & Invernizzi (2021) believe that effective

management of technology and innovation should involve empowering patients with access to their electronic medical records, online second opinions, real-time virtual visits, and eHospital critical care monitoring. Tonjang & Thawesaengskulthai (2022) support the notion of creating user-friendly websites and social media strategies that engage patients and caregivers and offer live chats, virtual visits, and online second opinions. Some examples of healthcare companies that have used effective management of technology and innovation to create competitive advantage in the post-COVID-19 era are Medtronic, a medical device company, which increased its production of ventilators and other critical equipment and shared its design specifications with other manufacturers to address the global shortage. Therefore, the management of companies in the health care industry should ensure the effective adoption and integration of new technologies into existing processes and systems. Develop a robust change management strategy to address potential resistance and promote adoption and to provide training, support, and clear communication to employees to facilitate a smooth transition and maximise the value of technology investments (Siyal et al., 2019).

3.6.1.7 CONTINUOUS LEARNING AND IMPROVEMENT

According to Xu et al. (2020), it is imperative for healthcare companies operating in the post-COVID-19 environment to foster a learning culture that encourages continuous improvement and knowledge sharing. In order to achieve this, Xu et al. (2020) suggested that healthcare companies should regularly evaluate and learn from technology and innovation initiatives, capturing lessons and best practices and encouraging cross-functional teams to share insights and experiences to drive organisational learning and accelerate future innovation efforts. Siyal et al. (2019) advocated for the need to develop employees through training and learning opportunities. This becomes more significant as the competitive environment for the organisation becomes more dynamic. The management of technology and innovation requires the collaboration of all levels of the organisation and that efforts are made to ensure that employees may enhance their skills for themselves and the organisation. The more dynamic the environment, the more important skill enhancement is for the individual and the organisation (Dodgson et al., 2021). By following these principles and practices, organisations can effectively manage technology and innovation, unlocking the full potential of their capabilities and driving sustained business success in an increasingly dynamic and competitive landscape.

The next strategy for gaining sustainable competitive advantage during and after COVID-19 involves harnessing and building skills for enhancing technological innovations, as discussed below:

3.6.2 HARNESSING AND BUILDING SKILLS FOR ENHANCING TECHNOLOGICAL INNOVATIONS

There are many skills required to successfully manage technology and innovation in the organisation (Amesho, Edoun, Naidoo & Pooe, 2021).There are two skills the organisation must develop to be successful: the ability to manage learning and knowledge processes, and the ability to analyse and project future trends (Amesho et al., 2021). Individual skills that are critical to the organisation's success include leadership/followership and creative thinking. Another key aspect of effectively managing technology for gaining competitive advantage during and after the COVID-19 era involves building organisational skills and competences to cope with the changing environments (Amesho et al., 2021).

Organisational skills involve how the firm arranges people and resources to create value—building capabilities. With the right capabilities, the organisation can develop a competitive advantage (Brockhoff, 2017). In the world of technology and innovation, the management of learning and knowledge processes is key. It is necessary for the organisation to have systems in place that permit it to collect data that can be analysed to construct information (Brockhoff, 2019). The information needs to be used to gain knowledge and insight. At each step, learning takes place. Organisational learning is the acquisition of knowledge through the collection of data that is analysed to gather information, which is then transferred and shared through communication among members of the organisation (Brockhoff, 2017). This communication process specifies the foundation for knowledge acquisition and enhancement within the firm (Brockhoff, 2017). There are two types of knowledge that must be managed: explicit knowledge (codified or written down as rules or guidelines) and tacit knowledge (which transpires from the experience of an individual). Tacit knowledge can become explicit at some point if the expert is able to codify the knowledge for others (Amesho et al., 2021). However, it is not always possible to codify tacit knowledge (Amesho et al., 2021). For example, Henry Bessemer was sued by the patent purchasers who could not get his steel-making process to work. In the end, Bessemer set up his own steel company because he knew how to gauge when to add and subtract heat based on the impurities in the iron ore, even though he could not convey it to his patent users (Amesho et al., 2021). Bessemer's company became one of the largest in

the world and changed the face of steelmaking. After the introduction of the Bessemer process, steel and wrought iron became similarly priced, and some users, primarily railroads, turned to steel (Brockhoff, 2019). The insights and experiences that are gained from the gathering of data and converting that data into information are key to successful management of technology and innovation for gaining a competitive advantage.

3.6.3 SUPPLIER COLLABORATION STRATEGY

Supplier collaboration strategy plays a vital role in gaining and sustaining competitive advantage, particularly in the post-COVID-19 era. The COVID-19 pandemic highlighted the importance of supply chain resilience. Collaborating closely with suppliers allows organisations to build resilient supply chains that can withstand disruptions (Song and Lee, 2020). A robust and resilient supply chain provides a competitive advantage by ensuring continuity of operations and meeting customer demands, even during challenging times (Song & Lee, 2020). Collaborating with suppliers can accelerate innovation and reduce time-to-market for new products or services. Suppliers often possess specialised knowledge, expertise, and insights that can contribute to the innovation process. By involving suppliers early in the product development cycle, organisations can tap into their capabilities, collaborate on design and production, and leverage their resources to bring new products or services to market more quickly (Kuckertz et al., 2020). This speed-to-market advantage helps organisations stay ahead of competitors and capture market share. Supplier collaboration can lead to improved product quality and differentiation. By working closely with suppliers, organisations can ensure that suppliers meet quality standards, adhere to specifications, and provide consistent, high-quality inputs. Collaborating on product design, specifications, and performance requirements enables organisations to differentiate their products in terms of quality, features, or performance (Iansiti & Levien, 2019). Differentiated products command higher prices, attract loyal customers, and contribute to competitive advantage. Supplier collaboration can result in cost efficiencies and value optimisation. Collaborative efforts with suppliers can lead to joint cost reduction initiatives, such as process improvements, supply chain optimisation, or shared resource utilisation (George et al., 2020). Collaborating on cost reduction initiatives helps organisations improve profitability, reduce production costs, and offer competitive pricing to customers. Additionally, supplier collaboration can unlock opportunities for joint value creation, such as shared research and development, co-marketing efforts, or joint promotional campaigns, which can enhance the overall value proposition and competitive advantage (Walker et al., 2020).

Collaborating with suppliers provides access to their expertise, resources, and capabilities (Walker, 2020). Suppliers often possess industry-specific knowledge, technical know-how, and resources that can be leveraged to improve operational efficiency, drive innovation, or enhance product and service quality (Walker et al., 2020). By tapping into supplier expertise and capabilities, organisations can gain a competitive advantage by leveraging external knowledge, accelerating organisational learning, and enhancing their own capabilities. To effectively leverage supplier collaboration for competitive advantage in the post-COVID-19 era, organisations should focus on building strong, trust-based relationships with key suppliers, promoting open communication, and aligning their strategic objectives (George et al., 2020). Embracing collaborative technologies, sharing information and data, and jointly developing long-term plans and goals with suppliers can foster a collaborative culture that drives innovation, resilience, and operational excellence.

3.6.4 BLUE OCEAN STRATEGY VERSUS RED OCEAN STRATEGY

Blue Ocean Strategy is a strategic framework introduced by W. C Kim & Renée Mauborgne in their book "Blue Ocean Strategy: How to Create Uncontested Market Space and Make the Competition Irrelevant" (Kim & Mauborgne, 2022). The concept proposes that organisations can attain long-term success by creating new market spaces, known as "blue oceans," rather than competing in existing market spaces, referred to as red oceans" (Nah & Siau, 2020). The primary notion of the Blue Ocean Strategy is to shift the focus from battling competitors to creating new demand and value for customers (Nah & Siau, 2020). This involves identifying and pursuing innovative strategies that break existing industry boundaries, redefine market boundaries, and create new value propositions. By applying the Blue Ocean Strategy, organisations aim to design a distinctive market space with fewer competitors, higher growth potential, and greater customer value (Thompson, Strickland & Gamble, 2019). By focusing on innovation, differentiation, and value creation, companies can escape the intense competition of red oceans and achieve sustainable growth and profitability in their chosen blue ocean markets (Thompson et al., 2019).

In a red ocean, companies compete within an existing industry, striving for competitive advantage by outperforming rivals through factors like cost reduction or product differentiation. This often leads to intense competition, price wars, and limited growth opportunities. In contrast, a blue ocean represents untapped market space where competition is

irrelevant or non-existent. The term "Red Ocean" symbolises the intense competition that often characterises these established markets. Companies in red oceans engage in a competitive race, focusing on factors such as cost reduction, product differentiation, and capturing market share from competitors. This competition can result in price wars, shrinking profit margins, and limited growth opportunities. As examples of enterprises that successfully performed a Blue Ocean strategy, the following can be mentioned: Cirque du Soleil, Apple, iTunes and Canon. (Thompson et al., 2019). Table 3.1 below displays an overall overview of the characteristics of enterprises within the red and blue oceans.

Table 3. 1: Characteristics of Red Oceans (many competitors) and Blue Oceans (none or few competitors)

Red Ocean (many competitors)	Blue Ocean (none or few competitors)
Existing Businesses	New Business Ideas
Compete in the existing market where there is high competition.	Create spaces with little or no competition (make the competition irrelevant).
Exploit existing demand.	Create and take advantage of new demand.
Give in the value-price relationship.	Break the value-price relationship.
Low cost or product differentiation.	Significant profit and product differentiation.

Source: (Thompson et al., 2019).

Some examples of healthcare companies that have used the blue ocean strategy during and after the post-COVID-19 pandemic are Health Media, Compte-Nickel and Marvel (OECD – Building Back Better, 2020). Health Media is a digital health company that created a blue ocean by offering personalised online coaching programmes for chronic disease prevention and management. Health Media combined the benefits of behavioural science, technology, and data analytics to deliver customised and scalable solutions that improved health outcomes and reduced costs for employers, insurers, and health systems (OECD: Building Back Better, 2020). Compte-Nickel, a fintech company that created a blue ocean by offering a simple and accessible banking service for the unbanked and under banked population in France. Compte-Nickel partnered with tobacco shops to provide customers with a bank account, a debit card, and basic banking services without any fees, overdrafts, or credit checks (OECD: Building Back Better,

2020). Compte-Nickel attracted millions of customers who were dissatisfied with traditional banks or excluded from the banking system (OECD –Building Back Better, 2020).

The Red Ocean strategy has been extensively used by CVS Health, UnitedHealth Group, and Medtronic (OECD Science, Technology and Innovation: 2020). CVS Health, a pharmacy and healthcare company that expanded its COVID testing and vaccination services across its retail locations and partnered with other providers to increase its market share and customer loyalty. CVS Health also launched a new digital platform to offer telehealth, home delivery, and chronic care management services to its customers. United Health Group, a health insurance and healthcare company that leveraged its data and analytics capabilities to identify and address COVID-related health risks and gaps in care for its members (OECD Science, Technology and Innovation: 2020). UnitedHealth Group also invested in digital health solutions, such as virtual visits, remote monitoring, and online wellness programmes, to improve access and quality of care for its members (OECD Science, technology and innovation: 2020). Next is a discussion of cost compression and spending cutbacks as a post-COVID-19 strategy for gaining a competitive advantage.

3.6.5 Cost Compression and spending cutbacks

In the post-COVID-19 era, healthcare companies may indeed consider cost compression and spending cutbacks as tools to gain a competitive advantage. The pandemic has placed significant financial strain on healthcare systems and providers worldwide, and many companies have been forced to re-evaluate their cost structures and financial strategies. Healthcare companies can leverage cost compression and spending cutbacks to enhance their competitive position (Barro, 2020). Healthcare organisations can streamline their operations and eliminate inefficiencies to reduce costs (Barro, 2020). This can involve process optimisation, automation, and adopting innovative technologies to enhance productivity and reduce manual workloads (Barro, 2020). By improving operational efficiency, companies can lower expenses and allocate resources more effectively.

Companies can assess and optimise their supply chains to reduce costs. This may involve negotiating better contracts with suppliers, consolidating vendors, or implementing just-in-time inventory management strategies (Ponnusamy, 2021). By ensuring a reliable and cost-effective supply chain, healthcare companies can minimise waste and enhance their competitiveness.

The adoption of telemedicine and digital health solutions can provide cost savings by reducing the need for physical infrastructure and overhead expenses. Virtual consultations, remote monitoring, and digital health platforms can improve access to care while lowering costs associated with traditional in-person visits and administrative tasks (Ponnusamy, 2021). Investing in employee engagement and retention strategies can help healthcare companies reduce turnover costs and enhance productivity. Through creation of a positive work environment, providing professional development opportunities, and recognising employee involvement, companies can improve employee satisfaction, which can lead to better patient care and cost savings in the long term (Amesho et al., 2021). According to the World Economic Forum (2021), Health Corporation of America (HCA) Healthcare is one good example of a hospital operator that has undertaken cost compression strategies following its announcement of a $1.1 billion reduction in capital expenditures for 2020, as well as a 30% cut in salaries for senior executives and a suspension of quarterly dividends and share repurchases. HCA Healthcare also implemented temporary furloughs and reduced hours for some employees to align staffing with patient volumes (World Economic Forum, 2021). Another example of cost compression strategies pertains to Quest Diagnostics, a clinical laboratory company that also reduced its capital expenditures by $200 million for 2020, implemented temporary salary reductions for executives and board members, suspended merit increases and 401(k) matching contributions, and offered voluntary unpaid leaves of absence to employees (Kalidas, Magwentshu & Rajagopaul, 2020). Quest Diagnostics also withdrew its financial guidance for 2020 due to the uncertainty initiated by the pandemic (Kalidas et al., 2020).

Whilst cost compression and spending cutbacks can be effective strategies, healthcare companies must also prioritise patient care, safety, and regulatory compliance. Balancing cost reductions with quality and patient outcomes is crucial to maintaining a sustainable competitive advantage in the post-COVID-19 era.

3.6.6 INVESTING IN INNOVATION

Currently, research into new post-COVID-19 business innovations has intensified in order to help prepare organisations for future health disruptions (Chen et al., 2021). Recently, most global firms are in the process of making significant financial investments in the various facets of business innovations so as to prepare their organisations for any business disruptions that may inadvertently occur (Ponnusamy, 2021). To reduce the spread of COVID-19, countries

around the world have enforced stringent lockdowns, compelling employees in various organisations to work from home. This has reinvented the way people work, resulting in a greater reliance on technology (Ponnusamy, 2021). As a result, the management of firms should consider investing more in technological innovations. In order to remain in business, companies have had to ensure that their employees are able to continue working from home, and that their services can be bought or accessed online (Rodríguez-Antónet al., 2020). The outbreak has led to structural shifts, including in customer preference for digital engagement and advancing to remote working models for employees, which are likely to remain even post-COVID-19 (Barro, 2020).

Some examples of healthcare companies that have invested funds for innovation in the post-COVID-19 era are Pfizer, Teladoc Health, Amazon and Pfizer, a pharmaceutical company, invested $2 billion to develop and manufacture a COVID-19 vaccine in partnership with BioNTech, a biotechnology company (Blake, 2021).Teladoc Health, a telehealth company that invested $18.5 billion to acquire Livongo, a digital health platform for chronic conditions, to create a comprehensive and integrated solution for remote health management. Teladoc Health and Livongo offer a range of services, such as virtual visits, remote monitoring, coaching, and personalised insights, to help patients manage their health and wellness (Robinson, 2021). Amazon, an e-commerce and technology company that invested $500 million to launch Amazon Pharmacy, an online pharmacy service that allows customers to order prescription medications for delivery to their homes (Robinson, 2021). Amazon Pharmacy also offers discounts for Prime members, free two-day shipping, and access to pharmacists for consultation.

Investment in innovations has meant the development of new software, digital systems, and communication methods. To ensure the company's survival over the pandemic and support the creators involved, business leaders often embark on intensive online marketing. By engaging in online marketing, the management can formulate a strategy of allowing visitors free access to an interactive, online design festival, followed by making it easy for guests to purchase products online (Barro, 2020). This decision has a higher probability of ensuring the survival of the company and paving the way for future online markets. Study findings and recommendations by Chen et al. (2021) suggested that managers should take steps to build a more resilient supply chain network for the healthcare industry by integrating different

emergent technologies, including artificial intelligence, big data analytics, data-driven supply chains, block chain technology, and the Internet of Things (IoT), into their business operations over the long term (Moktadir et al., 2019). Further, to curtail human contact in transacting, managers may think about the execution of robots.

3.6.7 CREATING AN ONLINE ON DEMAND DELIVERY PLATFORMS

Creating an online on-demand delivery platform can indeed be a strategic approach for healthcare companies to gain a competitive advantage in the post-COVID-19 era. The pandemic has accelerated the adoption of digital solutions and increased the demand for contactless services (Xu et al., 2020). By offering an online platform for on-demand delivery, healthcare companies can provide convenience and accessibility to patients. Users can easily order prescription medications, medical supplies, and other healthcare products from the comfort of their homes (Xu et al., 2020). This eliminates the need for physical visits to pharmacies or healthcare facilities, particularly for patients with limited mobility or in rural areas. An on-demand delivery platform enhances the overall patient experience by reducing waiting times and offering flexibility (Barro, 2020). Patients can schedule deliveries at their preferred time and location, eliminating the need to wait in lines or make multiple trips. It can also provide real-time updates on delivery status, allowing patients to track their orders and plan accordingly (Barro, 2020). An online on-demand delivery platform minimises exposure to potential infections by reducing unnecessary physical contact and limiting visits to healthcare facilities. Patients can receive medications and healthcare essentials without compromising their safety. Implementing an online, on-demand delivery platform can differentiate healthcare companies from their competitors. It showcases the organisation's commitment to innovation, customer-centricity, and adaptability. As more patients prioritise convenience and contactless services, having a robust online platform can attract new customers and retain existing ones. Some examples of healthcare companies that have created online on-demand delivery platforms to gain a competitive advantage in the post-COVID-19 era are Amazon, Capsule and Ro. Amazon, an e-commerce and technology company launched Amazon Pharmacy, an online pharmacy service that allows customers to order prescription medications for home delivery (Bestsennyy, Gilbert, Harris & Rost, 2021). 'Capsule', is also a digital pharmacy company that delivers prescription medications to customers' doors within two hours (Bestsennyy et al., 2021). 'Capsule' also offers online consultations with pharmacists, automatic refills, price comparisons, and insurance coordination. Ro, a telehealth

company that provides online diagnosis, treatment, and delivery of medications for various health conditions, such as erectile dysfunction, hair loss, smoking cessation, and allergies (Blake, 2021). Ro also offers online consultations with physicians, home testing kits, and digital health programmes (Blake, 2021).

3.6.8 FORMULATING A NEW BUSINESS MODEL

The advent of COVID-19 meant that the business-as-usual approach had to be abandoned in favour of a strategy that involved formulating a new business model that generated competitive advantage for their organisations. During periods of unanticipated disruptions, disasters, and change, businesses should consider transforming their business model altogether. The pandemic demonstrated to business leaders across all industries that they need to have practices in place that allow them to cope with unexpected crises. In order to survive, businesses need to be resilient, adaptive, and creative (Barro, 2020). For a company to be resilient, it must demonstrate agility. Agile business modelling is a new business strategy gaining momentum as a result of the pandemic (Barro, 2020). Business agility is an organisation's capability to adapt quickly, respond rapidly, be creative, lead change, and maintain its competitive advantage when faced with difficult problems and uncertainty. Organisational agility is the ability of a company to quickly change or adapt in response to a tumultuous and rapidly changing market. It encompasses two major dimensions: speed and stability (Hudecheck, Siren, Grichnik, Wincent, 2020). With regards to the former, a business needs to be nimble and responsive in keeping with change. This includes being innovative and dynamic in its thinking and actions; however, to ensure its sustained success and the ability to upgrade and extend operations, there needs to be a set of principal elements (Barro, 2020). Thus, the latter component of stability, or the solid backbone, becomes crucial. While organisational agility was once appealing, it has now become central to survival. This study shows that COVID-19 has induced agile transformation in many companies at an alarming level. If a business can remain agile throughout these periods, then its chances of success and survival are much greater (Barro, 2020).

3.7 CONCLUSION

The influence of COVID-19 on healthcare companies has been profound and far-reaching. The pandemic has presented both challenges and opportunities for the healthcare industry. COVID-19 has placed significant financial strain on healthcare companies, particularly those that

experienced decreased patient volumes and increased expenses for personal protective equipment (PPE), testing, and treatment. Many companies have had to navigate revenue losses and adapt their financial strategies to remain resilient. The pandemic has hastened the adoption of digital solutions in healthcare. Telemedicine, remote monitoring, and online platforms have become essential for providing care while minimising the risk of infection. Healthcare companies have had to rapidly implement and scale digital technologies to adapt to the changing landscape. Healthcare companies have faced disruptions in the global supply chain, leading to shortages of critical medical supplies and equipment. The pandemic exposed vulnerabilities in the supply chain and highlighted the need for diversification, local manufacturing, and strategic stockpiling to ensure the availability of essential healthcare resources. In conclusion, the COVID-19 pandemic has significantly impacted healthcare companies, challenging them to adapt, innovate, and find new ways to deliver care. It has accelerated the adoption of digital solutions, reshaped care delivery models, and highlighted the importance of collaboration, agility, and public health initiatives. The lessons learned from this global crisis will continue to shape the healthcare industry in the post-COVID-19 era.

Healthcare companies have implemented various strategies to gain a competitive advantage in the ever-evolving industry. These strategies have been shaped by factors such as technological advancements, changing patient expectations, and market dynamics. It's important to note that the specific strategies adopted by healthcare companies may vary depending on their size, specialty, geographic location, and target market. Additionally, the COVID-19 pandemic has further influenced and accelerated the adoption of certain strategies, such as telemedicine and digital health. The ability to adapt, innovate, and meet the evolving needs of patients and the healthcare industry remains crucial for gaining a sustainable competitive advantage.

The chapter presented and discussed the research gaps pertaining to this study. Following this was a discussion that focused on the influence of the COVID-19 pandemic on the performance of health care products, followed by a discussion on the notion of competitive advantage. The chapter also discussed the influence of COVID-19 on strategy formulation. The last section discussed strategies for dealing with unimaginable circumstances, disruptions, and change to gain a competitive advantage. The next chapter discusses the research methodology and design of the study.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 INTRODUCTION

The previous chapter focused on reviewing the literature pertaining to the influence of COVID-19 on strategy formulation and implementation within organisations. This chapter presented a detailed discussion of the various elements of research methodology used in the study. The initial section of the chapter examined the research design used in the study and the research paradigms. This was followed by sections that presented the target population, sampling methods and sample size. The chapter also provided a methodical review of the data collection instruments and the quantitative and qualitative data collection methods, which led to the clarification of the data analysis techniques for qualitative and quantitative data. Ensuing this, was the elucidation of the principles of trustworthiness for qualitative research and issues of validity and reliability for quantitative research. Finally, the ethical issues relating to the research both before and during its execution, were highlighted.

4.2 RESEARCH PHILOSOPHY: PRAGMATIC PARADIGM

In research, a paradigm refers to a set of assumptions, beliefs, and methodologies that guide the overall approach to conducting research within a particular field or discipline (Sileyew, 2019). A research paradigm encompasses the underlying worldview, theoretical frameworks, and research methodologies that researchers employ to study and understand phenomena (Aggarwal & Ranganathan, 2019). There are three main common research paradigms, namely positivism (associated with quantitative research), interpretivism (associated with qualitative research) and pragmatism (Aggarwal & Ranganathan, 2019). The pragmatic research paradigm, also known as the pragmatic approach or mixed methods research, combines elements of positivist and interpretivist paradigms (Newman & Gough, 2020). It emphasises the practicality of research, focusing on addressing real-world problems and generating actionable knowledge (Newman & Gough, 2020).

This study adopted the pragmatic research paradigm in line with the mixed-methods research methodology. One of the key characteristics of the pragmatic research paradigm is the use of methodological pluralism (Borrego, Douglas & Amelink, 2020). Pragmatic researchers are

open to using a combination of quantitative positivist and qualitative interpretivist research paradigms, depending on the research question and the nature of the problem being studied (Borrego et al., 2020). Pragmatism was chosen because the use of positivist and interpretivist research paradigms aided in providing complementary insights and a more comprehensive understanding of the phenomenon, particularly the influence of COVID-19 on the strategy formulation for sustainable competitive advantage of chosen healthcare companies in Durban.

Thus, in this study, both interpretivism and positivism were adopted to deal with different aspects of the study's research questions. Interpretivism is a philosophical approach often employed in qualitative research (Newman & Gough, 2020). It emphasises the importance of understanding and interpreting human behaviour, experiences, and social phenomena in their natural and social contexts. Interpretivists believe that individuals and their social interactions are complex and cannot be reduced to objective, universal laws or generalisations (Newman & Gough, 2020). In qualitative research, interpretivism focuses on the subjective meanings, interpretations, and perspectives of participants. Interpretivism recognises that individuals construct their own realities and that these realities are shaped by cultural, social, and historical contexts (Basias & Pollalis, 2018). Interpretivism was applied to solicit different interpretations on the qualitative research questions (Basias & Pollalis, 2018) being pursued in this study. The rationale for choosing interpretivism lies in the fact that there are likely to be a variety of subjective meanings and interpretations of the research questions pertaining to participant perceptions of the factors that influenced strategy formulation for sustained competitive advantage of selected healthcare companies in Durban, South Africa, and on strategies formulated by the healthcare companies in Durban, South Africa, to gain a competitive advantage since the emergence of COVID-19.

Positivism was also integrated into this research. Positivism is a philosophical approach commonly employed in quantitative research and it emphasises the use of empirical evidence, objectivity, and the scientific method to study and understand the social world (Vasileiou, Barnett & Thorpe, 2018). Positivists believe that social phenomena can be observed, measured, and analysed using rigorous scientific principles. Positivists assume that there are objective realities that can be studied independently of individual interpretations and subjective experiences (Vasileiou et al., 2018).

The positivist research paradigm was applied to research questions pertaining to the influence of COVID-19 on strategy formulation and implementation within organisations and its influence on the sustainable competitive advantage of some healthcare companies in Durban, South Africa. Positivism was applied to test the causal relationship between COVID-19 and strategy formulation on the one hand and strategy formulation and impact on sustainable competitive advantage on the other.

4.2.1 EPISTEMOLOGY OF PRAGMATISM

The word "epistemology" is derived from the term "episteme", which denotes the study of the philosophical theory of knowledge. Epistemology makes it possible for human beings to attain knowledge in the form of research data. Monette, Sullivan & DeJong (2019) explain that the epistemology of pragmatism is grounded in the belief that knowledge and truth are derived from practical experience and the consequences of our actions. The epistemology of pragmatism places value on experimentation and learning through experience (Vasileiou et al., 2018). Thus the epistemology of pragmatism was adopted in the sense that it allowed the manner in which knowledge about the influence of COVID-19 on strategy formulation for sustained competitive advantage, the influence of the COVID-19 pandemic on the performance of the health care companies, strategies formulated by the healthcare companies and factors that influenced strategy formulation for sustained competitive advantage of selected healthcare companies in Durban, South Africa, was acquired. Thus, through the epistemology of pragmatism, knowledge was acquired through active engagement with the research participants and through statistical analysis to allow for integrated and comprehensive findings on the research questions.

4.2.2 ONTOLOGY OF PRAGMATISM

Ontology is described as the science of discovering the nature of reality or truth. Vasileiou et al. (2018) state that pragmatism takes a practical and instrumental approach to ontology, emphasising the relationship between our beliefs, actions, and the consequences they produce. It focuses on how we navigate and interact with the world rather than on abstract metaphysical questions. The ontology of pragmatism emphasises practical engagement with reality, the role of beliefs and actions in shaping our understanding of the world, and the contextual and processual nature of reality (Bell et al., 2019). According to Corbin & Strauss (2017), pragmatism focuses on the consequences and practical outcomes of our beliefs and actions,

rejects fixed essentialism, and values pluralism in understanding reality. The ontology of pragmatism was applied in this study through an instrumental approach to engage with the reality of factors affecting strategy formulation during the COVID-19 period. To achieve this, both a survey questionnaire and an interview guide containing research aligned questions were availed to different categories of participants in order to gain an understanding of the practical issues underlying the research inquiry.

4.2.3 AXIOLOGY OF PRAGMATISM

The axiology of pragmatism refers to the values and ethics that guide pragmatic thinking and action (Creswell & Clark, 2016). Axiology of pragmatism places emphasis on practicality, usefulness, and the consequences of beliefs and actions (Kumari et al., 2023). It values problem-solving, open-mindedness, ethics and a focus on achieving practical outcomes (Kumari et al., 2023). In this study, axiology of pragmatism was applied to the research through an empirical investigation of issues surrounding the influence of COVID-19 on strategy formulation with a view to proposing effective strategies to gain a competitive advantage post-COVID-19 in South Africa as part of the problem-solving approach dictated by the axiology of pragmatism.

4.3 RESEARCH DESIGN

To counter the drawbacks of utilising just one method, a mixed-methods strategy was adopted in this study. The adoption of a mixed methods research technique is the most appropriate research methodology for this study. According to Mouton & Marais (2020), there are three different types of mixed method research: convergent parallel mixed method, exploratory sequential mixed method, and transformational design. The convergent parallel mixed method research design will be used for this study. Data collection, analysis, and interpretation was done using a convergent parallel mixed-methods study design. According to Kumari et al. (2023), the convergent parallel mixed method research technique comprises both quantitative and qualitative investigations into the research issues concurrently. Utilising parallel processes, the convergent parallel mixed method research technique comprised the concomitant data collection of quantitative and qualitative research instruments. Mixed-methods research is defined as:

> the collection or analysis of both quantitative and qualitative data in a single study, in which the data are collected concurrently or sequentially and are given a preference, and which encompasses the integration of the data at one or more phases in the process of the research (Mouton & Marais, 2020).

The quantitative part of the research design was focused on gathering and numerical data pertaining to the influence of COVID-19 on strategy formulation and implementation within organisations and its influence on the sustainable competitive advantage of some healthcare companies in Durban, South Africa. Quantitative research was advantageous in the sense that it allowed for the easy and quick collection of data from a large pool of respondents. Furthermore, quantitative research is advantageous because it leads to a statistical and scientifically objective analysis of facts. However, the limitation with quantitative research is that the survey method does not allow for further probing of respondents to go beyond the mere yes-or-no answers or the guided responses provided. Thus, to overcome this limitation, the research also adopted qualitative research methodology to cover the limitations of quantitative research methodology.

A qualitative research approach is characterised by gathering in-depth and extensive information on a subject or problem that is being studied or looked at (Borrego et al., 2019). One of the traits of qualitative research is that it is a non-numeric way of gathering and analysing a comprehensive amount of information about people's lived experiences, opinions, beliefs and views of participants (Corbetta, 2021). Qualitative research is also conducted in a setting that is natural. Since all responses are taken into account, it learns about people's lived experiences using a method that is typically referred to as inductive (Corbetta, 2021).

Qualitative research was applied to research participants to explore the strategy formulation used for sustained competitive advantage of the health care products industry in Durban, South Africa. There are several advantages to conducting research using the qualitative method, Firstly, qualitative research does not hinder the collection of detailed information from participants; hence, it has a greater inclination to lead to more comprehensive findings. More so, qualitative research takes place in a natural setting, adding to the credibility of the findings. However, a limitation of qualitative research is its standard practice of collecting data from a smaller sample of participants, which makes it difficult to generalise the findings to the entire

population. This limitation will be mitigated by sending a survey research instrument to a larger number of respondents.

4.3.1 Research Objectives and Research Methods

Objective 1: To determine the influence of the COVID-19 pandemic on strategy formulation for sustained competitive advantage of the health care products industry in Durban, South Africa. The quantitative research method was utilised for the objective.

Objective 2: To explore the factors that influenced strategy formulation for the sustained competitive advantage of selected healthcare products companies in Durban, South Africa. The quantitative and qualitative research methods were employed to achieve this objective.

Objective 3: To examine the strategies formulated by the health care product industry in Durban, South Africa, to gain a competitive advantage since the emergence of COVID-19. The entailed application of the qualitative research method.

The utilisation of both qualitative and quantitative methods in this study clearly indicates that a mixed-methods research design was applied in this study. The rationale for using the mixed-methods research design is based on the following advantages (Coffey & Atkinson, 2018). Firstly, mixed methods were adopted because they enable the researcher to obtain more comprehensive findings than any other research methodology alone (Coffey & Atkinson, 2018). The mixed methods help complement the weaknesses of one research methodology by using another research methodology. However, the limitation of the mixed-methods research design is that it is time-consuming and sometimes expensive to conduct (Bell et al., 2019). Notwithstanding this limitation, the researcher exercised patience when collecting data because the advantages of mixed methods outweighed the disadvantages. In this study, the advantages related to collecting comprehensive data and formulating comprehensive conclusions far outweighed the limitation of time.

4.4 TARGET POPULATION

The senior management and non-managerial personnel of six (6) registered enterprises involved in the supply of healthcare items, such as medical equipment, protective apparel, and medical consumables, constituted the target population of this study. More explicitly, senior management of these companies who perform strategy-making and decision-making roles at the corporate level formed part of the target population for the qualitative part of the study, while professional and technical employees performing accounting, marketing, human resources, information communication technology roles as well as technical employees involved in the production and operations departments, formed the target population for the quantitative part of the study. Members of the target population were chosen for their possession of intimate knowledge about the research phenomena being pursued in this study.

The target population for managerial employees was 28 and the qualitative research method was used whereas the target population for non-managerial employees was 200, where the quantitative research method was used. The decision to select managerial employees was made because they have intimate and pertinent knowledge of how the COVID-19 pandemic has affected the formulation of strategies for selected healthcare companies in Durban to maintain a competitive advantage.

Table 4. 1: Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
Privately owned companies which are situated in Durban—only privately held businesses that provide healthcare services which were in operation during the COVID-19 pandemic—were selected. This selection was due to the fact that most businesses in the health care products industry in South Africa became incapacitated due to disruptions in the global supply chains and also due to government-imposed	State-owned facilities that did not sell health care products to consumers, thus there was no bearing on profit margins and profitability on business.

lockdowns, which had a devastating effect on the firm's liquidity and profitability.	
Durban was selected due to the immediate availability of health care companies in the area. Due to the COVID-19 pandemic, it was more feasible to access the clients living in the same city.	Any privately held business which provides health care outside of Durban. The proximity to reach clients during the COVID-19 pandemic was a deterrent on selecting companies outside of Durban
Those employed in senior managerial and higher positions at privately held healthcare services in Durban. Senior managers and above are able to identify, engage in decision-making and revisit the company's strategies.	Non-managerial staff members of privately held business enterprises operating in Durban that provide healthcare services

4.4.1 Sampling method

Convenience sampling was used to choose the organisations, and it involved choosing healthcare service providers whose management was open to participating in the study. According to Pascoe (2020), both the random probability sampling approach and the non-probability sampling purposive method were used to choose respondents for study participation.

With respect to the distribution of a survey questionnaire for the quantitative study, the probability random sampling method was used to select participants for the study. The random sampling method involves the non-systematic random selection of participants (Pascoe, 2020). This method gives each participant an equal chance of being selected and hence eliminates subjectivity and bias in the participant selection process (Pascoe, 2020). The main advantage of this method is that it helps to make the findings generalisable (Mohajan, 2018). Random sampling was actioned by requesting employees from the six registered companies who were willing to participate in the study to indicate by writing their names on the prescribed form that was circulated by an authorised designated person in each of the companies. Upon completion of the registration process, the names were typed and put into a random computer generator for

the random selection of non-managerial employees who were to receive and complete the survey questionnaire. The use of random sampling was adopted because it eliminated bias and subjectivity in the participant selection process and also helped to ensure the representativeness of the findings across the entire spectrum of non-managerial employees.

On the other hand, both non-probability purposive and convenience sampling methods were applied in the election of senior managerial employees who were targeted to participate in the interviewing data collection strategy for the qualitative part of the study. Purposive sampling involves deliberately selecting participants who possess specific characteristics, experiences, or knowledge relevant to the research question (Mohajan, 2018). This approach allows researchers to gain in-depth insights from individuals who can provide the most relevant and valuable information (Mohajan, 2018). Thus, senior managerial employees were purposively selected on the basis that they possessed relevant and valuable information about the influence of COVID-19 on strategy formulation and how strategy formulation contributed to sustained competitive advantage. The convenience sampling involves selecting participants who are readily available and accessible to the researcher (Kumari et al., 2023). The convenience sampling method was chosen because the availability and willingness of members of the target population were deemed to be unpredictable; hence, the researcher had to conveniently select those members of the target population whose availability and willingness were expressly guaranteed.

4.4.2 SAMPLE SIZE

Using Slovin's formula n = N/(1 + Ne^2)*, where n = 133, is the sample size of the population, N = 200 which is the total population, and e is the margin of error which is 0.05. The sample size n at the 95% confidence level was estimated for this investigation. The population size of prospective respondents was determined by the company's human resources departments.
A sample size of all six (6) businesses, namely Renttech, E-Moyo, Clatten Supplies, Kendon, Zeta Laboratory, and ATB Supplies, was calculated using Slovin's formula. The following sample sizes for quantitative research were calculated using the Slovin formula as follows: A total of 133 participants were obtained for the survey questionnaire from Rentech (29), E-Moyo (21), Clatten Supplies (20), Kendon (24), Zeta Laboratory (19), and ATB Supplies (20) at a

95% confidence level. A sample size of less than 100 should be considered representative of the entire population for the study, according to the Slovin formula for calculating sample sizes.

For the interviews based on the company's organogram, the sample size for the qualitative research will be 18 senior managerial personnel of certain health care companies in Durban, South Africa. The sample size of 18 was selected based on the willingness and availability of the managers to participate in the study during the Covid - 19 Pandemic. The acceptability of a sample size of 18 was further substantiated on current studies on qualitative studies in that although some qualitative studies require up to 40 participants to reach data saturation, 12-15 participants are the norm, depending on how broadly the study is defined (Moon , Wolf, Baker, Carman, Clark, Henderson, Manton & Zavotsky, 2013).

4.5 DATA COLLECTION METHODS

In order to collect data from the research participants, this study used questionnaires and interviews as its methods. These tripartite data collection methods, which also included documentary analysis, were chosen because they gave the researcher the opportunity to gather a wide range of data from the research subjects.

4.5.1 ONLINE INTERVIEWS

Online interviews were conducted via Zoom meetings and Microsoft Teams meetings with a carefully chosen sample of participants. Online interviews involve posing questions to participants and receiving responses through electronic data interchange platforms, notably the internet (Mouton & Marais, 2020). Senior managerial staff from the study's participating companies were subjected to online interviews. Interviewees were administered through a three-step process. The first administration procedure involved reaching out to participants who had been chosen through purposive and convenience sampling by email. The email instructed the participants to respond to the online interview guide, and the links were sent to them. The email also instructed respondents to email a letter of acknowledgement informing the researcher that they had received the email and the link. The online interview guide contained semi-structured interview questions. The interviews adhered to a predetermined set of questions: open-ended questions that were aligned to the research problem and objectives. The participants were also required to note their responses in the open spaces corresponding to each question. Upon completion of the online interviews, respondents were instructed to click the

submit button, which made it possible for the researcher to receive completed online interview guides. Further probing for clarity and detailed information was also pursued through follow-up emails. This was done as part of the fulfilment of the objective of obtaining detailed and clear responses consistent with a qualitative research methodology and desired outcomes. Online interviews were chosen because they minimised the difficulties associated with the non-availability of managerial employees due to their busy schedules (Corbetta, 2021). Online interviews were therefore a credible strategy as far as managerial employees were concerned because it afforded them the convenience of responding to the online interview guide during the periods when they were not busy. Secondly, online interviews were a valid and credible strategy because they helped to eliminate the pressure and discomfort of having the interviewer be physically present and inducing participants to respond in a manner, they thought would please the researcher (Corbetta, 2021). Thus, online interviews afford the interviewees the freedom and latitude to freely express their views in the absence of the interviewer. The major challenge with online interviewing is that it can be affected by a low response rate and higher incidences of incomplete answers (Mouton & Marais, 2020). The research encountered this limitation but was countered by the researcher exercising greater patience and persistence in sending numerous follow-up emails as reminders and also for further probing.

4.5.2. QUESTIONNAIRE SURVEYS

A survey questionnaire was also used as a data collection tool. Survey questionnaires include closed-ended questions with fixed answers and are used for quantitative studies. Survey questionnaires were used for various reasons. Survey questionnaires are advantageous to use in the sense that they are less costly and can be administered fairly quickly and easily to a large pool of respondents (Borrego et al., 2019). By virtue of the fact that they collect data from a large number of respondents, their findings are largely regarded as generalisable (Borrego et al., 2019). Thus, they do allow for the collection of large quantities of data within a short period of time. However, they have the disadvantage that they do not allow for further elaboration of responses beyond the fixed choices provided. Nevertheless, this limitation was overcome by the use of interviewing techniques. Survey questionnaires were physically distributed and retrieved from participants through a three-step process. This was a valid and credible strategy in the sense that it allowed for quick contact and faster distribution of the questionnaires. Online survey questionnaires were not chosen because they have a generally low response rate, and they also have the disadvantage that following up with a large pool of respondents online may

be time-consuming and frustrating. Firstly, the researcher obtained permission from the senior management of the participating companies to reach out to their professional and technical employees willing to complete the survey questionnaires. Upon final selection through the random sampling method, the researcher informed the participants at meetings and obtained consent from those participants who worked shifts so as to form a WhatsApp group from which all information concerning the venues, times and dates for collecting the questionnaires, as well as the modus operandi for returning the completed questionnaires, was provided. Survey questionnaires were physically distributed through designated persons within the company, and sealable envelopes were provided for enclosing the completed research instrument. The third step involved the collection of completed questionnaires. Respondents were given the option of calling the researcher to collect the questionnaires in person or to insert their completed questionnaires in a drop box which was also at the work area. Quite a significant number of participants preferred the former, and this saw the researcher making frequent trips to collect the completed questionnaires, while others preferred the drop-box method. The diction and language used in the survey questionnaires were simplified in order to allow for easy interpretation of the research questions. Such a strategy is recommended by Borrego et al. (2019), who pointed out that questionnaires need to be written in plain, simple language so as to minimise complications in understanding and low response rates.

4.6 RATE OF RETURN (QUESTIONNAIRE)

Every sample may not reach a specific proportion, which could have an impact on respondents' response rates (Saunders et al., 2016). By dividing the total number of completed questionnaires by the number of participants who were eligible for the sample, the response rates were calculated. The distribution of the surveys had a response rate that was deemed to be satisfactory. Due to constant follow-up and monitoring, this response rate was possible. One hundred and twenty-three (123) questionnaires were returned, of which none were rejected. In all, 123 of the questionnaires were considered valid and found usable, as shown in Table 4.2 below:

Table 4. 2: Questionnaire distribution

Questionnaire Distribution	Frequency	Percentage
No of questionnaires administered	133	100%

No returned and completed	133	100%
No unreturned/unusable	0	100%

According to statisticians, a sample size is neither conceptually large nor small as long as it accurately characterises and fairly represents the study's population (Pascoe, 2020). Every researcher aims for a response rate of about 60%, according to Doherty (2018), as a low response rate compromises the validity and dependability of the survey's results. The response rate of 100%, representing the sample data, was deemed to be quite acceptable in light of this research study.

4.7 MEASUREMENTS

In research, 'measurement' refers to the process of observing and recording observations, which are an integral part of the research process (Dalati, 2018). Furthermore, according to Saunders et al. (2016), "measurement encompasses the allocation of numbers, in terms of fixed rules, to individuals or objects to indicate variations between them in some characteristic or attitude." The Likert Measurement Scale was used in this investigation. Initial plans called for a "closed and open-ended questionnaire" to be emailed to the research team in order to administer the quantitative portion of the study.

To measure the degree of agreement or disagreement with statements made regarding the research's topic, a Likert scale was used in the questionnaire. Mouton & Marais (2020) posited that "Likert scales were devised in 1932 as the classic five-point bipolar answer type most people are familiar with today". People are frequently asked to rate how much they agree or disagree, approve or disapprove, or believe that a statement is true or incorrect on these scales. According to Dalati (2018), a Likert scale is also described as a type of scale that is balanced with an equal number of agreement and disagreement response choices. Because responses to specific items are used to create a participant's overall score on this type of scale, it is also referred to as a summative scale. Questions in Section B focused on, how the COVID-19 pandemic affected the health care products market in Durban, South Africa and the variables that affected the creation of strategies for certain Durban-based healthcare product companies to maintain their competitive edge. For categorical replies in Section A, the nominal scale was utilised. The analysis of ordinal data uses a Likert-style rating scale. On a scale of one to five,

with five being the strongest level of agreement, the participants were asked to select their response (severely agreed = 5, agreed = 4, somewhat agreed = 3, disagreed = 2, severely disagreed = 1)., likert scales, provides a convenient and flexible way to analyse and visualise Likert items in R Statistical computing software of the R Core Team, 2020. By providing a simple and intuitive interface for working with Likert items, the package facilitates the exploration and understanding of complex survey data (Bryan, 2020).

4.8 ANALYSIS OF THE QUALITATIVE AND QUANTITATIVE DATA

To comprehend the question that the study is focused on, data analysis requires the researcher to evaluate the information acquired and sort, choose, and organise the statistics (Du Plooy-Cilliers et al., 2021). Both themes and statistical analysis were used in this study. The methods used in this study's data analysis are covered in the next subsection.

4.9 QUALITATIVE DATA ANALYSIS

The qualitative information collected from emailed responses from senior managers who were part of the target population was read, evaluated and analysed by the researcher. Initially, all emailed interviews were transferred to the research documents in their raw form. This was followed by a decision regarding the method of analysing the data. Thematic analysis, a general method for analysing qualitative data that includes categorising the data's subjects or models, was used to analyse the qualitative data.

The study's findings and conclusions were created through the description of the data in terms of subjects and concepts. Thematic data analysis is a qualitative data analysis approach and technique that allows the researcher to pinpoint underlying themes (Monette et al., 2019). Following that, these themes are arranged using illustrative codes. Thematic coding is further described as "a method of data reduction by means of identifying themes" (Robert, Dowell & Nie, 2019). The initial phase involved getting familiar with the data. This involved reading and re-reading the data to get an understanding of the contents of the data. This entailed reviewing a handful of interview data sets in order to get a summary or outline of the data set. This was targeted at noticing and detecting recurring themes and ideas. Dominant and emerging patterns

in the data were identified. The main ideas were written down and coding from the stream of data was done. After coding, the data was put into different categories depending on its intended meaning. This was done in alignment with the research objectives. Irrelevant data was removed. This was done with greater care to avoid losing valuable data. To obtain a summary or outline of the data set, it required reading through a number of interview transcriptions. The goal of this was to identify recurrent themes and ideas. Fundamental issues that had been uncovered through interviews were found through thematic analysis. The NVIVO software was also used to help in generating themes and analysing data.

4.10 QUANTITATIVE ANALYSIS

The statistical data analysis will be conducted in R Statistical computing software of the R Core Team, 2020, version 3.6.3. The advantages such as statistical power, flexibility, dynamic graphics and reproducibility make R computing software a popular choice among data analysts, statisticians, and researchers (Grolemund, 2014).The results will be presented in the form of descriptive and inferential statistics. Categorical variables were mostly applicable and were described as counts and percentage frequencies. Pie and simple bar charts were also used to visually display the categorical variables. Likert plots were used for handling multidimensional presentation of the categorical data. To determine the association between categorical variables, a Chi-Square Test will be used and when the distribution of the cross tabulations contained an expected value of less than five, a Fisher's exact test was applied. In the case of significant difference between the Chi-Square or Fisher exact test, a row wise paired z-test was used as a post hoc analysis following the omnibus tests (Chi-Square or Fisher exact test). The internal consistency of a set of items will be assessed using the Cronbach alpha and the item-rest correlation. To improve the Cronbach alpha, items with opposite scale direction will be reversed and those suppressing the Cronbach will be dropped. All the inferential statistical analysis tests will be conducted at 5% levels of significance.

4.11 RELIABILITY AND VALIDITY OF DATA

By measuring degrees of internal consistency with the Cronbach alpha measurement, reliability was guaranteed. For this investigation, the Cronbach alpha was 0.95. This demonstrated higher degrees of dependability and internal consistency. The Cronbach alpha coefficient ranges from 0 to 1, with 0 denoting great unreliability and 1 denoting extreme dependability. The minimal coefficient of 0.7 is recommended in the literature (Humphries 2017). When determining scale reliability in terms of item equivalence within single-construct scales, Cronbach's alpha is most useful. The most popular indicator of internal consistency (or reliability) is Cronbach's alpha. When a researcher has several Likert items in a survey or questionnaire that form a scale and wants to know if the scale is dependable, it is most frequently employed in similar studies (Humphries, 2017). Researchers have an easy technique to determine whether a score is credible because of Cronbach's alpha.

The following steps were utilised in R Statistical computing software of the R Core Team, 2020, version 3.6.3. was used to calculate the Cronbach alpha. The first phase entailed entering the survey's data, then clicking "analyse," "scale," and "reliability analysis," which were all followed by other clicks. The following stage entailed changing the survey's variables from "variables" to "items," setting the model default to "alpha," clicking on the "statistics" dialogue box, selecting "item," "scale," and then selecting correlation in the "inter item" box.

Clicking "continue" and then "OK" was the final step. The Cronbach alpha statistic was then available for examination. One of the simplest and most reliable techniques to assess the internal consistency or dependability of the results is to compute the Cronbach alpha using the R Statistical computing software. The collection of elements in the research instrument was then examined using the Cronbach alpha statistics to see if they were closely connected (Humphries, 2017).

According to Saunders et al. (2016), an instrument's validity is determined by how well it captures the underlying concept that it is meant to measure. Criterion validity, content validity, construct validity, face validity, and concurrent validity are common types of validity in the literature (Saunders et al., 2016; Borrego et al., 2015). Although each of these types has distinct advantages, face validity, content validity, and construct validity are used in this study.

While content validity examines whether the questions in the instrument accurately reflect what should be measured, face validity simply looks at how the research instrument is organised to determine its validity. The extent to which the content of the instrument includes all of the elements necessary to address each study purpose, on the other hand, is referred to as construct validity (Du Plooy-Cilliers et al., 2021).

In this study, the supervisor, a subject matter expert who can offer a critical assessment of the instruments, guaranteed content validity by ensuring that the instruments contained all pertinent information (and questions) that adequately covered the study's focal concerns.

By providing the questionnaire and interview guide to selected professionals in the subject area under consideration, face validity and construct validity were guaranteed. Four (4) employees from one of the companies were thus given the instruments to critically evaluate the questions in light of the study's goals. Prior to this, a thorough review of the literature served as the basis for developing questions. In order to create pertinent questions for the phenomenon under consideration, a wide range of current academic literature, official documents, and news stories were heavily researched.

The instruments' advanced drafts were also tested in order to ensure their clarity, promote understanding, eliminate ambiguous terms, and rewrite unclear statements. This exercise is completed before the real data gathering. In this regard, the interview schedule will be trialled on the same four employees described earlier, while the questionnaire is being tested on ten (10) individuals from one of the study's participating organisations. Although the data from the pilot surveys were not used in the final analysis, they were used to find inaccuracies and defects in the research instruments.

4.11.1 Principles of Trustworthiness

The following strategies were deployed by the researcher to guarantee the quality of the collected data:

- **Credibility**

Basias & Pollalis (2018) define credibility as one's perception of the outcomes' realism and deservingness of belief. Credibility has a role in instilling confidence that the results are accurate, trustworthy, and believable from the viewpoint of the participants. Triangulation is one of the methods a researcher can ensure credibility of findings (Basias & Pollalis, 2018). Triangulation is one of the methods a researcher can use to ensure the credibility of their findings (Basias & Pollalis, 2018). Triangulation involves using multiple sources of data, methods, or researchers to examine the research question from different perspectives (Corbett, 2020), and it involves using different data collection methods (such as interviews, surveys and observations) or involving multiple researchers so that the findings can be cross-validated, thereby strengthening the credibility of the research. Triangulation was also applied as one of the strategies for ensuring credibility in this study. This process involved corroborating study findings with other sources and prior research on a similar topic to ensure that there were no serious divergences. Serious divergence would indicate a lack of credibility of findings. However, in this study, triangulation of sources confirmed that there were no material divergences between the study findings and the other sources. This study ensured the credibility of findings by undertaking rigorous and strict adherence to both quantitative and qualitative research methodology procedures and processes so as to generate credible findings.

- **Transferability**

Transferability in qualitative research, according to Basias & Pollalis (2018), is a principle of reliability in research that offers judgement and proof that the findings from the research may be applied to various contexts, situations, times and people. Transferability was also ensured by providing thick descriptions of the socioeconomic, cultural, and environmental circumstances that surrounded data collection. The transferability of results was also ensured by providing explicit, thorough descriptions of the locations and times of the interviews as well as other components of data collection that contributed to a more complete and detailed understanding of the research environment.

- **Dependability**

Dependability is a principle of trustworthiness in qualitative research that aims to show the consistency or steadiness of the inquiry processes (Corbin & Strauss, 2017). Thus, dependability aids in ensuring that the study's conclusions are reliable and repeatable (Corbin & Strauss, 2017). Member checking is also one of the methods used to ensure the dependability

of the findings. Member checking involves sharing the research findings with participants to verify the accuracy and interpretation of the collected data (Corbett, 2020). This collaborative process allows participants to provide feedback and corrections, ensuring that their perspectives are accurately represented (Corbett, 2020). Member checking was also performed to ensure dependability and involved providing research participants with the chance to confirm whether what they said was included in the findings. Dependability was ensured in this study by checking and re-checking the data transcription to make sure there were no omissions in the integration of the data that was gathered and translated into results.

- **Conformability**

Conformability is a criterion that is used in qualitative research to assess the degree to which the research findings are derived from the respondents' own narratives as opposed to any researcher biases (Corbett, 2020). Maintaining clear and detailed documentation of the research process is crucial for ensuring conformability. This includes documenting the research design, data collection procedures, data analysis techniques, and decisions made during the research (Corbett, 2020). Transparent documentation enables others to understand and replicate the study, ensuring transparency and conformability. This detailed record provides a transparent account of the research process, allowing others to evaluate and verify the accuracy and conformability of the findings.

4. 12 ETHICAL CONSIDERATIONS

In this sense, ethics refers to the set of rules that a researcher must follow to make sure that study participants are treated with respect and valued. Conduct in research is crucial since it calls for honesty and integrity from the researchers. The unwavering safeguarding of human beings is how this is made possible. The most important ethical rules in social science, according to Basias & Pollalis (2018), are those that relate to "voluntary participation and causing no harm to the participants; maintaining anonymity and confidentiality; and not deceiving the subjects of the research."

The study's design concentrates on the anticipated ethical norms and principles associated with research. It is important to obtain permission, maintain confidentiality and anonymity, and ensure that the consent given is in a clear and understandable manner, that participants are not harmed and suffered from any harm. All paper records were secured with locks on cabinets

with restricted access to third parties, ensuring confidentiality. In order to prevent unwanted third parties from accessing electronic data, secrecy was ensured by encrypting the data with passwords. In order to conceal the identities of research respondents and/or participants, pseudonyms were used in place of real names to ensure anonymity. In addition, to maintain the respondents' privacy, names, addresses, or phone numbers were not written down. In order to do this, responses were coded, and respondents' identities remained sacred and untouchable. Pseudonyms were also utilised to ensure the secrecy of the respondents' identities.

4.12.1 IREC APPROVAL

Before beginning fieldwork, the researcher will make sure that IREC approval has been received.

4.12.2 Ethical considerations in the Recruitment of managers and employees

Once the researcher receives a gatekeeper's letter from the companies, there are two basic ways to find respondents. First, consent was obtained in writing so that a letter inviting each participant could be distributed at management meetings. Everyone who was interested was asked to freely enter their names, contact information, and email addresses in the slots provided. The second strategy involves designating a staff member to hand out letters inviting people to join in the study, with areas for anyone interested to freely provide their names, contact information, including a phone number and email address, for communication reasons.

When it was feasible, WhatsApp users were told to click a link to join the research group. On the letter of invitation, participants-in-waiting who weren't on WhatsApp should state how to get in touch with them. A group email address was made just for the research's purposes, and participants and potential respondents were given the password in order to prevent supervisors from sending surveys to staff members and instilling fear. All participants were instructed by the researcher to access the interview schedule via the created group email account and complete it.

In order to respect human integrity, the researcher obtained the respondents' informed consent and confirmed that they were willing to participate based on their understanding of the study's objectives. Taylor, Bogdan & DeVault (2019) state that "informed consent is the mechanism by which individuals decide whether to contribute to an inquiry after being informed of the

details that are likely to influence their choices". The researcher benefits greatly from these consent letters since they lay out the objectives of the study. Additionally, consent was sought from everyone who would be questioned before the interviews were conducted.

The respondents were also reminded that they were free to reject engaging in the research and that, should they decide to, they were free to withdraw at any moment without suffering consequences. Additionally, respondents had plenty of opportunity to express questions about the analyses, which were well answered. So, prior to completing the interview schedules, time was spent outlining the precautions taken to safeguard the respondents. The researcher successfully obtained ethical approval from the University Research and Ethics Office and received letters of authorisation from gatekeepers at the organisation where the research was to be conducted, allowing the research to proceed. Gatekeepers are those people who enable researchers to gain access to an organisation or community to conduct their research (Taylor et al., 2019).

4.13 CONCLUSION

The approach utilised to gather and compile the data for the research undertaken was described in this chapter. In-depth explanations of the methodology and paradigm employed in this investigation were provided. The chapter also covered the techniques for gathering the data, including surveys and interviews. The sample strategies used in the study were also extensively examined. The chapter came to a close by describing the many measures that were taken to ensure the study's dependability and validity, the veracity of the data, and its ethical conduct. The next chapter presents, analyses, interprets and discusses research results pertaining to qualitative and quantitative data.

CHAPTER FIVE

STATEMENT OF FINDINGS, INTERPRETATION AND DISCUSSION

5.1 INTRODUCTION

In the preceding chapter, the focus was to explore the influence of COVID-19 on the strategy formulation for sustained competitive advantage of selected healthcare companies in Durban. This chapter centres on presenting the results from the survey and from the interviews, where figures and tables are also presented. In order to achieve the objectives of the research, data was collected through questionnaires and in-depth interviews with participants. This data is presented and analysed. There are five distinct sections. The first section presents the results of the pilot study. The second section discussed and analysed the biographical data obtained from the research. The third section presented and analysed data collected through questionnaires and in-depth interviews regarding participant views on the influence of the COVID-19 pandemic on the performance of the health care products industry in South Africa. The fourth section presented and analysed data on influence during COVID-19 on strategy formulation for sustained competitive advantage of selected healthcare companies in Durban. Lastly, the fifth section presented and analysed data gathered through questionnaires and in-depth interviews regarding the COVID-19 factors that influenced strategy formulation for sustained competitive advantage of selected healthcare product companies in Durban, South Africa.

5.2 PILOT STUDY

Pilot testing is defined as a small-scale version or trial done in preparation for the larger study (Simon 2011). It is also referred to as the pre-testing of the research questionnaires and interview schedules. Reliability and validity are fundamental to the study. Reliability and validity are often used by the researchers at the pilot study and initial analysis stages. “A pilot study aids in identifying possible problems and deficiencies in the research instruments that might create trivial distortion in the main research work” (Mohamad, Pulka & Ramli, 2018).

The pilot study was conducted to validate both the interview guide for qualitative data collection and the questionnaire for quantitative data collection. As part of the pilot study, four (4) respondents from managerial employees were selected to participate in the pilot

interviewing, while a minimum of ten (10) participants were drawn from the target population of operational employees to participate in the completion of questionnaires.

5.1.1 Results of Qualitative Data Analysis

A pilot study was undertaken involving four participants, who were taken from the target population of managerial employees from the selected healthcare companies. Generally, the interviewing process proceeded smoothly, and most interviewees were able to answer the interview questions without difficulty, which gave assurance that the main interview was going to proceed smoothly as well. The results of the pilot study revealed that the influence of the COVID-19 pandemic on the profitability of the organisations was negative, as they experienced job losses, revenue losses, a decrease in demand, and an increase in costs.

The pilot study findings illustrated that marketing activities were influenced by the COVID-19 pandemic in different ways, depending on the industry; while some had none or limited marketing, while others did not rely on marketing at all.

The results of the pilot study established that the supply of health care products depended on raw material procurement, actual production, and distribution, whereas some industries relied on this process while others did not. The COVID-19 pandemic affected this process by causing shortages of components, long lead times, dissatisfied clients, and financial constraints.

The findings revealed that shortfalls in the operational process due to the COVID-19 pandemic varied by industry. Some faced challenges in equipment calibration, business standstill, decreased staff, time-consuming sanitisation, booking room shortages, and revenue loss, whereas others did not have any shortfalls in procurement.

Results showed that the responses were in accordance with the research objectives and questions.

No further intervention was required.

5.1.2 Results of Quantitative Data Analysis

A questionnaire pilot survey was conducted on ten (10) employees. The pilot questionnaire went smoothly and without problems. The study findings established that 100% of respondents agreed or strongly agreed that "COVID-19 affected my company's financial performance." This statement had the highest percentage of agreement: "COVID-19 affected my company's financial performance," with 100% of respondents agreeing or strongly agreeing. This suggests that COVID-19 had a severe and negative impact on the financial performance of the companies surveyed. The statement that had the lowest percentage of agreement was "COVID-19 varied influence on my company performance," with 40% of respondents strongly agreeing and 60% agreeing. This suggests that COVID-19 had a consistent and negative impact on the overall performance of the companies surveyed, rather than varying by different aspects or dimensions of performance. The statements "COVID-19 affected my company daily operations," "COVID-19 affected my company production targets," and "COVID-19 affected my company market share" had the same percentage of agreement, with 50% of respondents strongly agreeing and 50% agreeing. This suggests that COVID-19 had a similar and negative impact on the daily operations, production targets, and market share of the companies surveyed.

With respect to the results of the pilot survey on strategy formulation, the statements that had the highest percentage of agreement were "stay at home regulations" and "changing the operating environment," with 100% of respondents agreeing or strongly agreeing. This suggests that COVID-19 had a significant and negative impact on the healthcare industry by restricting the mobility and accessibility of customers and employees and by creating a volatile and uncertain operating environment.

The statements that had the lowest percentage of agreement were "Sanitisation enforcement regulations" and "COVID-19 introduced threats," with 70% of respondents agreeing or strongly agreeing. This suggests that COVID-19 had a moderate and mixed impact on the healthcare industry by imposing stricter hygiene and safety standards, which could increase costs but also improve quality, and by introducing new challenges but also new opportunities for growth and innovation. The statements "Competitor innovations during COVID-19," "Technological changes during COVID-19," "Changes in the demand for healthcare products," and "COVID-19 provided opportunities" had similar percentages of agreement, with around 80% of respondents agreeing or strongly agreeing. This suggests that COVID-19 had a positive

and stimulating impact on the healthcare industry by encouraging innovation, technology adoption, demand expansion, and opportunity identification.

5.1.3 FINDINGS

All 10 responses were correlated to the research objectives and research questions. No further clarity was required on the questions. The research instruments were reliable and valid.

5.2 BIOGRAPHICAL DATA OF THE PARTICIPANT POPULATION

In order to assess the influence of COVID-19 on the strategy formulation for sustained competitive advantage of selected healthcare companies in Durban, a survey questionnaire was issued to various key management, technical, and professional personnel representing a diverse cross-section of the selected companies. In this section, a table containing the biographical information concerning the age, gender, level of education, and participant categories of the 133 participants who participated in the survey is provided. A brief discussion accompanies the tables and figures. This section will begin by examining the different age categories of respondents, followed by discussion of gender and level of education participant categories.

5.2.1 AGE OF RESPONDENTS

Biographical information regarding the age of respondents.

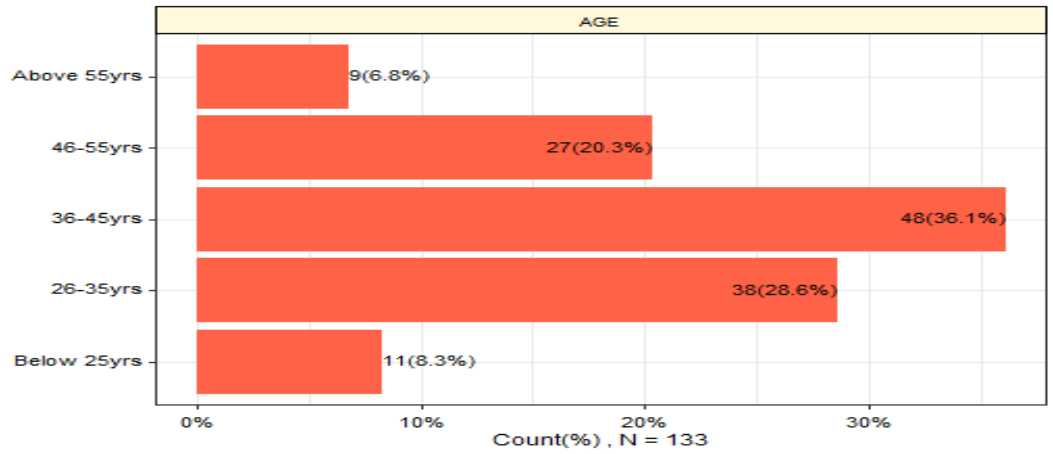


Figure 5. 1: Age of respondents

The age distribution of the respondents showed a skewed pattern, with most of the respondents belonging to the middle age groups. Out of the total 133 respondents, 48 were aged between 36 and 45 years, accounting for 36.1% of the sample. The second-largest group was the 26-35-year-olds, with 38 respondents, or 28.6% of the sample. The third-largest group was the 46-55-year-olds, with 27 respondents, or 20.3% of the sample. The smallest groups were the below--25-year-olds and the above-55-year-olds, with 11 and 9 respondents, respectively, representing 8.3% and 6.8% of the sample. The difference between the largest and the smallest groups was 27.3 percentage points. The mean age of the respondents was 39.7 years, with a standard deviation of 10.2 years. The median age was 38 years, and the mode was 40 years. The minimum age was 21 years, and the maximum age was 65 years. The age range was 44 years, and the interquartile range was 15 years. One possible implication of the age distribution of the respondents in the analysis of the influence of COVID-19 on strategy formulation is that the perspectives and experiences of different age groups may vary in relation to the pandemic and its influence on various sectors and domains. According to some sources, age is an important factor that affects the exposure, susceptibility, severity, and outcomes of the COVID-19 infection, as well as the social and economic consequences of the pandemic. Therefore, it is important to ensure that the data collected and analysed for strategy formulation are age-responsive and reflect the diverse needs and realities of different age groups. A skewed age distribution in the sample may introduce some bias or gaps in the data, especially if the

questions asked or the indicators used are not age-sensitive. For example, some questions or indicators may not capture the specific challenges faced by younger or older people in accessing health care, education, employment, or social protection during the pandemic, or the increased risk of morbidity and mortality that older people face. To address this issue, it is recommended that the data collection and analysis methods be reviewed and revised to incorporate an age lens and ensure that both younger and older people's voices are equally heard and valued in the process of strategy formulation. Additionally, it is advisable to consult with relevant stakeholders, such as age experts, civil society organisations or community representatives, to validate and enrich the data and analysis with their insights and feedback. This way, the strategies developed will be more inclusive, effective, and responsive to the age dimensions of COVID-19.

5.2.2 Gender of Respondent

The study took into consideration the gender of respondents.

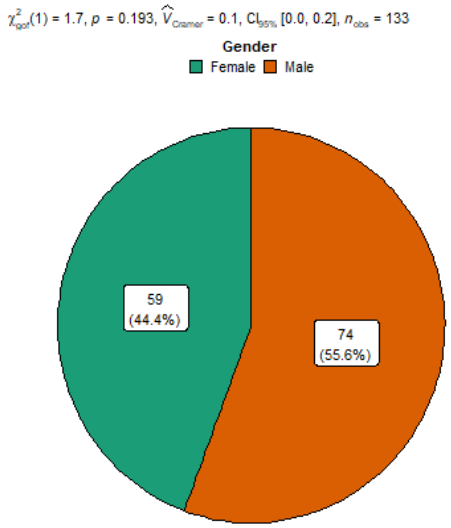


Figure 5. 2: Gender of Respondent

The gender distribution of the respondents showed a slight male dominance. Out of the total 133 respondents, 74 were males and 59 were females. This means that the male respondents accounted for 55.6% of the sample, while the female respondents represented 44.4%. The difference between the two groups was 10.2 percentage points. The study included a total of 133 respondents from healthcare companies in Durban, with 74 males and 59 females.

The gender distribution in the sample seems relatively balanced. One possible implication of the gender distribution of the respondents in the analysis of the influence of COVID-19 on strategy formulation is that the perspectives and experiences of women and men may differ in relation to the pandemic and its influence on various sectors and domains. According to some sources, gender and sex are important factors that affect the exposure, susceptibility, severity, and outcomes of the COVID-19 infection, as well as the social and economic consequences of the pandemic. Therefore, it is important to ensure that the data collected and analysed for strategy formulation are gender-responsive and reflect the diverse needs and realities of women and men. A slight male dominance in the sample may introduce some bias or gaps in the data, especially if the questions asked or the indicators used are not gender-sensitive. For example, some questions or indicators may not capture the specific challenges faced by women in accessing health care, education, employment, or social protection during the pandemic, or the increased burden of unpaid care work and gender-based violence that many women experience. To address this issue, it is recommended that the data collection and analysis methods be reviewed and revised to incorporate a gender lens and ensure that both women's and men's voices are equally heard and valued in the process of strategy formulation. Additionally, it is advisable to consult with relevant stakeholders, such as gender experts, civil society organisations or community representatives, to validate and enrich the data and analysis with their insights and feedback. This way, the strategies developed will be more inclusive, effective, and responsive to the gendered dimensions of COVID-19. The next section discusses the marital status of respondents.

5.2.3 MARITAL STATUS

The marital status of respondents was also taken into consideration for reasons explained below. **Figure 5.3** shows the marital status of respondents

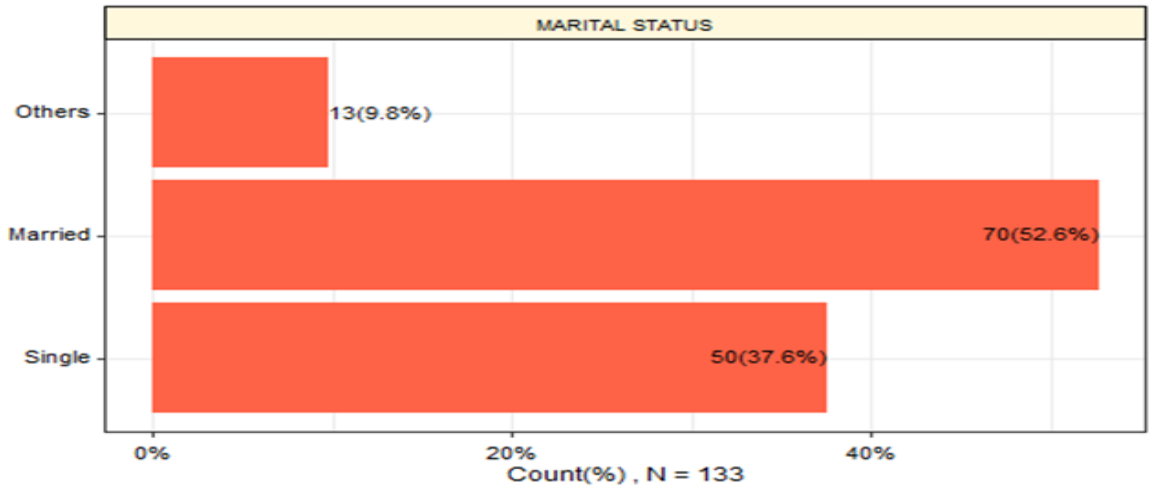


Figure 5. 3: Marital Status of Respondents

The results show that the majority of the respondents were married, accounting for 52.6% of the sample. This implies that most of the respondents had a spouse or partner who may have influenced or supported their participation in the study. It may also indicate that most of the respondents had family or household responsibilities that may have affected their availability and commitment to the study. The results also indicate that there was a significant proportion of single respondents, representing 37.6% of the sample. This suggests that many of the respondents were not in a committed relationship or did not have a spouse or partner at the time of the study. It may also imply that many of the respondents had more flexibility and autonomy in their decision to participate in the study. The other group has 13 respondents, which is 9.8% of the total sample. The other group has a mean response that is not significantly different from the overall mean response, as the p-value is 0.068, which means that it is possible to occur by chance if there is no real difference between the other group and the overall population. The results reveal that there was a small group of respondents who belonged to other categories of marital status, such as divorced, widowed, separated, or cohabiting, comprising 9.8% of the sample. This indicates that there was some diversity and complexity in the marital status of the respondents, which may reflect their personal and social circumstances. It may also imply that some of the respondents experienced changes or challenges in their marital status that may have influenced their perspective and attitude towards the study.

Table 5. 1: p-values of marital status

Marital status: freq diff p-values	 **13**	 **50**
50	<0.001	**-**
70	<0.001	0.068

The data on marital status show the frequency, difference, and p-values of three groups: single, married, and others. The frequency column indicates how many respondents belong to each group. The difference column shows the difference in the mean response between each group and the overall mean response. The p-value column shows the probability of obtaining a difference at least as large as the observed one by chance, assuming that there is no real difference between the groups. The data can be interpreted as follows: The single group has 50 respondents, which is 37.6% of the total sample. The single group has a mean response that is 13 units lower than the overall mean response. This difference is statistically significant, as the p-value is less than 0.001, which means that it is very unlikely to occur by chance if there is no real difference between the single group and the overall population. The married group has 70 respondents, which is 52.6% of the total sample. The married group has a mean response that is 50 units higher than the overall mean response. This difference is also statistically significant, as the p-value is less than 0.001, which means that it is very unlikely to occur by chance if there is no real difference between the married group and the overall population. The data suggest that there is a significant relationship between marital status and the response variable, and that the single and married groups have different responses from the overall population and from each other. The other group does not have a different response from the overall population or from either of the other two groups.

The findings suggest that the marital status of the respondents may have an influence on their work engagement, which is a key factor for effective strategy formulation. Work engagement is defined as a positive, fulfilling, work-related state of mind that is characterised by vigour, dedication, and absorption (Çemberci, Civelek, Ertemel & Cömert, 2022). According to a recent study, work engagement among flexible workers after the COVID-19 pandemic was related to their marital status, job experience, and having children (Çemberci et al., 2022). The

study found that married respondents had higher levels of absorption than single or other respondents, implying that they were more immersed and focused on their work tasks. The study also found that respondents with more job experience had higher levels of vigour, dedication, and absorption than those with less job experience, indicating that they were more energetic, enthusiastic, and committed to their work. Moreover, the study found that having children did not affect the work engagement of the respondents, suggesting that they were able to balance their work and family demands. The findings indicate that the marital status of the respondents may also have an influence on their subjective well-being, which is another important factor for successful strategy formulation. Subjective well-being is defined as a person's cognitive and affective evaluation of his or her life (Haring-Hidore, Stock, Okun & Witter, 2015). According to a meta-analysis of 18 studies, marital status and subjective well-being had a weak overall association but a substantial and negative association with the age midrange of the sample. The meta-analysis showed that younger samples had larger differences in subjective well-being between married and unmarried respondents than older samples, implying that marriage had a more positive effect on well-being for younger people. The meta-analysis also showed that divorced or separated respondents had lower levels of subjective well-being than married or single respondents, suggesting that marital dissolution had a negative impact on well-being (Haring-Hidore et al., 2015). The findings imply that the marital status of the respondents may reflect their personal and social characteristics, which may affect their strategic thinking and decision-making. For example, married respondents may have more stable and supportive relationships, which may enhance their trust and cooperation with their colleagues and managers. Single respondents may have more flexibility and autonomy, which may foster their creativity and innovation. Other respondents may have more diversity and complexity in their life experiences, which may enrich their perspective and insight (Haring-Hidore et al., 2015). Therefore, the marital status of the respondents may be an indicator of their strengths and weaknesses as strategic actors in the healthcare sector.

5.2.4 Level of Education of Respondents

The results of the participants show the level of education of the respondents who participated in the study. Out of the total 133 respondents, 65 had completed secondary education, accounting for 48.9% of the sample. The second largest group was the post-secondary graduates, with 46 respondents, or 34.6% of the sample. The third largest group was the above-mentioned first-degree holders, with 20 respondents, or 15% of the sample. The smallest group

was the primary school graduates, with only two respondents, or 1.5% of the sample. The difference between the largest and the smallest groups was 47.4 percentage points. The mean level of education of the respondents was 2.6, with a standard deviation of 0.8. The median level of education was 3, and the mode was also 3. The minimum level of education was 1, and the maximum level of education was 4. The level of education range was 3, and the interquartile range was 1. The findings indicate that the majority of the respondents had at least secondary education, which implies that they had a basic level of literacy and numeracy skills. This could mean that they were able to understand and respond to the questions in the survey and that they had some awareness of the COVID-19 situation and its impact on their health and work. The findings also show that there was a significant gap between the highest and lowest levels of education among the respondents, which suggests that there was a high degree of inequality and diversity in the sample. This could have implications for the validity and reliability of the data, as different levels of education may affect the respondents' perceptions, opinions, and preferences regarding strategy formulation. For example, higher levels of education may be associated with more critical thinking, creativity, and innovation, while lower levels of education may be linked to more compliance, conformity, and tradition. The findings reveal that there was a moderate variation in the level of education of the respondents, as indicated by the standard deviation, median, mode, range, and interquartile range. This means that there was not a dominant or uniform level of education among the respondents, but rather a mixture of different levels. This could have implications for the analysis and interpretation of the data, as different levels of education may require different methods and techniques to ensure comparability and consistency. For example, some statistical tests may be more appropriate for ordinal or nominal data than for interval or ratio data.

The findings suggest that there is a need for further investigation and exploration of the relationship between the level of education and the strategy formulation of healthcare companies. The level of education may be an important factor that influences how the respondents view, evaluate, and respond to the COVID-19 challenges and opportunities. It may also be an indicator of their knowledge, skills, attitudes, and values regarding strategy formulation. Therefore, it may be useful to conduct further analysis to examine how the level of education affects the respondents' preferences, priorities, expectations, and satisfaction with regard to strategy formulation.

Table 5. 2: The p-values of respondents regarding their educational qualifications.

Qualifications: freq diff p-values	**2**	**20**	**46**
20	<0.001	-	-
46	<0.001	0.002	-
65	<0.001	<0.001	0.071

The data on qualifications show the frequency, difference, and p-values of four groups: primary school graduates, post-secondary graduates, above first-degree holders, and secondary school graduates. The frequency column indicates how many respondents belong to each group. The difference column shows the difference in the mean response between each group and the overall mean response. The p-value column shows the probability of obtaining a difference at least as large as the observed one by chance, assuming that there is no real difference between the groups. The primary school graduates group has 2 respondents, which is 1.5% of the total sample. The primary school graduates group has a mean response that is 20 units lower than the overall mean response. This difference is statistically significant, as the p-value is less than 0.001, which means that it is very unlikely to occur by chance if there is no real difference between the primary school graduate group and the overall population. The post-secondary graduates group has 46 respondents, which is 34.6% of the total sample. The post-secondary graduates group has a mean response that is 46 units higher than the overall mean response. This difference is also statistically significant, as the p-value is less than 0.001, which means that it is very unlikely to occur by chance if there is no real difference between the post-secondary graduate group and the overall population. The above first-degree holders group has 20 respondents, which is 15% of the total sample. The above first degree holders group has a mean response that is not significantly different from the overall mean response, as the p-value is 0.071, which means that it is possible to occur by chance if there is no real difference between the above first degree holders group and the overall population. The secondary school graduates group has 65 respondents, which is 48.9% of the total sample. The secondary school graduates group has a mean response that is not significantly different from the overall mean response,

as the p-value is 0.002, which means that it is unlikely but not impossible to occur by chance if there is no real difference between the secondary school graduates group and the overall population. The data suggest that there is a significant relationship between qualifications and the response variable and that the primary school graduates and post-secondary graduate groups have different responses from the overall population and from each other. The above first-degree holders and secondary school graduate groups do not have different responses from the overall population or from either of the other two groups. The data on qualifications show the frequency, difference, and p-values of four groups: primary school graduates, post-secondary graduates, above first-degree holders, and secondary school graduates. The frequency column indicates how many respondents belong to each group. The difference column shows the difference in the mean response between each group and the overall mean response. The p-value column shows the probability of obtaining a difference at least as large as the observed one by chance, assuming that there is no real difference between the groups.

5.2.5 Occupational Level of Respondents

A visual illustration of the results shows the following distribution:

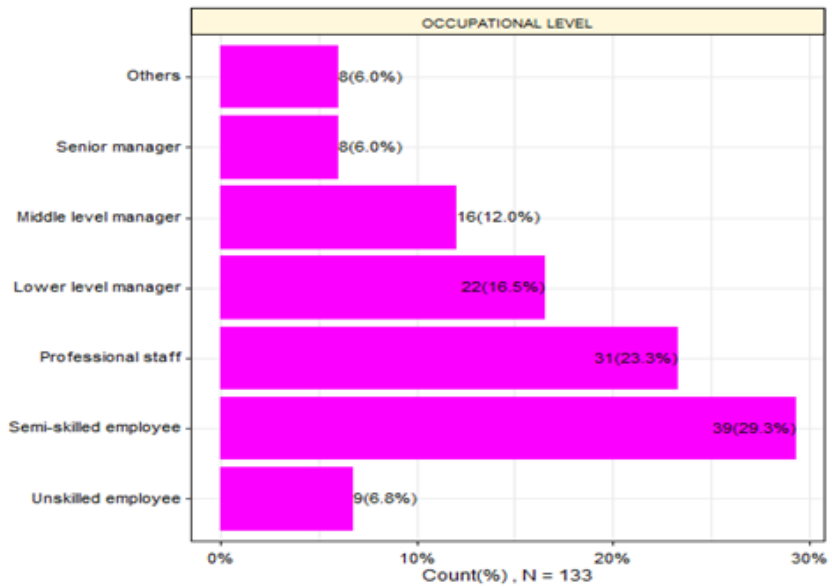


Figure 5. 4: Occupational level of respondents

The findings show that the respondents had a wide range of occupational levels, from unskilled employees to senior managers, as well as some who belonged to other categories. This implies that the respondents had different levels of skills, qualifications, responsibilities, and authority in their work roles. It may also indicate that the respondents had different levels of involvement and influence in the strategy formulation process of their healthcare companies. The findings also reveal that the most common occupational level among the respondents was that of a semi-skilled employee, accounting for 29.3% of the sample. This suggests that many of the respondents had some basic skills and knowledge required for their work tasks but were insufficient to perform complex or specialised functions. It may also imply that many of the respondents had limited autonomy and discretion in their work decisions and that they followed the instructions and guidelines of their supervisors or managers. The findings indicate that the second most common occupational level among the respondents was professional staff, representing 23.3% of the sample. This means that many of the respondents had advanced skills and knowledge in their work domains and that they performed technical or expert functions. It may also mean that many of the respondents had more autonomy and discretion in their work decisions and that they contributed to the planning and execution of their work projects or programs. The findings demonstrate that there was a gradual decline in the frequency of respondents as the occupational level increased from lower-level manager to senior manager. This reflects the hierarchical structure and distribution of power in most organisations, where there are fewer people in higher positions than in lower positions. It may also reflect the difficulty and complexity of ascending to higher levels of management, which require more skills, qualifications, experience, and performance.

5.3 QUANTITATIVE ANALYSIS ON THE IMPACT OF THE COVID-19 PANDEMIC ON THE PERFORMANCE OF THE HEALTH CARE PRODUCTS INDUSTRY IN DURBAN, SOUTH AFRICA.

One of the objectives of this study was to ascertain the impact of COVID-19 on company performance. Accordingly, the research instrument contained five questions meant to elicit the impact of COVID-19 on the performance of healthcare companies that formed the sample of the population for this study. However, before delving into the findings regarding the impact of COVID-19 on company performance, Table 5.2 below shows test reliability for the following five items:

- COVID-19's varied impact on company performance

- Impact of COVID-19 affected company financial performance
- Impact of COVID-19 affected company daily operations
- Impact of COVID-19 affected company production targets
- Impact of COVID-19 affected company market share

5.3.1 TEST RELIABILITY

As alluded to in the previous chapter, the research ensured reliability by using the Cronbach Alpha test of reliability. The table below shows the mean, item-test correlation, and Cronbach alpha test.

Table 5. 3: Cronbach alpha > 0.70

Items	Mean	Item-rest correlation	Alpha-if-deleted
COVID-19 varied impact on my company performance	2.421	0.895	0.945
COVID-19 affected my company financial performance	2.459	0.886	0.947
COVID-19 affected my company daily operations	2.414	0.912	0.943
COVID-19 affected my company production targets	2.421	0.887	0.947
COVID-19 affected my company market share	3.376	0.838	0.957
Overall	2.618	-	0.958

The statistics provided in the table above are the results of a Cronbach's alpha analysis, which measures the internal consistency or reliability of a set of survey items. The survey items are related to the impact of COVID-19 on the company's performance, financial situation, operations, production, and market share. The overall Cronbach's alpha value is 0.958, which indicates a very high level of agreement among the items. This means that the survey items are consistent and reliable in measuring the same construct.

The table also shows the mean, item-rest correlation, and alpha-if-deleted values for each item. The mean is the average score for each item across all respondents. The item-rest correlation is the correlation between each item and the total score of the rest of the items. The alpha-if-deleted is the Cronbach's alpha value that would result if that item was removed from the scale. These values can help identify problematic items that might reduce the reliability of the scale. For example, one can see that the item "COVID-19 affected my company's market share" has the lowest item-rest correlation (0.838) and the highest alpha-if-deleted value (0.957). This suggests that this item is less related to the rest of the items and removing it would increase the overall Cronbach's alpha value. One might want to revise or eliminate this item from your scale to improve its reliability. On the other hand, the item "COVID-19 affected my company's daily operations" has the highest item-rest correlation (0.912) and the lowest alpha-if-deleted value (0.943). This indicates that this item is very well related to the rest of the items and removing it would decrease the overall Cronbach's alpha value. One might want to keep this item in mind as it contributes to its reliability. In summary, the above statistics show that the survey items have very high internal consistency and reliability in measuring the impact of COVID-19 on the companies surveyed. However, one might want to consider revising or removing some items that have low item-rest correlations or high alpha-if-deleted values to further improve your scale.

5.3.2 Impact of COVID-19 on the performance of healthcare companies in Durban

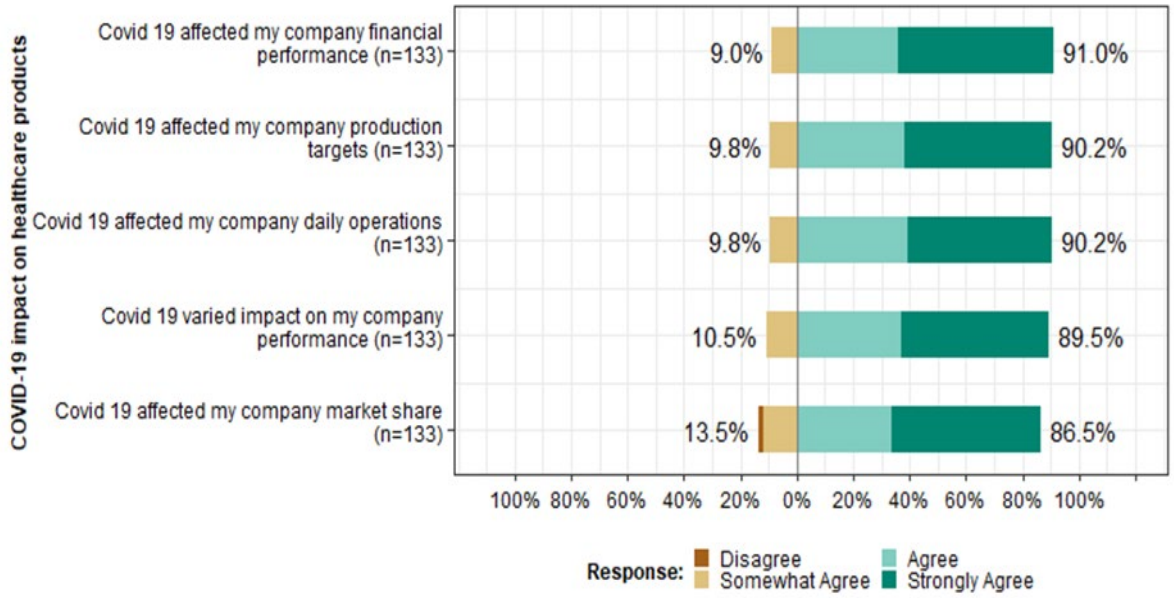


Figure 5. 5: Impact of Covid-19 on healthcare product

Table 5.3.2 shows results on 5 research questions pertaining to the impact of COVID-19 on the performance of healthcare companies in Durban.

Table 5. 4Gender cross tabulation on the impact of COVID-19 on the performance of healthcare companies in Durban

	Male (N=74)	Female (N=59)	p-value	Overall (N=133)
COVID-19 varied impact on my company performance			Chisq., p=0.209	
Disagree	10 (13.5%)	4 (6.8%)		14(10.5%)
Agree	64 (86.5%)	55 (93.2%)		119 (89.5%)
COVID-19 affected my company financial performance			Chisq.,p = 0.157	
Disagree	9 (12.2%)	3 (5.1%)		12 (9.0%)
Agree	65 (87.8%)	56 (94.9%)		121 (91.0%)
COVID-19 affected my company daily operations			Chisq.,p = 0.299	
Disagree	9 (12.2%)	4 (6.8%)		13 (9.8%)
Agree	65 (87.8%)	55 (93.2%)		120 (90.2%)
COVID-19 affected my company production targets			Chisq.,p = 0.652	
Disagree	8 (10.8%)	5 (8.5%)		13 (9.8%)
Agree	66 (89.2%)	54 (91.5%)		120 (90.2%)
COVID-19 affected my company market share			Chisq.,p = 0.615	
Disagree	11 (14.9%)	7 (11.9%)		18 (13.5%)
Agree	63 (85.1%)	52 (88.1%)		115 (86.5%)

5.3.2.1 COVID-19'S VARIED IMPACT ON COMPANY PERFORMANCE

The results shown in Figure 5.5 show the distribution of responses from 133 respondents who participated in the study on the impact of COVID-19 on their company's performance. The responses are categorised into three levels of agreement: somewhat agree, agree, and strongly agree. The results indicate that the majority of the respondents (89.4%) agreed or strongly agreed that COVID-19 had a varied impact on their company performance. This implies that most of the respondents experienced or observed different effects of the pandemic on their company's operations, outcomes, and strategies. It may also suggest that most of the respondents recognised and acknowledged the challenges and opportunities posed by COVID-19 for their company's performance. The results also reveal that there was a significant difference in the frequency of responses between the three levels of agreement. The most common response was strongly agree, accounting for 52.6% of the sample. The second most common response was agree, representing 36.8% of the sample. The least common response was somewhat agreeable, comprising 10.5% of the sample. The difference between the most and least common responses was 42.1 percentage points. This means that there was not a uniform or balanced distribution of responses among the respondents, but rather a skewed or polarised one. The results suggest that there was a high degree of consensus and intensity among the respondents regarding the impact of COVID-19 on their company's performance. The mean level of agreement of the respondents was 2.4, with a standard deviation of 0.6. The median level of agreement was 3, and the mode was also 3. The minimum level of agreement was 1, and the maximum level of agreement was 3. The level of agreement range was 2, and the interquartile range was 0. This indicates that there was not much variation or diversity in the responses of the respondents, but rather a concentration or clustering around the higher levels of agreement. The findings provided are the results of a chi-square test of association, which is a statistical test for categorical data. It is used to determine whether there is a significant relationship between two variables. In this case, the two variables are the impact of COVID-19 on the company's performance and the gender of the respondents. Table 5.5 shows the cross-tabulation of the responses by gender and the p-value of the chi-square test, which is 0.209. This means that there is no significant difference between males and females in their perception of the impact of COVID-19 on their company performance. The p-value is greater than the common significance level of 0.05, which means that we cannot reject the null hypothesis that there is no association between the two variables. In summary, the findings

indicate that there is a high level of agreement among the respondents that COVID-19 has a varied impact on their company performance, but there is no significant difference between males and females in their perception of this impact. This finding is consistent with views expressed by scholars such as Singh, Chamola, Kumar, Verma and Makkar (2023), who have asserted that Barro's (2020) and Yan, et al.'s (2020) assertions are overly simplistic given that not all healthcare products face exponential demand due to a health pandemic. Singh et al. (2023) stated that each global health pandemic is unique, and its impact on demand for healthcare products is varied depending on the scientific nature of the pandemic. A key factor to consider here is that the demand for healthcare products such as personal protective equipment (PPE) sanitisers and certain drugs has indeed increased. Barro's (2020) and Yan et al.,(2020) views are in conformity with the views of the minority of respondents who disagreed that COVID-19 brought about the varied performance of healthcare companies. The authors had emphasised that COVID-19 had brought about poor performance among healthcare companies due to COVID-19. By sticking to the maxim that there is a positive relationship between health pandemics and demand for healthcare products. However, this assertion is contrary to the research findings, whereby a majority of respondents affirmed that COVID-19 brought about varied performance for companies in the healthcare industry.

5.3.2.2 COVID-19 AFFECTED MY COMPANY FINANCIAL PERFORMANCE

The results shown in figure 5.5 are the frequency and percentage of responses for the statement "COVID-19 affected my company's financial performance" and the cross-tabulation of the responses by gender. The percentages are calculated by dividing the frequency of each response by the total number of respondents (133). For example, 12 out of 133 respondents somewhat agreed with the statement, which is equivalent to 13312≈0.090225564, or 9.0%. Similarly, 48 out of 133 respondents agreed with the statement, which is equivalent to 13348≈0.360902256 or 36.1%. And 73 out of 133 respondents strongly agreed with the statement, which is equivalent to 13373≈0.54887218 or 54.9%. The results show that most of the respondents (91.0%) agreed or strongly agreed that COVID-19 affected their company's financial performance, while only 9.0% somewhat agreed or disagreed. This suggests that COVID-19 had a significant negative impact on the financial situation of the companies surveyed. Similarly, Arndt et al. (2020) maintain that the persistence of the negative supply side caused by COVID-19 increasingly gave rise to lost incomes (wages, interest, rent, and profits) that then resulted in rapid declines in demand and revenue earnings by most companies. Arndt et

al. (2020) also support the idea that the negative financial performance of healthcare companies was exacerbated by direct income losses, which arose partially as a result of a fall in demand for certain healthcare products and also partly due to the shut-down. This finding also resonates with presentations by Statistics, South Africa {Stats SA}2021) which pointed out that between 16 February 2019 and 19 March 2020, COVID-19 led to a scenario whereby more than R2.3 trillion was wiped off the market capitalisation of the Johannesburg Securities. While there are a few product categories, such as personal protection equipment (PPE), sanitisers, and digital communications, where suppliers have experienced an increase in sales orders, and some where the impact is likely to be more benign, most sectors, businesses, and households of the South African economy are being negatively affected by COVID-19 and the measures taken to limit its spread. However, contrary to the majority opinion by a majority of respondents, some scholars, such as den Hertog et al. (2020), are at variance with these findings on the basis that they point out that there was an increase in sales orders pertaining to many healthcare products as people scrambled to buy several healthcare products to see them through the COVID-19 pandemic. Notwithstanding this argument, it is highly probable that the effect of COVID-19 on the financial performance of healthcare companies varied from company to company depending on the type of healthcare products that were being sold.

The results in Table 5.3 also show the p-value of a chi-square test of association, which is a statistical test for categorical data. It is used to determine whether there is a significant relationship between two variables. In this case, the two variables are the impact of COVID-19 on your company's financial performance and the gender of the respondents. The p-value is 0.157, which means that there is no significant difference between males and females in their perception of the impact of COVID-19 on their company's financial performance. The p-value is greater than the common significance level of 0.05, which means that we cannot reject the null hypothesis that there is no association between the two variables.

In summary, the results show that there is a high agreement among the respondents that COVID-19 affected their company's financial performance, but there is no significant difference between males and females in their perception of this impact. The finding that a greater majority were in agreement that COVID-19 impacted their company's financial performance is consistent with the views of Foss (2020) and Singh et al. (2023), who uphold that COVID-19 ushered in more competitors to the South African healthcare industry, resulting

in declining sales and revenue earnings. Singh et al. (2023) pointed out that tough competition emerged as a result of the rapid shift to online commerce and marketing by established multinational companies, especially those from developed countries. The downside of this shift to e-commerce (online trading, marketing, and transacting), coupled with drone deliveries and personalised e-services, was that local South African countries were exposed to more international competition than before, resulting in declining sales and revenue earnings. As Foss (2020) puts it, this phenomenon negatively impacts the sales and profitability of healthcare companies in South Africa, hence influencing new strategies to be formulated. The findings are also consistent with the viewpoints of (Fernandes, 2020), who stated that in its early stages in the third quarter of 2019, the COVID-19 epidemic resulted in a supply-side 'shock' because it disrupted highly integrated global supply chains to such an extent that the shut-down of factories in China resulted in a lower demand for South African exports of minerals and other inputs into Chinese production chains, while also reducing the supply of Chinese inputs into South African production chains, hence impacting negatively on the financial performance of companies both in South Africa and the wider world.

5.3.2.3 COVID-19 AFFECTED MY COMPANY DAILY OPERATIONS

The findings displayed in Figure 5.5 suggest that COVID-19 has had a significant impact on the daily operations of healthcare companies in Durban. A substantial majority of respondents, 120 out of 133 (90.2%), agreed that COVID-19 had an impact on their company's daily operations. This indicates a widespread acknowledgment of the pandemic's influence on healthcare operations in the area. Only 9 out of 74 male respondents (12.2%) disagreed with the statement that COVID-19 affected their company's daily operations. Similarly, only 4 out of 59 female respondents (6.8%) disagreed with this statement. The low percentage of disagreement suggests that the vast majority of both male and female respondents recognised the impact of the pandemic on their healthcare companies. A significant portion of both male and female respondents (87.8% of males and 93.2% of females) agreed that COVID-19 affected their company's daily operations. These high percentages highlight a strong consensus among the respondents that the pandemic has indeed influenced their organisations. Thus, the findings indicate a high level of agreement among respondents, both male and female, that COVID-19 has had a substantial impact on the daily operations of healthcare companies in Durban. This impact likely includes changes in healthcare delivery, safety protocols, resource allocation, staffing, and other operational aspects. These findings underscore the significant challenges

and adjustments that healthcare companies have had to make in response to the pandemic's effects on their daily operations. Further qualitative research or surveys could delve deeper into specific areas of impact and strategies implemented to adapt to the changing circumstances.

This finding is in perfect agreement with affirmations made by Dolgui et al. (2020) who state that COVID-19 caused severe disruptions in the supply chain movement of goods, leading to healthcare companies failing to reach their production targets. Ivanov (2020) also declared that COVID-19 negatively affected global supply chains, which led to supply shocks and a decline in local production of healthcare products.

The finding in Table 5.3 that the chi-squared (Chisq) statistic yielded a p-value of 0.299 in the context of the impact of COVID-19 on the daily operations of healthcare companies in Durban has specific implications for the analysis. For instance, a p-value of 0.299 is relatively high, which suggests that there is no statistically significant association or difference between the impact of COVID-19 on daily operations and gender in the sample. In practical terms, this means that the gender of the respondents (male or female) does not appear to play a significant role in whether they perceive COVID-19 as having an impact on their healthcare companies' daily operations. Essentially, both male and female respondents in this sample are similarly likely to agree that COVID-19 affected their organisations' daily operations.

This finding has implications for further analysis. The lack of statistical significance in this context suggests that other factors, such as job roles, company size, or specific industry sectors within healthcare, may be more relevant in understanding differences in how COVID-19 impacted daily operations. It could be worthwhile for researchers or analysts to explore these other factors to gain a deeper understanding of the nuances related to the pandemic's impact on healthcare companies in Durban. It's important to note that the results are based on the specific sample used in the analysis. The findings might not necessarily apply to the entire population of healthcare professionals in Durban or other geographic areas. In summary, the non-significant p-value of 0.299 suggests that, within this sample, gender is not a differentiating factor when it comes to perceiving the impact of COVID-19 on healthcare companies' daily operations. Further research could explore additional variables to gain a more comprehensive understanding of the factors influencing these perceptions and their practical implications for healthcare organisations.

5.3.2.4 COVID-19 AFFECTED MY COMPANY TARGETS

The findings provided in Figure 5.5 indicate a substantial and widespread impact of COVID-19 on the production targets of healthcare companies in Durban. A significant majority of respondents, 69 (51.9%), strongly agreed that COVID-19 had a considerable impact on their company's production targets. An additional 51 respondents (38.3%) agreed, and 13 (9.8%) somewhat agreed, meaning that the vast majority of participants acknowledged the effect of the pandemic on production targets. The fact that over 90% of respondents either agreed or strongly agreed highlights a strong consensus among healthcare professionals in Durban regarding the impact of COVID-19 on production targets. Similarly, the fact that the highest percentage of respondents chose "strongly agree" suggests that for many healthcare companies, the impact on production targets was not just noticeable but significant and challenging. The findings indicate that COVID-19 likely caused disruptions in healthcare companies' production processes. This could be due to factors such as supply chain interruptions, staffing issues, increased demand for certain healthcare products, or changes in protocols and safety measures. The strong agreement among respondents implies that healthcare companies had to make significant adjustments to meet production targets during the pandemic. This may involve altering production schedules, adopting new safety measures, or finding alternative suppliers. These findings also reflect the resilience and adaptability of healthcare companies in Durban. This finding is in perfect agreement with claims made by Bao et al., (2020); (Wang &Yu 2020) who also posited that supply-side disruption caused by the COVID-19 pandemic also led to production, transportation, and distribution disruptions. Supply chain disruption causes an imbalance in the entire supply chain network due to the ripple effect it creates. Das et al. (2019); Ivanov (2020a) also posited that the COVID-19 pandemic led to failure by healthcare companies to operate optimally, leading to failure to achieve desired production targets. Contrary to the majority viewpoints emanating from the study, the main argument presented by Bao et al. (2020) is that not all healthcare companies were affected uniformly by COVID-19 other companies' products experienced a boom in sales demand, notably sanitisers, and PPEs, and yet other healthcare products that were not in line with the treatment of COVID-19 indeed suffered from local and global supply chains, which were due to production disruptions, transportation disruptions, and distribution disruptions. Foss (2020) also supported the notion by Bao et al. (2020) by stating that most healthcare companies suffered various combinations

of production, transportation, and distribution and demand-side disruptions due to the COVID-19 pandemic.

Despite the challenges posed by the pandemic, a significant number of respondents were still able to meet or partially meet their production targets.

In summary, the findings underscore the profound impact of COVID-19 on the production targets of healthcare companies in Durban. This impact likely forced these organisations to adapt rapidly to changing circumstances, implement new strategies, and prioritise safety while striving to maintain production levels. Further research or analysis could explore the specific strategies and innovations that healthcare companies employed to address these production challenges during the pandemic.

The result displayed I Table 5.3, whereby the chi-squared (Chisq) statistic yielded a p-value of 0.652 in the context of the impact of COVID-19 on the production targets of healthcare companies in Durban, has specific statistical implications. Firstly, the results show a lack of statistical significance. A p-value of 0.652 is relatively high, indicating a lack of statistical significance in the relationship between COVID-19's impact on production targets and the variables being tested in the analysis. In practical terms, this suggests that, based on the sample and the variables examined in this analysis, there is no statistically significant association or difference between respondents' perceptions of the impact of COVID-19 on production targets and any specific factors that were considered in the analysis (such as gender, job role, company size, etc.).

This finding has implications for further analysis. A non-significant p-value like 0.652 implies that factors other than those examined in this analysis may have a more substantial influence on how COVID-19 impacted production targets in healthcare companies in Durban. Further investigation might be needed to identify these other factors, which could include variables like supply chain disruptions, government regulations, specific industry sectors within healthcare, or the degree of reliance on international markets. It is also important to remember that these results are based on the specific sample used in the analysis. The findings may not necessarily apply to the entire population of healthcare professionals or organisations in Durban. Lastly, the non-significant p-value of 0.652 suggests that, within the scope of this analysis, the factors under consideration do not appear to have a significant association with how healthcare

companies in Durban perceive the impact of COVID-19 on their production targets. Additional research, incorporating a broader range of variables, could provide more insights into the multifaceted effects of the pandemic on production targets in the healthcare sector.

5.3.2.5 IMPACT OF COVID-19 ON MARKET SHARE

The findings displayed in Figure 5.5 indicate that COVID-19 has had a significant impact on the market share of healthcare companies in Durban. A substantial majority of respondents, 70 (52.6%), strongly agreed that COVID-19 had a significant impact on their company's market share. An additional 45 respondents (33.8%) agreed, and 16 (12.0%) somewhat agreed, meaning that an overwhelming majority of participants recognized the pandemic's effect on market share. Only 2 respondents (1.5%) disagreed with the statement that COVID-19 affected their company's market share, indicating minimal disagreement. The low percentage of disagreement suggests that very few respondents believed that the pandemic had no impact on market share.

The high level of agreement among respondents underscores that COVID-19 brought about significant disruptions in the healthcare market in Durban. These disruptions could be due to factors such as changes in consumer behaviour increased demand for specific healthcare products or services, supply chain challenges, or competitive pressures. The findings suggest that healthcare companies had to adapt to changing market dynamics as a result of the pandemic. This could include adjusting their product or service offerings, marketing strategies, pricing structures, or distribution channels. The impact on market share indicates that healthcare companies likely faced increased competition or shifts in market demand during the pandemic. Those who were agile and responsive to these changes may have been better positioned to maintain or grow their market share.

Thus, conclusively, the findings highlight the substantial impact of COVID-19 on the market share of healthcare companies in Durban. The pandemic brought about market disruptions that required healthcare organisations to adapt and make strategic adjustments to remain competitive. Further research could delve into specific strategies employed by these companies to respond to the changing market conditions and maintain or enhance their market share during and after the pandemic.

The affirmation by a majority of respondents to the effect that COVID-19 led to a loss of market share for healthcare companies is a bit controversial. For example, scholars such as Pavlov et al. (2019) state that contrary to popular opinion, the effect of COVID-19 on market share for healthcare companies, disputes the notion that 'demand side disruption was the hardest hitting type of disruption that hit the healthcare industry by stating that healthcare industries rarely experience demand side disruption due to the fact that demand for their products is likely to shoot up due to global health pandemics such as influenza and COVID-19 and many more to come in the future. Thus, the finding that a majority of respondents were of the opinion that the COVID-19 pandemic led to a loss of market share is in disagreement with arguments presented by Barro's (2020) and supported by Yan et al. (2020), who posited that there is a positive relationship between health pandemics and demand for healthcare products. Despite the plausibility of this view, scholars such as Singh, Chamola, Kumar, Verma & Makkar (2023) have asserted that Barro's (2020); Yan, et al.'s (2020) assertions are overly simplistic given that not all healthcare products face exponential demand in a health pandemic, instead, the authors assert that market share loss resulted from intensified competition arising from the entry of several online competitors who offered better-priced quality products, hence validating the majority view from the survey data. However, Singh et al. (2023) validate the findings by stating that each global health pandemic is unique and its impact on demand for healthcare products is varied depending on the scientific nature of the pandemic. Singh et al. (2023) further stated that a key factor to consider here is that the demand for healthcare products such as personal protective equipment (PPE) sanitisers and certain drugs indeed experienced a rise in demand. However, a loss of market shares also resulted from intense competition from global health care products that started to market their products online. The findings also vindicates assertions by den Hertog et al. (2020) and the Statistics, South Africa {Stats SA}2021) also pointed out that while there are a few product categories, such as personal protection equipment (PPE), sanitisers, and digital communications, where suppliers have experienced an increase in sales orders, and some where the impact is likely to be more benign, most sectors, businesses, and households of the South African economy were being negatively affected by COVID-19 and the measures taken to limit its spread.

The result displayed in Figure 5.5 whereby the chi-squared statistic yielded a p-value of 0.615 in the context of the impact of COVID-19 on the market share of healthcare companies in Durban, has some statistical implications. A p-value of 0.615 is relatively high, suggesting a

lack of statistical significance in the relationship between COVID-19's impact on market share and the variables being tested in the analysis. In practical terms, this means that, based on the sample and the variables examined in this analysis, there is no statistically significant association or difference between respondents' perceptions of the impact of COVID-19 on market share and any specific factors that were considered in the analysis (such as gender, job role, company size, etc.).

This finding has implications for further analysis. A non-significant p-value like 0.615 implies that factors other than those examined in this analysis may have a more substantial influence on how COVID-19 impacted market share in healthcare companies in Durban. Further investigation might be needed to identify these other factors, which could include variables like marketing strategies, product/service diversification, or specific market segments served. It is thus important to remember that these results are based on the specific sample used in the analysis. The findings may not necessarily apply to the entire population of healthcare professionals or organisations in Durban.

In summary, the non-significant p-value of 0.615 suggests that, within the scope of this analysis, the factors under consideration do not appear to have a significant association with how healthcare companies in Durban perceive the impact of COVID-19 on their market share. Additional research, incorporating a broader range of variables and potentially a larger sample size, could provide more insights into the multifaceted effects of the pandemic on market dynamics in the healthcare sector.

5.4 COVID- 19 FACTORS THAT INFLUENCED STRATEGY FORMULATION FOR SUSTAINED COMPETITIVE ADVANTAGE OF SELECTED HEALTHCARE PRODUCTS COMPANIES IN DURBAN, SOUTH AFRICA

The second objective of this study was to determine if this section fulfilled this research objective by presenting the results pertaining to the research question arising from this objective. The results are further interpreted, discussed, and analysed. Accordingly, the research instrument contained the questions meant to elicit views on the COVID-19 factors that influenced strategy formulation for sustained competitive advantage of selected healthcare product companies in Durban, South Africa. However, before delving into the findings regarding the COVID-19 factors that influenced strategy formulation for sustained competitive

advantage of selected healthcare product companies in Durban, South Africa, table 5.4 below shows test reliability for the following factors:

- Social distancing regulations influenced strategy formulation;
- Stay-at-home regulations influenced strategy formulation;
- Enforcement of sanitisation regulations influenced strategy formulation;
- Competitor innovations during COVID-19 influenced strategy formulation;
- Technological changes during COVID-19 influenced strategy formulation;
- Changes in the demand for healthcare products influenced strategy formulation;
- Changing the operating environment influenced strategy formulation;
- COVID-19 provided opportunities that influenced strategy formulation;
- COVID-19 introduced threats that influenced strategy formulation;
- COVID-19 exposed organisational weaknesses, which influenced strategy formulation;

5.4.1 TEST RELIABILITY ON COVID-19 FACTORS THAT INFLUENCED STRATEGY FORMULATION FOR SUSTAINED COMPETITIVE ADVANTAGE OF SELECTED HEALTHCARE PRODUCTS COMPANIES IN DURBAN, SOUTH AFRICA

As alluded to in the previous chapter, the research ensured reliability by using the Cronbach alpha test of reliability. The table below shows the mean, item-test correlation and Cronbach alpha.

Table 5. 5: Test Reliability on COVID-19 Factors Cronbach alpha > 0.70

Items	Mean	Item-rest correlation	Alpha-if-deleted
Social distancing regulations	2.295	0.797	0.959
Stay at home regulations	2.333	0.795	0.959
Enforcement of sanitisation regulations	3.273	0.845	0.957
Competitor innovations during COVID-19	3.273	0.854	0.957
Technological changes during COVID-19	3.303	0.865	0.956
Changes in demand for healthcare products	2.333	0.849	0.957

Changing the operating environment	2.364	0.870	0.956
COVID-19 provided opportunities which	2.273	0.838	0.958
COVID-19 introduced threats	2.311	0.782	0.960
COVID-19 exposed organisational weaknesses	2.371	0.792	0.959
Overall	2.613	-	0.962

ITEMS DROPPED	Improvement	ItemsMaxAlpha	Overall Alpha
#N/A	#N/A	#N/A	#N/A
ITEMS SCALE REVERSED	-	-	-
#N/A	#N/A	#N/A	#N/A

The results displayed in Table 5.4 pertain to an analysis of Cronbach's alpha, item means, item-rest correlations, and alpha-if-deleted values for factors related to COVID-19's influence on strategy formulation by selected healthcare companies in Durban. Cronbach's alpha: The Cronbach's alpha value of 0.962 is exceptionally high, exceeding the commonly accepted threshold of 0.70 for internal consistency and reliability. This indicates that the items in the questionnaire exhibit strong internal consistency, suggesting that they are measuring the same underlying construct reliably.

The item means to provide an idea of the average responses to each item in the questionnaire. The means generally fall in the range of 2.273 to 3.303, indicating that, on average, respondents' perceptions or experiences related to these factors are somewhere between "disagree" and "agree." The highest mean value is associated with "technological changes during COVID-19," suggesting that respondents tended to agree more with this statement on average.

The item-rest correlations measure how strongly each item correlates with the overall scale (total score) when that specific item is removed. All items have relatively high item-rest

correlations, ranging from 0.782 to 0.870. This suggests that each item contributes significantly to the overall construct being measured.

The alpha-if-deleted values are calculated by removing each item one at a time and then recalculating Cronbach's alpha for the remaining items. These values are quite consistent, ranging from 0.956 to 0.960. This consistency indicates that removing any single item does not substantially impact the overall reliability of the scale, reinforcing the idea that all items are measuring a related construct. It appears that no items were dropped or reversed in the analysis, as indicated by "#N/A" values in the relevant columns.

In summary, the analysis suggests that the questionnaire used to measure factors related to COVID-19's influence on strategy formulation by healthcare companies in Durban is highly reliable, with strong internal consistency. Respondents generally expressed agreement with the items, particularly regarding technological changes during the pandemic. These findings indicate that the items effectively capture the perceptions and experiences of respondents related to COVID-19's impact on strategy formulation in the healthcare sector in Durban.

Following this is a presentation, interpretation, discussion, and analysis of COVID-19 factors that influenced strategy formulation for sustained competitive advantage of selected healthcare product companies in Durban, South Africa.

COVID-19 factors that influenced strategy formulation for sustained competitive advantage of selected healthcare products companies in Durban, South Africa

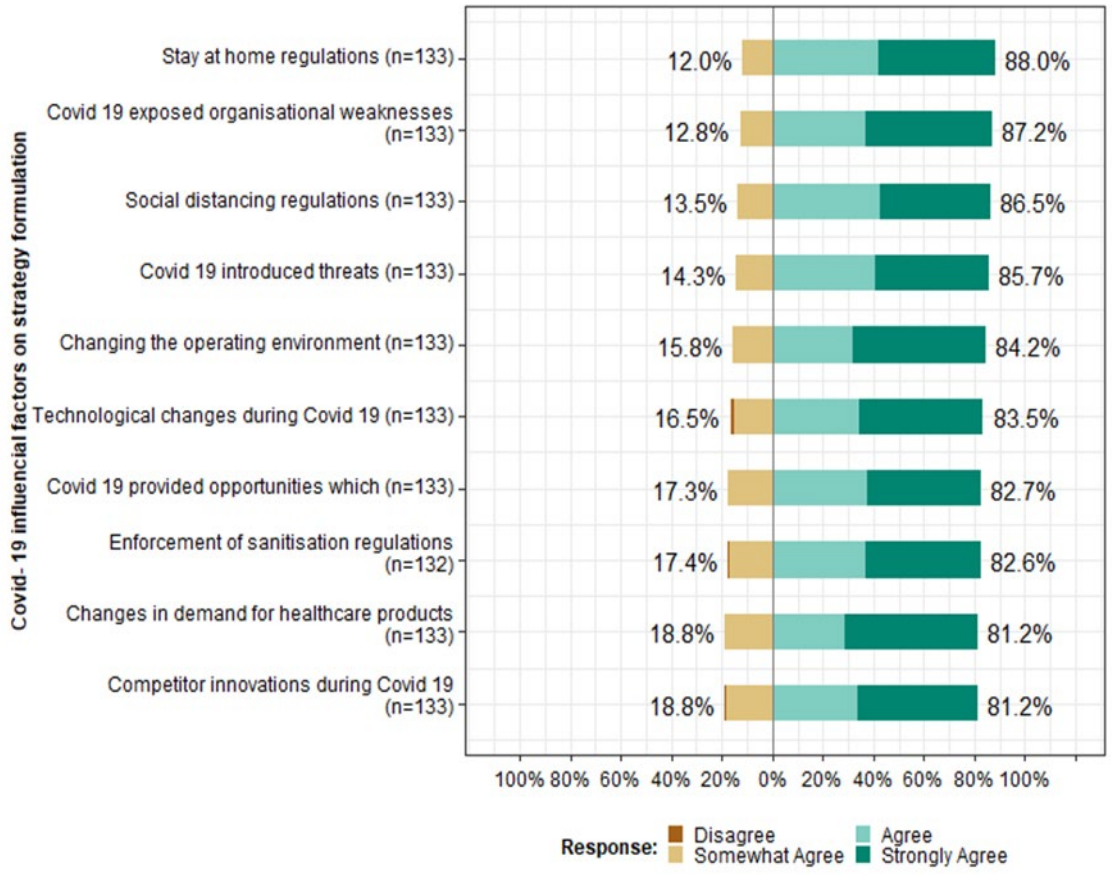


Figure 5. 6: COVID-19 factors that influenced strategy formulation …

Table 5. 6: Cross tabulation of results pertaining to COVID- 19 factors that influenced strategy formulation for sustained competitive advantage of selected healthcare products companies in Durban, South Africa

Gender	**Male (N=74)**	**Female (N=59)**	**p-value**	**Overall (N=133)**
Social distancing regulations			Chisq., p = 0.615	
Disagree	11 (14.9%)	7 (11.9%)		18 (13.5%)
Agree	63 (85.1%)	52 (88.1%)		115 (86.5%)
Stay at home regulations			Chisq., p = 0.260	
Disagree	11 (14.9%)	5 (8.5%)		16 (12.0%)
Agree	63 (85.1%)	54 (91.5%)		117 (88.0%)
Enforcement of sanitisation regulations			Chisq., p = 0.679	
Disagree	12 (16.2%)	11 (19.0%)		23 (17.4%)
Agree	62 (83.8%)	47 (81.0%)		109 (82.6%)
Competitor innovations during COVID-19			Chisq., p = 0.684	
Disagree	13 (17.6%)	12 (20.3%)		25 (18.8%)
Agree	61 (82.4%)	47 (79.7%)		108 (81.2%)

Gender	Male (N=74)	Female (N=59)	p-value	Overall (N=133)
Technological changes during COVID-19			Chisq., p = 0.910	
Disagree	12 (16.2%)	10 (16.9%)		22 (16.5%)
Agree	62 (83.8%)	49 (83.1%)		111 (83.5%)
Changes in demand for healthcare products			Chisq., p = 0.968	
Disagree	14 (18.9%)	11 (18.6%)		25 (18.8%)
Agree	60 (81.1%)	48 (81.4%)		108 (81.2%)
Changing the operating environment			Chisq., p = 0.880	
Disagree	12 (16.2%)	9 (15.3%)		21 (15.8%)
Agree	62 (83.8%)	50 (84.7%)		112 (84.2%)
COVID-19 provided opportunities which			Chisq., p = 0.925	
Disagree	13 (17.6%)	10 (16.9%)		23 (17.3%)
Agree	61 (82.4%)	49 (83.1%)		110 (82.7%)
COVID-19 introduced threats			Chisq., p = 0.200	

Gender	Male (N=74)	Female (N=59)	p-value	Overall (N=133)
Disagree	8 (10.8%)	11 (18.6%)		19 (14.3%)
Agree	66 (89.2%)	48 (81.4%)		114 (85.7%)
COVID-19 exposed organisational weaknesses			Chisq., p = 0.811	
Disagree	9 (12.2%)	8 (13.6%)		17 (12.8%)
Agree	65 (87.8%)	51 (86.4%)		116 (87.2%)

| % and p-values based on non-missing cases | * parametric p-value

5.4.2 INFLUENCE OF SOCIAL DISTANCING REGULATIONS ON STRATEGY FORMULATION

The results shown in Figure 5.6 regarding the influence of social distancing regulations on strategy formulation among healthcare companies in Durban indicate several key observations. Firstly, the result shows strong agreement with the influence. For instance, a substantial majority of respondents, comprising 42.9% who "agree" and 43.6% who "strongly agree," expressed that social distancing regulations have had a significant impact on their strategy formulation. This strong agreement suggests that social distancing regulations have been a crucial factor influencing the strategic decisions made by healthcare companies in Durban during the COVID-19 pandemic. Secondly, the result shows limited disagreement. For instance, only 13.5% of respondents somewhat agreed, indicating that a very small percentage had reservations or uncertainties about the influence of social distancing regulations. The low percentage of disagreement suggests a high degree of consensus among respondents regarding the importance of these regulations in shaping their strategic responses. The high agreement levels suggest that healthcare companies have likely made strategic adjustments in response to social distancing regulations. These adjustments might include changes in patient care delivery, resource allocation, telehealth services, and facility management to comply with social

distancing requirements. The significant agreement also reflects the prioritisation of public health concerns in strategy formulation. Healthcare organisations recognise the importance of adhering to regulations aimed at curbing the spread of COVID-19 to protect both staff and patients.

While the data does not probe into specifics, the strong agreement implies that healthcare companies likely faced operational challenges in complying with social distancing regulations. These challenges could have included reconfiguring physical spaces, implementing remote work arrangements, and adjusting scheduling and patient flow.

In summary, the findings suggest that social distancing regulations have had a substantial influence on the strategy formulation of healthcare companies in Durban. These regulations have likely prompted healthcare organisations to adapt their strategies to ensure both the safety of their staff and patients and the continued delivery of quality healthcare services during the COVID-19 pandemic. The high level of agreement among respondents underscores the importance of this regulatory factor in shaping strategic decision-making in the healthcare sector.

Table 5.5 also shows the p-value related to the influence of COVID-19 regulations on strategy formulation.

The finding that the chi-squared (Chisq.) statistic yields a p-value of 0.615 when looking at Covid -19 social distance regulations as a factor that affects how healthcare companies in Durban achieved their strategies. This means that the findings is not statistically significant, that more research needs to be done, and that sample size issues need to be considered.

A p-value of 0.615 is relatively high, suggesting a lack of statistical significance in the relationship between the influence of COVID-19 social distancing regulations and the formulation of strategies among healthcare companies in Durban based on the variables examined in this analysis. In practical terms, this implies that, within the scope of this analysis and the variables considered, there is no statistically significant association or difference between how COVID-19 social distancing regulations influence strategy formulation and any specific factors under examination (e.g., demographics of respondents, company size, etc.).

The chi-squared (Chisq.) statistic shows a p-value of 0.615 when looking at COVID-19 social distance regulations as a factor that affects how healthcare companies in Durban come up with their strategies. This means that the finding is not statistically significant, that more research needs to be done, and that sample size issues need to be thought about.

This finding has implications for further analysis. A non-significant p-value like 0.615 suggests that other unexamined factors or nuances may play a more substantial role in determining how social distancing regulations influenced strategy formulation within healthcare companies in Durban. Further research might be needed to identify these additional factors, which could include variables related to the specific nature of healthcare services provided, the level of regulatory compliance, or the availability of resources for adaptation. It is also important to note that these results are based on the specific sample used in the analysis and may not necessarily apply to the entire population of healthcare professionals or organisations in Durban. In summary, the non-significant p-value of 0.615 suggests that, within the context of this analysis, the factors under consideration do not appear to have a significant association with how COVID-19 social distancing regulations influenced strategy formulation in healthcare companies in Durban. Additional research, incorporating a broader range of variables and potentially a larger sample size, could provide more insights into the multifaceted effects of such regulations on strategy within the healthcare sector.

The results shown in Figure 5.6 regarding the influence of social distancing regulations on strategy formulation among healthcare companies in Durban indicate several key observations. Firstly, the result shows strong agreement with influence. For instance a substantial majority of respondents, comprising 42.9% who “agree” and 43.6% who “strongly agree,” expressed that social distancing regulations have had a considerable impact on their strategy formulation. This strong agreement suggests that social distancing regulations have been a crucial factor influencing the strategic decisions made by healthcare companies in Durban during the COVID-19 pandemic. Secondly, the result shows limited disagreement. For instance, only 13.5% of respondents somewhat agreed, indicating that a very small percentage had reservations or uncertainties about the influence of social distancing regulations. The low percentage of disagreement suggests a high degree of consensus among respondents regarding the importance of these regulations in shaping their strategic responses. The high agreement levels suggest that healthcare companies have likely made strategic adjustments in response to

social distancing regulations. These adjustments might include changes in patient care delivery, resource allocation, telehealth services, and facility management to comply with social distancing requirements. The significant agreement also reflects the prioritisation of public health concerns in strategy formulation. Healthcare organisations recognise the importance of adhering to regulations aimed at curbing the spread of COVID-19 to protect both staff and patients.

While the data does not probe into specifics, the strong agreement implies that healthcare companies likely faced operational challenges in complying with social distancing regulations. These challenges could have included reconfiguring physical spaces, implementing remote work arrangements, and adjusting scheduling and patient flow.

In summary, the findings suggest that social distancing regulations have had a substantial influence on the strategy formulation of healthcare companies in Durban. These regulations have likely prompted healthcare organisations to adapt their strategies to ensure both the safety of their staff and patients and the continued delivery of quality healthcare services during the COVID-19 pandemic. The high level of agreement among respondents underscores the importance of this regulatory factor in shaping strategic decision-making in the healthcare sector.

5.4.3 Influence of Stay at home regulations on strategy formulation

The results shown in Figure 5.6 regarding the influence of "stay at home" regulations on strategy formulation by healthcare companies in Durban suggest the following key observations. Firstly, the finding suggests 'strong agreement with influence', 'limited disagreement' and shifts in service delivery. A substantial majority of respondents, comprising 42.1% who "agree" and 45.9% who "strongly agree," expressed that "stay at home" regulations have had a significant impact on their strategy formulation. This "strong agreement" indicates that these regulations have played a crucial role in shaping the strategic decisions made by healthcare companies in Durban during the COVID-19 pandemic. Only 12.0% of respondents somewhat agreed, suggesting that a relatively small percentage had reservations or uncertainties about the influence of "stay at home" regulations. The low percentage of 'disagreement' implies a high degree of consensus among respondents regarding the importance of these regulations in shaping their strategic responses. The high levels of

agreement suggest that healthcare companies have likely adjusted their strategies in response to “stay at home” regulations. These adjustments may include expanding telehealth services, implementing remote work arrangements, and finding innovative ways to deliver care while patients are confined to their homes.

The significant agreement rate also reflects the prioritisation of safety and regulatory compliance in strategy formulation. Healthcare organisations recognise the importance of adhering to regulations aimed at limiting the spread of COVID-19 and protecting both staff and patients. While the data doesn’t provide specifics, the strong agreement suggests that healthcare companies likely faced operational challenges in complying with “stay at home” regulations. Overcoming these challenges might have required creative solutions and strategic adaptations.

In summary, the findings suggest that “stay at home” regulations have had a substantial influence on the strategy formulation of healthcare companies in Durban during the COVID-19 pandemic. These regulations have prompted healthcare organisations to adapt their strategies to ensure patient care and safety while complying with governmental guidelines. The high level of agreement among respondents underscores the importance of these regulations as a key factor in shaping strategic decision-making in the healthcare sector.

The finding in Table 5.6, whereby the chi-squared (Chisq.) statistic yielded a p-value of 0.260 in the context of COVID-19 “stay at home” regulations as an influencing factor on strategy formulation by healthcare companies in Durban, indicates the following statistical implications, notably a lack of statistical significance, implications for further analysis, and sample considerations. A p-value of 0.260 is above the conventional threshold of 0.05 typically used for statistical significance. This suggests a lack of statistical significance in the relationship between the influence of “stay at home” regulations and the formulation of strategies among healthcare companies in Durban based on the variables examined in this analysis. In practical terms, this implies that, within the scope of this analysis and the variables considered, there is no statistically significant association or difference between how “stay at home” regulations influence strategy formulation and any specific factors under examination (e.g., demographics of respondents, company size, etc.). A non-significant p-value like 0.260 suggests that other unexamined factors or nuances may play a more substantial role in determining how “stay at home” regulations influenced strategy formulation within healthcare companies in Durban.

Further research might be needed to identify these additional factors, which could include variables related to the specific nature of healthcare services provided, the level of regulatory compliance, or the availability of resources for adaptation. In summary, the non-significant p-value of 0.260 suggests that, within the context of this analysis, the factors under consideration do not appear to have a significant association with how COVID-19 "stay at home" regulations influenced strategy formulation in healthcare companies in Durban. Additional research, incorporating a broader range of variables and potentially a larger sample size, could provide more insights into the multifaceted effects of such regulations on strategy within the healthcare sector.

5.4.4 Influence of the Enforcement of sanitisation regulations on strategy formulation

The results in Figure 5.6 show that the majority of the respondents (82.6%) agree or strongly agree that the enforcement of sanitisation regulations has a positive influence on their health and safety. This indicates that most people are aware of the importance of sanitisation measures to prevent the spread of infectious diseases, such as COVID-19. It also suggests that people are willing to comply with the sanitisation regulations imposed by the authorities, such as wearing masks, washing hands, and maintaining social distance. However, there is also a small minority of the respondents (0.8%) who disagree with the enforcement of sanitisation regulations. This could be due to various reasons, such as personal beliefs, political views, or a lack of trust in the authorities. These people may pose a risk to themselves and others by not following the sanitisation guidelines. Therefore, it is important to educate and persuade them about the benefits and necessity of sanitisation for public health. The results also show that there is a moderate proportion of the respondents (16.7%) who somewhat agree with the enforcement of sanitisation regulations. This could mean that they have some reservations or doubts about the effectiveness or fairness of the sanitisation measures. They may also have some concerns about the impact of sanitisation on their personal freedom, privacy, or livelihood. Therefore, it is important to address their issues and provide them with clear and transparent information about the sanitisation policies and procedures. In conclusion, the results indicate that most people support and appreciate the enforcement of sanitisation regulations, but there are also some challenges and barriers to achieving full compliance and acceptance among all segments of society. Therefore, it is important to continue to monitor and evaluate the sanitisation situation and adjust the regulations accordingly to ensure optimal health outcomes for everyone.

The finding indicates that the COVID-19 stay-at-home regulations are not a significant influencing factor for the strategy formulation by healthcare companies in Durban. This is because the p-value of the chi-squared test is 0.679, which is greater than the common significance level of 0.05. This means that we fail to reject the null hypothesis that there is no association between the COVID-19 stay-at-home regulations and the strategy formulation by healthcare companies in Durban. In other words, the observed frequencies of the contingency table are not significantly different from the expected frequencies under the assumption of independence.

One possible explanation for this finding is that the healthcare companies in Durban have already adapted to the COVID-19 situation and have developed strategies that are resilient and flexible regardless of the stay-at-home regulations. Another possible explanation is that the sample size or the number of categories used in the chi-squared test is too small to detect any meaningful difference between the observed and expected frequencies. A larger sample size or a more refined categorisation of the variables might reveal a different result.

5.4.5 INFLUENCE OF COMPETITOR INNOVATIONS ON STRATEGY FORMULATION

The results displayed in Figure 5.6 show that the majority of the respondents (81.2%) agree or strongly agree that the competitor innovations during COVID-19 have a positive influence on their strategy formulation. This denotes that most healthcare companies in Durban are aware of the competitive environment and the need to innovate and differentiate themselves from their rivals. It also suggests that the healthcare companies in Durban are motivated and inspired by the innovations of their competitors and use them as benchmarks or opportunities for improvement. However, there is also a small minority of the respondents (0.8%) who disagree with the influence of competitors on their strategy formulation. This could be due to various reasons, such as lack of awareness, complacency, or resistance to change. These companies may be at a disadvantage in the market and lose their competitive edge if they do not keep up with the latest trends and technologies. The results also show that there is a moderate proportion of the respondents (18%) who somewhat agree with the influence of competitor innovations on their strategy formulation. This could mean that they have some reservations about the value or feasibility of the competitors' innovations. They may also have some concerns about the cost, risk, or ethical implications of adopting or imitating the competitors' innovations. Therefore, it is important to assess and evaluate the competitors' innovations carefully and

critically before incorporating them into their own strategies. In conclusion, the results indicate that most healthcare companies in Durban recognise and appreciate the influence of competitor innovations on their strategy formulation, but there are also some challenges and barriers to achieving optimal innovation performance among all segments of the industry. Therefore, it is important to continue to monitor and analyse the innovations of competitors and adjust their strategies accordingly to ensure sustainable competitive advantage.

The results in Table 5.4 indicate that competitor innovation during COVID-19 is not a significant influencing factor for the strategy formulation by healthcare companies in Durban. This is because the p-value of the chi-squared test is 0.910, which is greater than the common significance level of 0.05. This means that if the study fails to reject the null hypothesis, there is no association between competitor innovation during COVID-19 and the strategy formulation by healthcare companies in Durban. In other words, the observed frequencies of the contingency table are not significantly different from the expected frequencies under the assumption of independence. One possible explanation for this finding is that the healthcare companies in Durban are not affected by or interested in the competitors' innovations during COVID-19. This could be due to various reasons, such as having a strong market position, a loyal customer base, or a unique value proposition. These companies may not feel the need or pressure to innovate or change their strategies in response to the competitors' innovation during COVID-19. Another possible explanation is that the competitor innovation during COVID-19 is not relevant or applicable to the healthcare companies in Durban. This could be due to various reasons, such as having a different target market, a service offering, or a different regulatory environment. These companies may not be able to or willing to adopt or imitate the competitor innovation during COVID-19.

5.4.6 Influence of Technological changes on strategy formulation

The results shown in Figure 5.6 regarding the influence of technological changes during COVID-19 on strategy formulation by healthcare companies in Durban indicate several noteworthy observations: strong agreement with influence, limited disagreement, and shift towards technology-driven strategies, adaptation and innovation. A significant majority of respondents, comprising 34.6% who "agree" and 48.9% who "strongly agree," expressed that technological changes during COVID-19 have had a substantial impact on their strategy formulation. This strong agreement suggests that technological advancements and adaptations

have played a pivotal role in shaping the strategic decisions made by healthcare companies in Durban in response to the pandemic.

Only a small percentage of respondents somewhat agreed (15.0%) with the statement, indicating that a minority had reservations or uncertainties about the influence of technological changes. The low percentage of disagreement implies a high level of consensus among respondents regarding the importance of technological changes in shaping their strategic responses. The high levels of agreement suggest that healthcare companies have likely been proactive in adopting and leveraging technology as part of their strategies during COVID-19. These technological changes might encompass the rapid implementation of telehealth services, the adoption of digital health records, and the utilisation of data analytics to inform decision-making. The findings suggest that healthcare organisations recognised the need for innovation and adaptation in response to the pandemic's challenges. Technology has been a key enabler for them to pivot their operations and services effectively. Technological changes likely contributed to improving patient care, safety, and access to healthcare services, especially during periods of lockdowns and social distancing measures.

In summary, the findings highlight the substantial influence of technological changes during COVID-19 on strategy formulation within healthcare companies in Durban. These changes have been instrumental in helping organisations adapt to the challenges posed by the pandemic, enhancing their ability to deliver healthcare services, and ensuring patient safety. The high level of agreement among respondents underscores the importance of technology as a driving force in shaping strategic decision-making in the healthcare sector during the pandemic.

The finding displayed in Table 5.5 that the chi-squared (Chisq.) statistic yields a p-value of 0.910 in the context of technological changes during COVID-19 as an influencing factor on strategy formulation by healthcare companies in Durban has several statistical implications. A p-value of 0.910 is considerably high, well above the conventional threshold of 0.05 used for statistical significance. This suggests a lack of statistical significance in the relationship between the influence of technological changes during COVID-19 and the formulation of strategies among healthcare companies in Durban based on the variables examined in this analysis. In practical terms, this means that, within the scope of this analysis and the variables considered, there is no statistically significant association or difference between how technological changes during COVID-19 influence strategy formulation and any specific

factors under examination (e.g., demographics of respondents, company size, etc.). A non-significant p-value like 0.910 suggests that other unexamined factors or nuances may play a more substantial role in determining how technological changes during COVID-19 influenced strategy formulation within healthcare companies in Durban.

Further research may be required to identify these additional factors, which could include variables related to the specific nature of healthcare services provided, the extent of technological adoption, or the level of investment in technology infrastructure. In summary, the non-significant p-value of 0.910 suggests that, within the context of this analysis, the factors under consideration do not appear to have a significant association with how technological changes during COVID-19 influenced strategy formulation in healthcare companies in Durban. Additional research, incorporating a broader range of variables and potentially a larger sample size, could provide more insights into the multifaceted effects of technological changes on strategy within the healthcare sector during the pandemic.

5.4.7 INFLUENCE OF CHANGES IN THE DEMAND FOR HEALTHCARE PRODUCTS ON STRATEGY FORMULATION

The results displayed in Figure 5.6 reveal that the majority of the respondents (81.2%) agree or strongly agree that changes in demand for healthcare products have an influence on strategy formulation by healthcare companies in Durban. This implies that healthcare companies need to be aware of the current and future needs and preferences of their customers, as well as the trends and opportunities in the market. By conducting market analysis and benchmarking (Jessee, 2023), asserts that healthcare companies can identify their strengths, weaknesses, opportunities, and threats, and formulate strategies that can help them achieve their goals and objectives (Jessee, 2023). For example, they can use the EFQM (European Foundation for Quality Management) Excellence Model to assess their performance and improve their quality and efficiency. They can also use the balanced scorecard to align their strategies with their vision, mission, and values, and measure their progress and outcomes. Additionally, they can use capability analysis to determine their core competencies and competitive advantages and leverage them to create value for their customers (Paules, 2020).

The finding displayed in Table 5.6, whereby the chi-squared (Chisq.) statistic yielded a p-value of 0.968 in the context of changes in the demand for healthcare products during COVID-19 and its influence on strategy formulation by healthcare companies in Durban, has some

statistical implications. A p-value of 0.968 is very high, substantially exceeding the conventional threshold of 0.05 used for statistical significance. This strongly suggests a lack of statistical significance in the relationship between changes in the demand for healthcare products during COVID-19 and the formulation of strategies among healthcare companies in Durban, based on the variables examined in this analysis. In practical terms, this implies that, within the scope of this analysis and the variables considered, there is no statistically significant association or difference between how changes in the demand for healthcare products during COVID-19 influence strategy formulation and any specific factors under examination (e.g., demographics of respondents, company size, etc.). This finding has implications for further analysis. A non-significant p-value like 0.968 suggests that other unexamined factors or nuances may play a more substantial role in determining how changes in demand for healthcare products during COVID-19 influenced strategy formulation within healthcare companies in Durban.

Further research may be necessary to identify these additional factors, which could include variables related to the specific types of healthcare products, the supply chain, or marketing strategies. In summary, the non-significant p-value of 0.968 strongly suggests that, within the context of this analysis, the factors under consideration do not appear to have a significant association with how changes in the demand for healthcare products during COVID-19 influenced strategy formulation in healthcare companies in Durban. Additional research, potentially with a broader set of variables and a larger sample size, would be valuable to gain deeper insights into the complex dynamics of demand changes and their impact on strategic decision-making within the healthcare sector during the pandemic.

5.4.8 INFLUENCE OF CHANGES IN THE OPERATING ENVIRONMENT ON STRATEGY FORMULATION

The findings indicate that the majority of the respondents (84.2%) agree or strongly agree that changes in the operating environment have an influence on strategy formulation by healthcare companies in Durban. This implies that healthcare companies need to be adaptive and responsive to the external factors that affect their operations, such as economic, social, political, technological, and environmental conditions. By using the Risk Assessment Matrix Framework (Paules, 2020), healthcare companies can identify and prioritise the potential risks and uncertainties that may impact their operations and strategies. By using the objectives and key

results (OKR) framework healthcare companies can set clear and measurable goals and track their progress and results. By using the brand prioritisation framework (Jessee, 2023), healthcare companies can prioritise their strategic initiatives and allocate their resources accordingly.

The finding displayed in Table 5.4, whereby the chi-squared (Chisq.) statistic yielded a p-value of 0.880 in the context of changes in the operating environment for healthcare products during COVID-19 and its influence on strategy formulation by healthcare companies in Durban, has several statistical implications. A p-value of 0.880 is quite high, significantly exceeding the conventional threshold of 0.05 used for statistical significance. This strongly suggests a lack of statistical significance in the relationship between changes in the operating environment for healthcare products during COVID-19 and the formulation of strategies among healthcare companies in Durban, based on the variables examined in this analysis. In practical terms, this implies that, within the scope of this analysis and the variables considered, there is no statistically significant association or difference between how changes in the operating environment for healthcare products during COVID-19 influence strategy formulation and any specific factors under examination (e.g., demographics of respondents, company size, etc.).

A non-significant p-value like 0.880 suggests that other unexamined factors or nuances may play a more substantial role in determining how changes in the operating environment during COVID-19 influenced strategy formulation within healthcare companies in Durban. Further research may be essential to identify these additional factors, which could include variables related to specific aspects of the operating environment, regulatory changes, or competition dynamics. In summary, the non-significant p-value of 0.880 strongly suggests that, within the context of this analysis, the factors under consideration do not appear to have a significant association with how changes in the operating environment for healthcare products during COVID-19 influenced strategy formulation in healthcare companies in Durban. Additional research, potentially incorporating a broader range of variables and a larger sample size, may provide deeper insights into the complex relationship between changes in the operating environment and strategic decision-making within the healthcare sector during the pandemic.

5.4.9 COVID-19 PROVIDED OPPORTUNITIES WHICH INFLUENCED STRATEGY FORMULATION

The results shown in Figure 5.6 regarding how opportunities provided by COVID-19 influenced strategy formulation among healthcare companies in Durban reveal several key observations, notably strong agreement with opportunities, limited disagreement, strategic agility and innovation, resource allocation and risk assessment, and adaptive leadership. A substantial majority of respondents, including 37.6% who "agree" and 45.1% who "strongly agree," expressed that COVID-19 has presented opportunities that influenced their strategy formulation. This strong agreement suggests that healthcare companies in Durban have been proactive in identifying and capitalising on opportunities that arose during the pandemic. While a small percentage of respondents somewhat agreed (17.3%), the overall level of disagreement is low. This implies that there is a high degree of consensus among respondents regarding the significance of opportunities related to COVID-19 in shaping their strategic responses.

The high levels of agreement suggest that healthcare companies have recognised the need to be agile and innovative in response to the challenges posed by the pandemic. These opportunities might include the expansion of telehealth services, the development of new healthcare products or services, or the exploration of alternative revenue streams. The findings suggest that organisations have been resourceful in reallocating resources to exploit opportunities while also assessing the risks associated with pursuing these opportunities during a time of uncertainty. The strong agreement also accentuates the role of adaptive leadership in recognising and seizing opportunities in crisis situations. Leaders in healthcare companies may have played a crucial role in driving strategic change and innovation. In summary, the findings highlight that COVID-19 provided healthcare companies in Durban with opportunities that significantly influenced their strategy formulation. These opportunities have driven strategic agility, innovation, and adaptive responses to the challenges posed by the pandemic. The high level of agreement among respondents underscores the importance of recognising and capitalising on opportunities as a critical factor in shaping strategic decision-making in the healthcare sector during COVID-19.

5.4.10 COVID-19 INTRODUCED THREATS WHICH INFLUENCED STRATEGY FORMULATION

The results shown in Figure 5.6 regarding the perception that COVID-19 introduced threats to strategy formulation among healthcare companies in Durban indicate several significant points. A substantial majority of respondents, including 40.6% who "agree" and 45.1% who "strongly

agree," expressed that COVID-19 introduced threats that have influenced their strategy formulation. This strong agreement suggests that healthcare companies in Durban have been keenly aware of the challenges and risks posed by the pandemic and its impact on their strategic decision-making. While a small percentage of respondents somewhat agreed (14.3%), the overall level of disagreement is low. This implies a high degree of consensus among respondents regarding the significance of the threats introduced by COVID-19 in shaping their strategic responses. The findings suggest that organisations have recognised the importance of assessing and mitigating the threats associated with the pandemic. These threats could include disruptions in the supply chain, increased healthcare demand, financial challenges, workforce issues, and compliance with evolving regulations. The strong agreement underscores the need for strategic adaptation and resilience in the face of threats. Healthcare companies may have developed contingency plans, diversified their services, and adopted risk management strategies to address these challenges effectively. The high level of agreement also points to the role of leadership in addressing threats. Strong leadership and crisis management skills may have been essential in navigating the uncertainties brought about by the pandemic. In summary, the findings suggest that COVID-19 introduced threats that significantly influenced the strategy formulation of healthcare companies in Durban. These threats have led to a heightened awareness of risks and the need for strategic adaptation and resilience. The high level of agreement among respondents underscores the importance of recognising and addressing threats as a critical factor in shaping strategic decision-making in the healthcare sector during the COVID-19 pandemic.

The result displayed in Table 5.6, whereby the chi-squared (Chisq.) statistic yielded a p-value of 0.200 in the context of the emergence of threats during COVID-19 and its influence on strategy formulation by healthcare companies in Durban, has some statistical implications. A p-value of 0.200, while not extremely high, is still above the conventional threshold of 0.05 typically used for statistical significance. This suggests a lack of statistical significance in the relationship between the emergence of threats during COVID-19 and the formulation of strategies among healthcare companies in Durban based on the variables examined in this analysis. In practical terms, this implies that, within the scope of this analysis and the variables considered, there is no statistically significant association or difference between how the emergence of threats during COVID-19 influences strategy formulation and any specific factors under examination (e.g., demographics of respondents, company size, etc.).

A non-significant p-value like 0.200 suggests that other unexamined factors or nuances may play a more substantial role in determining how threats introduced by COVID-19 influenced strategy formulation within healthcare companies in Durban. Further research might be required to identify these additional factors, which could include variables related to the specific types of threats, the effectiveness of risk mitigation strategies, or the level of preparedness of healthcare organisations. In summary, the non-significant p-value of 0.200 suggests that, within the context of this analysis, the factors under consideration do not appear to have a significant association with how threats introduced by COVID-19 influenced strategy formulation in healthcare companies in Durban. Additional research, incorporating a broader range of variables and potentially a larger sample size, may provide greater understanding into the complex relationship between threats and strategic decision-making within the healthcare sector during the pandemic.

5.4.11 COVID-19 EXPOSED ORGANISATIONAL WEAKNESSES THAT INFLUENCED STRATEGY FORMULATION

The results shown in Figure 5.6 regarding the perception that COVID-19 exposed organisational weaknesses, which in turn influenced strategy formulation among healthcare companies in Durban, reveal several significant points. A substantial majority of respondents, including 36.8% who “agree” and 50.4% who “strongly agree,” expressed that COVID-19 exposed organisational weaknesses that influenced their strategy formulation. This strong agreement suggests that healthcare companies in Durban have been introspective and have recognised the vulnerabilities within their organisations brought to light by the pandemic. While a small percentage of respondents somewhat agreed (12.8%), the overall level of disagreement is low. This implies a high degree of consensus among respondents regarding the significance of organisational weaknesses in shaping their strategic responses. The findings suggest that organisations have used the challenges posed by COVID-19 as opportunities to identify areas for improvement and growth. These weaknesses could encompass areas such as supply chain resilience, digital infrastructure, crisis management protocols, workforce flexibility, and financial preparedness.

The strong agreement underscores the need for strategic adaptation and remediation in response to exposed weaknesses. Healthcare companies may have developed plans to address these vulnerabilities and enhance their overall resilience. The high level of agreement also points to

the role of leadership in recognising and addressing organisational weaknesses. Effective leadership is crucial to driving change and fostering a culture of continuous learning and improvement. In summary, the findings suggest that COVID-19 exposed organisational weaknesses that significantly influenced the strategy formulation of healthcare companies in Durban. These weaknesses prompted healthcare organisations to be proactive in identifying areas for improvement, enhancing their resilience, and driving strategic change. The high level of agreement among respondents underscores the importance of recognising and addressing organisational weaknesses as a critical factor in shaping strategic decision-making in the healthcare sector during the COVID-19 pandemic.

5.5 ANALYSIS OF QUALITATIVE DATA

This section presents the qualitative data collected from managerial employees of the selected healthcare companies, namely Rentech, E-Moyo, Clatten, Kendon, Zeta Laboratory and ATB. The decision to select managerial employees was implemented due to their intimate, detailed and pertinent knowledge of how the COVID-19 pandemic has affected the formulation of strategies for selected healthcare companies in Durban to maintain a competitive advantage. The data was collected during the period from June 2023 to August 2023. The study targeted responses from the in-depth interviews conducted involving eighteen (18) management employees purposively selected from different levels of the organogram. The participants included one (1) manager from Rentech, two (2) managers from E-Moyo, four (4) managers from Clatten, one (1) manager from Kendon, five (5) managers from Zeta Laboratory and five (5) managers from ATB. They were selected because they had in-depth knowledge of how the COVID-19 pandemic has affected the performance of the health care companies in South Africa. The qualitative interviews had a response rate of 100%. This response rate helped provide assurance that much valuable information that can improve the discussions and recommendations of this study was yielded. Open-ended questions from the interview guide were issued to participants. The interview guide consisted of three sections. The interview schedule used to collect qualitative data for this study is given in Appendix 2. The interviews were conducted online.

5.5.1 DEMOGRAPHIC PROFILE OF RESPONDENTS

Demographic data provides a basis for understanding the characteristics of participants. Such data includes race, gender, marital status, employment status, gender, age, level of education,

and so on (Kumar 2019). In this study, demographic characteristics such as gender, employment status and level of education were the main focus, as they were deemed relevant to assist in understanding the perspectives of the participants. Pseudonyms were used to protect the identities of the participants. Pseudonyms is a way to protect participants from possible victimisation or litigation (Saunders et al., 2016). The real names of participants were replaced by numbers to protect their identities. Thus, numbers (1–18) were used to identify participants in this study. Table 5.7 presents the demographic profiles of the employees who participated.

Table 5. 7: Profile of respondents

Participant	Gender	Position in the organisation	Experience in a management position	Experience in the Healthcare industry	Age	Highest level of education
Participant 1	Female	Operations Manager	5	15	47	Degree
Participant 2	Male	Finance Director	8	6	42	Post Degree
Participant 3	Female	Purchasing Manager	5	5	38	B.Com Purchasing
Participant 4	Male	Chief Executive Officer	9	3	49	MBA
Participant 5	Female	Managing Director	6	6	56	M.Com
Participant 6	Male	Finance Executive	9	7	39	ACCA, Hons Degree. MBA
Participant 7	Female	Human Capital Development	15	9	46	MBA HRM
Participant 8	Male	Chief Executive Officer	13	6	47	Degree

Participant	Gender	Position in the organisation	Experience in a management position	Experience in the Healthcare industry	Age	Highest level of education
Participant 9	Male	Sales Executive Director	10	7	50	M.Com Degree
Participant 10	Female	Information Technology Executive Director	8	5	44	Post Degree
Participant 11	Male	Risk Management Director	9	6	40	Degree
Participant 12	Male	Operations Manager	11	7	39	MBCHB
Participant 13	Male	Strategic Manager (innovations)	9	7	47	Degree
Participant 14	Male	Senior Manager-global operations	14	9	50	Post degree
Participant 15	Male	Managing Director	16	9	59	B.Com Pharmacy
Participant 16	Female	Business Development Manager	10	6	48	Post degree
Participant 17	Male	HRM Director	12	8	39	Post degree

Participant	Gender	Position in the organisation	Experience in a management position	Experience in the Healthcare industry	Age	Highest level of education
Participant 18	Male	Marketing Executive Manager	11	7	47	Post degree

By analysing the above information, it is important to note that successful strategy formulation during the COVID-19 pandemic most likely involved a combination of factors, including diverse perspectives, experienced leadership, healthcare industry knowledge, and a blend of educational backgrounds. The participants' roles, such as CEOs and directors, suggest they played pivotal roles in shaping the organisation's response to the pandemic.

To gain a deeper understanding of the specific strategies employed during COVID-19, it was deemed valuable to conduct further research or interviews with these participants to explore the actions taken, challenges faced, and lessons learned during the pandemic. Additionally, organisational culture, external market conditions, and government regulations would also be significant factors to consider when analysing strategy formulation during the pandemic.

5.5.2 Qualitative analysis of findings on the Impact of the COVID-19 pandemic on the performance of the health care industry in Durban, South Africa

Findings from managerial employees are presented according to the objectives of the study. As highlighted in the previous chapter, the thematic approach is used to analyse qualitative data collected from managerial employees of healthcare companies. In this regard, each objective is used to represent a different theme of the study. Subthemes (i.e., core ideas under each theme) are then used to explain each theme further.

A summary of the qualitative results is in Table 4.9, and the discussion is presented thereafter.

Table 5. 8: Themes and sub-themes on the impact of COVID-19 on the healthcare industry

Theme	Sub- Theme	Frequency
1. Profitability	a. Temporary dip in profitability	3
	b. Increased profitability	5
	c. Differential profitability	9
2. Marketing activities	a. Shift towards online marketing platforms	14
	b. Personalised and custom-made online marketing	4

Theme 1: Profitability

This theme is linked to the first objective of the study, which sought to determine impact of the COVID-19 pandemic on the performance of the health care companies in Durban, South Africa. Participants were asked to express their thoughts on the impact of the COVID-19 pandemic on the performance of the health care companies in Durban, South Africa. Three sub-themes emerged under this theme, namely the temporal dip in profitability, increased profitability, and differential profitability. A total of eighteen participants provided their views.

a) Temporary decrease in profitability

A decrease in profitability emerged as one of the themes describing the impact of COVID-19 on the performance of healthcare companies in Durban, South Africa. Some participants pointed out that COVID-19 caused a temporary plunge in profits, which lasted during the entire duration of the pandemic. Participants pointed out that

> *Profits dipped dramatically due to the fact that movement of people was restricted; there was even a time when the logistics sector too was legislated to stop moving across provinces; except for those truckers carrying food and*

some designated medical essentials, this restriction led to a fall in supply and difficulties in the timeous replenishment of stocks, so essentially we did experience supply bottlenecks and also we did experience a fall in sales and this scenario was worsened by the fact that most fixed costs had to be incurred all the same, so from a financial perspective, our profits indeed temporarily dipped during the entire duration of the pandemic.

Another interview excerpt to this effect stated that:

Generally company profits declined but not dramatically per se, what we indeed experienced was a phenomenon whereby cost of supplies increases as some speculative suppliers expected a drastic curtailment of production and a complete shutdown of industries, therefore they raised the prices of many healthcare essentials especially those that were in high demand, yet on the other hand, they were also serious job losses occurring within the country, so it became difficult also to raise prices dramatically due to the fact that there was also a corresponding decline in demand, therefore we were forced to adjust our prices marginally just to break-even because there was generally not enough money in the market circulating, so we didn't make as much profits as we generally used to do.

The above interview excerpt was similarly echoed by three participants who were of the view that the profitability of healthcare companies temporarily declined during the Covid -19 period, thus affecting the country. This interview excerpt provides valuable insights into the impact of the COVID-19 pandemic on a business's financial performance, particularly in the context of supply chain disruptions and fixed costs. The excerpt begins by highlighting that the company experienced a significant decline in profits during the pandemic. This decline was attributed to various factors. The first major factor mentioned is the restriction on the movement of people. This is a common feature of pandemic responses, aimed at limiting the spread of the virus. These restrictions likely impacted the ability of employees to commute to work and customers to visit stores or facilities. The excerpt also mentions that legislation restricted the movement of the logistics sector across provinces, except for essential goods like food and medical supplies. This legislative intervention had a direct impact on the supply chain, causing disruptions. The restrictions on movement led to supply bottlenecks. This means that the

company faced challenges obtaining the necessary goods and materials in a timely manner. This could have affected production and led to stock shortages. The disruptions in the supply chain and restricted movement of people contributed to a fall in sales. This is a common consequence of the pandemic, as consumer behaviour changed and some businesses were forced to close temporarily. One crucial point mentioned is that despite the decline in sales and disruptions in the supply chain, most fixed costs still had to be incurred. Fixed costs, such as rent and salaries, remain constant regardless of changes in business activity. This situation added financial pressure on the company. The interviewee emphasises that the dip in profits was temporary, suggesting that the company was able to weather the storm. This could imply that they implemented strategies to adapt to the challenging circumstances. In summary, this interview excerpt underscores the financial challenges faced by businesses during the COVID-19 pandemic. Movement restrictions, legislative measures impacting logistics, supply bottlenecks, and a fall in sales all contributed to a decline in profits. Importantly, the company still had to cover fixed costs, which exacerbated the financial strain. However, the interviewee suggests that this plunge in profits was temporary, indicating that the company may have implemented strategies to mitigate the impact and adapt to the changing business environment. This finding is in line with the assertion by Chaghooshi & Moein (2019), who pointed out that the disruptions in supply chains during COVID-19 caused a severe strain on the financial performance of healthcare businesses in the short term. Chen et al. (2021) also alluded to this notion by stating that during the early years of the COVID-19 pandemic, business operations were disrupted, causing a temporary dip in sales and profitability. As alluded to earlier, Fernandes (2020) stated that in its early stages in the third quarter of 2019, the COVID-19 pandemic resulted in a supply-side 'shock' because it disrupted highly integrated global supply chains to such an extent that the shut-down of factories in China led to a lower demand for South African exports of minerals and other materials into Chinese production chains, while also limiting the supply of Chinese goods and services into South African production markets , hence impacting negatively on the net profit of companies both in South Africa and the wider world.

b) Increased profitability

A significant number of participants pointed out that COVID-19 impacted positively on the profitability of healthcare companies. The view that COVID-19 led to increased profitability

had the second highest frequency of participants who attested to this view. The participants pointed out that the increased profitability was due to a surge in demand for some related COVID-19 healthcare products. This finding is corroborated by the following interview excerpts, which resemble the views of the five other participants:

> *Pertaining to my company, which as you know, sells healthcare products, what I can honestly say is that we managed to make profits because we quickly adjusted to the COVID-19 environment and made arrangements to order personal protective equipment and other accessories that were in high demand for protecting the generality of the population against contracting COVID-19.… So we made high sales selling masks, different types of sanitisers and many hygiene products, and also remember that medical products are a priority to the population, so our sales soared a bit and so did our profits.*

The participants mentioned that their company quickly adapted to the COVID-19 environment. This adaptability is crucial during a crisis, as it allows businesses to respond to changing market conditions and customer needs effectively. Thus, the companies made arrangements to order personal protective equipment (PPE) and other accessories that were in high demand during the pandemic. This included masks, sanitisers, and hygiene products. These items were essential for protecting individuals against contracting COVID-19. The participants note that there was a high demand for PPE and hygiene products to protect the general population from COVID-19. This heightened demand most likely led to increased sales for the company. As a result of their strategic decision to supply essential COVID-19-related products, the company experienced a surge in sales. The increased sales, in turn, led to higher profits. This demonstrates how certain businesses were able to pivot and capitalise on the increased demand for pandemic-related products. The interviewee also highlights that medical products are a priority for the population during a health crisis. This prioritisation likely contributed to the increased sales of healthcare products.

In summary, this interview excerpt illustrates a positive outcome for a healthcare product company during the COVID-19 pandemic. By quickly adapting to the new environment, supplying high-demand items like PPE and hygiene products, and recognising the priority of medical products, the company was able to not only meet the needs of the population but also increase its sales and profits. This case exemplifies how businesses that responded effectively

to the challenges created by the pandemic were able to thrive in certain sectors. This finding agrees with assertions by den Hertog et al. (2020), who pointed out that there was an increase in sales orders pertaining to many healthcare products as people scrambled to buy several healthcare products to see them through the COVID-19 pandemic.

c) Differential profitability

Differential profitability came into the spotlight during the interviewing process. A large number of participants stated that the COVID-19 pandemic gave rise to differential profitability for healthcare companies arising from differential demand for different healthcare products. This finding is corroborated by a summation of interview excerpts, which all converge on the following excerpt:

> *It depends on what you were really selling, generally the profitability of healthcare products, especially the medicinal ones, which are specialised in selling, were not overly affected, and to, us I think the COVID-19 was a blessing because it added to more demand for items such as sanitisers and masks and others which were slow moving to move fast enough,…also remember there was panic buying too and so during this period our sales increased and this also led to an increase in profitability…if you were selling COVID-19 related healthcare products which were in high demand or selling drugs that had something to do with preventing and mitigating contraction of COVID-19 virus or mitigating its impacts your company experienced a surge in sales of this products and hence an increase in profits because of high demand high prices, but most companies also experienced a phenomenon whereby other non-COVID-19 related and non-essential healthcare products experienced low demand and low profits, so generally there was a combination of differential demand and differential profits.*

This interview excerpt provides valuable insights into how different types of healthcare product companies were affected during the COVID-19 pandemic and how the nature of their products influenced their profitability. The profitability of a company during the pandemic appears to depend significantly on the type of healthcare products it was selling. Medicinal products, especially specialised ones, were not overly affected. This suggests that products directly related to medical treatment or prevention of COVID-19 may have had stable or even increased

demand. For some healthcare product companies, the COVID-19 pandemic was seen as a blessing because it created additional demand for certain items, such as sanitisers and masks. These products, which might have had slower sales previously, suddenly noticed a surge in demand due to increased awareness and health precautions. The mention of panic buying highlights the psychological aspect of the pandemic. People rushed to stock up on essential items, including healthcare products, contributing to increased sales during the pandemic's peak. The interviewee notes that companies selling COVID-19-related healthcare products experienced a surge in both sales and profitability due to high demand and potentially higher prices. However, non-COVID-19-related and non-essential healthcare products saw low demand and lower profits. Products directly related to COVID-19 prevention or mitigation, such as masks and sanitisers, likely commanded higher prices due to increased demand. This contributed to higher profitability for companies selling these items. The excerpt emphasises that there was a combination of differential demand and differential profits in the healthcare product industry. This indicates that the pandemic created winners and losers within the sector, depending on the nature of the products offered.

In summary, the participants suggested that the impact of the COVID-19 pandemic on healthcare product companies varied depending on the type of products they sold. Companies offering COVID-19-related products or those involved in the prevention and mitigation of the virus experienced a surge in demand and profitability. In contrast, companies selling non-essential healthcare products may have experienced lower demand and profits. This differential impact highlights the importance of adaptability and product relevance during a crisis like the COVID-19 pandemic within the healthcare industry. This finding is consistent with views expressed by scholars such as Singh et al. (2023) who asserted that not all healthcare products face exponential demand to a health pandemic. Singh et al. (2023) stated that each global health pandemic is unique and its impact on demand and profitability of healthcare products is varied depending on the scientific nature of the pandemic. A key factor to consider here is that the demand for healthcare products such as personal protective equipment (PPE) sanitisers and certain drugs has indeed experienced a rise in demand and profitability.

Theme 2: Impact of COVID-19 on marketing activities

This theme is linked to the first objective of the study, which sought to determine the impact of the COVID-19 pandemic on the performance of the health care companies in Durban, South

Africa. Participants were asked to express their thoughts on the impact of the COVID-19 pandemic on the marketing activities of the health care companies in Durban, South Africa. Three sub-themes emerged under this theme: shift towards online marketing platforms, shift from contact advertising and marketing, and personalised and custom-made online marketing. A total of eighteen participants provided their views.

a) Shift towards online marketing platforms

A majority of participants pointed out that COVID-19 led to a dramatic shift in marketing towards online marketing platforms such as the internet. This view was attested to by the largest number of participants and so had the highest frequency among the other responses. The following interview excerpts summarise participant views regarding the shift towards online marketing platforms. Some respondents stated that:

> *In as far as COVID-19 was concerned, it changed the way we did our marketing activities. There was a general consensus that we had to intensify our presence on online platforms, if were to survive and gain market share, more intense digitisation of marketing ensued as a result of COVID-19 because the other conventional physical contact advertising became untenable as the COVID-19 regulations forced people to stay at home, so we then resorted to market our products digitally…upon realising that the government was strict about enforcing COVID-19 regulations that involved restrictions on people movement, healthcare companies had to become innovative and shift its emphasis towards marketing their products using online channels, such as social media, webinars, online video, and content marketing.*

This interview excerpt highlights how the COVID-19 pandemic led to a significant shift in marketing strategies for healthcare companies. The participants acknowledge that the COVID-19 pandemic necessitated a fundamental change in their company's marketing activities. This was a common response among businesses during the pandemic, as traditional marketing methods became challenging due to restrictions and safety concerns. There was a consensus within the company that they needed to intensify their online presence. This shift reflects the increased importance of digital marketing in reaching and engaging with customers during the pandemic. The pandemic accelerated the process of digitisation in marketing. As physical

contact advertising became untenable due to COVID-19 regulations and people staying at home, healthcare companies had to adapt by relying more on digital marketing strategies. Healthcare companies had to innovate in response to strict government regulations. They shifted their emphasis towards marketing their products using online channels. This innovation likely involved exploring new technologies and platforms to connect with customers remotely. The participants mention several online marketing channels that were adopted, including social media, webinars, online video, and content marketing. These digital channels allowed healthcare companies to continue reaching their target audience despite the limitations imposed by the pandemic. Thus, the finding establishes that the COVID-19 pandemic forced healthcare companies to re-evaluate and adapt their marketing strategies. The inability to rely on traditional, physical-contact advertising led to a greater emphasis on digital marketing channels. This shift towards online marketing allowed companies to maintain their presence, engage with customers, and potentially even expand their market share during a challenging period. It also highlights the importance of adaptability and innovation in response to rapidly changing circumstances.

a**) Personalised and custom-made online marketing**

COVID-19 influenced healthcare companies to engage more in personalised and custom-made online marketing as a way to circumvent restrictions that came about as a way to restrict the physical spread of the disease. A significant number of participants attested to the view that healthcare companies shifted from conventional physical contact advertising towards personalised and custom-made online marketing. This finding is evidenced by the following interview excerpt:

> *We followed the trend of engaging in personalised and custom-made advertising and this involved use of data to reach out to audiences, and involved making each customer feel more unique and optimising their experience with the company…Through using data healthcare companies were able to identify patterns that enabled us to more effectively target potential customers using online platforms, specifically at some of our companies we resorted to inserting the customer name into the same marketing email that goes to all of our customers*

and it also ensuring that we targeted the right person with the right message at the right moment with the right suggestions but using online channels.

This interview excerpt highlights the use of personalised and data-driven advertising strategies by healthcare companies and their effectiveness in reaching and engaging with customers. The participants mentioned that the company followed the trend of personalised and custom-made advertising. Personalisation involves tailoring marketing messages and experiences to individual customers. This approach is designed to make each customer feel unique and valued by the company. Data performs a central part in personalised advertising.

The interviewee points out that data was used to reach out to audiences more effectively. This likely includes collecting and analysing customer data to understand their preferences, behaviours, and needs. Data analytics enabled healthcare companies to identify patterns in customer behaviour. These patterns provided insights into how to target potential customers more effectively on online platforms. Understanding customer behaviour is essential for creating relevant and engaging marketing campaigns. The statement mentions that the company inserted the customer's name into marketing emails, ensuring that the right message was delivered to the right person at the right moment. This level of personalisation can significantly improve the impact of marketing campaigns and enhance the customer experience. The personalised advertising efforts were primarily focused on online channels. Online platforms provide a wealth of data and the ability to deliver targeted messages to specific individuals or customer segments.

In summary, the participants underscore the importance of data-driven and personalised marketing strategies in the healthcare industry. By leveraging customer data, healthcare companies were able to identify patterns, tailor their messaging, and optimise the customer experience. This approach not only increases the effectiveness of marketing efforts but also enhances the relationship between the company and its customers by making them feel valued and understood. Personalised advertising is a persuasive means for building customer loyalty and driving business growth in the digital age. The shift to personalised online marketing demonstrates what White et al. (2015) called adaptation in leadership parlance, meaning that the leadership was able to introduce and implement new strategies that effectively respond to a changed operating environment.

5.5.3 QUALITATIVE ANALYSIS OF FACTORS THAT INFLUENCED STRATEGY FORMULATION FOR SUSTAINED COMPETITIVE ADVANTAGE OF SELECTED HEALTHCARE COMPANIES IN DURBAN, SOUTH AFRICA.

This section is related to one of the main objectives of this study, which to investigate the factors that influenced strategy formulation for the sustained competitive advantage of selected healthcare companies in Durban, South Africa.

Table 5. 9: Themes and sub-themes on factors that influenced strategy formulation for sustained competitive advantage of selected healthcare companies in Durban

Theme	Sub- Theme	Frequency
1. Technological changes	a. Business process innovations through digitisation	6
	b. leveraging expertise and resources to innovate	12
2. COVID-19 regulations	a. optimisation of websites and Search Engine Optimisation (SEO) for increased online traffic and search queries	14
3. Competitor innvovations	a. Product/service differentiation	11
	b. service/process innovations	7

Theme 1: Technological changes

Technological changes emerged as one of the themes describing factors that influenced strategy formulation for the sustained competitive advantage of selected healthcare companies in Durban. Restrictions on human movement necessitated that companies develop new technologies meant to ensure that they continue to conduct their businesses within the confines of the COVID-19 environment. The emergence of new technologies meant that companies had to reinvent new business process models and leverage their resources and expertise in order to gain a competitive advantage.

a) Business process innovations

Business process innovations emerged as one of the key sub-themes describing how technological changes influenced strategy formulation for gaining competitive advantage.

> *Due to new technologies such as telehealth, artificial intelligence and data analytics most businesses were forced to formulate new business process innovations meant to align their business processes with new technologies that emerged in the market…most companies embarked on engaging all levels of employees to generate ideas of how to innovate business processes so that the companies become more competitive and become sustainable…new ways of doing businesses were devised, new workflow systems were introduced and employee ways of conducting work were modified and adjusted to suit new technologies. This meant that job roles were adapted to align with new technological developments.*

This interview excerpt highlights the significant impact of new technologies, such as telehealth, artificial intelligence (AI), and data analytics, on businesses and how they responded by formulating new business process innovations. The participants acknowledge the disruptive influence of new technologies, including telehealth, AI, and data analytics, on various industries. These technologies have the potential to transform how businesses operate and deliver services. In response to the emergence of these new technologies, many businesses recognised the need to innovate their business processes.

Business process innovation involves rethinking and redesigning how tasks and activities are carried out to make them more efficient, effective, and aligned with technological advancements.

The primary objective of these process innovations was to align business operations with the capabilities offered by the new technologies. This alignment is crucial for businesses to leverage the full potential of these technologies and stay competitive. The interviewee emphasises that many companies involve all levels of employees in the innovation process. This approach suggests a commitment to fostering a culture of innovation within the organisation. Engaging employees in generating ideas encourages a diverse range of perspectives and can lead to more creative and practical solutions. The overarching goal of these business process innovations is to enhance competitiveness and sustainability. By adapting to new technologies and finding ways to leverage them effectively, businesses aim to maintain their competitive edge in the market and ensure long-term viability.

Thus, the interview excerpt highlights the dynamic nature of the business landscape, driven by the rapid evolution of technology. Businesses recognise the need to adapt and innovate their processes to remain relevant and competitive. Involving employees in the innovation process is seen as a valuable approach to generate ideas and foster a culture of adaptability and sustainability in response to the changing technological landscape. Ultimately, the ability to harness new technologies and align business processes with them is crucial for staying competitive and thriving in today's market.

Similarly, Tonjang & Thawesaengskulthai (2020) also stated that technological business process innovations are a tool that can help healthcare companies gain a competitive advantage in the post-COVID-19 era by enabling them to leverage the power of artificial intelligence (AI) to improve diagnosis, treatment, and prevention of diseases, as well as optimise clinical workflow management, advanced surgery assistance, and medical diagnostics. The finding is also consistent with assertions by Kraus et al. (2021), who also noted that the effective management of technology in healthcare should involve utilising the Internet of Medical Things (IoMT) to connect devices, equipment, and infrastructure that enable applications such as automatic disinfection capabilities, smart diagnosis, and remote patient management so as to help companies gain a competitive advantage in the present COVID-19 operating environment moving forward. On the other hand, the findings are also in perfect agreement

with assertions by Siyal et al. (2019), who provided an example of Medtronic, a medical device company that also undertook technological business process innovations to help the company to gain a competitive advantage.

(b) Leveraging expertise and resources to innovate

Leveraging expertise and resources to innovate also emerged as a sub-theme describing the technological factors that influenced strategy formulation for gaining a competitive advantage. The study findings highlight that the majority of participants with a frequency of twelve study participants, all converged on the fact that technological changes within the healthcare industry influenced the management of these companies to leverage expertise and resources in order to innovate and gain a competitive advantage. The following interview excerpts corroborate this finding:

> *Companies had to retrain its employees in order to create a new kind of expertise that resonated with the new technological developments that emerged during the COVID-19. … Upon realising that companies had to leverage its expertise, core competences and alter its resource allocation criteria to ensure that they gain a competitive advantage during the pandemic, as management and professionals we were forced to ensure that we get new expertise, train existing experts, re-orient existing skills competences in order to align the skills bases of our employees to operate in a new technological environment in a manner that ensured we got competitive advantage over our rivals domestically and globally…more so this implied that we had to harness our resources, reprioritise budgets and allocate more funds towards skills and human capital development so that our organisations adapt effectively to the new era of new technological advancements that COVID-19 brought about.*

The participant's view highlights the significant challenges and strategic shifts that companies underwent in response to the new technological landscape brought about by the COVID-19 pandemic. The participant stresses the need for companies to retrain their employees to acquire new expertise that aligns with emerging technological developments. This reflects the dynamic nature of the business environment, where technological advancements can reshape industries rapidly. Companies recognised the importance of leveraging their core competencies to gain a

competitive advantage during the pandemic. This entails identifying and utilising their unique strengths and capabilities to excel in the changing market landscape. To gain a competitive edge, businesses had to reconsider their resource allocation criteria. This implies a shift in budget priorities and resource allocation strategies to prioritise areas such as skills development and technological adaptation. Management and professionals were compelled to ensure that employees acquired new expertise, either through training or by reorienting existing skills and competencies. This process aimed to align the workforce with the demands of the new technological environment. The overarching goal was to ensure that organisations could operate effectively in the face of new technological advancements brought about by the pandemic. This adaptation was essential for companies to remain competitive both domestically and globally. The participant emphasised the need for companies to allocate more funds towards skills and human capital development. This investment reflects a strategic commitment to equipping the workforce with the knowledge and capabilities required to thrive in the post-pandemic era. In summary, this participant's view underscores the pivotal role of human capital development and skills enhancement in responding to the challenges posed by the COVID-19 pandemic. Companies recognised that in order to remain competitive, they needed to adapt to new technological developments, leverage their core strengths, and prioritise investments in employee expertise. This adaptive approach was crucial for staying ahead in a rapidly changing business environment shaped by the pandemic and its associated technological advancements.

This finding is related with views articulated by Saidi et al. (2021), who asserted that effective resource allocation is a critical strategy that can help healthcare companies gain a competitive advantage in the post-COVID-19 pandemic by enabling them to optimise the use of their human, financial, and physical resources to deliver high-quality care and services to their patients and customers and align their resource allocation decisions with their strategic goals and priorities, as well as the changing needs and expectations of the market and society. Similarly, Barlow (2021) advised the management of healthcare companies to leverage data and analytics to inform their resource allocation decisions, monitor their performance, and identify opportunities for improvement and innovation. Consistent with the research findings George et al. (2020) asserted that management should prioritise allocating resources to projects that align with strategic objectives, have high potential for impact, and can deliver value in the short and long term. The findings also give credence to manoeuvres by companies, such

Cleveland Clinic and Johnson & Johnson, which used workforce planning to capture competitive advantage from new talent scenarios, such as remote work, skill clusters and distributed workforce models, and which used resilient business practices to cushion the impact of the pandemic, recover faster than the competition, and thrive in the new circumstances by anticipating, cushioning, adapting, and shaping. Kraus et al. (2021) also gave an example of companies such as Roche, which also used data-driven resource allocation to optimise its research and development portfolio to prioritise its projects and accelerate its drug development process.

Theme 2: COVID-19 regulations

COVID-19 regulations were another key highlight that participants mentioned as one of the factors that influenced strategy formulations. This was in response to a question that was posed to participants regarding their views about the influence of COVID-19 on strategy formulation for gaining a competitive advantage.

a) Sub-theme: optimisation of websites and search engine optimisation (SEO) for increased online traffic and search queries

An overwhelming majority of respondents highlighted that COVID-19 regulations influenced strategy formulation through influencing company management to optimise their websites and search engine optimisation for increased online traffic and search queries as a measure to assist customers in getting all the information they needed to do business with healthcare companies in a restricted environment. The highest frequency (14) of respondents attested to this view as stated in the following interview except:

> *The COVID-19 regulations were tough and unprecendented during the early days after the announcement of the emergence of the pandemic, regulations were tough, for instance they were severe restrictions on the movement of people and for some months people were told to stay at home for hours on end, this meant that they could not freely go for shopping as they used to, as time went on they were gradual relaxation of the restrictions but still flexibility of movement was a challenge, this state of affairs forced companies to innovate the way they do business and most noticeably they began to optimise their websites and engaged*

in online marketing, online provision of orders, processing of payments and provision … In some companies, there was greater SEO as a strategy meant to optimise a website's technical configuration, content relevance and link popularity so its pages … so that the company websites become easily findable, contained more relevant information and become popular for users to search queries, find healthcare information, prices, delivery modes, payment modalities, and so on.

This interview excerpt provides insight into how the COVID-19 regulations and restrictions prompted companies to adapt and innovate in their business operations, particularly in the context of online presence and marketing. The excerpt highlights that the COVID-19 regulations were initially tough and unprecedented. These regulations included severe restrictions on the movement of people and prolonged stay-at-home orders. These measures were intended for limiting the spread of the virus but had significant implications for business operations. The strict regulations meant that people could not freely go shopping as they used to. This likely led to a shift in consumer behaviour, with more people turning to online channels for their shopping and healthcare needs due to limited physical access to stores. To adapt to this changing landscape, companies had to innovate the way they conducted business. Notably, they began optimising their websites and engaging in online marketing. This suggests a proactive response to the increased importance of online platforms during the pandemic. Companies have embraced online solutions for order placement, processing payments, and service provision. This shift to online operations allowed them to continue serving customers while adhering to social distancing and lockdown measures. Some companies prioritised SEO as a strategy to enhance their online visibility. SEO efforts aimed to optimise the technical configuration, content relevance, and link popularity of their websites. The goal was to ensure that their websites were easily discoverable by users searching for healthcare information, prices, delivery options, payment methods, and related queries. The focus on providing relevant information, optimising website functionality, and improving the user experience suggests a user-centric approach. Companies aimed to make it easier for customers to access essential information and services online. In summary, the interview excerpt illustrates how COVID-19 regulations prompted a rapid transformation in the way companies conducted business. The restrictions on movement and changing consumer behaviour led to a greater emphasis on online operations, including website optimisation, online marketing, and SEO. This shift reflects the

adaptability of businesses in responding to unforeseen challenges and underscores the importance of a strong online presence in the modern business landscape, especially during times of crisis. This finding resonates with assertions by Wang et al. (2022:1358), who likened the business shift from traditional brick-and-mortar businesses to online business websites as an example of business practice innovation. Just like any other crisis, COVID-19 provided an impetus for healthcare service providers to undertake practice innovations as a strategy to help their businesses remain sustainable and gain a competitive advantage in the wake of dwindling consumer demand and falling incomes. Den Hertog et al. (2020) also pointed out that SEO optimisation was a business practice motivation that saw changes in the provision of healthcare services and products shifting online.

Theme 3: Competitor innovations

Competitor innovations also came into the spotlight as one of themes that describes factors influencing strategy formulations during the COVID-19 era. From the findings, two sub-themes explain the influence of competitor innovations on strategy formulations, namely the need to differentiate products/services in order to stay ahead of the competition and the need to innovate services.

a) Product/service differentiation

According to research participants, most competitors started to innovate their product offerings and resorted to differentiating their products and services in order to gain a competitive advantage. The data collected showed a very high frequency of participants who mentioned that competitor innovations played a key role in influencing the management of healthcare companies to engage in a strategy of product and service differentiation. This finding is corroborated by the following summarised interview excerpt:

> *Customers for some healthcare products became fewer and fewer and company closures were the order of the order of the day…this led to intense competition among healthcare companies to compete for the customers who still had jobs and income…in order to stay afloat new strategies such as product and service differentiation became a necessity."*

This interview excerpt reveals the challenging business environment in the healthcare industry during a specific period, like the COVID-19 pandemic. The excerpt suggests a reduction in the number of customers for certain healthcare products. This decline may have been due to economic challenges, shifting consumer priorities, or specific circumstances related to the healthcare industry. The phrase "company closures were the order of the day" indicates that many healthcare companies faced financial difficulties and had to shut down their operations. This could be attributed to a reduced customer base, increased competition, or other market challenges. As the customer base dwindled, surviving healthcare companies found themselves in a highly competitive environment. The competition was particularly fierce among those companies targeting the remaining customers who still had jobs and income. To stay afloat and stand out in a crowded and competitive market, healthcare companies had to adopt new strategies. One of the key strategies mentioned is "product and service differentiation", This means that companies need to offer unique and distinctive products or services to attract and retain customers. Thus, the interview excerpt paints a picture of a challenging business environment in the healthcare industry, likely exacerbated by economic downturns or other factors. Company closures were common, leading to increased competition among the remaining players. To survive and thrive in this tough market, healthcare companies had to innovate and differentiate their products and services to satisfy customers, who still had the means to make purchases. This illustrates the importance of adaptability and strategy in a changing and competitive marketplace. This finding resonates with assertions by Robinson (2021), who posited that product and service differentiation gave companies like Teladoc Health and Livongo a competitive advantage in the healthcare industry. Robinson (2021) further stated that Teladoc Health and Livongo gained a competitive advantage by offering a range of services, such as virtual visits, remote monitoring, coaching, and personalised insights, to help patients manage their health and wellness. Amazon is an e-commerce and technology company that invested $500 million to launch Amazon Pharmacy, an online pharmacy service that allows customers to order prescription medications for home delivery.

b) Service process innovations

Service process innovation emerged as a sub-theme that describes how competitor innovations influenced strategy formulations during the COVID-19 era. A significant number of participants pointed out that competitor innovations had a great influence on the formulation

of strategies that some healthcare companies adopted. The following interview excerpt corroborated this finding:

> *Due to intense competition from global companies, local domestic healthcare companies had to embark on changing the manner in which they provided services to their customers/clients, So most local companies were forced to undertake service process innovations in order to make it easy to interact with customers, process customer orders and deliver products and services to their clientele in an effective and efficient way.*

This interview excerpt emphasises the competitive challenges faced by local domestic healthcare companies in the context of intense competition from global companies. The statement indicates that local domestic healthcare companies were operating in a highly competitive market where global companies posted significant competition. This competition likely included multinational corporations with substantial resources and global reach. Due to the pressure from global competitors, local healthcare companies recognised the need to change the way they provided services to their customers. This suggests that they were at risk of losing market share or facing other challenges if they did not adapt. To respond effectively to the competition and enhance their competitiveness, local companies undertook service process innovations. This means they examined and improved the way they interacted with customers, processed customer orders, and delivered products and services. The focus on making it easy to interact with customers suggests a customer-centric approach. Local companies likely aim to improve the customer experience, making it more convenient and satisfying for their clientele. The interview excerpt gives weight to the importance of delivering products and services in an effective and efficient way. This indicates that local companies sought to streamline their operations and reduce inefficiencies in order to compete more effectively with global rivals. In summary, the interview excerpt accentuates the competitive pressures faced by local domestic healthcare companies in the face of global competition. To remain competitive, these companies recognised the need for change and adopted service process innovations to enhance customer interaction and improve the efficiency and effectiveness of their operations. This adaptive approach is crucial for local companies to thrive in a globalised and competitive healthcare industry. This finding vindicates assertions by Dodgson et al. (2021), who implored organisations to design systems and processes that can identify, assess,

and develop technology and service processes that utilise opportunities and protect an organisation from new technology threats. This finding resonates with assertions by Chen et al. (2021), who pointed out that research into new post-COVID-19 business service innovations has intensified in order to help prepare the organisations for future health disruptions. Ponnusamy (2021) too posited that most global firms are in the process of making significant financial investments in the various facets of business innovations so as to prepare their organisations for any business disruptions that may inadvertently occur. Holdford & Inocencio (2019) stated that in the health care industry, a business model innovation might be a movement from the conventional practice of producing revenues by selling merchandise or providing services for a fee to a new value-based, pay-for-performance, and other forms of business models. According to Van der Aa & de Jong (2020), business model innovations often effect innovations in both service bundles and processes.

5.5.4 THEMATIC ANALYSIS OF FINDINGS ON STRATEGIES DEVELOPED AND IMPLEMENTED BY THE HEALTH CARE INDUSTRY IN DURBAN, SOUTH AFRICA, TO GAIN A COMPETITIVE ADVANTAGE SINCE THE EMERGENCE OF COVID-19

This section is in alignment with one of the objectives of this study, which sought to identify strategies that were developed and implemented by the health care industry in Durban, South Africa, to gain a competitive advantage since the emergence of COVID-19. There are three main themes that emerged from participants regarding the strategies that they adopted to gain a competitive advantage during and after COVID-19, namely strategic collaboration and partnerships, human resources optimisation and redesign of business operating models.

Table 5. 10: Themes and sub-themes on strategies developed and implemented by the health care industry in Durban, South Africa, to gain a competitive advantage since the emergence of COVID-19

Theme	Sub-Theme	Frequency
1.Strategic collaboration & partnerships	a. Supplier collaboration	6
	b. Technical collaboration and skill transfer	8
	c. Policy and regulation advocacy collaboration	4
2. Human Resources Optimisation	a. Introduction of flexible working conditions	5
	b. Staff retraining	11
3. Redesign of business operating models	a. Acceleration of digital transformation	
	b. Service and product differentiation	10

Theme 1: Strategic collaboration and partnerships

This theme is linked to the objective of identifying strategies that were developed and implemented by the health care industry in Durban, South Africa, to gain a competitive advantage since the emergence of COVID-19. Almost all eighteen participants alluded to the fact that most healthcare companies adopted the strategy of collaborating with suppliers, others with technical partners and others with fellow industry players to advocate for policy and regulatory reform. Thus, three sub-themes emerged from the main theme.

a) Supplier strategic collaboration

A significant number of participants pointed out that their companies resorted to collaborating and forming supplier partnership agreements as a strategy of ensuring steady supplies of inventory to mitigate the negative effects of supplier disruption brought about by the COVID-19 pandemic. Participants pointed out that the strategy of supplier collaboration and partnership was meant to secure supply chains so that they could gain a competitive advantage in an operating environment characterised by uncertainties regarding the supply of stock. The following summarised interview excerpt corroborates this finding:

> *The onset of COVID -19 was characterised by severe curtailment of logistics supplies and many disruptions occurred along the supply value chains, and existing stocks were quickly depleting with no certainty as to when the new deliveries would come especially from international suppliers….so the only logical reason was to secure supplier agreements that our particular company is prioritised ahead of others and this came at a price….particularly to my company I had to pay a priority fee in order to be prioritised for deliveries…other suppliers demanded long term supply agreements in the post COVID era and we had to do that to secure supply chains and get more stock and assure us of having adequate available stocks ahead of other competitors, this strategy was meant to ensure continued availability of stock so that we get more customers coming to us…we also ended up getting favourable supplier terms and this helped us to gain a competitive advantage.*

This interview excerpt provides insights into the challenges and strategic decisions made by a company in response to disruptions in the supply chain caused by the COVID-19 pandemic. The excerpt describes the initial phase of the COVID-19 pandemic as being marked by severe disruptions in logistics and supply chains. This disruption resulted in the depletion of existing stocks, creating uncertainty about when new deliveries, especially from international suppliers, would be available. In response to these supply chain challenges; the company adopted a strategy of securing supplier agreements that prioritised their company over others. This suggests that they negotiated with suppliers to ensure that their orders would be given priority, even if it required additional costs or fees. The participants mentioned that their company had to pay a priority fee to secure prioritised deliveries. This indicates a willingness to invest in

supply chain reliability, even at an added cost, to ensure a steady flow of essential products. To further strengthen their supply chains, the company entered into long-term supply agreements with their suppliers. This commitment was aimed at securing a stable and reliable source of products beyond the immediate pandemic period. The primary objective of these strategies was to ensure the continued availability of stock. By giving precedence to deliveries and securing long-term agreements, the company aimed to have an ample supply of products ahead of competitors, which would attract more customers. The interviewee suggests that these strategies, while initially incurring some costs, helped the company gain a competitive advantage. The favourable supplier terms negotiated as part of these agreements likely contributed to cost efficiency and reliability in the supply chain. This finding vindicates assertions by Ponnusamy (2021), who recommended that companies could assess and optimise their supply chains to reduce costs by negotiating better contracts with suppliers, consolidating vendors, or implementing just-in-time inventory management strategies. Ponnusamy (2021) further stated that by ensuring a reliable and cost-effective supply chain, healthcare companies can minimise waste and enhance their competitiveness.

This finding illustrates how the company responded strategically to the supply chain disruptions caused by COVID-19. By prioritising deliveries, securing long-term supply agreements, and paying priority fees, the company aimed to ensure a steady and reliable source of products, attract more customers, and gain a competitive edge in a challenging business environment. These actions reflect the importance of supply chain resilience and strategic partnerships during times of crisis. This finding is consistent with assertions by Song and Lee (2020) who posited that collaborating closely with suppliers allows organisations to construct resilient supply chains that can endure disruptions. Song & Lee (2020) further posited that a robust and resilient supply chain provides a competitive advantage by ensuring continuity of operations and meeting customer demands, even during challenging times. Collaborating with suppliers can accelerate innovation and reduce time-to-market for new products or services. Suppliers often possess specialised knowledge, expertise, and insights that can contribute to the innovation process. Kuckertz et al. (2020) also pointed out that by involving suppliers early in the product development cycle, organisations can tap into their capabilities, collaborate on design and production, and leverage their resources to bring new products or services to market more quickly. Similarly, George et al. (2020) posited that collaborative efforts with suppliers

can lead to joint cost reduction initiatives, such as process improvements, supply chain optimisation, or shared resource utilisation.

b) Technical collaboration and skills transfer

The majority of study participants highlighted that their healthcare companies adopted a strategy of collaborating with well-established overseas suppliers from countries such as India, Singapore, China, Europe and others, for technical assistance in building up technological capabilities for online trading, digitalised business and service process transformation as strategies for a gaining competitive advantage. This sentiment had the highest frequency of responses from participants derived from the data set. This strategy also involved requesting some kind of collaboration and partnership that involved skills transfer from willing companies. The following summarised interview excerpt corroborates this finding:

> *Companies saw that they were losing ground to global competitors especially from countries such as India, China, Europe and the from other developed countries who had developed strong presence on digital platforms and seemed everything set from the perspective of finance, marketing, human resources and supply chain management to collaborate and partner with our companies and help transfer some of their skills competences on agreed terms negotiated with individual terms…equity was offered as a payment for this...in some cases preferential procurement was offered…and many inducements were offered in order to lure some of our global competitors to help us by using online channels or other possible to teach us how to do business technically and operationally using new technologies and also by imparting those skills on us.*

This interview excerpt stresses the competitive challenges faced by local companies in the face of global competitors, particularly from countries like India, China, Europe, and other developed nations. It also discusses the strategies employed by local companies to collaborate with these global competitors in order to bridge the technological and operational gaps. The excerpt suggests that global competitors, particularly those from countries with advanced digital capabilities, had a significant advantage. These companies were well-established in terms of finance, marketing, human resources, and supply chain management. They possessed

expertise in utilising digital platforms effectively. To compete effectively, local companies recognised the need to collaborate and partner with these global competitors. The goal was to transfer skills, competencies, and knowledge in areas such as digital technology, online marketing, and operational efficiency. In some cases, local companies offered equity as payment to their global collaborators. This implies that they were willing to share ownership or stakes in their companies in exchange for expertise and knowledge transfer. Another strategy mentioned is preferential procurement. This means that local companies might have favoured global competitors when procuring goods or services, possibly giving them priority or better terms in exchange for their assistance. Local companies used various inducements and incentives to attract global competitors to assist in imparting skills and knowledge. These inducements could include financial incentives, partnerships, or other benefits. The collaboration aimed to teach local companies how to conduct business technically and operationally using new technologies. This involved transferring expertise in areas such as digital marketing, supply chain management, and other key aspects of business operations.

The interview excerpt reflects the competitive landscape where local companies recognised the need to catch up with global competitors who had advanced digital capabilities. To bridge the gap, they adopted a strategy of collaboration, offering equity, preferential procurement, and various inducements to encourage global competitors to share their knowledge and skills. This approach was seen as a way to strengthen their own capabilities and stay competitive in an increasingly digital and globalised business environment. Iansiti & Levien (2019) also pointed out that collaborating on product design, specifications, and performance requirements enables organisations to differentiate their products in terms of quality, features, or performance. Similarly, Walker et al. (2020) posited that supplier collaboration can unlock opportunities for joint value creation, such as shared research and development, co-marketing efforts, or joint promotional campaigns, which can enhance the overall value proposition and competitive advantage. Walker et al. (2020) also supported the notion of technical collaboration by stating that some global corporations often possess industry-specific knowledge, technical know-how, and resources that can be leveraged to improve operational efficiency, drive innovation, or enhance product or service quality. Blake (2021) also provided examples of collaboration and partnerships between healthcare companies, involving Pfizer, which that invested $2 billion to develop and manufacture a COVID-19 vaccine in partnership with BioNTech, a biotechnology company Teladoc Health, a telehealth company that invested $18.5 billion to acquire Livongo,

a digital health platform for chronic conditions, to create a comprehensive and integrated solution for remote health management.

c) Policy and regulation advocacy collaboration

Policy and regulation advocacy collaboration was also another sub-theme related to the theme on strategic collaboration. Some participants converged on the view that their companies also adopted the strategy of collaborating with industry players to join in the advocacy for relaxing some of the COVID-19 policies and regulations to allow for smooth functioning of their business especially for the movement of healthcare products. The following summarised interview excerpt corroborates this finding:

> *There were times when the local South African COVID-19 policy and regulations were more stringent than other countries who were worse affected by the pandemic…and this was negatively affecting our business…so as industry players we engaged on a process of engaging government policy makers to make it easy for healthcare companies to operate and cooperate in saving lives.*

This interview excerpt features the challenges faced by local healthcare companies in South Africa due to stringent COVID-19 policies and regulations, which were perceived to be more restrictive than those in other countries with worse pandemic situations. The excerpt indicates that South Africa has implemented strict COVID-19 policies and regulations. These measures were likely put in place to curb the spread of the virus and protect public health. The strict policies and regulations were negatively affecting the business operations of healthcare companies in South Africa. The restrictions might have limited their ability to provide essential services, disrupted supply chains, or imposed additional operational burdens. Industry players, which likely include representatives from healthcare companies, engaged in a process of dialogue and collaboration with government policymakers. The objective was to address the challenges imposed by the stringent policies and regulations. The primary goal of these engagements was to find ways to make it easier for healthcare companies to operate while still prioritising public health and safety. The phrase "cooperate in saving lives" underscores the shared goal of both the government and the healthcare industry in addressing the pandemic. The engagement with government policymakers may have involved advocating for policy

adjustments that would balance public health concerns with the need for healthcare companies to continue their operations and contribute to the pandemic response efforts.

In summary, the interview excerpt reflects the tensions between stringent COVID-19 policies and the operational needs of healthcare companies in South Africa. These companies sought to engage with the government to find a balanced approach that would allow them to operate effectively while also contributing to the efforts to combat the pandemic and save lives. This engagement reflects a collaborative approach between the healthcare industry and policymakers to address the unique challenges posed by the COVID-19 crisis.

Theme 2: Human resources optimisation

Theme 2 is also related to the objective of identifying strategies that were developed and implemented by the health care industry in Durban, South Africa to gain a competitive advantage since the emergence of COVID-19. The participants mentioned three sub-themes that emerged from the data namely introduction of flexible working hours, downsizing of non –critical staff and staff retraining.

a) Flexible working conditions

A significant number of respondents expressed the view that COVID-19 restrictions forced some healthcare companies to introduce flexible working conditions such as remote working or working from home and the provision of feedback using virtual channels as a strategy to minimise travel and physical contact, thereby also ensuring the safety of staff and customers, alike. This meant that some categories of employees were allowed to work from home during the time that the COVID-19 pandemic was intensifying and affecting large numbers of people. This strategy was meant to ensure that company operations continued. This view had the second highest number of participants who mentioned the issue of flexible working conditions as a strategy to make companies operational during the pandemic. The following summarised interview excerpt corroborates this finding:

> *Work had to be done irrespective of the COVID-19 pandemic and management identified certain categories of employees who could possibly work from their homes without prejudicing company productivity, for example, services staff, accounting, human resources, IT staff, marketing and*

senior management staff could do well even working at home, the idea was to minimise physical contact and minimise the spread of the virus at work but also ensuring that essential company operations continued to be functional and generating revenue and sales even when employees are working from home…"

This interview excerpt discusses how the COVID-19 pandemic prompted a shift in work arrangements, allowing certain categories of employees to work from home. Management recognised that not all job roles required employees to be physically present at the workplace. The excerpt mentions specific categories of employees, including service staff, accounting, human resources, IT staff, marketing, and senior management, who could effectively perform their roles from home. The primary motivation for allowing remote work was to minimise physical contact among employees and reduce the potential spread of the COVID-19 virus in the workplace. This aligns with public health guidelines aimed at curbing the pandemic. Despite the pandemic, it was essential for the company to ensure that its operations continued to function smoothly. By enabling employees to work from home, the company aimed to maintain essential functions, keep revenue generation on track, and sustain sales activities. This shift to remote work demonstrates the company's adaptability and commitment to ensuring business continuity in challenging circumstances. It reflects a willingness to embrace new work arrangements to safeguard both employee health and operational effectiveness. The decision to allow remote work for these categories of employees was a pandemic response strategy. It permitted the company to continue its operations while observing stringent safety measures and decreasing the risk of virus transmission. Thus, this interview excerpt highlights how the company adapted to the COVID-19 pandemic by identifying roles that could be performed remotely. The decision to allow remote work aimed to minimise physical contact among employees, reduce the spread of the virus at the workplace, and ensure that essential company operations continued smoothly. This flexibility in work arrangements reflects a proactive approach to balancing employee safety with business continuity during challenging times. This finding is in perfect agreement with assertions by Rodríguez-Antón et al. (2020). who stated that companies resorted to ensuring that their employees are able to continue working from home and that their services can be bought or accessed online in order to enable them to stay afloat. Barro (2020) also posited that the outbreak has led to structural shifts, including

customer inclination towards digital involvement, and advancing to remote working models for employees, which are likely to continue post-COVID-19.

b) Retraining of staff

This sub-theme occurred more frequently within the data set and a majority of the respondents posited that healthcare companies resorted to retraining staff to facilitate easy migration to digitised health services, which were becoming more dominant during COVID-19. The 'coming on board' of new technologies mandated this move.

The following interview excerpts corroborates this finding:

> *Healthcare companies had to adapt to the changing technological environment and it's meant that we had to retrain most of our staff in order to align their skills with newer technological innovations such as telehealth, telemedicine, digital health, data analytics, online marketing and online financial transactions and many other technological advantage as a strategy that companies stay ahead of the competition .so basically we had to call in experts and train our staff both virtually, conventionally and on the job…so that they become equipped to operate in a digitised environment…"*

This interview excerpt emphasises the imperative for healthcare companies to adapt to the evolving technological landscape. The statement underscores the necessity for healthcare companies to respond to changes in technology. Specifically, it mentions emerging technological innovations such as telehealth, telemedicine, digital health, data analytics, online marketing, and online financial transactions. These technologies are transforming the healthcare industry. To keep pace with these technological advancements, healthcare companies recognised the need to retrain their staff. This involved upgrading the skills and competencies of their workforce to align with the demands of the digitised environment. Adapting to these new technologies was viewed as a strategic imperative to maintain competitiveness. In a rapidly changing industry, staying ahead of the competition requires companies to embrace and leverage the advantages offered by technology. The interview excerpt mentions that healthcare companies sought the expertise of professionals to facilitate the training process. This suggests a commitment to ensuring that employees receive high-

quality training in these new technologies. Training was conducted through various methods, including virtual, conventional, and on-the-job training. This multi-pronged approach allowed employees to acquire new skills and knowledge through a combination of online courses, classroom sessions, and practical experience. The ultimate goal was to equip employees with the necessary skills and knowledge to operate effectively in a digitised environment. This reflects an understanding of the importance of digital literacy and adaptability in the modern healthcare landscape.

In summary, this interview excerpt highlights the proactive stance of healthcare companies in responding to technological advancements. By retraining their staff and ensuring they are well-versed in emerging technologies, these companies aim to remain competitive and provide high-quality healthcare services in a rapidly changing digital environment. This adaptation is essential for delivering efficient and effective healthcare while embracing the benefits of technological innovation. This finding is in sync with assertions by Xu et al. (2020). who clearly pointed out that it is imperative for healthcare companies operating in the post-COVID-19 environment to foster a learning culture that encourages continuous improvement and knowledge sharing. Xu et al. (2020) further suggested that healthcare companies should regularly evaluate and learn from technology and innovation initiatives, capturing lessons and best practices and to encouraging cross-functional teams to share insights and experiences to drive organisational learning and accelerate future innovation efforts. Siyal et al. (2019) advocated for the need to develop employees through training and learning opportunities. Amesho et al. (2021) also posited that another key aspect of effectively managing technology for gaining competitive advantage during and after the COVID-19 era involves building organisational skills and competences to cope with the changing environments.

Theme 3: Redesign of business operating models

This theme is also related to the objective of identifying the strategies that were developed and implemented by the health care industry in Durban, South Africa to gain a competitive advantage since the emergence of COVID-19.Two sub-themes emerged from the data with acceleration of digital transformation appearing more frequently in the data set that product and service differentiation.

a) Acceleration of digital business model

A larger majority of participants pointed out that healthcare companies adopted the strategy of accelerated transformation towards digitalisation of their business models and ensured that all business processes were transferred to digital platforms to help enhance customer convenience and experience and to also help cut costs associated with brick-and-mortar businesses. The following summarised interview excerpt corroborates this finding:

> *COVID-19 provided us with an impetus to transform our business models from brick-and-mortar to digital platforms where customers could have 24-hour interface with customers in a physical movement restricted environment….we saw that online digital platforms were more convenient in terms of doing business with customers and they were less costly. That's why there was an accelerated transition towards conducting more business online than was the case before….*

This interview excerpt reveals how the COVID-19 pandemic acted as a catalyst for transforming business models from traditional brick-and-mortar operations to digital platforms. The COVID-19 pandemic served as a driving force (impetus) for change in the business models of the company. The challenges posed by the pandemic, such as restrictions on physical movement and face-to-face interactions, necessitated a re-evaluation of how business was conducted. The pandemic prompted the company to shift its focus from physical, in-person interactions to digital platforms. This transition allowed the company to establish a 24-hour interface with customers, enabling them to engage with the company's products or services online at any time. The decision to transition to digital platforms was motivated by the convenience they offered to both the company and its customers. Online platforms allow customers to access products or services without the need for physical presence, making it more convenient, especially during periods of restricted movement. Additionally, conducting business online was perceived as less costly, which could be due to the reduced overhead associated with physical locations. The excerpt suggests that the transition to conducting more business online was accelerated in response to the pandemic. This indicates a sense of urgency in adapting to the changing business landscape brought about by COVID-19.

In summary, this interview excerpt highlights the transformational impact of the COVID-19 pandemic on business models. The company recognised the advantages of digital platforms, such as enhanced convenience and cost efficiency, and expedited its shift towards conducting more business online. This adaptation reflects the company's ability to respond quickly to changing circumstances and leverage digital technologies to meet the evolving needs of its customers in a physically restricted environment. This finding resonates with assertions by Xu et al. (2020), who pointed out that creating an online on-demand delivery platform can indeed be a strategic approach for healthcare companies to gain a competitive advantage in the post-COVID-19 era. The pandemic has accelerated the adoption of digital solutions and increased the demand for contactless services. Consistent with the findings are assertions by Barro (2020) who stated that a company to demonstrate agility in order to be resilient. Barro (2020) further stated that nimble business modelling is a new business strategy increasing momentum as a result of the pandemic and involves management building a new business model with the capability to adapt promptly , respond speedily, be creative, lead change and sustain its competitive advantage in difficulty and uncertainty.

Barro (2020) posited that the new business model that surfaced after the COVID-19 pandemic was the creation of an on-demand delivery platform that was designed to enhance the overall patient experience by reducing waiting times and offering flexibility. Bestsennyy et al. (2021) also cited the example of Amazon, an e-commerce and technology company, which also launched Amazon Pharmacy, an online pharmacy service that allows customers to order prescription medications for home delivery. Bestsennyy et al. (2021) further cited the example of Capsule, which is also a digital pharmacy company that delivers prescription medications to customers' doors within two hours (Bestsennyy et al., 2021).

b) Product and service differentiation

A significant number of participants also indicated that most healthcare companies embarked on product and service differentiation with a technological bias that was adopted by some company managers. The following interview excerpt corroborates this finding:

> *Companies embarked on an informational technological service provision differential drive as a strategy to gain a competitive advantage ahead of other industry players. The idea was to harness the potential of social media*

platforms, online channels to transact business, offer convenience to customers, enhance customer experience …we also made sure to provide high-quality masks with distinct and unique features that enhanced customer and embedded with aesthetic features …our company became the first to offer inter-surgical non rebreather mask which featured a soft, thermoplastic face seal to ensure greater patient comfort and could provide supplemental oxygen up to a level …and this made us to gain a competitive advantage…we also endeavoured to supply high quality disinfectants and sanitisers that surpassed most competitors in terms of quality…"

This interview excerpt points out how the COVID-19 pandemic acted as a catalyst for transforming business models from traditional brick-and-mortar operations to digital platforms. The COVID-19 pandemic served as a driving force (impetus) for change in the business models of the company. The challenges posed by the pandemic, such as restrictions on physical movement and face-to-face interactions, necessitated a re-evaluation of how business was conducted. The pandemic prompted the company to shift its focus from physical, in-person interactions to digital platforms. This transition allowed the company to establish a 24-hour interface with customers, enabling them to engage with the company's products or services online at any time. The decision to transition to digital platforms was motivated by the convenience they offered to both the company and its customers. Online platforms allow customers to access products or services without the need for physical presence, making it more convenient, especially during periods of restricted movement. Additionally, conducting business online was perceived as less costly, which could be due to the reduced overheads associated with physical locations.

The excerpt suggests that the transition to conducting more business online was accelerated in response to the pandemic. This indicates a sense of urgency in adapting to the changing business landscape brought about by COVID-19.

In summary, this interview excerpt highlights the transformational impact of the COVID-19 pandemic on business models. The company recognised the advantages of digital platforms, such as enhanced convenience and cost efficiency, and expedited its shift towards conducting more business online. This adaptation reflects the company's ability to respond quickly to

changing circumstances and leverage digital technologies to meet the evolving needs of its customers in a physically restricted environment.

> C*ompanies embarked on an informational technological service provision differential drive as a strategy to gain a competitive advantage ahead of other industry players. The idea was to harness the potential of social media platforms, online channels to transact business, offer convenience to customers, enhance customer experience ….we also made sure to provide high-quality masks with distinct and unique features that enhanced customer and embedded with aesthetic features …our company became the first to offer inter-surgical non rebreather mask which featured a soft, thermoplastic face seal to ensure greater patient comfort and could provide supplemental oxygen up to a level and this made us to gain a competitive advantage….we also endeavoured to supply high quality disinfectants and sanitisers that surpassed most competitors in terms of quality.*

This interview excerpt discusses the strategic initiatives adopted by companies to gain a competitive advantage in the healthcare industry, particularly in the context of providing information technology-driven services and high-quality products. The finding reveals that companies recognised the need to differentiate themselves in the market by offering information technology-driven services. This approach aimed to set them apart from other industry players and gain a competitive edge. To implement their strategy, companies harnessed the potential of social media platforms and online channels for business transactions. This allowed them to reach customers more effectively and provide convenience in accessing their products and services. The focus on information technology services and online platforms was driven by a desire to enhance the overall customer experience. This reflects a customer-centric approach aimed at meeting customer needs and expectations. Also, the interview excerpt reveals that companies went beyond standard offerings by providing high-quality masks with distinct and unique features. For example, the mention of the inter-surgical non-rebreather mask with a soft, thermoplastic face seal highlights an innovation that focused on patient comfort and oxygen delivery capabilities. This innovation became a source of competitive advantage.

Emphasis was placed on the supply of high-quality disinfectants and sanitisers that exceeded the quality of most competitors' products. Ensuring superior product quality was another avenue through which the companies aimed to gain a competitive edge.

Thus, the study establishes that healthcare companies adopted a strategic approach. They leveraged information technology services, online channels, and high-quality product offerings to distinguish themselves and gain a competitive advantage. This strategy was driven by a commitment to enhancing the customer experience and delivering innovative, high-value healthcare solutions. This finding is consistent with the core ideas of the red ocean strategy, Nah & Siau (2020:589), whereby companies compete within an existing industry, striving for competitive advantage by outperforming rivals through factors like cost reduction or product differentiation. The OECD Science, Technology and Innovation (2020:1) also cited that the Red Ocean strategy has been extensively used by CVS Health, United Health Group and Medtronic CVS Health, a pharmacy and healthcare company that expanded its COVID testing and vaccination services across its retail locations and partnered with other providers to increase its market share and customer loyalty.

5.6 CONCLUSION

This chapter focused on illustrating the results from the survey and from interviews. In order for the objectives of the research to be achieved, data which was collected through questionnaires and in –depth interviews from participants, was presented and analysed. The chapter also presented, analysed and interpreted qualitative data using thematic analysis on the influence of COVID-19 on the performance of healthcare companies in Durban, factors that influenced strategy formulation for sustained competitive advantage of selected healthcare products companies in Durban, South Africa and strategies that were developed by healthcare companies to gain a competitive advantage during the COVID-19 era. The next chapter presents the conclusion and recommendations for the study and provides suggestions for further research.

CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

6.1 INTRODUCTION

In the preceding chapter, the researcher delved into the extensive findings of this research study, which aimed to explore the influence of the COVID-19 pandemic on the healthcare sector in Durban, South Africa. This research has been a multidimensional journey, striving to answer crucial questions related to strategy formulation, competitive advantage, and the overall performance of selected healthcare companies within the context of the pandemic. As the researcher traversed through the pages of the previous chapter, she not only presented these findings but also meticulously interpreted and discussed them in the context of the research questions and corresponding objectives that have underpinned this study. This chapter, however, serves as a synthesis of the knowledge that has been gathered thus far. In the ensuing pages, the researcher will succinctly present a summary of the findings and conclusions obtained from the literature review and primary study, paying special attention to the research objectives pertaining to determining the influence during COVID-19 on strategy formulation for sustained competitive advantage, determining the influence of the COVID-19 pandemic on the performance of the healthcare companies in Durban, South Africa, investigating the strategies formulated by the healthcare companies in Durban, South Africa, to gain a competitive advantage since the emergence of COVID-19 and exploring the factors that influenced strategy formulation for sustained competitive advantage of selected healthcare companies in Durban, South Africa. In this chapter, the research limitations, conclusions and recommendations will be presented systematically, providing a comprehensive overview of the insights gathered through rigorous research and analysis. These insights not only contribute to the academic understanding of the subject matter but also hold practical implications for healthcare companies navigating the challenges and opportunities presented by the COVID-19 pandemic in the quest for sustained competitive advantage.

6.2 FINDINGS FROM THE STUDY

6.2.1 OBJECTIVE 1: TO DETERMINE THE INFLUENCE OF THE COVID-19 PANDEMIC ON THE PERFORMANCE OF THE HEALTH CARE PRODUCTS INDUSTRY IN DURBAN, SOUTH AFRICA

The research fulfilled Objective 1 by determining the influence of the COVID-19 pandemic on the performance of the health care products industry in Durban, South Africa.

Several key conclusions have been drawn from the study findings:

- **Varied impact on company performance**

The research concludes that the influence of the COVID-19 pandemic on the performance of healthcare companies in Durban, South Africa, was varied. Respondents generally agreed that the impact differed depending on the type of healthcare products being sold. Some products related to mitigating the spread and severity of COVID-19 saw increased demand, while others not related to the virus faced challenges. This finding is supported by both quantitative and qualitative research data, demonstrating a high level of consensus among respondents.

- **Differential profitability**

The study concludes that the pandemic gave rise to differential profitability for healthcare companies, with some experiencing increased profits due to higher demand for certain COVID-19-related products. However, there were also instances of temporary dips in profitability. The type of healthcare products being sold played a prominent role in determining the financial impact, reinforcing the notion of varied performance among companies.

- **Negative impact on the financial situation**

Despite variations in profitability, the study concludes that COVID-19 had a significant negative impact on the financial situation of the companies surveyed. This adverse effect was attributed to factors such as supply chain disruptions, staffing issues, increased demand for specific healthcare products, and changes in safety protocols. Nonetheless, it is important to note that while some companies faced financial challenges, others experienced growth during the pandemic.

- **Disruptions in daily operations**

The research underscores that COVID-19 substantially disrupted the daily operations of healthcare companies in Durban. These disruptions encompassed changes in healthcare delivery, safety protocols, resource allocation, staffing, and various operational aspects. Factors such as supply chain interruptions, staffing issues, increased demand for specific healthcare products, and changing safety measures contributed to these operational disruptions.

- **Disruptions in the healthcare market**

The study concludes that COVID-19 brought about major disruptions in the healthcare market in Durban. These disruptions were multifaceted and could be attributed to shifts in consumer behaviour, increased demand for specific healthcare products or services, supply chain challenges, and competitive pressures.

Emergence of new marketing trends

The influence of COVID-19 on healthcare companies extended to marketing. The research highlighted the emergence of online marketing platforms and the dominance of customised and personalised marketing strategies. These trends reflect the adaptability and innovation demonstrated by healthcare companies in response to the pandemic.

In summary, the research illustrates the multifaceted influence of COVID-19 on healthcare companies in Durban, emphasising the variability in company performance, financial outcomes, and operational disruptions. The pandemic forced healthcare companies to adapt, innovate, and tailor their strategies to navigate the challenges and opportunities presented by this global crisis.

6.2.2 OBJECTIVE 2: TO EXPLORE THE FACTORS THAT INFLUENCED STRATEGY FORMULATION FOR SUSTAINED COMPETITIVE ADVANTAGE OF SELECTED HEALTHCARE PRODUCTS IN DURBAN, SOUTH AFRICA

The research fulfilled Objective 2 by determining the factors that influenced strategy formulation for the sustained competitive advantage of selected healthcare companies in Durban, South Africa. The following conclusions have been drawn from the study findings:

The research concludes that COVID-19 has had a significant influence on the strategy formulation of healthcare companies in Durban, South Africa, in terms of adapting to the social

distancing regulations, enhancing their technological capabilities, and capitalising on the opportunities presented by the pandemic.

- **Adaptation to the pandemic**: Quantitative survey research and qualitative interviews jointly underscore that restrictions on people's movement led to the development of new technologies for conducting business within the COVID-19 environment. Healthcare companies demonstrated adaptability and innovation in response to the pandemic.
- **Impact of social distancing regulations**: Both quantitative survey research and qualitative interview findings consistently indicate that social distancing regulations have had a substantial influence on the strategy formulation of healthcare companies in Durban. These regulations necessitated adaptive strategies to ensure patient care and safety while complying with governmental guidelines.
- **Role of technology in strategy formulation**: There is a strong convergence between quantitative survey research findings and qualitative interviews concerning the influence of technology on strategy formulation. The research highlights that technology played a pivotal role in strategy formulation as companies optimised their websites and search engine optimisation (SEO) to enhance online transactions and customer information accessibility in response to COVID-19 restrictions.
- **Adaptation to the pandemic**: Quantitative survey research and qualitative interviews jointly underscore that restrictions on people's movement led to the development of new technologies for conducting business within the COVID-19 environment. Healthcare companies demonstrated adaptability and innovation in response to the pandemic.
- **Divergent views on stay-at-home regulations**: Quantitative research results suggest that stay-at-home regulations were not a significant influencing factor in strategy formulation for healthcare companies in Durban. In contrast, qualitative interviews highlight the pivotal role of stay-at-home regulations in shaping strategy formulation. This suggests divergent perceptions between non-managerial and managerial staff.
- **Competitor innovation as an influencing factor**: There is a notable difference between quantitative survey research and qualitative interviews concerning the influence of competitor innovations during COVID-19 on strategy formulation. While

quantitative research did not find this factor to be significant, qualitative interviews reveal that competitor innovation significantly influenced strategy formulation.

- **Impact of changes in the operating environment**: Both quantitative survey research and qualitative interviews suggest that changes in the operating environment have influenced strategy formulation for healthcare companies in Durban. This indicates a broad consensus among respondents regarding the role of the operating environment.
- **Proactive response to opportunities**: A key finding from both quantitative survey research and qualitative interviews is that COVID-19 presented opportunities that influenced strategy formulation. Healthcare companies in Durban were proactive in identifying and capitalising on these opportunities that arose during the pandemic.

The research concludes that there is a high degree of convergence between the quantitative survey research findings and the qualitative interview findings on most of the factors that influenced strategy formulation, such as social distancing regulations, technology, and opportunities. This implies that there is a consistent and reliable understanding of the influence of COVID-19 on strategy formulation among the respondents and the interviewees.

However, the information also reveals some divergence between the quantitative survey research findings and the qualitative interview findings on some of the factors that influenced strategy formulation, such as stay-at-home regulations and competitor innovation. This suggests that there may be some differences or discrepancies in the perceptions or experiences of the respondents and the interviewees regarding these factors. For example, the respondents may not have been aware of or affected by the competitor innovation, while the interviewees may have been more sensitive or responsive to it. Alternatively, the respondents may have been more satisfied or compliant with the stay-at-home regulations, while the interviewees may have faced more challenges or difficulties with them.

In summary, the research underscores the multifaceted nature of strategy formulation for healthcare companies in the context of COVID-19. It draws attention to the prominent role of factors such as regulatory changes, technology, and competitor innovations while also acknowledging the adaptability and proactive approach of these companies in the face of challenges and opportunities presented by the pandemic. The research concludes that there are some variations or nuances in the influence of COVID-19 on strategy formulation among different healthcare companies in Durban, South Africa, depending on their size, sector,

market, etc. For example, some companies may have been more proactive or innovative in developing new technologies or products to meet the changing needs and demands of their customers, while others may have been more reactive or conservative in adjusting their existing strategies or operations to manage the recent challenges and risks posed by the pandemic.

6.2.3 OBJECTIVE 3: TO EXAMINE THE STRATEGIES FORMULATED BY THE HEALTH CARE PRODUCTS INDUSTRY IN DURBAN, SOUTH AFRICA, TO GAIN A COMPETITIVE ADVANTAGE SINCE THE EMERGENCE OF COVID-19

Conclusions on the strategies were developed and implemented by the health care industry in Durban, South Africa, to gain a competitive advantage since the emergence of COVID-19.

The research fulfilled Objective 3 by identifying the strategies that were developed and implemented by the health care industry in Durban, South Africa, to gain a competitive advantage since the emergence of COVID-19. Several key conclusions can be drawn from the provided information regarding the strategies developed and implemented by the healthcare industry in Durban, South Africa, to gain a competitive advantage since the emergence of COVID-19:

Diverse strategic approaches: Both quantitative survey research findings and qualitative interview findings indicate that healthcare companies have adopted a diverse range of strategies to gain a competitive advantage. These strategies include strategic collaboration and partnerships, human resources optimisation, and the redesign of business operating models.

Supply chain resilience: Companies responded strategically to supply chain disruptions caused by the COVID-19 pandemic. They adopted strategies such as collaborating with suppliers and forming partnership agreements to ensure a steady supply of inventory. Prioritising deliveries, securing long-term supply agreements, and paying priority fees were among the tactics employed to maintain a reliable source of products and enhance competitiveness.

Global collaborations for technological advancement: Healthcare companies engaged in collaborations with well-established overseas suppliers from countries like India, Singapore, China, Europe, and others. These collaborations were focused on obtaining technical assistance to build technological capabilities for online trading and the digitalisation of business and

service processes. This strategy aimed to enhance technological competence and competitiveness.

Knowledge and skill sharing: Collaborations with global competitors were adopted as a strategy to encourage knowledge and skill sharing. Companies offered equity, preferential procurement, and other inducements to strengthen their capabilities and remain competitive in a digital and globalised business environment.

Advocacy for policy relaxations: Some healthcare companies collaborated with industry players to advocate for the relaxation of COVID-19 policies and regulations. This advocacy aimed to facilitate the smooth functioning of their businesses, particularly concerning the movement of healthcare products.

Flexible work arrangements: In response to COVID-19 restrictions, healthcare companies introduced flexible working conditions, such as remote work and virtual communication channels. This strategy minimised travel and physical contact, ensuring the safety of both staff and customers. Some employees were allowed to work from home during the pandemic.

Staff training and digital transformation: Healthcare companies invested in retraining staff to facilitate the transition to digitised health services. They adopted a strategy of accelerated transformation towards digital business models, transferring all business processes to digital platforms. This shift aimed to enhance customer convenience, improve the customer experience, and reduce costs associated with traditional brick-and-mortar businesses.

Leveraging information technology: The pandemic acted as a catalyst for change in business models. Companies leveraged information technology services, online channels, and high-quality product offerings to differentiate themselves and gain a competitive advantage. This strategic approach was driven by a commitment to enhancing the customer experience and delivering innovative healthcare solutions.

In summary, the conclusions drawn from the information reveal a dynamic and multifaceted approach by healthcare companies in Durban to adapt and thrive in the evolving business environment shaped by the COVID-19 pandemic. These strategies encompass supply chain resilience, global collaborations, workforce optimisation, digital transformation, and customer-centric innovations, all aimed at gaining a competitive advantage in the healthcare industry.

6.2.4 OBJECTIVE 4: TO MAKE RECOMMENDATIONS TO THE SENIOR MANAGEMENT OF SELECTED COMPANIES IN THE HEALTH CARE PRODUCTS INDUSTRY ON EFFECTIVE STRATEGIES FOR GAINING COMPETITIVE ADVANTAGE IN THE POST-COVID-19 PANDEMIC IN SOUTH AFRICA

Recommendations of the study

Based on the findings presented regarding the strategies developed and implemented by the healthcare industry in Durban, South Africa, to gain a competitive advantage since the emergence of COVID-19, several recommendations can be proposed for further research, industry practices, and policy considerations:

1. Conduct a comparative study

Explore and compare the effectiveness of various strategies adopted by healthcare companies to determine the most impactful approaches for gaining competitive advantage during and post-COVID-19.

- **Longitudinal study**

Conduct a longitudinal study to track the sustainability and long-term impacts of the strategies implemented by healthcare companies in response to the pandemic, assessing how they have evolved and adapted over time.

- **Cross-industry analysis**

Expand the study to encompass multiple industries to understand how strategies for gaining a competitive advantage differ across various sectors and the lessons that can be shared and applied within the healthcare industry.

2. Industry practice recommendations

- **Strengthen supply chain resilience**

Healthcare companies should focus on enhancing supply chain resilience through strategic collaborations, diversified supplier networks, and robust contingency plans to ensure uninterrupted access to essential inventory.

- **Foster global collaborations**

Encourage healthcare organisations to establish partnerships and collaborations with global suppliers and industry players to leverage international expertise, share best practices, and enhance technological capabilities for sustainable competitive advantage.

- **Promote technological adoption**

Advocate for the accelerated adoption of digital technologies to drive operational efficiencies, enhance customer experiences, and facilitate the transition towards online platforms and services within the healthcare industry.

- **Invest in employee training**

Prioritise employee training and development programmes to equip healthcare professionals with the necessary skills to navigate digital transformations and effectively utilise advanced technologies for improved healthcare services.

2) Policy and Regulation Recommendations:

- **Support digital health initiatives**

Advocate for policy frameworks that incentivise and support the digital transformation of healthcare services, ensuring a conducive regulatory environment to foster innovation and investment in technology-enabled healthcare solutions.

- **Encourage collaboration advocacy**

Advocate for policies that promote collaboration between healthcare companies and industry stakeholders to collectively address challenges, share knowledge, and influence policy changes that support the growth and sustainability of the healthcare sector.

- **Address workforce flexibility**

Advocate for policies that allow for flexible working arrangements, including remote work and virtual communication channels, to ensure the safety and well-being of the healthcare workforce while maintaining operational efficiency.

- **Support training and development**

Advocate for policies that facilitate ongoing training and up skilling of healthcare professionals to keep pace with rapid technological advancements and ensure a skilled workforce capable of utilising innovative healthcare solutions effectively.

These recommendations aim to guide future research endeavours, inform industry practices, and influence policy decisions to facilitate the continued growth and resilience of the healthcare industry when encountered with evolving challenges such as the COVID-19 pandemic.

3. Suggestions for future research

Future studies could consider the following topics that arise from this study:

- Explore the provision of mental health services by healthcare companies, especially during and after the pandemic. Analyse strategies for addressing the growing mental health challenges in the community.
- Investigate the effectiveness of collaboration and knowledge-sharing initiatives among healthcare companies, government agencies, non-governmental organisations, and academic institutions in responding to health crises.
- Investigate how international health policies and agreements influenced the strategies and responses of healthcare companies in Durban during the pandemic. Assess the impact of global health governance on local healthcare initiatives.
- Explore the cyber security and data privacy challenges associated with the increased use of digital health technologies. Investigate strategies for safeguarding patient data and maintaining regulatory compliance.
- Research supply chain resilience in the healthcare industry. Examine the strategies adopted by companies to ensure a consistent supply of critical medical equipment, pharmaceuticals, and protective gear during disruptions.

- Investigate the role of healthcare companies in contributing to public health preparedness and response. Analyse their involvement in initiatives related to vaccine distribution, pandemic management, and community health programmes.

6.3 CONCLUSIONS REGARDING THE RESEARCH QUESTIONS

Research question 1: **What is the influence of the COVID-19 pandemic on the performance of the health care products industry in Durban, South Africa?**

The findings indicated that COVID-19 likely caused disruptions in healthcare companies production processes and negatively affected their production targets, mainly due to factors such as supply chain interruptions, staffing issues, increased demand for certain healthcare products, or changes in protocols and safety measures. The study established that there was a high level of agreement among respondent's emphasis that COVID-19 brought about significant disruptions in the healthcare market in Durban. These disruptions could be due to factors such as changes in consumer behaviour, increased demand for specific healthcare products or services, supply chain challenges, or competitive pressures.

While findings from the survey questionnaire focused on financial impact, disruptions in daily operations, and shortfalls in production and reduced market share, some findings from the interviews, such as the emergence of online marketing platforms and the dominance of customised, personalised marketing were identified as impacts of COVID-10 on healthcare industries.

Research question 2: What are the **factors** ***that influenced strategy formulation for sustained competitive advantage of selected healthcare companies in Durban, South Africa?***

There was greater convergence between quantitative survey research findings and qualitative interview findings. Both quantitative survey research findings and qualitative interview findings suggest that social distancing regulations have had a substantial influence on the strategy formulation of healthcare companies in Durban. These regulations prompted healthcare organisations to adapt their strategies to ensure patient care and safety while complying with governmental guidelines. The findings also revealed that technology also influenced strategy formulation for the sustained competitive advantage of selected healthcare companies in Durban.

Both quantitative survey research findings and qualitative interview findings highlighted that restrictions on human movement necessitated that companies develop new technologies meant to ensure that they continue to conduct their businesses within the confines of the COVID-19 environment. The finding from the survey also indicated that though most people supported and appreciated the enforcement of sanitisation regulations, there were also some challenges and barriers to achieving full compliance and acceptance among all segments of society. However, regarding the enforcement of stay-at-home regulations, quantitative research results indicated that they were not a significant influencing factor for the strategy formulation by healthcare companies in Durban, leading to the failure to reject the null hypothesis that there is no association between the COVID-19 stay at home regulations and the strategy formulation by healthcare companies in Durban. Whereas interview research results indicated that stay-at-home regulations played a key role in influencing strategy formulation.

Research Question 3: Which strategies were developed and implemented by the health care industry in Durban, South Africa, to gain a competitive advantage since the emergence of COVID-19.

Both quantitative survey research findings and qualitative interview findings suggested that most healthcare companies adopted several strategies, such as strategic collaboration and partnerships, human resources optimisation and redesign of business operating models. The findings from both quantitative survey research findings and qualitative interviews indicated that companies resorted to collaborating and forming supplier partnership agreements as a strategy of ensuring steady supplies of inventory to mitigate the negative effects of supplier disruption brought about by the COVID-19 pandemic. This finding illustrates how the companies responded strategically to the supply chain disruptions caused by COVID-19. By prioritising deliveries, securing long-term supply agreements, and paying priority fees, the companies aimed to ensure a steady and reliable source of products, attract more customers, and gain a competitive edge in a challenging business environment. The study findings indicates that healthcare companies adopted a strategy of collaborating with well-established overseas suppliers from countries such as India, Singapore, China, Europe and others for technical assistance in building up technological capabilities for online trading, digitalised business and service process transformation as strategies to gain competitiveness. Healthcare companies adopted a strategy of collaboration, offering equity, preferential procurement, and

various inducements to encourage global competitors to share their knowledge and skills. This approach was seen as a way to strengthen their own capabilities and stay competitive in an increasingly digital and globalised business environment. Healthcare companies also adopted the strategy of collaborating with industry players to join in the advocacy for relaxing some of the COVID-19 policies and regulations to allow for the smooth functioning of their businesses, especially for the movement of healthcare products. COVID-19 restrictions forced some healthcare companies to introduce flexible working conditions such as remote working or working from home and the provision of feedback using virtual channels as a strategy to minimise travel and physical contact thereby also ensuring the safety of staff and customers alike. This meant that some categories of employees were allowed to work from home during the time that the COVID-19 pandemic was intensifying and affecting large numbers of people. Healthcare companies resorted to retraining staff during times so as to facilitate easy migration to digitised health services, which were becoming more prevalent during the COVID-19 pandemic. Healthcare companies adopted the strategy of accelerated transformation towards digitalisation of their business models and ensured that all business processes were transferred to digital platforms to help enhance customer convenience and experience and to also help cut costs associated with brick-and-mortar businesses. The COVID-19 pandemic served as a driver for change in the business models of the company. The challenges posed by the pandemic, such as restrictions on physical movement and face-to-face interactions, necessitated a re-evaluation of how businesses were conducted. Healthcare companies also adopted a strategic approach. They leveraged information technology services, online channels, and high-quality product offerings to differentiate themselves and gain a competitive advantage. This strategy was driven by a commitment to enhancing the customer experience and delivering innovative, high-value healthcare solutions.

Results for testing Research Objectives 1 and 3 both qualitatively quantitatively

The objectives 1 and 3 were both investigated using both qualitative and quantitative as a way of complimentary approaches.

Objective 1

- To determine the influence of the COVID-19 pandemic on the performance of the health care products industry in Durban, South Africa.

The qualitative research was aimed at gaining an in-depth understanding of the phenomenon under investigation whilst the quantitative was to assist in testing some statistical hypotheses on the relationships between the Covid 19 induced activities and the company performance.
The qualitative findings resonated with the quantitative findings in that the qualitative results indicated that some companies realised some profit that was due to the shift to the online marketing strategies. However, the quantitative findings suggested that only about 15% of the participants were not affected by the pandemic. Hence, the majority (85%) of the affected participants observed in the quantitative study reflect the dip in the profitability as highlighted in the in-depth analysis from the qualitative study.

Objective Three

- To examine the factors that influenced strategies formulation by the health care product industry in Durban, South Africa, to gain a competitive advantage since the emergence of COVID-19.

All the factors investigated in the quantitative study showed that at least 80% of the participants were in agreement with the factors that influenced strategies formulation. These factors included social distancing, stay at home regulations, sanitising regulations, competitor innovations, technological changes, changes in operating environment and so on. On the other hand, the qualitative study showed a complimentary view by also revealing the positive aspects to the strategy formulation such as increased optimizing websites and Search Engine Optimisation (SEO) for increased online traffic and search queries as well as the leveraging expertise and resources to innovate and product service differentiation.

6.4 LIMITATIONS OF THE STUDY

- The study was initiated amid the COVID-19 pandemic, which posed a huge challenge to accessing health care company personnel. Most industries were focusing on regaining their revenue losses and were not keen on participating in the study.
- Senior managers and above only completed the online schedules according to their timeframes. This caused major setback as the researcher had to constantly approach these respondents to complete their surveys online.

- This is new research that focused on companies in Durban only. This may not be the perfect representation of all the health care companies in South Africa thus generalisability is limited.

6.5 POTENTIAL OUTPUTS

This study entitled "The Influence of COVID-19 on Strategy Formulation for Selected Healthcare Companies in Durban, South Africa" may yield a variety of potential outputs, including:

- **Research paper or thesis**

The primary output would likely be a comprehensive research paper or thesis that summarises the study's objectives, methodology, findings, and conclusions. This document would contribute to the academic understanding of the topic and may serve as a reference for other researchers. It is envisaged that the findings from this research will be presented to an academic community, regarding the influence of the COVID-19 pandemic on enhancing the competitive advantage of the health care product supply industry in South Africa and subsequently published in a peer-reviewed journal.

This research will have a far-reaching impact in terms of the influence of the COVID-19 pandemic on enhancing the competitive advantage of the health care product supply industry. Finally, based on the research findings, a new business model will be developed for the health care supply industries to reduce the impact of future pandemics.

- **Published journal articles**

The study's findings could be condensed and adapted into multiple journal articles for publication in peer-reviewed academic journals. This would enhance the visibility of the research and facilitate dissemination to a broader academic audience. Publishing this work in a peer-reviewed journal entails contributing to the existing body of knowledge and acting as a reference in academic research.

- **Conference presentations**

The researcher may present his/her study at academic conferences, sharing the findings with colleagues, receiving feedback, and potentially establishing connections for future collaborations. The research findings can also be valuable to institutions, as they can be incorporated into lectures and future research.

- **Policy reports**

Since the research has implications for healthcare policy or practice, it could result in policy reports or whitepapers. These documents may be used by policymakers and industry stakeholders to inform decision-making.

- **Recommendations for healthcare companies**

The study might generate specific recommendations for healthcare companies in Durban on how to adapt their strategies in light of the pandemic. These recommendations could be disseminated to industry professionals.

- **Media coverage**

If the findings are particularly newsworthy or relevant to the general public, the research may receive media coverage in the form of news articles, interviews, or features in newspapers, magazines, or on television and online platforms.

- **Educational materials**

The study's insights could be used to develop educational materials for healthcare management programmes, workshops, or seminars. These materials may help train future healthcare leaders.

- **Book or monograph**

The research could be expanded into a book or monograph that provides an in-depth exploration of the topic, including historical context, theoretical frameworks, methodology, and detailed findings.

- **Online resources**

The study might lead to the creation of online resources, such as webinars, podcasts, or videos, to engage a wider audience and disseminate key findings and insights.

- **Further research projects**

The findings may spark interest in related or follow-up research projects exploring different aspects of healthcare strategy formulation in the context of pandemics or other disruptive events.

- **Collaborations and partnerships**

The study may open doors for collaborations between the researchers and healthcare companies, governmental bodies, or international organisations interested in addressing similar challenges.

- **Educational courses**

The research might inform the development of courses or training programmes on healthcare strategy, crisis management, or public health preparedness.

These potential outputs can help maximise the impact of the study and ensure that the insights gained from it are disseminated to relevant stakeholders, contributing to academic knowledge, healthcare practice, and public understanding.

6.6 DISCUSSION OF RESULTS IN LIGHT OF CURRENT RESEARCH

While this thesis has provided a comprehensive summary of findings, it is essential to critically discuss these results in the context of existing research. Comparing and contrasting the outcomes of this study with those in the broader academic literature will enhance the

understanding of their implications. This section will examine how the findings align with or diverge from current research, providing a deeper insight into the contributions of this study to the field. By situating the results within the existing body of knowledge, this discussion will highlight the study's relevance and its potential to inform future research and practice.

6.7 CONCLUSION

This chapter presented a summary of the findings and conclusions obtained from the literature review and primary study, paying special attention to the research objectives pertaining to determining the influence during COVID-19 on strategy formulation for sustained competitive advantage, determining the influence of the COVID-19 pandemic on the performance of the healthcare companies in Durban, South Africa, investigating the strategies formulated by the healthcare companies in Durban, South Africa, to gain a competitive advantage since the emergence of COVID-19 and exploring the factors that influenced strategy formulation for sustained competitive advantage of selected healthcare companies in Durban, South Africa. In this chapter, conclusions and recommendations arising from the study were presented systematically, providing a comprehensive overview of the insights garnered through rigorous research and analysis. These insights not only contributed to the academic understanding of the subject matter but also hold practical implications for healthcare companies navigating the challenges and opportunities presented by the COVID-19 pandemic in their quest for sustained competitive advantage. The first of three papers was submitted for academic publication and was accepted. Refer to Appendix K.

REFERENCES

Adams, T. M., &. Stewart, L. D. 2020. Chaos theory and organisational crisis: A theoretical analysis of the challenges faced by the New Orleans Police Department during Hurricane Katrina." Public Organisation Review 15(3): 415-431.

Aggarwal, R., & Ranganathan, P. 2019. Study designs: Part 2 - Descriptive studies. *Perspect Clin Res*. 10(1):34-36.

Amankwaa, L. 2016. Creating Protocols for Trustworthiness in Qualitative Research. *Journal of Cultural Diversity*, 23(3).

Amesho, K.T., Edoun, E.I., Naidoo, V., & Pooe, S. 2021. Managing competitive advantage through technology and innovation systems and its impacts on service delivery within the Kaohsiung City Government in Taiwan. *South African Journal of Information Management*, *23*(1):.1-12.

Antonakis, J., & Day, D. V. 2019. The nature of leadership. Sage publications.

Arena, M. J., & Uhl-Bien, M. 2019. "Complexity leadership theory: Shifting from human capital to social capital." People and Strategy (2): 22.

Arena, M., R., Cross, R. Sims, J., & Uhl-Bien, M. 2019. "Groundswell: Tapping the power of employee networks to fuel emergent innovation." MIT Sloan Management Review 58(4): 39-47.

Arndt, C., Davies, R., Gabriel, S., Harris, L., Makrelov, K., Modise, B., Robinson, S., Simbanegavi, W. Seventer., & Anderson, L. 2020. Impact of COVID-19 on the South African economy: An initial analysis. SA-TIED Working Paper 111. https://sa-tied.wider.unu.edu/sites/default/files/pdf/SA-TIED-WP-111.pdf. [Accessed on 19 Dec 2021].

Ashby, W. 2019. Design for a brain: The origin of adaptive behaviour. New York, Springer Science & Business Media.

Assensoh-Kodua, A. 2019. The resource-based view: A tool of key competency for competitive advantage. *Problems and Perspectives in Management*, *17*(3), 143.

Atta-Asiedu & Kwaku Ayim. 2020. Understanding Measurement as a Tool in Social Research Available at
SSRN: https://ssrn.com/abstract=3643797 or http://dx.doi.org/10.2139/ssrn.3643797
[Accessed on 25 June 2023].

Azizi, M.R., Atlasi, R., Ziapour, A., Abbas, J., & Naemi, R. 2021. Innovative human resource management strategies during the COVID-19 pandemic: A systematic narrative review approach. *Heliyon*, 7(6): 7233.

Bajaba A., Bajaba, S., Algarni, M., Basahal, A., & Basahel, S. 2021.Adaptive Managers as Emerging Leaders During the COVID-19 Crisis. *Front Psychol*. 13:12:661628.doi: 10.3389/fpsyg.2021.661628. PMID: 33927672; PMCID: PMC8076558. [Accessed on 4 August 2024].

Baltacı, A., & Balcı, A. 2022. "Complexity Leadership: A Theoretical Perspective." International Journal of Educational Leadership and Management 5(1): 30-58.

Bao, X., Diabat, A., & Zheng, Z. 2020. An ambiguous manager's disruption decisions with insufficient data in recovery phase. *International Journal of Production Economics*, 221: 107465

Barney, J. 1991. 'Firm resources and sustained competitive advantage', *Journal of* Management, 17 (1): 99-120.

Barney, J.B., Ketchen Jr. D.J., & Wright, M. 2021.'Bold voices and new opportunities: an expanded research agenda for the resource-based view'. *Journal of Management*, 47(7): 1677-1683.

Bar-Yam, Y. 2020 "Guide to Complex Systems (online)." Retrieved 29/06/2000, from www.necsi.org/guide

Basias, N., & Pollalis, Y. 2018. Quantitative and qualitative research in business & technology: Justifying a suitable research methodology. *Review of Integrative Business and Economics Research*, 7:.91-105.

Bell, E., Bryman, A., & Harley, B. 2019 'Business research methods'. Oxford university press.

Belrhiti, Z., Giralt, A.N., & Marchal, B. 2018. "Complex leadership in healthcare: a scoping review." *International journal of health policy and management*, 7(12): 1073.

Bestsennyy, O, Gilbert, G., Harris, A., & Rost, J. 2021. Telehealth: A quarter – trillion – dollar post- COVID -19 reality? Available on https://www.mckinsey.com/industries/healthcare/our-insights/telehealth-a-quarter-trillion-dollar-post-COVID-19-reality . [Accessed on 2 June 2023].

Bolisani, E., & Bratianu, C. 2018. Knowledge and strategy formulation in a turbulent world. In *Emergent Knowledge Strategies* .Springer, Cham.

Borrego, M., Douglas, E.P., & Amelink, C.T. 2015. Quantitative, qualitative, and mixed research methods in engineering education. *Journal of engineering education*, 98(1),: 53-66.

Bose, S., Srinivasan, R., Tan, C., Goyal, A., Chung, W., Cheung, S., & Ho, T. 2021. Contactless Economy. Available on https://www2.deloitte.com/content/dam/Deloitte/sg/Documents/strategy/sea-cons-contactless-economy.pdf. [Accessed on 4 August 2024].

Boyce, C., & Neale, P. 2014. Conducting In-Depth Interview: A Guide for Designing and Conducting In-Depth Interviews for Evaluation Input. Pathfinder International Tool Series, Monitoring and Evaluation-2. *Open Access Library Journal*, 1 (5):55-57.

Boylan, S. A., & Turner, K. A. 2018. "Developing Organisational Adaptability for Complex Environment." *Journal of Leadership Education*.

Brockhoff, K.2017. The Emergence of Technology and Innovation Management. Technology & Innovation. 19. 461-480. 10.21300/19.2.2017.461.

Business Tech .2020. Concern in South Africa as job losses pile up. https://businesstech.co.za/news/banking/400307/concern-in-south-africa-as-job losses-pile-up/. [Accessed on 15 March 2021].

Caballero-Morales, S.O. 2021. Innovation as recovery strategy for SMEs in emerging economies during the COVID-19 pandemic. *Research in international business and finance*, 57:.101396.

Campbell, A. & Luchs, K. 1997. "*Understanding competencies*" Core Competency-based Strategy. Thomson, London.

Cappelli, A., & Cini, E . 2020. Will the COVID-19 pandemic make us reconsider the relevance of short food supply chains and local productions? Trends Food Sci Technol 99:566–567. https://doi.org/10.1016/j.tifs.2020.03.041. [Accessed on 12 April 2023]

Castillo, G. A. 2018. The importance of adaptive manangement. *International Journal of Novel Research in Education and Learning* 5(2):100-106.

Çemberci, M., Civelek, M.E., Ertemel, A.V., & Cömert, P. N. 2022. The relationship of work engagement with job experience, marital status and having children among flexible workers after the COVID-19 pandemic. PLoS ONE 17(11): e0276784. https://doi.org/10.1371/journal.pone.0276784. [Accessed on 14 May 2023].

Chaghooshi, A.J., & Hajimaghsoudi, M. 2014. Reducing the risk of transportation disruption in supply chain: integration of FUZZY-AHP and TOPSIS. *Glob J Manag Stud Res*, 1: 1-9.

Chatterjee, S., Chaudhuri, R., Vrontis, D., & Thrassou, A. (2023). Revisiting the resource-based view (RBV) theory: from cross-functional capabilities perspective in post COVID-19 period. *Journal of Strategic Marketing*. 1-16. 10.1080/0965254X.2023.2182447.

Chen J, Sohal A.S., & Prajogo, D.I. 2021. Supply chain operational risk mitigation: a collaborative approach. *Int J Prod Res*. 51(7):2186–2199.

Chowdhury, M.T. Sarkar, A., Paul, S.K. & Moktadir, M.A. 2020. A case study on strategies to deal with the impacts of COVID-19 pandemic in the food and beverage industry. *Operations Management Research* .1-13.

Coffey, A. & Atkinson, P. 2018. Making sense of qualitative data: Complementary research strategies. Sage Publications, Inc.

Cohen, L., Manion, L., & Morrison, K. 2016. *Research Methods in Education*: Routledge.

Conley, J. G., Bican, P. M., & Ernst, H. 2013. Value Articulation: A Framework for the Strategic Management of Intellectual Property. California Management Review, 55(4), 102–120. https://doi.org/10.1525/cmr.2013.55.4.102. [Accessed on 8 June 2021].

Cote , R. 2022. Adaptive Leadership Approach with Covid 19 Adaptive Challenges. *Journal of Leadership Accountability and Ethics* 19(1) 34-44

Cooper & Schindler. 2015. *Business Research Methods,* (9th ed). New York: McGraw Hill/Iruib.

Corbetta, P. 2021. Social research: Theory, methods and techniques. Sage.

Corbin, J. & Strauss, A. 2017. Basics of qualitative research: Techniques and procedures for developing grounded theory. Sage publications.

Creswell, J. W. & Clark V.L.P. 2016. Mixed methods research: Designing and conducting. 2nd Edition. California: Sage Publications, Inc.

Currie, C.S., Fowler, J.W., Kotiadis, K., Monks, T., Onggo, B.S., Robertson, D.A., & Tako, A.A. 2020. How simulation modelling can help reduce the impact of COVID-19. *Journal of Simulation*, 14(2):.83-97.

Dagnino, G.B., & Cinici, M.C. (2016). Research Methods for Strategic Management (1st ed.). Routledge. https://doi.org/10.4324/9780203676615.

Daigle, J. L. 2020. An Evaluation and Application of Complex Adaptive Leadership: A Fuzzy Logic and Neural Network Approach Data. London, Routledge.

Dalati, S. 2018. Measurement and Measurement Scales. Arab International University. Available: https://www.researchgate.net/publication/324117390[Accessed on 21 June 2023]

Daniel, J. 2014. *Choosing the type of probability sampling*. Available from: http://www.sagepub.com/upm-data/40803_5.pdf. [Accessed on 30 June 2021].

Das, A., Gottlieb, S., & Ivanov, D.2019. Managing disruptions and the ripple effect in digital sup-ply chains: empirical case studies. In: Ivanov D, Dolgui A, Sokolov B (eds) Handbook of the ripple effects in the supply chain. Springer, New York: 261–285.

Davis, G.F. & DeWitt, T. 2021. Organisation theory and the resource-based view of the firm: The great divide. *Journal of Management*, 47(7): 1684-1697.

den Hertog, P, van der Aa, W., & de Jong, M.W. 2020. Capabilities for managing service innovation: Towards a conceptual framework. J Serv Manag. 2010; 21(4):490-514. doi: 10.1108/09564231011066123. [Accessed on 21 June 2021].

DeRue, D. S. 2021. Adaptive leadership theory: Leading and following in a complex adaptive process. Research in Organisational Behaviour 31: 125-150.

Dionysus, R., & Arifin, A.Z. 2020. Strategic Orientation on Performance: The Resource Based View Theory Approach. *Journal Akuntansi*, 24(1),:136-153.

Dodgson, M., Ash, S., Andrews, J., & Phillips, N., 2021. Managing technology-enabled innovation in a professional services firm: A cooperative case study. *Academy of Management Discoveries.*

Doherty M.2014. *Probability versus non-probability sampling in sample surveys*. New Zealand Stat Rev 2014; 218. Available at: http://www.nss.gov.au/nss/home.nsf/75427d7291fa0145ca2571340022a2ad/768dd0fbbf616c71ca2571ab002470cd/$FILE/Probability%20versus%20Non%20Probability%20Sampling.pdf. [Accessed on 14 May 2020]

Dolgui, A., Ivanov, D., & Rozhkov M .2020. Does the ripple effect influence the bullwhip effect? An integrated analysis of structural and operational dynamics in the supply chain. *Int J*

Prod Res .58:1285–1301. https://doi.org/10.1080/00207543.2019.1627438. [Accessed on 16 July 2021].

Du Plooy-Cilliers, F., Davis, C., & Bezuidenhout, R.M. 2021. Research Matters 2nd Ed Juta & Company Ltd.

Edmonstone, J. 2020. "Complex adaptive leadership: embracing paradox and uncertainty." Action Learning: Research and Practice 13(1): 87- 89.

El-Erian, M. 2020. The Coming Coronavirus Recession and the Uncharted Territory Beyond. Foreign Affairs, Media Report. Available at: https://www.foreignaffairs.com/articles/2020-03-17/coming-coronavirus-recession .Accessed 6 March 2020. [Accessed on 9 May 2021].

Elliot, J.2020. Prepare for the coronavirus global recession. The Guardian. Media report. Available at: https://www.theguardian.com/business/2020/mar/15/prepare-for-the-coronavirus-global-recession. [Accessed 12 May 2020].

Eloranta, V., & Turunen, T. 2015. *Platforms in service-driven manufacturing*: *Leveraging complexity by connecting, sharing, and integrating*. Industrial Marketing Management. 10.1016/j.indmarman.2015.10.003.

Etikan, I., Musa, S.A., & Alkassim, R.S. 2016. Comparison of convenience sampling and purposive sampling. *American journal of theoretical and applied statistics,* 5(1): .1-4.

Fabeil, N.F., Pazim., K.H. & Langgat, J. 2020. The impact of COVID-19 pandemic crisis on micro-enterprises: Entrepreneurs' perspective on business continuity and recovery strategy. *Journal of Economics and Business*, *3*(2).

Fernandes N. 2020. Economic effects of coronavirus outbreak (COVID-19) on the world economy. *SSRN.* 2020:1–33.

Financial Times .2020. Global recession already here, say top economists. Available at: https://www.ft.com/content/be732afe-6526-11ea-a6cd-df28cc3c6a68.
[Accessed 3 June 2020].

Formby, S. K., Malhotra, M. K. &. Ahire, S. L .2020. The complex influences of quality management leadership and workforce involvement on manufacturing firm success. *International Journal of Productivity and Performance Management* 67(3): 502-518.

Forsman H. 2021. Innovation capacity and innovation development in small enterprises – a comparison between the manufacturing and service sectors. *Res. Policy;* 40:739–750.

Foss, N. J. 2020. Behavioural strategy and the COVID-19 disruption. *Journal of Management*, 46(8): 1322-1329.

Freeman, R.E., Dmytriyev, S.D., & Phillips, R.A. 2021. Stakeholder theory and the resource-based view of the firm. *Journal of Management*, 47(7): .1757-1770.

Garavaglia, C., Sancino, A., & Trivellato, B. (2021). 'Italian mayors and the management of COVID-19: adaptive leadership for organizing local governance', *Eurasian Geography and Economics*: 62(1), 76-92 [10.1080/15387216.2020.1845222].

Gaspar, M., Jorge, J., & Cruz, M. 2019. Organizational Strategies Induced by the Fourth Industrial Revolution: Workforce Awareness and Realignment. 10.1007/978-3-319-91334-6-45.

Gavrilova, T., Kubelskiy, M., Kudryavtsev, D., & Grinberg, E. 2018. Modeling methods for strategy formulation in a turbulent environment. *Strategic Change*, 27(4): .369-377.

George, G., Lakhani, K., & Puranam, P. 2020. What has changed? The impact of COVID pandemic on the technology and innovation management research agenda. *Journal of Management Studies*.57(8): 1755- 1757.

Georgieva, K.2020. IMF Managing Director Kristalina Georgieva's Statement Following a G20 Ministerial Call on the Coronavirus Emergency. IMF Press statement. Available at: https://www.imf.org/en/News/Articles/2020/03/23/pr2098-imf-managing-director-statement-following-a-g20-ministerial-call-on-the-coronavirus-emergency.[Accessed on 10 June 2020].

Gizawi,N.E. 2014.The Dynamic Capabilities Theory: Assessment and Evaluation as a Contributing Theory for Supply Chain Management, 3 rd IBA PhD Thesis Conference, July 3

rd, 2014, Enschede, The Netherlands. Copyright 2014, University of Twente, Faculty of Management and Governance.

Goffin, K., Åhlström, P., Bianchi, M., & Richtnér, A. 2019. Perspective: State-of-the-art: The quality of case study research in innovation management. *Journal of Product Innovation Management*, 36 (5): 586-615.

Goldberg, J., &. Markoczy, L. (2020). "Complex Rhetoric and Simple Games." Retrieved 02/02/2019, from www.Cranfield.ac.za/public/cc/cc047/papers/complex/html/complex.htm.[Accessed on 2 May 2021].

Gono, T., & April, K. 2022. Adaptive Leadership During Covid 19 Pandemic. *Scholarly Journal*, 25(2) 46-79.

Gopalakrishnan, S., & Kovoor-Misra, S. 2021. Understanding the impact of the Covid-19 pandemic through the lens of innovation. *BRQ Business.*24(3): 224-232.

Gray, P., & Kim, M. 2023. How Have Predictors of Engagement in Tourism Crisis Planning and Preparedness Changed in More Than a Decade?. *Cornell Hospitality Quarterly*: 19389655231214721.

Gupta, R., Mejia, C., & Kajikawa, Y. 2021. Business, innovation and digital ecosystems landscape survey and knowledge cross sharing. *Technological Forecasting and Social Change*, 147:100-109.

Haleem, A., Javaid, M., Singh, R.P., & Suman, R.2021. Telemedicine for healthcare: Capabilities, features, barriers, and applications.*Sens Int,* 2:100117. doi: 10.1016/j.sintl.2021.100117.

Haring-Hidore, M., Stock, W. A., Okun, M. A., & Witter, R. A. 1985. Marital Status and Subjective Well-Being: A Research Synthesis. *Journal of Marriage and Family*, 47(4), 947–953. https://doi.org/10.2307/352338. [Accessed on 18 April 2021].

Harris, J.A., Denyer, D., Harwood, S., Braithwaite, G., Jude S., & Jeffrey, P. 2020. Time to invest in global resilience. *Nature*, 583(7814).

Heifetz, R., Grashow, A., &. Linsky, M. 2014. The practice of adaptive leadership: Tools and tactics for changing your organisation and the world. Boston, MA, Harvard Business School Press.

Heifetz, R., Grashow, A. & Linsky, M. 2020. "The practice of adaptive leadership: Tools and tactics for changing your organisation and the world. Boston, MA: Harvard Business School Press.

Hitt, M.A., Arregleb, J.L., & Holmes, R.M., 2021. Strategic Management Theory in a Post-Pandemic and Non-Ergodic World. *Journal of Management studies* 58:1.

Holdford DA, ed.2017. Acute & ambulatory care pharmacy practice. Second ed. Bethesda, MD: ASHP Publications.

Holdford, D.A. 2018. Resource-based theory of competitive advantage-a framework for pharmacy practice innovation research. *Pharmacy Practice (Granada)*: 16(3).

Holdford, D.A., & Inocencio, T.J. 2019. Adherence and persistence associated with an appointment-based medication synchronization program. *J Am Pharm Assoc*; 53(6). doi: 10.1331/JAPhA.2013.13082. [Accessed on 12 April 2021].

Horowit, J. 2020. The global coronavirus recession is beginning. CNN. Media report. Available at: https://edition.cnn.com/2020/03/16/economy/global-recession-coronavirus/index.html.[Accessed on 27 June 2020].

Horvat, A., & Filipovic, J. 2018. "Service quality and maturity of health care organisations through the lens of Complexity Leadership Theory." *Journal of evaluation in clinical practice* 24(1): 301-307.

Hossain, M.S., Hussain, K., Kannan, S., & Nair, S.K.K.R. 2021. Determinants of sustainable competitive advantage from resource-based view: implications for hotel industry. *Journal of Hospitality and Tourism Insights*.

Huang H, Zeng N & Xu, H. 2018. "Procurement mechanism for dual sourcing and emergency production under capacity constraint". *Computer Ind Eng* .119:204–218.

Hu, J., He, W., & Zhou, K. 2020. The mind, the heart, and the leader in times of crisis: How and when COVID-19-triggered mortality salience relates to state anxiety, job engagement, and prosocial behavior. *Journal of Applied Psychology, 105*(11), 1218–1233. https://doi.org/10.1037/apl00006.

Hudecheck, M, Siren, C, Grichnik D., & Wincent J .2020. How companies can respond to the coronavirus. MIT Sloan Manag. Rev. accessed from https://sloanreview.mit.edu/article/how-companies-canrespond- to-the-coronavirus/ [Accessed on 21 July 2020].

Humphries, B. 2017. 'Re-thinking social research: anti-discriminatory approaches in research methodology'. Taylor & Francis.

Islam M.R, Khan N.A., & Baikady, R. 2022. Principles of Social Research Methodology. Springer Singapore Pte Ltd.

Ivanov D. 2020b.Viable supply chain model: integrating agility, resilience and sustainability perspectives. Lessons from and thinking beyond the COVID-19 pandemic. Ann Oper res. https://doi.org/10.1007/s10479-020-03640-6. [Accessed on 15 October 2021].

Ivanov D. 2020a. Predicting the impacts of epidemic outbreaks on global supply chains: a simulation-based analysis on the coronavirus outbreak (COVID-19/SARS-CoV-2) case. Transp Res Part E Logist Transp Rev 136:101922. https://doi.org/10.1016/j.tre.2020.101922[Accessed on 8 May 2021].

Jessee, T. 2023. Healthcare Strategic Planning: An In-Depth Guide, https://www.clearpointstrategy.com/blog/healthcare-strategic-plan. [Accessed on 12 August 2023].

Johnstone, M. J. 2019. Organisational and leadership ethics." *Australian Nursing Journal: ANJ* 20:10: 39.

Kaiser, G. N. & Smallwood, J.J. 2019. "Towards a systems thinking approach in allocating infrastructure budgets in local government." J. S. Afr. Inst. Civ. Eng. 56 (1).

Kaiser, Z. 2020. Covid 19. Opportunities for Businesses to Adapt and Grow, https://www.mcclone.com/blog/covid-19-opportunities-for-businesses-to-adapt-and-grow[Accessed on 12 April 2024].

Kamardi, A.A., Mahdiraji, H. A., Masoumi, S., & Jafari – Sadeghi, V. (2022). Developing sustainable competitive advantages from the lens of a resource- based view: evidence from IT sector of an emerging economy. *Journal of Strategic Marketing*, 1-23, https://doi.org/10.1080/0965254X.2022.2160485

Korek, S. & Mohr, G. 2020. Antecedents for Transformational Leadership: The Role of Leaders Complex and Dynamic Tasks, Diakses pada tanggal.

Kuckertz A., Brändle L., Gaudig A., Hinderer S., Morales-Reyes A.M., Prochotta A., Steinbrink K.M., & Berger E.S.C. Startups in times of crisis – a rapid response to the COVID-19 pandemic. *J. Business Venturing Insights.* 2020; 13(e00169):1–13.

Kumar, R. 2019. *Research methodology: A step-by-step guide for beginners*. Sage Publications Limited.

Kumari, K.V. Lavanya K. Vidhya V, Annlet G. Premila, S., & Lawrence, B. 2023. Research Methodology: Kindle Edition.

Lichtenstein, B. B., Uhl-Bien, R. Marion, A., Seers, J. Orton, D., & Schreiber, C. 2021. Complexity leadership theory: An interactive perspective on leading in complex adaptive systems. Lincoln, University of Nebraska.

Lockett, A., Thompson, S. & Morgenstern, U. 2019. The development of the resource-based view of the firm: A critical appraisal. *International journal of management reviews*, 11(1),:.9-28.

You, N., Lou, Y., Zhang, W., Chen, D., & Zeng, L. 2023. Leveraging resources and dynamic capabilities for organizational resilience amid COVID-19. *South African Journal of Business Management*, *54*(1): 3802.

Macdonald, I., Burke, C., & Stewart, K. 2018. Systems leadership: Creating positive organisations, Routledge.

Madhani, P. M. 2009. "Resource Based View (RBV) of Competitive Advantages: Importance, Issues and Implications", KHOJ Journal of Indian Management Research and Practices,. 1: 2-12.

Mahdi, O.R. & Nassar, I.A. 2021. The Business Model of Sustainable Competitive Advantage through Strategic Leadership Capabilities and Knowledge Management Processes to Overcome COVID-19 Pandemic. https://doi.org/10.3390/su13179891[Accessed on 14 April 2024].

Mäkinen, E. I. 2018. "Complexity leadership theory and the leaders of transdisciplinary science." Informing Science: *International Journal of an Emerging Transdiscipline* 21: 133-155.

Mbunge, E. Effects of COVID-19 in South African health system and society: An explanatory study. Diabetes Metab Syndr. 2020 Nov-Dec; 14(6):1809-1814. doi: 10.1016/j.dsx.2020.09.016. Epub 2020 Sep 11. PMID: 32956925; PMCID: PMC7485444. [Accessed on 14 April 2021].

Mendes, M., Gomes, C., Marques-Quinteiro, P., Lind, P. & Curral,, L.2019. "Promoting learning and innovation in organisations through complexity leadership theory." *Team Performance Management,* 22(5/6): 301-309.

Meyer, S. 2020. Evolving Ecommerce: 14 Trends Driving Online Retail In 2020, https://www.bigcommerce.com/blog/ecommerce-trends/[Accessed on 12 Dec 2020].

Mohajan, H. 2018. *Qualitative Research Methodology in Social Sciences and Related Subjects. Journal of Economic Development, Environment and People*, 7 (1): 23-48.

Moktadir M.A, Dwivedi A, Rahman A, Chiappetta Jabbour CJ, Paul SK, Sultana R., & Madaan J .2020. An investigation of key performance indicators for operational excellence towards sustainability in the leather products industry. Bus Strategy Environ in press. https://doi. org/10.1002/bse.2575. [Accessed on 2 May 2021].

Monette, D.R., Sullivan, T.J. & DeJong, C.R.. 2019. *Applied social research: A tool for the human services*. Cengage Learning.

Moon, M.D., Wolf, LA., Baker, K., Carman ,M.J., Clark, P.R, Henderson, D., Manton, A.,& Zavotsky, K.E. 2013. Evaluating qualitative research studies for use in the clinical setting. *J Emerg Nurs*. 39 (5):508-10. doi: 10.1016/j.jen.2013.06.009. PMID: 23998230

Morrison, K. 2020. School leadership and complexity theory. New York, Routledge.

Mouton, J., Marais, H. C., Prinsloo, K. P., Rhoodie, N. J., & Mauer, K. F. 2020. Basic concepts in the methodology of the social sciences. *Human Sciences Research Council*.

Nah F. & Siau K. In: *Proc. of the 22nd HCI International Conference, HCII 2020.* Stephanidis, et al., editors. Springer Nature Switzerland; Copenhagen, Denmark: 2020. COVID-19 pandemic – role of technology in transforming business to the new normal. pp. 585–600.

Narayanan, V.K. 2019. *Managing technology and innovation for competitive advantage*. Upper Saddle River, N.J. ISBN: 0130305065

Newman, M. & Gough, D. 2020. Systematic Reviews in Educational Research: Methodology, Perspectives and Application. Springer.

Nikolaou, I.E., Tsalis, T.A. & Evangelinos, K.I. 2019. A framework to measure corporate sustainability performance: A strong sustainability-based view of firm. *Sustainable Production and Consumption*, 18:.1-18.

Northouse, P. G. 2018. Leadership: Theory and practice, Sage publications.

Northouse, P. G. 2019. Leadership: Theory and practice. Los Angeles, CA, Sage Publications.

Nurwitono, D.S. & Silvianita, A. 2023. The Influence of Strategic Leadership, Corporate Culture. Commitment Management, Innovation and Competitive Advantage in Change Management moderation on Corporate Performance. *International Conference on Innovations in Social Sciences Education and Engineering*. (3) 069-069.

Obolensky, N. 2017. Complex adaptive leadership: Embracing paradox and uncertainty, Routledge.

Ozili, P. 2020. Spill over of COVID-19: impact on the Global Economy Peterson Ozili, Central Bank of Nigeria, Nigeria, Thankom Arun, and University of Essex, United Kingdom.

Pascoe, G. 2020. Sampling. In: F. d. Plooy- Cilliers, C. Davis & R. M. Bezuidenhout, eds. *Research Matters.* Cape Town: Juta,

Paules, A. 2020. Strategic Planning for Healthcare Services, https://www.slideshare.net/alberpaules/strategic-planning-for-healthcare-services. [Accessed on 6 Jan 2021].

Pavlov, A., Ivanov, D., Werner, F., Dolgui. A., & Sokolov, B. 2019. Integrated detection of disruption scenarios, the ripple effect dispersal and recovery paths in supply chains. Ann Oper Res. https://doi.org/10. 1007/s10479-019-03454-1. [Accessed on 20 July 2020].

Peng, M.W. 2021. *Global strategy*. Cengage learning.

Penrose, E. T. 1959. The Theory of the Growth of the Firm. New York: John Wiley.

Ponnusamy, P. 2021. Open Access - Survival Strategies for Businesses during COVID-19 Lockdown P. Nivetha. 8. 79-82.

Porter, M.E. 1985, Competitive Advantage: Creating and Sustaining Superior Performance, Free Press, New York.

Porter, M. E. 1991. Towards a dynamic theory of strategy. *Strategic Management Journal*,.12(1): 95-117.

Prahalad, C. & Hamel, G. 1990. The core competence of the corporation. *Harvard Business Review* . 6 :79-91.

Randall, L. M. & Coakley, L.A. 2021. "Applying adaptive leadership to successful change initiatives in academia." Leadership & Organisation Development Journal 28(4): 325-335.

Reddy, S. 2016. "Democratic Decentralisation and Local Democracy in South Africa re-examined." *Politcia* 29(3): 66–87.

Ristovska, N., Blazheska, D & Gramatnikovski, S. 2023. The influence of COVID-19 pandemic on the global business trends and management practices, *UTMS Journal of Economics*, 14(2):144-159.

Robbins, S. P., Coulter., M & DeCenzo, D.A. 2017. Fundamentals of management San Francisco CA, Jossey-Bass.

Roberts, K., Dowell, A. & Nie, JB. 2019. Attempting rigour and replicability in thematic analysis of qualitative research data; a case study of codebook development. *BMC Med Res Methodology* 19: 66.

Rodríguez-Antón, J.M. & Alonso-Almeida, M.D.M., 2020. COVID-19 impacts and recovery strategies: The case of the hospitality industry in Spain. *Sustainability*, 12(20): 8599.

Ruben, B. D. & Gigliotti, R.A. 2021. "Leadership as social influence: An expanded view of leadership communication theory and practice." *Journal of Leadership & Organisational Studies*. 23(4): 467-479.

Saunders, M., Lewis, P. & Thornhill, A. 2019. 'Research Methods for Business Students' Chapter 4: Understanding research philosophy and approaches to theory development. Pearson Education.

Schneider, M. and Somers, M. 2019. "Organisations as complex adaptive systems: Implications of complexity theory for leadership research." The Leadership Quarterly 17(4): 351-365.

Sekaran, U. & Bougie, R. 2016. *Research methods for business: A skill building approach*. John Wiley & Sons.

Seriki, O., Idowu, S.O., Schmidpeter, R., Capaldi, N., Zu, L., Del Baldoa M. & Abreu, R. 2023. Resource-Based View. Encyclopedia of Sustainable Management. Springer, Cham. https://doi.org/10.1007/978-3-031-25984-5_469 [Accessed on 12 Jan 2024].

Shapiro, J. P. & Stefkovich, J.A. 2021. Ethical leadership and decision making in education: Applying theoretical perspectives to complex dilemmas, Routledge.

Sharma, M., Alkatheeri, H., Jabeen, F. & Sehrawat, R. 2022. Impact of COVID-19 pandemic on perishable food supply chain management: a contingent Resource-Based View (RBV) perspective. *The International Journal of Logistics Management*.

Sigalas, C & Pekka-Economou, V. (2013). Revisiting the concept of competitive advantage: Problems and fallacies arising from its conceptualization. *Journal of Strategy and Management*. 6 (4) DOI:10.1108/JSMA-03-2013-0015

Sileyew, K.J. 2020. Research Design and Methodology. Cyberspace.

Singh, S., Chamola, P., Kumar, V., Verma, P. & Makkar, N. 2023. Explaining the revival strategies of Indian MSMEs to mitigate the effects of COVID-19 outbreak. *Benchmarking: An International Journal*, 30(1) : 121-148.

Singh, S.K., Gupta, S., Busso, D. & Kamboj, S. 2021. Top management knowledge value, knowledge sharing practices, open innovation and organisational performance. *Journal of Business Research*, 128:.788-798.

Smits, S. J. & Bowden, D.E. 2021. "A Perspective on Leading and Managing Organisational Change." Economics and Business Review 1(2): 3-21.

South Africa News. 2020. Sacci Welcomes Government's Covid-19 Efforts, Https://Www.Sanews.Gov.Za/South-Africa/Sacci-Welcomes- Government%E2%80%99s. [Accessed on 16 October 2020].

Stacey, R. D. 1996. Complexity and creativity in organisations. San Francisco, Berrett-Koehler Publishers.

Stevens, T. & Reid, A. 2020. Complex adaptive leadership. https://www.leader.co.za/article.aspx?s=6&f=1&a=7543. [Accessed on 4 August 2024].

Storey, J. 2019. Changing theories of leadership and leadership development, Routledge.

Taylor, S.J., Bogdan, R. & DeVault, M. 2019. *Introduction to qualitative research methods: A guidebook and resource*. John Wiley & Sons.

Thompson, A., Peteraf, M., Gamble, J & Strickland, A. J. III . 2016. *Crafting & Executing Strategy*: The Quest for Competitive Advantage: Concepts and Cases 19th Edition. New York. McGraw Hill.

Thompson, A.A .,Strickland, A.J & Gamble, J.E (2019) Crafting and Executing strategy,6th edition, Mc-Graw-Hill International Edition, New York, USA.

Tralac News (21 April, 2020) Statement By President Cyril Ramaphosa On Further Economic And Social Measures In Response The COVID-19 Epidemic https://www.tralac.org/documents/resources/COVID-19/countries/3363-statement-by-president-cyril-ramaphosa-on-further-economic-and-social-measures-in-response-to-COVID-19-21-april-2020/file.html. [Accessed 21 April, 2020].

Uhl-Bien, M. & Marion R. 2019. "Complexity Leadership". Charlotte, NC, Information Age.

Vasileiou, K., Barnett, J., Thorpe, S. et al. 2018. Characterising and justifying sample size sufficiency in interview-based studies: systematic analysis of qualitative health research over a 15-year period. *BMC Med Res Methodology* 18:148.

Walker, P., Whittaker, C., Watson, O., Baguelin, M., Ainslie, K., Bhatia, S., Bhatt, S., Boonyasiri, A., Boyd, O., Cattarino, L. & Cucunuba Perez, Z. 2020. Report 12: The global impact of COVID-19 and strategies for mitigation and suppression.

Walton, A.2024. The VRIO Framework (what it is and how to use it effectively), https://www.competitiveintelligencealliance.io/vrio-framework/[Accessed on 14 April 2024].

Wang Q., Voss C., Zhao X, & Wang, Z. 2022. Modes of service innovation: A typology. Ind Manag Data Syst: 115(7):1358-1382. doi: 10.1108/IMDS-03-2015-0067. [Accessed on 2 June 2021].

Wernerfelt, B. 2020. A resource-based view of the firm. *Strategic Management Journal, 5*: 171–180.

Western, S. 2019. Leadership: A critical text, SAGE Publications Limited.

Wheelen, T.L. & Hunger, L.D. 2022. Strategic Management and Business Policy (11th Edition). England: Prentice Hall.

Whitfield, K. 2019. The resource-based view approach and HRM. In *Elgar Introduction to Theories of Human Resources and Employment Relations* Edward Elgar Publishing.

Wolf, B. 2016. Inspiration by Swarms University of Wuppertal. Wuppertal, Germany, ICSIBO 2016, LNCS 10103, Springer International Publishing AG.

Wolinski, S. 2010. "Leadership Theories." Retrieved June 14, 2014, from http://managementhelp.org/blogs/leadership/2010/04/21/leadership-theories/. [Accessed on 1 May 2020].

Xu, K., Cai, H., Shen, Y., Ni, Q., Chen, Y., Hu, S., Li, J., Wang, H., Yu, L., Huang, H. & Qiu, Y. 2020. Management of COVID-19: the Zhejiang experience. *Zhejiang da xue xue bao. Yi xue ban= Journal of Zhejiang University. Medical sciences*, 49(2): 147-157.

Yukl, G. & Mahsud, R. 2019. "Why flexible and adaptive leadership is essential." Consulting Psychology Journal: Practice and Research 62(2): 81-93.

Zaleznik, A. 2018. Power and Leadership in Complex Organisations, Routledge.

Zikmund, W. G. 2017. Business Research Methods (7thed.). Mason, OH: South-Western, Thomson Learning

APPENDICES

APPENDIX A

Faculty of Management Sciences

Department of Public Management & Economics

Date: 7 September 2021

LETTER OF INFORMATION

Title of the Research Study: The influence during COVID-19 on strategy formulation for sustained competitive advantage of selected healthcare companies in Durban.

Principal Investigator/s/researcher: Ms Judy Moodley - BA (Unisa), Btech (DUT), MBA (Mancosa)

Co-Investigator/s/supervisor/s: Dr Khalida Akbar-PhD (UKZN)

Brief Introduction and Purpose of the Study:

I am Ms Judy Moodley, currently registered with DUT for DPhil Management Sciences (Business Admin).I would like to invite you to participate in the research outlined below.

The reason for the choice of the research area lies in the fact that COVID-19 pandemic is a fairly new disease with unprecedented unique attributes and prevention demands which have

incidentally impacted on the economy and business operations and more so the competitive advantage of companies in the health care product supply industry in Durban.

The aim of the study

The aim of this study is to explore the influence during COVID-19 on strategy formulation for sustained competitive advantage of selected healthcare companies in Durban.

The objectives of the study

- To determine the impact of the COVID-19 pandemic on the performance of the health care industry in Durban,

- To explore the factors that influenced strategy formulation for sustained competitive advantage of selected healthcare companies in Durban, South Africa.

- To examine the strategies formulated by the health care industry in Durban, South Africa to gain a competitive advantage since the emergence of COVID-19.

- To make recommendations to the senior management of selected companies in the health care industry on effective strategies for gaining competitive advantage in the post-COVID-19 pandemic in South Africa.

You will be informed via email as to when the interview will be conducted. The interview will be conducted by the researcher. The venue will be chosen by you, preferably in an office environment. Interviews will be conducted through face-to-face contact, video calls or Zoom. The time to complete the interview will be 20 -30minutes.

Interviews will be conducted as per preferred time of interviewee. The data will be recorded by the interviewer.

You are entitled to discuss the study with your family and friends and are under no obligation to commit at this stage. For this purpose, a copy of the Letter of Information document is given to you to take home.

Risks or Discomforts to the Participant:

There are no risks or discomfort to you during and after the interview process.

The research may be terminated early in particular circumstances viz. Non-compliance, illness, adverse reactions, etc.

You are entitled to withdraw from the study at any time should they wish to do so. The researcher may, under certain circumstances, decide to withdraw you from the study.

Benefits of the Study:

- This research will be made available at an academic community as well as peer reviewed journals, thus contributing to the existing body of knowledge and used for reference in academic research.

- The new business environment heralded by the COVID-19 pandemic requires detailed research so as to new insights and new additional knowledge to the academic fraternity as one of the final contribution of the study which will act as academic reference for educational institutions and students.

- Furthermore the findings of the research are intended to be published to provide additional empirical academic knowledge and thereby act as a permanent reference for students in tertiary industries and members of the academia.

- It is further predicted that the findings will stimulate additional academic interest and further research on the impact of COVID-19 on enhancing the competitive advantage within the health care product supply industry and across several disciplines in South Africa.

- The research is further envisaged to help unlock the problem of inertia and lack of urgency and innovativeness by businesses in terms of being adaptive to the unfolding business environment brought about by COVID-19.

- The study is expected to make a meaningful contribution in the sense that competitive advantage by the health care product supply industry in South Africa will inadvertently help

communities to access high quality and affordable healthcare products further leading to improvements in the health and living standards of members of the communities.

- It is foreseen that this study on the impact of the COVID-19 pandemic is seen to make an original creative contribution towards fostering an understanding of the contribution of the pandemic towards enabling the healthcare supply industry to gain a competitive advantage.

- Finally, based on the research findings, a new business model will be developed for health care supply industries to reduce the impact of future pandemics.

R**emuneration**: No remuneration will be paid to you for participating in the study.

Costs of the Study: You will not be made to incur any costs during the research process. Confidentiality:

This study will keep all information gathered from participants confidential and safeguarded to ensure that no unauthorised person has access to it.

Information will be kept confidential by keeping the participants' information will be locked in a secure place and out of reach of unauthorised persons. In an endeavour to protect the anonymity of clients, the research instrument will exclude the participant's personal details such as personal names, physical and home addresses, contact telephone numbers and their job descriptions.

The participant will be given a consent form to complete prior to the interview. The results of the study will be made available as per request from the company. This will be issued via email to the bonafide email address of senior management of the company. Research-related Injury:

There is no research related injury.

Storage of all electronic and hard copies including tape recordings Electronic data will be password encrypted. All paper will be stored in a safe, fire resistant facility with lockable cupboards.

Confidential data will be stored for 5 years after which they will be disposed. Paper documents will be shredded and incinerated while encrypted electronic data will be deleted permanently from electronic media.

Persons to contact in the Event of Any Problems or Queries:

Please contact the researcher Judy Moodley (Tel no. 0748882697), my supervisor Dr K. Akbar (0718819916) or the Institutional Research Ethics Administrator on 031 373 2375.

Complaints can be reported to the Director: Research and Postgraduate Support Dr L Linganiso on 031 373 2577 or researchdirector@dut.ac.za.

Yours sincerely

Researchers signature _____Date_____

_____

Student

Contact Details

_____

Supervisor / Promoter

Contact Details

_____

Co-Supervisor/Co-Promoter

Contact Details

APPENDIX B

CONSENT

Full Title of the Study: The influence during COVID-19 on strategy formulation for sustained competitive advantage of selected healthcare companies in Durban

Names of Researcher/s: Ms Judy Moodley

Statement of Agreement to Participate in the Research Study:

☐ I hereby confirm that I have been informed by the researcher, Judy Moodley about the nature, conduct, benefits and risks of this study - Research Ethics Clearance Number: _____.

☐ I have also received, read and understood the above written information (Participant Letter of Information) regarding the study.

☐ I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.

☐ In view of the requirements of research, I agree that the data collected during this study can be processed in a computerised system by the researcher.

☐ I may, at any stage, without prejudice, withdraw my consent and participation in the study.

□ I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.

□ I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

_____	_____	_____	_____
Full Name of Participant	**Date**	**Time**	**Signature / Right Thumbprint**

I, Judy Moodley (name of researcher) herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

Judy Moodley	11/5/21	
_____	_____	_____
Full Name of Researcher	**Date**	**Signature**
_____	_____	_____
Full Name of Witness (If applicable)	**Date**	**Signature**
_____	_____	_____
Full Name of Legal Guardian (If applicable)	**Date**	**Signature**

APPENDIX C

INTERVIEW GUIDE

INSTRUCTIONS TO THE PARICIPANT

- The research is **ONLY** limited to the Senior Administrative Leadership of the Industry.
- Do not reveal your name when answering the interview questions.
- Before you respond to the question, please read out the question number and the question in full, then respond.
- **Except for section A,**
- Kindly explain all your responses to each question in detail. "**Yes**" or "**No**" responses are highly discouraged.
- Please answer all your questions in the order given.
- Should you feel the need to add more detail to a question that you answered earlier, please feel free to do so, but read out the question Number and the full question first.

SECTION A: DEMOGRAPHICS

A1. : Your Gender ……

A2. : Your Age ……

A3 : Your position in the organisation (e.g. Senior Manager) ……

Section B

Section B: Impact of COVID-19 pandemic on the performance of the health care industry in Durban, South Africa.

B1: What was the impact on the profitability of your organisation during the COVID-19 pandemic?

_____

_____

B2: How was the marketing activities influenced during the COVID-19 pandemic?

_____

_____

B3: The supply of the health care products depends on the raw material procurement, actual production and distribution. Please answer the following questions which is applicable to your industry.

B3.1 How has the COVID-19 pandemic affected your industry?

_____

_____

B3.2 How was the demand for the health care products affected during the COVID-19 pandemic?

_____

_____

B3.3 on attempting to implement the counter measures to mitigate the effects of the COVID-19 pandemic, what challenges were experienced in the supply of healthcare products due to financial constraints?

B4: At the time when the operations were being adjusted in line with the COVID-19 pandemic, explain the shortfalls in the operational process which is applicable to your industry.

B4.1. Explain the shortfall in procurement?

B4 .2. Explain the shortfall in the production process?

Section C: Factors that influenced strategy formulation for sustained competitive advantage of selected healthcare companies in Durban, South Africa.

C1: In response to the COVID-19 pandemic, how did technological changes during COVID-19 influence strategy formulation in your organisation?

_____

_____

C2: How did COVID-19 regulations influence strategy formulation in your organisation?

_____

_____

C3: To what extent did competitor innovations influence strategy formulation in your organisation?

_____

_____

C4: What other factors influenced strategy formulation for sustained competitive advantage in your organisation?

_____

_____

Section D: Strategies developed and implemented by the health care industry in Durban, South Africa to gain a competitive advantage since the emergence of COVID-19.

D1: Describe in detail, the strategies that were formulated by your organisation to gain a competitive advantage during and after COVID-19 pandemic?

_____

_____

D2: In response to the COVID-19 pandemic, what are the technological advancements that have been realised to be important for gaining competitive advantage in the supply of healthcare products?

Thank you for your cooperation

APPENDIX D

QUESTIONNAIRE

SECTION A

Instructions: Please tick (✓) in the appropriate spaces provided

1. Sex: Male ( ) Female ( )

2. Age: Below 25 ( )

Between 26—35 ( )

Between 36—45 ( )

Between 46—55 ( )

Above 55 ( )

3. Marital status:

Single ( ) Married ( ) Others ( )

4. Qualifications:

No formal education ( )

Primary ( )

Secondary ( )

Post-secondary ( )

Above first degree ( )

5. Participants category

Senior Manager	

Middle level Manager	
Lower level Manager	
Professional staff	
Semi-Skilled employee	
Unskilled employee	
Others (*please specify*)	

SECTION B

Instruction: *You are expected to tick appropriately in the box provided against your option,*

True	✓	False		No comment	

What is the impact of the COVID-19 pandemic on the performance of the health care products industry in Durban, South Africa?

	Strongly Disagree	**Disagree**	**Somewhat Agree**	**Agree**	**Strongly Agree**
COVID-19 had a varied impact on the performance of my company					
COVID-19 affected the financial performance of my company					
COVID-19 affected the daily operations of my company					
COVID-19 affected my company's production targets					

COVID-19 affected my company's market share					

What are the COVID- 19 factors that influenced strategy formulation for sustained competitive advantage of selected healthcare products companies in Durban, South Africa?

	Strongly Disagree	**Disagree**	**Somewhat Agree**	**Agreed**	**Strongly Agree**
Social distancing regulations influenced strategy formulation					
Stay at home regulations influenced strategy formulation					
Enforcement of sanitisation regulations influenced strategy formulation					
Competitor innovations during COVID-19 influenced strategy formulation					
Technological changes during COVID-19 influenced strategy formulation					
Changes in the demand for healthcare products influenced strategy formulation					
Changing the operating environment influenced strategy formulation					

	Strongly disagree	**Disagree**	**Somewhat Agree**	**Agree**	**Strongly Agree**
COVID-19 provided opportunities which influenced strategy formulation					
COVID-19 introduced threats which influenced strategy formulation					
COVID-19 exposed organisational weaknesses which influenced strategy formulation					
COVID-19 exposed organisational weaknesses which influenced strategy formulation					

Thank you for your cooperation

APPENDIX E

Gate keepers letters

2020/09/11

To: Ms.Judy Moodley

This letter confirms permission granted to you to continue your research under the topic "The impact of the COVID-19 pandemic on enhancing the competitive advantage of the health care products supply industry In South Africa" for your Doctoral studies at the Durban University of technology, focused on our organization. We hereby advise that your request has been approved.

Please note that this letter does not entitle you to coerce or force our staff to participate in providing responses you may need. Participation will be strictly voluntary. Kindly avail to us a copy of your study and findings upon completion

The management and staff wishes you the best in your academic endeavours

Sincerely,

Dirk Koekemoer
CEO

eMoyoDotNetZa (Pty)Ltd,
179 Beyers Naude Drive, Northcliff
Johannesburg, 2195.

Silhouette House, 179 Beyers Naudé Drive, Northcliff, 2195, South Africa P.O. Box 4944, Cresta, 2118, South Africa
Tel: +27 11 7821154 | Fax: +27 11 86 5420142 | www.emoyo.net
eMoyoDotNetza (Pty) Ltd | Reg. No.: 2015/414566/07 | Director: Dr. Dirk (H L) Koekemoer

DURBAN CHAMBER OF COMMERCE AND INDUSTRY NPC
EST 1856

A: 101 Isaiah Ntshangase Road, Durban 4001
P.O Box 1506, Durban 4001, KwaZulu-Natal, South Africa
Reg. No: 2015/448265/08
T: +27 31 335 1000 | F: +27 31 303 1149
E: info@durbanchamber.co.za | membership@durbanchamber.co.za
W: www.durbanchamber.co.za

21 September 2020

Ms Judy Moodly

Durban University of Technology

7 Ritson Road, Overport

Durban

4001

Dear Ms. Moodley

RE: PERMISSION TO CONDUCT RESEARCH

This letter serves to confirm that the Durban Chamber of Commerce and Industry hereby acknowledges and approves the research to be conducted through the Durban Chamber of Commerce and Industry for the completion of PhD studies, research topic: The impact of the COVID - 19 pandemic on the health care product supply industry in South Africa.

Please note that the data collected must be treated with due confidentiality and anonymity. This information is also provided by the Durban Chamber of Commerce and Industry on the condition that a copy of the final research output will be given to the Durban Chamber of Commerce and Industry for information purposes.

Yours sincerely

Yolan Nagoor

Manager: Policy and Advocacy

Durban Chamber of Commerce and Industry NPC T: 031 335 1000

CLATEN SUPPLIES

Health and Safety supplies

434 **Main Road**
Malvern
4093
Tel: 031 4641500
Fax: 0867102678

Date : 14 September 2020

To: Ms J. Moodley

Claten Supplies hereby grant permission for Ms Moodley to conduct interviews with regards to the study on the Covid 19 Pandemic on enhancing the competitive advantage of the health care product supply industry in South Africa.

I hope that this meets with the requirements by the University. Wishing Ms Moodley well in her study.

L. Phillips (Director)
0840723889

1 Manchester Road
Wadeville, 1422
Tel. +27 (0) 11 824 0410
Fax: +27 (0) 11 824 0427

PO Box 14853
Wadeville, 1422
Reg No:
2008/029015/07

SPECIALIST HIRERS AND SUPPLIERS OF WELDING AND CONSTRUCTION EQUIPMENT

Att: Judy Moodley

Date: 11 January 2021

Re: Letter of Permission to Conduct Study

I refer to your email dated 9 November 2020 to conduct research study titled: "The impact of the COVID-19 pandemic on enhancing the competitive advantage of the health care products supply industry in South Africa".

Permission is herein granted subject to all the information provided during your research being treated in the strictest confidentiality. We will not be pleased if you breach this confidentiality requirement.

Regards

Richard Allen
Branch Manager
Renttech SA
Durban

KENDON LABORATORIES (Pty) LTD
Reg no 2013/092134/07
Wholesale Distributors of Surgical, Medical & Pharmaceutical Products - Est 1968
5 Maplefield Place, Springfield Park, Durban 4000, South Africa
Directors : S.J Vilakazi ; P.W Turner ; R.H MacKenzie
Manager & Responsible Pharmacist : M.C Lindsay

Tel : (031) 579 4870
Fax : (031) 579 1951
E-mail : kendon@iafrica.com

17 September 2020

Attn : Sr Judy Moodley

This letter serves to confirm that the undersigned agree to participate in your research study titled 'The impact of the Covid-19 pandemic on enhancing the competitive advantage of the healthcare product supply industry in South Africa'.

Please would you kindly advise us in advance of the proposed date and time of the interview sessions.

Please be advised that should we feel that a response to any question breaches our policy concerning intellectual property, that a 'No Comment' response may be necessary.

We would be very grateful if you would provide us with a copy of your study findings on the completion of your research.

Yours sincerely

Mike Lindsay
Manager, Responsible Pharmacist and
Authorised Agent for Medical Devices

Sandra Reddy
Operations Manager and
Buyer of Medical & Surgical Devices

APPENDIX F

Ethical Clearance

Institutional Research Ethics Committee

Research and Postgraduate Support Directorate

2nd Floor, Berwyn Court

Gate 1, Steve Biko Campus

Durban University of Technology

P O Box 1334, Durban, South Africa, 4001

21 February 2023

Ms J Moodley

6 Candis Gardens

149 Mount Vernon Road

Hillary

4094

Dear Ms Moodley

The influence during COVID-19 on strategy formulation for sustained competitive advantage of selected healthcare companies in Durban

Ethical Clearance number IREC 262/21

The DUT-Institutional Research Ethics Committee acknowledges receipt of your Safety Monitoring and Annual Recertification report.

I am pleased to inform you that the study has been approved to continue.

Please note that ethical approval has been extended till **22 April 2024** if the research is not

complete within this time, you will be required to apply for recertification three months before the expiry date.

Yours Sincerely

Prof J K Adam

Chairperson: DUT-IREC

APPENDIX G

ORIGINALITY REPORT

Final Thesis 4 May 2024

Submission date: 04-May-2024 12:51PM (UTC+0200)
Submission ID: 2208800779
File name: Final_Thesis.docx_4_May_2024..docx (995.5K)
Word count: 71343

Character count: 427304

SIMILARITY INDEX 16%

INTERNET SOURCES 14%

PUBLICATIONS 9%

STUDENT PAPERS 6%

APPENDIX H

Statistical Analysis

	Overall (N=133)
Gender	
Male	74 (55.6%)
Female	59 (44.4%)
Age	
Below 25yrs	11 (8.3%)
26-35yrs	38 (28.6%)
36-45yrs	48 (36.1%)
46-55yrs	27 (20.3%)
Above 55yrs	9 (6.8%)
Marital status	
Single	50 (37.6%)
Married	70 (52.6%)
Others	13 (9.8%)
Qualifications	
Primary	2 (1.5%)
Secondary	65 (48.9%)
Post-secondary	46 (34.6%)
Above first degree	20 (15.0%)

	Overall (N=133)
Occupational level	
Unskilled employee	9 (6.8%)
Semi-skilled employee	39 (29.3%)
Professional staff	31 (23.3%)
Lower-level manager	22 (16.5%)
Middle level manager	16 (12.0%)
Senior manager	8 (6.0%)
Others	8 (6.0%)
COVID-19 varied impact on my company performance	
Somewhat Agree	14 (10.5%)
Agree	49 (36.8%)
Strongly Agree	70 (52.6%)
COVID-19 affected my company financial performance	
Somewhat Agree	12 (9.0%)
Agree	48 (36.1%)
Strongly Agree	73 (54.9%)
COVID-19 affected my company daily operations	
Somewhat Agree	13 (9.8%)
Agree	52 (39.1%)
Strongly Agree	68 (51.1%)
COVID-19 affected my company production targets	
Somewhat Agree	13 (9.8%)
Agree	51 (38.3%)

	Overall (N=133)
Strongly Agree	69 (51.9%)
COVID-19 affected my company market share	
Disagree	2 (1.5%)
Somewhat Agree	16 (12.0%)
Agree	45 (33.8%)
Strongly Agree	70 (52.6%)
Social distancing regulations	
Somewhat Agree	18 (13.5%)
Agree	57 (42.9%)
Strongly Agree	58 (43.6%)
Stay at home regulations	
Somewhat Agree	16 (12.0%)
Agree	56 (42.1%)
Strongly Agree	61 (45.9%)
Enforcement of sanitisation regulations	
Disagree	1 (0.8%)
Somewhat Agree	22 (16.7%)
Agree	49 (37.1%)
Strongly Agree	60 (45.5%)
Competitor innovations during COVID-19	
Disagree	1 (0.8%)
Somewhat Agree	24 (18.0%)
Agree	45 (33.8%)

	Overall (N=133)
Strongly Agree	63 (47.4%)
Technological changes during COVID-19	
Disagree	2 (1.5%)
Somewhat Agree	20 (15.0%)
Agree	46 (34.6%)
Strongly Agree	65 (48.9%)
Changes in demand for healthcare products	
Somewhat Agree	25 (18.8%)
Agree	38 (28.6%)
Strongly Agree	70 (52.6%)
Changing the operating environment	
Somewhat Agree	21 (15.8%)
Agree	42 (31.6%)
Strongly Agree	70 (52.6%)
COVID-19 provided opportunities which	
Somewhat Agree	23 (17.3%)
Agree	50 (37.6%)
Strongly Agree	60 (45.1%)
COVID-19 introduced threats	
Somewhat Agree	19 (14.3%)
Agree	54 (40.6%)
Strongly Agree	60 (45.1%)
COVID-19 exposed organisational weaknesses	

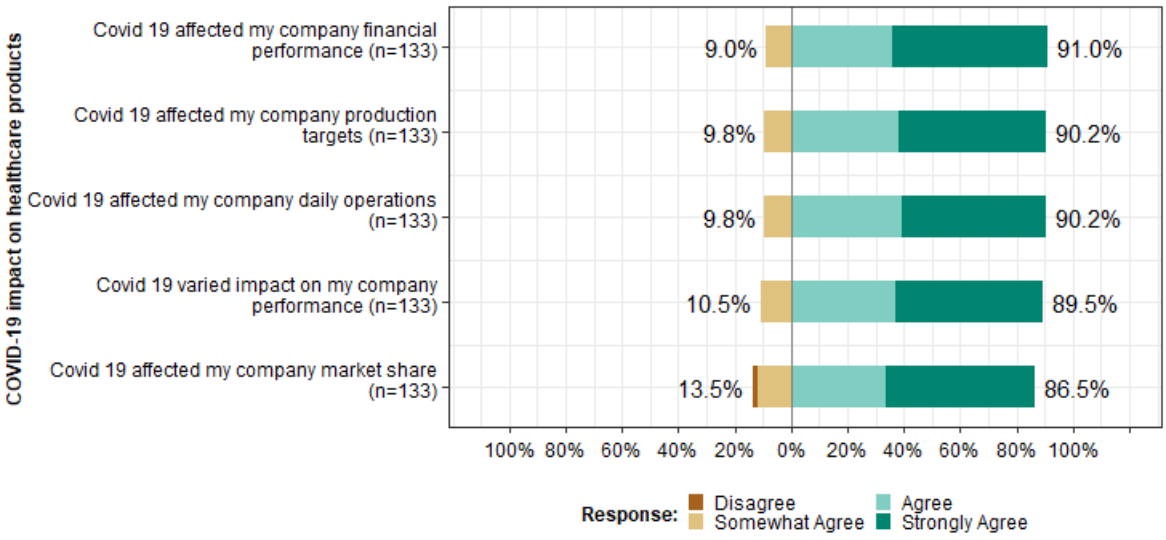
	Overall (N=133)
Somewhat Agree	17 (12.8%)
Agree	49 (36.8%)
Strongly Agree	67 (50.4%)

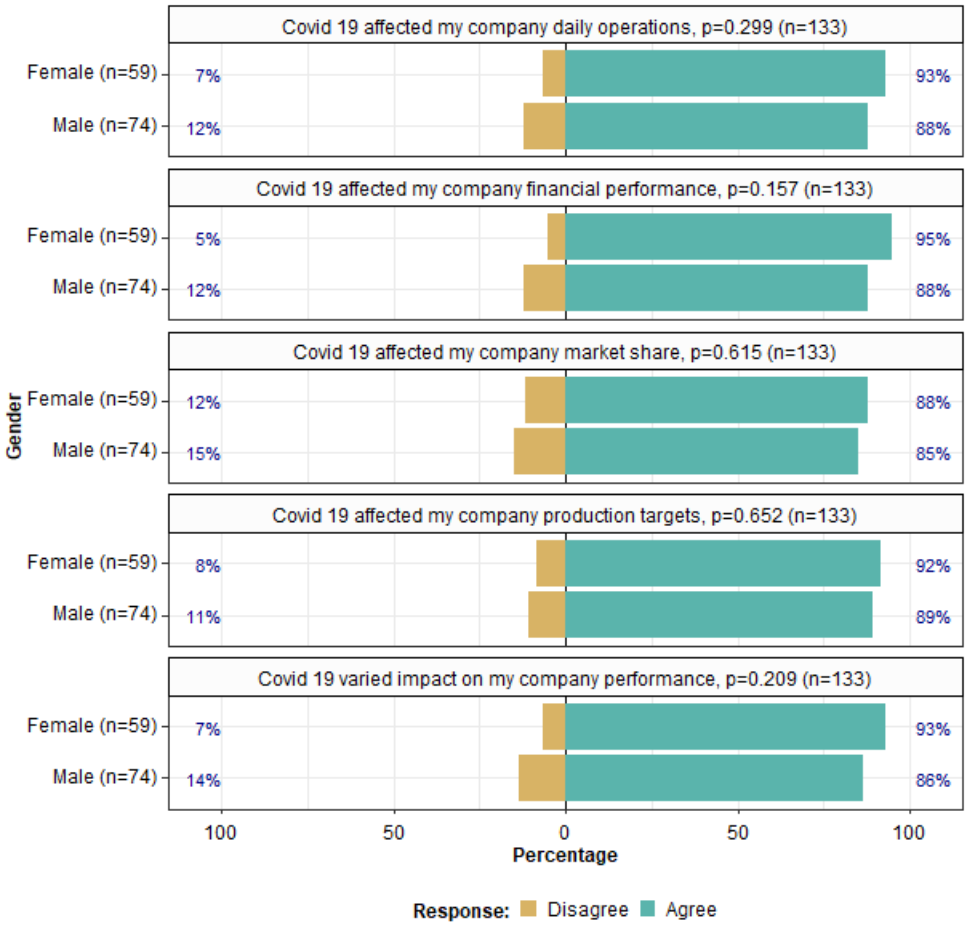
H2: COVID-19 impact on healthcare products

Cronbach alpha > 0.70

Items	Mean	Item-rest correlation	Alpha-if-deleted
COVID-19 varied impact on my company performance	2.421	0.895	0.945
COVID-19 affected my company financial performance	2.459	0.886	0.947
COVID-19 affected my company daily operations	2.414	0.912	0.943
COVID-19 affected my company production targets	2.421	0.887	0.947
COVID-19 affected my company market share	3.376	0.838	0.957
Overall	2.618	-	0.958

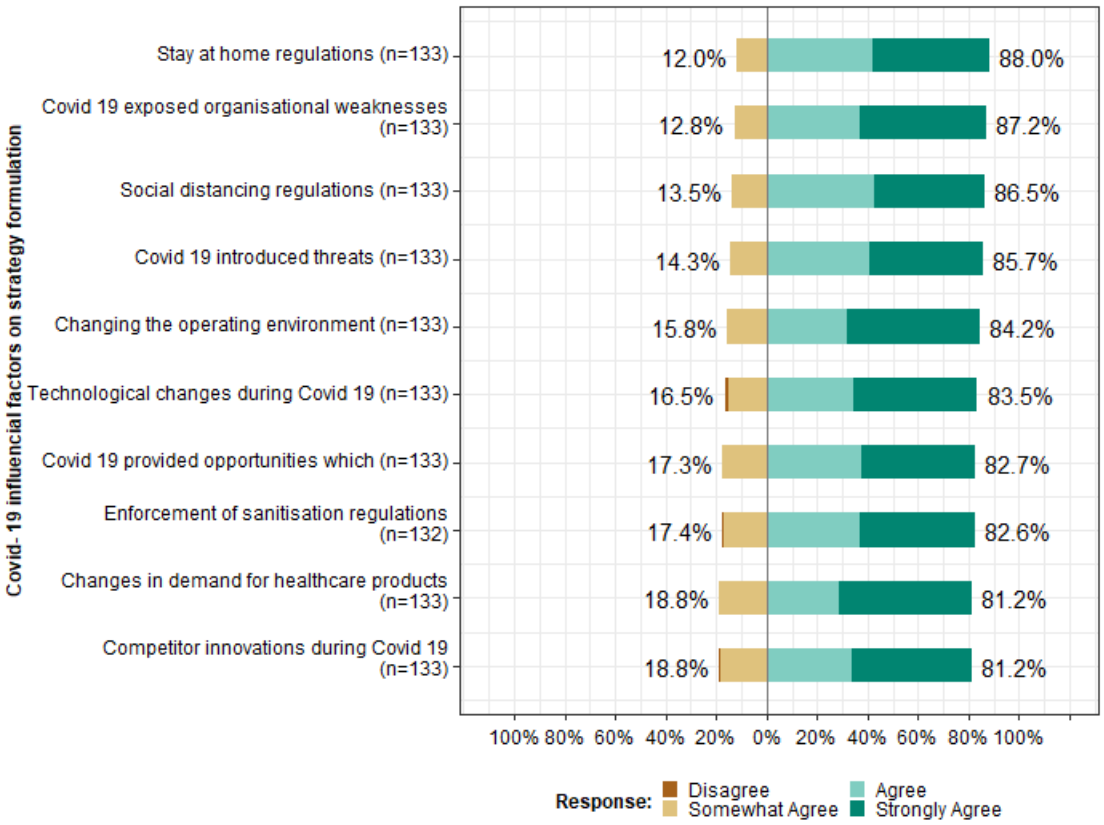
	Improvement	ItemsMaxAlpha	OverallAlpha
ITEMS DROPPED	#N/A	#N/A	#N/A
ITEMS SCALE REVERSED	- #N/A	- #N/A	- #N/A


COVID-19 impact on healthcare products
Covid 19 affected my company financial performance (n=133)
Covid 19 affected my company production targets (n=133)
Covid 19 affected my company daily operations (n=133)
Covid 19 varied impact on my company performance (n=133)
Covid 19 affected my company market share (n=133)
9.0%
91.0%
9.8%
90.2%
9.8%
90.2%
10.5%
89.5%
13.5%
86.5%
100% 80% 60% 40% 20% 0% 20% 40% 60% 80% 100%
Response:
Disagree
Somewhat Agree
Agree
Strongly Agree


Covid 19 affected my company daily operations, p=0.299 (n=133)
Covid 19 affected my company financial performance, p=0.157 (n=133)
Covid 19 affected my company market share, p=0.615 (n=133)
Covid 19 affected my company production targets, p=0.652 (n=133)
Covid 19 varied impact on my company performance, p=0.209 (n=133)
Gender
Female (n=59)
Male (n=74)
7%
93%
12%
88%
5%
95%
12%
88%
12%
88%
15%
85%
8%
92%
11%
89%
7%
93%
14%
86%
100
50
0
50
100
Percentage
Response:
Disagree
Agree

Items	Mean	Item-rest correlation	Alpha-if-deleted
Social distancing regulations	2.295	0.797	0.959
Stay at home regulations	2.333	0.795	0.959
Enforcement of sanitisation regulations	3.273	0.845	0.957
Competitor innovations during COVID-19	3.273	0.854	0.957
Technological changes during COVID-19	3.303	0.865	0.956
Changes in demand for healthcare products	2.333	0.849	0.957
Changing the operating environment	2.364	0.870	0.956
COVID-19 provided opportunities which	2.273	0.838	0.958
COVID-19 introduced threats	2.311	0.782	0.960
COVID-19 exposed organisational weaknesses	2.371	0.792	0.959
Overall	2.613	-	0.962

ITEMS DROPPED	Improvement	ItemsMaxAlpha	OverallAlpha
#N/A	#N/A	#N/A	#N/A
ITEMS SCALE REVERSED	-	-	-
#N/A	#N/A	#N/A	#N/A

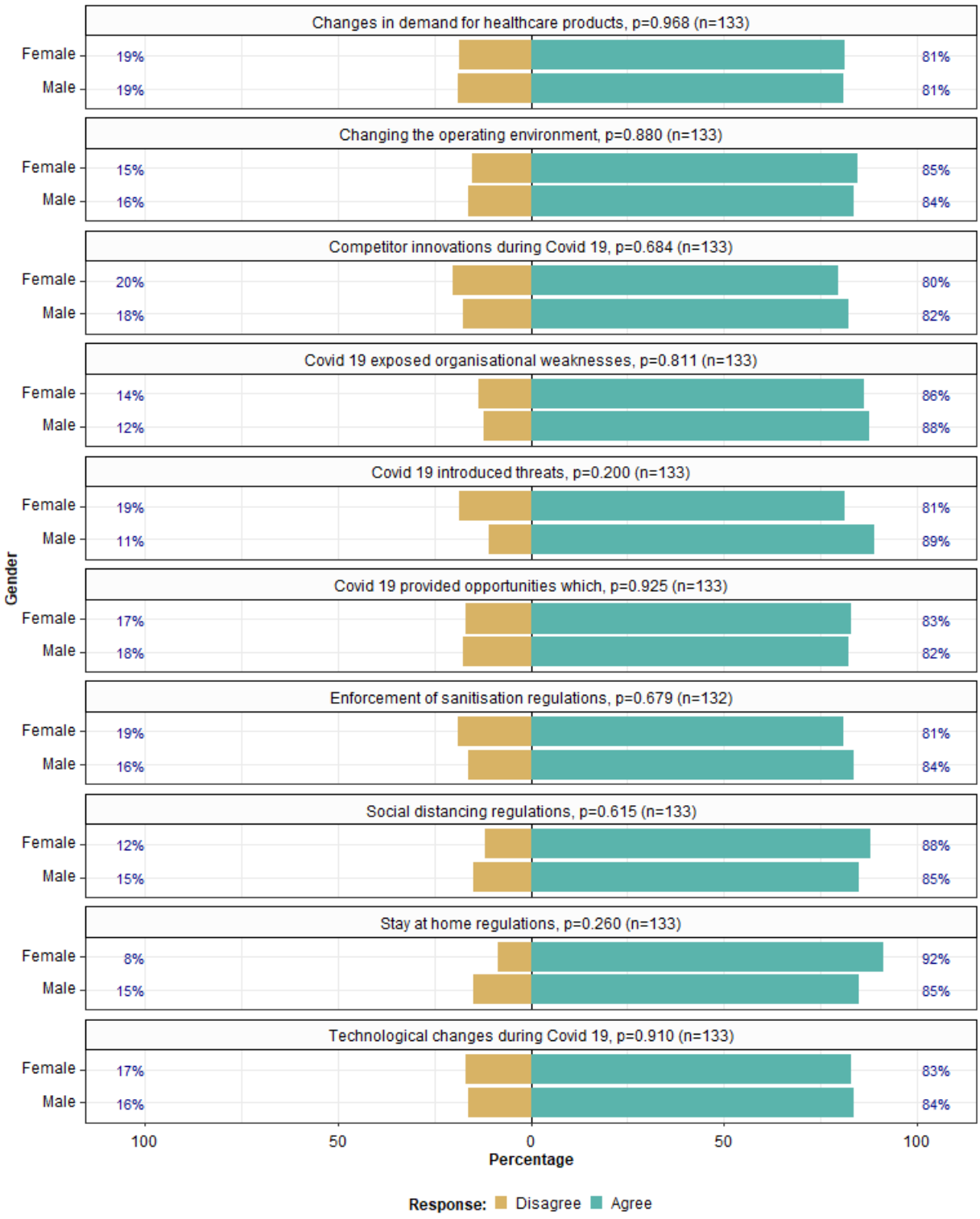


Gender	Male (N=74)	Female (N=59)	p-value	Overall (N=133)
Social distancing regulations			Chisq., p = 0.615	
Disagree	11 (14.9%)	7 (11.9%)		18 (13.5%)
Agree	63 (85.1%)	52 (88.1%)		115 (86.5%)
Stay at home regulations			Chisq., p = 0.260	
Disagree	11 (14.9%)	5 (8.5%)		16 (12.0%)
Agree	63 (85.1%)	54 (91.5%)		117 (88.0%)

Gender	Male (N=74)	Female (N=59)	p-value	Overall (N=133)
Enforcement of sanitisation regulations			Chisq., p = 0.679	
Disagree	12 (16.2%)	11 (19.0%)		23 (17.4%)
Agree	62 (83.8%)	47 (81.0%)		109 (82.6%)
Competitor innovations during COVID-19			Chisq., p = 0.684	
Disagree	13 (17.6%)	12 (20.3%)		25 (18.8%)
Agree	61 (82.4%)	47 (79.7%)		108 (81.2%)
Technological changes during COVID-19			Chisq., p = 0.910	
Disagree	12 (16.2%)	10 (16.9%)		22 (16.5%)
Agree	62 (83.8%)	49 (83.1%)		111 (83.5%)
Changes in demand for healthcare products			Chisq., p = 0.968	
Disagree	14 (18.9%)	11 (18.6%)		25 (18.8%)
Agree	60 (81.1%)	48 (81.4%)		108 (81.2%)
Changing the operating environment			Chisq., p = 0.880	

Gender	Male (N=74)	Female (N=59)	p-value	Overall (N=133)
Disagree	12 (16.2%)	9 (15.3%)		21 (15.8%)
Agree	62 (83.8%)	50 (84.7%)		112 (84.2%)
COVID-19 provided opportunities which			Chisq., p = 0.925	
Disagree	13 (17.6%)	10 (16.9%)		23 (17.3%)
Agree	61 (82.4%)	49 (83.1%)		110 (82.7%)
COVID-19 introduced threats			Chisq., p = 0.200	
Disagree	8 (10.8%)	11 (18.6%)		19 (14.3%)
Agree	66 (89.2%)	48 (81.4%)		114 (85.7%)
COVID-19 exposed organisational weaknesses			Chisq., p = 0.811	
Disagree	9 (12.2%)	8 (13.6%)		17 (12.8%)
Agree	65 (87.8%)	51 (86.4%)		116 (87.2%)

| % and p-values based on non-missing cases | * parametric p-value


Changes in demand for healthcare products, p=0.968 (n=133)
Female 19% 81%
Male 19% 81%
Changing the operating environment, p=0.880 (n=133)
Female 15% 85%
Male 16% 84%
Competitor innovations during Covid 19, p=0.684 (n=133)
Female 20% 80%
Male 18% 82%
Covid 19 exposed organisational weaknesses, p=0.811 (n=133)
Female 14% 86%
Male 12% 88%
Covid 19 introduced threats, p=0.200 (n=133)
Female 19% 81%
Male 11% 89%
Covid 19 provided opportunities which, p=0.925 (n=133)
Female 17% 83%
Male 18% 82%
Enforcement of sanitisation regulations, p=0.679 (n=132)
Female 19% 81%
Male 16% 84%
Social distancing regulations, p=0.615 (n=133)
Female 12% 88%
Male 15% 85%
Stay at home regulations, p=0.260 (n=133)
Female 8% 92%
Male 15% 85%
Technological changes during Covid 19, p=0.910 (n=133)
Female 17% 83%
Male 16% 84%
Gender
100
50
0
50
100
Percentage
Response: Disagree Agree

APPENDIX I

Sury Bisetty Academic Editing Services

The pen is mightier than the sword

To whom it may concern

I edited the dissertation entitled: The influence during Covid-19 on strategy formulation for sustained competitive advantage of selected healthcare companies in Durban by Judy Moodley, student number: 16639837, submitted in fulfilment of the requirement of the degree of Doctor of Philosophy in the faculty of Management Sciences at the Durban University of Technology.

Professional Language and Technical Editor
31 October 2023

CONTACT DETAILS
Email: surybisetty11@gmail.com
Cell no: 0844932878 Tel.: 031 7622 766

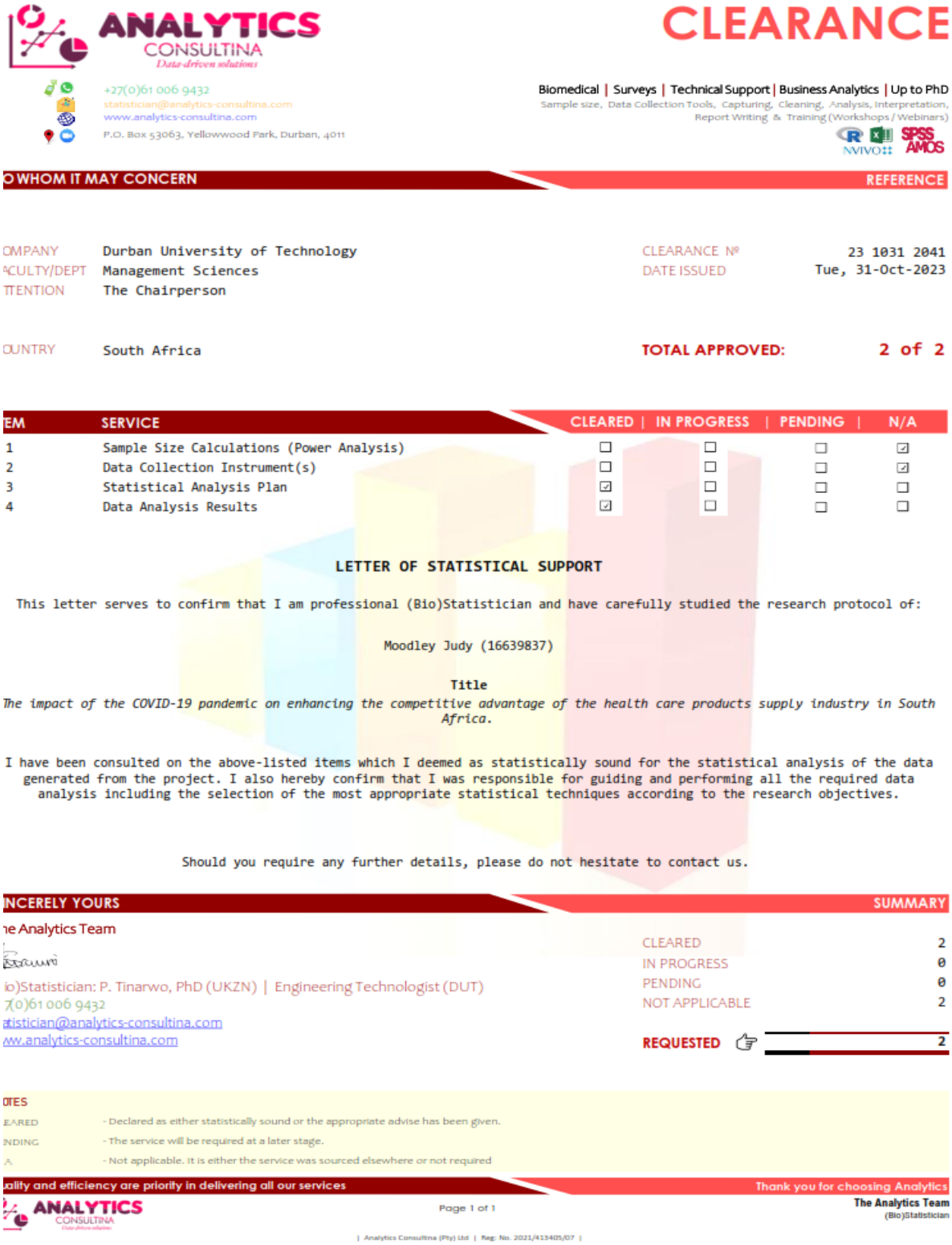
MEMBER OF:
Professional Editor's Guild (BIS002)
South African Council of Educators (222277)
purposes
SAMEA (761237008553)

CERTIFICATION:
BA. UHDE (English Majors)
MLA – Editing & proofreading for academic

ELSEVIER – Editor's guide to reviewing
Editing Mastery: How to Edit to Perfection
Complete writing, editing master class.
PEGSA: Critical Reading

Disclaimer: Please note, I provided language and technical editing as per discussion with the client. The content and structure of the paper were not amended in any way. The edited work described here may not be identical to that submitted. The author, at his/her sole discretion, has the prerogative to accept, delete, or change amendments/suggestions made by the editor before submission.

APPENDIX J



ANALYTICS CONSULTINA
Data-driven solutions

+27(0)61 006 9432
statistician@analytics-consultina.com
www.analytics-consultina.com
P.O. Box 53063, Yellowwood Park, Durban, 4011

CLEARANCE

Biomedical | Surveys | Technical Support | Business Analytics | Up to PhD
Sample size, Data Collection Tools, Capturing, Cleaning, Analysis, Interpretation, Report Writing & Training (Workshops / Webinars)

NVIVO SPSS AMOS

O WHOM IT MAY CONCERN — REFERENCE

OMPANY	Durban University of Technology	CLEARANCE Nº	23 1031 2041
ACULTY/DEPT	Management Sciences	DATE ISSUED	Tue, 31-Oct-2023
TTENTION	The Chairperson		
OUNTRY	South Africa	TOTAL APPROVED:	2 of 2

EM	SERVICE	CLEARED	IN PROGRESS	PENDING	N/A
1	Sample Size Calculations (Power Analysis)	☐	☐	☐	☑
2	Data Collection Instrument(s)	☐	☐	☐	☑
3	Statistical Analysis Plan	☑	☐	☐	☐
4	Data Analysis Results	☑	☐	☐	☐

LETTER OF STATISTICAL SUPPORT

This letter serves to confirm that I am professional (Bio)Statistician and have carefully studied the research protocol of:

Moodley Judy (16639837)

Title

The impact of the COVID-19 pandemic on enhancing the competitive advantage of the health care products supply industry in South Africa.

I have been consulted on the above-listed items which I deemed as statistically sound for the statistical analysis of the data generated from the project. I also hereby confirm that I was responsible for guiding and performing all the required data analysis including the selection of the most appropriate statistical techniques according to the research objectives.

Should you require any further details, please do not hesitate to contact us.

NCERELY YOURS — SUMMARY

he Analytics Team

io)Statistician: P. Tinarwo, PhD (UKZN) | Engineering Technologist (DUT)
7(0)61 006 9432
atistician@analytics-consultina.com
ww.analytics-consultina.com

CLEARED	2
IN PROGRESS	0
PENDING	0
NOT APPLICABLE	2
REQUESTED	2

OTES

EARED	- Declared as either statistically sound or the appropriate advise has been given.
NDING	- The service will be required at a later stage.
A	- Not applicable. It is either the service was sourced elsewhere or not required

ality and efficiency are priority in delivering all our services — Thank you for choosing Analytics

ANALYTICS CONSULTINA

Page 1 of 1

The Analytics Team
(Bio)Statistician

| Analytics Consultina (Pty) Ltd | Reg: No. 2021/413405/07 |

APPENDIX K

Czech Technical University in Prague
Faculty of Civil Engineering
Business & IT journal

Judy Moodley
Durban University of Technology
41/43 M L Sultan Rd
Durban, 4000
South Africa

Khalida Akbar
Durban University of Technology, 41/43 M L Sultan Rd
MANCOSA, 2 Samora Michell Street
Durban, 4000
South Africa

Business & IT journal
Department of Economics and Management in Civil Engineering
Faculty of Civil Engineering
CTU in Prague
Thakurova 7
166 29 Prague 6
Czech Republic

phone: +420 22435 3720
mail: bit@fsv.cvut.cz

Prague, 19th April 2024

ACCEPTANCE LETTER

Dear authors,

I am pleased to officially certify that your article entitled "STRATEGIC RESILIENCE AND COMPETITIVE EDGE IN DURBAN'S HEALTHCARE: NAVIGATING THROUGH PANDEMIC DISRUPTIONS" has been accepted for publication in Business & IT journal, Volume XIV, Issue 1, ISSN 2570-7434 (electronic version).

ČESKÉ VYSOKÉ UČENÍ TECHNICKÉ
FAKULTA
IČO: 68407700

Eduard Hromada, Ph.D.
The secretary of the editorial board
Journal Business & IT