



ORGANISATIONAL RE-ENGINEERING FOR BUSINESS SUSTAINABILITY DURING
TURBULENT PERIODS: A MIXED METHODS ANALYSIS OF ORGANISATIONS IN
TRINIDAD AND TOBAGO DURING THE COVID-19 PANDEMIC

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This Thesis by Charles N. Balkaran has been approved by the committee members below, who recommend it be accepted by the faculty of Unicaf University in Malawi in partial fulfillment of requirements for the degree of

Doctor of Business Administration (DBA)

Thesis Committee:

Dr Girish Chowbay Nuckchady, supervisor

Dr Nathan Musonda, chair

Dr Ismaila Yusuf, external examiner

Dr Brigitte Mukabana Wabuyabo Okonga, internal examiner

Abstract

ORGANISATIONAL RE-ENGINEERING FOR BUSINESS SUSTAINABILITY DURING TURBULENT PERIODS: A MIXED METHODS ANALYSIS OF ORGANISATIONS IN TRINIDAD AND TOBAGO DURING THE COVID-19 PANDEMIC

Charles N. Balkaran

Unicaf University in Malawi

This research utilised a sequential exploratory mixed methods approach (Natow, 2020) to investigate the various dimensions that can assist leaders in the implementation of organisational re-engineering (Hammer, 1990) and for successfully leading their organisations to sustainability (Bayomy et al., 2021; Hammer & Champy, 1993) during turbulent times. Organisational re-engineering has emerged as one of the tools that leaders can use to successfully manage their businesses during turbulent periods (Hammer, 1990). This research was conducted due to the problem that it has generally been found that the implementation of organisational re-engineering is challenging for the achievement of business sustainability during crisis periods (Duchek, 2020).

In the face of uncertainties during turbulent periods, many leaders did not adopt any systematic methodology of implementing organisational re-engineering for successfully manoeuvring their businesses during these times. Many scholars have attempted to provide guidance for the implementation of organisational re-engineering and managing during turbulent periods (Cole & Snider, 2019; Zafari et al., 2020). However, there remains a lack of clarity in this area (Duchek, 2020), with many leaders being confused and oblivious to the availability and use of relevant tools and techniques for implementing organisational re-engineering and leading during turbulent periods (Bottan et al., 2020). This research thus examined the actions of decision-makers throughout the recent Covid-19 pandemic in Trinidad

and Tobago and analysed the effectiveness of different actions utilised by organisational leaders to lead organisations during turbulent periods. The degree of correlation of these actions as against business sustainability were then investigated.

A sequential exploratory mixed methods design was adopted for this research. Data was collected from a sample from a total population of twenty-six thousand and forty-six organisations across Trinidad and Tobago. These consisted of small, medium and large organisations in sixteen main sectors. The quantitative sample of three hundred and eighty-four companies was selected using stratified multistage sampling and simple random sampling (Noor et al., 2022), whilst the data for the qualitative aspect was selected using purposive sampling. The qualitative sample size consisted of sixteen organisations and this was determined when saturation was achieved. Data collection was done through interviews, questionnaires and secondary sources, where they were evaluated using mathematical tools, content analysis, thematic analysis and statistical analysis. The statistical techniques used included missing value analysis, Cronbach's alpha, Pearson's correlation coefficient analysis, Cramer's V, multivariate ranking, trending, measures of central tendency, frequencies, charts and graphs.

The research findings found that organisations utilised a wide range of actions in the pandemic period in an attempt to manoeuvre their businesses during this turbulent period (Pasaribu et al, 2021; Srinivas et al., 2021; Windarto et al. 2021). The key dimensions of organisational re-engineering that were used by the sampled organisations were leadership, strategic, operational, and tactical decision making; information technology infrastructure and adaptations; human resources restructuring; project management practices; and change management systems and process improvement. It was also found that organisations that adopted these dimensions benefitted from increased profitability (Chen, 2016) in the post

pandemic period as compared to the pandemic period. These actions created a pathway for attaining future sustainability (Bayomy et al., 2021; Hammer and Champy, 1993).

In closing, this research contributed towards the practice and body of knowledge surrounding organisational re-engineering. It also appraised organisations about the positive impacts (Njuguna and Wanjohi, 2021) and benefits of organisational re-engineering (Zaboli et al., 2013). Additionally, it provided recommendations for its application and for future research. It filled the research gap of the misunderstandings and lack of clarity surrounding the usage and implementation of organisational re-engineering (Novikov et al., 2016) and provided a framework of five dimensions of organisational re-engineering that will assist leaders in the implementation of organisational re-engineering, management and operations of organisations during turbulent periods.

Keywords: Business Process Re-engineering, Organisational Re-engineering, Turbulent Periods, Crisis, Covid-19 Pandemic, Leadership, BPR, Information Technology, Change Management, Business Sustainability, Project Management, Human Resources Management

DECLARATION

I declare that this research study has been compiled and written solely by myself and that it has not been submitted, wholly or partly in any former application for a degree. Except where states otherwise by reference or acknowledgment, the research presented is entirely my own.

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Dedication

I wish to dedicate the culmination of my attaining this Doctoral qualification to my beautiful and loving wife and daughter, Vedanti-Anne and Charlize. Without them, this tremendous journey would not have been possible. They were the inspiration and driving forces behind my motivation for pursuing and completing this Degree.

"The greatest moments in life are not concerned with selfish achievements but rather with the things we do for the people we love and esteem, and whose respect we need." - Walt Disney

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CHAPTER ONE: INTRODUCTION

According to Peter Drucker, “The greatest danger in times of turbulence is not the turbulence; it is to act with yesterday's logic” (Drucker, 1980, p. 9). The world is dynamic, which creates a landscape that yields both opportunities and turbulence (Mishra, 2024). The dynamism of the world affects organisations to varying degrees (SubbaNarasimha, 2001). What is of great importance is how business leaders deal with and manage these situations (Schoemaker et al., 2018). Turbulence, if not dealt with in an appropriate manner, can lead to the demise of organisations. Schoemaker et al. (2021) noted alert organisations are proactively equipped to identify and deal with threats and opportunities in their early stages, rather than reacting to them at a later time.

Turbulence in the business environment can occur from many internal and/or external environmental factors (Mufudza, 2018). A turbulent environment (Cole & Snider, 2019) may include situations of pandemics, natural disasters, competitive pressures or even mismanagement and prolonged losses. These situations often affect all organisations (Al-Hawary & Al-Syasneh, 2020) at some point during their life cycle. If not identified and addressed in a timely and effective manner, this can create disaster within organisations (Dwipriyoko, 2020), which can eventually result in their closure. Shufutinsky et al. (2021) commented that crises or disasters are characterized by circumstances, events or actions that disrupt or jolt a system. The consequences of crises or disasters are not insular to countries or governmental departments, but also affects all segments inclusive of society, schools, businesses, charities, just to name a few. These scenarios may result from natural disasters, man-made disasters or even from political, social, environmental, or economic situations. Their life span is mostly undetermined and may range from days to years. Shufutinsky et al. (2021) further iterated that during the pandemic in 2020, the world abruptly came into chaos. The pandemic being first of its kind in the modern world stifled global transportation, threatened

personal safety and health, increased unemployment, and caused high economic costs. Businesses that were unprepared for this disruptive stoppage had to forcibly close its operations.

Consequently, many scholars have attempted to provide guidance in this area. Zafari et al. (2020) sought to address this issue indicating that organisations needed to acclimatise and equip themselves with alternative providers of its resources in order to continue operations. Cole and Snider (2019) stated that leaders need to focus on supply chain education to make better decisions to further navigate and connect towards sustaining a stronger global supply chain environment for their organisations. Nevertheless, there remained a lack of clarity in this area, with many leaders being confused and oblivious to the availability and use of relevant tools and techniques for effectively implementing organisational re-engineering and for leading during turbulent periods. This resulted in the closure of many organisations.

Additionally, the influences of success or failure of organisations during turbulent times have not been documented or explored in a systematic and holistic manner (Duchek, 2020). As such, this has led to a research gap. There is a need to explore these factors in greater detail. Moreso, these factors need to be examined in the context of organisational re-engineering (Awolusi & Atiku, 2019).

On that note, the concept of organisational re-engineering is not new and has its impetus by Hammer, Davenport and Short. Hammer (1990) noted that “Reengineering strives to break away from the old rules about how we organize and conduct business. It involves recognizing and rejecting some of them and then finding imaginative new ways to accomplish work” (p. 107). Davenport and Short (1990) supported this view when they postulated that the processes within an organisation are related and linked. This linkage is necessary for achieving defined business outcomes. These researchers extended on Michael Porter’s work in 1980, 1985 and

1990 on competitive advantage (Stonehouse & Snowden, 2007), by outlining a fresh methodology to managing processes for performance improvement.

Subsequent to the initial research and views on re-engineering, several other authors postulated on this concept, often referring to organisational re-engineering by differing names such as business transformation, and business process redesign, with slightly modified interpretations and scopes (Denna et al., 1998). Nevertheless, the concept of the approach of organisational re-engineering was the transformation of a system into a new or modified form (Lokhande et al., 2021) with benefits of positive effects on performance (Njuguna and Wanjohi, 2021). Jerab and Mabrouk (2023) commented that organisational restructuring is a process utilised by companies in an effort to adapt to changes in the business environment. This strategic process assists companies to become viable as it entails reshaping the business structure, its roles and functions, and changing its culture. Companies undertaking organisational restructuring are focused on profitability, cost efficiency targets, partnerships or mergers and acquisitions. The implementation of organisational re-engineering is expected to provide benefits to organisations during both turbulent and non-turbulent periods.

Noteworthy, the concept and theory of leadership have evolved over time to meet the demands of organisations operating in a changing world (Abu Samra, 2014). According to Wu et al. (2021), there have been a number of major disasters over the past years. These included “the Chernobyl nuclear disaster, the Asian Financial Crisis, the tsunami in the Pacific region, the 2008 Global Economic (or Financial) Crisis, the Sichuan earthquake, the Eurozone Debt Crisis, and the COVID-19 pandemic” (p. 1). These situations would have significantly affected the economy and organisations. These scenarios demand business and political leaders to manage the increased demands and stakeholder’s expectations.

Wu et al. further went on to state that leadership behaviour is moulded by context. The actions of leaders greatly affect all internal and external relationships of organisations. It is

therefore important that crisis leadership be adopted to better deal with such situations. The Theoretical Framework underlying this concept and this research is grounded on theories developed by Bass and Stogdill's (1990) on Leadership, Lewin (1947) on the three-step change model, (Taylor, 2017), Full Range Leadership Theory (Bass & Avolio, 1994), Human Capital Theory, Resources Based Theory and Project Management Theory.

Bass and Stogdill's leadership theory suggested that there are three key factors that describe how people develop into leaders – personality traits, a crisis or occasion, or through the process of learning. This research focused on “a crisis or occasion”. Mitroff and Anagnos (2001) built on earlier works from Pearson and Mitroff (1993) and developed a holistic model for the concept of crisis management proposing that predicaments of the past create valuable opportunities for lessons learnt and can be used as templates in the future to avoid similar issues (Browne, 2021). Crisis, dynamic and unpredictable situations require leaders with key skills and traits to carry organisations successfully through these scenarios (Wisittigars and Siengthai, 2019). However, according Balasubramanian and Fernandes (2022), “Crisis leadership during the pandemic, in particular, is arguably in its early development phases, both academically and practically, despite our past experiences with epidemics such as SARS, Ebola, bird flu, H1N1, and MERS” (p. 2). In this vein, this research explored the key dimensions of organisational re-engineering for business sustainability during turbulent periods.

The next sections of this Chapter provide a conceptual and contextual review of the research, and identifies and documents the problem and purpose. Additionally, it provides the importance and purpose of this research as well as the aims and objectives.

1.1 Conceptual/Contextual Review

1.1.1 *Organisational Re-engineering*

This research investigated the various dimensions of organisational re-engineering that assisted leaders to successfully lead their organisations to sustainability during turbulent times. Organisational re-engineering has emerged as one of the tools that leaders can use and implement in order to successfully manage their businesses during turbulent periods. Evstafyeva et al. (2018) postulated that ‘value’ is gained when organisations successfully implement organisational re-engineering. Li and Nazif (2021) noted that organisational re-engineering reviews systems, policies, and organisational structures to raise performance levels and optimise organisational productivity. It involves a critical review of all facets of an organisation with the view of fundamentally improving them.

Nkomo and Marnewic (2021) remarked that organisational re-engineering is a method that can be utilised for assessing the core processes in an organisation. This approach allows for the introduction of novel ideas and processes and aids in the determination of skill types and people that may be required in an organisation to create multidimensional jobs. Organisational re-engineering ensures the relevance and effectiveness of organisations when changes occur. Further, it allows organisations to move away from a narrow mindset and for the implementation of an integrated approach that can facilitate new processes that will affect all departments within an organisation. This supports for a more customer driven organisation and for a reduction in the cost and time taken for the performance of many activities with an organisation.

1.1.2 *Business Sustainability*

Business sustainability is the ability of an organisation to survive in a dynamic environment by formulating and implementing strategies for developing, maintaining and

enhancing its competitiveness. Business sustainability encompasses a wide variety of factors, and its definition must be taken in context of the situation at hand. The sustainability of organizations is measured through a number of factors including its profitability (Edema et al., 2019). For the purpose of this research, changes in profitability were used as a measure of business sustainability.

1.1.3 *Turbulent Periods*

Turbulent periods are unexpected, enigmatic and require a unique leadership style to adapt and respond to such situations to make smart decisions and gather the necessary resources on short notice. Turbulent periods are characterised by periods of high uncertainty which affect the normal operations of businesses. These can be devastating, where it sometimes results in business closures. Jordaan (2019) iterated that the modern business environment is typified with high levels of complexity, turbulence and uncertainty. Survival and success in these types of environments necessitate the development and adoption of appropriate structures, strategies and leadership.

1.1.4 *The Covid-19 Pandemic*

This research focused on the Covid-19 pandemic as this period can be considered as one of the most turbulent periods in recent history that affected all organisations worldwide (Sahu, 2020). The pandemic allowed for an understanding and practical insight into a real-world turbulent period. This period was characterised by numerous business closures, reductions in revenues, increased operational costs, and shortened work hours, just to name a few of the negative impacts. Organisational profits fell during this period for the vast majority of organisations. Turbulent periods are not hypothetical situations; rather they are practical occurrences that occur.

1.1.5 Trinidad and Tobago

Trinidad and Tobago is a small twin island state located in the most southerly region of the Caribbean region. Its population is just over one million, six hundred thousand persons. Trinidad and Tobago is considered the most developed, when compared to its Caribbean neighbours. The island has a relatively large business sector with approximately 26,046 registered businesses (Central Statistical Office, 2022), spread over a wide geographically space. These organisations are of varying sizes.

This research has been conducted in Trinidad and Tobago as a case study approach, so as to obtain an in-depth and contextual understanding of organisational re-engineering and business sustainability during a turbulent period. It allowed for the research to be conducted in a relatively closed environment, with the intention of extrapolating the results and recommendations to other countries. Additionally, it would not have been practically possible to conduct this research using samples from countries all around the world due to time, cost, resources and logistical constraints.

1.2 Statement of the Problem

The problem is that it has generally been found that the implementation of organisational re-engineering is challenging for the achievement of business sustainability during crisis periods (Duchek, 2020). Leaders are faced with a host of uncertainties during turbulent periods (Bottan et al., 2020) and many do not possess the requisite knowhow to successfully implement Organisational Re-engineering during crisis periods. According to Wenzel et al. (2020):

Arguably, since the 1970s, crises have increasingly become an omnipresent part of organizational life. As a result, managers and employees increasingly experience uncertainty concerning the appropriateness of firms' business activities. This, then,

raises questions about how managers and employees can respond effectively to crisis.
(p. v13)

This uncertainty was seen during the recent Covid-19 pandemic. This turbulent phenomenon affected all companies around the world (Sahu, 2020). This belief was reinforced by Dirani et al. (2020) when they asserted that the Covid-19 pandemic tested leadership around the world. Leaders managed this crisis differently where some organisations failed and others rose to the occasion. Failure resulted from leaders using their instincts rather than a structured approach to deal with the Covid-19 pandemic period. This trend was expected to continue unless leaders became more prepared and equipped to deal with such situations.

Since the onset of the Covid-19 pandemic, many research studies were conducted proposing different approaches to managing organisations during this crisis (Margherita & Heikkilä, 2021). However, there was no holistic study conducted (Megahed & Hassan, 2022) that dealt with a specific set of actions or an integrated approach that leaders could successfully utilise to manage any type or size of organisation throughout the Covid-19 pandemic or through any crisis period (Appiah et al., 2022). The studies that were conducted were fragmented and industry specific. Boiral et al. (2021) postulated that the indecisions surrounding the management of the Covid-19 pandemic stemmed from the absence of research on the subject matter, and also due to a lack of, incomplete, and inconsistent information on the topic. Given that there was no precedence to this global, unplanned phenomenon, the approaches adopted by organisations had mixed results (Daniels et al., 2022). Hameed et al. (2022) noted that the implementation of organisational re-engineering would reduce the impact surrounding the negative effects of the Covid-19 pandemic. This has led to confusion for leaders given the misconceptions (Novikov et al., 2016) and absence of clarity of the varying presented approaches for the implementation of organisational re-engineering and the absence of any plausible framework that can be used during turbulent periods. Organisations that did not

effectively implement organisational re-engineering suffered the ill-fate of closed doors (Asikhia et al., 2021).

Moreover, amongst the many negative impacts, it resulted in loss of sales, increased costs, labour shortages, restricted working hours, decreased profitability and the closure of many organisations (Travkina & Luigi, 2020). Undoubtedly, leaders who were incapable of effectively managing their businesses through this turbulent period suffered the wrath of business closures.

Having identified and discussed the problem that this research is seeking to address, the next section of this research focused on an elaboration of the research purpose, aims and objectives.

1.3 Purpose of the Study, Research Aims, and Objectives

1.3.1 Purpose of the Study

The purpose of this mixed methods research is to provide guidance for the successful implementation of organisational re-engineering. This research examined and analysed the effectiveness of the implementation of the different dimensions of organisational re-engineering that were utilized to lead organisations during turbulent periods. More specifically, the actions of leaders throughout the recent Covid-19 pandemic (Ciotti et al., 2020) in Trinidad and Tobago were analysed in this research. Kaushik and Guleria (2020) iterated that the Covid-19 pandemic will tremendously impact all aspects of the world and will cause permanent and far-reaching changes. Importantly, business leaders must be aware and utilize the necessary tools and techniques for effectively managing their businesses during turbulent periods. On that note, Organisational re-engineering was explored as a tool to be used to successfully manage their businesses during turbulent periods.

Accordingly, this research was conducted using a mixed methodology (Natow, 2020) combining quantitative and qualitative techniques (Queirós et al., 2017). Zohrabi (2013) noted that the mixed method approach is now at the forefront where many researchers are choosing this methodology. This is due to this approach allowing both the qualitative and quantitative data to be “simultaneously collected, analyzed and interpreted” (Zohrabi, 2013, p. 254). This methodology facilitates triangulation of the results acquired from both approaches for filling and complementing any data and analysis gaps of each methodology. According to Santos et al. (2020), triangulation analyses information from different angles to reduce bias from a single viewpoint. In conducting the research, focus was made on the financial performance (Bhunia et al., 2011) of the sampled companies prior, throughout and after the Covid-19 pandemic. The movement of these companies’ financial performances was cross correlated (Akoglu, 2018) to the actions performed by these organisations throughout and after the Covid-19 pandemic. The research ascertained the trends and variations in profitability in the pre Covid-19 period, the actual period of the Covid-19 pandemic and the period post the Covid-19 pandemic. This data was used as a gauge to guide on the effectiveness of the actions undertaken by leaders during the Covid-19 pandemic.

Data was gathered from a sample of a wide cross-section of existing small, medium, and large organisations in sixteen main sectors in Trinidad and Tobago who were either positively or adversely impacted by the pandemic. Attempts were made to have a representative sample of organisations spread throughout Trinidad and Tobago. The research’s population was obtained from the Central Statistical Office (CSO) in Trinidad and Tobago, where it was indicated that there were twenty-six thousand and forty-six (26,046) registered businesses existing at the time of this research. Omair (2014) noted that sample selection is a major determining factor in quantitative research. He further went on to state that having an inadequate sample size will result in the rejection of findings. A sample size should be a true

representation of the population so as to avoid any misrepresentation of the population's attributes.

The sample of companies for the quantitative aspect of the research was selected from the population using stratified multistage sampling (Etikan & Bala, 2017), supported by simple random sampling (Noor et al., 2022). The qualitative data was obtained through purposive sampling, while the secondary data was obtained through convenience sampling. Data collection was conducted from the sampled companies through semi-structured interviews, closed-ended questionnaires and from secondary sources. The guiding principle for the conduct of the interviews was the attainment of saturation. The interview was initially conducted on a pilot group for practice of the interviewing techniques and for modifications and implementation of suggestions to the interview questions (Majid et al. 2017). To ensure efficiency of the questionnaire and eliminate any potential practical problems, the questionnaire was firstly conducted and tested on a pilot group where necessary modifications were made prior to administering to the population sample (Van Teijlingen & Hundley, 2002). An exploratory sequential design was adopted where the data obtained from the interviews was used to guide the preparation of the questionnaire. The data gathered was evaluated using mathematical and statistical tools, content analysis and thematic analysis. Statistical software NVivo and SPSS was used to assist in conducting the data analysis. The analysis of the data using these tools was expected to assist in addressing the research questions and purpose of the research. The analysis of the data was used to test the various hypotheses of the research. Barroga and Matanguihan (2022) iterated that prior to the development of research questions, there must be a thorough comprehension of the research's problem that requires investigating, as well as a comprehensive literature review. The questions should be focused and must be developed taking into account a thorough literature review for trends, up to date studies, and developments in the field. Barroga and Matanguihan further stated that hypotheses are tested

in scientific research by gathering data and evidence from research questions. The hypothesis in a study guides the research design, sampling methodology, analysis and expected results. Research questions and hypotheses are derived from conventional theories and practice. They result in new theories and the testing of existing theories. Consequently, it is important for researchers to have knowledge of both quantitative and qualitative research techniques, as both techniques involve using research questions and hypotheses. However, these key elements of research are often ignored or included without the required level of diligence that may be required. It is therefore necessary that all research be properly designed and planned. This will allow for the correct methodology to be chosen and executed for sampling, data collection and analysis, and for properly developing and analysing research questions and hypotheses.

Importantly, there must be an understanding of what is organisational re-engineering (Al-Anqoudi et al., 2021) and its benefits be fully understood, so that its implementation, applicability and adoption to organisations in turbulent times will be a success. Organisations that emerged unscathed from the pandemic re-engineered their organisations (Hameed et al., 2021) to navigate the turbulence created by the Covid-19 pandemic. This led to the development of new ventures and processes (Freitas & Wang, 2020).

Having now discussed the problem and purpose of this research, the next section will address the study's research aims and research objectives.

1.3.2 Research Aim

The aim of this research was to explore the dimensions of organisational re-engineering that will assist organisational leaders in its successful implementation and in navigating their businesses during turbulent times. By doing this, the research emphasised the importance of adopting organisational re-engineering for the achievement of business sustainability of companies in Trinidad and Tobago during turbulent times. The research focused on five

specific dimensions of organisational re-engineering. These are leadership, strategic, operational and tactical decision making; information technology infrastructure and adaptations; human resources restructuring; project management practices; and change management systems and process improvement. The actions of leaders during the pandemic were analysed and their actions compared to these five dimensions of organisational re-engineering. The effectiveness of these actions and their relatedness to the five dimensions of organisational re-engineering was analysed for achieving benefits in the post Covid-19 period. More specifically, the research discovered whether organisations were sustainable in the post Covid-19 period due to the implementation of organisational re-engineering dimensions during the period of the Covid-19 pandemic. The aim of this research is to provide a road map to leaders on how to effectively implement organisational re-engineering and how to lead their organisations during turbulent periods in order to achieve business sustainability.

1.3.3 Research Objectives

The research objectives were:

- i. To investigate the actions undertaken by organisational leaders throughout the Covid-19 pandemic. This objective allowed for the identification of leadership actions during the pandemic period, and later comparison and linkage to dimensions of organisational re-engineering.
- ii. To examine how the actions of organisational leaders during the Covid-19 pandemic affected the financial performance of organisations throughout and after the Covid-19 pandemic. This facilitated the cross correlation of leaders' actions to the financial performance of organisations in the pre-pandemic, pandemic, and post pandemic periods. Improved financial performance was used as a measure of business sustainability.

iii. To analyse the actions of organisational leaders that successfully managed the Covid-19 pandemic as dimensions of organisational re-engineering. This objective facilitated the examination of the correlation of leadership actions during the pandemic to dimensions of organisational re-engineering.

iv. To ascertain the benefits of organisational re-engineering to business sustainability during turbulent periods. This objective allowed for the identification and recognition of specific benefits derived from the effective implementation of organisational re-engineering.

Having previously identified and documented the research problem, purpose, aim and objectives, the research will now move on to expand on the nature and significance of the study.

1.4 Nature and Significance of the Study

1.4.1 Nature of the Study

This research utilized a case study approach (Crowe et al., 2011) using the Covid-19 pandemic (Ciotti et al., 2020) in Trinidad and Tobago for exploring the impact of organisational re-engineering for business sustainability during turbulent periods. This research was conducted using a mixed methodology (Natow, 2020) combining quantitative and qualitative techniques (Queirós et al., 2017). Qualitative data provided an indication of relationship between concepts or variables, after which the quantitative research either confirmed or disconfirmed the various hypotheses generated by the qualitative research. Qualitative research is defined by interactions with the respondents to delve into the human and emotional aspects. This reveals the underlying behaviours that would not be otherwise revealed in quantitative research (Santos et al. 2020). On the other hand, Lakshman et al. (2020) elaborated that quantitative research is more scientific and captures data beyond the human aspect. Qualitative research is required for investigating the ‘why’ and ‘how’ for research.

Specifically, the research utilised triangulation. This facilitated convergence, corroboration, and correspondence of results from the quantitative and qualitative techniques for filling and complementing any data and analysis gaps of each methodology (Greene et al., 1989). Santos et al. (2020) noted that triangulation involves using two or more methods, the quantitative method, and the qualitative method. They went on to state that in order to increase a study's credibility, various data sources are utilised to improve the accuracy and trustworthiness. These methods also facilitate understanding the study at different levels from different perspectives. It helps the study become validated and further alleviate bias in the research findings. Additionally, in the conduct of this research, there was a continuous review of existing literature from current and new research in organisational re-engineering.

Moreso, data was obtained from both primary and secondary data sources (Johnston, 2017). Primary data collection surrounds data collection from the inception source for later use in research (Karunarathna et al., 2024). Primary sources included semi-structured interviews (Kallio et al., 2016) and closed-ended questionnaires (Zhou et al., 2017). Secondary data collection entails data collection from sources that are not new (Karunarathna et al., 2024). Secondary sources included document reviews (Creswell, 2008), annual reports and media clippings. The quantitative data was gathered from a sample taken from a wide cross-section of existing organisations in Trinidad and Tobago, using stratified multistage sampling (Etikan & Bala, 2017) and simple random sampling (Noor et al., 2022), while the qualitative data was gathered using purposive sampling and the secondary data from convenience sampling.

The collected data was evaluated using mathematical and statistical tools, content analysis and thematic analysis. This included correlation, measures of central tendency, summaries, grouping, coding, and reporting. NVivo and SPSS statistical software were used to assist in the data analysis. Data gathered from quantitative and qualitative techniques was triangulated against each other for increased validity and reliability of the research (Golafshani,

2003). Ahmed and Ishtiaq (2021) noted that reliability and validity are essential factors necessary for research. Validity is concerned with the ‘what’ of a measurement instrument, whereas reliability deals with the data’s integrity and error degree. Every effort was made to ensure that the trustworthiness, reliability, and validity of the research was maintained at each stage.

1.4.2 Significance of the Study

This research sealed the gap on the successful implementation and use of organisational re-engineering during turbulent periods by providing the dimensions of organisational re-engineering that will assist organisational leaders in successfully implementing organisational re-engineering and navigating their businesses during turbulent periods. According to Harika et al. (2021), re-engineering is expected to improve processes, enhance efficiency, provide cost savings, increase value, and create a sustainable competitive advantage. The research thus exemplified the positive impact of implementing organisational re-engineering during turbulent times (Njuguna and Wanjohi, 2021). In so doing, it focused on the Covid-19 pandemic which can be considered as one of the most turbulent periods in recent history that affected all organisations worldwide (Sahu, 2020). The research identified, documented, and analysed the actions that contributed towards the success or failure of organisations throughout the Covid-19 pandemic.

This research sensitized organisations to the benefits of implementing organisational re-engineering, and it provided an alert for the imminent danger of not implementing organisational re-engineering during turbulent times (Zaboli et al., 2013). It filled the existing research gap of the misunderstandings and lack of clarity surrounding the implementation and usage of organisational re-engineering (Novikov et al., 2016) and provided the dimensions of organisational re-engineering that will assist leaders in the implementation, management, and

operations of organisations during turbulent periods. It also provided a source for further study in this field by affording the opportunity for researchers to explore the effectiveness of the recommended organisational re-engineering dimensions (Awolusi & Atiku, 2019). The outcome of this research is expected to lend assistance to organisations in implementing organisational re-engineering and in manoeuvring during turbulent periods with the anticipation of positive organisational outcomes.

Having expounded the nature and significance of this research, the next section of this Chapter provides the research questions and research hypothesis relevant to this research.

1.5 Research Questions and Research Hypotheses

1.5.1 Research Questions

The guiding research questions for this research are:

- i. What were the actions undertaken by organisations for the duration of the Covid-19 pandemic?
- ii. How have the actions of leaders during the Covid-19 pandemic affected the financial performance of organisations throughout and after the Covid-19 pandemic?
- iii. How are the actions of organisations that successfully managed the Covid-19 pandemic aligned to dimensions of organisational re-engineering?
- iv. What are the benefits of organisational re-engineering to business sustainability during turbulent periods?

1.5.2 Research Hypotheses

Following the literature review in Chapter Two, the statement of problem and the research gap were identified. The research questions were developed in response to the research gap, after which the research hypotheses were developed. These are presented below:

Let **H₀** represent the null hypothesis.

Let **H₁** represent the alternative hypothesis.

- i. **H₀**: Leadership strategic, operational and tactical decision-making does not drive the relationship between the implementation of organisational re-engineering and business sustainability during turbulent periods.
H₁: Leadership strategic, operational and tactical decision-making drives the relationship between the implementation of organisational re-engineering and business sustainability during turbulent periods.
- ii. **H₀**: Information technology infrastructure and adaptations are not necessary to achieve business sustainability during turbulent periods.
H₁: Information technology infrastructure and adaptations are necessary to achieve business sustainability during turbulent periods.
- iii. **H₀**: Systems and process improvement, as a facet of change management, does not positively moderate the relationship between organisational re-engineering and business sustainability.
H₁: Systems and process improvement, as a facet of change management positively moderate the relationship between organisational re-engineering and business sustainability.
- iv. **H₀**: The application of project management practices does not strengthen the relationship between organisational re-engineering and business sustainability.

H₁: The application of project management practices strengthens the relationship between organisational re-engineering and business sustainability.

- v. **H₀:** Human resources management restructuring is not a necessary component to achieve business sustainability during turbulent periods.

H₁: Human resources management restructuring is a necessary component to achieve business sustainability during turbulent periods.

- vi. **H₀:** Organisational re-engineering does not lead to the sustainability of organisations.

H₁: Organisational re-engineering leads to the sustainability of organisations.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This Chapter focused on the theoretical framework governing organisational re-engineering and conceptual framework linking the implementation of organisational re-engineering to business sustainability. Given the varying terminologies used interchangeably for organisational re-engineering (Denna et al., 1998), a wide literature review was required. The literature review spanned the development of organisational re-engineering since its conception in 1990 with an emphasis on peer-reviewed, scholarly research sources that were published during the most recent five years. Sources of literature included Google Scholar, ProQuest, EBSCO, Sage, ResearchGate, Harvard Business Review and Emerald.

2.2 Theoretical/ Conceptual Framework

The founding father of re-engineering was Michael Hammer, a former MIT Professor. He published his work “Reengineering Work: Don’t Automate, Obliterate” in the July/August 1990 edition of the Harvard Business Review and coined the term BPR (Hammer, 1990). The notion of Organisational Re-engineering is not new, and has its stimulus by Hammer (1990), and Davenport and Short (1990). Hammer’s work built on concepts advanced by Davenport and Short (1990) when they “published an article in Sloan Management Review titled: The New Industrial Engineering: Information Technology and Business Process Redesign”, (Harari, 1996). Davenport and Short (1990) viewpoint were that “business processes as a set of logically-related tasks performed to achieve a defined business outcome” (p. 12).

“Reengineering was created in response to the Japanese concept of quality management and represents a pragmatic approach to change in line with the American way of thinking” (Petrović et al., 2020, p. 144). Hammer developed the concept as a framework for improving productivity in organisations (Fetais et al, 2022a). Elapatha and Jehan (2020) further stated that

organisational re-engineering can be used both in the private and public sectors. According to Kim and Ramkaran (2004), desirable results cannot be achieved from fixing or restructuring individual parts of a system. If a system is broken or not producing the desirable results, then its supporting processes and organisational structures must be obliterated and new, more innovation and effective processes should be instituted for accomplishing the desired outcomes of the system. However, Petrović et al. (2020) noted that there are misconceptions towards re-engineering. He expressed that for instance, some organisations conduct a major reorganisation, and it is referred to as re-engineering. Even when organisations reduced staff or improved functionality for better efficiency, they may not undergo the full process. This was also wrongly denoted as re-engineering.

Bayomy et al. (2021) provided clarity on the concept when they remarked “Business Process Re-engineering (BPR) provides a roadmap of how to efficiently achieve the operational goals in terms of enhanced flexibility and productivity, reduced cost, and improved quality of service or product”. In this vein, Bayomy et al. (2021) developed the following BPR Life Cycle (Figure 2.1):

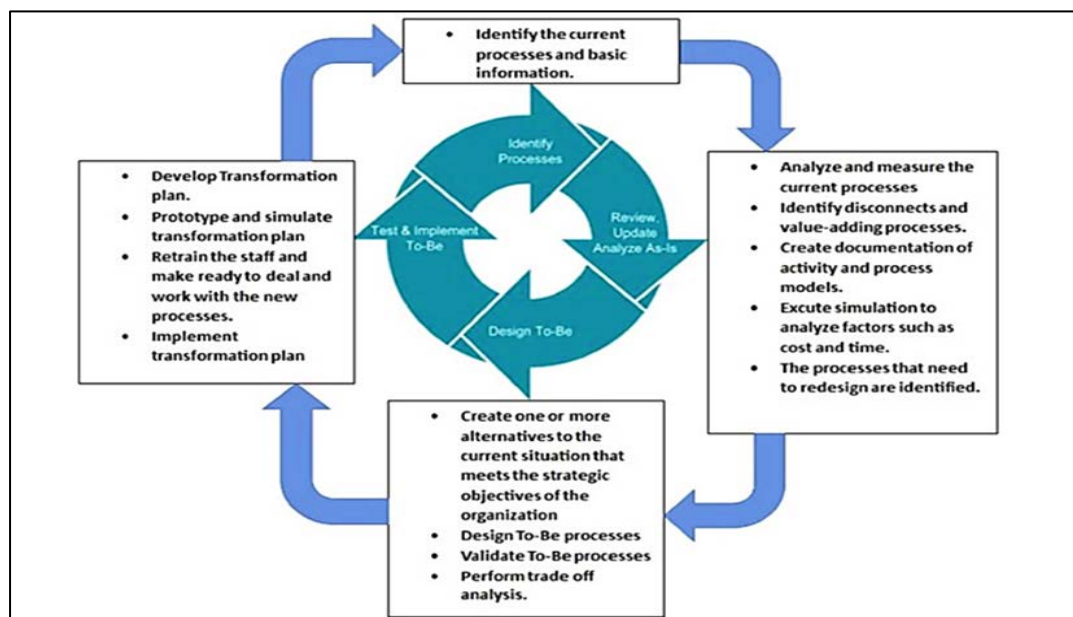


Figure 2.1. *The Proposed Adaptive Model for Business Process Reengineering.*

Note. Extracted from Bayomy et al. (2021), p. 10.

Hammer (1990) postulated that “Reengineering strives to break away from the old rules about how we organize and conduct business. It involves recognizing and rejecting some of them and then finding imaginative new ways to accomplish work” (p. 107). Ashayeri et al. (1998) reinforced this view describing organisational re-engineering as an instrument for dealing with organisational externalities. It positively transforms organisations to achieve their strategic pillars. Ashayeri et al. (1998) sought to demonstrate the scope and impact of BPR diagrammatically (Figure 2.2) as follows:

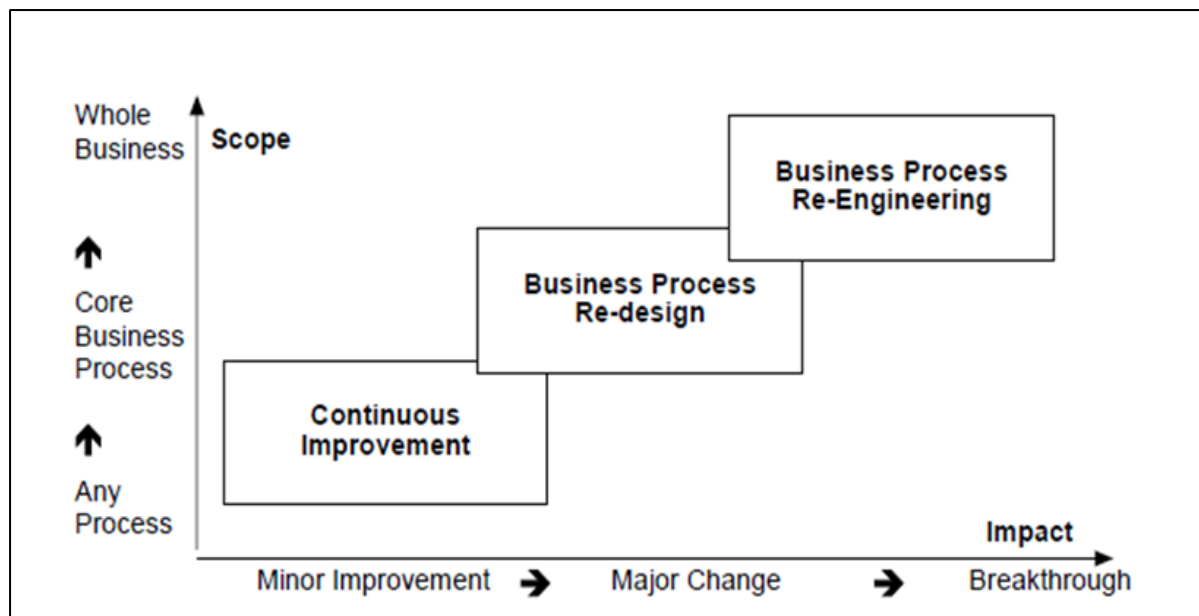


Figure 2.2. *Scope and Impact of Alternative Business Improvement Approaches.*

According to Kim and Ramkaran (2004, p. 2-3), Hammer’s framework consisted of seven best practices and principles. These were:

- i. “Organize around results and outcomes, not tasks (several jobs are combined into one)
- ii. Have those who use the output of the process perform the process (workers make decisions)
- iii. Subsume information-processing work into the real work that produces the information (the steps of the process are performed in a natural order).

- iv. Treat geographically dispersed resources as though they were centralized (hybrid centralized/decentralized operations are prevalent).
- v. Link parallel activities instead of integrating their results (reconciliation is minimized).
- vi. Put the decision point where the work is performed, and build control into the process (checks and controls are reduced).
- vii. Capture information once and at the source (work is performed where it makes most sense)".

Later in 1993, Hammer teamed with Champy to further develop this initial concept in their book publication entitled "Re-engineering organizations: An Introduction to the Business Revolution". This publication called for a review of the activities, operations and procedures of organisations and changing them fundamentally and wholly to meet the occurrences and changes of the business environment (Nkomo & Marnewick, 2021). Hammer and Champy (1993) clarified business process reengineering as "the fundamental rethinking and radical redesign of business process to achieve dramatic improvement in critical contemporary measures of performance such as cost, quality, service, and speed" (p. 32). They contended that the theories on division of labour of the 19th century were inapplicable to companies of the 21st century given the complexities of 21st century practices and that the related difficulties with managing and coordinating activities as specified by the concept of the division of labour model are very challenging. They presented the theory of having business processes re-designed with a clean sheet, where workforces are expected to think, take responsibility, and act. Hammer and Champy (1993, p. 3) added two further best practices and principles. These were:

- i. "Processes have multiple versions.
- ii. A case manager provides a single point of contact".

Subsequent to the inceptive research and viewpoints on re-engineering, several other researchers hypothesised on this framework (Kim & Ramkaran, 2004), often referring to organisational re-engineering by differing names such as business process re-engineering (BPR), business transformation and business process redesign, with slightly altered explanations and scopes (Denna et al., 1998). According to Boudreau and Robey (1996), business process re-engineering has acquired many different meanings, from restructuring of distinct work tasks to imposing profound change throughout an organisation. Such variations in interpretation may align with professional interests and expertise.

Harrington (1991) used the concepts of total quality management to define re-engineering as an improvement, rather than a revolutionary re-design. Ligus (1993) saw re-engineering as agility focused, while Talwar (1993) saw it as strategy driven. Booth (1994) refined it as being management accounting oriented, while Miller (1995) developed it as aphorisms. The principles of Klein (1995) approach were very similar to Hammer and Champy. Atefi (1997) attempted to distil commonalities in processes, arguing that re-design heuristics have many similarities. The approaches of other researchers were all very similar, all revolving around corporate renewal, with a focus on processes. Zinser (1998) agreed that radical changes in business process thinking were the best method of executing processes when there are dramatic variations in paradigms. In Hammer (2002) the concept was further refined from being a one-shot re-engineering to continuous management of processes.

Despite the many perceived benefits of organisational re-engineering, the concept was highly criticized for its high failure rate (Kim & Ramkaran, 2004). However, Teng et al. (1998) noted that the high failure rate was not due to issues with the model of business process reengineering, but rather to point on its lack of implementation considerations (Fetais et al., 2022b). This has in fact created a research gap (Li & Nazif, 2022), where many scholars have explored the key factors necessary for the effective implementation and employment of

organisational re-engineering. According to Fetais et al. (2022a), the concept is quite expansive. Despite extensive research already conducted in this field, organisational re-engineering is still not fully understood. It is therefore in this vein that this research filled this gap by providing five definitive dimensions of organisational re-engineering that can be used to ensure its effective implementation and the achievement of business sustainability in turbulent periods.

Nkomo and Marnewick (2021) noted that business process re-engineering is usually unsuccessful due to the absence of a standard approach for guiding users when implementing its initiatives. Since business process re-engineering lacks standardisation, it is challenging for leaders to manage and implement new business initiatives. The absence of standards causes difficulties in the comprehension and dissemination of information when new processes and initiatives are developed and implemented. It is therefore necessary that appropriate techniques are used in the advancement and application of business process re-engineering. This will ensure that a standard approach is used to implement business process re-engineering in an organisation. This research closed this gap by providing a structured approach and framework for the successful implementation of organisational re-engineering. In so doing, it examined the impact of organisational re-engineering for the attainment of business sustainability during turbulent periods.

Numerous studies have been undertaken on the assumptions and critical success factors necessary for the fruitful implementation of organisational re-engineering. Hall et al. (2016) postulated that there are three essential elements necessary for a successful BPR initiative. These are breadth, leadership, and depth. Based on their work they concluded that:

Successful projects at Banca di America e di Italia, Siemens Nixdorf Service, and AT&T demonstrate how companies can appropriately make their reengineering projects broader and deeper. Such efforts, however, if poorly managed, provoke organizational

resistance. But such opposition can be overcome if committed managers approach reengineering as a painful but necessary disruption of the status quo. (p. 107)

Mauil et al. (1995), Geralis and Terziovski (2003), Herzog et al. (2007) and Grover et al. (1995) all built on the initial works of Hall et al. (2016). They argued on key issues underpinning organisational re-engineering, including six factors and seven key areas that must be undertaken to attain successful re-engineering. These were commitment from senior management, education and training, teamwork, project of BPR, worker co-operation, information technology support, and levers and results. They indicated that the following six domains may be problematic for the implementation of organisational re-engineering: management support, technological competence, process delineation, project planning, change management and project management.

Other researchers also contributed reasons for the failure of the concept. King (1994) stated that a focus on the tactical as opposed to the strategic process resulted in unsuccessful results. Ozcelik (2010) gave a number of reasons for failure. These included too high an expectation in a short time period, no cost-benefit analysis of the activity prior to executing change, an absence of knowledge on reshaping linked activities (Barua et al., 1996) and lack of communication amongst the IT department and sub-systems of the organisation (Martinez, 1995). To resolve this issue, it was recommended the utilization of a cross-functional team at the organisational hierarchy to drive and execute process designing (Hammer & Hershman, 2010). This type of team will facilitate different points of view when rationalising the most suitable process design (Majeed, 2013). Groznik and Maslaric (2012) contributed a different solution to avoid failure. They stated that effective implementation of organisational re-engineering requires a person who can make strategic decisions and who can take control of the entire process (Fetais et al., 2022a). Nkurunziza et al. (2019) found leadership to be the foremost impetus for organisational re-engineering advancements. This view was also

supported by Petrović et al. (2020) who stated that re-engineering requires a good and experienced manager who possesses the knowledge and qualifications applicable to undertake BPR's complexed processes.

Other researchers spoke of the need of the environment, management style, and structural facets inside the organisation to ensure that organisational re-engineering is a success. Paper and Chang (2005) articulated that success depended on making management's vision into an actionable plan. Abdolvand et al. (2008) spoke about assessing the readiness of organisations for re-engineering and linked this to the success of the concept. Their readiness factors included having an egalitarian leadership, a synergetic work environment, senior management commitment, supportive management, and the usage of information technology. On the other hand, resistance to change played an adverse role. Handoko (2010) alluded that improvements in employee performance was dependant on having an innovative and empowering culture.

Boudreau and Robey (1996) sought to deal with the contradictions in BPR indicating that the foundational problems lay in the definition of BPR and in its application (Fetais et al., 2022b; Riyanto et al., 2018). Secondly, Boudreau and Robey examined "four fundamental contradictions inherent in BPR's analysis of organizations: the fallacy of its 'clean-slate' assumption, the paradox of information technology's role as an enabler of organisational change, the hypocrisy of employee empowerment, and the irony of employee commitment", (Boudreau & Robey, 1996, p. 40). Finally, they suggested postulations of organisational learning and organisational politics to comprehend and provide a solution to the contradictions contained in BPR.

Guimaraes and Bond (1996) listed six constructs for organisational re-engineering implementation in any organisation. These were: changes to processes, planned goals and objectives, the achievement of goals and objectives, execution problems, derived benefits, and

organisational performance. Park (2018) conducted similar studies and identified six different constructs. These were: depth of BPR, management of change, adaption to change, IT practice, information management practice, and information behaviours and values. Attaran (2003) encouraged the use of IT capabilities to implement organisational re-engineering as process redesigning that did not use IT is likely to not succeed. This view was shared by Zuhaira and Ahmad (2021) when they pinpointed IT as one of the main elements of business process management. Studies conducted by Nkurunziza et al. (2019) found that human and IT factors were also necessary for success. Al-Anqoudi et al. (2021) conducted research that focused on success elements, approaches, and instruments of BPR projects. Their findings determined that the human factor is most required.

On the other hand, Bayomy et al. (2021) found that organisational re-engineering success was dependant on four performance measures: processing time, cycle time, quality, and cost of resources. Syed Ibrahim et al. (2019) conducted studies in the telcom sector. They identified thirteen success factors. However, it is worthy to note that IT was not one of these factors. Hashem (2020) examined the banking sector in Egypt for factors necessary for success. The research concluded that the commitment of management, together with having the necessary IT infrastructure, employee management, change readiness were all necessary factors required for success. As a crucial enabler of organisational re-engineering, it was also necessary to have an organisational structure with little formalization. Nkomo and Marnewick (2021) conducted studies in the financial sector. They found success factors to be the proper definition of the expectation of the project, suitable gap analysis, change management, effective communication, proper documentation, and the commitment of leaders.

Alhawamdeh (2021) alluded that the execution of organisation re-engineering in the face of intense competition increases competitiveness. Riyanto et al. (2018) supported the view that organisational re-engineering enhances organisational competitiveness through

organisational change. Successful organisational change is achieved from commitment, change management, and information technology capacity. According to Li and Nazif (2021), organisational re-engineering reviews systems, policies, and organisational structures to raise performance levels and optimize organisational productivity. This in fact contributes towards making an organisation more competitive. Studies conducted by (Pasaribu et al, 2021) on educational institutions proved the positive effectiveness of BPR. Research conducted by (Al-Basal et al., 2021) on a wide cross section of different industries found that organisational re-engineering reduced production costs by reducing operational and activity costs and by minimising non-value-adding activities and processes by the redesign of processes, flowcharts, and distribution for production.

Based on the above, it is evident that the notion of organisational re-engineering has been employed in many and in a wide diversity of fields (Pasaribu et al, 2021; Srinivas et al., 2021; Windarto et al. 2021). It is most applicable for changes to enhance business productivity in a fast-changing, turbulent, or dynamic business environment (Fetais et al., 2022a). Additionally, it is clear that there are varying views on what constitutes organisational re-engineering and also on what are the key factors necessary for the successful implementation of organisational re-engineering. Consistently coming out of the above theoretical review were five key dimensions that are necessary for the effective implementation of organisational re-engineering for the attainment of business sustainability. These were:

- i. Leadership – Strategic, operational, and tactical decision making
- ii. Information Technology – Infrastructure and adaptations
- iii. Human Resources – Restructuring
- iv. Project Management – Project management practices
- v. Change Management – Systems and process improvements

To provide clarity in this area, the following Conceptual Framework (Figure 2.3) is presented:

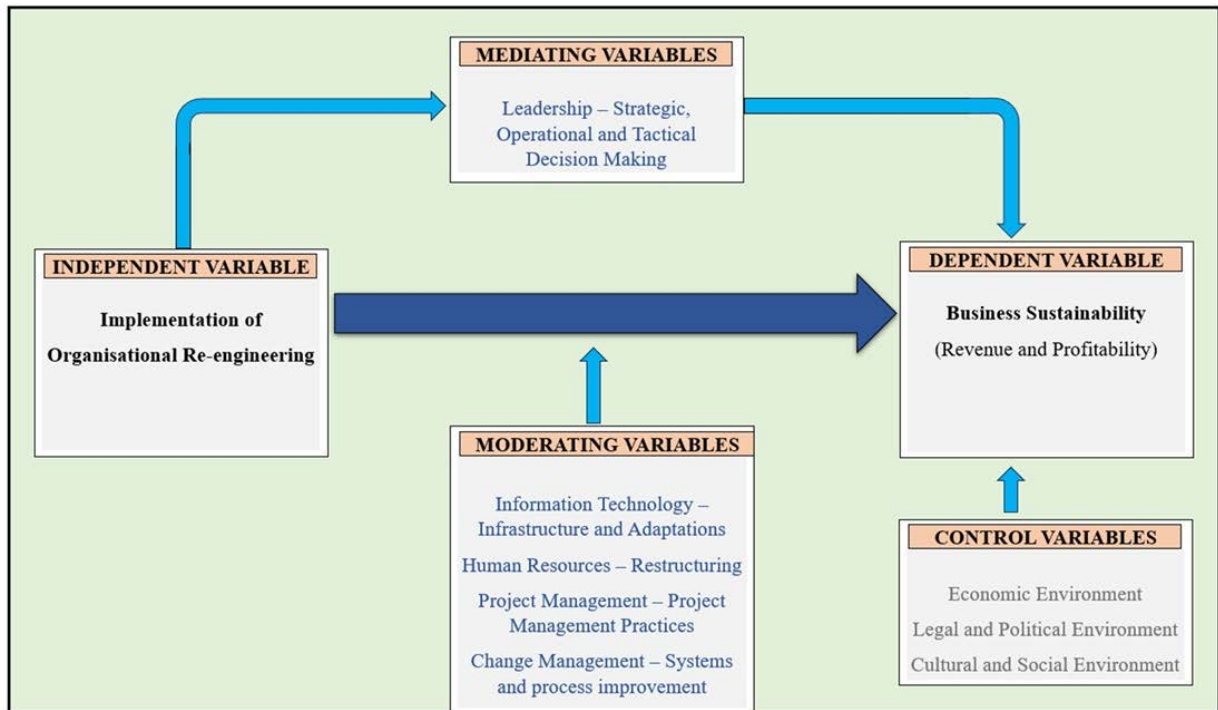


Figure 2.3. *Conceptual Framework.*

At the heart of this framework are the independent and dependent variables of this research, where the ‘cause and effect relationship’ will be tested. The independent variable, ‘Implementation of Organisational Re-engineering’ is expected to have some effect on the dependent variable, ‘Business Sustainability’. The associated hypothesis that was tested is:

H₀: Organisational re-engineering does not lead to the sustainability of organisations.

H₁: Organisational re-engineering leads to the sustainability of organisations.

Business sustainability can be measured by improvements in revenue, cost, quality, service, speed, competitiveness, and performance (Bayomy et al., 2021; Hammer and Champy, 1993). Affecting this cause-and-effect relationship are three main variables. These are

moderating variables and mediating variables. For the purposes of this research, certain factors were considered as control variables. According to Memon et al. (2019), “A moderating variable refers to a variable that influences the nature (e.g., magnitude and/or direction) of the effect of an antecedent on an outcome” (p. 2). In other words, it is a variable that can alter the cause-and-effect relationship that an independent variable has on a dependent variable. Based on the above literature review, a number of factors stood out as moderating variables. These included senior management commitment and support, leadership, IT, human resources, project planning and management, change management, risk management, education and training, organisational resistance, organisational communication, performance management and crisis management. These factors affect the successful implementation of organisational re-engineering.

Unlike moderating variables, mediating variables connect the independent and dependent variables, facilitating a better explanation of the relationship between the independent and dependent variables. At the core of the concept of organisational re-engineering is a need for a radical re-design and a fundamental rethinking of the processes within an organisation. The mediating variables that stood out from the literature review included the organisations’ human resources, processes and activities, systems and operations, policies and procedures, organisational structure, controls, IT, and process management.

Control variables are the variables in the research, while having the potential to have a significant impact on the outcome of the findings will be held as a constant. This is necessary so as to gain a better understanding of the impact and effect that the independent variable has on the dependent variable. The control variables in this research were the economic, legal, political, cultural, and social environments.

Emanating from the literature review were five key dimensions that influenced and connected the independent and dependent variables of this research. These were leadership,

information technology, project management, change management and human resources management. These dimensions were therefore the main focus of this research and so their influence and connectivity were tested as separate hypotheses in this research. The associated hypotheses with each dimension were as follows:

- i. **H₀:** Leadership Strategic, Operational and Tactical decision-making does not drive the relationship between the implementation of Organisational Re-engineering and business sustainability during turbulent periods.
H₁: Leadership Strategic, Operational and Tactical decision-making drives the relationship between the implementation of Organisational Re-engineering and business sustainability during turbulent periods.
- ii. **H₀:** Information Technology infrastructure and adaptations are not necessary to achieve business sustainability during turbulent periods.
H₁: Information Technology infrastructure and adaptations are necessary to achieve business sustainability during turbulent periods.
- iii. **H₀:** Systems and Process Improvement, as a facet of change management, does not positively moderate the relationship between Organisational Re-engineering and business sustainability.
H₁: Systems and Process Improvement, as a facet of change management positively moderate the relationship between Organisational Re-engineering and business sustainability.
- iv. **H₀:** The application of project management practices does not strengthen the relationship between Organisational Re-engineering and business sustainability.
H₁: The application of project management practices strengthens the relationship between Organisational Re-engineering and business sustainability.

v. **H₀:** Human Resources Management restructuring is not a necessary component to achieve business sustainability during turbulent periods.

H₁: Human Resources Management restructuring is a necessary component to achieve business sustainability during turbulent periods.

This research gap surrounding the uncertainty on the effective implementation of organisational re-engineering as identified by the literature review was addressed through a case study approach of the recent Covid-19 pandemic in Trinidad and Tobago. The research examined the use of organisational re-engineering by organisations within Trinidad and Tobago during the Covid-19 pandemic. The Covid-19 pandemic was identified as a recent turbulent period that affected all organisations around the world. According to Teresiene et al. (2021) the Covid-19 pandemic had varying impacts on differing sectors, key being the health sector and the financial and banking sectors.

The research utilised a mixed methodology using both quantitative and qualitative approaches, and primary and secondary data. Firstly, the research examined the actions performed by organisations during the Covid-19 pandemic (Research Question 1). Secondly, these actions were analysed for any relationships with the financial performance of these organisations during and post the Covid-19 pandemic (Research Question 2). Thirdly, there was an examination of how the actions undertaken by organisations that successfully managed the Covid-19 pandemic aligned to dimensions of organisational re-engineering (Research Question 3). Fourthly, the research determined the beneficial aspects of organisational re-engineering for business sustainability during turbulent periods (Research Question 4).

Data was gathered during the course of this research, where it was thoroughly examined and analysed. This provided a comprehensive evaluation of the validity of each of the above hypotheses.

Grounded on the investigation of the research questions, the research provided the varying dimensions for the effective implementation of organisational re-engineering that will support leaders to successfully lead their firms to sustainability during turbulent periods. It addressed the problem of assisting business leaders in successfully implementing organisational re-engineering during turbulent times. It created an awareness for firms about the advantages of organisational re-engineering, and it gave a forewarning of the impending consequences of not implementing organisational re-engineering during crisis periods (Zaboli et al., 2013). It also sealed the existing research gap of the misinterpretations and obscurity encompassing the implementation and employment of organisational re-engineering (Novikov et al., 2016).

The next sections of this Chapter addressed the various dimensions that are related to the both the theoretical and conceptual frameworks of this research. These are leadership, strategic, operational and tactical decision making, as a mediating variable, and information technology infrastructure and adaptations; human resources restructuring; project management practices; and change management systems and process improvement as moderating variables.

2.3 Leadership

2.3.1 Introduction

Leadership has been identified as one of the key dimensions of organisational re-engineering that emerged from the literature review that is necessary for the effective implementation of organisational re-engineering. From the literature review, there are many views on what constitutes leadership and on its definition. According to Stogdill (1974), leadership has been defined in many different ways by several persons. This therefore makes it critical that the development of leadership be understood in context, especially as it pertains to crisis periods. According to Balasubramanian and Fernandes (2022), “Crisis leadership

during the pandemic, in particular, is arguably in its early development phases, both academically and practically, despite our past experiences with epidemics such as SARS, Ebola, bird flu, H1N1, and MERS” (p. 2). Consequently, crisis, dynamic and unpredictable conditions necessitate Leadership with particular skills and traits to carry organisations successfully through these scenarios (Wisittigars & Siengthai, 2019). Soeari et al. (2023) noted that leadership is key for achieving organisational success. They need to be adaptive and ensure that adequate resources are available for improving service quality.

This research next dealt with the development of leadership, followed by the characteristics of a good leader. It also explored various leadership theories and styles. This is essential for gaining an in-depth understanding of leadership during crisis periods. This section ended with a deeper look at effective leadership in crisis periods.

2.3.2 Development of Leadership

It is necessary to have an understanding of the development of leadership, as this is linked to the development of the different leadership theories. Silva (2016) noted that theories of leadership started over twenty-five hundred years ago when Confucius espoused that leaders needed to be virtuous and tend to those around them. Later, Plato, who is recognized as the Father of Philosophy noted that “the leader should be wise” (Silva, 2016, p. 2). Silva went on to provide further details on the development of leadership, noting that a leader should be virtuous and intelligent in order to gain patronage from those around.

The scientific study of leadership began with Max Weber (Maslanka, 2004). His work found the role of leaders to be both problematic and important. On analysing the many postulations from the various scholars on the issue of leadership, two common components emerged (Algahtani, 2014). These were:

- i. The process of influencing an individual, group or team to accomplish a common goal

- ii. To develop a vision.

Northhouse (2007) provided one of the widest definitions of leadership. He identified leadership as having many characteristics: a behaviour, a style, a skill, a process, a responsibility, an experience, a function of management, a position of authority, an influencing relationship, a characteristic and an ability. Northhouse's notion about leadership reinforced the view of DePree (1989) who described leadership as multidimensional and complexed.

Other scholars had a narrower focus on the definition of leadership. Maxwell (1998) described it as an influence. Kotter (1990) definition of leadership had a slant on motivation and inspiration. He saw leadership as "the capacity for collective action to vitalize" (p. 86). Greenleaf's focus on leadership was that the leader should serve followers and that the followers should follow the leader (Bennis & Nanus, 1997). This view was similar to that of Bass (1990). Silva (2016) defined leadership as consensual arrangement where a leader is chosen to achieve a common goal. The key skills of a leader include strategic thinking, planning and delivery, people management, change management, communication and persuasion, and influence.

2.3.3 What Constitutes a Good Leader?

Similar to the multi-faceted views on leadership, there are also many views on what or who constitutes a good leader. The characteristics of a good leader was examined in relation to the actions undertaken during the Covid-19 pandemic. This was necessary to determine the most appropriate skills and characteristics necessary for leading organisations during turbulent periods. Dimitrovska et al. (2023) noted that exceptional leaders are cognisant that people are motivated by emotion. Noteworthy, emotional attachments are created through both individual and group relations. Leaders should take into consideration that each person is unique, and this gives them their own sense of individuality. Leaders must understand and maintain this

individuality in order to harness employees' loyalty and work ethic for achieving organisational success. Great leaders encourage workers towards their self-development due to their confidence in their employees. Leaders have a responsibility to find the potential in their employees and processes and must ensure that this potential is developed. This belief in employees builds the confidence of leaders, allowing employees to easily adapt to new processes and situations.

A leader who has high confidence and self-esteem is not fearful to implement business re-engineering since the benefits are two-way. Leaders must carefully examine their organisation and so as to determine the right timing to execute their plans and changes. Notably, change should begin through careful planning and preparation, and should be executed in small intervals. Leaders should also encourage and motivate their team to obtain relevant skills, make change, as well as accept change. These all help to commence and accelerate the rate of implementing change.

Bennis and Nanus (1997) identified many characteristics necessary for effective leadership. These included "confidence; service mentality; good coaching skills; reliability; expertise; responsibility; good listening skills; being visionary; realistic; good sense of priorities; honesty; willingness to share; strong self-esteem; technical or contextual, and recognition" (Algahtani, 2014, p. 76). Bass (1990) saw a leader as one who uses a transformational style to direct followers, with them following the leader voluntarily. According to Capowski (1994), there are some critical qualities that are required by leaders. These are "integrity; vision; toughness; decisive; trust; commitment; selflessness, creativity; risk taking; toughness; communication ability, and visibility" (p. 12). House (1977) noted that leaders should have charisma; a purpose, an influential ability, and an aptitude to solve problems.

As evident above, there are many commonalities amongst these various scholars on the characteristics of a good and effective leader. However, as we explored below, different leadership characteristics and styles may be required in different situations. The characteristics that may make one leader successful in one situation may also cause that leader to fail in another situation. Wu et al. (2021) iterated that context plays an essential role in moulding leaders' behaviour, actions, thoughts, and leadership qualities. The actions which leaders undertake during a turbulent period has a direct correlation to the impact on their organisation, as well as to their internal and external investors.

2.3.4 Leadership Theories and Styles

Leadership theories have evolved to meet the dynamism of the world (Abu Samra, 2014). The dynamics of the world includes crisis situations which demand leaders with certain characteristics and knowledge to drive organisations successfully through these periods. There is no blueprint for managing organisations through such situations and success is usually dependent on the astuteness and knowledge of the leader. Riggio and Newstead (2023) commented that there is an assumption that leaders usually have to lead under stable circumstances such as in a work organisation, government bureaucracy and social fronts. Moreover, it was noted that many leadership theories hypothesise leadership under steady and constant conditions. However, leadership is most important during turbulent times. Times of chaos put organisations under pressure and leaders need to make fast and pivotal decisions. Given that crises are sudden and unforeseen, and since several turbulent situations are quickly resolved, research on leadership has not been focused on crisis leadership. Crisis is actually looked at from a management perspective and not leadership. This involves preparing for crisis situations and the creation of teams and plans to respond in case such an event was to occur. It must be noted that it is not possible to foresee and adequately plan for every crisis scenario.

Similar to mishaps within the workplace, it is difficult to eliminate crisis and accurately predict it. Turbulent periods are unexpected, enigmatic and require a unique leadership style to adapt and respond to such situations to make smart decisions and gather the necessary resources on short notice.

In the face of crisis situations, leaders are faced with the dilemma of choosing the best strategies, tools, and styles to rally successfully through these periods. Ming-Jian and Ming-Chia (2007) noted that the choice of leadership styles and structures in such situations is very debatable given the many styles that surround leadership. These consist of the Great Man, trait, behavioural and situational theories. Leaders are required to adopt the most appropriate style for effectively leading their organisations during crisis periods.

2.3.4.1 Great Man and Trait Theories. The Great Man theory evolved in the nineteenth century with the belief that only a few and rare persons had the capability to lead (Maslanka, 2004). Following the Great Man theory was the trait theory. The belief in this approach was that leadership was determined by a person's personality and was not a learned skill. Bass (2008) described leaders in this approach as having identifiable characteristics. These characteristics are part of a leader's identity from birth and influences their thoughts, feelings, and actions. These leaders have distinctive features, mannerisms, and intellectual traits (Allen, 2002). Horner (1997) found this theory to be flawed as it ignored the impact of situational and environmental factors on the role of a leader.

Peterson and Van Fleet (2004) also found limitations in the trait theory. They noted that technical, human, and conceptual skills were all necessary for effective leadership. They further explained that the level of skill required changes as an individual moved up an organisation from technical to human and then to conceptual.

2.3.4.2 Behavioural Theory. The early twentieth century found the development of the behavioural theory to deal with the shortcomings of the trait theory. This theory focused on

leadership in a context or situation (Shaw & Stogdill, 1974). The belief of this theory was that leadership can be task-oriented or relationship-oriented (Ming-Jian & Ming-Chia, 2007). According to Allen (2002) scholars who believed in this theory identified certain determinants of leadership where leaders could be trained and developed in these determinants. However, Van Wart (2003) found that these determinants were not effective across all situations. Nevertheless, this approach can be used in crisis situations by combining task-related behaviours and relationship-oriented behaviours for goal attainment.

2.3.4.3 Transactional Leadership. Arising from the behavioural approach was transactional leadership. This leadership style believes in the concept of passive and active approaches (Martin, 2015). The passive approach involves negative reinforcement where a leader's action is driven by a problem. On the other hand, the active approach uses positive reinforcement in the form of praise and rewards to followers for their actions and behaviours. Leaders can use this style to reinforce and/or suppress the actions of followers during crisis periods.

2.3.4.4 Contingency Theory. The contingency theory arose in the 1960s. According to Abu Samra (2014), this theory considers both the situation and factors impacting the entity. Its belief is that there is no singular style of leading and that leadership is based on the prevailing situation. In certain situations, some leaders will excel while in other situations some leaders may fail. Bodla and Nawaz (2010) described the success of this style to be based on the qualities and relationship with followers. Robbins and Coulter (2005) iterated that there are four main contingency theories, each offering its own perspective on leadership. These are the Fiedler's least preferred co-worker theory, the Evans path goal model of leadership theory, the leader-member exchange (LMX) theory and the Kouzes and Posner leader participation model theory.

Fiedler's least preferred co-worker theory involves seeking a good match between leaders and followers. Situational factors will then influence the degree of control the leader has over followers. In Evan's path-goal model, the leader creates the path for followers by setting goals and then directing them towards the goal achievement. Kouzes and Posner leader-participation model is based on the degree and level of participation of a leader in the decision-making process (Bodla & Nawaz, 2010). In the leader-member exchange (LMX) Theory, leaders and their followers build relationships based on their social exchanges (Burian et al., 2014). Both the leader and follower mutually benefit from this relationship by the exchange of resources. This leadership style can be utilized in crisis situations to direct followers towards specific goals.

2.3.4.5 Transformational Leadership. Transformational leaders have the ability to influence their followers for the organisation's goal attainment. They can be likened to visionaries and role models (Hawkins, 2009). Transformational leaders strive to promote the accomplishment of organisations and their employees. This type of leader values their followers and encourages followers to input extra work and go the extra distance to accomplish organisational objectives. This type of leadership is effective in crisis situations.

2.3.4.6 Servant Leadership. Servant leadership is based on the philosophy and disposition of the leader unselfishly serving followers (Balda & Mora, 2011). In this way, the well-being of followers is placed as priority with a clearly defined relationship between leaders and followers. Leaders are able to show and display empathy and awareness and listen to followers during crisis periods (Avolio et al., 2009). It is assumed that this approach will promote teamwork and inspiration of followers, thus leading to their success and happiness, and consequently to organisational goal attainment.

2.3.4.7 Adaptive Leadership. Nicolaides and McCallum (2013, as cited in Heifetz et al., 2009) noted that adaptive leadership necessitates "unlearning old assumptions and attitudes

and learning new ways of knowing, doing, and being” (p. 248-249). It is geared towards new situations that are in crisis or where no predictable solution exists. Adaptive leadership diagnoses the problem and then purposely directs resources to resolve the problem. Resources are not mobilized in a traditional fashion from the top to the bottom, but instead through a change of thinking and distribution of authority across multiple stakeholders and systems (Senge et al., 2008).

2.3.4.8 Inclusive Leadership. Inclusive leadership seeks to include followers and promote teamwork. It is not about individual effort. It is believed that this style of leadership will foster better decision making and goal attainment through inclusiveness rather than through individual effort. This is crucial for crisis scenarios where the participative process fosters success, unity and two-way communication and operations (Hollander, 2012).

2.3.4.9 Fellowship. According to McKimm and Vogan (2020), in Fellowship, the actions and skills of leaders are largely influenced by the reactions of followers. Followers react differently in crisis scenarios and to a changing environment. Traditionally, leadership actions were not influenced by the reactions of followers. Followers were expected to be subservient and passive. However, in this style, the actions of followers largely shape and define the actions of leaders.

2.3.4.10 Gender Leadership. Gender leadership continues to play a major role during crisis situations. Despite their underrepresentation, women leadership has continuously grown over the years (Yarrish et al., 2010). Holden and Raffo (2014) noted that many of the attributes normally associated with leadership do not contribute to effective leadership. In fact, gender is one of the main issues that affects the acceptance and expectation of leaders.

Historically, it has been viewed that leadership positions are more suited for males and that masculine traits are preferred in leadership positions (Koenig et al., 2011). Nanton (2015) noted that males possessed higher task-oriented leadership, while women possessed higher

relationship-oriented leadership skills. This view is tied to traditional roles of women and their power struggles over the years. Their leadership roles are often contested as they operate outside of the social norms of society (Nanton, 2015). Eagly and Karau (2002) noted gender role expectation has been passed down through each generation and this affects decision making and behaviours.

Rhee and Sigler (2015) concluded that men in leadership positions provided more effective leadership than their female counterparts. Despite males and females having similar leadership styles, male stereotype behavior was regarded as being superior to female stereotype behavior making females be viewed as inferior leaders to males. Kolb (1999) held a different view, articulating that there were minor differences in leadership behavior between genders and characteristics such as masculine traits, leadership perceptions, self-confidence and leadership experience were better indicators for the ability to lead. Despite women's perceived roles as leaders, competent leaders of either gender are required and are capable of leading nations, organisations, and followers through crisis situations (Bennis, 2010).

2.3.4.11 Ethical Leadership. “Leaders have an enormous influence in the creation and support of an ethical culture and intrinsically also in its destruction”, (Roque et al., 2020, p. 276). Their actions can make or break organisations. This has been seen throughout history where once formidable organisations such as Enron have collapsed due to unethical leadership. Similarly, leaders need to demonstrate high levels of ethics in crisis situations even amidst the temptation to do otherwise. Failure may result in ruin of organisations and little or no support from followers in leading organisations through crisis situations.

2.3.4.12 Team Leadership. Team leadership builds work teams that are cohesive and productive. The actions of individual followers are integrated to perform in complexed and dynamic environments (Zaccara et al., 2001). Team leadership in a crisis situation pulls everyone on the same page with a common goal.

2.3.4.13 Authentic Leadership. Leadership during crisis situations is complexed with the human component playing a critical role. Leaders must consider factors such as employee well-being and emotions as well as leading the business financially and strategically. The authentic approach to leadership takes a broader perspective than the trait and behavioural approaches and includes virtues of being empathic, self-aware, and having high morals (Gardner et al., 2011). Avolio and Gardner (2005) noted a greater demand for authentic leadership given the rise in catastrophic world events.

Authentic leaders build relationships and motivate followers, listen, and take responsibility for their errors, concentrate on the strengths and growth of their followers and self, and follow sound ethical norms and practices. They focus on the human elements of support and navigate their followers by displaying empathy, teamwork, and trust (George, 2003).

2.3.4.14 Crisis Leadership. Crisis situations showcase leaders from non-leaders. Some leaders have risen to the crisis resulting from the Covid-19 pandemic communicating truthfully and ethically with their followers, while managing the financial, social and economic fallouts. On the other hand, many leaders have failed where business was permanently closed, followers negatively displaced and countless loss of lives (Abrams, 2020). Hall and Rowland (2016) noted that in order to obtain a competitive advantage during a turbulent period where there is a burden upon leaders to increase productivity and lessen costs, leadership and performance management play an essential and key role in achieving these outcomes.

Effective and non-effective leaders have emerged during this Covid-19 crisis as leaders' skills and their decision-making abilities have been placed to the test as was never done previously. The Prime Ministers of countries such as Denmark, New Zealand and Germany took immediate steps to lock down their countries to protect their citizens and avoid the spread, while other countries like Brazil, that delayed taking any action, caused their countries

countless lives. Key to effective Leadership is timely and decisive decision making, and protecting followers. These skills are evident in many of the leadership theories with no one singular theory not advocating for same.

Effective leaders drew upon their experience and followed the recommendations of the science. East Asia countries that experienced the 2003 SARS pandemic immediately began mandatory mask wearing as the norm and took aggressive steps to control the spread. Teamwork and autonomy to public health officials helped managed the spread of the virus. New Zealand's Prime Minister pushed an enormous communication effort to try to obtain collective adherence after her strict lock down of the country at the start of the Covid-19 pandemic. Communication and follower buy-in are essential for effective leadership.

Leaders of financial institutions found creative ways of maintaining their top and bottom lines. They instituted online loan application forms, drop off boxes for loan applications and further developed their online banking platforms allowing easier access and use of the various products that were offered. Leaders set targets, aligned and directed their followers, ensuring that all workers understood the importance of selling financial products and thus obtaining goal attainment.

Some nations experienced devastating consequences when some world leaders used their political platforms for misinformation like using hydroxychloroquine for curing the virus or gave false hope and advocating no mask wearing (Hatcher, 2020). Honesty and ethics are key for effective leadership. Leaders in countries where there were significant deaths and cases were poorly rated by the public (see Appendix A). Effective leaders must be transparent, follow the experts, and practice compassion.

In crisis situations like the Covid-19 pandemic, leaders were called upon for rapid and fast impact decision making. Volatility, uncertainty, complexity and ambiguity existed at every turn. These situations had to be effectively managed by leaders without any blueprint. New

lessons were learnt along the way where leaders had to develop new and creative strategies to keep their organisations alive and successful and also to care for the well-being and emotions of their followers.

2.3.4.15 Full Range Leadership. Amidst all of these challenges, leaders need to choose the most appropriate strategies, tools and techniques for managing crisis situations. There is no one best effective leadership style. Leaders need to slice pieces from all the various approaches on a rational basis to ensure goal attainment. Elements such as communication, core values, realism, innovation, humanism and decision-making are all critical (Kaul et al., 2020). Arguably, a mix between transformational, transactional, and adaptive leadership styles may be the most effective leadership approach amidst a crisis (Sivarat et al., 2021). This concept has its genesis with (Bass & Avolio, 1994). This concept views leadership as being multidimensional (Northhouse, 2007).

2.4 Information Technology

2.4.1 Introduction

The inclusion of information technology is contained in Hammer's initial list of best practices and principles for organisational re-engineering (Kim & Ramkaran, 2004). However, subsequent to Hammer's initial work, there have been various views on the utilisation of information technology as a driver and as a success factor for the implementation of organisational re-engineering. In this research, information technology was considered as a moderating variable in the correlation between organisational re-engineering and business sustainability during turbulent periods. Before proceeding to examine the various views that information technology has on the implementation of organisational re-engineering and business sustainability, it is first essential to explore the various definitions of information technology as well as its benefits.

2.4.2 Definition of Information Technology

The theoretical framework surrounding information technology is the Resource Based View (Agarwal et al., 2025) where organisations effectively use their internal resources and capabilities to achieve a competitive advantage. There is an absence of a universally recognized definition of information technology (Onn & Sorooshian, 2013). The main reason for these variations has been the growth of this field from being basic at its inception ranging from just the employment of simple computer hardware and software to its present day which combines communication and systems networks as well as its inclusion of the information super-highway – the internet. The notion of the evolution of computers in organisations was first explained in 1973 by Richard Nolan’s Stage Theory (King & Kraemer, 1984). According to Mukherji (2002), “over the years, information systems architectures as well as organization structures have evolved from centralized to more decentralized forms” (p. 497).

Thong and Yap (1995) defined information technology “as using computer hardware and software applications to support operations, management, and decision-making in the business” (p.430). Its goal was really to increase productivity. Boar (1997) expanded the definition as “those technologies engaged in the operation, collection, transport, retrieving, storage, access presentation, and transformation of information in all its forms ...” (p. 2). Hollander et al. (1999) regarded information technology as a technology-based facet of information systems. Khashman (2019, as cited in Ellatif et al., 2017) iterated that information, communication and technology encompass both information systems and communication technology. These two areas are necessary for bringing success to the business and organisation together, as well as supply to the organisation all of its requisite information.

Sarosa and Zowghi (2003) alluded that information technology is the use of computer processes for the creation of computer-based systems of information. Carr and Smeltzer (2002)

iterated that information technology involved the use of automated relationships between suppliers and the company via the electronic exchange of data, computer networking with major vendors and information systems. Tan et al. (2009) saw information technology as the solicitation of information and communication technologies instruments for internet connection. It is evident that with the changes in technology over time, the definition of information technology has evolved. Onn and Sorooshian (2013) summed up the term as covering a:

wide range of information processing and computer application in organizations. It will cover systems of information, Internet, information and communication related technologies, and their infrastructure including computer softwares, networks and hardwares, which processes or transmit information to enhance the effectiveness of individuals and organizations. (p. 139)

2.4.3 Benefits of Information Technology

According to Wang et al. (2022), information technology is essential for organisational success. Over time, information technology has morphed beyond its original function. It has revolutionised the way work is conducted bringing to the fore greater efficiency and effectiveness for organisations. This has culminated from the automation of many routine tasks which has resulted in greater productivity with faster and more accurate processing of data at much cheaper costs. This has thereby fostered an environment for greater innovation and productivity.

Additionally, information technology has enhanced communication lines, decision making and learnings in organisations through the usage of paraphernalia such as electronic mail, social media, instant messaging, video conferencing and meeting platforms. Hagar (2011) commented that ICT have revolutionised data management, communication, and storage. Data

can now be stored and retrieved more efficiently and communicated faster. Flanagan and Marsh (2000) noted that information technology has been extensively implemented across several sectors, resulting in a reduction in expenditure and enhanced competitiveness.

Having explored the various definitions of information technology and its benefits, the next sections examined information technology as both a moderating and mediating variable for the implementation of organisational re-engineering.

2.4.4 Information Technology as a Moderating Variable

Similar to the many definitions of information technology developed over the years, there are also many views on whether information technology is necessary for the successful implementation of organisational re-engineering. This section examined information technology as a moderating variable in the link between the implementation of organisational re-engineering and business sustainability.

Maull et al. (1995), Gernalis and Terziovski (2003), Herzog et al. (2007) and Grover et al. (1995) all individually postulated that information technology was one of seven key areas that was needed to be performed for the successful implementation of organisational re-engineering. On the other hand, King (1994) identified that the successful implementation of organisational re-engineering occurred from being strategic oriented rather than tactical oriented. Ozcelik (2010) offered another alternative for the successful implementation of organisational re-engineering. He cited that a lack of knowledge on how to reshape linked processes (Barua et al., 1996) and the absence of communication amongst the information technology department and the sub-systems of the organisation (Martinez, 1995) were the main reasons for failure.

Other scholars postulated on leadership, the environment, management style and structural systems as being necessary for the successful implementation of organisational re-

engineering. Paper and Chang (2005) alluded to the actioning of management's vision while Abdolvand et al. (2008) alluded on the organisational readiness for change. Other scholars like Handoko (2010) concluded that a culture of innovation and empowerment were necessary for improvements in employee performance.

According to Love et al. (1996, as cited in Ahmed et al., 1995), information technology must be viewed as a modern-day innovation that has potential to transform business processes. However, Davenport (1993) espoused that the utilisation of information technology was often insufficient to enable process change. There continues to be polarisation of views on the usefulness of information technology as a driver and critical success factor for the implementation of organisational re-engineering and business sustainability during turbulent periods.

Bhatt (2000) conducted studies on the link between information technology infrastructure and the implementation of organisational re-engineering. The results of the research found "that network infrastructure affects the dimensions of BPR (process improvement thrust, and customer focus), but data integration was not found to be significantly affecting the BPR dimensions" (p. 139). Park (2018) developed six constructs for the successful implementation of organisational re-engineering. Among these were information technology practice, information management practice and information behaviour and values. Attaran (2003) placed great importance on the utilisation of information technology during the implementation of organisational re-engineering highlighting that process redesign without using information technology was likely to not succeed. Zuhaira and Ahmad (2021) supported this view when they identified information technology as one of the key elements necessary for business process management. This view was also shared by Nkurunziza et al. (2019).

These dichotomy of views from various scholars have continued up till today. Bayomy et al. (2021) identified four performance measures for success, none of which included

information technology. Similarly, studies done by Syed Ibrahim et al. (2019) in the Telecom sector also did not identify information technology as one of the factors necessary for success. On the flip side of the coin, studies conducted by Hashem (2020) in the Egyptian banking sector concluded that information technology infrastructure was one of the key tools that were necessary for the effective implementation and execution of organisational re-engineering. To the contrary, studies conducted by Nkomo and Marnewick (2021) in the financial sector did not find information technology to be one of the success factors for implementation.

2.4.5 Information Technology as a Mediating Variable

The previous section completed a literature review of information technology as a moderating variable in the link between the implementation of organisational re-engineering and business sustainability. This section examined information technology as a mediating variable. Mediating variables connect the independent and dependent variables. According to Groznik and Maslaric (2010), information technology must be synergised with organisational re-engineering for connecting and complementing supply logistics and enhancement of functionalities. This view is shared by many scholars. Grover et al. (1998) noted “IT will cause process change which can lead to higher productivity” (p. 143). Their mediating model “of perceived process change with respect to perceived productivity and IT diffusion” (p. 145) is represented in Figure 2.4. Groznik and Maslaric (2010) postulated organisational re-engineering is premised on the effectiveness of information technology.

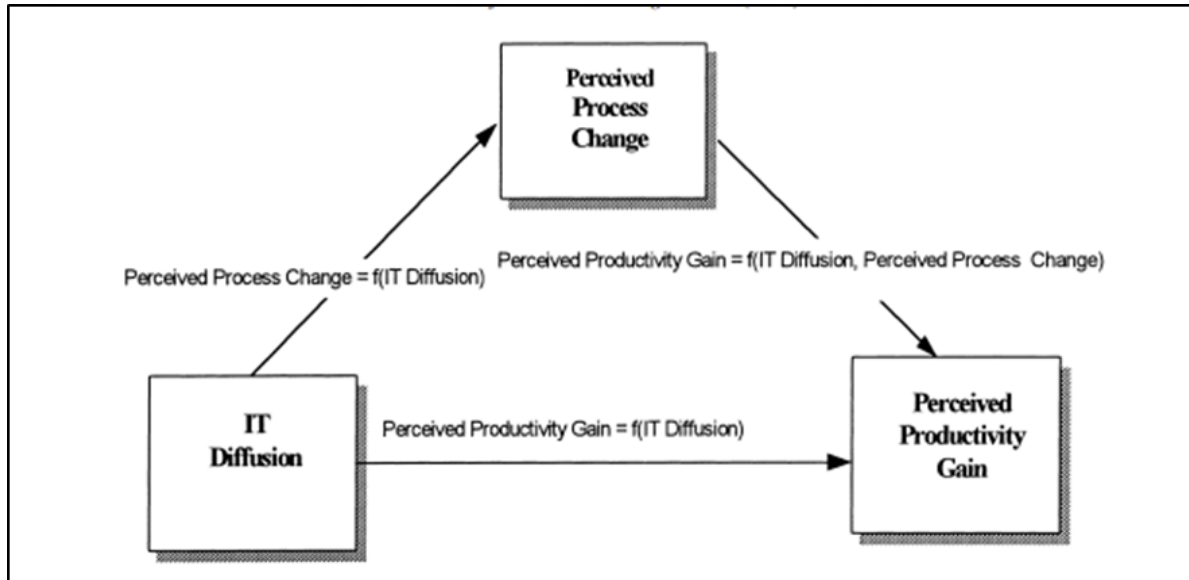


Figure 2.4. *Mediating Effects Model of IT Diffusion, Perceived Process Change and Perceived Productivity Gains.*

Khashman (2019) revealed that there is a strong positive correlation amongst many variables of business process re-engineering and organisational performance when information, communication and technology are used as a mediating variable. Larsen (2003) noted that the integration of information systems was crucial for improving and increasing cost and competitiveness, efficiency, and effectiveness. Hammer (1990) stressed the need for the correct composition of information technology infrastructure to overcome inherent challenges with the implementation of organisational re-engineering, thus leading to a competitive advantage. Salimifard et al. (2010) spoke of the need of partnering with information technology in organisational re-engineering as re-engineering starts in the information technology department and plays a key role on the success of implementation of organisational re-engineering. Reijers and Mansar (2005) noted that information technology accelerates the implementation of organisational re-engineering and also reduces errors and increases productivity.

2.4.6 Conclusion

The definition of information technology has grown with developments in the field, with many scholars having consensus on the perceived benefits of information technology. However, the usage of information technology has to be effectively managed to reap maximum rewards. This view was shared by Norton (1995) when he indicated that inadequate resources are being channelled to the field of information technology despite its known benefits for strategic sustainability.

It can be concluded that there remains a polarisation of views on the role and usefulness of information technology as a moderating variable for the implementation of organisational re-engineering and business sustainability. This has created a research gap which is yet to be closed in its entirety. However, it is clear based on studies conducted by many scholars, information technology is an important mechanism for fundamentally restructuring an organisation (Khashman, 2019). The conduct of this research provided some insight into this research gap and facilitated a basis for further studies in this area by other researchers.

2.5 Human Resources Management

2.5.1 Introduction

The concept of human resources management (HRM) emerged in the 1980s after a rebranding of the term Personnel Management. This resulted from a convergence of thinking to a new perspective where academics “began to consider people and how they are employed and managed in organisations” (O’riordan, 2022, p. 1). Purcell et al. (2003) identified six work human resources practices that is included in Human Resources Management. These included “career development and opportunities for advancement; training opportunities; job influence and challenge; involvement and communication; performance management and appraisal processes and work-life balance” (p. 26). Based on subsequent works by Purcell, an additional

practice was added. This was “the way people worked together to be productive and flexible enough to meet new challenges” (Purcell et al., 2003, p. 32).

In this light, human resources management is very broad and is both a moderating and mediating variable in the relationship between the implementation of organisational re-engineering and business sustainability. These two relationships are explored in the subsequent sections. However, before proceeding to these sections, this literature examined the development of the concept of human resources management.

2.5.2 Concept of Human Resources Management

The technological development of the world and globalisation has changed the perspective of what is considered to be human resources management. The theory of human resources management emerged from many concepts (O’riordan, 2022). One concept was based on Michael Porter’s work on how to achieve a competitive advantage and the resource-based view, while another concept is from the theory of organisational behaviour. The first concept was based on the view that a competitive advantage was gained through the possession of valuable and scarce resources. Fombrun et al. (1984) built on this view conceptualising that human resources add to the unique characteristics of an organisation which then result in a human competitive advantage.

The second foundational concept of organisational behaviour focused on the functioning of organisations and the behaviour of employees (Manuti et al., 2020). This concept was based on organisational performance being dependent on the interaction between human behaviour and the organisation. Consequently, this concept covered a number of areas which included organisational design, organisational culture, employee commitment, motivation, employee engagement and performance appraisals (O’riordan, 2022). Another

foundation concept is the human capital theory. This theory highlights employees as strategic resources that contribute to organisational success.

Coming out of these conceptual theories was an extended definition of human resources management. Armstrong (2016) provided a broad definition, stating “Human Resource Management is a strategic, integrated and coherent approach to the employment, development and well-being of people working in organisations” (p. 7). This definition is consistent with Hammer’s BPR framework where the concept of human resources management was included in many of his seven best practices and principles. These best practices and principles were as follows (Kim & Ramkaran, 2004):

- i. *“Organize around results and outcomes, not tasks (several jobs are combined into one)*
- ii. *Have those who use the output of the process perform the process (workers make decisions)*
- iii. *Subsume information-processing work into the real work that produces the information (the steps of the process are performed in a natural order).*
- iv. *Treat geographically dispersed resources as though they were centralized (hybrid centralized/decentralized operations are prevalent).*
- v. *Link parallel activities instead of integrating their results (reconciliation is minimized).*
- vi. *Put the decision point where the work is performed, and build control into the process (checks and controls are reduced).*
- vii. *Capture information once and at the source (work is performed where it makes most sense)” (p. 29).*

Uthman (2024) explained that human resources management involves the deliberate management and coordination of knowledgeable and experienced staff to fulfil and achieve the strategic goals of an entity. It deals with the management of interrelationships within an

organisation, ensuring that the mental and physical aspects of the workforce are given priority. This interest in employees can lead to better functioning, dedication, productivity, and increased performance of employees. Human resources management functions as an intermediate between the organisation and the employees for achieving its targets. An organisation not only needs physical and financial resources, but also human resources for its success.

Having provided a background on the development and concept of human resources management, the next sections explored human resources management as both a moderating variable and mediating variable in the relationship between implementation of organisational re-engineering and business sustainability.

2.5.3 Human Resources Management as a Moderating Variable

There is a wide array of views on the utilization of human resources management as being necessary for the successful implementation of organisational re-engineering. Dey (1999) iterated that the successful implementation of organisational re-engineering involves a seamless merger of both technical and human elements. The human side of engineering consists of several mutual elements, a well-defined view of the future, new office values and culture, leadership, elevated levels of participation, highly motivated and effective teams, customer driven procedures, new personnel skills and revised selection and promotion policies. These mutual factors can be grouped into different sections: “culture change, analysis, assessment, selection, training and development” (p. 219).

This section examined human resources management as a moderating variable in the link between the implementation of organisational re-engineering and business sustainability. Maull et al. (1995), Geralis and Terziovski (2003), Herzog et al. (2007) and Grover et al. (1995) all noted that education, training, and worker co-operation are all key areas that must be

performed to attain successful re-engineering. Education, training, and worker co-operation are all facets of human resources management. Martinez (1995) noted that lack of communication amongst sub-systems of the organisation was one of the reasons for failure in the implementation of organisational re-engineering. Hammer and Hershman (2010) recommended that the use of a cross-functional team will assist in resolving this issue. The responsibility for effective communication systems and the development of cross-functional teams within an organisation lies within the scope of human resources management.

The concept of human resources management is also responsible for the structural facets within an organisation. Abdolvand et al. (2008) noted that a synergetic work environment as opposed to resistance to change played a key role in the development of readiness factors for the implementation of organisation re-engineering. According to Boudreau and Robey (1996) “the hypocrisy of employee empowerment, and the irony of employee commitment” (p. 41) were factors that contributed to the unsuccessful implementation of organisational re-engineering. Consequently, they recommended various postulations of organisational learning and organisational policies as a solution to these contradictions. Handoko (2010) alluded that a culture that was supportive of innovation and empowerment would lead to the successful implementation of organisational re-engineering and improvements in employee performance.

Park (2018) conducted studies on various constructs for the implementation of organisational re-engineering. Among his constructs were two human resources factors. These were the management of change and information behaviours and values. This was contrary to the constructs earlier developed by Guimaraes and Bond (1996) that did not have any human resources factors. Research performed by Nkurunziza et al. (2019) concluded that both human and IT factors were essential for the implementation of organisational re-engineering, while Al-Anqoudi et al. (2021) alluded that the human factor is most required.

Hashem (2020) in examining the banking sector found employee management and an organisational structure with little formalization to be essential for the implementation of organisational re-engineering. However, Nkomo and Marnewick (2021) in examining the financial sector found effective communication to be one of the key success factors rather than those identified by Hashem (2020). Contrary to the research findings of both Hashem (2020) and Nkomo and Marnewick (2021), Bayomy et al. (2021) concluded that success was dependant on four performance measures, namely, processing time, cycle time, quality, and cost of resources, rather than Human Resources Management factors.

Based on the above, it is evident that human resources management plays a critical role as a moderating link in the relationship between the implementation of organisational re-engineering and business sustainability. The next section of this Chapter explored human resources management as a mediating variable. Mediating variables connect the independent and dependent variables.

2.5.4 Human Resources Management as a Mediating Variable

According to Asriati et al. (2022), successful human resources management aids in the development of strategies for efficient operations and this in turn leads to a competitive advantage within organisations. Macke and Genari (2019) noted that over the years, human resources management focused mainly on the importance of hiring the right workforce to meet its business strategies and demands of organisations. This is maintained within the allocated budget, through cost and revenue approaches for the benefit of the stakeholders and owners of an organisation.

Human resources management thus bridges the link between the strategy of implementing organisational re-engineering and business sustainability. There are normally improved outcomes and support to organisations whenever human resources management is

used in the implementation of organisational re-engineering (Azhar et al., 2013). This view is supported by (Chopra, 2020) when he noted a “positive relationship between good HR practices and business performance” (p. 1). Chopra went on to note that employee development was specific to the implementation of strategic objectives of the organisation and led to better operational results and overall performance. Chopra concluded the mannerism in which an organisation manages and sustains its human resources results in an enhanced performance and increased achievements.

Hernita et al. (2021) alluded that strengthening the capacity of human resources with the use of technology followed by organisational diversification fosters improved productivity. Supportively, Zhiqiang et al. (2021) noted that it is necessary to invest in activities relating to human resources. This fosters the development of employee skills and allows for improvements in overall performance. Hernita further stated that employee development strengthens the organisation’s capacity by improvements in staff’s innate abilities through education and training.

However, the absence of the consideration of human resources issues in the implementation of organisational re-engineering makes a project very difficult (Azhar et al., 2013). Weiss and Hartle (2023) reinforced this view postulating that the human resources management has the greatest impact in the re-engineering process. Weiss and Hartle explained that it involves making the work environment fair by the creation of a productive climate. It is therefore important that human resources management be taken into consideration when implementing organisational re-engineering as it is very critical (Bako & Banmeke, 2019). Support from middle management is most difficult as they are the ones “to identify change opportunities and perform them, while they are the group facing most threats as BPR as often is used for cutting hierarchies and reducing the workforce” (Bako & Banmeke, 2019, p. 4). Another human factor identified by Bako and Banmeke was the alignment of the work force

with the vision of the corporate culture of the organisation. Additionally, Bako and Banmeke contended that training and development must be undertaken so as to move decision making and empowerment lower down the organisational hierarchy. Organisational change is a phenomenon of growth and development in organisations. Where employees did not commit to organisational change, this resulted in failure of organisations (Manuti et al., 2020). Milan et al. (2014) summarised the importance of human resources management when he commented that it is essential for increasing shareholder value and the positioning of a company.

2.4.5 Conclusion

The concept of human resources management is broad and encompasses a number of factors. These include employee training and development, motivation, communication, teamwork, performance appraisals, corporate culture, employee grievance, organisation change, etc. Based on the exploration of this concept, it is evident that human resources management plays a crucial role in strengthening the link and relationship between the implementation of organisational re-engineering and business sustainability as a moderating variable. It is therefore critical that the concept of human resources management be carefully considered and utilized for the successful implementation of organisational re-engineering during turbulent periods.

2.6 Project Management

2.6.1 Introduction

Project management has existed since the inception of humans (Seymour & Hussein, 2014) and has morphed into a modern-day phenomenon that is practiced in all spheres. From the creation of the Pyramids of Giza and The Great Wall of China, to the landing on the moon and to the present-day implementation of organisational re-engineering, project management

was and is still an indispensable tool for the effective implementation and completion of projects.

According to King (1996), there is a greater chance of success for implementing organisational re-engineering initiatives when they are used in conjunction with project management tools and methodologies. Project management is a moderating variable that enhances the achievement of business sustainability from implementing and utilizing organisational re-engineering. According to Dey (1999), project process re-engineering is conducted by removing non-value added tasks, undertaking projects simultaneously and by the careful application of information systems, as well as utilising risk management techniques for the entirety of the project life cycle.

The next sections of this literature sub-theme provided a better comprehension of what is project management and explored the development of project management. Project management was also examined as a moderating variable in the link between organisational re-engineering and business sustainability.

2.6.2 What is Project Management?

Project management has its foundation in the Project Management Theory. This theory focused on structured planning, execution, and control of projects to achieve organisational objectives. Before proceeding to explain the concept of project management, it was first necessary to provide an understanding of what is a project. “Projects consist of activities, which have interrelationships among one another, produce quality-approved deliverables, and involve multiple resources” (Webster et al., 2004, p. 5). Accordingly, the Project Management Institute (2013) stated that a project is a “A temporary endeavor undertaken to create a unique product, service, or result” (p. 3). Projects possess certain key characteristics that distinguish them from other undertakings. Webster et al. (2004) listed the following characteristics:

- i. *“Projects are unique undertakings*
- ii. *Projects are composed of interdependent activities*
- iii. *Projects create a quality deliverable*
- iv. *Projects involve multiple resources*
- v. *Projects are not synonymous with the products of the project*
- vi. *Projects are driven by the competing constraints” (p. 2-3)*

Webster et al. (2004) went on to define project management as “a branch of learning that deals with the planning, monitoring, and controlling of one-time endeavors” (p. 1). The PMBOK® Guide, explains that project management is “the application of knowledge, skills, tools, and techniques to project activities to meet project requirements” (Project Management Institute, 2013, p. 5). Webster et al. listed the following descriptions of project management:

- i. *“Project Management is a unique career and profession*
- ii. *Project Management is not just scheduling software*
- iii. *Project Management is different than Operations and Technical Management*
- iv. *Project Management has a focus on integration” (p. 5-6)*

Accordingly, project management is an integral part in the implementation of organisational re-engineering in organisations around the world. In fact, project management provides economic benefits and there has been much growth in the field over time. (Svejvig & Andersen, 2015). Project management allows for cross functional interactions and efficient change, while encouraging a continuous monitoring of the organisation for process improvements (King, 1996). If projects are not properly implemented through the utilisation of appropriate project management tools and techniques, the resultant outcomes will not benefit the organisation.

2.6.3 The Development of Project Management

Project management has grown over time to a wider thinking which has led to new insights (Svejvig & Andersen, 2015) into the field. While there is no evidence on the actual start of modern-day project management, it is believed that the field existed since the beginning of humanity with the successful completion of many differently sized projects in varying sectors. According to Seymour and Hussein (2014), in the book, *The History of Project Management* by Mark Kazak-Holland, project management is not a 20th century field of study. Instead, project management is directly linked to history where there were several projects that had project sponsorship and project management teams carried out project management processes. The executors of these projects possessed instinctive knowledge of the Nine Knowledge Areas as outlined in PMBok[®]. Kazak-Holland further went on to emphasise that without a solid background and understanding of the theories and principles underlying project management, that these projects would not have been able to be accomplished. These projects would have all followed the various phases of project management – “initiation, planning, execution, monitoring and control and closure” (García-Madurga & Esteban-Navarro, 2020, p. 8) to some extent and degree.

For the success of projects of ancient times, engineers, architects, and craftsmen would have had to perform the functions of a project manager to manage the vast labour forces, materials, scheduling, etc. However, there exists little documentation prior to 1950's on the processes that were used to successfully manage projects. This was mainly due to more of a focus on the final product itself, rather than on the processes used to produce the final product. The responsibility for the project lay with the craftsman, who was most of the times uneducated and kept his methods a secret within his tribe or family (Karma, 2008).

Chiu (2010) postulated that the founding fathers of modern-day project management were Henri Foyal and Henry Gantt. They both had noteworthy influences in the field. Fayol

developed “five functions of management - planning, organizing, commanding, coordinating and controlling” (Chiu, 2010, p. 1). He subsequently established fourteen principles for guidance in the execution of the five managerial functions. Shenhar (2007) noted that the Manhattan Project “exhibited the principles of organization, planning, and direction that influenced the development of standard practices for managing projects” (p. 10).

Henry Gantt is renowned for developing the Gantt chart. This tool is used widely in modern day Project Management for managing projects based on the breakup of a project into smaller tasks. It was initially utilised in the Hoover Dam project and subsequently in the Interstate Highway project. However, there is some argument that the concept of the Gantt chart was actually developed by Polish economist, Karol Adamieckic who referred to it as the Harmonogram (Marsh, 1975).

According to Snyder and Kline (1987, as cited in Kwak, 2003), modern day project management began in 1958 when the Critical Path Method (CPM) and the Project Evaluation and Review Technique (PERT) were established. These two techniques were developed simultaneously by the U.S. Navy in the Polaris project and by E.I du Pont de Nemours Company in the construction of a major chemical plant. It is believed that The U.S. Navy greatly influenced the advancement of modern-day Project Management methodologies and techniques through their application of structured tools and techniques for intricate projects in the 1950's. PERT was used by the U.S. Navy to test different scheduling scenarios, while CPM was used by E.I du Pont de Nemours Company to precisely determine the cost and time of the project. NASA also used PERT for the Apollo project given the need to manage such a complexed, expensive, and ambitious project. According to Wolfe (1968), the program's most precious outcome turned out to be human related rather than technologically related. There are now improved understandings of how to plan, coordinate, and monitor the countless and diverse undertakings of the organisations needed to achieve such social activities. During this

period, there was also a mandate for forthcoming projects of similar complexity to the Polaris project to use the Work Breakdown Structure (WBS) approach. Chen (1999) stressed on the utilisation of a Work Breakdown Structure with distinct inputs and outputs at various stages of the project.

The year 1965 saw the establishment of the International Project Management Association (IPMA). This was the first organisation to institutionalise project management. It has since grown to be one of the foremost associations for project management in Europe, Asia, and Arab countries. The Project Management Institute (PMI) was later formed in 1969 and has since made available The Project Management Body of Knowledge (PMBOK) which details the processes and practices of project management as a discipline. The first publication took place in 1987.

The 1970s saw the development of computers and its related technology. This allowed greater affordability of computer hardware and software and the advancement of many project management software tools and organisations (Azzopardi, 2014). The development of technology allowed multitasking and greater efficiencies in handling and managing large amounts of complexed data and projects in the 1980's. During this period, different project management programs were developed. These were grounded on the Projects Resource Organization Management Planning Technique II (PROMPT II) model, which was subsequently led to the PProjects In Controlled Environments (PRINCE) model, (Bizness Académie, 2012).

In 1986, the Theory of Constraints was forwarded by Eliyahu M. Goldratt (Cox & Goldratt, 1986). This theory hypothesised that the rate of goal achievement was restricted by at least one constraint. The year 1986 also saw the development of the Scrum Model. This model moved away from the traditional approach to project management using sequential activities to a more agile approach. It was based on the utilization of small teams to enable

greater flexibility and the attainment of a holistic and common goal (Takeuchi & Nonaka, 1986). Three notable projects of this period were “The English-France Channel project, Space Shuttle Challenger project and The XV Calgary Olympic Winter Games” (Kwak, 2003, p. 5).

The 1990’s saw greater advancements in technology with PRINCE being upgraded to PRINCE2 and the development of the Critical Chain Project Management (CCPM). This technique essentially focussed on the resources required for a project rather than on the individual tasks (Goldratt, 1997). The concept of Total Cost Management was developed in the twenty first century. This concept focused on managing cost throughout a project cycle.

With the growth of project management, its importance grew in the business world, where it was touted as the third highest useful skill required by employers (Project Management Institute, 2013). Its application began to spread over multiple industries and formal training in the field became popular (Nelson, 2012). “Project management theories, tools, and techniques are now mainstream in many organizations and industries” (Seymour & Hussein, 2014, p. 233).

2.6.4 Project Management as a Moderating Variable

Having previously focused on providing an understanding and the evolution of project management, this section will examine project management as a moderating variable in the link between organisational re-engineering and business sustainability. Organisational re-engineering is necessary for the growth and existence of organisations (Asikhia et al., 2021). Without its implementation and organisations not being able to adapt to change, there will be a failure on the part of organisations to be competitive, meet customer expectations or even create value (Reeves & Deimler, 2011). Accordingly, Project Management Institute (2013) alluded that “Organisations are involved in creating products and services for customers to meet a goal. Therefore, applying know-how, expertise, tools, and techniques directed at meeting specific project requirements is critical” (p. 5).

However, according to Kim and Ramkaran (2004), the phenomena of organisational re-engineering was criticised for a high failure rate. This view was countered by Teng et al. (1998) when they noted that this failure was due more to the lack of effective implementation, rather than with problems within the concept itself (Fetais et al., 2022b). Studies undertaken by Maull et al. (1995), Geralis and Terziovski (2003), Herzog et al. (2007) and Grover et al. (1995) all pointed to the need to implement organisational re-engineering as a project for its implementation to be successful. They all however alluded that this may be very problematic.

According to Joslin, and Müller (2015) “project management dynamics are at the heart of all these factors, which integrate relational issues with stakeholders, leadership, project planning, and time conscientiousness” (p. 7), all of which are necessary for the effective application of organisational re-engineering and the attainment of business sustainability. Nkomo and Marnewick (2021) reinforced this view when they postulated that project management was key to achieving organisational change. Fasna and Gunatilake (2019) noted that project management was especially important given the unique features and uncertainties within organisations in the implementation of organisational re-engineering. This opinion was supported by Guesalaga et al. (2018) where they noted that project management allowed the flexibility to effectively implement organisational re-engineering.

Bayomy et al. (2021) moved away from these implementation problems and suggested that performance measures were necessary for implementation success. These were: processing time, cycle time, quality, and cost of resources – all project management related factors. On the other hand, studies conducted by Nkomo and Marnewick (2021) found that a key factor for the effective application was the proper definition of the expectation of a project. Zaini and Saad (2019) reinforced this view stating that it was essential that the project team understood the required changes and benefits to be achieved. This comes with proper project planning

(Jackson, 1997). Zairi and Sinclair (1995) noted that proper time planning of the project was key to success.

According to Eloranta et al. (2001), the problems in successful implementation of organisational re-engineering relates generally to leadership and experience in successfully implementing different stages and processes of the project. In order to manage the process re-design stages of project implementation of organisational re-engineering, Talwar (1993) noted that the people related issues of project management must be managed. Additionally, CSC Index (1994) recommended the use of management techniques in the re-design stages. Hammer and Stanton (1995) called for a pilot of the new design to learn and fix errors as well as to ensure successful implementation. Throughout implementation, there must be measurement of the development of the project to ensure time, quality and cost parameters are in alignment with budget and where necessary, corrective actions taken (Zahoor et al. 2015).

With effective project management, the associated implementation problems of organisational re-engineering will be eliminated which will then result in business sustainability (Bayomy et al., 2021). “Organisations will benefit from a clear approach on how to implement successful BPR plans to achieve desirable outcomes and internal acceptability of such projects” (Musonda & Okoro, 2022, p. 67).

2.6.5 Conclusion

Various authors have postulated on many dimensions for the successful implementation of organisational re-engineering, as it is believed that failure factors lie more with the implementation process itself, rather than with the concept (Fetais et al., 2022b). According to Musonda and Okoro (2022), business process reengineering is complicated, and requires extensive training and knowledge from leaders to enhance performance. In this vein, project management is an essential tool (Packendorff, 1995) for aiding with the advancement of

organisational re-engineering and for the attainment of business sustainability. If organisational re-engineering is not successfully implemented, there will be little or no resultant benefits to organisations. It is therefore important that the steps in project management (Jugdev et al., 2001) be followed and managed using an astute project manager (Pinto, 2000; San Cristóbal et al., 2018).

Project management is crucial for the management of projects, resulting in growth and development in many different economic spheres (Svejvig & Andersen, 2015). Kothari (2019) noted that agile project management methods can be utilized in a wide range of sectors for policy and process review while hybrid project management fosters an increased ability to respond to being innovative in the face of internal and external organisational factors (Copola Azenha et al., 2021). Projects have become a key manner of structuring initiatives within organisations and success is often dependent on effective project management (Dvir et al., 2006). It is therefore imperative that project management tools and techniques be effectively employed in the implementation of organisational re-engineering. Silvius and Schipper (2014) commented that

The concept of sustainability has also been linked to project management. Projects are “instruments of change” within organizations, which play an important role in the realization of sustainable business processes and practices. Project managers are therefore important “change agents” in organizations that have a strong influence on the sustainability of organizations. (p. 40)

2.7 Change Management

2.7.1 Introduction

Organisational re-engineering has been condemned for not having a high success (Kim & Ramkaran (2004). However, Fetais et al. (2022b) noted that this failure was due more to do

with the lack of effective implementation, rather than with the concept of organisational re-engineering itself. Nevertheless, organisational re-engineering fosters increased productivity, improved quality, and greater customer satisfaction (Al-Mashari & Zairi, 2000). Mento et al. (2002) postulated “Business and engineering are about growing, changing, adjusting and improving the accepted norms and procedures today to make the future brighter” (p. 46).

The benefits of organisational re-engineering to an organisation are highly dependent on managing the change process during its implementation. According to Taylor (1998), organisation re-engineering often changes the structure, culture, and management processes within an organisation. Hill and Collins (1998) noted that BPR failed due to the non-creation of a structure and culture to support its implementation. The new approach of organisational re-engineering has to be integrated throughout the organisation (Siegal et al., 1996). Consequently, the change process must be effectively managed to ensure success. Errida and Lotfi (2021) explained that a change management model acts like a guidebook in aiding and guiding transformation efforts by deciding on the exact systems and procedures, and directions to use, by showing how there are several factors that affect change, or by determining the forces which were utilised to achieve the change management process. Noteworthy, several change management models have been formulated and created over time, taking several theories, principles, and perspectives from many different fields.

Change Management is an important moderating variable that strengthens the link between the implementation of organisational re-engineering and business sustainability. According to Senior (2002), “organisational change, its management is becoming a highly required managerial skill” (p. 4). “The successful management of change is accepted as a necessity in order to survive and succeed in today’s highly competitive and continuously evolving environment” (By, 2005, p. 369). The next section examined the principle of change management and its development, following which, the moderating effect of change

management in the link between the implementation of organisational re-engineering and business sustainability was explored.

2.7.2 What is *Change Management*?

To comprehend the principle of change management, it was first necessary to appreciate the concept of organisational change. Cao et al. (1999) characterised four categories of organisational change. These were “processual change, structural change, cultural change and political change” (Cao et al., 1999, p. 188). These stemmed from the foundational works of Flood (1996) who espoused the four facets of an organisation as “process, design, culture and politics” (Flood, 1996, p. 40). The work of Coa et al. (1999) suggests that changes are required to each dimension of the organisation. However, Burnes (1996) argued that organisational change has to be integrated and should not be done to each organisational dimension in isolation. He went on to state that organisational change is an everchanging process and that changes in any facet will cause offsetting changes in another facet, leading to failure in the change process. Consequently, organisational change has to be managed holistically requiring a systematic application of many methodologies to address the interrelationships of the various dimensions of an organisation (Cao et al., 2001). This holistic management of these interrelationships is referred to as change management. Moran and Brightman (2001) defined change management as “the process of continually renewing an organization’s direction, structure, and capabilities to serve the ever-changing needs of external and internal customers” (p. 111). Idogawa et al. (2023) asserted that the topic of change management is of great academic and practical significance since it is meticulously aligned with an organisations’ daily activities. Additionally, change management has a direct relation to strategic decision-making which also has a significant impact on organisations. The extent of change management

includes the exploration for novelty, revolutionization and achievement in companies' goals and projects.

2.7.3 The Development of Change Management

Kurt Lewin advanced the planned approach to change in 1946 (Bamford & Forrester, 2003). He postulated that old behaviours had to be dispensed with prior to the implementation of any new behaviour. Change therefore consisted of three stages – unfreeze, change, freeze (Cummings et al., 2016). This model is referred to as the “three step change model” and is used as general model when change occurs in an organisation. Errida and Lotfi (2021) explained Lewin's three stage model which is thought to be the theoretical base of planned change management. Lewin's three stage model consists of three key steps that are used for managing planned change. These steps are unfreezing, transition, and refreezing. Errida and Lotfi goes on to explain that “Unfreezing” involves the subversion of the existing state of affairs by creating the need for change, as well as putting this in place to plan for the forthcoming change. The stage of “transition” includes the shifting to the anticipated future outcome. Finally, “refreezing” occurs subsequent to the implementation of the change, which causes a new tradition, behaviour, and procedures.

Eldrod II and Tippet (2002) postulated that three step change model was too general, which led to other scholars developing narrower and more practical methods. Bullock and Batten (1985) modified Lewin's model and formulated a four-phase model. This model consisted of exploration, planning, action, and integration. Senior (2002) later argued that this model was more suited for minor changes within an organisation and was not suitable to circumstances that required swift and transformational change.

The emergent approach superseded the previous approaches given the erratic characteristic of change and also because change needed to be a learning process. Dunphy and

Stace (1993) noted that companies required open learning systems where their strategy and change could occur naturally based on their environments. This was denoted to as the emergent approach. Bamford and Forrester (2003) however criticized the emergent approach, indicating that it lacked logic, consistency, and a variety of techniques. They suggested that a model that was more situational or dealt with contingencies would be better. Their suggestions were based “on the theory that the structure and the performance of an organisation are dependent on the situational variables that it faces” (By, 2005, p. 376).

Early studies of change management advocated that there could be no improvement in performance if organisations were continually changing (Rieley & Clarkson, 2001). Luecke (2003) alluded that performance improvement could only occur where there were routines within the organisation. These views were quickly dispelled by Burnes (2004) who postulated that it was vital for organisations to undergo change. Different scholars went on to describe various change approaches, with many adopting varying terminologies (By, 2005). Burnes (2004) differentiated between incremental and continuous change, while Grundy (1993) and Senior (2002) distinguished between smooth and bumpy incremental change. Luecke (2003) suggested that change be undertaken in small steps based on a continuous monitoring of an organisation’s environments. Conversely, Burnes (2004) noted that change needed to be conducted in a fundamental way to keep pace with the rate of change. Eldrod II and Tippet (2002) raised the issue of understanding the different phases of change management to reach a desired state. Underlying this view was to understand how the change came about (By, 2005).

Mento et al. (2002) noted that there are many change management theories. “Three of the most well-known are Kotter’s strategic eight-step model for transforming organisations, Jick’s tactical ten-step model for implementing change, and General Electric (GE)’s seven-step change acceleration process model” (p. 45). Mento et al. went on to further elaborate on these three models. He stated that Kotter’s model is intended for the strategic level and that the

change process follows a series of phases. These phases are lengthy, and mistakes made in any phase can cause negative impacts in the drive for change. Jick's model aims at the tactical level and provides a ten-step blueprint for the change process. He noted that implementation is just as important as the change itself. General Electric (GE)'s seven-step change acceleration process model is similar to Lewin's change model and is dependent on the leader to execute the change activities.

It is evident that the philosophy of change management has evolved over time. However, despite these changes, it is clear that change has to be managed so as to achieve organisational benefits. Each of the researchers who sought to develop the concept tried to advance a model that would bring about advantages to an organisation with each advancing that management of change was especially important. The next section moved towards examining the relationship between the implementation of organisational re-engineering and business sustainability with change management being a moderating variable.

2.7.4 Change Management as a Moderating Variable

According to Hall et al. (1993), while the failure to use an integrated approach for the implementation of organisational re-engineering may result in individual process improvement, the overall organisational wide results are usually negative. It is therefore essential that the change process be managed (Valiris & Glykas, 1999) to ensure that there is an integrated approach. This view is supported by Stebbins et al. (1998) when they iterated that organisational re-engineering can be a powerful change tool if its initiatives are integrated and managed. Senior (2002) noted that the process of organisational change was continuous, and it was necessary to harmonise the organisation's strategy, processes, people, and structure. Grover (1999) noted the removal of obstacles for change was necessary for success. Change is difficult as it requires modifications to many facets of an organisation. He later went on to

emphasize that the implementation of organisational re-engineering requires aspects of change management and iterated that “Organizations that had narrower change management gaps clearly found greater success in their projects” (p. 20). Idogawa et al. (2023) postulated that change management was “the underlying mechanism to bring adaptability, innovation and advantage for companies” (p. 553). Albizu et al. (2004) noted that “change management is the main facilitating activity that must be developed to successfully implement BPR” (p. 358). Management of change in the implementation of organisational re-engineering is therefore necessary in order to achieve business sustainability and success.

In the change management process, there must be communication of change throughout the organisation and employees should be rewarded and encouraged to be involved in the process by expressing their creativity. This will facilitate the sustenance of high levels of employee morale. As noted in a previous section of this Chapter when human resources was discussed as a moderating variable, employees have the power of creating implementation problems for organisational re-engineering. Top management must therefore clearly articulate the goals of the change, the new strategic direction, and the change management process so as to reduce and avoid employee resistance (Idogawa et al., 2023).

Grover (1999) postulated that organisational re-engineering had favourable outcomes when the change process was managed and continually evaluated, with each complementing the other for positive outcomes. “Failure to do so could inhibit success in both project- and people-related outcomes” (p. 20). He further noted that change management was more important than the other facets such as leadership, technology, and project management in the successful implementation of organisational re-engineering. However, Idogawa et al. (2023) noted that leadership, technology, and project management were key critical success factors for the change management process.

Park (2018) noted that “The change management activities supporting organizational changes are indispensable for a successful implementation” (p. 5). Almajali et al. (2016) argued that failure resulted when the change management process was not managed, with change management being a critical success factor (Lee & Pai, 2003). Nah et al. (2003) pointed out that a greater level of change management activities during the implementation of high levels of organisational change results in quicker conflict resolution and enables better cooperation between departments. During the implementation of organisational re-engineering, decisions can be made more efficiently as change management facilitates training and communication and the availability of information (Fazlzadeh et al., 2011).

It is apparent that change management plays a critical role in the successful implementation of organisational re-engineering. If the change process is not managed, there will not be any positive outcomes.

2.7.5 Conclusion

“Changes need to be managed to reduce the negative impacts and to safeguard quality and profitability” (Erdogan et al, 2005, p. 1) and for organisations to remain competitive (Idogawa et al., 2023). The change process must be performed as an integrated approach (Siegal et al., 1996). Failure to do so will result in compensatory consequences in other facets (Burnes, 1996). It is evident that implementing organisational re-engineering requires change management in order to achieve successful outcomes. Systems and process improvement as a facet of change management is therefore an important moderating variable that strengthens the link between the implementation of organisational re-engineering and business sustainability.

2.8 Business Sustainability

2.8.1 Introduction

The sustainability of many business organizations depends on the adoption of new means that ensure the organization's survival when faced with increasing global or even local competition. This is often achieved by adopting business process re-engineering (BPR) as a proposed strategy to enhance the organization's success. (Fetais et al., 2022a, p. 1)

This section of this Chapter examined the concept of business sustainability. This concept was highlighted in the conceptual framework at the beginning of this Chapter. Business sustainability is considered as a dependent variable in this framework, with the implementation of organisational re-engineering being the independent variable.

The previous sections of this Chapter examined different dimensions which are considered as moderating and mediating variables in the relationship between the implementation of organisational re-engineering and business sustainability. Having extensively examined these sub-themes, this section examined business sustainability. In moving forward, the next section provided an explanation and the development of business sustainability.

2.8.2 What is Business Sustainability?

Business sustainability encompasses a wide variety of factors, and its definition must be taken in context of the situation at hand. Broadly speaking, it is the ability of an organisation to survive in a dynamic environment by formulating and implementing strategies for developing, maintaining, and enhancing its competitiveness. Dyllick and Hochterts (2002) noted that business sustainability is gained when organisations positively leverage their various capitals within the constraints of their political environment. On the other hand, Munck et al. (2012) theorised that business sustainability was the “equilibrium between what is socially

desirable, economically viable and ecologically sustainable” (p. 5). Boodre and Ramstad (2005) viewed business sustainability as the achievement of success in the present time, without affecting the future. Colbert and Kurucil (2007) noted that business sustainability was about ensuring continuity, while the CIPD (2012) postulated that it was the improvement of systems within which an organisation operates. Edema et al. (2019) noted that sustainability involves generation of profits and competitive advantages through improvements. It includes adding stakeholder value, exploring opportunities, increasing market share and shareholder return. It is dependent on the effective use of resources for achieving organisational goals and objectives.

The concept of business sustainability has its genesis with the systems theory (Von Beratalanffy, 1972). Essentially, this theory looked at the interactions of the different component parts of an organisation to achieve a common goal. According to Inyang (2007), this theory focused holistically on the organisation and its processes. It therefore allowed organisations to understand their problems and make changes to facilitate sustainability and the achievement of a competitive advantage.

Another theory that impacted the development of the concept of business sustainability was the job characteristics theory (Hackman & Oldham, 1976). This theory focused on job design and alluded that a well-designed job motivated and created satisfied employees. This led to opportunities for growth and development, better quality work life and lower rates of absenteeism and turnover. Consequently, this impacts the entire organisation leading to positive work outcomes and business sustainability.

Edema et al. (2019) noted that business sustainability is dependent on an organisation understanding its existing operations and adopting changes to “provide a clear understanding and definition of customers’ needs and expectations” (p. 1). It is evidently clear that the concept of business sustainability is far reaching and encompasses many key factors. However, what is

common, is that most theorist agree that business sustainability is the ability of an organisation to survive during dynamic periods and remain competitive.

2.8.3 Relationship Between Organisational Re-engineering and Business Sustainability

According to Fetais et al. (2022a), the adoption of organisational re-engineering reshapes an organisation and results in improved quality of goods and services, cost reductions, increased competitiveness and efficiencies and maintenance of a competitive advantage. These resultant benefits can be classified as elements of business sustainability. Chen (2016) noted that the implementation of organisational re-engineering helps organisations to meet their objectives, which consequently leads to increased efficiencies and effectiveness and reductions in overhead costs. Additionally, Houy et al. (2010) explained that organisational re-engineering redesigned business processes and enabled new processes, the achievement of organisational level strategic outcomes and is inter-functional in its efforts.

Edema et al. (2019) conducted research in the manufacturing sector. Their study “concluded that the sustainability of manufacturing organizations is tremendously enriched by business process reengineering” (p. 1). They found organisational re-engineering to be an “effective tool for changing the entire operating system of an organization” (p. 1). This view was supported by Arora (2009) noting that organisational re-engineering systematically evaluated the processes of organisational tasks and developed more effective processes that were faster and more effective. This led to the development of new and additional tasks and procedures which engendered greater efficiency and effectiveness. Edema et al. (2019) iterated that organisational re-engineering altered the “obsolete approach used in dealing with people in the organization and exercising of authority over subordinates in an effort to attain organizational goals” (p. 87).

Eke and Adaku (2014) postulated that organisational re-engineering allowed organisations to look at their overall performance and implement changes, process, and strategies for becoming cost leaders. It combined changes in job designs, management and leadership styles, processes, technology, and systems. In a study conducted by Budiman et al. (2021), success was found in implementing organisational e-engineering during the Covid-19 pandemic to support the sustainability of its sales commodities.

It is therefore evident that a positive relationship exists between the implementation of organisational re-engineering and business sustainability. This is apparent from the many benefits that accrue to organisations from the implementation of organisational re-engineering. According to Timane (2012), implementing organisational re-engineering increases the competitiveness of organisations in general.

2.8.4 Conclusion

It can be concluded that the effective implementation of organisational re-engineering does in fact contribute towards the attainment of business sustainability. This is consistent with the early postulations of Hammer and Champy (2009) where they iterated that implementing organisational re-engineering led to the enhancement of production and commercial activity. This view is also supported by many other researchers based on research conducted in a wide cross-section of industries.

There are many views on what constitutes business sustainability. However, it is clear that it entails the ability of a business to grow and survive during dynamic periods as well as the building and maintenance of competitiveness.

2.9 Summary

In a world of constant change, it is important that leaders be aware of these changes and take the necessary steps to keep abreast of these changes (Schoemaker et al., 2018). Failure to do so will result in the demise of organisations (Dwipriyoko, 2020). Despite guidance given in this area by many scholars (Cole & Snider, 2019; Zafari et al., 2020), the problem is that many leaders require assistance in implementing organisational re-engineering and in managing their organisations during turbulent periods (Duchek, 2020), and do not use the available tools and techniques to assist with managing during crisis periods.

In dealing with this issue, the implementation of organisational re-engineering is one of the tools that leaders can use during such periods (Sungau, 2019). In an attempt to fill the obvious existing research gap, this research explored and analysed the relationship between the implementation of organisational re-engineering and business sustainability. In order to gain a deeper understanding of the topic as well as to obtain related information for the research, it was necessary to conduct a literature review.

The literature review was conducted by firstly exploring the independent variable, implementation of organisational re-engineering, following which several of the key mediating and moderating variables were examined. The literature review concluded by examining the dependent variable, business sustainability.

2.9.1 *Organisational Re-Engineering*

This concept of organisational re-engineering was developed by Hammer (1990), and Davenport and Short (1990). According to Petrović et al. (2020), “Reengineering was created in response to the Japanese concept of quality management and represents a pragmatic approach to change in line with the American way of thinking” (p. 46). Hammer developed the concept as “a tool for implementing major organizational changes with the view to successfully

changing business processes for better productivity in the private sector” (Fetais et al, 2022a, p. 186). Hammer and Champy (1993) noted that implementing organisational re-engineering involved achieving modern measures such as cost, quality, service, and speed from the dramatic restructuring and redesigning of organisational processes. Since its development, there have been many misconceptions of the concept with many scholars adding to its development and referring to it by varying names (Kim & Ramkaran, 2004).

Despite the early success of the model of organisational re-engineering, the concept eventually plateaued, with many researchers indicating that the concept had a high failure rate Teng et al. (1998). However, these notions were quickly dispelled by other researchers, who indicated that the problem lay more with the implementation of the concept, rather than with the concept itself (Fetais et al., 2022b). According to Fetais et al. (2022a), “Despite the research done today, the field remains extremely broad, thus it is inevitable that the significance of BPR is only partially understood” (p. 186). As such, many studies have been undertaken on the assumptions and critical success factors necessary for the fruitful implementation of organisational re-engineering. These studies postulated several varying views on what constitutes organisational re-engineering and also on what are the key factors necessary for the successful implementation of organisational re-engineering. In an effort to provide a framework for these various factors, Figure 2.3 was presented. This outlined the conceptual framework for the relationship between the implementation of organisational re-engineering and business sustainability. The key factors that affected the successful implementation as identified in the literature review of organisational re-engineering were leadership, information technology, human resources management, project management and change management.

2.9.2 Leadership

Theories of leadership began over twenty-five hundred years ago, with many scholars providing varying definitions and theories of leadership as well as to the characteristics that constitute a good leader. According to Stogdill (1974), there are numerous definitions of leadership. These stem from the many researchers who have endeavoured to try to define leadership. It is therefore imperative that leadership be understood in context, especially as it pertains to crisis periods. Syed and Hauer (2017) iterated failure of leaders to adequately deal with crisis situations leads to adverse impacts on organisations.

According to Balasubramanian and Fernandes (2022), “Crisis leadership during the pandemic, in particular, is arguably in its early development phases, both academically and practically, despite our past experiences with epidemics such as SARS, Ebola, bird flu, H1N1, and MERS” (p. 2). Consequently, crisis, dynamic and unpredictable conditions necessitate leadership with particular skills and traits to carry organisations successfully through these scenarios (Wisittigars & Siengthai, 2019). On analysing the many postulations from the various scholars on the issue of leadership, two common components emerged (Algahtani, 2014). These were:

- i. “The process of influencing an individual, group or team to accomplish a common goal
- ii. To develop a vision.”

The various theories on leadership all stressed on differing aspects, some on the characteristics of the leader, some on the behaviours, while others on the situation at hand. Some even combined different aspects. This led to the development of the Great Man and trait theories, the behavioural theory, transactional leadership theories, contingency theory, transformational leadership theory, servant leadership theory, adaptive leadership theory, inclusive leadership theory, fellowship theory, gender leadership theories, ethical leadership theories, team leadership theories, authentic leadership theories and crisis leadership theories.

Amidst all of these theories, leaders need to choose the most appropriate strategies, tools, and techniques for managing crisis situations. There is no one best effective leadership style or theory. Leaders need to chop pieces from all the various approaches on a rational basis to ensure goal attainment based on their unique circumstances. Elements such as communication, core values, realism, innovation, humanism, and decision-making are all critical (Kaul et al., 2020).

2.9.3 Information Technology

Information technology was considered as both a moderating variable and a mediating variable in the correlation between the implementation of organisational re-engineering and business sustainability during turbulent periods. In the absence of a universally recognized definition for information technology, Onn and Sorooshian (2013) summed up information technology as covering a broad and diverse set of actions, systems, hardware, and software, all of which work together to improve organisational performance.

Given the many definitions of information technology that has developed over the years, there are many views on whether information technology is necessary for the successful implementation of organisational re-engineering. There remains a polarisation of views on the role and usefulness of information technology as both a mediating and/or moderating variable. Nevertheless, it is clear that information technology is an important mechanism for fundamentally restructuring an organisation (Khashman, 2019). However, the usage of information technology has to be effectively managed to reap maximum rewards.

2.9.4 Human Resources Management

Human resources management is very broad and is both a moderating and mediating variable in the relationship between the implementation of organisational re-engineering and business sustainability. The concept was developed in the 1980s and is concerned with “people

and how they are employed and managed in organisations” (O’riordan, 2022, p. 1). The theory of human resources management emerged from two concepts (O’riordan, 2022). The first concept, the resource-based view, was based on Michael Porter’s work on how to achieve a competitive advantage, while the second concept is from the theory of organisational behaviour. Coming out of these conceptual theories was an extended definition of human resources management. Armstrong (2016) provided a broad definition, stating “Human Resource Management is a strategic, integrated and coherent approach to the employment, development and well-being of people working in organisations” (p. 7). There is a wide array of views on the utilization of human resources management as being necessary for the successful implementation of organisational re-engineering. Different scholars have used differing metrics in their analysis of the usefulness of human resources management in the implementation of organisational re-engineering. These include employee training and development, motivation, communication, teamwork, performance appraisals, corporate culture, employee grievance and organisation change. Based on the exploration of this concept, it is evident that human resources management plays a crucial role in the link and relationship between the implementation of organisational re-engineering and business sustainability both as a moderating and mediating variable. The concept has to be utilized holistically and must take into consideration all of its different subsets.

2.9.5 Project Management

Project management has existed from the beginning of humanity (Seymour & Hussein, 2014) and is practiced in many of today’s activities. According to Musonda and Okoro (2022), the complexity involved in business process re-engineering require numerous variables to assure of its success. Project management is a moderating variable that enhances the achievement of business sustainability from implementing and utilising organisational re-

engineering. According to Webster et al. (2004), project management can be defined as “a branch of learning that deals with the planning, monitoring, and controlling of one-time endeavors” (p. 1). Project management is an integral part in the implementation of organisational re-engineering in organisations around the world. Svejvig and Andersen (2015) argued “the management of projects is of considerable economic importance and dramatic growth has occurred in project work across different sectors, industries and countries” (p. 278). Asikhia et al. (2021) noted that the implementation of organisational re-engineering is necessary for the growth and existence of organisations. With effective project management, the associated implementation problems of organisational re-engineering will be eliminated which will then result in business sustainability (Bayomy et al., 2021). Benefits will accrue from positive outcomes and internal tolerability when there is a systematic methodology for the implementation of business process re-engineering. (Musonda & Okoro, 2022).

2.9.6 Change Management

The benefits of organisational re-engineering to an organisation are highly dependent on managing the change process during its implementation. Mizrak (2024) explained that change management is an important practice in today’s ever-changing business world. This occurs due to the fact that organisations are always challenged with the need for business transformation in order to effectively adapt to changing market conditions, technology innovations, and competitors. Leaders must use effective and careful change management strategies in order to successfully pilot their organisation to effective change. Accordingly, Mizrak went on to state that change management is critical in a changing world, especially as entities constantly transform and adjust to market dynamics, information technology and competition.

Change management is an important moderating variable in the link between the implementation of organisational re-engineering and business sustainability. Organisational change has to be managed holistically requiring a systematic application of many methodologies to address the interrelationships of the various dimensions of an organisation (Cao et al., 2001). This holistic management of these interrelationships is referred to as change management. Moran and Brightman (2001) defined change management as a process that allows for the continuous revitalisation of an organisation's vision, internal and external arrangements, and abilities in order to provide satisfaction to the dynamic needs of its internal and external stakeholders. According to Taylor (1998), the implementation of organisation re-engineering often changes the structure, culture, and management processes within an organisation. Hill and Collins (1998) noted that BPR failed due to the non-creation of a structure and culture to support its implementation. The new approach of organisational re-engineering has to be integrated throughout the organisation (Siegal et al., 1996). Consequently, the change process must be effectively managed to ensure success. Changes in an organisation must be effectively co-ordinated to mitigate any adverse impacts to avoid compromising quality and profitability (Erdogan et al., 2005), and for organisations to remain competitive (Idogawa et al., 2023).

2.9.7 Business Sustainability

The concept of business sustainability was highlighted in the conceptual framework (Figure 2.3). Business sustainability is considered as a dependent variable in this framework, with the implementation of organisational re-engineering being the independent variable. It is the ability of an organisation to survive in a dynamic environment by formulating and implementing strategies for developing, maintaining, and enhancing its competitiveness. Edema et al. (2019) noted that business sustainability is dependent on an organisation

understanding its existing operations and adopting changes to “provide a clear understanding and definition of customers’ needs and expectations” (p. 212). Fetais et al. (2022a) argued that the adoption of organisational re-engineering reshapes an organisation and results in improved quality of goods and services, cost reductions, increased competitiveness and efficiencies and maintenance of a competitive advantage. The implementation of organisational re-engineering does in fact contribute towards the attainment of business sustainability. This is consistent with the early postulations of Hammer and Champy (2009) where they iterated that implementing organisational re-engineering led to the enhancement of production and commercial activity. However, it is imperative that the mediating and moderating variables highlighted in this Chapter be taken into consideration, as without these, there would be a breakdown in the relationship between the implementation of organisational re-engineering and business sustainability. Once taken into account, there will be success in the implementation of organisational re-engineering to bring about business sustainability.

CHAPTER THREE: RESEARCH METHOD

3.1 Introduction

This research utilised a case study approach using the recent Covid-19 pandemic to explore the impact of organisational re-engineering for business sustainability during turbulent periods. This approach captured data from the pre-period, post-period, and the actual time of the Covid-19 pandemic. This facilitated a deep comprehension and investigation of the complexity of the impact of the Covid-19 pandemic and by extension the implementation of organisational re-engineering to a turbulent period. This thus allowed generalisation of conclusions to turbulent periods. According to Aaltio and Heilmann (2010), a case study approach is best suited when investigating entities and their behaviour. It allows for the use of either the qualitative approach or the quantitative approach or a combination of both.

The Covid-19 pandemic can be considered as one of the most turbulent periods in the recent past that affected businesses globally (Bottan et al., 2020). Gruszczynski (2020) noted that Covid-19 pandemic plunged world trade into chaos and affected both the demand and supply sides of the world trade. Many governments closed their non-essential services. Similarly, numerous organisations adopted similar measures and made decisions to temporarily close their operations. Many even reduced their output due to supply chain disruptions. Some organisations also permanently closed their business operations. Gruszczynski went on to explain that the greatest impact of the Covid-19 pandemic was in the international service sector. More specifically, areas of global tourism, commuter air travel and shipping of containers had been hit most severely. Apart from these, there had been significant impacts on international financial transactions, and informational and communications technology. Gruszczynski further iterated that based on a report from the United Nations Conference on Trade and Development (UNCTAD), there was a conservative estimate that worldwide foreign direct investments were expected to contract by at least five to fifteen percent in 2020. Apart

from the supply side, there had also been tremendous negative impacts on the demand side. Given the uncertainty and fear surrounding the Covid-19 pandemic, there was a reduction in consumer spending. This problem was compounded from the loss of jobs from business closures where consumers now had less disposable income. Overall, the above phenomenon was expected to continue, and the total impact was yet to be determined and was difficult to predict.

Hameed et al. (2022) iterated that the tremendous and disrupted effects of the Covid-19 pandemic make it necessary for firms to implement organisational re-engineering. Boiral et al. (2021) iterated “For organisations, these uncertainties are all the more difficult to manage because there are few in-depth studies on the subject and the information available is scarce, partial, and contradictory” (p. 1). Given that there was no precedence to this global, unplanned phenomenon, the approaches adopted by organisations to implement organisational re-engineering had mixed results (Daniels et al., 2022). This gap on how to implement organisational re-engineering during turbulent periods led to the generation of the problem and purpose of this research. As a recap from Chapter One and to provide context for this Chapter, the research problem and research purpose has been repeated.

3.1.1 Statement of the Problem

The problem is that it has generally been found that the implementation of organisational re-engineering is challenging for the achievement of business sustainability during crisis periods (Duchek, 2020). Leaders are faced with a host of uncertainties during turbulent periods (Bottan et al., 2020) and many do not possess the requisite knowhow to successfully implementing organisational re-engineering during crisis periods. According to Wenzel et al. (2020), there is no doubt that turbulent times have become an ubiquitous part of organisational life since the 1970s. Consequently, leaders and their subordinates have

undergone elevated levels of uncertainty regarding how organisations manage their business activities during crisis periods. This has led to questions being raised on how should leaders and their subordinates effectively manage their organisations during crisis periods.

This was seen during the recent Covid-19. This turbulent phenomenon affected all companies around the world (Sahu, 2020). This belief was reinforced by Dirani et al. (2020) when they asserted that the Covid-19 pandemic tested leadership around the world. Leaders managed this crisis differently where some organisations failed and others rose to the occasion. Failure resulted from leaders using their instincts rather than a structured approach to deal with the Covid-19 pandemic period. This trend was expected to continue unless leaders became more prepared and equipped to deal with such situations.

Since the onset of the Covid-19 pandemic, many research studies were conducted proposing different approaches to managing organisations during this crisis (Margherita & Heikkilä, 2021). However, these studies were fragmented and industry specific, with no holistic study being conducted (Megahed & Hassan, 2022) on successfully managing organisations throughout the Covid-19 pandemic. This has led to confusion for leaders given the misconceptions (Novikov et al., 2016) and absence of clarity of the varying presented approaches for the implementation of organisational re-engineering and the absence of any plausible framework that can be used during turbulent periods. Organisations that did not effectively implement organisational re-engineering suffered the ill-fate of closed doors (Asikhia et al., 2021). Engidaw (2022) iterated that the Covid-19 pandemic has caused a massive shrinkage in short term economic activities, where many organisations were forced to close their doors, regardless of their size. Consequently, millions of people were left unemployed and this severely impacted overall business activities.

Moreover, amongst the many negative impacts, it resulted in loss of sales, increased costs, labour shortages, restricted working hours, decreased profitability and the closure of

many organisations (Travkina & Luigi, 2020). Undoubtedly, leaders who were incapable of effectively managing their businesses through this turbulent period suffered the wrath of business closures.

3.1.2 Purpose of the Study

The purpose of this mixed methods research is to provide guidance for the successful implementation of organisational re-engineering. This research investigated the various dimensions of organisational re-engineering that assisted leaders to effectively implement organisational re-engineering and thus successfully lead their organisations to sustainability during turbulent times. This research examined and analysed the effectiveness of the implementation of the different dimensions of organisational re-engineering that were utilised to lead organisations during turbulent periods. More specifically, the actions of leaders throughout the recent Covid-19 pandemic (Ciotti et al., 2020) in Trinidad and Tobago were analysed in this research. Importantly, business leaders must be aware and utilize the necessary tools and techniques for fruitfully managing their businesses during turbulent periods.

On that note, the implementation of organisational re-engineering has emerged as one of the tools that leaders can use to successfully manage and lead their businesses during turbulent periods. According to Evstafyeva et al. (2018), “a targeted implementation of the business reengineering project gives the manager the opportunity to directly affect the company’s value factors” (p. 133).

Accordingly, this research was conducted using a mixed methodology (Natow, 2020) combining quantitative and qualitative techniques (Queirós et al., 2017). This facilitated triangulation of the results acquired from both approaches for filling and complementing any data and analysis gaps of each methodology. Thurmond (2001) noted that triangulation involves the amalgamation of more than one hypothetical thoughts, procedural techniques, sources of data, researcher findings, or data analytical methodologies. The purpose of utilising

triangulation is to reduce, obliterate, or counterbalance the shortcomings of a particular approach, thereby improving and enhancing the capability of analysing the data findings.

Importantly, there must be an understanding of what is organisational re-engineering (Al-Anqoudi et al., 2021), how it can best be implemented, and its benefits be fully understood, so that its applicability and adoption to organisations in turbulent times will be a success. Organisations that emerged unscathed from the pandemic re-engineered their organisations (Hameed et al., 2021) to navigate the turbulence created by the Covid-19 pandemic. This resulted in the creation of new ventures and improved processes (Freitas & Wang, 2020).

Having recapped the research problem and research purpose from Chapter One, the subsequent section of this Chapter addressed the research approach and research design of this research. This Chapter gave particulars of the methods and processes used in this research to explore the impact of the implementation of organisational re-engineering for business sustainability during turbulent periods. It commenced with presenting a synopsis of the research's approach and design. Next, it went deeper into the techniques that were utilized in the research for collecting data and the activities that were involved in examining and evaluating the data that was collected. This included the determination and selection of the population's sample and the research instruments and tools that were utilized. Also covered in this Chapter are the variable constructs that were tested during the research as well as the ethical assurances that were employed during the research. Figure 3.1 shows the research structure methodology that was employed in this research.

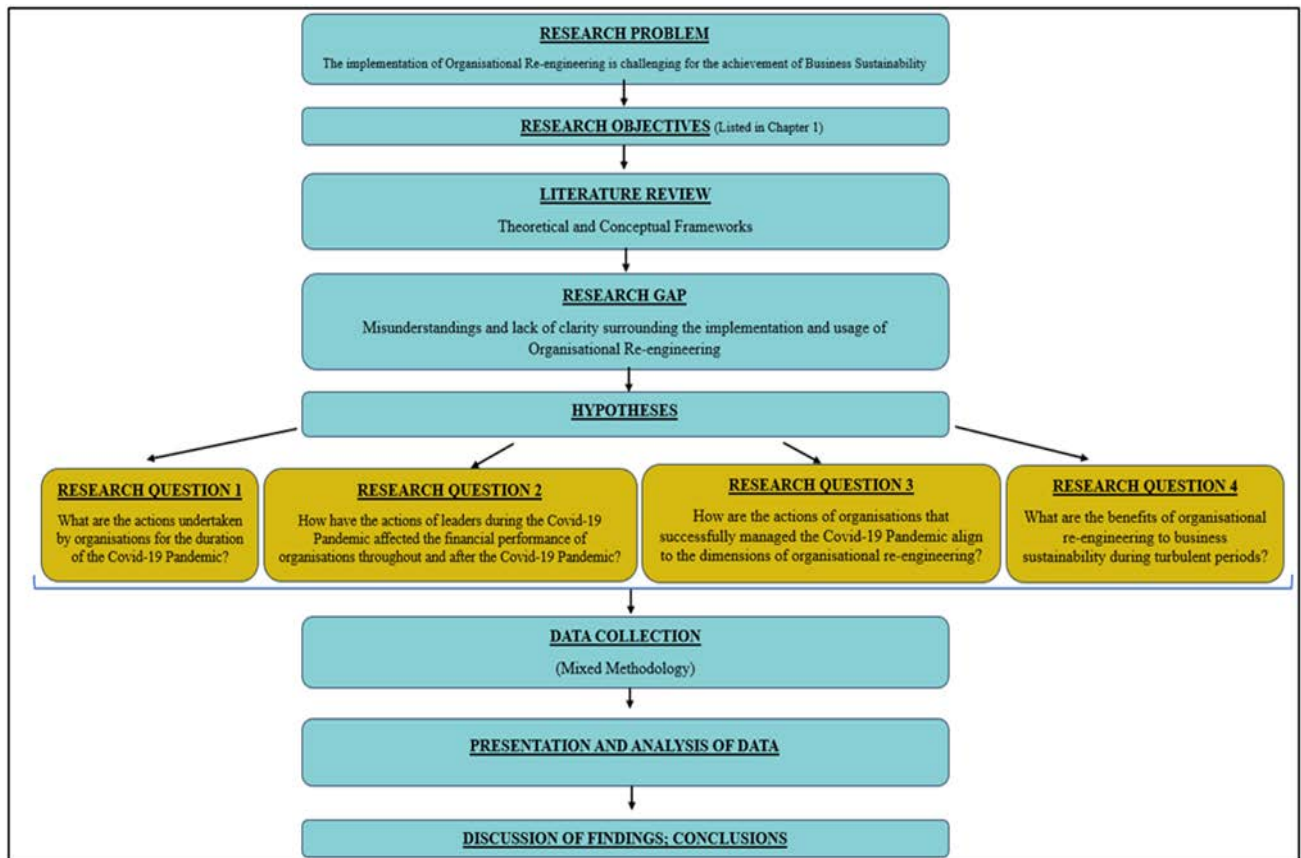


Figure 3.1. *Research Structure Methodology.*

3.2 Research Approach and Design

This case study approach utilized a mixed methodological design, combining the quantitative and qualitative research techniques (Queirós et al., 2017). Palinkas et al. (2011) noted that the mixed methodology evolves around the collection, analysis, and amalgamation of the quantitative and qualitative data into single or multiple studies. The main proposition behind this technique is that the mixture of the qualitative and quantitative techniques enables for a more thorough appreciation of research problems, rather than if an approach is used in isolation. In this vein, this approach was adopted for this research to bring about enhanced reliability and validity.

During the conduct of research, researchers use three main research approaches. These are the qualitative, quantitative, and mixed methodologies. The qualitative and quantitative

methodologies utilise different research methods to gather and analyse data, whereas the mixed methodological method uses a blend of both the qualitative and quantitative approaches. Each methodology allows researchers to answer different types of research questions and is suited to different types of research. Basias and Pollalis (2018) noted that researchers choose to use the qualitative or quantitative approach based on the nature and specific dynamics of the research to be conducted to best investigate a phenomenon. To better understand the rationale for selecting the research methodology for this research, it is essential to first comprehend the inherent constructs for each of these methodologies and their practicalities.

3.2.1 Qualitative Research

Qualitative research aims at investigating and exploring human reaction and interaction in response to an issue. It is carried out to understand meanings, experiences, ideas, beliefs, and values. It is an attitude or approach to data gathering that involves an extensive investigation of human perception, attitudes, and experiences. It iteratively provides for a better comprehension of a phenomenon by getting closer and interacting with it (Aspers and Corte, 2019). According to Mohajan (2018, as cited in Zohrabi, 2013), the qualitative approach can be viewed as a social interaction that emphasises the interpretation of circumstances to allow for a better comprehension of the social reality of different scenarios. It utilises many techniques inclusive of interviews, logs, records, participative and general observations, as well as open ended questionnaires in order to gather, evaluate, and decode data from visual and written sources, either from historical or present day.

Qualitative research results in value added understanding of motivation and behaviours and allows feedback on subjects and situations. It involves interacting with people in subjective situations. Pathak et al. (2013) asserted “Qualitative research gives voice to the participants in the study” (p. 192). It uses inductive reasoning to guide Observation → Pattern → Tentative

Hypothesis → Theory. There is keen attention to data analysis and interpretation of data, as inappropriate and incorrect collection of data can adversely influence the research's conclusions and can affect the validity of the research. Karunarathna et al. (2024) explained that qualitative data is nonquantifiable and is based mainly on observations. This data is obtained through specific data collection tools that usually differ from the instruments used for quantitative research. Qualitative data enhances quantitative research and explores the effects of a phenomena.

In qualitative studies, researchers have a choice of research design – grounded theory, case study or ethnography. By its very nature, qualitative research explores the research questions. “Allows to understand the nature and complexity of the phenomenon under consideration. Facilitates research in new areas. Supports the examination of a phenomenon in its natural environment. Supports in depth research”, (Basias & Pollalis, 2018, as cited in Denzin & Lincoln, 1994, Lincoln & Guba, 1985, Benbasat et al., 1987). This research used qualitative research to firstly obtain an indication of relationship between concepts and variables. It allowed for an initial and deep understanding of the concepts and variables by using semi-structured interviews with participants. The findings from the qualitative data collection tools were used to determine the themes of the research, which were then used to guide the construction of the quantitative data collection tool.

3.2.2 Quantitative Research

Unlike the qualitative method that uses inductive reasoning to develop a theory, the quantitative research tests objective theories. It attempts to ascertain the relationship or correlation between two or more variables. This approach is used when measuring variables, verifying an existing theory or hypothesis or when questioning a theory or hypothesis. These variables can be measured using different research tools. Bhawa and Gobind (2015, as cited in

Aliaga and Gunderson, 2000) termed quantitative research as the explanation of a phenomenon through the gathering of numerical data and its interpretation with the use of mathematical and statistical tools and techniques. In quantitative research, researchers have a choice of research design – correlation, case study or experimental. In experiments, subjects are measured both prior and after the experiment. Data collected about different variables are used to generate or test a hypothesis. Quantitative research uses deductive reasoning: Theory → Hypothesis → Observation → Confirmation. Karunarathna et al. (2024) noted that quantitative data is not observable and is mainly numerical in nature. It is usually measured using rating scales which are further analysed for predispositions, correlations, and significance. This methodology uses specific data collection tools that may differ from qualitative research.

In this research, quantitative research was also incorporated using closed-end questionnaires. The quantitative data collection tool was developed from the themes that were originally ascertained from the qualitative research. The quantitative data was used to ascertain relationships amongst key variables, as well as to determine trends, commonalities, and patterns in the data. The analysis of this data was used for either confirming or disconfirming the various hypotheses of this research.

3.2.2.1 Differences between the Qualitative and Quantitative Research Approaches. The qualitative and quantitative research methodologies are fundamentally different. Ercikan and Roth (2006) postulated that, “The classification of research activities into qualitative and quantitative typically is based on the types of data and analyses used” (p. 15). Qualitative research attempts to provide an understanding of a concept, thought or experience while quantitative research attempts to verify or test a theory or hypothesis. Fielding and Schreier (2001, as cited in Witt, 1969) stated that the use of the qualitative and quantitative

approaches differs based on the research strategy. Each addresses different research goals, collect and analyse data differently, and have different sampling norms.

Qualitative and quantitative research use different data collection methods. The qualitative method uses primarily observation, interviews, focus groups, ethnography, and literature reviews, while quantitative research uses surveys, experiments, observation, secondary data, and closed-ended questionnaires. The former approach seeks to understand why a phenomenon occurred, while the latter approach aims to test or confirm a theory or hypothesis. The type of data collection method used will be driven by the research questions that are required to be addressed. In this research, it was necessary to use both types of research. The qualitative method was used to understand the various variables, while the quantitative approach looked at their relationships and tested the hypotheses of the research.

Both methodologies use different reasoning methods. The qualitative methodology utilises inductive reasoning, while the quantitative methodology utilises deductive reasoning. Inductive reasoning starts with an observation and looks for a pattern. Once a pattern is found, a tentative hypothesis is developed, and a theory formed. On the other hand, deductive reasoning in quantitative research starts with a theory and hypothesis. It then uses different methods to confirm or test the hypothesis and then either agrees or disagrees with the hypothesis. Qualitative research using inductive reasoning aims at developing a theory. It looks at a specific observation and moves to a broad generalization. Conclusions drawn based on inductive reasoning are not proven and can be invalidated. Quantitative research uses deductive reasoning and focuses on assessing an existing theory. In contrast to qualitative research, quantitative research moves from broad generalisations to confirmation or non-confirmation of a hypothesis or theory. Conclusions based on deductive reasoning are only as good as the underlying postulations of the initial inductive study.

The philosophical underpinnings of the two approaches differ. The quantitative methodology supports the viewpoint of positivism, while the qualitative methodology supports interpretivism. “Positivism is counted on the philosophical stance of natural scientist that is working with observable reality within society leading to production of generalizations”, (Husam & Abraham, 2020, p. 41). Husam & Abraham went on to state:

Interpretivism is more concerned with in depth variables and factors related a context, it considers humans as different from physical phenomena as they create further depth in meanings with the assumption that human beings cannot be explored in a similar way to physical phenomena. (p. 41)

Qualitative research describes a problem from the viewpoint of those experiencing it. In-depth information on the behaviour is collected from a few respondents. Qualitative research can therefore be considered as subjective. Alternatively, quantitative research provides observed effects of a problem or condition. Less in-depth information is gathered from a large sample of respondents. However, a wider breadth of information is collected. Quantitative studies can therefore be considered as objective.

When conducting qualitative studies, few respondents are required as this type of research starts with an observation. To the contrary, quantitative research requires many respondents as this methodology aims at testing or confirming an existing hypothesis or theory. The conclusions drawn from quantitative research are representative of a large population and provide a statistically more accurate hypothesis and theory. Given that quantitative research requires many respondents, it is usually more costly and time consuming in the planning and execution stages and lighter on the analysis stage when compared to qualitative research. “Qualitative findings are far longer, more detailed and variable in content than quantitative ones” (Yilmaz, 2013, p. 313). Qualitative research only requires a small number of participants (Polkinghorne, 2005).

Both methodologies use questionnaires as a basis for data collection. However, each methodology aims at achieving a different objective. Qualitative research attempts to understand the 'why' for behaviours, experiences, ideas, beliefs, and values, whereas quantitative research seeks to test or confirm an existing hypothesis or theory. As such, qualitative techniques use questionnaires with open-ended questions, while quantitative techniques use questionnaires with closed-ended questions where the respondent must choose a response from pre-set responses. Open-ended questions facilitate the respondent providing a rationale for behaviours and allows a deeper understanding of the reason that underlies a respondent's actions. In contrast, closed-ended questions only aim to confirm existing thoughts and seek to ascertain relationships among variables.

Data obtained from qualitative techniques are analysed by coding, summarizing, categorizing and interpretation, whereas data obtained from quantitative techniques are analysed using mathematical and statistical analysis. The analysis tools used for both methods are different as both methods have different aims and objectives. Qualitative data is analysed using techniques such as qualitative content analysis, thematic analysis, and discourse analysis. Quantitative techniques look for commonalities, patterns, and relationships in data. Qualitative data is depicted in words, while quantitative data is portrayed in numbers, tables, and graphs. The validity and reliability of qualitative studies are largely reliant upon the skills and expertise of the researcher, whereas the validity and reliability of quantitative studies are predominantly contingent upon the measurement device and instrument utilised. According to Cleland (2015), the quantitative and qualitative methodologies utilise various beliefs about the world. This surrounds the manner in which knowledge is created, as well as what represents actual problems, challenges, and solutions of the world. Santos et al. (2020) highlighted the shortcomings of both methodologies. He postulated that qualitative research lacks rigor, which

has negative impacts on reliability and validity, while the quantitative approach fails to describe or understand an underlying phenomenon.

In this vein, it was necessary to use both methods. The shortcomings of one method were supplemented with the strengths of the other method. The quantitative approach ensured rigor in the research, while the qualitative approach allowed for a deep understanding of the concepts and variables prior to them being measured and in ascertaining their relationships.

3.2.3 Mixed Methodological Approach

There is ongoing dialog on defining and conceptualizing the mixed methodological approach as a type of research method. The mixed methodology is arguably considered as a major research paradigm. There are no individual criteria for demarcation of this methodology as a research method. Instead, there are a range of conceptualizations on what constitutes the mixed methodology. Positivists hold opposing views to constructivists and interpretivists on research methodologies (Johnson & Onwuegbuzie, 2004).

The mixed methodology lies on the continuum between the opposing poles of the qualitative and quantitative methods and is determined by the mixing and matching of both approaches to answer research questions. The definition continues to change as the approach grows and develops. The mixed methodology approach is defined as “the combination of methodologies in the study of the same phenomenon” (Johnson et al., 2007, p. 291). Johnson et al. identified five themes based on comparisons and contrasts of nineteen separate definitions – “what is mixed; the mixing stage; breadth of mixed research; why mixing is carried out; the orientation of the mixed methods”. Combined, they provided for an understanding and corroboration for the breadth and depth of research. The mixed methodology “refers to the designed use of multiple methods, with offsetting or counteracting biases, in investigations of

the same phenomenon in order to strengthen the validity of the inquiry results” (Greene et al., 1989, p. 256).

Several researchers have conducted studies into the adoption of the mixed methods approach. Greene and McClintock (1985) indicated five main justifications for this approach. These were validation of results, “complementarity, development, initiation and expansion”, (Greene et al., 1989). Greene et al. further developed these justifications. The five justifications provide for stronger evidence in research conclusions, the answering of an extensive variety of research questions, generalizations of findings and improved validity and reliability of research.

Existing literature details both the advantages and disadvantages of the mixed methodology. Mark and Shotland (1984) explained that confusion surrounds the cost and benefits of design choices and data analysis of the mixed methodology given the existence of insufficient guidance and studies on the implementation of mixed methods designs and analysis. The mixed methodology can be time-consuming, costly and requires careful planning and available resources. Some specialized skills may need to be outsourced as the researcher may not have the required expertise for the combined use of the quantitative and qualitative methodologies concurrently or sequentially or even to combine the results of both methods. Ivankova et al. (2006) commented that the challenges in the use of the quantitative and qualitative methodologies revolve around the weighting that is given to each methodology. Additionally, the timing of data collection and interpretation, as well as what stage of the study’s connection requires the use of both techniques, are factors which influence the success of the mixed methods approach.

Greene and McClintock (1985) indicated “Mixed method designs comes the need for systematic strategies for joint analysing and triangulating the results of quantitative and qualitative methods” (p. 526-527). Karim (2007) highlighted several advantages associated

with the mixed methodology. These include the provision of greater validity of research, increased understanding of a phenomena, a broader overview of a subject matter, best for use when there is scarce information and most applicable for case studies.

There continues to be much thought, debate and research on the value and relevance associated with the adoption of the mixed methodology. Work continues in this field with researchers gathering conclusions utilizing different frameworks and philosophies. There are many researchers who prefer to use a single method. However, there are many benefits to be gleaned from the mixed methodology. The common advantages associated with the adoption of the mixed methodology are as follows:

3.2.3.1 Strengths of either Method can overcome the Weaknesses of the other Method. The mixed methodological approach does not seek to replace the qualitative and quantitative methods. Rather, it seeks to utilise the strong points of each methodology to complement the weak points of other methodology. Researchers capitalize on the strengths of each methodology to minimize the weaknesses of the other methodology in research. The strengths of either methodology can even prevail over the drawbacks of the other method. As such this research utilised both methods, thereby capitalizing on the strengths of both. Denzin (1978) noted “the bias inherent in any particular data source, investigators, and particularly method will be canceled out when used in conjunction with other data sources, investigators, and methods” and “the result will be a convergence upon the truth about some social phenomenon” (p. 1347).

Fusch et al. (2018) iterated that a study’s worthiness of building on the existing body of research is enhanced with the use of triangulation, as this approach improves the validity of the research results. He insinuated that researchers could strengthen their studies from the advantages of the qualitative and quantitative methodologies and by using the qualities of one approach to counter the deficiencies of the other method. This permits researchers to obtain an

expansive range of information on a study and to increase the validity and reliability of the study. This view has been reinforced by Greene et al. (1989) where they indicated that:

The core premise of triangulation as a design strategy is that all methods have inherent biases and limitations, so use of only one method to assess a given phenomenon will inevitably yield biased and limited results. However, when two or more methods that have offsetting biases are used to assess a given phenomenon, and the results of these methods converge or corroborate one another, then the validity of inquiry findings is enhanced. (p. 256)

3.2.3.2 Stronger Evidence for Research Conclusions. Convergence and corroboration of outcomes from the qualitative and quantitative methods enhance conclusions. Descriptive results from the qualitative approach add to the statistics generated from the quantitative approach, while the statistics generated from the quantitative approach provides supportive data for qualitative research. “One apparently common purpose for combining qualitative and quantitative methods is to use the results from one method to elaborate, enhance, or illustrate the results from the other” (Greene et al., 1989, p. 266). In this way, the themes derived from the qualitative data were used to develop the closed-ended questionnaire of the quantitative aspect of this research. This view is supported by Johnson and Onwuegbuzie (2004) where they indicated “Many researchers need to complement one method with another, and all researchers need a solid understanding of multiple methods used by other scholars to facilitate communication, to promote collaboration, and to provide superior research” (p. 15). The mixed methodology enriches conclusions drawn from different data collection and interpretation instruments.

3.2.3.3 Broader Range of Research Questions. The mixed methodology offers an opportunity to answer a broader scope of research questions so as to better understand a phenomenon and provide greater accuracy for the research findings. Researchers can use

techniques from both the qualitative and quantitative approaches to find a more workable solution to answer specific research questions. This investigation would have been restricted if only one research method was utilized. Research questions can best be answered in the best available way. Johnson and Onwuegbuzie (2004) iterated that the underlying outcome for providing answers to research questions are enhanced based on how the qualitative and quantitative approaches are mixed. Weyers et al. (2008) commented that the mixed methodology will "produce a variety of information from multiple perspectives on the same issue and, in so doing, enrich the understanding of the deeper and varied dimensions of the given phenomenon" (p. 209). Utilizing the combined usage of the qualitative and quantitative research methodologies allows researchers deeper insights and increases the accuracy of research studies that may have otherwise been overlooked had only one method been used. The mixed methodology helps to reveal inconsistencies, highlight contradictions, and show trends of a study. The use of both methodologies is therefore expected to enhance the reliability and validity of the research.

3.2.3.4 Generalization of Findings. The mixed methodology facilitates the generality of research findings. The use of the findings from only one approach restricts the utilisation of the findings to other studies. Understanding the strong points and the shortcomings of the quantitative and qualitative approaches allows researchers to effectively utilise a mixture of both methods. The usage of the combined qualitative and quantitative research approaches produces richer findings that can be applied to other research. Karim (2007) noted "it is process of using more than one method, theory, researcher and data collection method & technique to make the research findings more valid, reliable and generalisable" (p. 1). Given that it is expected that the recommendations of this research will be generalised to all organisations, the mixed methodology was therefore most appropriate.

3.2.3.5 Improves Validity and Reliability. The mixed methodology seeks the achievement of validity and reliability in its research findings and conclusions. Ahmed and Ishtiaq (2021) iterated that validity and reliability in research are important factors. Without validity and reliability, research errors may not be identified or addressed, which may lead to bias or wrong conclusions. It is therefore necessary to use the correct methodology and data collection instruments when conducting research.

Greene et al. (1989) indicated “Testing and verification of both types of data sources increased reliability and validity” (p. 268). When used together, knowledge is produced that informs theory and practice. Johnson and Onwuegbuzie (2004) postulated “Research in a content domain that is dominated by one method often can be better informed by the use of multiple methods” (p. 15). Grounded theory can be developed and tested by researchers to provide valid research theories. It allows for the expansion and a creative form of research. There are numerous methods of blending combinations of the qualitative and quantitative research methodologies. Utilisation of multiple approaches is legitimized when answering research questions from both the quantitative and qualitative points of view. Weyers et al. (2008) noted that the individual methodologies are inherently deficient, lacking the ability to obtain and make comparisons across different data sets.

The mixed methodology promotes neutrality in a research study resulting in bias-free results. It guides data collection methods and reduces uncertainty. Corroboration of research approaches provides greater confidence of research findings. Greater knowledge and understanding are gained by the researchers when there are conflicting findings of the studied phenomena. Researchers are then able to modify the interpretation and conclusions of the study. Thus, the mixed methodology improves the validity and reliability of research findings. Olsen (2004) noted “I argue, is not aimed merely at validation but at deepening and widening one's understanding” (p. 1).

3.2.4 Study's Research Design

The mixed approach was selected for this research based on the benefits previously detailed. Taherdoost (2022) noted that mixed methods approach simply uses an amalgamation of the qualitative and quantitative approaches dependent on the purpose of the research, the nature of the study and the research questions. It aims to provide a more comprehensive insight into a particular phenomenon. The combination of both methodologies sometimes vary either equally or with more weight given to the other methodology dependent on the selected integration process. The integration of both methodologies can assist researchers in obtaining answers and solutions to complexed phenomenon in a range of different fields.

This method allowed for greater validity, reliability (Greene et al., 1989), viability, acceptability, and utilisation of the research's findings (Karim, 2007). Additionally, the mixed approach provided stronger evidence for conclusions (Onwuegbuzie, 2004). It minimized the weaknesses associated with a singular technique and used the strengths of both approaches to provide a superior conclusion and theory (Denzin, 1978). The mixed approach allowed a wider variety of research questions to be asked, thus facilitating greater accuracy and generalization of research findings. Jick (1979) noted that the mixed methodological approach is able to give way to researchers being more confident of their research publications. It allowed for the initiation and motivation for innovative ways of data collection. It led to detailed and broad perspectives about the research problem. It also allowed for the fusion and amalgamation of theories. It revealed inconsistencies in previous studies and served as a benchmark for assessing the comprehensiveness, validity, and reliability of other theories.

Amaratunga et al. (2002) iterated that the weakness in one technique is usually counterbalanced by a strength in the other technique. Rahman (2020) noted that the quantitative approach “fails to ascertain deeper underlying meanings and explanations” (p. 105), while Munthe-Kaas (2019) postulated that “few tools have been designed for appraising qualitative

studies in the context of qualitative synthesis. Furthermore, there is a paucity of tools designed to critically appraise qualitative research to inform a practical decision or recommendation” (p. 2). Ahmad et al. (2019) indicated that the qualitative approach is difficult to analyse as “people will use different words and phrases to describe their points of view, and may not even talk about the same things if they find space to roam with their responses” (p. 2828). It is envisioned that the systematic use of both methods will thus eliminate these shortcomings.

The combined use of the quantitative and qualitative techniques facilitated triangulation of the statistics gathered from both methods. More specifically, there was convergence, corroboration, and correspondence of the data from both techniques for filling and complementing any data and analysis gaps of each methodology (Greene et al., 1989). The primary materials collected from the two approaches was analysed together with data gathered from secondary sources to examine the various hypotheses of this research.

In performing this research, the quantitative and qualitative research approaches were used sequentially, rather than concurrently (Almeida, 2018). The qualitative approach was firstly be conducted, after which the quantitative aspect was conducted. This was necessary as the qualitative approach provided an indication of the various dimensions conducted by business leaders during the Covid-19 pandemic for the implementation of organisational re-engineering, and for the success of organisations during this period. The qualitative method took into account unpredicted findings and allowed flexibility in the study design (Saunders et al., 2015). According to Stahl and King (2020), qualitative research is distinctive as it allows researchers to obtain first-hand information directly from study subjects, thus allowing for a more interactive comprehension of the problem under investigation. The data that was collected using the quantitative approach either confirmed or disconfirmed, and complement the data obtained from the qualitative approach. This provided an overall better analysis and

understanding of the impact of the implementation of organisational re-engineering during turbulent times and on the sustainability of organisations.

Data was amassed from both primary and secondary data sources (Johnston, 2017). Karunarathna et al. (2024) noted that data collection plays an instrumental role in determining whether a study is successful or not. Data collected for a study is used in many different aspects. These include for example in the finding of solutions to research questions, in checking the validity of research hypotheses and in the fulfilling of the research objectives. The quality of the data collected is influenced by the reliability and validity of the data collection techniques. Therefore, there must be tremendous diligence when choosing a data collection technique. Data can be categorised differently. For example, data can be qualitative, quantitative, primary, or secondary. Each type of data requires a different data collection technique. The selection of the most appropriate technique is based on the research issue, the research objectives and the type of data that will be required.

Primary sources of data collection included semi-structured interviews (Adeoye-Olatunde & Olenik, 2021) and closed-ended questionnaires (Jain, 2021), while secondary sources included document reviews. The data was gathered from a sample taken from a wide cross-section of existing organisations in Trinidad and Tobago. Given the large population size, stratified multistage sampling (Etikan & Bala, 2017) was used to obtain an unbiased representative sample (Elfil & Negida, 2017). Omair (2014) noted that a sample must consist of an appropriate size of respondents in order to maintain accuracy and reliability of the study. The sample must also be a representation of the research population so as to avoid any major discrepancies in the interpretation of the findings of the sample as against the characteristics of the population. It is therefore critical that the correct sample size be chosen in order to achieve the objectives of the research. In this vein, multistage sampling was used. According to Makwana et al. (2023), multistage sampling divides a population into smaller clusters and then

selects samples from the different clusters. This may be done several times until the most appropriate sample size is reached. In order to obtain information-rich cases, the stratified multistage sampling method was supported by simple random sampling (Noor et al., 2022). Makwana et al. (2023) iterated that simple random sampling allows each participant in a survey to have an equal and random opportunity of being chosen. It reduces bias and thus allows for greater generalisation of findings.

The collected particulars from the qualitative approach were evaluated with the usage of content analysis and thematic analysis while the data gathered from the quantitative approach was examined using mathematical and statistical tools. Together, these included discussions, charts and diagrams, correlation, summaries, grouping, coding, and reporting. Data gathered from quantitative and qualitative techniques were triangulated against each other for increased validity and reliability of the research (Golafshani, 2003).

3.3 Population and Sample of the Research Study

The population for this research consisted of twenty-six thousand and forty-six (26,046) companies within Trinidad and Tobago (Central Statistical Office, 2022). These companies were spread across sixteen (16) main industries (Central Statistical Office, 2022) and were of varying sizes and maturity. It is presumed that all these companies were impacted by the pandemic. Given the relatively large population size, probability sampling using stratified multistage sampling was utilized, (Elfil & Negida, 2017), supported by simple random sampling (Noor et al., 2022). The sampling methodology of using stratified multistage sampling was time and cost effective and provided credibility and objectivity to the research. It involved using a combination of cluster and stratified sampling. This sampling approach ensured that the sample was typical of the larger population. Stratified multi-stage sampling encompassed dividing the population into groups at various levels. From within each group, a

smaller group was chosen. The final sample was drawn from the smallest remaining group, (Acharya et al., 2013).

During the course of the research, sampling played a major role. It encompassed the selection of a subset from within the statistical population. Sampling was necessary as surveying the population would have been time and cost inefficient, (Bhardwaj, 2019). The characteristics of the sample population was used to determine the characteristics of the sample (Tsoukatos, 2021a). Gumpili and Das (2022) noted that a small sample size may not be an accurate representation of the study's population. This would invalidate the results of the study, as the findings would not be a true representation of the population. Narayan et al. (2023) argued that a reduction in the sample size of a study causes a decrease in the cost, time and work involved in conducting the study. On the other hand, reducing the sample size may compromise the quality of information that is obtained via the data collection techniques of the study. This sometimes results from challenges in obtaining a representative sample. It must be noted that a representative sample was required from the population to ensure that there was proper analysis for the provision of a valid and reliable research. It was therefore imperative that the chosen sampling technique provide an accurate representation of the population, thus allowing for the validity of the research findings, recommendations, and conclusions. Conversely, the inclusion of any bias in sample selection would have resulted in findings that were not able to be applied to the study's population. Therefore, an appropriate sampling technique was chosen to eliminate bias from the sample group.

A sample can be undertaken using probability and non-probability sampling. Both these methodologies are distinctly different and are used under different circumstances. The choice of sampling approach is dependent on the research objectives. The use of an incorrect sampling method may result in biased and/or inaccurate inferences, (Tansay, 2007). It is important that a sample be representative of the entire population (Acharya et al., 2013). Gumpili and Das

(2022) iterated that the sample size needs to be optimised so as to discover any statistical variations that may exist and also to obtain scientifically valid results. Therefore, researchers must ensure that the sample size is neither too small nor too large, and the chosen size must in fact allow for a correct representation of the characteristics of the population.

It is also critical that a sample of experts be assembled on the research topic (Sileyew, 2019). This is especially useful in qualitative research. An effective sample should be consistent, diverse, and transparent (Kyngäs et al., 2020). Consistency is required to track changes across space and time. Any change in the data should be across all comparable samples. Samples should be as diverse as the population and sensitive to changes in the same way as the population would have been affected. Procedures chosen to select the sample need to be transparent to safeguard credibility of the research (Haq, 2023). The type of sampling method chosen would determine the degree of representation of a sample to its population. Omair (2014) noted that the chosen sampling method must allow the sample to be a true reflection of the population. As far as possible convenience sampling should be avoided.

Researchers strive for ensuring that the sample characteristics closely resemble the population characteristics. Sample size and sample design are key considerations in research, (Omona, 2013). The sampling methodology affects the response rate and should be grounded on the research objectives and the specific traits of the population. If an inappropriate sampling method was used, this might result in a poor response rate and inaccurate findings, (Khan, 2020). Sampling therefore determines the quality of a study and enhances the reliability and validity of the findings. Ahmed and Ishtiaq (2021) noted that validity and reliability are two essential factors when conducting research as they determine the effectiveness of the study's methods to its boundaries. Validity measures the extent of accuracy of the findings, whereas reliability measures the consistency. Simple random sampling facilitates an equal opportunity of a sample being chosen. This is used to prevent bias in the selection process. It is a probability

sampling method that allows the sample to be a good and unbiased representation of the population (Noor et al., 2022). This method is relatively cost effective and fast but can be a bit cumbersome.

The National Education Association (Krejcie & Morgan, 1970) specified a formula for the calculation of sample size, s . The formula is: “ $s = \frac{X^2 NP(1-P)}{[d^2(N-1)] + [X^2 P(P-1)]}$ ”

where:

X^2 = the table value of chi-square for one degree of freedom at the desired confidence level (3.841)

N = the population size

P = the population proportion (assumed to be 0.5, since this would provide the maximum sample size)

d = the degree of accuracy expressed as a proportion (0.05)”.

Therefore: $s = \frac{25,010.6715}{66.07275}$

$s = 378.5$ (rounded to 379).

Based on utilizing the sampling formula as specified by the National Education Association (Krejcie & Morgan, 1970), a sample of three hundred and seventy-nine (379) participants companies from across the sixteen (16) sectors was selected for the quantitative aspect of the research. The qualitative aspect of the research involved a relatively smaller sample. Sample size for the qualitative aspect was determined when saturation (Powers & Knapp, 2006) was attained. According to Fugard and Potts (2015), saturation is usually achieved from between 15 to 30 participants

The samples were taken from the following sixteen (16) sectors:

- i. Wholesale and retail trade
- ii. Professional, scientific, and technical activities
- iii. Manufacturing and distribution

- iv. Tourism
- v. Accommodation
- vi. Food processors and drinks
- vii. Arts, entertainment, and recreation
- viii. Construction
- ix. Information, communication, and technology
- x. Administrative and support services activities
- xi. Education
- xii. Financial and insurance activities
- xiii. Government
- xiv. Printing and publishing
- xv. Real estate
- xvi. Transport

At the first stage of stratified multistage sampling for this research, the entities were grouped into sectors that were mutually exclusive and exhaustive. These were the primary sampling units. The second stage of stratification involved using secondary data on the number of employees within each organisation to categorize the various organisations into three distinct size categories – small, medium, and large businesses.

Becker-Blease et al. (2010) iterated that an organisation's size can be determined in various ways which includes assets, sales, or employees. Becker-Blease et al. went on to note that "number of employees rather than assets or sales are better measures of firm size for organizational theories" (p. 4). Gray et al. (2003) stated that "small organisations had fewer than 100 employees, medium-sized firms had 100-499 employees, and large organisations had more than 500 employees" (p. 10). This same criterion using 'employee numbers' was also

used for the classification of the sampled organisations into small, medium or large in this research (Oxford Business Group, 2024).

From each of the resultant forty-eight (48) sub-groups, eight companies were randomly selected using simple random sampling (Noor et al., 2022). This resulted in three hundred and eighty-four (384) participants. While the Krejcie and Morgan (1970) table identified a sample size of 379 participants for a population of 26,046, a sample size of 384 participants was utilized in the research. This choice was made to adhere to the maximum conservative threshold set by Krejcie and Morgan for large populations. Furthermore, because this research employed a stratified multistage sampling design, the additional 5 participants were included to provide a margin for the design effect and to ensure that the research maintained its 95% confidence level even if minor data cleaning was required. This approach allowed for statistical rigor over minimum requirements. 384 was therefore considered as the ultimate sampling units. Gumpili and Das (2022) iterated that having a too large of a sample is a wastage of money, people, and time. A larger than needed sample size does not add to the ethical assurance of a study and causes more than the necessary number of respondents in participating in the research process. Even small variations in the sample size can lead to significantly different findings which can mislead researchers into making erroneous decisions.

For the qualitative aspect of the research, one organisation was selected from each of the sixteen (16) main sectors using purposive sampling (Palinkas et al., 2015). This process was repeated until saturation was achieved. Saturation was expected to be attained from between 15 to 30 participants (Fugard & Potts, 2015). Gumpili and Das (2022) explained that saturation is attained when data that is collected repeatedly gives the same results. The collection of data from an additional sample does not provide any new results. Saturation is determined by different factors inclusive of the similarity or differences of the study's population.

The samples consisted of existing going concern companies, as it was difficult to contact and obtain information from companies that were closed due to the Covid-19 pandemic. As such, closed entities were intentionally excluded from this research. This exclusion of closed entities introduced survivorship bias into the research, which would have inflated the sustainability findings. This allowed the research to capture the actions of organisations that were resilient during the Covid-19 pandemic and those that adopted measures that ensured their survival and sustainability. Therefore, the research finding would report the broad reality of the key dimensions necessary for the successful implementation of organisational re-engineering during turbulent periods. The chosen sampling techniques used in this research provided samples that were a good representation of the population. These included companies of various sizes and maturities.

The participants for the sample were Board Members or Executive Managers. The criteria for these participants were that they must have had a minimum of 1 year's experience/ involvement with the organisation. They must have also fallen within the age category of 18 to 85 years. These criteria allowed persons who were participants in the strategic and operational decision-making of the organisation to be part of the research. Persons with mental disabilities, as well as persons who were unable to provide consent for themselves were excluded from this research.

Contact information for the selected sample was obtained through a Google search, after which the Executive Secretaries of the Board Directors or Executive Management of each sampled company was contacted. The Executive Secretaries of each of these companies were initially telephoned and then emailed with a formal letter giving details of the research and seeking agreement for a Board Member or Executive Manager to participate in the research. Follow up for consent and timing was done through the Executive Secretaries of the various organisations. Once permission was granted, arrangements were made to conduct an interview

for the qualitative aspect of the research and for the dissemination of the questionnaire either electronically through a Google Form or hardcopy for the quantitative aspect of the research. Where permission was not granted or where there was a refusal to take part in the research, a replacement organisation from the second stage stratification in the same category was selected using simple random sampling to replace the previously sampled organisation. Ahmed (2024) commented that the selection of the most appropriate sampling technique enhances the validity, relevance, and generalisability of study outcomes. The sampling method must therefore intrinsically include many aspects of the research. It must include the research goals and objectives, the demographics of the study's population and the inherent limitations of the study.

3.4 Materials/Instrumentation of Research Tools

As noted in this Chapter's previous section, the chosen research approach and design for this research was the mixed methodological design (Hossain, 2012), using a case study approach of the Covid-19 pandemic. The case study approach (Bollen, 1989) of the Covid-19 pandemic focused on discerning and comprehending the experiences, perspectives, and thoughts of this period, so as to generalise (Dawadi et al., 2021) and extrapolate the results of this research to assist leaders with implementing organisational re-engineering during turbulent periods.

The mixed methodological design used a blend of the qualitative and quantitative approaches, allowing for the strong points of one methodology to supersede the shortcomings of the other method (Almeida, 2018). McCusker and Gunaydin (2015) iterated that it is impossible to choose a research methodology without first understanding the nature of the study, as different research methodologies are required for addressing different research questions. In this research, individually, the qualitative and quantitative design methods were not able to effectively or comprehensively answer the various research questions. However, by

combining both approaches, there was a more rigorous methodology to answering the research questions. The mixed methodology thus allowed for a broad range of research questions and for the generalisation of the research findings, therefore providing stronger evidence for the research's conclusions. This consequently led to an enhancement of the research's validity and reliability. O'Cathain et al. (2007) commented that mixed methodology is essential to complement, support, and develop a greater analysis and understanding of the findings.

Primary data (Wilcox et al., 2012) is collected mainly through surveys, questionnaires, “interviews, observations and focus groups” (p. 16). Primary data is the collection of data from first-hand sources. It includes data that has not been published, changed, or altered (Kabir, 2016). It adds to the objectivity, accuracy, integrity, and credibility of studies and facilitates the gathering of data on specific fields of research. It offers researchers a first-hand perspective on a research topic through individual interactions with respondents. Often, primary data collection is utilised to collect information about a new or unique area of study that cannot be gleaned from secondary sources (Liang & Lu, 2006). The collection of primary data will add to the reliability and validity of the research. Karunarathna et al. (2024) iterated that primary data includes information from original sources. This type of data enhances a study's reliability, validity, and objectivity. Primary data is less subject to interpretation by external sources and secondary data.

This research utilized several different data collection tools, each drawn from either the qualitative or quantitative approach and directed towards satisfying the respective research questions of this research. Using the qualitative approach (Pathak et al., 2013), semi-structured interviews was utilised for answering all four research questions. Karunarathna et al. (2024) iterated that semi-structured interviews are useful for examining complexed scenarios. This technique allowed for obtaining unambiguous, consistent, and reliable qualitative data during the interview process. Semi-structured interviews are formal and based on a preset frame of

questions. This allowed for flexibility during the interview process. Researchers are able to follow the script, but are also permitted to delve further based on the responses from participants. This allowed for the collection of rich data that assisted in meeting the research objectives. On the other hand, closed-ended questionnaires were adopted for the quantitative approach to also assist with answering the four research questions. Karunarathna et al. (2024) noted that closed-ended questionnaires allowed respondents to choose responses from a set of pre-determined questions. The questions and answers were also pre-coded which facilitated more expeditious data collection and data analysis.

The mixed methodological approach triangulated the data from both approaches to aid in providing reliable and valid conclusions. Bans-Akutey and Tiimub (2021) noted that triangulation at times, utilises the mixed methodology of the qualitative and quantitative approaches to accomplish the aim of obtaining valid and trustworthy research findings. Research triangulation encompasses the activities that are necessary to assist in increasing and enhancing the validity and credibility of research studies. Research triangulation attempts to make the findings of studies relevant.

Additionally, this research utilized a sequential exploratory design (Teddlie & Tashakkori, 2003). Subedi (2016) explained the sequential exploratory design allows for researchers to initially collect qualitative data and then subsequently, to collect quantitative data. This type of research design allowed for the initial exploration of the phenomenon, followed by the gathering of quantitative data for determining relationships and correlations in the qualitative data. This approach is most applicable when there is no theoretical perspective and is useful for generalizability of the research findings. Given that there was little empirical understanding of the influence of the effective implementation of organisational re-engineering to attain sustainability of organisations during turbulent periods, the sequential exploratory mixed-methods approach served as the ideal design for this inquiry.

On the flip side of the coin, there was an option for an explanatory sequential design. According to Subedi (2016), the explanatory sequential design initiates with firstly the gathering of quantitative data, and then subsequently followed by obtaining qualitative data. The qualitative data aids in explaining and collaborating the quantitative results. Unlike the exploratory sequential design approach, this approach obtains quantitative data to attain a general idea of the research problem. The collection of the subsequent qualitative data is used to improve, widen, or clarify the general understanding that was initially obtained through the collection of the quantitative data. The explanatory sequential design is really the opposite approach to the sequential exploratory design. However, this research sought more to ‘explore’ rather than to ‘explain’. There existed little empirical evidence of the dimensions that effectively influence the implementation of organisational re-engineering for the sustainability of organisations during turbulent periods. Hence the sequential exploratory design was applicable rather than the explanatory sequential design.

Given the above, the qualitative approach was firstly administered. Following this, the quantitative approach was administered. It was expected that the qualitative design method would allow for a deep comprehension of the concepts, thoughts, experiences, and actions undertaken by organisational leaders during the Covid-19 pandemic, while the quantitative approach sought to confirm, complement, and fill any data analysis gaps of the qualitative approach (Márquez et al., 2017). The data gathered from the qualitative data collection tools guided the construction of the quantitative data collection tool. The two methods were given equal priority, so as to not allow one method to bias the other. Figure 3.2 diagrammatically shows the triangulation of both methods (Wu, 2011). The quantitative collection of data immediately followed the collection of the qualitative data so as to avoid one technique from influencing the technique or methodology of the other approach. The triangulation of the results of both methods facilitated the complementing and development of each methodology

(Bryman, 2006) and addressed the different research questions. Both these approaches were complemented with the triangulation of data collected from various secondary data sources. Karunaratna et al. (2024) noted that secondary data is utilised in literature reviews. It gives a basis for planning studies, comparison of findings and a comprehension of the background behind many problematic issues. It comprises of information that has previously been collected and published by others. Often, secondary data was previously produced for a different reason.

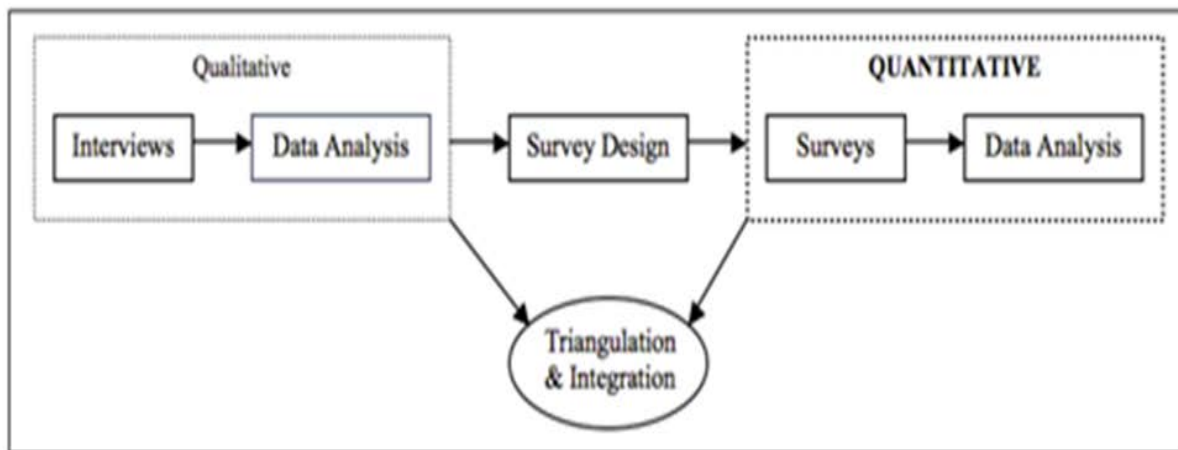


Figure 3.2. *Sequential Exploratory Mixed Methods Design.*

Note. Extracted from Wu (2011), p. 11

Face to face and online semi-structured interviews with thirty-three (33) pre-determined questions (Appendix A) were used to obtain information about the actions undertaken by organisations from their organisational leaders (Kallio et al., 2016). The questions were framed to focus more on the actions and consequences of leaders' actions during and after the Covid-19 pandemic and to a lesser degree on their perceptions of organisational re-engineering and business sustainability themselves. These interviews were used to obtain a general understanding of the actions undertaken by the leaders during the Covid-19 pandemic. It was also used to obtain their opinions on how they were affected by the impact of the Covid-19 pandemic and whether their actions assisted their organisations in obtaining business sustainability in the post Covid-19 period. Information was also gleaned on their financial

performance pre-Covid-19, in comparison to their financial performance during the Covid-19 pandemic and post Covid-19 pandemic periods. The dimensions of organisational re-engineering were also explored to ascertain leader's understanding of this phenomenon. According to Adeoye-Olatunde and Olenik (2021) the "primary benefit of the semi-structured interview is that it permits interviews to be focused while still giving the investigator the autonomy to explore pertinent ideas that may come up in the course of the interview, which can further enhance understanding" (p. 1358).

Secondary data collection detailing the dimensions of organisational re-engineering and on the financial information of the respective organisations were triangulated with the actions of leaders to ascertain if these actions were dimensions of organisational re-engineering and if these actions led to business sustainability. According to Engidaw (2022), secondary data analysis indicated that the world has suffered unforeseen impacts from the Covid 19 pandemic, leading to sufferation and destruction of numerous organisations around the world. It resulted in survival challenges caused by a reduction in revenue, unemployment, weakened global economies and diminished marketing performance. It has created much anxiety and controversy, and poses a challenge for the survival of many organisations.

Semi-structured interviews were more time-efficient than open-ended interviews and permitted for unanticipated data that could be synthesised, compared, amalgamated, investigated, and analysed (Saunders et al., 2012). The interview allowed for flexibility in the collection of data, where non-verbal information could also be collected (Cohen et al., 2013). The interview was initially conducted on a pilot group for practice of the interviewing techniques and for modifications and implementation of suggestions to the interview questions (Majid et al., 2017). Ruslin et al. (2022) noted that semi-structured interviews are ideal for qualitative research as it provides for a deep understanding of the research problem. It also

allows for flexibility in the interview process to probe for a better understanding. Based on the findings, there is potential for subsequent changing of the research questions.

These interviews were conducted with business leaders in their places of employment or place of preference. Where this was not practical, the option to conduct the interviews via online platforms like Zoom or Google Meet was offered. The objective of the interviews was to ascertain the strategies and actions that were adopted through the Covid 19 pandemic by organisational leaders, and their impact on the organisation. Additionally, the intention was to glean their understanding of the concept of implementing organisational re-engineering. The formalisation of the semi-structured interviews contained predetermined questions. There were also allowances for impromptu questions and flow of conversation. With the permission of respondents, these interviews were to be recorded and transcribed. If respondents refused to provide permission for recording, then notes were taken and these notes were verified by the respondents.

The data gathered from the interviews were analysed using NVivo software. This provided content and thematic analysis. Codes and themes (Yin, 1994) were identified and analysed to determine their relation to existent literature on the implementation of organisational re-engineering and business sustainability. The main objective of the interviews was to gain an insight and general understanding of the actions undertaken by leaders during the Covid-19 pandemic and to assess the impact of these actions towards the attainment of business sustainability. There was also a preliminary assessment to ascertain whether these actions were dimensions of organisational re-engineering. The data was analysed for any data gaps in fulfilling the objectives of this research and for allowing solutions to the research's various research questions. The guiding principle for the conduct of the interviews was the attainment of saturation (Powers & Knapp, 2006). Fusch and Ness (2015) iterated that data saturation is essential in research to ensure that adequate information is available to make a

study replicable. If data saturation is not achieved, it will impact a study's validity. Based on the anticipated homogeneity of the actions undertaken by leaders during the Covid-19 pandemic, it was anticipated that only a small purposive sample would be required to obtain saturation.

Using the data obtained from the semi-structured interviews, a closed-ended questionnaire with thirty-seven (37) questions, using tick-boxes and rating scales (Appendix B) was subsequently developed. These were administered to organisational leaders (Zhou et al., 2017) directly or through online using a Google Form. As far as possible, it was mandatory that participants answer all questions. This sample was different to the sample used for the interviews and was selected using stratified multistage and simple random sampling techniques. The preparation of the closed-ended questionnaire was guided by the responses received during the administration of the semi-structured interviews. This allowed for the filling of any data analysis gaps and for the validation of the generalizability of using the data that was collected, and on the actions and performances of companies during the Covid-19 pandemic for turbulent periods. It also offered the opportunity to extend and expand the results (O'Cathain et al., 2007) gathered from the semi-structured interview. The questionnaires were therefore administered to a larger sample than the sample used for the interviews.

In the absence of any acceptable, existing, validated questionnaire, and to ensure efficiency of the data collection, and to eliminate any potential practical problems, a self-developed questionnaire was first conducted and tested on a pilot group. This facilitated necessary modifications to be made prior to administering to the population sample (Van Teijlingen & Hundley, 2002). This also allowed for enhancement of the reliability and validity of the research. Van Teijlingen and Hundley (2001) explained that a pilot study pre-tests measuring instruments allowing for an adequate study design. While it does not necessarily ensure the success of research, it increases the probability of such.

The utilisation of closed-ended questionnaires was time efficient and reduced the probability of obtaining irrelevant answers (Bork & Francis, 1985). Additionally, given that data was already in an organised form in the questionnaire, this allowed for an easier analysis. The quantitative data retrieved from the questionnaire was analysed using mathematical tools, statistical software - SPSS and statistical tools. Patrawala et al. (2023) commented that SPSS is an effective tool for analysing quantitative data. It generates tables, charts, and descriptive statistics. This allows for evaluating the collected data for research questions. Statistical tools include correlation and regression analysis, linear regression, t-tests, scatterplot diagrams, trending, measures of central tendency and measures of dispersion, (Basias & Pollalis, 2018 as cited in Martin & Bridgmon, 2012, Black, 1999, Balnaves & Caputi, 2001, Goertz & Mahoney, 2012, Newman, 1998), Singh, 2006). The data from the quantitative methodology was expressed in numbers, tables, charts, diagrams, and graphs.

Apart from the collection and analysis of primary data, this research also reviewed secondary data sources using document reviews (Creswell, 2008). This involved the collection of public documents such as journals, newspapers, media clippings and transcripts, annual reports and published financial data. Similar to the analysis of the data obtained from interviews and questionnaires, the secondary data was analysed using thematic analysis, and mathematical and statistical tools. This data was used to obtain and analyse information on the financial operations of organisations prior, during and post the Covid-19 pandemic, as well as to ascertain whether the actions undertaken by organisational leaders were in alignment to dimensions of organisational re-engineering. It was also used to obtain objective data and opinions on the how well leaders managed the Covid-19 period, as well as to ascertain the impact of the Covid-19 pandemic on various organisations. The data from the secondary sources were triangulated with the data from the primary sources to confirm and complement the data collected utilising the qualitative and quantitative techniques.

Elaborative feedback derived from the qualitative tools was expected to provide rich information that allowed detail and flexibility in ascertaining the reasons business leaders used particular strategies to lead their organisations through the Covid-19 pandemic. The analysis of the research data attempted to ascertain patterns and components of leadership strategies that were linked to the implementation of organisational re-engineering. Qualitative research was necessary to comprehend the nature and complexity of using particular leadership strategies during the pandemic, (Basias & Pollalis, 2018 as cited Denzin & Lincoln, 1994, Lincoln & Guba, 1985, Benbasat et al., 1987).

On the other hand, the quantitative tools were expected to confirm and answer the question of the relationship between the independent variable, the implementation of organisational re-engineering, and the dependant variable, business sustainability during the Covid-19 pandemic. It was also used to determine the impact of the various selected moderating and mediating variables had on business sustainability. The data obtained from quantitative analysis using the closed-ended questionnaires and document reviews were triangulated with the data obtained from the qualitative technique of the semi-structured interviews to ascertain and validate the data collected. The triangular corroboration of the results of these two methods was essential for filling the data and analysis gaps of each methodology and for enhancing the accuracy of the research. Quantitative research was utilised to test and complement the data obtained through qualitative research, while the qualitative design method was utilised to better comprehend the findings from the quantitative research (Almeida, 2018).

A key responsibility of research is for researchers to protect participants, and the data collected and utilised in their research. Palys and Lowman (2006) noted “Protecting research confidentiality is an integral principle of all social sciences and humanities ethics codes” (p. 163). Manandhar and Joshi (2020) noted that research ethics provides a framework for carrying

out human and academic research in a responsible and ethical manner. It allows for the protection of research participants, so as to avoid any ill harm. Additionally, research ethics plays an important role in educating, guiding, and controlling researchers' actions to ensure that ethical standards are kept to the highest standards.

This research was considered low risk and was conducted incorporating the five ethical principles of research in each stage of the research. Consent from participants was obtained and they were presented with a written and verbal brief of the research preceding the commencement of the data collection. According to Mack (2005), informed consent serves great importance in research. Informed consent is essential as it acts as a tool to safeguard participants in a research study. It provides participants with an understanding of the purpose and objectives of the study and also on the details and consequences of participants' participation. Consequently, participants can objectively decide if they wish to participate in the research.

The brief included the purpose of the research, the research methods, the intention of the research, the time frame, benefits, contact persons, confidentiality and how to withdraw from participation. Informed consent was obtained from all participants prior to data collection. Analysis of the data was done at a group level so as to protect the identities of all participants. To prevent the risk of harm to those participating in the research, names were coded, and identifiers were not used. All data and documentation were kept in locked cabinets and will be destroyed five years after the research is completed. Kang and Hwang, (2023) commented that participant confidentiality and anonymity adheres to good ethical practice.

Manandha and Joshi (2020) commented that consent plays a critical role in the research process. Basically, it is the mutual exchange of information between a researcher and a participant that allows the researcher to proceed with participating in the research without any duress. It is important that researchers provide participants with sufficient and unambiguous

information that is in alignment with the participants' objective decision-making. The researcher should be considerate and respectful if the participant chooses not to participate or withdraw from the study based on the participant being uncomfortable with participating.

In research, reliability and validity are vital, such that it is crucial to design a sound research study, choose suitable methods and samples, and conduct the study carefully and consistently (Middleton, 2017). Reliability and validity are key gauges of the quality of measurement instruments used in research. It is crucial that data sources be objective. Zohrabi (2013) iterated that validity is an important factor for the assessment of the quality and suitability of research. Essentially, researchers utilise various data collection tools and techniques. It is imperative that these tools and techniques be appropriate and free of bias to allow for reliable and unprejudiced conclusions. It is also important that the information collected and instruments utilised be validated.

Objectivity is achieved when there is reliability and validity of the measures with known error margins and sources of errors. Enhancement increases the representation, presentation, and credibility of research. Validity occurs when the instrument measures what it aimed or intended at measuring. A necessary condition of validity is reliability. The extent of validity is determined by the degree to which the test results are in alignment with the intended use of the construct. "Reliability is the extent to which measurements are repeatable," (Bollen, 1989, p. 206). "Stability of measurement over a variety of measurements in which basically the same results should be obtained", (Nunnally, 1978, p. 191). Ahmed and Ishtiaq (2021) commented "The validity refers to how well the data represents the true findings among the participants of a study and among the similar individuals not participating in the study" (p. 2401). Reliability is obtaining the same results when different people conduct the research or when the research is conducted in different time period or under varying conditions with alternative instruments. Reliability and validity differ in their usefulness for measurement

instruments. Whereas reliability looks at the consistency of the measurement instrument, validity focuses on the precision of the measurement instrument. A test is valid when data is reliable. However, if a test is reliable, it is not necessarily valid. According to Ahmed and Ishtiaq (2021), validity and reliability are specific factors that are required to ensure that research is up to standard. They allow for data collection, analysis, and interpretation to be precise.

To safeguard the reliability of the research, it was vital that the concept of trustworthiness be built into the research (Lincoln & Guba, 1985). According to Connelly (2016), trustworthiness refers to the strength and level of confidence in the data analysis and methodologies used in a research study to attain the highest level of quality. It is necessary that researchers include processes and techniques in all studies so as to ensure that all studies are worthy of consideration. Trustworthiness strengthens the quality of the study and its reliability (Finlay, 2006). The concept of trustworthiness was incorporated into the research in several ways. The first way was to make certain that the data collection instruments produced data that was relevant to the research and for answering the research questions (Maxwell, 2005). This was achieved by pilot testing both the semi-structured interviews and closed-ended questionnaire on pilot groups for practice of each technique and for necessary modifications and implementation of suggestions to the questions (Majid et al., 2017). Additionally, the interview and questionnaire questions were reviewed to confirm that they were in sync with the research objectives and research questions. Also, the questionnaire was only developed after the conducting of all of the semi-structured interviews. In this way, the questionnaire was in alignment with the qualitative research, the research questions, and the research objectives. Care was also taken to ensure that the developed questions were non-leading. Di Bella. (2009) noted “Leading questions can influence the results of surveys, making them less reliable and useful because the results do not reflect reality” (p. 1). The above-mentioned actions allowed

for the discovery of themes and patterns, and for permitting the fulfilment of the research objectives and for answering the research questions.

A second way of ensuring the trustworthiness of the research was to safeguard that the uniqueness of the population was present in the selected sample. In this respect, stratified multistage sampling, supported by simple random sampling (Noor et al., 2022) was utilized. Participants were selected from each of the sixteen sectors of the population and included Board Members or Executive Managers with a minimum of at least one (1) year's experience/involvement with the organisation and who were within the age category of 18 and 85 years. These persons were expected to be part of the strategic and operational decision-making of the organisation. Persons with mental disabilities, as well as persons who were unable to provide consent for themselves were excluded from this research. Prior to the administration of the data collection instruments, screening questions were asked to ensure that the prospective respondents fitted within these criteria and were suitable participants for the research. According to DeSimone and Harms (2018) "data screening can improve the quality and trustworthiness of data" (p. 559).

A third measure used to safeguard the reliability of the research through the concept of trustworthiness was to make sure that the data was accurately documented (Gray, 2021). In this vein, the interview would be recorded where permission was granted, and all responses would be immediately transcribed following each interview. This would ensure that all data was captured accurately and in a timely basis. Where recording was not possible, notes were taken and re-read to respondents to ensure the accuracy of notes. This also allowed for accurate coding and the recognition of themes and patterns and for the subsequent further analysis of the data. SPSS, a statistical software package, was used, where data received from the questionnaire was uploaded, to independently produce charts and diagrams for analysis.

To further augment the trustworthiness of the research, an audit trail was developed (Creswell & Miller, 2000). This documented all the processes used in the collecting data and in its analysis. This was expected to increase the user's confidence in the research and added value to the research (Sandelowski, 1986). Carcary (2009) noted "audit trails make transparent the key decisions taken throughout the research process" (p. 15).

The use of a mixed methodology, with results being triangulated from the qualitative and quantitative techniques reduced the risk of any systematic biases and shortcomings of using a singular technique (Maxwell, 2005). This approach was expected to identify any inconsistencies and discrepancies in the research and allowed for identification and filling of any data analysis gaps. This in itself led to more robust and reliable results and allowed for a more comprehensive solution to the research problem.

3.5 Operational Definition of Variables

3.5.1 Introduction

Understanding the operational definition of variables is important as it guides the procedures and actions to prove the existence and extent of specific variables in testing the various hypotheses for a study (Reyonds, 2007). The operation definition must be contrasted against the conceptual definition of a variable which provides the theoretical meaning of a variable (Chinn & Krammer, 2018).

This research explored the various dimensions necessary for the successful implementation of organisational re-engineering for the attainment of business sustainability during turbulent periods. Park (2018) conducted studies and developed six constructs for organisational re-engineering implementation in any organisation. These were: "depth of BPR, change management, adaption to change, information technology practice, information management practice, and information behaviours and values" (p. 188). Hashem (2020)

examined the banking sector in Egypt for factors necessary for success. The research concluded that the commitment of management, together with having the necessary IT infrastructure, employee management, change readiness were all necessary factors required for success. Riyanto et al. (2018) supported the view that organisational re-engineering enhances competitiveness noting that it occurs when there is leadership commitment, change management and information technology.

In examining the work of various scholars on the operational definition of organisational re-engineering, five main dimensions stood out. These were leadership, information technology, change management, human resources management and project management. These dimensions were highlighted in the previously presented conceptual framework in Chapter Two for this research as moderating and mediating variables.

In order to examine the operational impact of each of these variables on business sustainability, separate, independent null hypothesis were developed for each variable. According to Barroga and Matanguihan (2022), it is essential that research studies possess well-crafted research hypotheses. A research hypothesis is a statement that provides a predictable outcome of a study. The hypothesis is normally based on historical information and present-day knowledge. Apart from making a specific prediction concerning a research problem, it also provides for a structured statement of the expected correlation between two variables, i.e., an independent variable and a dependent variable. In essence, it provides a predictive answer to a research problem that will be examined during the course of the research. Hypotheses utilise logic to foretell a theorised outcome. The outcome can also be determined from a researcher's understanding of a particular problem or from theories that have not yet been explored. A hypothesis becomes valid once it has been tested and its prediction can be replicated in an experiment.

Diagrammatically, the variables of this research were:

Variable	Variable Type	Data Measurement
Leadership	Operational/Independent	Nominal
Information Technology	Operational/Independent	Nominal
Change Management	Operational/Independent	Nominal
Project Management	Operational/Independent	Nominal
Human Resources Management	Operational/Independent	Nominal
Organisational Re-engineering	Operational/Independent	Nominal
Business Sustainability	Operational/Dependent	Nominal

Table 3.1. *Description of Variables Used in the Study.*

The relationship between these variables can be visualised as follows:

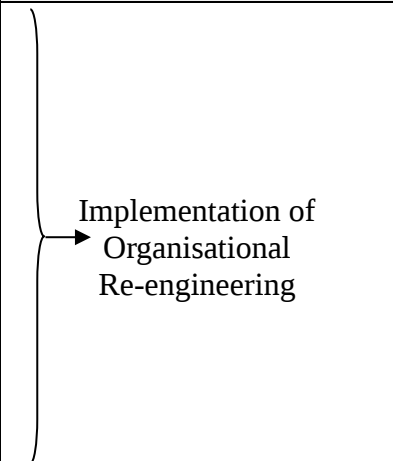
Dimensions of Organisational Re-engineering (Operational Variables)	Independent Variable	Dependent Variable
Leadership	 Implementation of Organisational Re-engineering	Business Sustainability
Information Technology		
Change Management		
Project Management		
Human Resources Management		

Table 3.2. *Relationship Among Variables.*

Each of the operational variables will now be examined in more detail.

3.5.2 Construct/Variable 1: Leadership

Nkurunziza et al. (2019) found leadership to be the foremost impetus for the implementation of organisational re-engineering advancements. This perspective was also reinforced by Petrović et al. (2020) who stated, “Applying the concept of reengineering is a very complex process where people need to have a good manager with authority and knowledge of the job he is doing” (p. 215). Shufutinsky et al. (2021) commented that there are several factors which affect the stability of organisations. However, leadership is key to maintaining stability as organisations navigate through globalisation and pandemics.

According to Groznik and Maslaric (2012), as cited in Fetais et al., 2022 “Successful implementation of BPRs needs talents that can make decisions strategically or an owner of the process who has the full authority to take such decisions” (p. 4). Crisis, dynamic and unpredictable conditions necessitate leadership with particular skills and traits to carry organisations successfully through these scenarios (Wisittigars and Siengthai, 2019). Petrović et al. (2020) stated, “Applying the concept of reengineering is a very complex process where people need to have a good manager with authority and knowledge of the job he is doing” (p. 215).

In turbulent periods like the Covid-19 pandemic, leaders were called upon for rapid and fast impact decision making. Shufutinsky et al. (2021) iterated that effective leadership played an essential role in times where there was no turbulence and becomes even more critical during crisis situations, and the periods thereafter. Leadership at all levels have been highly critiqued during the Covid 19 pandemic due to leaders’ inabilities to appropriately manage the impacts that fell upon their respective entities. Volatility, uncertainty, complexity, and ambiguity existed at every turn of the Covid-19 pandemic. These situations had to be effectively managed by leaders without any blueprint. New lessons were learnt along the way where leaders had to develop new and creative strategies to keep their organisations alive and successful, and also

to care for the well-being and emotions of their followers. Leaders adopted a wide array of leadership styles which included democratic, autocratic, laissez- faire, transformational, transactional, bureaucratic, servant and authentic. Raza (2023) noted “In turbulent times, leaders must make strategic decisions that balance short-term stability with long-term sustainability” (p. 45). It is highly debatable which style of leadership was most successful. However, the main point is that leadership was an important dimension for the successful application and implementation of organisational re-engineering in turbulent periods. This view is shared by many scholars. As such, the related null hypothesis was tested.

There was much recent literature on the area of leadership during turbulent period. There was also agreement that astute leadership was a necessary key component for managing organisations during turbulent periods. All four research questions of this research were expected to address the validity of the null hypothesis on leadership. This either proved or disproved that leadership is a key dimension of organisational re-engineering that is fundamental for business sustainability during turbulent periods. Data was gathered on the actions undertaken by organisational leaders during this turbulent period and these actions were cross correlated against organisations that had successful and sustainable outcomes post the turbulent period. In this way, the operational definition of leadership was compared and contrasted against its conceptual definition (Chinn & Krammer, 2018).

3.5.3 Construct/Variable 2: Information Technology

There have been various views on the utilisation of information technology (IT) as a driver and as a success factor for implementing organisational re-engineering. Information technology was considered as a moderating variable in the conceptual framework and in the correlation between the implementation of organisational re-engineering and business sustainability during turbulent periods. “Information technology (IT) is considered as a key to

business success by academia and industry. Notably, IT has evolved to an organization-level role that is far beyond previous technology supports and information storage functions”, (Wang et al., 2022, p. 3). It has revolutionised the way work is conducted bringing to the fore greater efficiency and effectiveness for organisations. This has culminated from the automation of many routine tasks which has resulted in greater productivity with faster and more accurate processing of data at much cheaper costs. This has thereby fostered an environment for greater innovation and productivity.

Attaran (2003) placed great importance on the utilisation of information technology during the implementation of organisational re-engineering highlighting that process redesign without using information technology was likely to not succeed. Zuhaira and Ahmad (2021) supported this view when they identified information technology as one of the key elements necessary for business process management. They pinpointed that IT is a major element of business process management. Nkurunziza et al. (2019) also found that IT factors were necessary for success. Appiahene et al. (2018) noted that information technology is utilised by organisations to increase productivity, operational efficiency, and processes. This in turn impacts business competitiveness and sustainability.

Studies conducted by Hashem (2020) in the Egyptian banking sector concluded that information technology infrastructure was one of the key tools that were necessary for the effective execution and implementation of organisational re-engineering. Grover et al. (1998) noted “IT will cause process change which can lead to higher productivity” (p. 145). Research conducted by Khashman (2019) discovered a strong and positive correlation between several independent variables related to business process re-engineering and the dependant variable, organisational performance, when information, communication and technology was used as a moderating variable. Larsen (2003) noted that the integration of Information Systems was crucial for improving and increasing cost and competitiveness, efficiency, and effectiveness.

Reijers and Mansar (2005) noted that information technology accelerates the implementation of organisational re-engineering and also reduces errors and increases productivity.

Based on the studies conducted by these researchers, it seems obvious that a positive correlation occurs between information technology and business sustainability. This research therefore validated this relationship by testing the null hypothesis related to information technology. This null hypothesis was tested by obtaining responses to the four research questions in this research during data collection and analysis. These responses were analysed with the assistance of using NVivo and SPSS software, after which conclusions were drawn on information technology being a dimension of organisational re-engineering necessary for the achievement of business sustainability during turbulent periods. The operational definition of information technology was also compared and contrasted with its operational definition (Chinn & Krammer, 2018).

3.5.4 Construct/Variable 3: Change Management

“Business and engineering are about growing, changing, adjusting and improving the accepted norms and procedures today to make the future brighter” (Mento et al., 2002, p. 21). Errida and Lotfi (2021) noted that a change management model plays a pivotal role in guiding and orchestrating change processes by outlining the specifics and pathway to be followed. It outlines the change drivers that allows success in the change management model. Over the years, several change management models have been put forward by various theorists based on studies that they each would have undertaken. Errida and Lotfi went on to state that several change management models have emerged over time. These models are key to drive change by providing frameworks for organisations to succeed.

Change management is an important moderating variable in the link between the implementation of organisational re-engineering and business sustainability. This can be seen

in the conceptual model that was previously presented in Chapter Two. According to Senior (2002), “organisational change, its management is becoming a highly required managerial skill” (p. 370). “The successful management of change is accepted as a necessity in order to survive and succeed in today’s highly competitive and continuously evolving environment” (By, 2005, p. 369).

Idogawa et al. (2023) postulated that change management was “the underlying mechanism to bring adaptability, innovation and advantage for companies” (p. 2011). Albizu et al. (2004) noted that “change management is the main facilitating activity that must be developed to successfully implement BPR” (p. 359). Management of change in the implementation of organisational re-engineering is therefore necessary to realise business sustainability and success. Grover (1999) postulated that the implementation of organisational re-engineering had favourable outcomes when the change process was managed and continually evaluated, with each complementing the other for positive outcomes. “Failure to do so could inhibit success in both project- and people-related outcomes” (p. 40). He further noted that change management was more important than the other facets such as leadership, technology, project management in the successful implementation of organisational re-engineering.

Park (2018) noted that “The change management activities supporting organizational changes are indispensable for a successful implementation” (p. 1). Almajali et al. (2016) argued that failure resulted when the change management process was not managed, with change management being a critical success factor (Lee & Pai, 2003). Nah et al. (2003) noted that a greater level of change management activities during the implementation of high levels of organisational change results in quicker conflict resolution and enables better cooperation between departments. During the implementation of organisational re-engineering, decisions

can be made more efficiently as change management facilitates training and communication and the availability of information (Fazlzadeh et al., 2011).

It is obvious based on the research conducted by the above scholars that change management is a key ingredient for achieving business sustainability. The related null hypothesis on change management was therefore tested. The literature review has raised the importance of change management, especially in the implementation of organisational re-engineering. Some scholars have alluded that this is one of the most important dimensions of organisational re-engineering. All four research questions were used to test the validity of this null hypothesis. Data was gathered from semi-structured interviews, closed-ended questionnaires, and secondary data. They were analysed using NVivo and SPSS software to assess the operational definition of change management as being key and necessary for the implementation of organisational re-engineering during turbulent periods and for obtaining business sustainability. This operational definition was compared and contrasted against its conceptual definition (Chinn & Krammer, 2018).

3.5.5 Construct/Variable 4: Project Management

Project management plays a fundamental part in the execution of organisational re-engineering in organisations around the world. In fact, “the management of projects is of considerable economic importance and dramatic growth has occurred in project work across different sectors, industries and countries” (Svejvig & Andersen, 2015, p. 278). Seymour and Hussein (2014) noted that project management theories, techniques and practices are now typical and are at the forefront in several entities across the world. Orieno et al. (2024) iterated that the concept of project management has morphed into a more significant role in recent years. While there is still a focus on time, cost and scope, there is now an inclusion of environmental, social, and economic considerations into the discipline. This evolution is a bold

move towards sustainable practices within the discipline. It serves to complement and build on its traditional focus.

Project Management Institute (2013) alluded that “Organisations are involved in creating products and services for customers to meet a goal. Therefore, applying know-how, expertise, tools, and techniques directed at meeting specific project requirements is critical” (p. 5). Joslin and Müller (2015) noted that “project management dynamics are at the heart of all these factors, which integrate relational issues with stakeholders, leadership, project planning, and time conscientiousness” (p. 141), all of which are necessary for the effective application of organisational re-engineering and the attainment of business sustainability. Nkomo and Marnewick (2021) reinforced this view when they postulated that project management was key to achieving organisational change. Fasna and Gunatilake (2019) noted that project management was especially important given the unique features and uncertainties within organisations in the implementation of organisational re-engineering. This opinion was endorsed by Guesalaga et al. (2018) where they postulated that project management allowed the flexibility to effectively implement organisational re-engineering.

With effective project management, the associated implementation problems of organisational re-engineering will be eliminated which will then result in business sustainability (Bayomy et al., 2021). “Organisations will benefit from a clear approach on how to implement successful BPR plans to achieve desirable outcomes and internal acceptability of such projects” (Musonda & Okoro, 2022, p. 1215). Project management is an essential tool (Packendorff, 1995) for aiding with the implementation and advancement of organisational re-engineering and for the attainment of business sustainability.

Projects have become a key manner of structuring initiatives within organisations and success is often dependent on effective project Management (Dvir et al., 2006). It therefore seems imperative that the tool and techniques used in project management are necessary for

the effective employment and implementation of organisational re-engineering. The related null hypothesis for project management was therefore tested. Again, all four research questions were used to test this null hypothesis. Based on previous work from other scholars, it is evident that the use of project management as a tool for implementing organisational re-engineering ensures the success of the process. Project management is an overarching methodology that may actually encompass all of the other dimensions of organisational re-engineering. This research gathered data using both qualitative and quantitative techniques to ascertain whether project management had any role in the successful implementation of organisational re-engineering and whether or not business sustainability was achieved in the post Covid-19 period. The conceptual definition of project management was compared and contrasted to the operational definition of Project Management (Chinn & Krammer, 2018).

3.5.6 Construct/Variable 5: Human Resources Management

Human resources management is very broad and is a moderating variable in the conceptual framework of this research. This can be seen in its link between the implementation of organisational re-engineering and business sustainability. According to Vardarlier, (2016):

Human Resources Management is one of the most important units of modern firms and organizations. It gains even more importance in times of crises, because it makes up an important dimension of crisis management. It is well known that human resources policies have a great influence on people; therefore, those policies are to bring about humanistic consequences. (p. 147)

Mauil et al. (1995), Geralis and Terziovski (2003), Herzog et al. (2007) and Grover et al. (1995) all agreed that education, training, and worker co-operation are all key areas that must be performed to attain successful re-engineering. Education, training, and worker co-

operation are all facets of human resources management. Martinez (1995) noted that lack of communication amongst sub-systems of the organisation was a reason for failure in the implementation of organisational re-engineering. Hammer and Hershman (2010) recommended that the use of a cross-functional team will assist in resolving this issue. Al-Anqoudi et al. (2021) conducted research that focused on success elements, approaches, and instruments of BPR projects. Their findings determined that the human factor is most required. Studies performed by Nkurunziza et al. (2019) postulated that the human factor was necessary for success. Abdolvand et al. (2008) noted that a synergetic work environment as opposed to environments where there was a reluctance and unwillingness to change performed a major role in the development of readiness factors for implementation of organisational re-engineering.

Handoko (2010) alluded that a culture that was supportive of innovation and empowerment would lead to the successful implementation of organisational re-engineering and improvements in employee performance. Hashem (2020) in examining the banking sector found employee management and an organisational structure with little formalization to be essential for organisational re-engineering while Nkomo and Marnewick (2021) found effective communication to be one of the key success factors. Chopra (2020) noted a “positive relationship between good HR practices and business performance” (p. 1). Chopra went on to note that employee development that was specific to the implementation of strategic objectives of the organisation and led to better operational results and overall performance. Chopra concluded the mannerism in which a company manages and supports its human resources results in an enhanced performance and increased achievements.

It is evident that human resources management functions as a crucial element in the link and relationship between the implementation of organisational re-engineering and business sustainability. This is confirmed in the conceptual model that was previously presented in

Chapter Two. It is therefore critical that the dimension of human resources management be carefully considered and examined in this research. The related null hypothesis for human resources management was therefore tested. The four research questions of this research addressed and tested this null hypothesis. This research gathered data on the human resources activities undertaken during this case study's turbulent period and assessed whether these activities had any impact on the implementation of organisational re-engineering and in the subsequent achievement of business sustainability in the post Covid-19 era. The research compared and contrasted the conceptual definition of human resources management against the operational definition of human resources management (Chinn & Krammer, 2018). In this way, the validity of the related null hypothesis was tested.

3.5.7 Independent Variable: Implementation of Organisational Re-engineering

According to Fetais et al. (2022a), the adoption of organisational re-engineering reshapes an organisation and leads to improved quality of goods and services, cost reductions, increased competitiveness and efficiencies and maintenance of a competitive advantage. These benefits can be classified as elements of business sustainability. Chen (2016) noted that the implementation of organisational re-engineering helps organisations to meet their objectives, which consequently leads to increased efficiencies and effectiveness and reductions in overhead costs. Additionally, Houy et al. (2010) explained that organisational re-engineering redesigned business processes and enabled new processes, the achievement of organisational level strategic outcomes and is inter-functional in its efforts.

Edema et al. (2019) conducted research in the manufacturing sector. Their study “concluded that the sustainability of manufacturing organizations is tremendously enriched by business process reengineering” (p. 40). They found organisational re-engineering to be an “effective tool for changing the entire operating system of an organization” (p. 34). This view

was supported by Arora (2009) noting that organisational re-engineering systematically evaluated the processes of organisational tasks and led to the development of more effective processes that were faster and more effective. This led to the development of new and additional tasks and procedures which engendered greater efficiency and effectiveness. Edema et al. (2019) iterated that organisational re-engineering altered the “obsolete approach used in dealing with people in the organization and exercising of authority over subordinates in an effort to attain organizational goals” (p. 33).

Eke and Adaku (2014) postulated that the implementation of organisational re-engineering allowed organisations to look at their overall performance and implement changes, process, and strategies for becoming cost leaders. It combined changes in job designs, management and leadership styles, processes, technology, and systems. A study performed by Budiman et al. (2021) found success when the implementation of organisational re-engineering was used during the Covid-19 pandemic to assist with its sustainability of its sales commodities. In this vein, the five dimensions of organisational re-engineering would support its implementation. The related null hypothesis for organisational re-engineering was tested using the four research questions of this research. This research gathered data on five dimensions of organisational re-engineering. These were leadership, information technology, change management, project management and human resources management. The research examined the impact of each of these dimensions towards the achievement of organisational benefits and business sustainability in the post Covid-19 period. In this way, the research made a determination on whether any benefits were at all gleaned from the implementation of organisational re-engineering. This allowed for a deeper examination of the operational definition of organisational re-engineering. By gaining an understanding of the operational definition of organisation re-engineering, this definition was compared and contrasted to the conceptual definition of organisational re-engineering (Chinn & Krammer, 2018). Added to

this, the outcomes from both the conceptual definition and the conceptual definitions of organisational re-engineering were compared and contrasted.

3.5.8 Dependent Variable: Business Sustainability

Business sustainability can be measured by improvements in revenue, cost, quality, service, speed, competitiveness, and performance (Bayomy et al., 2021; Hammer and Champy, 1993). Business Sustainability encompasses a wide variety of factors, and its definition must be taken in context of the situation at hand. Broadly speaking, it is the capability of an organisation to survive in a changing and turbulent environment by formulating and implementing strategies for developing, maintaining, and enhancing its competitiveness.

Dyllick and Hochterts (2002) noted that business sustainability is gained when organisations positively leverage their various capitals within the constraints of their political conditions. On the flip side, Munck et al. (2012) theorised that business sustainability was the “equilibrium between what is socially desirable, economically viable and ecologically sustainable” (p. 18). Boodre and Ramstad (2005) viewed business sustainability as the achievement of success in the present time, without affecting the future. Colbert and Kurucil (2007) noted that business sustainability was about ensuring continuity, while the CIPD (2012) postulated that it was the improvement of systems within which an organisation operates.

In this research, business sustainability was viewed in the context of a financial recovery and growth of the profitability of organisations post the Covid-19 pandemic in comparison to their profitability throughout the Covid-19 pandemic based on a positive correlation to organisational re-engineering and its various dimensions. The operational definition of business sustainability was tested in its related null hypothesis. In examining and testing this null hypothesis, it was necessary to assess the benefits that were gained from the implementation of organisational re-engineering and determine whether these benefits were in

fact benefits that would lead to business sustainability. As noted earlier, business sustainability is the capability of an organisation to survive in a changing and turbulent environment by formulating and implementing strategies for developing, maintaining, and enhancing its competitiveness. This research thus compared and contrasted the operational definition of business sustainability against its conceptual definition (Chinn & Krammer, 2018). This therefore allowed for a deeper analysis and assessment of the benefits gleaned from the implementation of organisational re-engineering to determine whether or not business sustainability was in fact achieved.

3.6 Study Procedures and Ethical Assurances

This research received approval from the Unicaf Research Ethics Committee (UREC) prior to data collection. Ethical assurances were included as part of the research's procedures. According to Sari (2024), ethical assurances ensure the maintenance of research vigour and reliability. This involves adherence to norms and processes to enhance the ethics, transparency, and the trustworthiness of research.

The Golden Rule, "Do unto others as you would have them do unto you" (Burton & Goldsby, 2005, p. 371), applies to every aspect of life. According to Resnik (2020), ethics is described as "norms for conduct that distinguish between acceptable and unacceptable behavior". Specific disciplines all have different behavioural standards that govern their actions and activities so as to establish the public's trust. It is therefore necessary that these specific ethical actions be incorporated the duties related to each discipline. Similarly, ethical norms overarch the aims or goals of research and must be adhered to by researchers. "Ethics in research refers to the use of the right rules of conduct essential when carrying out research. We have a moral responsibility to protect research participants from harm, respect their rights,

privacy, autonomy and dignity”, (Tsoukatos, 2021b). The next sections of this Chapter addressed these ethical assurances and indicated how they were included in this research.

3.6.1 Ethical Assurances

In the conduct of research, there are several reasons for adhering to ethical norms. Firstly, ethical norms ensured that the aim of the research was fulfilled. This included that the research was objective and well researched with the avoidance of research errors. In this way, there was no misrepresentation of data or bias. A suitable research design was used to produce accurate reporting and appropriate utilisation of information, (Yip et al., 2016). According to Asenahabi (2019) an appropriate research design is crucial for answering research questions. It encompasses a plan for data collection to be in alignment with the research objectives.

Secondly, research ethics enable researchers to receive credit for their contributions. This engenders trust, respect, accountability, and fairness for all persons who co-operated and contributed to a research study. This avoids fraud and plagiarism. To support this, guidelines were developed for copyright, citations, authorship, confidentiality, and patenting. Miteu (2024) noted that ethics steer the work of researchers. It affects the collection of data and the subsequent findings, recommendations, and conclusions of research studies. Ethical practices span a broad range of activities inclusive of the gathering and analysis of data, the use of resources, protecting human rights, the treatment of participants, corporate responsibility, security, and communication of research findings. Central to the concept of ethics is that the collection of data is not done against the well-being of society or individual participants. Ethics allows for responsible research processes and criteria so as to ensure trustworthy, valid, and reliable results.

Thirdly, ethical norms ensure that there is proper usage of research funds and that researchers can be held accountable for misuse of these funds. In this way, funders of research

will have the assurance in the quality and integrity of the research undertaken. Mandal et al. (2012) noted that researchers are responsible for securing research funds and adhering to proper practice in their usage. Support must be provided by an organisational research code which guides the protection and usage of research funds.

Finally, research must be compliant with laws and regulations and must ensure the safety and protection of all participants. There must be protection against loss of life or physical, mental, and social harm for all test subjects and participants. Hugman et al. (2011) iterated that the necessary steps should be taken to ensure that research participants' rights and confidentiality are protected and upheld during the research process. This will ensure the safety of participants throughout a research study. Research ethics emerged after World War II in an attempt at reconsidering ethical standards and the development of consensus for the protection of life and rights for humans and animals (Tsoukatos, 2021b). According to Kar (2011), research ethics emerged as a response towards unethical behaviour, to avoid any harm to participants' mental health and wellbeing. Research ethics is wide and encompasses the prevention of serious implications and consequences on participants' lives. It also deals with the responsible handling of funds, and should protect all stakeholders involved.

In order to support ethics in research, five ethical principles were developed. Tsoukatos (2021b) stated, "They concern the various stages of a research and ensure its ethical status" (p. (p.40). Webster (2011) went on to state, "To publish ethical research, one must conduct research responsibly, making ethical choices from the inception of the research idea and throughout the research process. Conducting and publishing ethical research is important because of the impact the results" (p. 1). Menezes (2016) stated:

The word ethics is derived from the Greek word 'ethos', which means character.

Ethics is a branch of philosophy that is concerned with human character & conduct.

It is a discipline dealing with that which is good & bad with moral duty &

obligation. Ethics is the embodiment of moral values, which describes, what is right & what is wrong in human behaviour & what ought to be. Thus ethics refers to good character & morality and to generally accept human character & behaviour considered as desirable by contemporary society. The same action or practice is viewed as ethical or unethical depending upon the school of moral thought to which one subscribes. Further, the perceptions of ethical or unethical change at times because some values are dropped & some values are added over the period. Ethics is the discipline dealing with what is good and bad and with moral duty and obligation. (p. 196)

These principles are consistent with the Belmont Report published by “the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research” (Singer & Levine, 2003, p. 594) in 1979. The Report presented the ethical framework for ensuing human participant research regulations and still serves as the basis for human participant protection legislation.

The five ethical principles of research (Smith, 2011) are:

- i. Obtain informed consent.
- ii. Minimise the risk of harm.
- iii. Avoid deceptive practices.
- iv. Protect anonymity and confidentiality.
- v. Provide the right to withdraw.

The key to conducting any research study is to obtain consent from those partaking in the research and to brief them of the research (Xu et al., 2020). In the case of minors, consent should be obtained from their parent or guardian. While there may be some specific instances where consent may not be required from participants to a study, in the large part, consent should be obtained in writing. This consent should be voluntary, and participants should not be coerced

or deceived in order to obtain research data. Where consent cannot be obtained, this must be noted in the study. Alternatively, the researcher should attempt to find another sample of participants or utilise a different sampling methodology where consent cannot be obtained.

Participants should understand that their participation means that they will be part of the study (Yip et al., 2016) and the researcher should explain to them the implications of the study. This will involve the purpose of the study, the research methods that will be used, the intention of the study, the length of time for the study, benefits of the study, contact persons for information or concerns of the research, confidentiality and how to withdraw from participating in the study. Dahal (2024) noted “researchers and research professionals should exercise *ethical* sensitivity and humility towards intangible forms of data collected during qualitative research when participants withdraw their consent” (p. 5). Participants should be made fully aware of what is required from them during the study. This will mean disclosure of any discomforts, inconveniences, and risks. Any information that may influence the participant against participating in the study should not be withheld.

Some of the more famous participant observation studies (such as Whyte’s study of street corner gangs) collected rich data because they did not disclose to the observed that their behaviour was being researched. Nowadays, such studies are viewed as ethically untenable and we are no longer able to conduct such research. (Alston & Bowles, 2003, as cited in Spicker, 2011, p. 1).

Secondly, there should be minimisation of the risk of intentional and accidental harm to those partaking in the research (Yip et al., 2016). This includes physical harm, social disadvantage, psychological distress and discomfort, financial harm or breach of privacy and anonymity. There needs to be strong justification when any risk of harm may be caused to participants. In such cases, there must be further planning to show how this harm will be

minimised and managed. Additionally, there must be consent from the participants and a detailed briefing of the consequences. In order to lower the risk of harm, the other four ethical principles of research should be adhered to in conjunction with this principle. Shaw and Barrett (2006) noted that various studies carry differing degrees of risk. Therefore, it is necessary to take into consideration the nature of the research undertaken and take the necessary steps to ensure the protection of all participants.

Thirdly, there must be avoidance of deceptive practices. Tsoukatos (2021b) noted:

In Milgram's experiment, for his study on obedience to authority, the participants thought they were giving electric shocks to a learner when they answered a question wrong. However, no electric shocks were given, and the learners were acting following the directions of Milgram. (p. 6)

Research studies should not include any kind of deceptive practices (Suter, 2020). Participants should not be deceived and should be aware of the purpose of the study, the research methods that will be used, the intention of the research, the length of time for the study, benefits of the study, contact persons for information or concerns of the research, confidentiality and how to withdraw from participating in the research. Participants should be made fully cognisant of what is required from them during the study. This will mean that there is full disclosure of any discomforts, inconveniences, and risks. In some cases, however, such as in overt observer participation, study results may become erroneous if the participants are aware or of have knowledge of the purpose of the study. The intentional use of covert research and deceptive practices is considered as controversial. However, many scholars argue that they have a place in research. Marzano (2022) noted that covert research has varying opinions amongst research theorists. While some researchers would fully support it, others refute it stating that it is against participants' moral rights and violates ethics. This reputation stems largely from the way that research was conducted historically compared to how research is conducted in modern day.

Modern day research is guided by written ethical guidelines and laws that forces and restricts researchers to operate ethically.

Fourthly, there must be protection of anonymity and confidentiality of participants (Lippe et al., 2019). Voluntary participants usually only agree to a research study if their identities are kept confidential. Also, some participants may be hesitant to participate in a study to provide sensitive data if their identities are not kept anonymous. There is also an issue of storage, analysis and publication of data, especially sensitive data. This must be kept confidential as its disclosure may cause harm to participants or third parties. Nevertheless, there are some circumstances where collected data does not necessarily need to be retained as confidential or anonymous. In such cases, the disclosure of the identity and views of participants at different times of the research process must be met with written permission prior to the confidential information being disclosed. Caution must also be undertaken to prevent the use of identifiers that will reveal the identities and location of the study. In the case of "Street Corner Society" conducted by William Whyte and published in 1943, confidentiality was breached as the identities of those who participated in the research and the location of the research was easily ascertainable from the publication. According to Tsoukatos (2021b), "Researchers have no legal duty to reveal criminal acts but they have to protect the greater good for the greater number of people. Often their duty to protect participant is passed by their duty to protect the wider community".

Lastly, participants should have the right to withdraw from the study at any time (McConnell, 2010) or at any stage of the study (Schaefer & Wertheimer, 2010). They should also be permitted to retract their data from the research. There should not be any coercion in any form for preventing or stopping participants from withdrawing. Participants are to be informed of this right by researchers. The only exception of this right is with covert observation where it is infeasible to share with participants that they are being observed or what research

is being conducted. “We argue that the right to withdraw should protect research participants from information imbalance, inability to hedge, inherent uncertainty, and untoward bodily invasion, and it serves to bolster public trust in the research enterprise”, (Schaefer & Wertheimer, 2010, p. 997). Spicker (2011) noted that covert research includes where information pertaining to a research is not conveyed to the study’s participants. This is often up for debate as it can be seen as dishonesty and unethical. This may infringe on the ethical rights of participants to be informed before participation. Researchers have a moral responsibility to follow ethical principles in the conduct of research studies (Yip et al., 2016). Research must be conducted so as to cause no harm to participants and to provide creditability to the study. The five ethical principles in research are essential for the safeguarding of the rights, dignity, mental and physical wellbeing of participants. According to Smith (2011), researchers should be aware of the code of ethics as it pertains to research and their available resources. Researchers should also be reminded of the importance of being cognisant of the basics of research and ethics to avoid ethical impasses.

In the process of carrying out this research, much care and attention was done to ensure that ethical assurances were incorporated in the research’s procedures. Care was taken as to not cause harm to any participant (Shaw & Barrett, 2006) by disclosure or embarrassment of their contributions (Haggerty, 2004). There was confidentiality and anonymity for all contributions. Additionally, all participants were fully briefed both verbally and in writing of the nature and purpose of the research, and they had the right to not take part or withdraw at any time (Schaefer & Wertheimer, 2010). The research was overseen by the Ethics Committee of the University (UREC) to ensure that all ethical guidelines related to the research were adhered with. Prior to any data collection, approval was sought and was received by the University’s ethics committee.

Also, consent from participants was obtained and they were presented with a written and verbal brief of the research before to the commencement of the data collection (refer cover letter in Appendix A and Appendix B). Consent was received from all participants in writing prior to data collection. The brief to participants included the purpose of the research, the research methods, the intention of the research, the time frame, benefits, contact persons, confidentiality and how to withdraw from participation in the research.

Analysis of the data was done at a group level so as to protect identities. This analysis was done using NVivo and SPSS software to ensure objectivity of the data analysis. To minimise the risk of harm to the participants (Shaw & Barrett, 2006), names were coded, and identifiers were not used. In keeping with the University's ethics guidelines, all data and documentation was stored in secured cabinets and will be destroyed five years after the research is completed.

3.7 Data Collection and Analysis

As previously noted, data collection commenced after UREC approval was received and spanned approximately seven (7) weeks. The intent of the data collection was to gain a deep comprehension of the relationship between the independent variables of this research and the dependent variable. The extent of this relationship was gleaned from answers received from the four research questions of this research. Just to recap, the four research questions were:

- i. What were the actions undertaken by organisations for the duration of the Covid-19 pandemic?
- ii. How have the actions of leaders during the Covid-19 pandemic affected the financial performance of organisations throughout and after the Covid-19 pandemic?
- iii. How are the actions of organisations that successfully managed the Covid-19 pandemic aligned to dimensions of organisational re-engineering?

iv. What are the benefits of organisational re-engineering to business sustainability during turbulent periods?

The null hypotheses for this research were based on the construct variables for organisational re-engineering. These are leadership, information technology, change management, project management and human resources management. These were initially highlighted in the conceptual framework as moderating and mediating variables for this research. Given that a sequential exploratory mixed method design was embraced for this research, data collection commenced with the semi-structured interview questions. This methodology was chosen to minimize any bias (Bergelson et al., 2022) and to allow for a deep comprehension of the research. This qualitative aspect began with pilot testing the interview questions for practice of the interviewing techniques and for modifications and implementation of suggestions to the interview questions (Majid et al., 2017). No alterations were necessary when the pilot research was conducted. Using purposive sampling, saturation was achieved after administration of sixteen (16) interviews (Fugard & Potts, 2015). Each interview consisted of thirty-three (33) pre-determined questions, of which six (6) were demographic questions. No issues were encountered in the administration of the interviews, with ten (10) interviews being conducted face to face at the interviewees' premises and six (6) online via Zoom platform. It must be noted that all sixteen (16) interviewees refused to grant permission for recording of the interviews and so notes had to be taken. To avoid any bias in notetaking and interpretation of answers, the written notes were re-read to participants after each question for them to ensure that the notes were a precise transcription of their answers. Also, care was taken to follow the pre-developed interview script (Siedlecki, 2022) and questions. The length of each interview was approximately thirty (30) minutes. The objective of the interviews was to ascertain the strategies and actions that were adopted throughout the Covid-19 pandemic by organisational leaders and their impact on the organisation.

Following the completion of the interviews and in keeping with the sequential exploratory mixed method approach, the data from the interviews was analysed using content and thematic analysis, with the assistance of NVivo software. Codes and themes (Yin, 1994) were developed, identified, and analysed to determine their relation to existing literature on organisational re-engineering and business sustainability, and on their relevance to each of the four research questions and various null hypotheses. The data was also analysed for any data gaps in fulfilling the objectives of this research.

The undermentioned were the steps that were utilised for analysing the interviews:

- i. The data was prepared by removing any identifiable information and assigning codes to each respondent.
- ii. Using NVivo (McKniff, 2016), files were developed for each participant.
- iii. A classification sheet containing demographic data was developed for each participant using Excel.
- iv. Labels were assigned to each participant.
- v. Each participant's file and the Excel spreadsheet containing the demographic data was uploaded to NVivo.
- vi. The data was coded and dragged into containers.
- vii. The data was sorted by grouping codes where there was a shared relationship to form clusters.
- viii. The clusters were labelled to form categories and themes.
- ix. Each research question and hypothesis was then linked to a theme (These themes were subsequently coded as ordinal and nominal measures in the quantitative analysis of data).

The themes (Kiger & Varpio, 2020) that were unearthed from the analysis of the semi-structured interviews were utilised to guide the construction of the quantitative data collection tool – the questionnaire (Appendix B). The quantitative collection of data followed immediately from the qualitative data collection and analysis, so as to avoid one technique from influencing the other data collection technique of the other approach.

Similar to the qualitative component of the data collection, the quantitative data collection commenced with pilot testing of the questionnaire. This allowed necessary modifications to be made prior to administering to the population sample (Van Teijlingen & Hundley, 2002) and for the enhancement of the reliability and validity of the research.

The quantitative sample of three hundred and eighty-four (384) organisations was obtained using stratified multistage sampling (Elfil & Negida, 2017) and simple random sampling (Noor et al., 2022). The process for selecting this sample was previously detailed in this research. Based on liaising with the Executive Secretaries of the various organisations, two hundred and fifty-four (254) questionnaires were sent hardcopy, one hundred and twenty-one (121) were sent through a Google Form and nine (9) were done face to face. All questionnaires sent hardcopy and through the Google Form were completed within three days of being sent and were immediately reviewed for any omissions. No omissions or incomplete questionnaires were received. Each questionnaire consisted of thirty-seven (37) closed-ended questions with an estimated completion time of twenty minutes per questionnaire. The themes that arose from the qualitative analysis of the interviews were included as ordinal and nominal measures in the questionnaire. Noteworthy of mention is that the five variable constructs were included in the questionnaire as nominal measures so as to determine their operational definitions, and also to test the related null hypothesis for each of these variable constructs. Caution was also taken to make sure that all participants were within the age group 18 to 85 years and had at least one (1) years' experience in their current position.

Following receipt of the completed questionnaires, each questionnaire was coded sequentially from 1 to 384 to ensure confidentiality of the respondents. Each potential response in the questionnaire was then coded in SPSS (Field, 2018) under the variable view tab, following which the responses from each of the various respondents for each question in each questionnaire was manually and carefully entered in the data view tab of SPSS. After all the data was entered, the dataset was analysed using the missing value analysis in SPSS. This analysis checked for any missing data in the dataset (Saeed et al., 2019). The result of this analysis is shown in Figure 3.3. Missing values in the dataset can occur from errors during data collection, mistakes in data entry, data loss during processing, manipulation and sorting of the data or failure to answer the question from a respondent. When this occurs, this can lead to biased or invalid conclusions which can affect the reliability and validity of the study.

The result of zero missing values resulted from a rigorous post collection process. Each questionnaire was immediately checked for any omissions. The audit of the responses indicated completeness of all questions, rendering no required deletions. The success of a high participation rate can be attributed to the high relevance of the subject matter to participants where they were motivated to complete the questionnaire. Also, given the sample quality where the sample consisted of leaders within organisations further contributed to zero missing values. Additionally, the logical layout of the questionnaire coupled with the closed-ended format allowed for a smooth flow of answering the questions and reduced respondent fatigue and accidental skips. Further, care was taken to accurately enter the data in SPSS to avoid any mistakes in data entry or data loss during processing, manipulation and sorting of the data.

Frequencies		Statistics				
	Candidate ID	Job Title	Gender	Age	Years work in Organisation	Years in Position
Valid	384	384	384	384	384	384
Missing	0	0	0	0	0	0
	Educational Level	Business Structure - Corporation	Business Structure - Co-Operative	Business Structure - Franchise	Business Structure - Parent	
Valid	384	384	384	384	384	384
Missing	0	0	0	0	0	0
	Business Structure - Subsidiary	Business Structure - Limited Liability Company	Business Structure - Partnership	Business Structure - Sole Proprietorship	Business Structure - National	
Valid	384	384	384	384	384	384
Missing	0	0	0	0	0	0
	Business Structure - Transnational	Business Structure - International	Business Structure - Conglomerate	Business Location	No. Of Branches	
Valid	384	384	384	384	384	384
Missing	0	0	0	0	0	0
	Business Sector	Operational Region	Size of Business	Involvement in Strategic and Operational Decision Making	Development of Vision and Mission	
Valid	384	384	384	384	384	384
Missing	0	0	0	0	0	0
	Development of Strategic Plan	Set Strategic Objectives for the Organisation	Assignment of Duties	Development of Policies	Development of Budget	
Valid	384	384	384	384	384	384
Missing	0	0	0	0	0	0
	Monitor Performance and Targets	Liaise and report to Board of Directors	Organisation affected by Covid-19 pandemic	Organisation not affected by Covid-19 pandemic	Revenue was affected by Covid-19 pandemic	
Valid	384	384	384	384	384	384
Missing	0	0	0	0	0	0
	Expenses were affected by Covid 19 pandemic	Profitability Growth was affected by Covid 19 pandemic	Customer Service was affected by Covid 19 pandemic	Operations were affected by Covid 19 pandemic	Management Staffing was affected by Covid 19 pandemic	
Valid	384	384	384	384	384	384
Missing	0	0	0	0	0	0
	Non-Management Staffing was affected by Covid 19 pandemic	Operating Hours were affected by Covid 19 pandemic	Mode of Delivery was affected by Covid 19 pandemic	Projects were affected by Covid 19 pandemic	Supply Chain was affected by Covid 19 pandemic	
Valid	384	384	384	384	384	384
Missing	0	0	0	0	0	0

	Customer Demand was affected by Covid-19 pandemic	Government Office Processing were affected by Covid-19 pandemic	Distribution of Goods and Services were affected by Covid-19 pandemic	Raw Materials Supply were affected by Covid-19 pandemic	Training was affected by Covid-19 pandemic
Valid	384	384	384	384	384
Missing	0	0	0	0	0
	Information Technology was affected by Covid 19 pandemic	Policies were affected by Covid 19 pandemic	Systems were affected by Covid 19 pandemic	Processes were affected by Covid 19 pandemic	Communication was affected by Covid 19 pandemic
Valid	384	384	384	384	384
Missing	0	0	0	0	0
	Strategies were affected by Covid 19 pandemic	Organisational Structure was affected by Covid 19 pandemic	Controls were affected by Covid 19 pandemic	Freight costs were affected by Covid 19 pandemic	Equipment Maintenance was affected by Covid 19 pandemic
Valid	384	384	384	384	384
Missing	0	0	0	0	0
	Level of involvement	Action undertaken - Change Strategy	Action undertaken - Delays in Business Investment	Action undertaken - Change Leadership	Action undertaken - Change Management Team
Valid	384	384	384	384	384
Missing	0	0	0	0	0
	Action undertaken - Management Rotation	Action undertaken - Work from Home	Action undertaken - Staff Re- Organisation	Action undertaken - Staff Cuts	Action undertaken - Permanent Closure
Valid	384	384	384	384	384
Missing	0	0	0	0	0
	Action undertaken - Temporary Closure	Action undertaken - Reduction in Working Hours	Action undertaken - Staff Rotation	Action undertaken - Reduction in Wages and Salaries	Action undertaken - Change in operating hours
Valid	384	384	384	384	384
Missing	0	0	0	0	0
	Action undertaken - Change Mode of Delivery to Online	Action undertaken - Reduced product and service offerings	Action undertaken - Changed Software	Action undertaken - Closed Branches	Action undertaken - Changed Systems
Valid	384	384	384	384	384
Missing	0	0	0	0	0
	Action undertaken - Changes Policies	Action undertaken - Changed Procedures	Action undertaken - Changed Organisational Structure	Action undertaken - Created in sources of Revenue	Action undertaken - Implemented Controls on Expenses
Valid	384	384	384	384	384
Missing	0	0	0	0	0
	Action undertaken - Diversified Operations	Action undertaken - Cancelled suppliers' orders	Action undertaken - Reached out to customers	Action undertaken - Strengthened IT Infrastructure	Action undertaken - Utilized Change Management Strategies
Valid	384	384	384	384	384
Missing	0	0	0	0	0
	Action undertaken - Used Project Management to implement changes and projects	Action undertaken - Used Business Sustainability as a business objective	Measures help alleviate problems caused by Covid 19 pandemic	Government Grant provided assistance	Overall Impact of Covid 19 pandemic on Organisation
Valid	384	384	384	384	384
Missing	0	0	0	0	0

	Requirement for different action	Lack of Resources caused hindrance in action	Organisation recovered from pandemic	Covid 19 actions benefitted Organisation	Organisation grew during Covid 19 pandemic
Valid	384	384	384	384	384
Missing	0	0	0	0	0

	Organisation contracted during Covid 19 pandemic	Profits increased during the Covid 19 pandemic	Profits increased post the Covid 19 pandemic
Valid	384	384	384
Missing	0	0	0

Figure 3.3. *Missing Value Analysis.*

Following the analysis for missing values, the dataset for each construct was analysed using Cronbach's Alpha, again in SPSS. Cronbach's Alpha checks the extent that all items of a scale are measuring the same underlying structure. Alpha values of more than 0.7 imply good internal consistency (Stellefson et al., 2020). The Cronbach's Alpha for each construct of the research was greater than 0.7. This therefore indicated an acceptable level of confidence in the dataset's consistency and accuracy for each of the five constructs. The Cronbach's Alpha results for each construct is shown below

Reliability Statistics	
Cronbach's Alpha	N of Items
.73	62

Figure 3.4. *Cronbach's Alpha – Leadership.*

Reliability Statistics	
Cronbach's Alpha	N of Items
.746	24

Figure 3.5. *Cronbach's Alpha – Information Technology.*

Reliability Statistics	
Cronbach's Alpha	N of Items
.746	37

Figure 3.6. *Cronbach's Alpha – Change Management.*

Reliability Statistics	
Cronbach's Alpha	N of Items
.737	20

Figure 3.7. *Cronbach's Alpha – Project Management.*

Reliability Statistics	
Cronbach's Alpha	N of Items
.704	30

Figure 3.8. *Cronbach's Alpha – Human Resources Management.*

Subsequently, Pearson's correlation coefficient analysis and Cramer's V were performed to test significance and associations among nominal variables, while multivariate ranking was used to test the simultaneous effects of the organisational re-engineering's dimensions to improve inferential robustness. Details of these findings are provided in Chapter Four of the research. This analysis assessed the strength and directions of the linear relationships between continuous variables. It identified the relationship between two variables and the degree of association between them (Field, 2018). This analysis aided in assessing the correlations within the dataset.

Following Pearson's correlation coefficient analysis, the data was analysed using trending, measures of central tendency, frequencies, charts, and graphs. These enabled the testing of each of the various null hypotheses, as well as to provide a better understanding of

the operating definition of the construct variables. This methodology was robust, efficient, and widely used (Tabachnick & Fidell, 2019). This analysis performed a descriptive analysis of the variables for analysis of frequency, mean, median, and mode. It also provided the range, minimum and maximum values.

To further promote the validity and reliability of this research, secondary data (Creswell, 2008) was obtained using convenience sampling from a sample of twenty-five participants included in the quantitative and qualitative samples. The secondary data included annual reports, newspapers, media clippings and published financial data. The purpose of this was to authenticate the information provided by respondents during the interviews and in their completed questionnaires.

Overall, the analysis of the data collected was executed efficiently using NVivo and SPSS. The analysed data from the qualitative analysis from the NVivo software was triangulated against the analysed data from the quantitative analysis using SPSS for consistency and for a deeper understanding of the findings. These findings were further triangulated against the secondary data to ensure validity of the data. This mixed methodological approach also allowed an extensive analysis of the data that was obtained from the various methodologies. This inevitably led to validation of the research findings and reliability and validity of the research (Golafshani, 2003).

3.8 Summary

It is necessary that all research is performed in a systematic and efficient approach to warrant the reliability and validity of research studies. Research designs provide a guided pathway for the research process.

The mixed methodological design utilised in this research incorporated both qualitative data collection through the use of semi-structured interviews, while the quantitative component

of this research used closed-ended questionnaires to gather data. The combination of these two primary data sources, together with secondary data for financial reports, annual reports and newspaper clippings permitted the triangulation of data and for the provision of a thorough analysis in answering the various research questions for this research. “Research methodology is the path through which researchers need to conduct their research. It shows the path through which these researchers formulate their problem and objective and present their result from the data obtained during the study period,” (Sileyew, 2019, p. 1).

The population’s sample for this research used a combination of stratified multistage sampling and simple random sampling (Noor et al., 2022) for the quantitative aspect of the research. This ensured that a representative sample was selected from the population. The qualitative aspect used purposive sampling (Etikan et al., 2016), until saturation was reached. The qualitative sample size was sixteen participants, while the quantitative sample size was three hundred and eighty-four participants. No major issues were encountered in the data collection process.

The qualitative data was analysed using NVivo software where codes and themes were developed. The results from the qualitative aspects of the research were utilised to formulate the questionnaire for the quantitative aspect of the research. The results of the quantitative data collection were analysed using SPSS software. A missing data analysis showed no missing data, while the Cronbach’s Alpha for each of the various constructs for the research was greater than 0.7, indicating an acceptable level of confidence in the dataset of the constructs for consistency and accuracy. The primary data was cross referenced with secondary data to ensure consistency and accuracy of results.

The entire research was conducted within ethical parameters, with all participants being respected and briefed both verbally and in writing regarding the purpose of the research and their rights upon participation. It was ensured that they all gave permission prior to data

collection. They were all assured of the confidentiality and anonymity of their contributions. All collected data has been coded to safeguard the identities of those that participated in the research and locked away in a secure location. The research's procedures were overseen and approved by UREC prior to any data collection.

The next Chapter of this research displayed and analysed the findings of the data collection process. This allowed for an in-depth discussion and understanding of the findings in relation to each of the various research questions and to the operating constructs of this research.

CHAPTER FOUR: FINDINGS

4.1 Introduction

This research examined the key dimensions necessary for the successful implementation of organisational re-engineering for business sustainability during turbulent periods. A case study approach was used, utilising the recent Covid-19 pandemic as a period of turbulence that affected organisations world-wide. Data was captured from business leaders for the pre-period, post-period, and the actual time of the Covid-19 pandemic. The actions of organisational leaders during these periods were analysed to determine if these actions were dimensions of organisational re-engineering and which actions brought success and sustainability to organisations during this turbulent period. The operational definitions of the constructs for this research were also analysed and compared to their conceptual definitions. This allowed for an in-depth comprehension of the actions undertaken by organisational leaders given the complexity of the impact of the Covid-19 pandemic on organisations, and thus for the application of the findings to the research problem, the research questions, and the implications, recommendations, and conclusions of this research.

The underlying problem that this research resolved was how to effectively implement organisational re-engineering and lead organisations successfully during periods of turbulence. It was generally found that several leaders have difficulty in effectively implementing organisational re-engineering and leading their organisations to sustainability during crisis periods (Duchek, 2020). This was evident by the high number of business closures during turbulent periods. It is therefore imperative that leaders adequately deal with these scenarios (Schoemaker et al., 2018) in order to attain sustainability during turbulent periods. If organisations are not responsibly steered in such periods, this can cause the closure of many organisations (Dwipriyoko, 2020).

Organisational re-engineering has come into view as one of the techniques that can be used by leaders to manage and guide their organisations during turbulent times (Sungau, 2019). This concept is not new and has been used with mixed results over the years. Many researchers have advocated that the failure of this concept has more to do with its interpretation and implementation, rather than with shortcomings of the concept itself (Teng et al., 1998; Fetais et al., 2022b).

The data collection for this research was gathered using a mixed methodology of qualitative and quantitative techniques. Qualitative data was gathered through the administration of semi-structured interviews, while the quantitative data was gathered through closed-ended questionnaires. An exploratory sequential approach was adopted where the qualitative data was firstly gathered and then used to develop the quantitative tool.

Having completed the data collection aspect of this research, this Chapter presented the findings. The findings were grouped and categorised around the four research questions of this research. Just to recap, the four research questions of this research were:

- i. What were the actions undertaken by organisations for the duration of the Covid-19 pandemic?
- ii. How have the actions of leaders during the Covid-19 pandemic affected the financial performance of organisations throughout and after the Covid-19 pandemic?
- iii. How are the actions of organisations that successfully managed the Covid-19 pandemic aligned to dimensions of organisational re-engineering?
- iv. What are the benefits of organisational re-engineering to business sustainability during turbulent periods?

Subsequent to the presentation of findings, the data was analysed with the view of testing the null hypotheses of this research. The results of this research were presented without any interpretation or speculation of the data, as this was done in Chapter Five of this research.

During the collection of the data, demographic data was obtained on all participants to confirm that they met the conditions of the research and also to gain a contextual understanding of their responses. This allowed an insight into their characteristics. This demographic information included gender, age, experience, education, business structure, location, size, business sector and business type.

Given that the research utilized a sequential exploratory mixed methods design, the results were firstly categorized based on data obtained from the qualitative approach and then by the quantitative approach. The qualitative approach served as a foundation for identifying themes, which were then subsequently used to develop the questions in the questionnaire. The findings were presented to surround each research question, with a link to the respective hypothesis. This allowed for an understanding of how the findings relate to each research question and hypothesis.

Before proceeding to provide the results of the data collection, it is important to indicate the manner in which the trustworthiness of the data was ensured. Details are provided on the credibility, transferability, dependability, and conformability of the data. Following this, the Chapter described how concerns related to validity and reliability of the measurement instruments were mitigated. The Chapter ended with an evaluation of the research findings.

4.2 Trustworthiness of Data

Trustworthiness of data indicates the degree of trust and dependability that the research findings can be used with repetition (Kavanagh et al., 2016). It was therefore necessary that a systematic approach be adopted towards the collection of data (Noble & Smith, 2015). Lincoln and Guba (1985) iterated that trustworthiness is demonstrated through credibility, transferability, dependability, and confirmability. Kyngäs et al. (2020) noted “credibility can be defined as confidence in the ‘truth’ of the findings” (p. 42). Lincoln and Guba (1985) noted that credibility can be obtained through “member checking, prolonged engagement and

triangulation” (p. 301). To ensure credibility, an audit trail was developed (Creswell & Miller, 2000), where the processes used for collecting the data were documented. This was expected to increase the user’s confidence in the research and add value to the research (Sandelowski, 1986).

To increase the trustworthiness and credibility of the research, the mixed methodological approach was employed. The results from the qualitative and quantitative techniques were triangulated to reduce the risk of any systematic biases and shortcomings of using a singular technique (Maxwell, 2005). This approach ensured that any inconsistencies and discrepancies were identified in the research. It also allowed for identification and filling of any data analysis gaps. This led to more robust and reliable results, and allowed for a more comprehensive solution to the research problem. Added to this, secondary data was gathered on a sample of the participants. The data from these primary sources were triangulated against the data from the two primary sources. This allowed for consistency and accuracy of data findings. It also contributed to the credibility of the research.

Transferability relates to the level of which the findings of the research can be transferred or applied to other studies or situations (Trochim et al., 2015). According to Anney (2015), it is the “degree to which the results of qualitative research can be transferred to other contexts with other respondents – it is the interpretive equivalent of generalizability” (p. 277). The trustworthiness of this research was promoted via the concept of transferability as the research provided detailed information about the assumptions, context, and situation that the research sought to address. More specifically, the research focused on the impact of using organisational re-engineering during crisis periods. The Covid-19 pandemic was used as a case study for turbulent periods, with the research referencing scholarly articles that provided details about the negative effect of the Covid-19 pandemic. It is envisaged that the research will be applicable to all turbulent periods. To support the transferability of the research to all turbulent

periods, the research provided detailed information of the context, participants, demographics, and the methodology used in the research. This facilitated comparison of the research's results within the context of the turbulence caused by the Covid-19 pandemic to other turbulent periods and contexts (Lincoln & Guba, 1985).

Dependability represents the consistency and repeatability of the research findings. It is used as a benchmark for determining if the same conclusion would be derived if someone else were to examine and analyse the same data set (Wicks-Nelson, 2015). In this research, care was taken to ensure that the data collection instruments provided data that was relevant to the research and for answering the various research questions (Maxwell, 2005). In this vein, both the semi-structured interviews and the closed-ended questionnaires were pilot tested for practice of each data collection technique and for making necessary modifications to the questions (Majid et al., 2017). This also ensured that the questions were not 'leading questions'.

To support the trustworthiness of the data, all interview and questionnaire questions were reviewed to confirm consistency with the research objectives and research questions. This facilitated the obtention of themes and patterns, and permitted the fulfilment of the research objectives. The dependability of the research was further enhanced by the accurate documentation of the data (Gray, 2021). Primary data was cross referenced to secondary data and participants were asked to confirm their responses to the semi-structured interviews. Overall, the research provided details on the research methods utilized, the data collection process and how the data was evaluated and interpreted. This therefore allowed for consistency and repeatability of the research findings and conclusions.

Confirmability looks at the level of objectivity of the research findings (Given, 2008). It attempts to remove personal biases of the researcher and allow for objectivity of the research findings based on participant responses. Care was taken in selecting a sample that was characteristic of the survey population. Also, responses were gathered from persons who were

part of the strategic and operational decision-making of the organisation. In this respect, stratified multistage sampling, supported by simple random sampling (Noor et al., 2022) was utilized to obtain data. Participants were selected from each of the sixteen business sectors of the population and included board members or executive managers with a minimum of at least one (1) years' experience/involvement with the organisation and who were within the age category of 18 and 85 years. Persons with mental disabilities, as well as persons who were unable to provide consent for themselves were excluded from being participants in the data collection process.

Added to the above, the data was analysed for missing data. The coding process was double checked, as well as the data entry for accuracy. Despite the interviewees' refusal to record the interviews, their responses were all transcribed, and they were all asked to confirm the responses that they had provided. This ensured that all data was captured accurately and objectively. This therefore allowed for accurate coding and the recognition of themes and patterns and for the subsequent further analysis of the data.

Also, ethical assurances were included in the research procedures of the research to protect and safeguard the participants of the research inclusive of their confidentiality and anonymity. Participants were all verbally and written briefed of the research and all participants provided written consent for their participation prior to any data collection. As an overarching monitor to the ethical assurances of this research, the University's Ethics Committee (UREC) as well as a University appointed Supervisor ensured that there was consistency and validity to all aspects of the research prior to any data collection taking place.

Overall, the research was conducted to safeguard the trustworthiness of the presentation. Elements to ensure credibility, transferability, dependability, and confirmability were incorporated in the research's design to promote its trustworthiness. The next section of this Chapter addressed the issue of reliability and validity of data.

4.3 Reliability and Validity of Data

It was necessary to ensure that the research was both reliable and valid to ensure the appropriateness, meaningfulness, and usefulness of the research. Middleton (2017) noted that it is crucial to design a sound research, choose suitable methods and samples, and conduct the research carefully and consistently. This builds reliability and validity into the research. The quality of measurement instruments is key in determining the reliability and validity of research. It is also necessary to ensure that the research is objective. Objectivity is achieved when there is reliability and validity of the measures with known error margins and sources of errors. Enhancement increases the representation, presentation, and credibility of research.

Validity occurs when the instrument measures what it aimed or intended at measuring. Key to this, is ensuring that the choice of sampling method and sampling methodology allowed for the sample to be representative of the population with a high response rate. Sample size and sample design were key considerations in this research (Omona, 2013). The sampling methodology affected the response rate and was based on the research objectives and the specific characteristics of the population. If an inappropriate sampling method was used, this might have resulted in a poor response rate and inaccurate findings (Khan, 2020). Sampling therefore determined the quality of a study and enhanced the reliability and validity of the findings. In this research, the sample was determined based on stratified multistage sampling supported by simple random sampling. This sampling method was most appropriate given the large population of the research and for getting a good representative sample.

Additionally, prior to formal data collection, there was pilot testing of both the interview and the questionnaire instruments. This allowed for necessary modifications to be made prior to administering to the population sample (Van Teijlingen & Hundley, 2002). This was a critical step in ensuring that the instruments were consistent with the achieving the aims of the research and for the enhancement of the research's reliability and validity.

In the absence of any acceptable, existing, validated questionnaire, and to ensure efficiency of the data collection, and to eliminate any potential practical problems, a self-developed questionnaire was initially conducted and tested on a pilot group. This allowed for the necessary modifications to be made prior to administering to the population sample (Van Teijlingen & Hundley, 2002).

To enhance the validity and reliability of this research, secondary data (Creswell, 2008) was obtained using convenience sampling for a sample of the organisations included in the quantitative and qualitative samples. The secondary data included annual reports, newspapers, media clippings and published financial data. The purpose of this was to validate the information provided by respondents during the interviews and in their completed questionnaires.

The analysis of the data collected was performed efficiently using independent and objective software applications NVivo and SPSS. The analysed data from the qualitative analysis from the NVivo software was triangulated against the analysed data from the quantitative analysis using SPSS for consistency and for a deeper understanding of the findings. In fact, the resulting themes from the NVivo analysis were used to develop the questions in the questionnaire. The responses to the questionnaire were analysed using SPSS. These findings were further triangulated against the secondary data to ensure validity of the data. This mixed methodological approach also allowed for an in-depth analysis of the data that was obtained from the various methodologies. This inevitably led to validation of the research findings and reliability and validity of the research (Golafshani, 2003).

The mixed methodology thus allowed for a broad range of research questions and generalisation of the research findings, therefore providing stronger evidence for the research's conclusions. This consequently led to an enhancement of the validity and reliability of the research (O'Cathain et al., 2007). Fusch et al. (2018) noted that triangulation improves the

validity of research studies by adding trustworthy data towards the existing body of research. He insinuated that researchers could strengthen their studies from the advantages of the qualitative and quantitative methodologies and by using the qualities of one method to counter the deficiencies of the other method. This allows researchers to obtain a wide range of information on research and improve the validity and reliability of research.

The mixed methodology seeks the achievement of validity and reliability in its research findings and conclusions. Greene et al. (1989) indicated “Testing and verification of both types of data sources increased reliability and validity” (p. 268). When used together, knowledge is produced that informs theory and practice. The mixed methodology promotes neutrality in research resulting in bias-free results. It guides data collection methods and reduces uncertainty. Corroboration of research approaches provides greater confidence of research findings. Greater knowledge and understanding are gained by the researchers when there are conflicting findings of the studied phenomena. Researchers are then able to modify the interpretation and conclusions of the study. Thus, the mixed methodology improves the validity and reliability of research findings.

This mixed approach was chosen for this research as it overcame some of the individual limitations of both the qualitative and quantitative research methods. It allowed for greater validity, reliability, viability, acceptability and use of the research’s findings. Missing values in the dataset can occur from errors during data collection, mistakes in data entry, data loss during processing, manipulation and sorting of the data or failure to answer a question from a respondent. When this occurs, this can lead to biased or invalid conclusions which can affect the reliability and validity of the research. To avoid this issue, a missing value analysis was done to identify missing data. This process added to the research’s reliability and validity. The collected data from both approaches was analysed using mathematical and statistical tools, content analysis and thematic analysis. This included the use of NVivo and SPSS applications,

discussions, charts and diagrams, correlation, summaries, grouping, coding, and reporting. Data gathered from the quantitative and qualitative techniques were triangulated against each other for increased validity and reliability of the research (Golafshani, 2003).

A necessary condition of validity is reliability. The extent of validity is determined by the degree to which the test results are in alignment with the intended use of the construct. “Reliability is the extent to which measurements are repeatable,” (Bollen, 1989, p. 206). “Stability of measurement over a variety of measurements in which basically the same results should be obtained,” (Nunnally, 1978, p. 191). Reliability is obtaining the same results when different people conduct the research or when the research is conducted on different time periods or under varying conditions with alternative instruments. In this vein, an audit trail was developed (Creswell & Miller, 2000), where the processes used for collecting the data were documented. Additionally, the research provided details on the research methods utilized, the data collection process and how the data was evaluated and interpreted. This therefore allowed for consistency and repeatability of the research findings and conclusions.

Reliability and validity differ in their usefulness for measurement instruments. The validity and reliability of qualitative research is largely dependent on the skills and expertise of the researcher, whereas the validity and reliability of quantitative research is mainly dependent on the measurement device and instrument used. Whereas reliability looks at the consistency of the measurement instrument, validity focuses on the precision of the measurement instrument. A test is valid when data is reliable. However, if a test is reliable, it is not necessarily valid.

Having provided details on how the trustworthiness of the data collection process, and also on the reliability and validity of the research, the subsequent section of this Chapter presented the results of this research.

4.4 Results

This research used a sequential exploratory design (Teddlie & Tashakkori, 2003) and utilised data collection tools drawn from both the qualitative and quantitative approaches to obtain data for answering the respective research questions and for testing the various null hypotheses of the research. The data collection tools involved using semi-structured interviews which guided the preparation of the questions in the closed-ended questionnaire. It also included the collection of secondary data to triangulate against the primary data for ensuring consistency and accuracy of data. This approach is most applicable when there is no theoretical perspective and is useful for generalizability of research findings. Given that there is little empirical understanding of the dimensions that influence the successful implementation of organisational re-engineering for the attainment of sustainability of organisations during turbulent periods, the sequential exploratory mixed-methods approach served as the ideal design for this inquiry.

The data obtained from the semi-structured interviews provided a deep comprehension of the concepts, thoughts, experiences, and actions undertaken by organisational leaders during the Covid-19 pandemic, while the questionnaire provided further details, and confirmed, complemented, and filled any data analysis gaps of the qualitative approach (Márquez et al., 2017). The quantitative collection of data immediately followed the collection of the qualitative data to avoid one technique from influencing the technique or methodology of the other approach. The triangulation of the results of both methods facilitated the complementing and development of each methodology (Bryman, 2006) and addressed the different research questions.

Face to face and online semi-structured interviews with thirty-three (33) pre-determined questions were administered to sixteen (16) organisational leaders in person at their places of employment and using zoom and google meet platforms. The data gathered from the interviews

was analysed using content and thematic analysis with NVivo software and used to frame and develop the questionnaire. The closed-ended questionnaire contained thirty-seven (37) questions and were administered both directly, hardcopy and through online using a Google Form. The quantitative data retrieved from the questionnaire was analysed using mathematical Microsoft tools and SPSS software. Details of the data obtained is presented in the tables, charts, diagrams, and graphs to follow.

Apart from the collection and analysis of primary data, document reviews were done using secondary data sources (Creswell, 2008). This involved reviewing of public documents such as journals, newspapers, media clippings, annual reports and published financial data. This review was done with the purpose of ascertaining a comparative trend of the financial performance of organisations before, during and after the Covid-19 pandemic. Similar to the analysis of the data obtained from interviews and questionnaires, the secondary data was analysed using mathematical and statistical tools. The data from the secondary sources was triangulated with the data from the primary sources to confirm and complement the data collected utilising the qualitative and quantitative techniques. The results from twenty-five secondary data collection sampled participants were collated and are displayed diagrammatically below.

4.4.1 Qualitative Data:

The initial stage of data collection was done using the qualitative tool of semi-structured interviews. The data was prepared by removing any identifiable information and assigning codes to each respondent. Using NVivo, files were developed for each participant. A classification sheet containing demographic data was developed for each participant using Excel. Labels were assigned to each participant. Each participant's file and the Excel spreadsheet containing the demographic data was uploaded to NVivo. The data was coded and

dragged into containers. The data was sorted by grouping codes where there was a shared relationship to form clusters. The clusters were labelled to form categories and themes. Each research question and hypothesis were then linked to a theme. These themes were subsequently coded as ordinal and nominal measures in the quantitative analysis of data. Common themes found from data collection from the semi-structured interviews are as follows:

THEME	DESCRIPTION
Demographic Data of Participants	- Participants held senior and leadership positions, were mostly male, in the age category of 56 to 65 years, had vast working experience, were in their current position for a number of years, and held a postgraduate university degree. - The majority of companies were Limited Liability Companies located in the most population dense districts, and were spread evenly amongst sector and size
Impact of Covid-19 pandemic on Organisations	All businesses impacted inclusive of many aspects of business operations
Impact on revenue and profitability	All companies had a decrease in their revenue and profitability in the pandemic period with some of them having an increase in revenue and profitability in the post pandemic period. However, this increase was lower than their revenue and profitability in the pre pandemic Period
Actions/ Strategies undertaken to deal with the crisis situation	- Wide variety of actions undertaken during this period. - All participants involved in strategic and operational decision making
Understanding and usage of Organisational Re-engineering	- All participants had a good knowledge and understanding of the concept of Organisational Re-engineering - Participants believed that they used Organisational Re-engineering during the Covid-19 pandemic
Alignment of actions undertaken to Organisational Re-engineering	Several actions undertaken by the participants were in alignment with the 5 dimensions of Organisational Re-engineering in the research

Benefits from actions undertaken by Organisations	- Improved Customer Service, Greater Agility, Increased Efficiency, Poised for Future Growth, More Robust, Increased Profitability, Achieved Growth, Decreased Cost, and Increased Revenue - Organisations are on a sustainable path due to their actions undertaken during the Covid-19 pandemic
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Table 4.1. *Themes from Qualitative Analysis.*

Each of these themes were used to align and develop questions in the questionnaire.

The findings of the qualitative data are presented below:

4.4.1.1 Demographic Data.



Figure 4.1. *Job Title.*

There were four (4) results that were unearthed for Job Title. These were: Director, Chief Executive Officer, Senior Manager and Owner. These findings were included in the first question of the questionnaire.

Male
Female

Figure 4.2. *Gender.*

Participants identified themselves according to two (2) categories of gender. These were male or female. There were no instances of unspecified or other gender types. These findings were incorporated in the second question of the questionnaire.

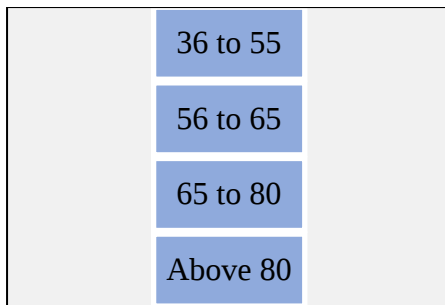


Figure 4.3. *Age.*

Whilst only the four age categories were obtained during the interview process, two additional bands were added to the third question in the questionnaire. These were ‘Under 18’ and ‘18 to 35’. This allowed for compliance with the criteria used for participants of this research.

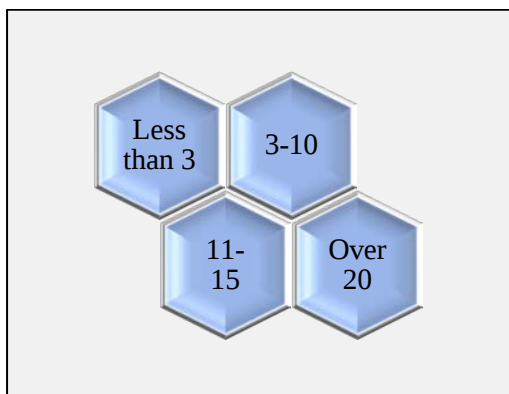


Figure 4.4. *Number of Years Participants Worked in Organisation.*

Four (4) age categories emerged for the number of years participants worked in their organisation. These were less than three years, three to ten years, eleven to fifteen years and over twenty years. These findings were incorporated in the fourth question of the questionnaire.

'1 to 5 years'
'5 to 10 years'
'Over 10 years'

Figure 4.5. *Number of Years in Current Position.*

Three (3) age categories arose for the length of time that participants worked in their current positions. These were one to five years, five to ten years and over ten years. However, in the construction the fifth question of the questionnaire, an additional category was added for less than 1 year in the current job position. This category was used as per the criteria for this research to exclude participants who possessed less than 1 years' experience in their current job position.

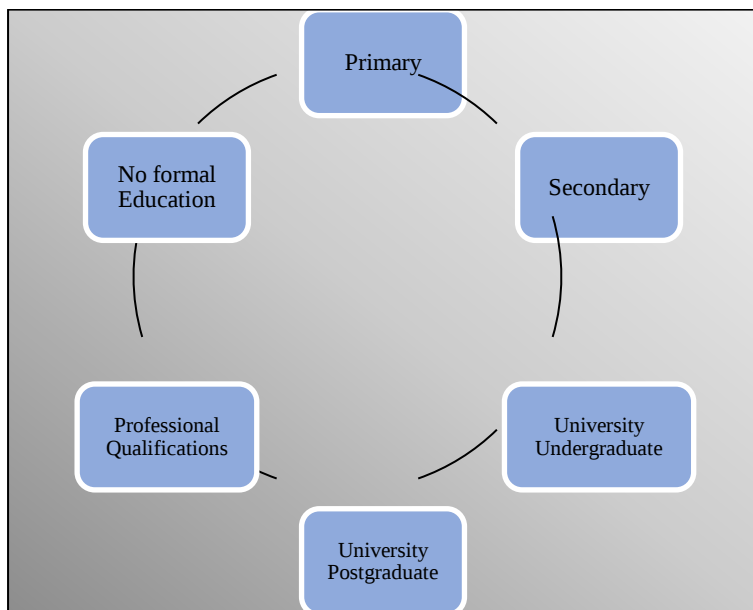


Figure 4.6. *Educational Level.*

From the interviews, there were six (6) categories of educational level of the participants. These were primary, secondary, university undergraduate, university postgraduate, professional qualifications, and no formal education. All categories were used in the formulation of the sixth question in the closed-ended questionnaire.

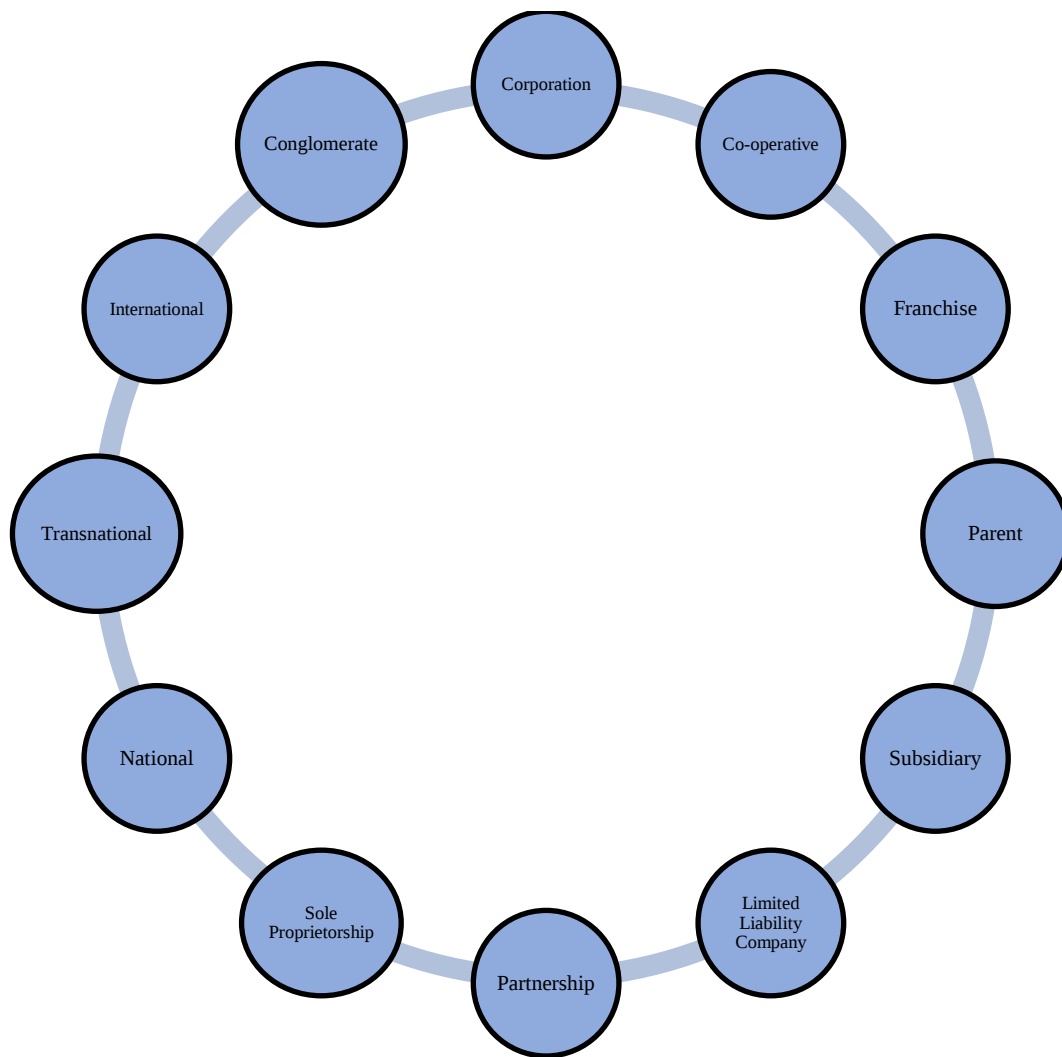


Figure 4.7. *Business Structure.*

There were a number of combinations of business structures that emerged from the interview process. However, for the construction of the seventh question of the quantitative research instrument, only the main business structures were considered. Additionally, for completeness, and given that only sixteen organisations were sampled for the qualitative aspect of this research, other categories were added. These are detailed above.

'Caroni'
'Nariva/ Mayaro'
'St. Andrew/ St. David'
'St. George East'
'Tobago'
'St. George West'
'St. Patrick'
'Victoria East'
'Victoria West'

Figure 4.8. *Geographic Location of Headquarters.*

Only four (4) geographical locations emerged during the interview process. However, to ensure that a representative sample from across all companies in Trinidad and Tobago were included, all nine (9) geographical districts were incorporated in eighth question of the questionnaire.

0	1 to 3
4 to 6	Greater than 6

Figure 4.9. *Number of Branches.*

All the participants during the interview fell into 2 categories: 0, and 1 to 3. However, to ensure trustworthiness of the data collection process, two (2) additional categories were added in the ninth question of the questionnaire. These were '4 to 6' and 'Greater than 6'.

Accommodation	Education	Information, Communication and Technology	Real Estate
Administrative and Support Activities	Financial and Insurance Activities	Manufacturing and Distribution	Tourism
Art, Entertainment and Recreation	Food processors and drinks	Printing and Publishing	Transport
Construction	Government	Professional, Scientific and Technical Activities	Wholesale and Retail Trade

Figure 4.10. *Sector to which Organisation Belongs.*

Sixteen (16) sectors were used to stratify the population. All sixteen (16) sectors were used as a guideline for preparing the tenth question of the questionnaire.

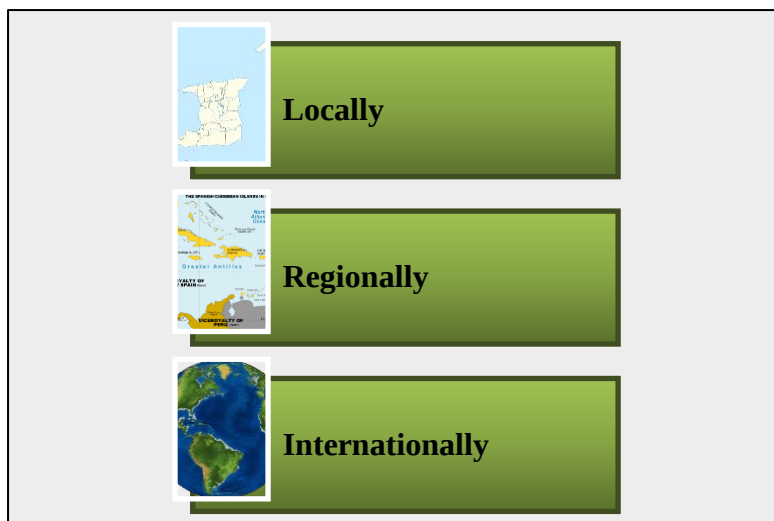


Figure 4.11. *Region of Operation.*

All firms interviewed had a local presence. To secure the reliability and validity of this research, two additional categories were added to the eleventh question of the questionnaire. These were: 'Regionally' and 'Internationally.'

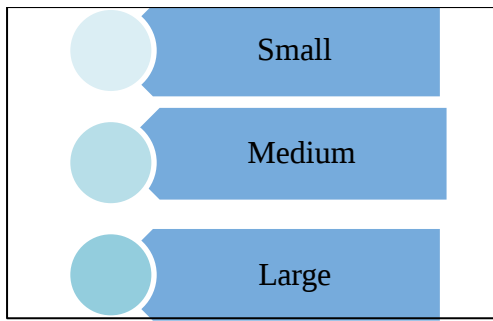


Figure 4.12. *Classification of Organisation.*

Three (3) categories of firms emerged during the interview process. These were small, medium, and large. The number of employees employed within the organisation was used to categorise organisations into these three categories. This criterion was previously explained in this research. These findings were included in the twelfth question of the questionnaire.

The demographic results that emerged from the semi-structured interviews were included as part of the closed-ended questionnaire in the quantitative aspect of this research. To enhance the validity and reliability of the research, some additional options were included. This added to the completeness of the questionnaire.

4.4.1.2 Research Question 1.

The first research question for this research was '*What were the actions undertaken by organisations for the duration of the Covid-19 pandemic?*'. The following were the results that emerged for Research Question 1.

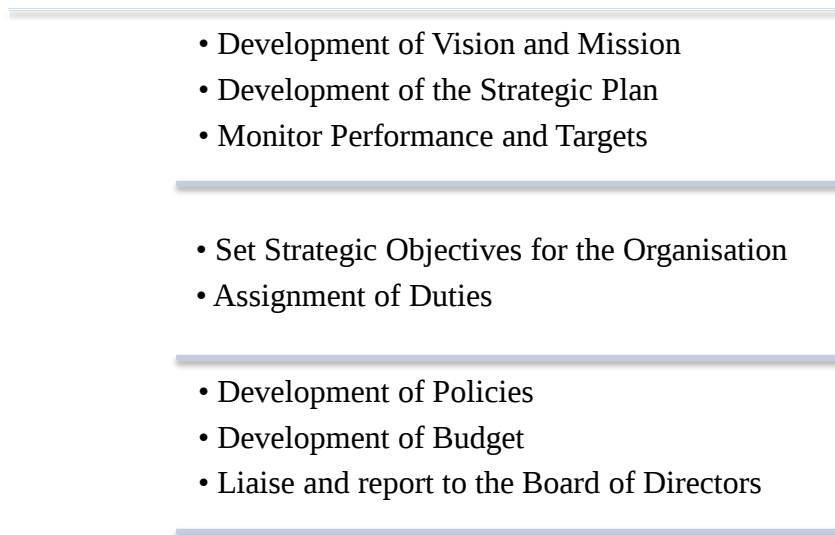


Figure 4.13. *Strategic & Operational Decision Making that Participants were Involved In.*

All participants indicated that they were involved in the strategic and operational decision-making and actions of their organisation. These were the categories that emerged based on the type of strategic and operational decisions that participants were involved in during the pandemic.

These categories provided an initial framework for discovery and understanding the operational definitions of the research's construct variables. These findings were used to develop the thirteenth and fourteenth questions of the questionnaire.

Revenue	Mode of delivery
Expenses	Projects
Profitability Growth	Supply chain disruptions
Customer Service	Reduced customer demand
Operations	Delays in government office processing
Management Staffing	Distribution of goods and services
Non-management Staffing	Raw material shortages
Operating hours	Training
Policies	Controls
Systems	Increased freight cost
Processes	Organisational Structure
Communication	Equipment maintenance
Strategy	IT

Figure 4.14. *Ways the Covid-19 Pandemic Affected the Organisation.*

From the interview answers, the Covid-19 pandemic seemed to have impacted organisations in several ways. The common results that emerged are detailed above. These were included in the fifteenth to seventeenth questions in the questionnaire. These results aided the research in ascertaining whether or not the five dimensions of organisational re-engineering had any influence on reducing the effects of these impacts.

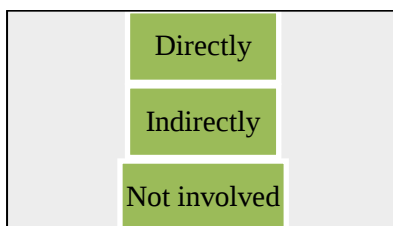


Figure 4.15. *Involvement in Strategy and Decision Making of Organisation during the Covid-19 Pandemic.*

The results seem to suggest that all participants were involved directly in strategy and decision making of their organisation during the Covid-19 pandemic. However, for completeness, two additional categories were added to the questionnaire. These were:

‘Indirectly’ and ‘Not Involved.’ This question aided in determining the operational effectiveness of leadership during this turbulent period. The findings from this question aided with the development of the eighteenth question of the questionnaire.

Permanent Closure	Used Project Management Techniques to Implement Changes and Projects	Staff Cuts, Utilised Business Sustainability as a Business Objective	Cancel Supplier Orders	Change in Operation Hours
Change leadership	Delays in Business investments	Change Mode of Delivery to Online	Utilised Change Management Strategies	Change Systems
Reduction of Wages and Salaries	Created New Sources of Revenue	Change Organisational Structure	Change strategy	Change Policies
Reduced Product and Service Offerings	Diversified Operations	Strengthened IT Infrastructure	Management Rotation	Change Procedures
Change Software	Change Management Team	Work from Home	Reduction in Staff Working Hours	Implemented Controls on Expenses
Close Branches	Staff Re-organisation	Temporary Closure	Staff Rotation	Reached Out to Customers

Figure 4.16. *Actions Undertaken by Organisations during the Covid-19 Pandemic.*

Leaders undertook many actions during the Covid-19 pandemic. The common responses that emerged are detailed above and were included in the nineteenth and twentieth questions of the questionnaire. From an initial observation, the five dimensions of organisational re-engineering were included in these actions.

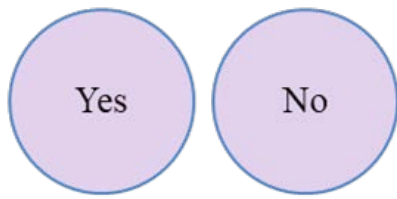


Figure 4.17. *Lack of Resources being Responsible for Hindrance of Actions.*

No participant revealed that a lack of resources was a hindrance for the actions that they undertook during the Covid-19 pandemic. For completeness, the option of 'No' was included in the twenty fifth question of the questionnaire. These findings also aided with the twenty first and twenty fifth questions of the questionnaire.

4.4.1.3 Research Question 2.

The second research question for this research is *‘How have the actions of leaders during the Covid-19 pandemic affected the financial performance of organisations throughout and after the Covid-19 pandemic?’*. This question helped to determine the effectiveness of leaders’ actions during the Covid-19 pandemic. It was used as a determinant of the operating definition of leadership for comparison to the conceptual definition of leadership.

The following were the results that emerged for Research Question 2.

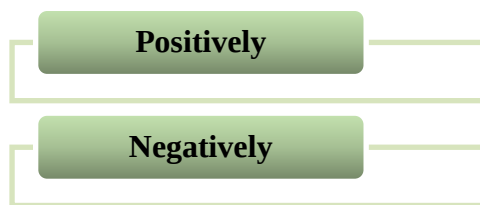


Figure 4.18. *How Measures Alleviated Problems that were Caused by the Covid-19 Pandemic.*

100% of participants indicated that these measures helped/alleviated the problems that resulted from the Covid-19 pandemic. These findings aided with the development of the nineteenth and twentieth questions of the questionnaire.

Yes
No

Figure 4.19. *Organisation Received Government Covid-19 Grant/ Subsidy.*

None of the interviewed participants received any governmental assistance throughout the Covid-19 pandemic. These findings were incorporated in question the twenty first question of the questionnaire.

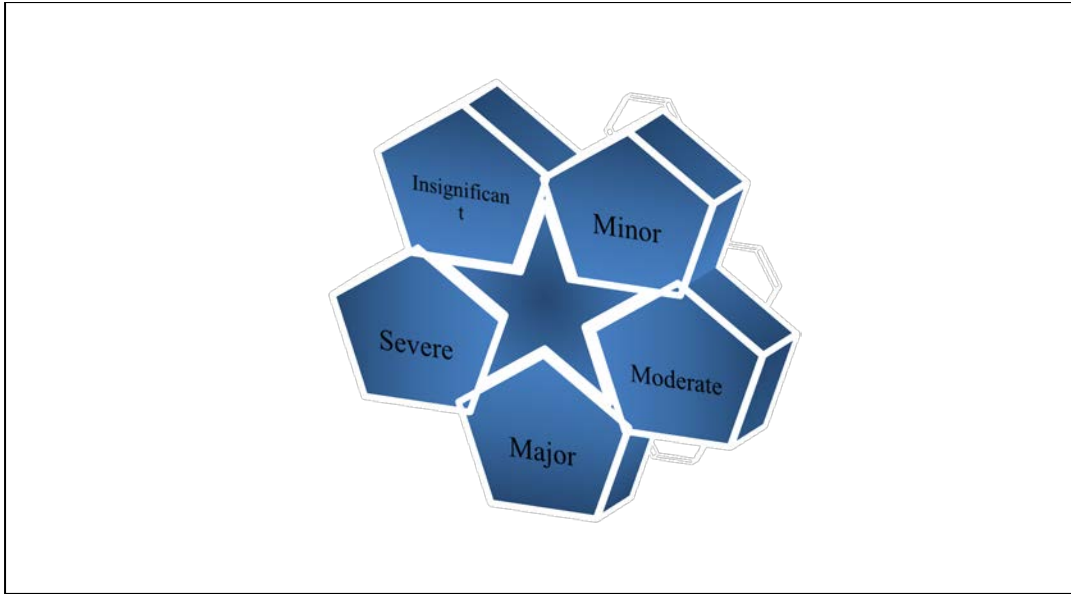


Figure 4.20. *Impact of Covid-19 Pandemic on Organisation.*

The findings of the interview indicated that the impact of the Covid-19 pandemic on their organisations were moderate, major, and severe. Two (2) additional options were added in the construction of the twenty second question of the questionnaire for ensuring completeness of responses. These are ‘Insignificant’ and ‘Minor.’ This question assisted in determining whether the actions that were executed during the Covid-19 pandemic had any effect of changing the overall impact brought about by this turbulent period.

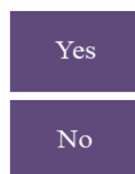


Figure 4.21. *Actions that could have been done differently.*

All participants indicated that there were no additional actions that could have been done differently during the Covid-19 pandemic. Therefore, it is determined that the actions that were undertaken during the pandemic was to the full extent of the organisations’ capabilities. These findings were explored further in the twenty third and twenty fourth questions of the questionnaire.

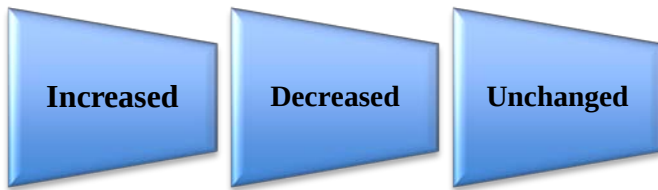


Figure 4.22. *Impact on Profitability during the Covid-19 Pandemic.*

All participants indicated that their profitability decreased during the course of the Covid-19 pandemic. This suggested that the pandemic negatively affected all organisations. These findings assisted with the development of the twenty sixth to thirty third questions of the questionnaire.

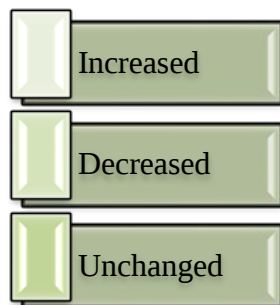


Figure 4.23. *Comparison to Pre-Pandemic Profitability.*

All participants indicated that their profitability decreased in comparison to their Pre-pandemic profitability. This question supports the findings of the previous question where all organisations were financially negatively affected by the pandemic. This finding was further explored in the thirty third question of the questionnaire.

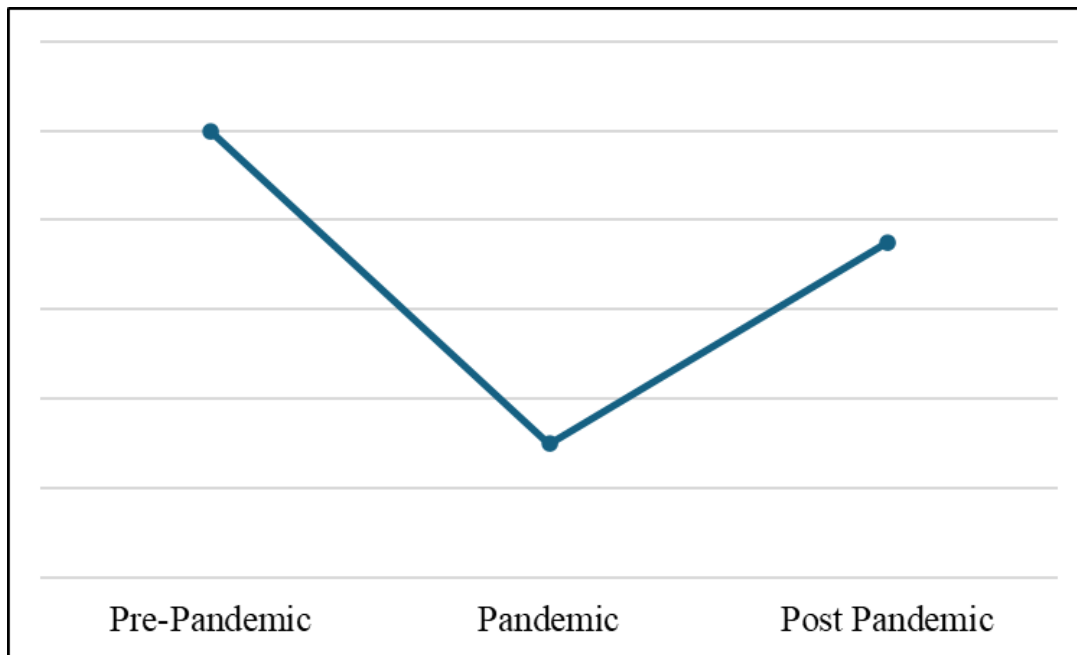


Figure 4.24. *Comparison of Pre-Pandemic, Pandemic and Post Pandemic Profitability.*

All participants indicated that their profitability decreased in comparison to their pre-pandemic profitability and then increased thereafter in the post pandemic period. However, their post-pandemic profitability was lower than their pre-pandemic profitability. This data was consistent to data obtained from secondary data sources. According to Engidaw (2022), secondary data analysis displayed that the Covid-19 pandemic had a tremendous negative impact on all organisations of different sizes. It resulted in the destruction of businesses globally and pose a significant challenge for others to survive. It brought about reduced revenue, unemployment and reduced economic activity. It created chaos in the economic world and proved to be a challenge for the survival of businesses. The findings of this question were used to develop the thirtieth, thirty first and thirty third questions of the questionnaire. This question offers support for some of the actions undertaken during the Covid-19 pandemic positively impacting in the post Covid-19 pandemic period.

4.4.1.4 Research Question 3.

The third research question for this research is *‘How are the actions of organisations that successfully managed the Covid-19 pandemic aligned to dimensions of organisational re-engineering?’*. The following were the responses that emerged for research question 3. This research question aided in developing an operational definition of the dimensions of organisational re-engineering. The resultant operational definition was compared to the conceptual definition of these variable constructs.

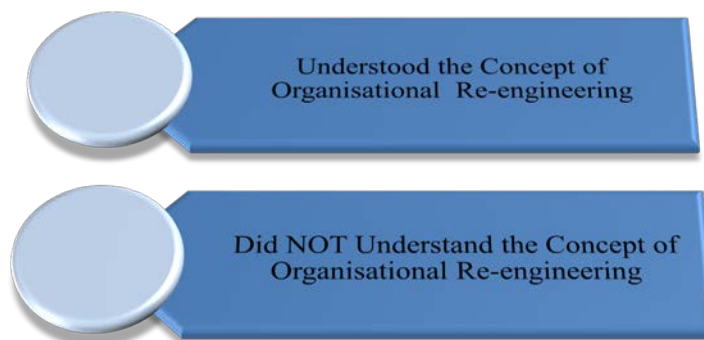


Figure 4.25. *Understanding of the Concepts of Organisational Re-engineering.*

100% of organisations indicated that they understood the concept of organisational re-engineering. This finding was further tested in the thirty fourth question of the questionnaire. Despite the large sample size, the collective agreement on the concept of organisation re-engineering suggested that the 384 participants may have been biased in their responses, and included answers they believed were expected of them. Despite anonymity being maintained, the findings suggested that leaders may not have responded based on their true knowledge of the concept of organisational re-engineering, but rather based on their inclination to align the organisation in support of the concept itself.

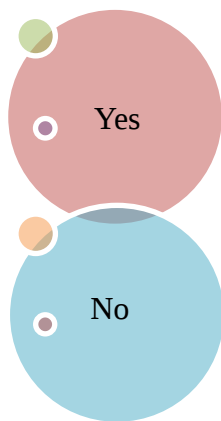


Figure 4.26. *Leaders Believe that their Actions can be considered as Organisational Re-engineering.*

100% of leaders believed that their actions could have been considered as organisational re-engineering. Upon analysing the responses, the 100% agreement suggests that since the participants were organisational leaders, their view may have been biased as having performed actions of organisational re-engineering. Furthermore, the perspectives of lower-level staff or other leaders within the respective organisations may not have been considered when answering this question.

4.4.1.5 Research Question 4.

The fourth research question for this research is '*What are the benefits of organisational re-engineering to business sustainability during turbulent periods?*' The following were the results that emerged for research question 4.

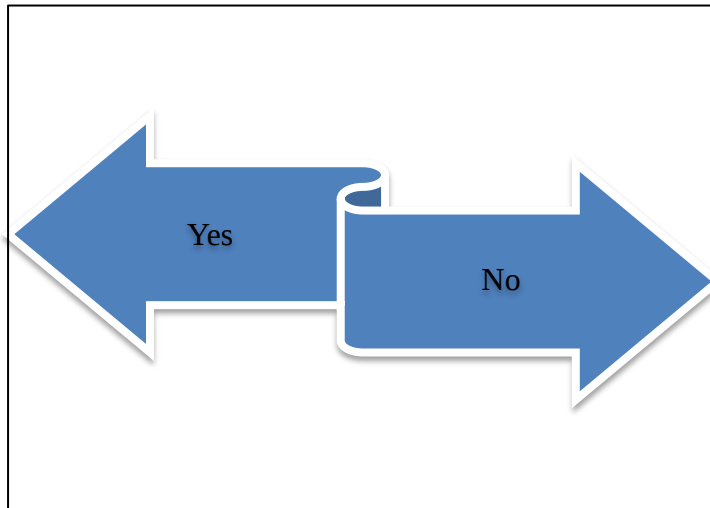


Figure 4.27. *Organisation Recovered from Covid-19 Pandemic.*

100% of participants indicate that their organisation had recovered from the effects of the Covid-19 pandemic. This finding was also consistent with data obtained from secondary sources. Operationally, leaders may have defined recovery with increases in revenue and profitability in the post pandemic period. Given that all organisations showed increases in both their revenues and profitability in the post pandemic period when compared to the pandemic period, leaders were thus inclined to respond that their organisations recovered from the Covid-19 pandemic. This finding was further explored in the twenty sixth question of the questionnaire.

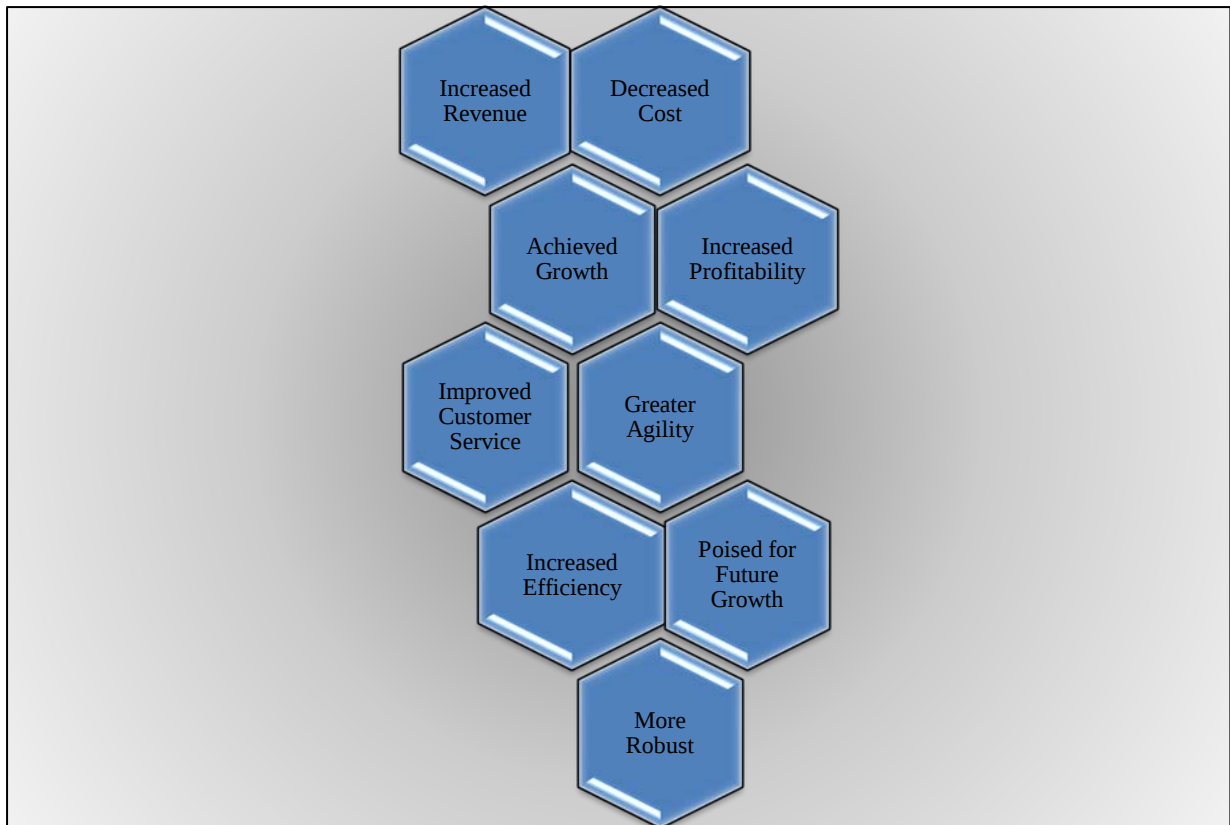


Figure 4.28. *Benefits Derived from Strategies Implemented During the Covid-19 Pandemic.*

The common responses that were derived from the benefits of strategies implemented throughout the time of the Covid-19 pandemic were increased revenue, decreased cost, achieved growth, increased profitability, improved customer service, greater agility, increased efficiency, poised for future growth and more robust. It must be noted that many, if not all of these responses are elements of business sustainability. These findings were further explored in the thirty sixth question of the questionnaire.

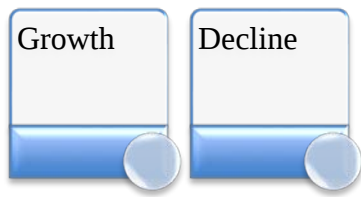


Figure 4.29. *Growth or Decline during the Covid-19 Pandemic.*

100% of participants indicated that their organisation had declined during the Covid-19 pandemic. This response was also supported by secondary data. This finding was incorporated into the twenty-ninth question of the questionnaire.

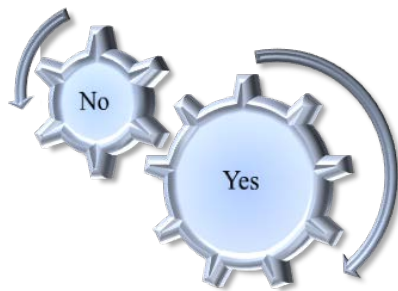


Figure 4.30. *Organisation on a Sustainable Path based on Actions Undertaken.*

100% of participants indicated that their organisations were on a sustainable path based on the actions that were undertaken during the Covid-19 pandemic. Operationally, leaders may have defined sustainability based on multiple factors. This may have included post pandemic recovery, post pandemic increases in revenue and profits, and post pandemic growth. Figure 4.28 also displays a number of post pandemic benefits that were derived from strategies and actions implemented during the pandemic period. These responses may have therefore led to the 100% response that organisations were on a sustainable growth path based on the actions undertaken by leaders in the pandemic period. This finding was further explored in the thirty seventh question of the questionnaire.

4.4.2 Quantitative Data:

Following the administration of the semi-structured interviews, the closed-ended questionnaire was developed. The findings from data collection from the closed-ended questionnaires were as follows:

4.4.2.1 Demographic Data.

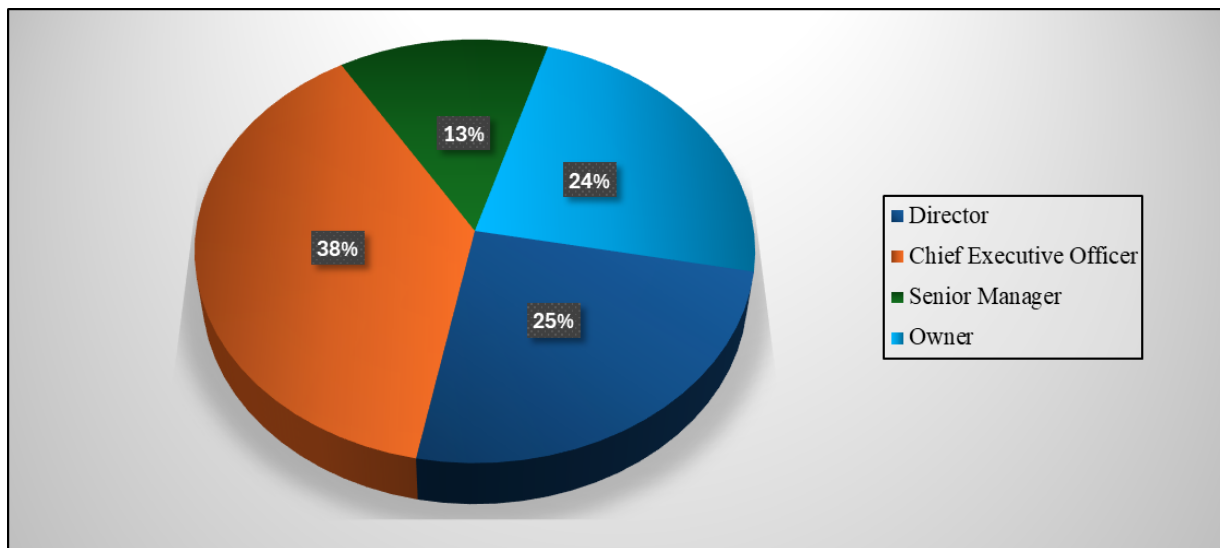


Figure 4.31. *Participants' Job Title.*

The questionnaire was administered to 384 participants. 96 of these persons (25%) held the job title of Director, 147 persons (38.3%) were Chief Executive Officers, 51 persons (13.3%) were Senior Managers, and 90 persons (23.4%) were Owners. While the majority of respondents were Chief Executive Officers, all 384 participants met the criteria used for the selection of participants (being Board Members or Executive Managers) and hence, their responses were expected to contribute towards answering the subsequent research questions.

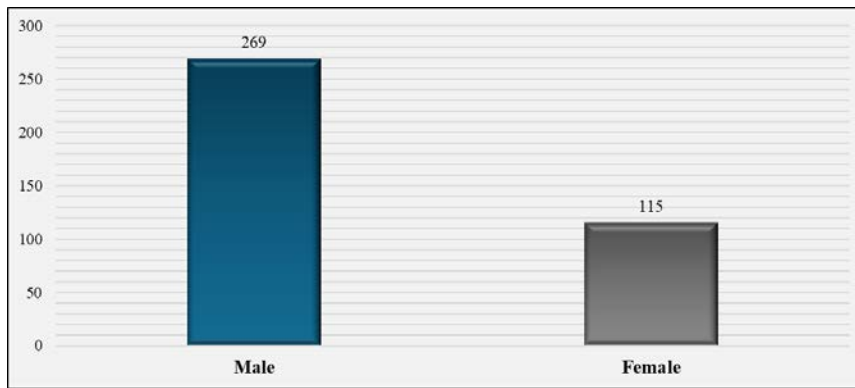


Figure 4.32. *Participants' Gender.*

From the 384 participants, 269 persons (70.1%) were males and 115 persons (29.9%) were females. Historically and even in present day society, men have had greater access to leadership and authoritative roles when compared to women. This higher ratio of males compared to female participants may result in variation of results given that women may lead organisations differently to males. Nevertheless, this difference was not expected to skew the conclusions of this research as both sexes would have experienced similar issues in managing the Covid-19 pandemic. In fact, the diversity of sexes enriched the research's conclusions, especially for generalisation purposes as a greater variation of responses were obtained.

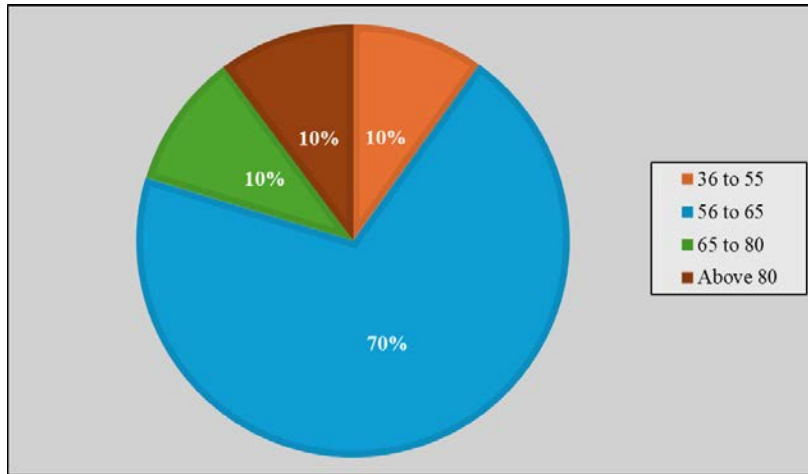


Figure 4.33. *Participants' Age.*

Most of the participants in this research fell within the age category 56 to 65 years (69.8%), whilst the age brackets 36 to 55, 65 to 80 and above 80 were evenly distributed at approximately 10% respectively. This distribution was understandable given that persons who hold key leadership positions within organisations are usually more experienced and hence, older. All participants therefore fell in the selection criteria of being between 18 to 85 years.

Time Period	Frequency
Less than 3	77
3 to 10	77
11 to 15	0
15 to 20	77
over 20	153

Table 4.2. *Number of Years Worked in Organisation.*

From the data collection, 230 persons or 59.9% of participants possessed more than 15 years of working experience within their respective organisations as compared to the remaining 154 participants who all had less than 15 years of working experience. Given the relatively high working experience of the majority of participants of this research in their respective organisations, it was expected that their responses would provide a deep understanding of their actions and responses to the Covid-19 pandemic on their respective organisations.

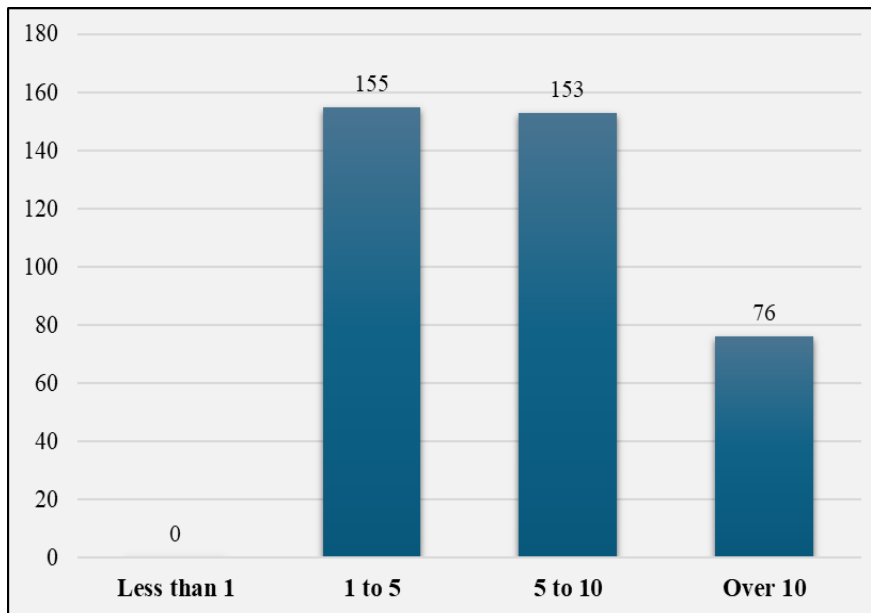


Figure 4.34. *Number of Years in Current Job Position.*

The majority of participants in this research had up to 10 years of experience in their current job position (80.2%). There was however, an even distribution of participants who had 1 to 5 years' experience and between 5 to 10 years of experience. No participant held their job position for less than 1 year. All participants therefore met the selection criteria of being in their position for at least 1 year. These findings are consistent and reasonable, as is in most organisations, senior positions are held for short-term periods.

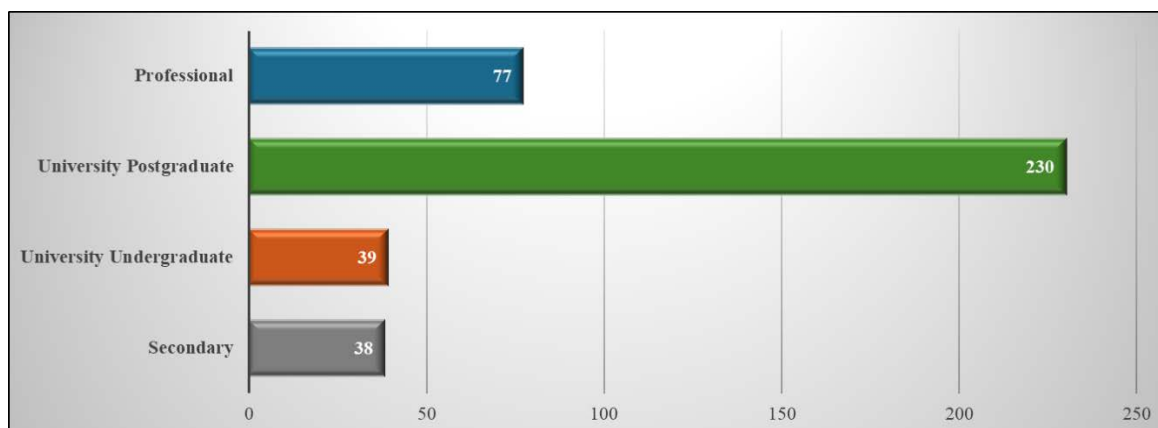


Figure 4.35. *Educational Level of Participants.*

Most of the participants in this research held a postgraduate university degree as their highest level of educational qualification (59.9%). This finding is consistent with persons holding leadership positions. As such, it was expected that the responses provided rich data to assist with developing the conclusions for this research.

BUSINESS STRUCTURE	FREQUENCY
International	2
Transnational	3
Conglomerate	3
Parent	4
Partnership	4
Sole Proprietorship	5
Franchise	7
Subsidiary	10
Co-operative	12
Limited Liability Company	375
National	379
Corporation	384

Table 4.3. *Business Structure of Participants' Companies.*

From the data collected, all respondents were corporations with the majority being limited liability companies and nationals of Trinidad and Tobago. The resulting data provided a good representation of how leaders in Trinidad and Tobago managed the Covid-19 pandemic.

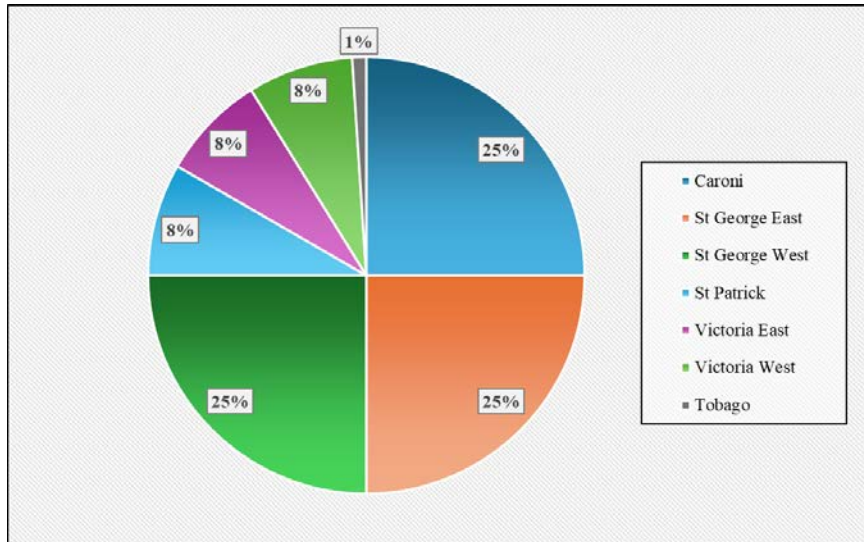


Figure 4.36. *Business Location.*

The demographic location of the collected data indicated that the majority of the participants were from localities within Caroni, St. George East, and St. George West districts (75%). This was because these areas were the most commercialised and industrialised regions within Trinidad and Tobago.

'Number of Branches'	'Frequency'	'Percentage'	'Valid Percent'	'Cumulative Percent'
0	374	97.4	97.4	97.4
1 to 3	4	1	1	98.4
4 to 6	5	1.3	1.3	99.7
>7	1	0.3	0.3	100
Total	384	100	100	

Table 4.4. *Number of Branches of Participants' Organisations.*

From the sample companies, 374 or 97.4% of these companies had no branches. This is typical of organisations within Trinidad and Tobago that mainly operate out of one location. This may pose to be a potential limitation for generalisation of the research's conclusions for companies that have more than one branch.

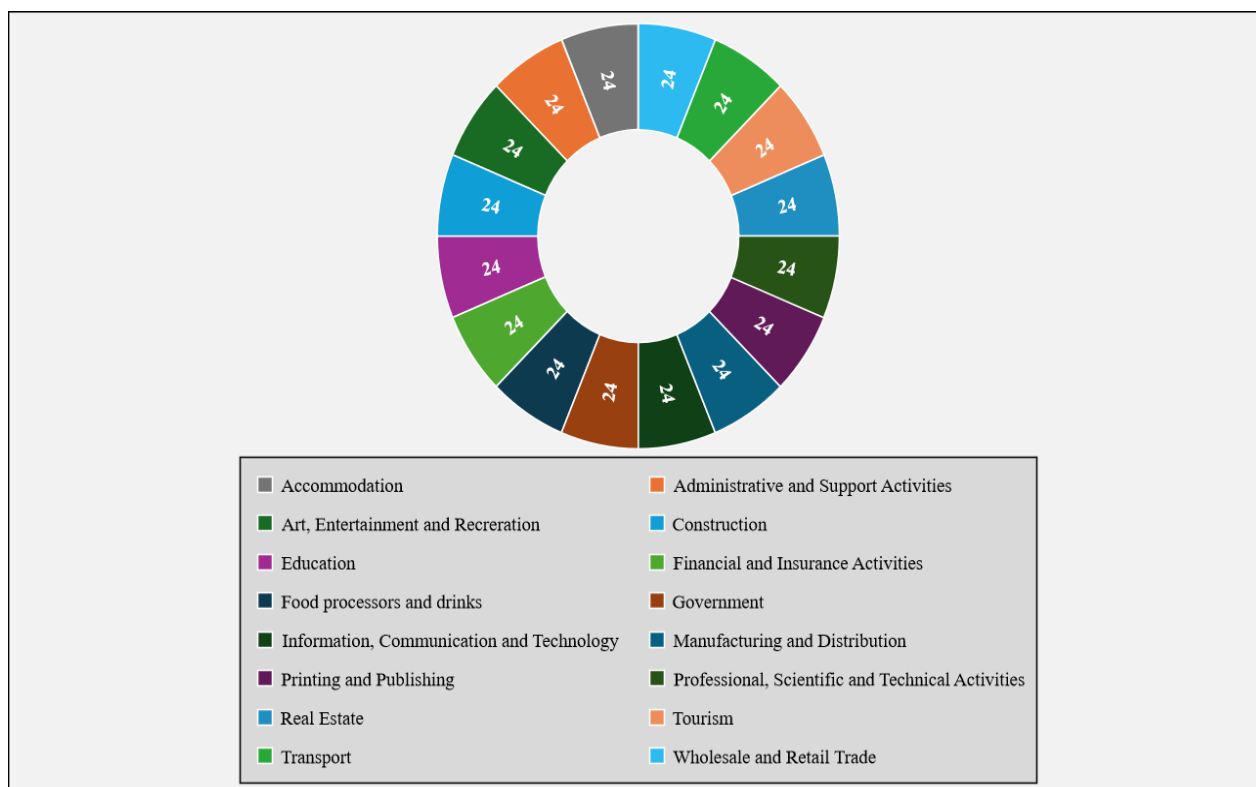


Figure 4.37. *Business Sector.*

The data distribution of sample companies shows that there was an equal distribution of sample companies from each of the 16 business sectors. This supports the sampling methodology of stratified multistage sampling that was employed in this research.

LOCATION	PERCENTAGE OF SAMPLE
Regionally	0.5
Internationally	1.3
Locally	98.2

Table 4.5. *Operational Region of Participants' Organisations.*

Of the 384 participants, 377 or 98.2% operated at a local level. Again, this is typical of companies within Trinidad and Tobago and may limit the research's conclusions for generalisation to companies that operate in multiple locations.

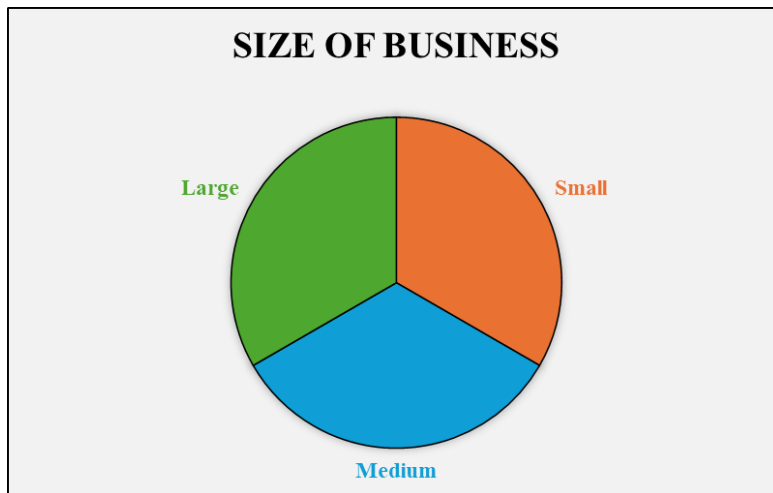


Figure 4.38. *Size of Participants' Businesses.*

The data distribution of sample companies shows that there was an equal distribution of sample companies amongst the three sizing categories. Again, this supports the sampling methodology of stratified multistage sampling that was employed in this research.

4.4.2.2 Research Question 1.

The first research question for this research is *‘What were the actions undertaken by organisations for the duration of the Covid-19 pandemic?’*. The following charts, diagrams and tables display the findings for answering this research question.

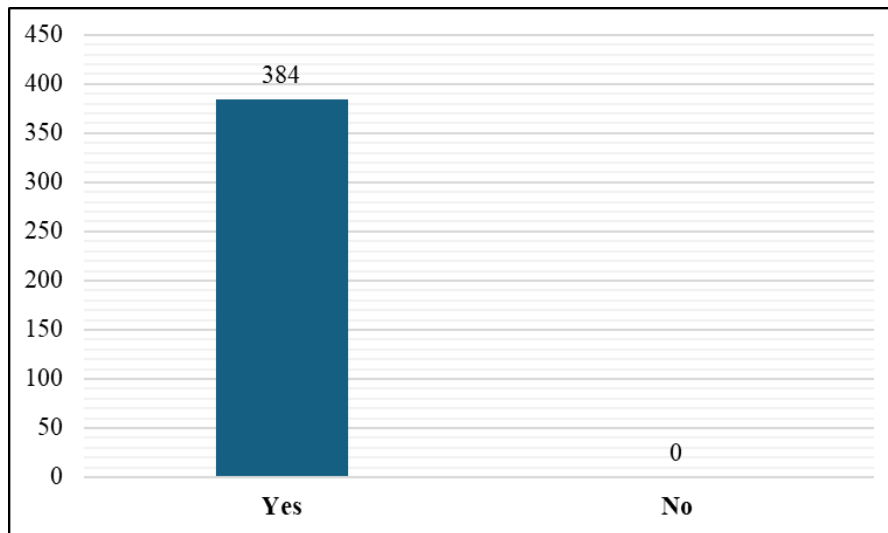


Figure 4.39. *Participants’ Involvement in Strategic and Operational Decision Making.*

From the data collection, 100% of participants were involved in the strategic and operational decision making within their company. This suggests that all leaders were involved in some form of decision making during the Covid-19 pandemic. Therefore, the resulting data provided a good representation of how leaders in Trinidad and Tobago managed the Covid-19 pandemic.

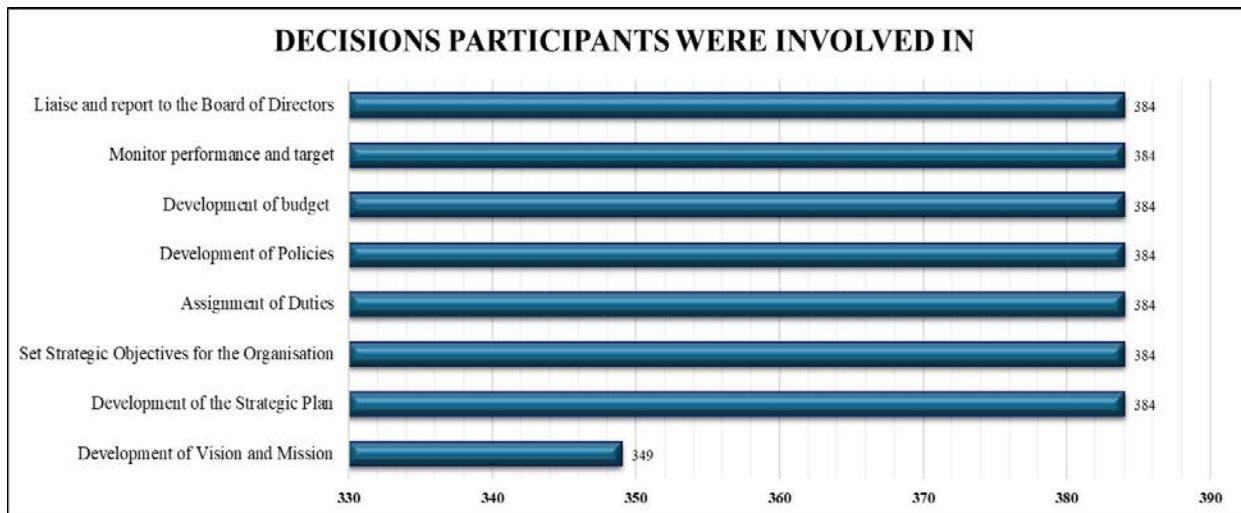


Figure 4.40. *Decisions Participants were involved in their Organisation.*

From the 384 participants, all were engaged in liaising and reporting to the Board of Directors, monitoring performance and targets, development of budget, development of policies, assignment of duties, setting of strategic objectives for the organisation and development of the strategic plan. However, 90.9% of participants were involved in development of their organisation's vision and mission. The findings therefore suggests that the samples participants would be active decision makers for leading and managing their organisations during the Covid-19 pandemic. These findings provided an insight into the operational definition of leadership. This definition is consistent with the conceptual definition of leadership.

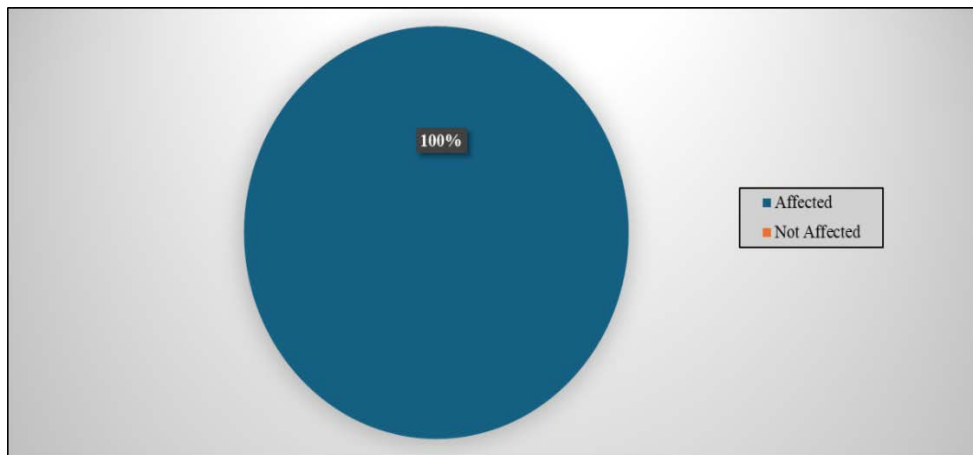


Figure 4.41. *Organisations Affected by Covid-19 Pandemic.*

From the data collected, 384 or 100% of participants indicated that their organisation was impacted by the Covid-19 pandemic. The responses from these participants provided relevant data relating to their actions and the effect of the Covid-19 pandemic on their organisations.

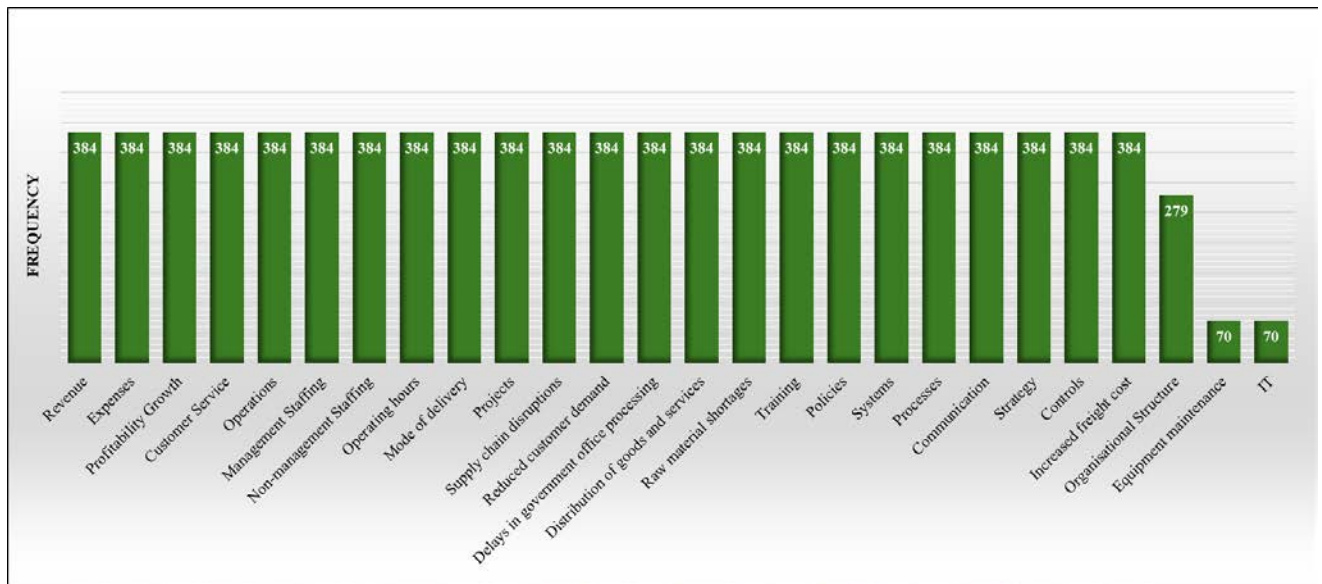


Figure 4.42. Areas where Participants' Organisations were affected by the Covid-19 Pandemic.

The data distribution of sampled companies showed that many areas were impacted during the Covid-19 pandemic. Of the 384 participants, the Covid-19 pandemic affected 100% of them in the following areas: revenue, expenses, profitability growth, customer service, operations, management staffing, non-management staffing, operating hours, mode of delivery, projects, supply chain disruptions, reduced customer demand, delays in government office processing, raw material shortages, training, policies, systems, processes, communication, strategy, controls, and increased freight cost. Noteworthy, 279 organisations or 72.7% indicated that their organisational structure was affected by the Covid-19 pandemic. Also, 70 organisations or 18.2% of the sample population indicated that equipment maintenance and IT respectively were affected by the Covid-19 pandemic. From the above, the findings suggest that the Covid-19 pandemic affected many aspects of business operations.

Level of Involvement	Percentage
Directly	100%
Indirectly	0%
Not involved	0%

Table 4.6. *Participants' Level of Involvement in Strategy and Decision Making during the Covid-19 Pandemic.*

From the data collected, 100% of participants indicated that they had a direct level of involvement in their organisation's strategy and decision making during the Covid-19 pandemic. These participants provided valuable data as it relates to this research.

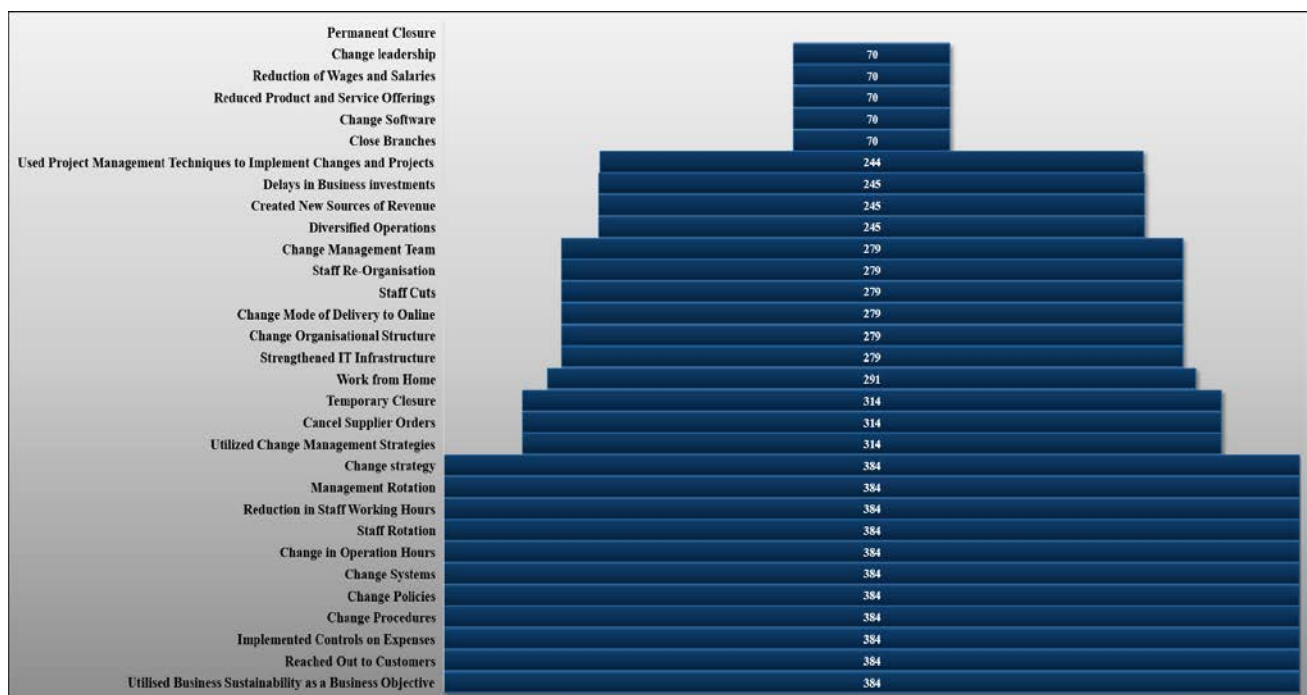


Figure 4.43. *Specific Actions Undertaken by Organisations during the Covid-19 Pandemic.*

The findings from the data collection revealed that participants undertook several activities to assist their organisations during the Covid-19 pandemic. 100% or 384 organisations indicated that the actions they undertook during the Covid-19 pandemic were changing their strategies, management rotation, reduction of staff working hours, staff rotation, change in operational hours, change of systems, change of policies, change of procedures,

implementation of controls on expenses, reaching out to customers and utilisation of business sustainability as a business objective. Additionally, 314 of the sample companies or 81.8% had to temporarily close, cancel supplier orders and utilise change management strategies. Moreover, 75.8% or 291 organisations indicated that their employees had to work from home. Furthermore, 279 or 72.7% of participants had to change their management team, conduct staff re-organisation, cut staff, change mode of delivery to online, change organisational structure and strengthen IT Infrastructure. Also, approximately 63.5% to 63.8% of participating organisations utilised project management techniques to implement changes and projects, had delays in business investments and created new sources of revenue and diversified operations. Also, of the 384 companies, 70 or 18.1% indicated that they had to change leadership, implement reduction of wages and salaries, reduce product and service offerings, change software and close branches. However, it is important to note that none of these organisations permanently closed.

Noteworthy of mention is that several of these actions undertaken by organisations during the Covid-19 pandemic are linked to the five dimensions of organisational re-engineering that is under the focus of this research – leadership, information technology, change management, project management and human resources management. More specifically, these actions provide the basis for testing all the null hypotheses for this research.

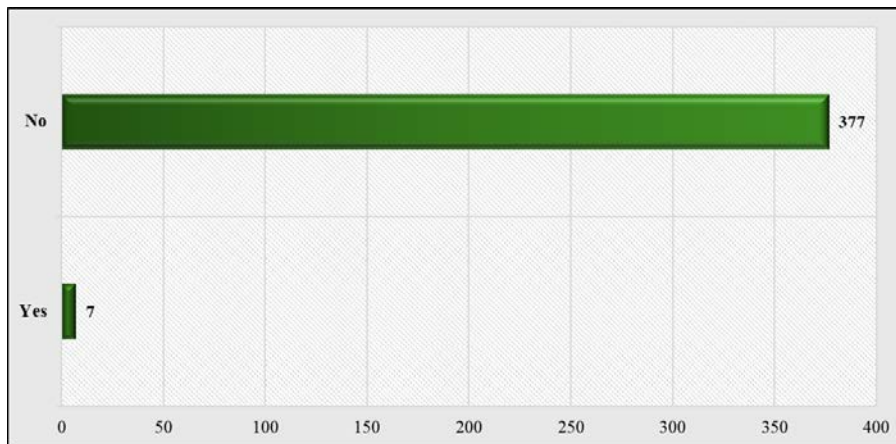


Figure 4.44. *Lack of Resources being Responsible for Any Hindrance of Actions during the Covid-19 Pandemic.*

Of the 384 participants, 377 or 98.2% indicated that a lack of resources was not responsible for any hindrance of action that could have been taken during the Covid-19 pandemic. However, 7 organisations or 1.8% indicated that a lack of resources was in fact a hindrance to their actions.

4.4.2.3 Research Question 2.

The second research question for this research is *‘How have the actions of leaders during the Covid-19 pandemic affected the financial performance of organisations throughout and after the Covid-19 pandemic?’*. The following charts, diagrams and tables display the findings for answering this research question.

Measures' Alleviation	Percentage
Yes	100%
No	0%

Table 4.7. *Leadership Actions Helped during the Covid-19 Pandemic.*

Of the 384 participating companies, 100% indicated that the measures that were implemented during the Covid-19 pandemic helped to alleviate the problems caused by the Covid-19 pandemic. These findings provide for an operational definition of leadership, where leaders performed actions to assist their organisations in times of crisis. this operational definition is consistent with the conceptual definition of leadership.

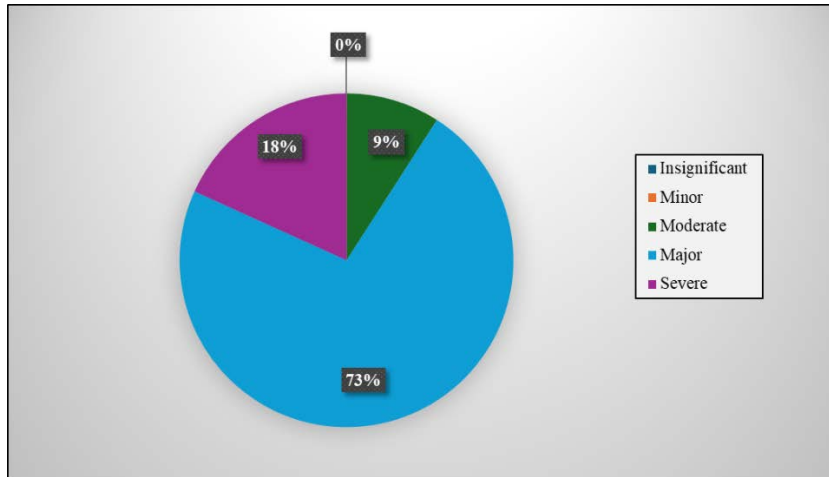


Figure 4.45. *Overall Impact of the Covid-19 Pandemic on Organisations.*

While all the sampled companies were impacted by the Covid-19 pandemic, their degree of impact varied. 73% of Organisations faced major effects of the Covid-19 pandemic whilst 18% indicated that they were Severely affected, 9% Moderately affected and 0% for both minor and insignificant damage. This finding is consistent with Sahu (2020), who noted that the Covid-19 pandemic can be considered as one of the most turbulent periods in recent history that affected all organisations worldwide.

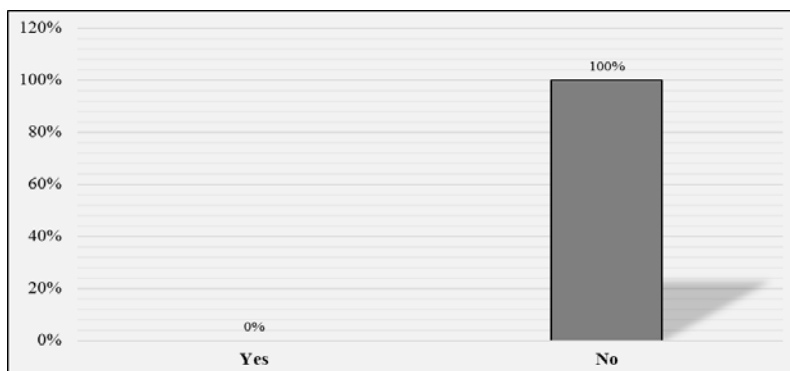


Figure 4.46. *Requirement for Different Actions during Covid-19 Pandemic.*

From the collected data, 100% of participants indicated that there was no requirement for different actions to be undertaken during the Covid-19 pandemic. They all felt that the actions that were undertaken were best suited for managing this turbulent period. This finding

puts a limitation on the operational definition of leadership, as leaders felt that they had done sufficiently enough to face the crisis of the Covid-19 pandemic.

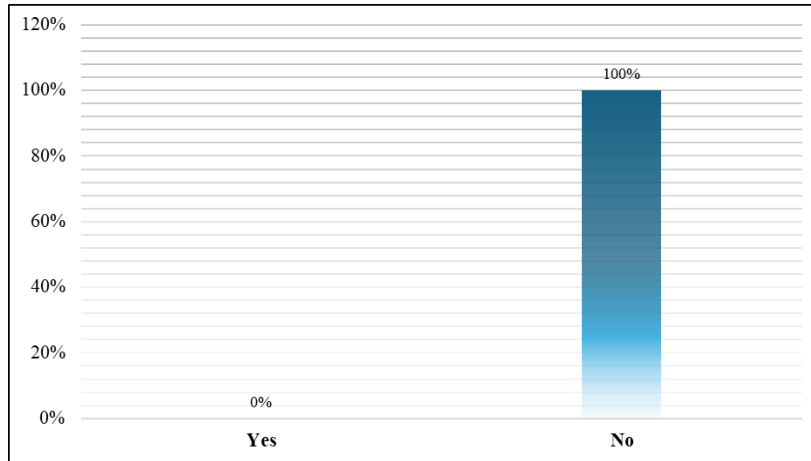


Figure 4.47. *Increase in Profitability During the Covid-19 Pandemic Period.*

From the 384 participants, all indicated that there was no increase in profitability during the Covid-19 pandemic period. This compounds previous comments by respondents that they were all affected during this turbulent period. This was also supported by secondary data, where all organisations were financially affected by the impacts of the Covid-19 pandemic.

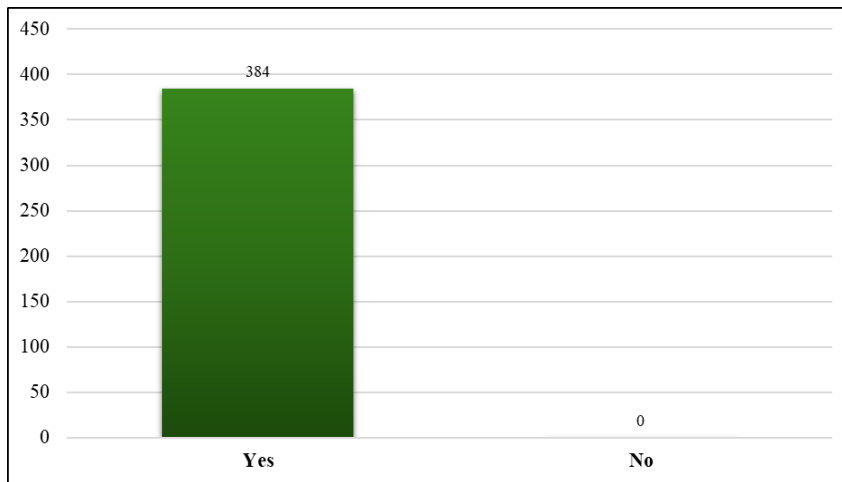


Figure 4.48. *Increase in Profitability Post the Covid-19 Pandemic Period.*

From the 384 participating organisations, 100% indicated that there was an increase in profitability post the Covid-19 pandemic period. This supports respondents' previous statements that their businesses were negatively affected throughout the Covid-19 pandemic. The following question provided some reasons for the increase in post Covid-19 pandemic profitability when compared to profitability during the pandemic.

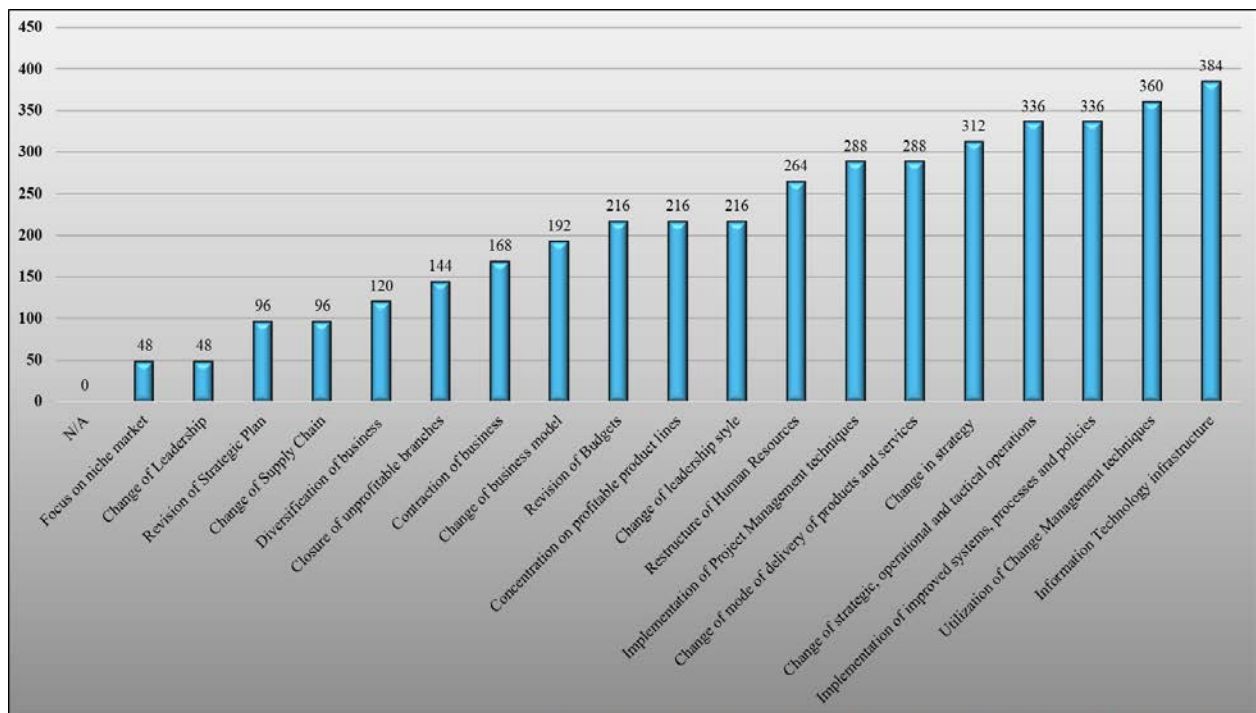


Figure 4.49. Reason for Increase in Profitability Post the Covid-19 Pandemic Period.

From the data obtained, organisations selected several reasons for increases in their profitability in the post Covid-19 pandemic period. Noteworthy, 12.5% or 48 organisations indicated that they focused on niche markets and changed their leadership respectively. Also, 96 organisations or 25% of organisations responded that they revised their strategic plan and changed their supply chain whilst 120 or 31.3% of organisations indicated that they had diversified their business. Furthermore, 144 or 37.5% of participating companies indicated that they closed unprofitable branches whilst 168 or 43.8% of participants contracted their business. 216 or 56.3% of participants indicated that they revised budgets, concentrated on profitable product lines, and changed their leadership style. 264 or 68.8% of organisations restructured human resources whilst 288 or 75% had implemented project management techniques and changed their mode of delivery of products and services respectively. More than 75% of participants changed strategies, changed strategic, operational and tactical operations, implement improved systems, processes and policies, utilised change management techniques and implemented information technology infrastructure. Business leaders all indicated that

these actions helped their businesses to recover and increase profitability post the Covid-19 pandemic.

Noteworthy, some of these actions are directly related to the five dimensions of organisational re-engineering that were tested by the various null hypotheses of this research. These five dimensions are leadership, information technology, change management, project management and human resources management. More specifically, leaders claimed that change of leadership, change of leadership style, restructure of human resources, implementation of project management techniques, change of strategic, operational and tactical operations, implementation of improved systems, processes and policies, utilisation of change management techniques and information technology infrastructure were all responsible for improving their profitability post the Covid-19 pandemic. These actions are all subsets of the five dimensions of organisational re-engineering that is under focus in this research.

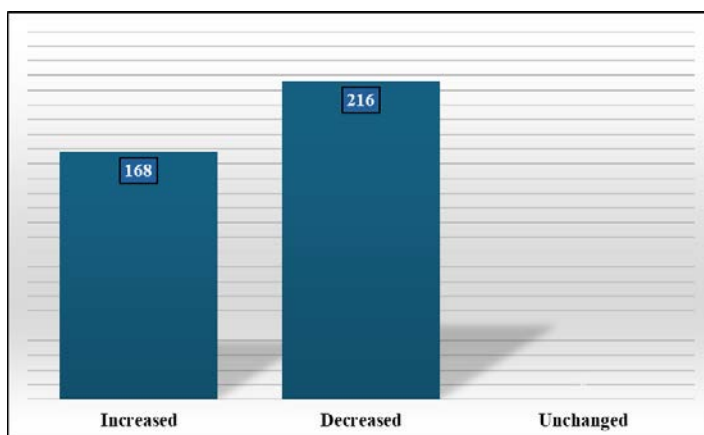


Figure 4.50. *Comparison of Post Covid-19 Pandemic Profitability to Pre-Pandemic Profitability.*

From the data collected from 384 organisations, 168 or 44% of the organisations indicated that post Covid-19 pandemic profitability increased when compared to pre Covid-19 pandemic profitability. However, 56% indicated that post Covid-19 pandemic profitability decreased when compared to pre Covid-19 pandemic profitability.

Noteworthy of mention, however, is that this differential may have been caused by the variations in actions undertaken by each business leader. Some actions would have caused an increase in the post Covid-19 pandemic period while some actions would have led to a decrease in profitability in the post Covid-19 pandemic period. These findings would be compared to the results from the evaluation of secondary data. Findings from the secondary data are shown in the next diagram.

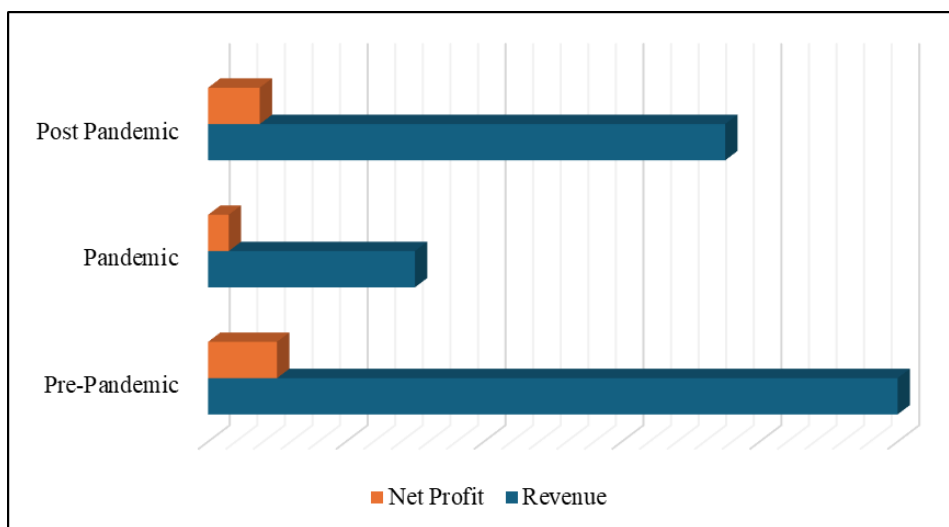


Figure 4.51. *Comparison of Post Pandemic, Pandemic and Pre-Pandemic Revenue and Profitability.*

Data gathered from secondary sources have indicated that both revenue and profitability fell for all organisations during the Covid-19 pandemic. However, post pandemic periods, while displaying increases in both revenue and profitability did not reach pre-pandemic levels.

These findings are consistent with those in Figure 4.50 where 56% of respondents had similar experiences.

4.4.2.4 Research Question 3.

The third research question for this research is *‘How are the actions of organisations that successfully managed the Covid-19 pandemic aligned to dimensions of organisational re-engineering?’*. The following charts, diagrams and tables display the findings for answering this research question.

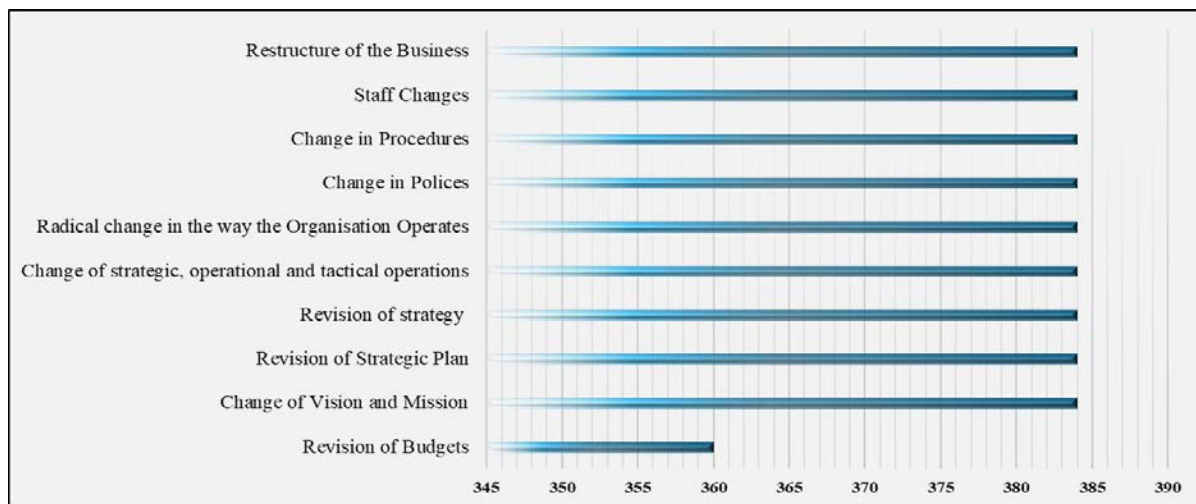


Figure 4.52. Participants’ Understanding of the Concept of Organisational Re-engineering.

From the data collected, it was found that participants’ understanding of the concept of organisational re-engineering included: restructure of the business, staff changes, change in procedures, change in policies, radical change in the way the organisation operates, change of strategic, operational and tactical operations, revision of strategy, revision of strategic plan, change of vision and mission. These actions are consistent with the five dimensions of organisation re-engineering under the focus of examination in this research. However, only 360 or 93.8% of respondents indicated that Revision of Budgets was part of the organisational re-engineering process.

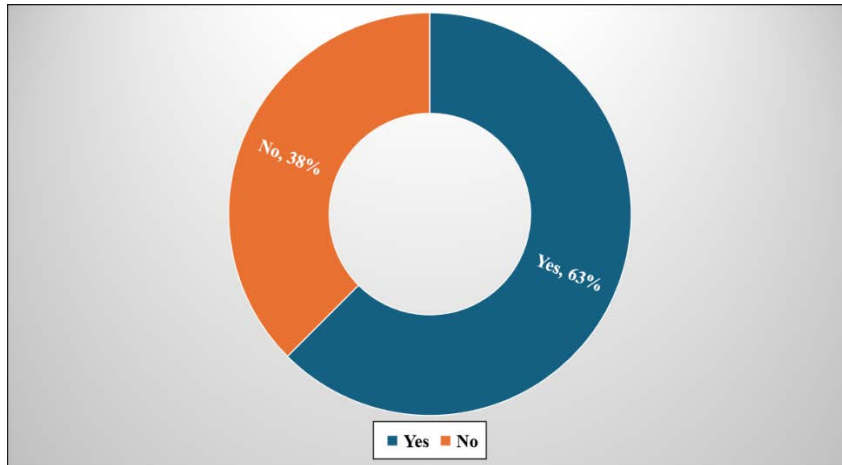


Figure 4.53. *Organisations' Utilisation of Organisational Re-engineering during the Covid-19 Pandemic.*

Out of the 384 companies that were sampled, 63% of the participants believed that they used organisational re-engineering during the Covid-19 pandemic whereas 38% believed that they did not use organisational re-engineering during the Covid-19 pandemic. This signifies that there was some attempt by leaders to use organisation re-engineering during the course of the Covid-19 pandemic. However, as was previously noted, many researchers have advocated that the failure of this concept has more to do with its interpretation and implementation, rather than with shortcomings of the concept itself (Teng et al., 1998; Fetais et al., 2022b).

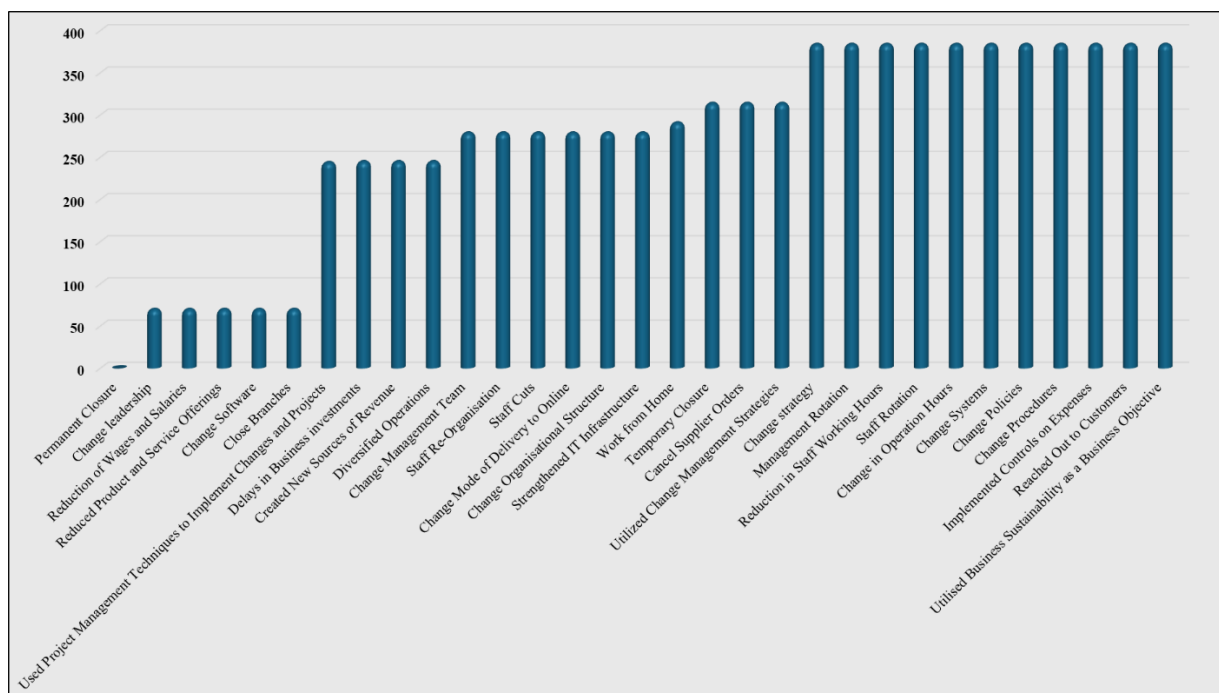


Figure 4.54. *Dimensions of Organisational Re-engineering Utilised during the Covid-19 Pandemic.*

Organisational leaders adopted several measures during the Covid-19 pandemic. Importantly, several of these actions are linked to the five dimensions of organisational re-engineering that is under the focus of this research. There were some commonalities amongst all organisations where they all implemented similar elements.

It is also necessary to gain a deeper understanding of how these findings relate to other aspects of the research. These actions were cross tabulated with other findings in the research for providing this understanding, for answering the various research questions and for testing all the null hypotheses.

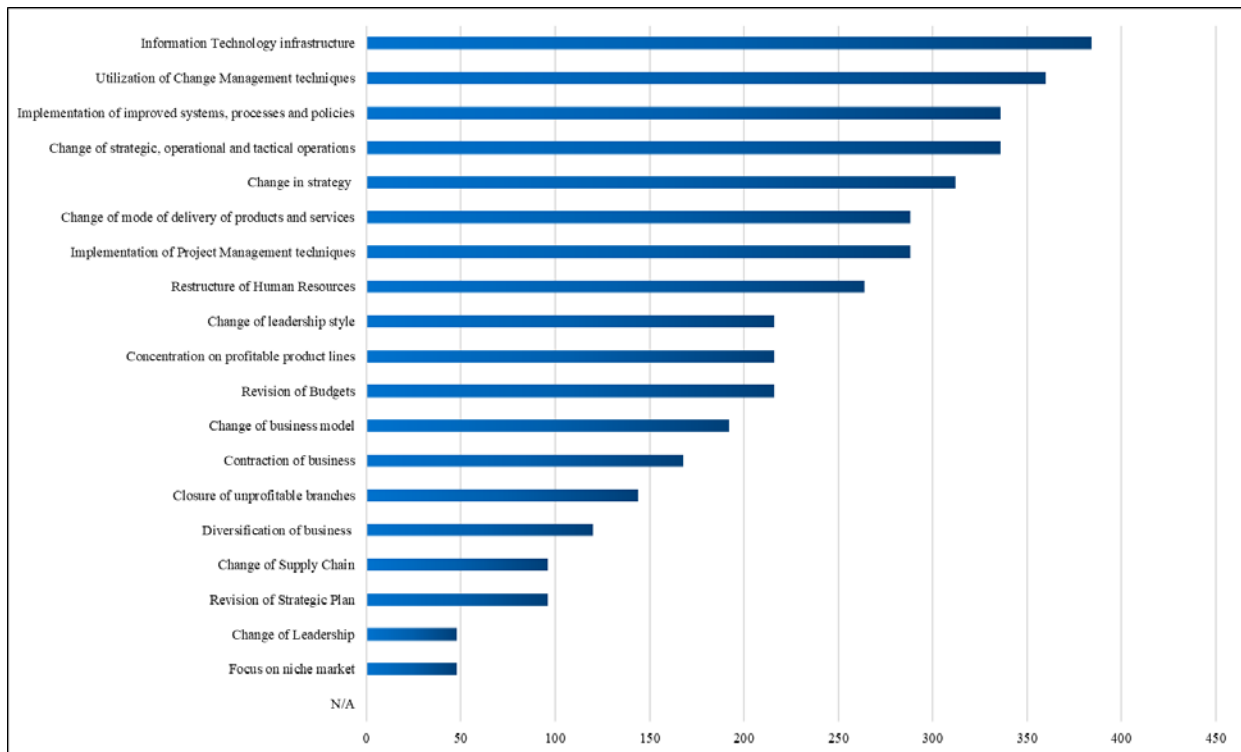


Figure 4.55. *Dimensions of Organisational Re-engineering Linked to Profitability Post the Covid-19 Pandemic.*

The results of the research found that several actions were responsible for increasing organisations' profitability post the Covid-19 pandemic. Of particular note, many of these actions were dimensions of organisational re-engineering. These included leadership, strategic, operational and tactical decision making, as a mediating variable, and information technology infrastructure and adaptations, human resources restructuring, project management practices, and change management systems and process improvement as moderating variables.

The following table displays the categorisation of the various actions undertaken by leaders into the five dimensions of organisational re-engineering.

Actions Undertaken by Participants	Relation to Organisational Re-engineering Dimensions				
	Leadership	Change Management	Information Technology	Human Resources Management	Project Management
Focus on niche market	✓	✓	✓		
Change of Leadership	✓	✓		✓	
Revision of Strategic Plan	✓	✓	✓	✓	✓
Change of Supply Chain	✓	✓	✓	✓	✓
Diversification of business	✓	✓	✓	✓	✓
Closure of unprofitable branches	✓	✓	✓	✓	✓
Contraction of business	✓	✓	✓	✓	✓
Change of business model	✓	✓	✓	✓	✓
Revision of Budgets	✓	✓	✓	✓	✓
Concentration on profitable product lines	✓	✓	✓	✓	✓
Change of leadership style	✓	✓		✓	
Restructure of Human Resources	✓	✓	✓	✓	✓
Implementation of Project Management techniques	✓	✓	✓		✓
Change of mode of delivery of products and services	✓	✓	✓	✓	✓
Change in strategy	✓	✓	✓	✓	✓
Change of strategic, operational and tactical operations	✓	✓	✓	✓	✓
Implementation of improved systems, processes and policies	✓	✓	✓	✓	✓
Utilization of Change Management techniques	✓	✓	✓	✓	✓
Information Technology infrastructure	✓	✓	✓	✓	✓

Table 4.8. *Alignment of Participants' Actions to Dimensions of Organisational Re-engineering.*

4.4.2.5 Research Question 4.

The fourth research question for this research is '*What are the benefits of organisational re-engineering to business sustainability during turbulent periods?*'. The following charts, diagrams and tables display the findings for answering this research question.

RECOVERY	PERCENTAGE
Yes	100%
No	0%

Table 4.9. *Recovery from the Covid-19 Pandemic.*

From the 384 participating companies, all participants indicated that their companies had recovered from the effects of this turbulent period. This finding can be linked to Figure 4.51 where all companies had both an increase in revenue and profitability in the post pandemic period. This is further supported by Figure 4.58 which displayed the wide range of benefits that were derived by organisations in the post pandemic period from the implementation of organisational re-engineering strategies during the Covid-19 pandemic.

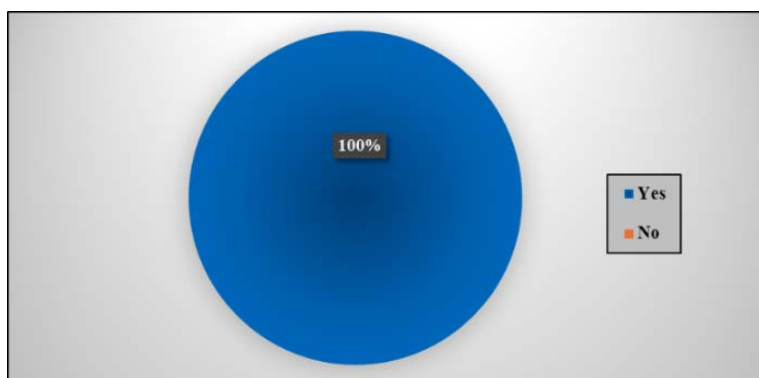


Figure 4.56. *Organisations' Benefit from Actions Undertaken.*

All participants indicated that their organisations had benefitted from their actions undertaken throughout the Covid-19 pandemic.

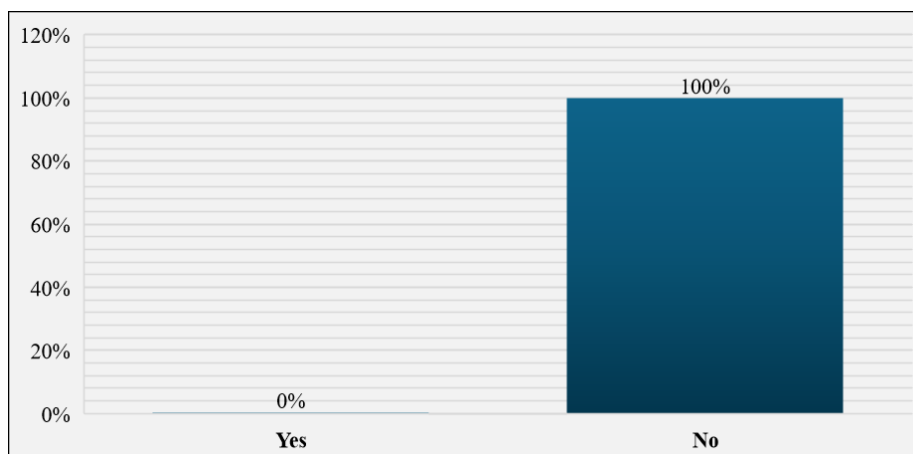


Figure 4.57. *Organisational Growth During the Covid-19 Pandemic.*

100% of participants indicated that their organisations did not grow during the Covid-19 pandemic.

CONTRACTED	FREQUENCY
Yes	384
No	0

Table 4.10. *Organisation Contracted During the Covid-19 Pandemic.*

100% of participants indicated that their organisations contracted in the period of the Covid-19 pandemic.

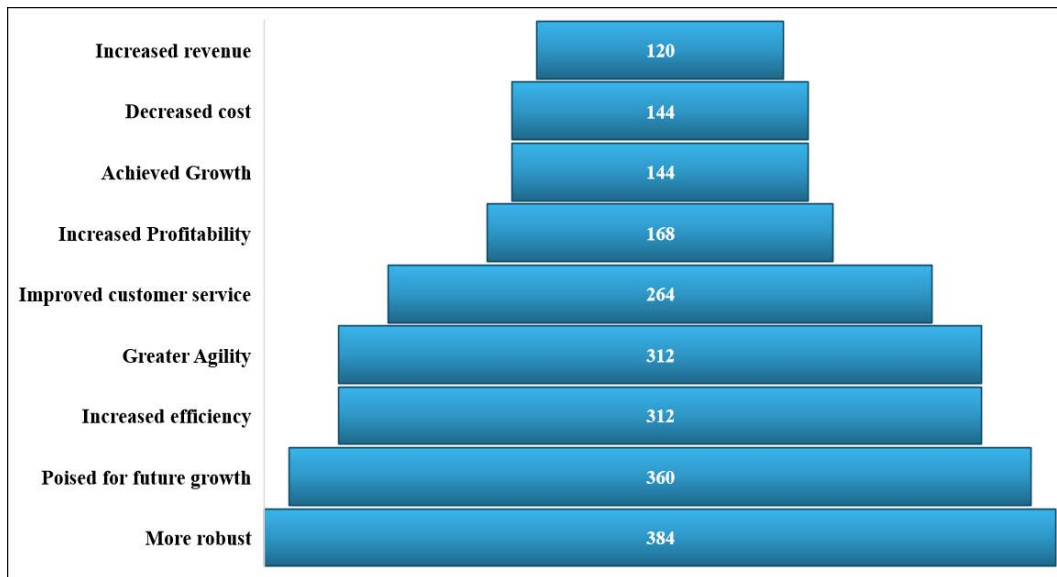


Figure 4.58. *Benefits from the Strategies Implemented During the Covid-19 Pandemic.*

The findings of the research indicated a range of benefits that were derived from the strategies implemented by organisational leaders during the Covid-19 pandemic. The major benefits were: improved customer service, greater agility, increased efficiency, poised for future growth and more robust. To a lesser extent, other benefits included increased profitability, achieved growth, decreased cost, and increased revenue.

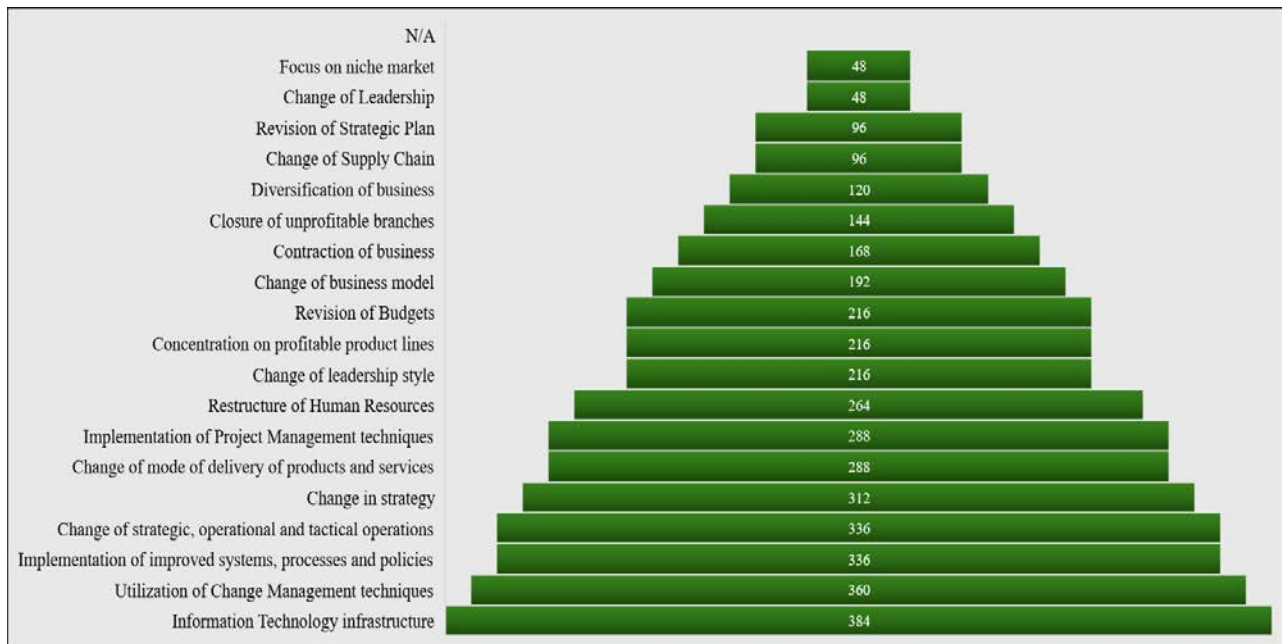


Figure 4.59. *Profitability Post Covid-19 Pandemic.*

The responses from participants noted several actions were undertaken during the Covid-19 pandemic. Noteworthy of mention, is that the five specific organisational re-engineering dimensions under the focus of research were part of these actions and resulted in the benefit of increased profitability in the period after the Covid-19 when compared to the pandemic period.

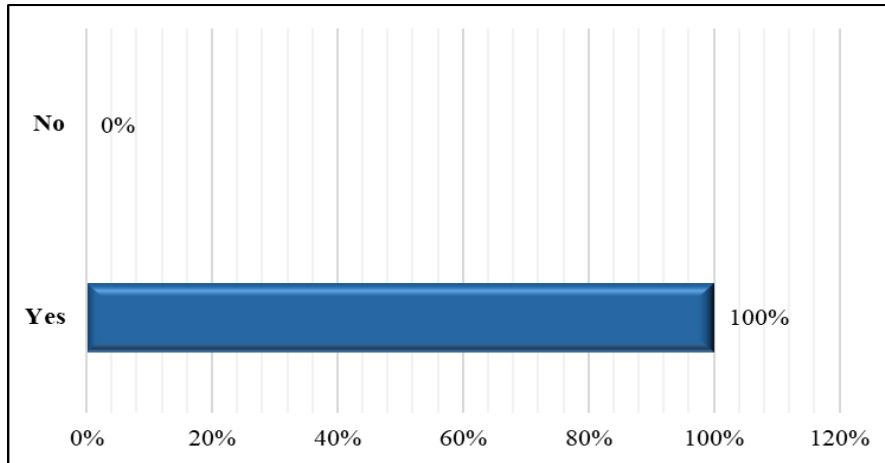


Figure 4.60. *Sustainable Path due to Actions Undertaken during the Covid-19 Pandemic.*

100% of participants indicated that their organisations were on a sustainable path due to their actions undertaken during the Covid-19 pandemic. The operational definition of business sustainability for this research was based on increases in revenue and profitability. When taken into context, 100% of organisations had an increase in their post-pandemic revenue and profitability when compared to the pandemic period (Refer to Figure 4.51). It is therefore suggestive that 100% of organisations were also in a sustainability path.

4.4.3 Crosstabulation of Findings

4.4.3.1 Demographic Data.

		Utilisation of Organisational Re-engineering during the Covid-19 pandemic		
		Yes	No	Total
Educational Level	Secondary	8.3%	12.5%	9.9%
	University Undergraduate	7.9%	13.9%	10.2%
	University Postgraduate	67.5%	47.2%	59.9%
	Professional	16.3%	26.4%	20.1%
Total		100.0%	100.0%	100.0%

'Chi-Square Tests'			
	Value	df	'Asymptotic Significance (2-sided)'
'Pearson Chi-Square'	15.532 ^a	3	.001
'Likelihood Ratio'	15.453	3	.001
'Linear-by-Linear Association'	.226	1	.634
'N of Valid Cases'	384		

^a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 14.25.'

Table 4.11. *Educational Level of Organisational Leaders who Utilised Organisational Re-engineering during the Covid-19 Pandemic.*

Based on a crosstabulation between 'Educational Level' and 'Utilisation of Organisational Re-engineering during the Covid-19 Pandemic', there was a 'significant relationship' between these two variables. The Pearson Chi-Square value was 15.532 and the p value was 0.001. Since the p value was less than the significance level, α , of 0.05, the null hypothesis is rejected. This signifies that there is a 'significant relationship' between these two variables, where the attainment of certain educational levels may have impacted the usage of organisational re-engineering during the Covid-19 pandemic.

4.4.3.2 Research Question 1.

What were the actions undertaken by organisations for the duration of the Covid-19 Pandemic?

ACTION UNDERTAKEN	FREQUENCY	PERCENTAGE
Permanent Closure	0	0.0%
Change leadership	70	18.2%
Reduction of Wages and Salaries	70	18.2%
Reduced Product and Service Offerings	70	18.2%
Change Software	70	18.2%
Close Branches	70	18.2%
Used Project Management Techniques to Implement Changes and Projects	244	63.5%
Delays in Business investments	245	63.8%
Created New Sources of Revenue	245	63.8%
Diversified Operations	245	63.8%
Change Management Team	279	72.7%
Staff Re-Organisation	279	72.7%
Staff Cuts	279	72.7%
Change Mode of Delivery to Online	279	72.7%
Change Organisational Structure	279	72.7%
Strengthened IT Infrastructure	279	72.7%
Work from Home	291	75.8%
Temporary Closure	314	81.8%
Cancel Supplier Orders	314	81.8%
Utilized Change Management Strategies	314	81.8%
Change strategy	384	100.0%
Management Rotation	384	100.0%
Reduction in Staff Working Hours	384	100.0%
Staff Rotation	384	100.0%
Change in Operation Hours	384	100.0%
Change Systems	384	100.0%
Change Policies	384	100.0%
Change Procedures	384	100.0%
Implemented Controls on Expenses	384	100.0%
Reached Out to Customers	384	100.0%
Utilised Business Sustainability as a Business Objective	384	100.0%

Table 4.12. *Actions Undertaken by Organisational Leaders that Resulted in an Increase in Profitability Post Covid-19 Pandemic.*

Organisational leaders adopted several measures during the Covid-19 pandemic. These actions are itemised above. Of key significance, is that all leaders utilized the following actions: changed strategy, management rotation, reduction in staff working hours, staff rotation, change in operation hours, change systems, change policies, change procedures, implemented controls on expenses, reached out to customers and utilised business sustainability as a business objective. Following these, the next most popular actions were: changed management team, staff re-organisation, staff cuts, change mode of delivery to online, change organisational structure, strengthened IT infrastructure, work from home, temporary closure, cancel supplier orders and utilized change management strategies. These actions directly tie to the five dimensions of organisational re-engineering under research. These are leadership, information technology, change management, project management and human resources management.

4.4.3.3 Research Question 2.

How have the actions of leaders during the Covid-19 pandemic affected the financial performance of organisations throughout and after the Covid-19 pandemic?

REASON	FREQUENCY	PERCENTAGE
No action	0	0.0%
Focus on niche market	48	12.5%
Change of Leadership	48	12.5%
Revision of Strategic Plan	96	25.0%
Change of Supply Chain	96	25.0%
Diversification of business	120	31.3%
Closure of unprofitable branches	144	37.5%
Contraction of business	168	43.8%
Change of business model	192	50.0%
Revision of Budgets	216	56.3%
Concentration on profitable product lines	216	56.3%
Change of leadership style	216	56.3%
Restructure of Human Resources	264	68.8%
Implementation of Project Management techniques	288	75.0%
Change of mode of delivery of products and services	288	75.0%
Change in strategy	312	81.3%
Change of strategic, operational and tactical operations	336	87.5%
Implementation of improved systems, processes, and policies	336	87.5%
Utilization of Change Management techniques	360	93.8%
Information Technology infrastructure	384	100.0%

Table 4.13. *Reasons for an Increase in Profits in Post Covid-19 Pandemic.*

There were many reasons for the increased profitability that followed the Covid-19 pandemic. These reasons are highlighted above. The most popular reasons were: changed business model, revision of budgets, concentration on profitable product lines, change of leadership style, restructure of human resources, implementation of project management techniques, change of mode of delivery of products and services, change in strategy, change of

strategic, operational and tactical operations, implementation of improved systems, processes and policies, utilization of change management techniques and information technology infrastructure. A closer analysis of these reasons revealed that some of these reasons were actually subsets of the five dimensions of organisational re-engineering.

		Profits increased post the Covid-19 pandemic	
		Yes	Total
Organisation utilised	Yes	62.5%	62.5%
Organisational Re-engineering	No	37.5%	37.5%
during the pandemic			
Total		100.0%	100.0%

Table 4.14. *Relationship Between Organisational Re-engineering and Increase in Profits Post the Covid-19 Pandemic.*

Using crosstabulation, 62.5% of organisations that utilised organisational re-engineering in the period of the Covid-19 pandemic had resultant increased profits in the period after the Covid-19 pandemic period. This success may have occurred due to the specific actions undertaken by leaders during the period of the Covid-19 pandemic.

		Overall Impact of Covid-19 pandemic on Organisations		
		Moderate	Major	Severe
Business Sector	Accommodation	5.7%	6.1%	7.1%
	Administrative and Support Activities	8.6%	6.1%	5.7%
	Art, Entertainment and Recreation	5.7%	6.5%	5.7%
	Construction	5.7%	6.5%	5.7%
	Education	5.7%	6.1%	7.1%
	Financial and Insurance Activities	5.7%	6.1%	7.1%
	Food processors and drinks	8.6%	6.1%	5.7%
	Government	5.7%	6.5%	5.7%
	Information, Communication and Technology	5.7%	6.5%	5.7%
	Manufacturing and Distribution	5.7%	6.5%	5.7%
	Printing and Publishing	5.7%	6.1%	7.1%
	Professional, Scientific and Technical Activities	5.7%	6.1%	7.1%
	Real Estate	8.6%	6.1%	5.7%
	Tourism	5.7%	6.5%	5.7%
	Transport	5.7%	6.5%	5.7%
	Wholesale and Retail Trade	5.7%	6.1%	7.1%
Total		100.0%	100.0%	100.0%

Table 4.15. *Impact of Covid-19 Pandemic on Different Business Sectors.*

An examination of the various impacts of the Covid-19 pandemic on each business sector revealed that impacts were either moderate, major, or severe. In the ‘*moderate*’ category, administrative and support activities, Food processors and drinks and real estate had the most significant impacts. On the other hand, in the ‘*major*’ category, art, entertainment and recreation, construction, government, information, communication and technology, tourism and transport had the most significant impacts. In the ‘*severe*’ category, accommodation, education, financial and insurance activities, printing and publishing, professional, scientific, and technical activities and wholesale and retail trade were most significantly impacted.

4.4.3.4 Research Question 3.

How are the actions of organisations that successfully managed the Covid-19 pandemic aligned to dimensions of organisational re-engineering?

Action Undertaken	Impact on Post Pandemic Sustainability
Change Leadership	18.2%
Change Management Team	72.7%
Management Rotation	100.0%

Table 4.16. *Impact of Leadership as a Dimension of Organisational Re-engineering on Post Pandemic Sustainability.*

From the data obtained, it seemed that leadership had a significant impact on post pandemic sustainability. More specifically, a change in the management team and management rotation were key activities that impacted post pandemic sustainability. It must be noted that a change in leadership seems to have not had a significant impact on post pandemic sustainability.

Action Undertaken	Impact on Post Pandemic Sustainability
Strengthened IT Infrastructure	72.7%
Work from Home	78.8%
Change Software	18.2%
Change Mode of Delivery to Online	72.7%
Change Systems/ Policies/ Processes	100%

Table 4.17. *Impact of Information Technology as a Dimension of Organisational Re-engineering on Post Pandemic Sustainability.*

The findings suggested that information technology had a significant impact on post pandemic sustainability. More specifically, the strengthening of IT infrastructure was suggestive as a key activity in this respect.

Action Undertaken	Impact on Post Pandemic Sustainability
Used Project Management to Implement Changes and Projects	63.5%
Created New Sources of Revenue	63.8%
Diversified Operations	63.8%
Implementing Controls on Expenses	100%
Change Procedures	100%
Change Policies	100%
Change Systems	100%
Change Strategy	100%
Reach out to Customers	100%

Table 4.18. *Impact of Project Management as a Dimension of Organisational Re-engineering on Post Pandemic Sustainability.*

The findings suggested that the use of project management to implement changes and projects had a significant impact on post pandemic sustainability.

Action Undertaken	Impact on Post Pandemic Sustainability
Reduction in Wages and Salaries	18.2%
Changed Organisational Structure	72.7%
Staff Re-Organisation	72.7%
Staff Cuts	72.7%
Work from Home	75.8%
Reduction in Working Hours	100.0%
Staff Rotation	100.0%

Table 4.19. *Impact of Human Resources Management as a Dimension of Organisational Re-engineering on Post Pandemic Sustainability.*

With the exception of a reduction in wages and salaries, all other human resources related actions were positively associated with the impact post pandemic sustainability of organisations.

Action Undertaken	Impact on Post Pandemic Sustainability
Utilisation of Change Management Strategies	81.8%
Changed Management Team	72.7%
Change of Mode of Delivery of Products and Services	72.7%
Changed Organisational Structure	72.7%
Changed Procedures	100.0%
Change Policies	100.0%
Change Systems	100.0%
Change Strategy	100.0%

Table 4.20. *Impact of Change Management as a Dimension of Organisational Re-engineering on Post Pandemic Sustainability.*

The findings suggested that the use of change management to implement changes had a significant impact on post pandemic sustainability.

Construct Variable	Rank
Project Management	1
Change Management	2
Human Resources Management	3
Information Technology	4
Leadership	5

Table 4.21. *Rank of Constructs.*

Multivariate ranking was performed to simultaneously rank the various variable constructs' impact on post pandemic sustainability. Project management had the greatest impact, followed by change management, human resources management, information technology, and leadership.

4.4.3.5 Research Question 4.

What are the benefits of organisational re-engineering to business sustainability during turbulent periods?

		Benefit from strategies implemented during the Covid- 19 pandemic - Decreased Costs		
		Yes	No	Total
Educational Level	Secondary	6.9%	11.7%	9.9%
	University Undergraduate	6.9%	12.1%	10.2%
	University Postgraduate	72.2%	52.5%	59.9%
	Professional	13.9%	23.8%	20.1%
Total		100.0%	100.0%	100.0%

‘Chi-Square Tests’

	‘Value’	‘df’	‘Asymptotic Significance (2-sided)’
‘Pearson Chi-Square’	14.577 ^a	3	.002
‘Likelihood Ratio’	14.927	3	.002
‘Linear-by-Linear Association’	.291	1	.590
‘N of Valid Cases’	384		

‘a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 14.25.’

Table 4.22. *Relationship Between Educational Level and Benefit from strategies implemented during the Covid-19 Pandemic - Decreased Costs.*

		‘Benefit from strategies implemented during the Covid-19 pandemic - Poised for Future Growth’		
		Yes	No	Total
Educational Level	Secondary	9.2%	20.8%	9.9%
	University	9.7%	16.7%	10.2%
	Undergraduate			
	University Postgraduate	62.2%	25.0%	59.9%
	Professional	18.9%	37.5%	20.1%
Total		100.0%	100.0%	100.0%

‘Chi-Square Tests’			
	‘Value’	‘df’	‘Asymptotic Significance (2-sided)’
‘Pearson Chi-Square’	13.254 ^a	3	.004
‘Likelihood Ratio’	13.025	3	.005
‘Linear-by-Linear Association’	.444	1	.505
‘N of Valid Cases’	384		

‘a. 3 cells (37.5%) have expected count less than 5. The minimum expected count is 2.38.’

Table 4.23. *Relationship Between Educational Level and Benefit from strategies implemented during the Covid-19 Pandemic - Poised for Future Growth.*

From a crosstabulation between ‘Educational Level’ and ‘Benefit from strategies implemented during the Covid-19 Pandemic’, there were only significant relationships with two of the sub-variables.

Significant relationships were found between ‘Educational Level’ and ‘Benefit from strategies implemented during the Covid-19 Pandemic - Decreased Costs’, where there was a Pearson Chi-Square value of 14.577 and a p value of 0.002. Since the p value was less than the significance level, α , of 0.05, the null hypothesis was rejected. This signified that there was a ‘significant relationship’ between these two variables.

Additionally, there was also a significant relationship between ‘Educational Level’ and ‘Benefit from strategies implemented during the Covid-19 Pandemic - Poised for Future

Growth'. The resultant Pearson Chi-Square value was 13.254 while the p value was 0.004. Since the p value was less than the significance level, α , of 0.05, the null hypothesis is rejected.

No other significant relationships existed between educational level and the other benefits that were derived from strategies implemented during the Covid-19 pandemic.

Crosstabulations were also done to test the significance of 'Size of Business' against 'Benefit from strategies implemented during the Covid-19 Pandemic'. All p values for this test showed no significant relationships between these two variables.

		Benefit from strategies implemented during the Covid-19 pandemic - Increased Revenue		
		Yes	No	Total
Organisation Utilised	Yes	80.0%	54.5%	62.5%
Organisational Re-engineering during the pandemic	No	20.0%	45.5%	37.5%
Total		100.0%	100.0%	100.0%

‘Chi-Square Tests’

	‘Value’	‘df’	‘Asymptotic Significance (2-sided)’	‘Exact Sig. (2-sided)’	‘Exact Sig. (1-sided)’
‘Pearson Chi-Square’	22.807 ^a	1	<.001		
‘Continuity Correction ^b ’	21.734	1	<.001		
‘Likelihood Ratio’	24.187	1	<.001		
‘Fisher's Exact Test’				<.001	<.001
‘Linear-by-Linear Association’	22.748	1	<.001		
‘N of Valid Cases’	384				

‘a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 45.00.’

‘b. Computed only for a 2x2 table’

‘Symmetric Measures’

		Value	Asymptotic Standard Error ^a	Approximate T ^b	Approximate Significance
Nominal by Nominal	Phi	.244			<.001
	Cramer's V	.244			<.001
Interval by Interval	Pearson's R	.244	.045	4.911	<.001 ^c
Ordinal by Ordinal	Spearman Correlation	.244	.045	4.911	<.001 ^c
N of Valid Cases		384			

‘a. Not assuming the null hypothesis.’

‘b. Using the asymptotic standard error assuming the null hypothesis.’

‘c. Based on normal approximation.’

Table 4.24. *Relationship Between Organisation Utilised Organisational Re-engineering during the Pandemic and Benefit from strategies implemented during the Covid-19 Pandemic - Increased Revenue.*

Based on a crosstabulation between ‘Organisation Utilised Organisational Re-engineering during the Pandemic’ and ‘Benefit from strategies implemented during the Covid-19 Pandemic - Increased Revenue’, there was a ‘significant relationship’ between these two

variables. The Pearson Chi-Square value was 22.807, $df = 1$, and the p value was < 0.001 . Since the p value was less than the significance level, α , of 0.05, the null hypothesis was rejected. This signified that there was a 'significant relationship' between these two variables. 80% of organisations that utilised organisational re-engineering during the pandemic benefitted from increased revenue. The Cramer's $V = 0.244$ indicates a moderate positive effect size, signifying that this variable works alongside on factors. These results are supportive of the alternative hypothesis, **"H₁: Organisational Re-engineering leads to the sustainability of organisations"**.

		Benefit from strategies implemented during the Covid-19 pandemic - Decreased Costs		
		Yes	No	Total
Organisation utilised	Yes	100.0%	40.0%	62.5%
Organisational Re-engineering during the pandemic	No		60.0%	37.5%
Total		100.0%	100.0%	100.0%

'Chi-Square Tests'

	'Value'	'df'	'Asymptotic Significance (2-sided)'	'Exact Sig. (2-sided)'	'Exact Sig. (1-sided)'
'Pearson Chi-Square'	138.240 ^a	1	<.001		
'Continuity Correction ^b '	135.692	1	<.001		
'Likelihood Ratio'	185.035	1	<.001		
'Fisher's Exact Test'				<.001	<.001
'Linear-by-Linear Association'	137.880	1	<.001		
'N of Valid Cases'	384				

'a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 54.00.'

'b. Computed only for a 2x2 table'

'Symmetric Measures'

		Value	Asymptotic Standard Error ^a	Approximate T ^b	Approximate Significance
Nominal by Nominal	Phi	.600			<.001
	Cramer's V	.600			<.001
Interval by Interval	Pearson's R	.600	.028	14.659	<.001 ^c
Ordinal by Ordinal	Spearman Correlation	.600	.028	14.659	<.001 ^c
N of Valid Cases		384			

'a. Not assuming the null hypothesis.'

'b. Using the asymptotic standard error assuming the null hypothesis.'

'c. Based on normal approximation.'

Table 4.25. Relationship Between Organisations that utilised Organisational Re-engineering during the Pandemic and Benefits from strategies implemented during the Covid-19 Pandemic - Decreased Costs.

Based on a crosstabulation between 'Organisations that utilised Organisational Re-engineering during the Pandemic' and 'Benefits from strategies implemented during the Covid-

19 Pandemic - Decreased Costs', there was a 'highly significant relationship' between these two variables. The Pearson Chi-Square value was 138.240, $df = 1$, and the p value was < 0.001 . Since the p value was less than the significance level, α of 0.05, the null hypothesis was rejected. This signifies that there is a 'highly significant relationship' between these two variables. 100% of organisations that utilised organisational re-engineering during the pandemic benefitted from decreased costs. Furthermore, a Cramer's V value of 0.6 indicated a strong effect size. This signifies a high predictability of decreased cost for an organisation that utilised organisational re-engineering. These findings are supportive of the alternative hypothesis, "**H₁: Organisational Re-engineering leads to the sustainability of organisations**".

		Benefit from strategies implemented during the Covid-19 pandemic - Increased Profitability		
		Yes	No	Total
Organisation utilised	Yes	71.4%	55.6%	62.5%
Organisational Re-engineering during the pandemic	No	28.6%	44.4%	37.5%
Total		100.0%	100.0%	100.0%

‘Chi-Square Tests’

	‘Value’	‘df’	‘Asymptotic Significance (2-sided)’	‘Exact Sig. (2-sided)’	‘Exact Sig. (1-sided)’
‘Pearson Chi-Square’	10.159 ^a	1	.001		
‘Continuity Correction ^b ’	9.493	1	.002		
‘Likelihood Ratio’	10.295	1	.001		
‘Fisher's Exact Test’				.001	<.001
‘Linear-by-Linear Association’	10.132	1	.001		
‘N of Valid Cases’	384				

‘a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 63.00.’

‘b. Computed only for a 2x2 table’

Table 4.26. *Relationship Between Organisations that utilised Organisational Re-engineering during the Pandemic and Benefits from strategies implemented during the Covid-19 Pandemic - Increased Profitability.*

Based on a crosstabulation between ‘Organisations that utilised Organisational Re-engineering during the Pandemic’ and ‘Benefits from strategies implemented during the Covid-19 Pandemic - Increased Profitability’, there was a ‘significant relationship’ between these two variables. The Pearson Chi-Square value was 10.159 and the p value was 0.001. Since the p value was less than the significance level, α , of 0.05, the null hypothesis was rejected. This signified that there was a ‘significant relationship’ between these two variables. 71.4% of organisations that utilised organisational re-engineering during the pandemic benefitted from increased profitability. This is supportive of the alternative hypothesis, **“H₁: Organisational Re-engineering leads to the sustainability of organisations”**.

		Benefit from strategies implemented during the Covid-19 pandemic - Poised for Future Growth		Total
		Yes	No	
Organisation utilised	Yes	66.7%		62.5%
Organisational Re-engineering during the pandemic	No	33.3%	100.0%	37.5%
Total		100.0%	100.0%	100.0%

‘Chi-Square Tests’					
	‘Value’	‘df’	‘Asymptotic Significance (2-sided)’	‘Exact Sig. (2-sided)’	‘Exact Sig. (1-sided)’
‘Pearson Chi-Square’	42.667 ^a	1	<.001		
‘Continuity Correction ^b ’	39.870	1	<.001		
‘Likelihood Ratio’	49.790	1	<.001		
‘Fisher's Exact Test’				<.001	<.001
‘Linear-by-Linear Association’	42.556	1	<.001		
‘N of Valid Cases’	384				

‘a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.00.’

‘b. Computed only for a 2x2 table’

‘Symmetric Measures’					
		Value	Asymptotic Standard Error ^a	T ^b	Approximate Significance
Nominal by Nominal	Phi	.333			<.001
	Cramer's V	.333			<.001
Interval by Interval	Pearson's R	.333	.034	6.910	<.001 ^c
Ordinal by Ordinal	Spearman Correlation	.333	.034	6.910	<.001 ^c
N of Valid Cases		384			

‘a. Not assuming the null hypothesis.’

‘b. Using the asymptotic standard error assuming the null hypothesis.’

‘c. Based on normal approximation.’

Table 4.27. *Relationship Between Organisations that utilised Organisational Re-engineering during the Pandemic and Benefits from strategies implemented during the Covid-19 Pandemic -Poised for Future Growth.*

Based on a crosstabulation between ‘Organisations that utilised Organisational Re-engineering during the Pandemic’ and ‘Benefits from strategies implemented during the Covid-19 Pandemic - Poised for Future Growth’, there was a ‘significant relationship’ between these two variables. The Pearson Chi-Square value was 42.667, $df = 1$, and the p value was < 0.001 . Since the p value was less than the significance level, α of 0.05, the null hypothesis was

rejected. This signified that there was a ‘significant relationship’ between these two variables. 66.7% of organisations that utilised organisational re-engineering during the pandemic benefitted from poised for future growth. Additionally, the Cramer’s V value of 0.333 was indicative that there is a moderately positive association between these two variables. This is supportive of the alternative hypothesis, “**H₁: Organisational Re-engineering leads to the sustainability of organisations**”.

		Benefit from strategies implemented during the Covid-19 pandemic - Achieved Growth		
		Yes	No	Total
Organisation utilised	Yes	83.3%	50.0%	62.5%
Organisational Re-engineering during the pandemic	No	16.7%	50.0%	37.5%
Total		100.0%	100.0%	100.0%

‘Chi-Square Tests’

	‘Value’	‘df’	‘Asymptotic Significance (2-sided)’	‘Exact Sig. (2-sided)’	‘Exact Sig. (1-sided)’
‘Pearson Chi-Square’	42.667 ^a	1	<.001		
‘Continuity Correction ^b ’	41.256	1	<.001		
‘Likelihood Ratio’	45.608	1	<.001		
‘Fisher's Exact Test’				<.001	<.001
‘Linear-by-Linear Association’	42.556	1	<.001		
‘N of Valid Cases’	384				

‘a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 54.00.’

‘b. Computed only for a 2x2 table’

‘Symmetric Measures’

		Value	Asymptotic Standard Error ^a	Approximate T ^b	Approximate Significance
Nominal by Nominal	Phi	.333			<.001
	Cramer's V	.333			<.001
Interval by Interval	Pearson's R	.333	.044	6.910	<.001 ^c
Ordinal by Ordinal	Spearman Correlation	.333	.044	6.910	<.001 ^c
N of Valid Cases		384			

‘a. Not assuming the null hypothesis.’

‘b. Using the asymptotic standard error assuming the null hypothesis.’

‘c. Based on normal approximation.’

Table 4.28. *Relationship Between Organisations that utilised Organisational Re-engineering during the Pandemic and Benefits from strategies implemented during the Covid-19 Pandemic - Achieved Growth.*

Based on a crosstabulation between ‘Organisations that utilised Organisational Re-engineering during the Pandemic’ and ‘Benefits from strategies implemented during the Covid-19 Pandemic - Achieved Growth’, there was a ‘significant relationship’ between these two variables. The Pearson Chi-Square value was 42.667, df = 1, and the p value was < 0.001. Since the p value was less than the significance level, α of 0.05, the null hypothesis was rejected. This signified that there was a ‘significant relationship’ between these two variables. 83.3% of

organisations that utilised organisational re-engineering during the pandemic benefitted from achieved growth. Also, a Cramer's V value of 0.333 is indicative of a moderate positive relationship using the two variables. This is supportive of the alternative hypothesis, "**H₁: *Organisational Re-engineering leads to the sustainability of organisations***".

		Benefit from strategies implemented during the Covid-19 pandemic - Greater Agility		Total
		Yes	No	
Organisation utilised	Yes	76.9%		62.5%
Organisational Re-engineering during the pandemic	No	23.1%	100.0%	37.5%
Total		100.0%	100.0%	100.0%

‘Chi-Square Tests’

	‘Value’	‘df’	‘Asymptotic Significance (2-sided)’	‘Exact Sig. (2-sided)’	‘Exact Sig. (1-sided)’
‘Pearson Chi-Square’	147.692 ^a	1	<.001		
‘Continuity Correction ^b ’	144.428	1	<.001		
‘Likelihood Ratio’	170.993	1	<.001		
‘Fisher's Exact Test’				<.001	<.001
‘Linear-by-Linear Association’	147.308	1	<.001		
‘N of Valid Cases’	384				

‘a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 27.00.’

‘b. Computed only for a 2x2 table’

‘Symmetric Measures’

		Value	Asymptotic Standard Error ^a	Approximate T ^b	Approximate Significance
Nominal by Nominal	Phi	.620			<.001
	Cramer's V	.620			<.001
Interval by Interval	Pearson's R	.620	.033	15.452	<.001 ^c
Ordinal by Ordinal	Spearman Correlation	.620	.033	15.452	<.001 ^c
N of Valid Cases		384			

‘a. Not assuming the null hypothesis.’

‘b. Using the asymptotic standard error assuming the null hypothesis.’

‘c. Based on normal approximation.’

Table 4.29. *Relationship Between Organisations that utilised Organisational Re-engineering during the Pandemic and Benefits from strategies implemented during the Covid-19 Pandemic - Greater Agility.*

Based on a crosstabulation between ‘Organisations that utilised Organisational Re-engineering during the Pandemic’ and ‘Benefits from strategies implemented during the Covid-19 Pandemic - Greater Agility’, there was a ‘significant relationship’ between these two variables. The Pearson Chi-Square value was 147.692, $df = 1$, and the p value was < 0.001 . Since the p value was less than the significance level, α of 0.05, the null hypothesis was rejected. This signified that there was a ‘significant relationship’ between these two variables.

76.9% of organisations that utilised organisational re-engineering during the pandemic benefitted from greater agility. On the other hand, all organisations that did not achieve greater agility, did not utilise organisational re-engineering. Also, a Cramer's V value of 0.620 was indicative of a strong positive association between the two variables. This is supportive of the alternative hypothesis, "**H₁: Organisational Re-engineering leads to the sustainability of organisations**".

		Benefit from strategies implemented during the Covid-19 pandemic - Improved Customer Service		
		Yes	No	Total
Organisation utilised	Yes	81.8%	20.0%	62.5%
Organisational Re-engineering during the pandemic	No	18.2%	80.0%	37.5%
Total		100.0%	100.0%	100.0%

‘Chi-Square Tests’					
	‘Value’	‘df’	‘Asymptotic Significance (2-sided)’	‘Exact Sig. (2-sided)’	‘Exact Sig. (1-sided)’
‘Pearson Chi-Square’	134.516 ^a	1	<.001		
‘Continuity Correction ^b ’	131.892	1	<.001		
‘Likelihood Ratio’	137.638	1	<.001		
‘Fisher's Exact Test’				<.001	<.001
‘Linear-by-Linear Association’	134.166	1	<.001		
‘N of Valid Cases’	384				

‘a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 45.00.’

‘b. Computed only for a 2x2 table’

‘Symmetric Measures’					
		Value	Asymptotic Standard Error ^a	Approximate T ^b	Approximate Significance
Nominal by Nominal	Phi	.592			<.001
	Cramer's V	.592			<.001
Interval by Interval	Pearson's R	.592	.043	14.352	<.001 ^c
Ordinal by Ordinal	Spearman Correlation	.592	.043	14.352	<.001 ^c
N of Valid Cases		384			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Table 4.30. *Relationship Between Organisations Utilised Organisational Re-engineering during the Pandemic and Benefit from strategies implemented during the Covid-19 Pandemic - Improved Customer Service.*

Based on a crosstabulation between ‘Organisations that utilised Organisational Re-engineering during the Pandemic’ and ‘Benefits from strategies implemented during the Covid-19 Pandemic - Improved Customer Service’, there was a ‘highly significant relationship’ between these two variables. The Pearson Chi-Square value was 134.516, df = 1, and the p value was <0.001. Since the p value was less than the significance level, α of 0.05, the null

hypothesis was rejected. This signified that there was a ‘highly significant relationship’ between these two variables. 81.8% of organisations that utilised organisational re-engineering during the pandemic benefitted from improved customer service. Also, a Cramer’s V value of 0.592 reflected a strong relationship between the 2 variables. This is supportive of the alternative hypothesis, “**H₁: Organisational Re-engineering leads to the sustainability of organisations**”.

		Benefit from strategies implemented during the Covid-19 pandemic - Increased Efficiency		
		Yes	No	Total
Organisation utilised	Yes	76.9%		62.5%
Organisational Re-engineering during the pandemic	No	23.1%	100.0%	37.5%
Total		100.0%	100.0%	100.0%

‘Chi-Square Tests’

	‘Value’	‘df’	‘Asymptotic Significance (2-sided)’	‘Exact Sig. (2-sided)’	‘Exact Sig. (1-sided)’
‘Pearson Chi-Square’	147.692 ^a	1	<.001		
‘Continuity Correction ^b ’	144.428	1	<.001		
‘Likelihood Ratio’	170.993	1	<.001		
‘Fisher's Exact Test’				<.001	<.001
‘Linear-by-Linear Association’	147.308	1	<.001		
‘N of Valid Cases’	384				

‘a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 27.00.’

‘b. Computed only for a 2x2 table’

‘Symmetric Measures’

		Value	Asymptotic Standard Error ^a	Approximate T ^b	Approximate Significance
Nominal by Nominal	Phi	.620			<.001
	Cramer's V	.620			<.001
Interval by Interval	Pearson's R	.620	.033	15.452	<.001 ^c
Ordinal by Ordinal	Spearman Correlation	.620	.033	15.452	<.001 ^c
N of Valid Cases		384			

‘a. Not assuming the null hypothesis.’

‘b. Using the asymptotic standard error assuming the null hypothesis.’

‘c. Based on normal approximation.’

Table 4.31. *Relationship Between Organisations that utilised Organisational Re-engineering during the Pandemic and Benefits from strategies implemented during the Covid-19 Pandemic - Increased Efficiency.*

Based on a crosstabulation between ‘Organisations that utilised Organisational Re-engineering during the Pandemic’ and ‘Benefits from strategies implemented during the Covid-19 Pandemic - Increased Efficiency’, there was a ‘significant relationship’ between these two variables. The Pearson Chi-Square value was 147.692, df = 1, and the p value was < 0.001.

Since the p value was less than the significance level, α of 0.05, the null hypothesis was rejected. This signified that there was a 'significant relationship' between these two variables. 76.9% of organisations that utilised organisational re-engineering during the pandemic benefitted from increased efficiency. Furthermore, a Cramer's V value of 0.620 signified a strong positive association between the two variables. This is supportive of the alternative hypothesis, "**H₁: Organisational Re-engineering leads to the sustainability of organisations**".

		Benefit from strategies implemented during the Covid-19 pandemic - More Robust		Total
		Yes	No	
Organisation utilised	Yes	71.4%		62.5%
Organisational Re-engineering during the pandemic	No	28.6%	100.0%	37.5%
Total		100.0%	100.0%	100.0%

‘Chi-Square Tests’

	‘Value’	‘df’	‘Asymptotic Significance (2-sided)’	‘Exact Sig. (2-sided)’	‘Exact Sig. (1-sided)’
‘Pearson Chi-Square’	91.429 ^a	1	<.001		
‘Continuity Correction ^b ’	88.406	1	<.001		
‘Likelihood Ratio’	106.043	1	<.001		
‘Fisher's Exact Test’				<.001	<.001
‘Linear-by-Linear Association’	91.190	1	<.001		
‘N of Valid Cases’	384				

‘a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 18.00.’

‘b. Computed only for a 2x2 table’

‘Symmetric Measures’

		Value	Asymptotic Standard Error ^a	Approximate T ^b	Approximate Significance
Nominal by Nominal	Phi	.488			<.001
	Cramer's V	.488			<.001
Interval by Interval	Pearson's R	.488	.034	10.926	<.001 ^c
Ordinal by Ordinal	Spearman Correlation	.488	.034	10.926	<.001 ^c
N of Valid Cases		384			

‘a. Not assuming the null hypothesis.’

‘b. Using the asymptotic standard error assuming the null hypothesis.’

‘c. Based on normal approximation.’

Table 4.32. *Relationship Between Organisations that utilised Organisational Re-engineering during the Pandemic and Benefits from strategies implemented during the Covid-19 Pandemic - More Robust.*

Based on a crosstabulation between ‘Organisations that utilised Organisational Re-engineering during the Pandemic’ and ‘Benefits from strategies implemented during the Covid-19 Pandemic – More Robust’, there was a ‘significant relationship’ between these two

variables. The Pearson Chi-Square value was 91.429, $df = 1$, and the p value was < 0.001 . Since the p value was less than the significance level, α of 0.05, the null hypothesis was rejected. This signified that there was a ‘significant relationship’ between these two variables. 71.4% of organisations that utilised organisational re-engineering during the pandemic benefitted from being more robust. Also, a Cramer’s V value of 0.488 is suggestive of a moderate to strong association between the two variables. This is supportive of the alternative hypothesis, **“H₁: Organisational Re-engineering leads to the sustainability of organisations”**.

Crosstabulations between ‘Organisations that utilised Organisational Re-engineering during the Pandemic’ and ‘Benefits from strategies implemented during the Covid-19 Pandemic’ showed significant relationships and strong associations amongst these variables. More specifically, there were significant relationships between the following specific benefits that were derived from strategies implemented during the Covid-19 pandemic: increased revenue, decreased cost, increased profitability, poised for future growth, achieved growth, greater agility, improved customer service, increased efficiency and more robust. The p value for all of these variable relationships was less than 0.01. Since the p values were less than the significance level, α of 0.05, the null hypothesis was rejected. Also, the Cramer’s V values all showed moderate to strong associations amongst the different variables. Notably, a ‘ N ’ value of 384 was indicative of a sufficient sample size for reliability of results. These are all supportive of the alternative hypothesis, **“H₁: Organisational Re-engineering leads to the sustainability of organisations”**.

ACTION UNDERTAKEN	FREQUENCY	PERCENT
Permanent Closure	0	0.0%
Change leadership	70	18.2%
Reduction of Wages and Salaries	70	18.2%
Reduced Product and Service Offerings	70	18.2%
Change Software	70	18.2%
Close Branches	70	18.2%
Used Project Management Techniques to Implement Changes and Projects	244	63.5%
Delays in Business investments	245	63.8%
Created New Sources of Revenue	245	63.8%
Diversified Operations	245	63.8%
Change Management Team	279	72.7%
Staff Re-Organisation	279	72.7%
Staff Cuts	279	72.7%
Change Mode of Delivery to Online	279	72.7%
Change Organisational Structure	279	72.7%
Strengthened IT Infrastructure	279	72.7%
Work from Home	291	75.8%
Temporary Closure	314	81.8%
Cancel Supplier Orders	314	81.8%
Utilized Change Management Strategies	314	81.8%
Change strategy	384	100.0%
Management Rotation	384	100.0%
Reduction in Staff Working Hours	384	100.0%
Staff Rotation	384	100.0%
Change in Operation Hours	384	100.0%
Change Systems	384	100.0%
Change Policies	384	100.0%
Change Procedures	384	100.0%
Implemented Controls on Expenses	384	100.0%
Reached Out to Customers	384	100.0%
Utilised Business Sustainability as a Business Objective	384	100.0%

Table 4.33. *Actions Undertaken by Organisations that were on a Sustainable Growth Path Post Covid-19 Pandemic.*

Based on an analysis of the specific actions undertaken by businesses that led them to be on a sustainable path following the Covid-19 pandemic, it is notable that several of these actions are subsets of the five dimensions of organisational re-engineering that are under focus in this research.

BENEFIT FROM STRATEGIES	FREQUENCY	PERCENTAGE
Increased revenue	120	31.3%
Decreased cost	144	37.5%
Achieved Growth	144	37.5%
Increased Profitability	168	43.8%
Improved customer service	264	68.8%
Greater Agility	312	81.3%
Increased efficiency	312	81.3%
Poised for future growth	360	93.8%
More robust	384	100.0%

Table 4.34. *Benefits from Strategies Undertaken during the Covid-19 Pandemic that Resulted in Organisations being in a Sustainable Growth Path.*

Several of the benefits from actions undertaken during the Covid-19 pandemic significantly affected the sustainable growth path of organisations in the post pandemic period. Key amongst them were improved customer service, greater agility, increased efficiency, poised for future growth and more robust.

Having presented the findings of data obtained from both the primary and secondary data sources, the next section of this Chapter provided an evaluation of these findings.

4.5 Evaluation of Findings

This research utilised a mixed methodological approach combining both qualitative techniques and quantitative techniques. Qualitative techniques included semi-structured interviews. The data from the qualitative technique was used to guide the preparation of closed-ended questionnaires for the quantitative aspect of this research. Additionally, secondary data was collected from newspaper articles, media clippings and annual reports. The primary data and secondary data were triangulated for filling any data gaps and for ensuring consistency and accuracy of the data and for its subsequent analysis. This methodology would enhance the trustworthiness of the research, as well as increase the reliability and validity of the research.

The data from the semi-structured interviews was coded and placed into clusters using NVivo software. This determined the themes for inclusion into the quantitative aspect of the research. These themes were very informative and provided the basis for developing the closed-ended questionnaire (Refer to Table 4.33). The findings from the semi-structured interviews and the questionnaire have previously been presented in this Chapter.

THEME FROM QUALITATIVE METHODOLOGY	LINK TO QUESTION DEVELOPED IN THE QUANTITATIVE METHODOLOGY
Demographic Data of Participants	Questions 1-12
Impact of Covid-19 pandemic on Organisations	Question 15-17, 22, 29
Impact on revenue and profitability	Question 17, 26, 28-31, 33
Actions/ Strategies undertaken to deal with the crisis situation	Question 13, 14, 18-21, 23-25, 27, 32
Understanding and usage of Organisational Re-engineering	Question 32, 34-37
Alignment of actions undertaken to Organisational Re-engineering	Question 13, 14, 18-20, 26, 28, 29, 32, 34-37
Benefits from actions undertaken by Organisations	Question 26-28, 33, 36, 37

Table 4.35. *Cross Validation Table Between Themes Derived from Qualitative Methodology against Questions included in the Quantitative Methodology.*

The evaluation of data received from the questionnaire was done in the same order as the sequencing of data collected from both the interviews and the questionnaire. The sequence began with the collection of demographic data and was then followed by the collection of data for each of the four research questions.

4.5.1 Demographic Data:

The participants for this research were chosen using purposive, convenience, stratified and random sampling methods. For the quantitative aspect of the research, 384 participants were selected. Questionnaires were administered to these 384 participants. Care was taken to ensure that these persons met the selection criterion for participating in the research.

From the questionnaire, it was determined that all participants held leadership positions within the sampled organisations. These persons consisted mainly Directors, Chief Executive Officers, Senior Managers and Owners. These position titles are consistent with the criteria for participant selection of the research. The findings also suggested that these persons were the key decision makers within the sampled organisations, during the Covid-19 pandemic. As such, the data that was received from them was expected to be relevant to the research.

From the 384 participants, it was found that the majority were males. This is suggestive and can possibly be explained by the fact that males have historically held leadership positions, more than females (Tiwari et al., 2018). This is now gradually changing in today's society (Bhushan et al., 2016). Nevertheless, there is not expected to be any bias in the results of the research, as there was still a substantial number of female participants in the research. From the 384 participants, 115 were female. The mix of having both male and female participants provided for richer data for the research, given that women usually lead differently to men (Nanton, 2015). It offered an additional perspective on how the turbulent period of the Covid-19 pandemic was managed.

The majority of participants of this research fell within the age bracket of 56 to 65 years. This is understandable given that it is usual for persons of this age category to hold senior positions within organisations. All the participants fell within the age criteria for the research of between 18 years to 85 years. Added to this, 59.9% of the participants possessed more than 15 years working experience within the particular organisation, with 80.2% having up to ten

years' experience in their current job position. All participants had more than one year of experience in their current leadership position. Given the vast experience that these participants may have in their organisations and in their existing job positions, this is indicative that their contributions were expected to be valuable. Further, 59.9% of these participants held a post graduate qualification. This is usual for leaders of most organisations. This would indicate an expectation of a high level of experience and education from within the organisation and in their respective leadership position. This is suggestive that the findings would lend itself to the provision of rich and trustworthy data from experienced and educated leaders.

The data collected were from 100% corporations within Trinidad and Tobago, with the majority being nationals and limited liability companies. This would lend itself to the credibility of this case study approach that sought to examine the dimensions of organisational re-engineering that led to its successful implementation for organisations that were affected by the Covid-19 pandemic in Trinidad and Tobago. Of particular note, all sampled companies were affected by the Covid-19 pandemic. This finding is consistent with Sahu (2020), who noted that the Covid-19 pandemic can be considered as one of the most turbulent periods in recent history that affected all organisations worldwide. The geographical spread of these companies was mainly from the Caroni, St. George East and St. George West districts of Trinidad and Tobago. This was due to the concentration of business organisations in these regions due to the availability of supporting infrastructure for their organisations. These areas are mostly commercial and industrial in nature.

97.4% of these companies had no branches and 98.2% of them operated locally. This is supportive of organisations in Trinidad and Tobago where both their headquarters and markets are locally based. There was an equal distribution of companies among being small, medium, or large, and also an equal distribution among the 16 stratified business sectors. This resulted from the sampling methodology employed in this research – stratified multistage

sampling supported by simple random sampling. This equal distribution of data collected evenly across different sectors provided supporting evidence as to how organisations within Trinidad and Tobago managed the Covid-19 pandemic. The even distribution spread between size and business sector provided an indication and understanding of how leaders were able to manage the pandemic in organisations of all different sizes and business sectors. This enhanced the reliability and validity of the research.

4.5.2 Research Question 1:

What were the actions undertaken by organisations for the duration of the Covid-19 Pandemic?

The results of the research found that 100% of participants were directly involved in strategy and decision making during the Covid-19 pandemic. Leaders undertook several activities to assist their organisations during the Covid-19 pandemic. This is consistent with the literature review previously presented where leaders undertook many different actions during crisis situations. Their actions were however guided by their leadership style. Nevertheless, all leaders were involved in the decision-making of their organisations during this crisis period.

The actions undertaken during the Covid-19 pandemic included changing their strategies, management rotation, reduction of staff working hours, staff rotation, change in operational hours, change of systems, change of policies, change of procedures, implementation of controls on expenses, reaching out to customers, utilisation of business sustainability as a business objective, temporary closure, cancellation of supplier orders, utilisation of change management strategies, employees working from home, change of management team, staff re-organisation, staff cuts, change in the mode of delivery to online, change of organisational structure and strengthen IT infrastructure, utilisation of project

management techniques to implement changes and projects, delays in business investments, creation of new sources of revenue, diversification of operations, change in leadership, reduction of wages and salaries, reduction of product and service offerings, change of software and closure of branches. Details of the usage of these activities are highlighted in Figure 4.43.

The above multitude of actions indicated that leaders had to engage in many major decisions in order to effectively lead their organisations during the period of the Covid-19 pandemic. These actions are consistent with the work of Hammer and Champy (1993) who noted that business process reengineering involved “the fundamental rethinking and radical redesign of business process to achieve dramatic improvement in critical contemporary measures of performance such as cost, quality, service, and speed”. Additionally, the actions of leaders during the Covid-19 pandemic developed an operating definition for leadership. This definition is consistent with the conceptual definition of leadership that was previously detailed in this research.

Table 4.15 analysed the impact of the Covid-19 pandemic on the sixteen (16) different business sectors that were sampled in this research. Of particular note, 100% of these sectors were impacted by the Covid-19 pandemic. Areas affected included revenue, expenses, profitability, growth, customer service, operations, management staffing, non-managerial staffing, operating hours, mode of delivery, projects, supply chains, customer demand, government processing, distribution of goods and services, raw materials availability, training, policies, systems, processes, communications, strategy, controls, freight cost, organisational structure, and equipment maintenance. The organisational impacts of the Covid-19 pandemic ranged from being moderate, major, and severe. Accordingly, organisational re-engineering has been employed in many and in a wide diversity of fields (Pasaribu et al, 2021; Srinivas et al., 2021; Windarto et al. 2021). It is most applicable for changes to enhance business productivity in a fast-changing, turbulent, or dynamic business environment (Fetais et al.,

2022a). This therefore lends great relevance to the selected sample as all of the sampled organisations were in fact impacted during the turbulent period of the Covid-19 pandemic.

98.2% of respondents indicated that lack of resources was not a limiting factor in the implementation and execution of initiatives during the Covid-19 pandemic. It can therefore be assumed that leaders undertook all actions within their know-how to aid their organisations during this turbulent period. Added to the above, data collected from secondary sources reinforced and supported the data that was gathered from the semi-structured interviews and questionnaires. This lends a great deal of credibility to the primary collected data and therefore contributed to the validity and reliability of this research.

4.5.3 Research Question 2:

How have the actions of leaders during the Covid-19 pandemic affected the financial performance of organisations throughout and after the Covid-19 pandemic?

The findings of the research revealed that 100% of participants indicating that the measures that they had implemented helped in alleviating the problems caused by the Covid-19 pandemic. The impacts of the Covid-19 pandemic ranged from moderate to major and to severe for the organisations under this research. Of significance, all participants indicated that there was no requirement for different actions to be taken during the pandemic. Of concern however, is that all participants suffered a decrease in profitability during the Covid-19 pandemic. These findings are supportive of the work of (Travkina & Luigi, 2020), who alluded to loss of sales, increased costs, and decreased profitability as being a consequence of the Covid-19 pandemic. Additionally, the secondary data of this research also confirmed this view, where all of the sampled organisations had a decline in profitability during the Covid-19 pandemic. Engidaw (2022) commented that the Covid-9 pandemic affected businesses of all

sizes. It posed many challenges for the survival of businesses given that it dramatically reduced the revenue of many organisations.

Chen et al. (2016) noted that organisational re-engineering helps organisations to meet their objectives, which consequently leads to increased efficiencies and effectiveness and reductions in overhead costs. Business sustainability can be measured by improvements in revenue, cost, quality, service, speed, competitiveness, and performance (Bayomy et al., 2021; Hammer and Champy, 1993). An analysis of Figure 4.49 displayed several reasons for increases in profitability in the post Covid-19 pandemic period. Noteworthy, 12.5% or 48 organisations indicated that they had to focus on niche markets and change their leadership respectively. Also, 96 organisations or 25% of organisations responded that they had to revise their strategic plan and change their supply chain whilst 120 or 31.3% of organisations indicated that they had to diversify their business. Furthermore, 144 or 37.5% of participating companies indicated that they had to close unprofitable branches whilst 168 or 43.8% of participants had to contract their business. 216 or 56.3% of participants indicated that they had to revise budgets, concentrate of profitable product lines, and change their leadership style. 264 or 68.8% of organisations had to restructure human resources whilst 288 or 75% had to implement project management techniques and change the mode of delivery of products and services respectively. More than 75% of participants had to change strategies, change strategic, operational and tactical operations, implement improved systems, processes and policies, utilised change management techniques and implement information technology infrastructure. Business leaders all indicated that these actions helped their businesses to recover and increase profitability post the Covid-19 pandemic.

Research conducted by (Al-Basal et al., 2021) on a wide cross section of different industries found that organisational re-engineering reduced production costs by reducing operational and activity costs and by minimising non-value-adding activities and processes by

the redesign of processes, flowcharts, and distribution for production. This would have thus increased profitability. The findings of the research are supportive of the works of (Al-Basal et al., 2021). 80% of organisations that utilised organisational re-engineering during the pandemic benefited from increased revenue. 100% of organisations that utilised organisational re-engineering during the pandemic benefited from decreased costs. 71.4% of organisations that utilised organisational re-engineering during the pandemic benefited from increased profitability. Additionally, according to Harika et al. (2021), re-engineering is expected to improve processes, enhance efficiency, provide cost savings, increase value, and create a sustainable competitive advantage. The findings of the research found that 66.7% of organisations that utilised organisational re-engineering during the pandemic benefited from being poised for future growth. 83.3% of organisations that utilised organisational re-engineering during the pandemic benefited from achieving growth. 76.9% of organisations that utilised organisational re-engineering during the pandemic benefited from greater agility. 81.8% of organisations that utilised organisational re-engineering during the pandemic benefited from improved customer service. 76.9% of organisations that utilised organisational re-engineering during the pandemic benefited from increased efficiency. 71.4% of organisations that utilised organisational re-engineering during the pandemic benefited from becoming more robust.

Noteworthy of mention was that despite an increase in post pandemic profitability as compared to the pandemic period, the levels of increased profitability in the post pandemic period were still less than in the pre Covid-19 pandemic periods. These findings are consistent with the works of Qadri et al. (2023) who concluded that the performance of organisations prior to the Covid-19 pandemic was better than during the period of the Covid-19 pandemic. Qadri et al. used financial measures of liquidity, solvency, profitability, and activity to derive this conclusion. The findings of their study also found that based on liquidity, solvency and

profitability measures, there were significant variances in performance in the pre Covid-19 pandemic period when compared to the post Covid 19 pandemic period.

4.5.4 Research Question 3:

How are the actions of organisations that successfully managed the Covid-19 pandemic aligned to dimensions of organisational re-engineering?

Crisis, dynamic and unpredictable conditions necessitate leadership with particular skills and traits to carry organisations successfully through these scenarios (Wisittigars and Siengthai, 2019). From the data obtained and displayed in Table 4.16, various leadership activities were undertaken during the period of the Covid-19 pandemic. Of significance, there were ‘Changes in Leadership’, ‘Changes in the Management Team’ and ‘Management Rotation’. The findings of the data collection found that ‘Change in the Management Team’ and ‘Management Rotation’ were instrumental activities that impacted post pandemic sustainability positively. These findings are consistent with Nkurunziza et al. (2019) who found leadership to be the foremost impetus for organisational re-engineering advancements. Of particular note, the finding also found that a ‘Change in Leadership’ did not significantly impact on post pandemic sustainability.

The views of Nkurunziza et al. (2019) are supported by Petrović et al. (2020) who stated, “Applying the concept of reengineering is a very complex process where people need to have a good manager with authority and knowledge of the job he is doing” (p. 144). The findings of this research supported this statement. Based on the findings of the research, it was found that participants were knowledgeable about the concept of organisational re-engineering. Their understanding included restructure of the business, staff changes, change in procedures change in policies, radical change in the way the organisation operates, change of strategic, operational and tactical operations, revision of strategy, revision of strategic plan, change of

vision and mission and revision of budgets. These actions are consistent with the work of Hammer and Champy (1993) who noted that business process reengineering involved “the fundamental rethinking and radical redesign of business process to achieve dramatic improvement in critical contemporary measures of performance such as cost, quality, service, and speed” (p. 32). Contributing to this knowledge of organisational re-engineering might stem from the majority of participants in this research (80.2%) having up to 10 years of experience in their current job position and 59.9% of them held a postgraduate university degree as their highest level of educational qualification. Additionally, four (4) job positions were unearthed for Job Title. These were: Director, Chief Executive Officer, Senior Manager and Owner. This again is supportive of the literature review as persons in these positions are expected to be persons “with authority and knowledge of the job” (Nkurunziza et al., 2019). To this end, 63% of participants believed that they had used organisational re-engineering during the Covid-19 pandemic. Of particular note however, Fetais et al. (2022b) iterated that failure of the concept of organisation re-engineering had more to do with its interpretation and implementation, rather than with shortcomings of the concept itself.

As noted previously, several actions were undertaken by organisations during the Covid-19 pandemic. These included permanent closure, change in leadership, reduction of wages and salaries, reduced product and service offerings, change of software, closure of branches, utilisation of project management techniques to implement changes and projects, delays in business investments, created new sources of revenue, diversified operations, changed the management team, re-organised staff, terminated staff, changed mode of delivery to online, changed organisational structure, strengthened information technology infrastructure, implemented a work from home policy, temporary closure, cancelled supply orders, utilised change management strategies, changed strategy, rotated management personnel, reduction in working hours, rotated staff, changed its operating hours, changed

systems, changed policies, changed procedures, implemented controls on costs, reached out to customers and utilised business sustainability as a business objective. This research only focused on dealing with five dimensions of organisational re-engineering. The five dimensions are leadership, information technology, change management, project management and human resources management. Many of the actions undertaken by organisations during the period of the pandemic can be considered as subsets of these five dimensions.

As noted in Table 4.12 and Figure 4.43, 63.5% of participants indicated that their organisation utilised project management techniques to implement changes and projects during the Covid-19 pandemic. Supportingly, based on the data from Figure 4.55 and Table 4.13, the implementation of project management techniques positively impacted 288 out of the 384 surveyed organisations (75%). Nkomo and Marnewick (2021) reinforced this view when they postulated that Project Management Practices was key to achieving organisational change. Further, as noted in Table 4.18, 63.5% of surveyed organisations used project management as a dimension of organisational re-engineering that positively impacted their post pandemic sustainability. These findings are consistent with the work of Talwar (1993) who iterated that organisational re-engineering is strategy driven. He further noted that issues surrounding project management must be managed during organisational re-engineering. This view is also supported by Packendorff (1995) who iterated that project management is an essential tool for aiding with the advancement of organisational re-engineering practices and for the attainment of business sustainability. According to Bayomy et al. (2021), effective project management practices eliminate the associated implementation problems of organisational re-engineering which then results in business sustainability. Figure 4.55 highlights a number of project management actions that were linked to the increase in profitability in the post Covid-19 period when compared to the actual period of the Covid-19 pandemic. Elements included used project management to implement changes and projects, created new sources of revenue, diversified

operations, implementing controls on expenses, change procedures, change policies, change systems, change strategy, and reached out to customers. These findings are in support of the views shared by many scholars previously detailed under the literature review.

According to Azhar et al. (2013), there are normally improved outcomes and support to organisations whenever human resources management restructuring is used in the implementation of organisational re-engineering. The findings of the research supported this view as changes in organisational structure, staff re-organisation, staff cuts, work from home, a reduction in working hours and staff rotation all contributed to post pandemic sustainability. This data is displayed in Table 4.19. This opinion is also espoused by (Chopra, 2020) when he noted a “positive relationship between good HR practices and business performance” (p. 1). Zhiqiang et al. (2021) noted that it is necessary to invest in human capital to achieve and maintain high levels of efficiency and for the overall enhancement of the skillset of workers. Correspondingly, as displayed in Table 4.13, ‘restructure of human resources’ was disclosed by 68.8% of participants as being the reason for post pandemic profitability. According to Asriati et al. (2022), the implementation of effective human resources restructuring practices aids in the reinforcement of an organisation’s strategy and hence promotes the occurrence of a competitive advantage. The findings of this research suggest that many human resources management actions were undertaken during the Covid-19 pandemic which resulted in an increase in profitability in the post Covid-19 period when compared to the actual period of the Covid-19 pandemic. These findings are consistent with the views shared by many scholars previously detailed under the literature review.

Grover et al. (1998) noted that information technology amends processes which then results in increased levels of output. Larsen (2003) noted that the integration of information systems was crucial for improving and increasing cost and competitiveness, efficiency and effectiveness which then leads to successful organisational re-engineering. According to the

findings on Figure 4.43, 72.7% of respondents indicated that they had strengthened their information technology infrastructure during the Covid-19 pandemic. As displayed in Figure 4.49, 100% of these respondents indicated that information technology infrastructure was one of the reasons for their increased profitability post the Covid-19 pandemic, whereas 279 out of the 384 participants indicated that information technology was one of the reasons for their business sustainability post the Covid-19 pandemic. Additionally, 78.8% of respondents noted that ‘Work from Home’, 18.2% of respondents noted ‘Change in Software’, 72.7% of respondents noted ‘Change Mode of Delivery to online’ and 100% of respondents noted “Change in Systems, Policies and Processes’ as the reasons for a positive impact in their post pandemic Sustainability. This data is displayed in table 4.17.

The findings of the research are supported by a number of different scholars. Research performed by Nkurunziza et al. (2019) concluded that both human and IT factors were essential for re-engineering, Flanagan and Marsh (2000) noted that “Information technology (IT) has been widely applied across many economic sectors in order to increase competitiveness and reduce costs” (p. 423). Maull et al. (1995), Geralis and Terziovski (2003), Herzog et al. (2007) and Grover et al. (1995) all individually postulated that information technology was one of seven key areas that was needed to be performed for the successful implementation of organisational re-engineering. Information technology is an important mechanism for fundamentally restructuring an organisation (Khashman, 2019). Attaran (2003) placed great importance on the utilisation of information technology during the implementation of organisational re-engineering highlighting that process redesign without using information technology was likely to not succeed. Zuhaira and Ahmad (2021) supported this view when they identified information technology as one of the key elements necessary for business process management. This view was also shared by Nkurunziza et al. (2019).

Senior (2002) noted that the process of organisational change was continuous, and it was necessary to harmonise the organisation's strategy, processes, people, and structure. Based on the research findings, the adoption of 'Change Management Strategies' was one of the actions used by organisational leaders surveyed during the Covid-19 pandemic. As noted on Figure 4.49, 360 out of the 384 participants indicated that the 'Utilisation of Change Management Techniques' was one of the reasons for increased profitability in the post pandemic period, whereas as shown on Table 4.33, 81.8% of participants indicated that 'Utilisation of Change Management Techniques' was one of the reasons for their organisations being on a sustainable growth path. Accordingly, Idogawa et al. (2023) postulated that change management is a pivotal instrument for bringing flexibility, novelty, and benefits for organisations. The findings of this research regarding actions undertaken during the Covid-19 pandemic with respect to change management are consistent with the views shared by many scholars previously detailed under the literature review.

The literature view supports role of systems and process improvement, as a facet of change management that positively strengthens the independent – dependent relationship of this research. The findings found that systems and process improvement, as a facet of change management had a significant impact on post pandemic sustainability. Elements included utilisation of change management strategies, changed management team, change of mode of delivery of products and services, changed organisational structure, change procedures, change policies, change systems, and change strategy.

Based on the findings of the research as shown on Figure 4.55, it is suggestive that the main dimensions of organisational re-engineering necessary for attaining business sustainability are leadership, strategic, operational and tactical decision making, information technology infrastructure and adaptations, human resources restructuring, project management practices, and change management systems and process improvement. These dimensions, as

noted on Table 4.33, seemingly all led to the sustainability of organisations in the post pandemic period. These findings are consistent with the work of King (1994), who postulated that a focus on the tactical as opposed to the strategic process resulted in unsuccessful results.

From the literature view, it was found that leadership decision making at the strategic, operational and tactical levels were instrumental for achieving business sustainability. It is indicative that the research also pointed to leaders who did in fact use decision making at these three different functional levels achieved post pandemic sustainability. These leadership decision-making activities thus supported the mediation relationship between the implementation of organisational re-engineering and business sustainability during turbulent periods.

Supportingly, Guimaraes and Bond (1996) listed six constructs for organisational re-engineering implementation in any organisation. These were: changes to processes, planned goals and objectives, the achievement of goals and objectives, execution problems, derived benefits, and organisational performance. Park (2018) conducted similar studies and identified six different constructs. These were: depth of BPR, management of change, adaption to change, IT practice, information management practice, and information behaviours and values. Al-Anqoudi et al. (2021) conducted research that focused on success elements, approaches, and instruments of BPR projects. Their findings determined that the human factor is most required.

It is therefore evidently clear that there are varying views on what constitutes the dimensions of organisational re-engineering and also on what are the key factors necessary for the successful implementation of organisational re-engineering. This in itself is one of the problems that causes issues that negatively impact the successful implementation of organisational re-engineering. Nevertheless, the wide range of activities that organisations implemented during the Covid-19 pandemic can be classified on the most part to being an

action that is related to one of the dimensions of organisation re-engineering that is under the focus of this research.

4.5.5 Research Question 4:

What are the benefits of Organisational Re-engineering to business sustainability during turbulent periods?

According to Li and Nazif (2021), organisational re-engineering reviews systems, policies, and organisational structures to raise performance levels and optimize organisational productivity. Eke and Achilike (2014) postulated that organisational re-engineering allowed organisations to look at their overall performance and implement changes, processes, and strategies for becoming cost leaders. It combined changes in job designs, management and leadership styles, processes, technology, and systems. In a study conducted by Budiman et al. (2021), success was found in using organisational re-engineering during the Covid-19 pandemic to support the sustainability of its sales commodities.

The findings of this research are consistent with the views of many scholars as was detailed in the literature review. Accordingly, as noted on Figure 4.58, a range of benefits were derived from the strategies implemented by organisational leaders who executed organisational re-engineering during the Covid-19 pandemic. The major benefits were improved customer service, greater agility, increased efficiency, poised for future growth, more robust, increased profitability and growth, decreased cost, and increased revenue. According to Table 4.9, from the 384 participating companies, all participants indicated that their companies had recovered from the effect of this turbulent period. This finding can be linked to where all companies had both an increase in revenue and profitability in the post pandemic period. This is further supported by the wide range of benefits that were derived by organisations in the post pandemic period from the implementation of organisational re-engineering strategies during the Covid-

19 pandemic. These findings are in harmony with the work of (Fetais et al., 2022a). They postulated that the adoption of organisational re-engineering reshapes an organisation and results in improved quality of goods and services, cost reductions, increased competitiveness and efficiencies and maintenance of a competitive advantage. Furthermore, Alhawamdeh (2021) alluded that the execution of organisational re-engineering in the face of intense competition increases competitiveness.

Business sustainability can be measured by improvements in revenue, cost, quality, service, speed, competitiveness, and performance (Bayomy et al., 2021; Hammer and Champy, 1993). Bayomy et al. (2021) provided clarity on this concept when they remarked “Business Process Re-engineering (BPR) provides a roadmap of how to efficiently achieve the operational goals in terms of enhanced flexibility and productivity, reduced cost, and improved quality of service or product” (p. 1). Of particular note, the findings of this research suggested that these outcomes are all linked to the impacts of the moderating and mediating variables as were identified in the conceptual framework for this research. More specifically, these outcomes can be directly linked to actions linked to the five dimensions of organisational re-engineering that were tested in this research. These are leadership, project management, change management, human resources management, and information technology.

Zaboli et al. (2013) noted that organisational re-engineering creates an awareness and forewarning for organisations about the consequences of not re-engineering during crisis periods. According to Figure 4.56, all participants indicated that their organisations had benefitted from their actions undertaken throughout the Covid-19 pandemic. Noteworthy, Figure 4.57 indicated that 100% of participants’ organisations did not grow during the Covid-19 pandemic and Table 4.10 showed that 100% of participants’ organisations contracted in the period of the Covid-19 pandemic. Subsequent to the organisational re-engineering actions undertaken by leaders during the pandemic period, as shown in Figure 4.60, 100% of

organisations indicated that they are now on a sustainable path due to their actions undertaken during the Covid-19 pandemic. Correspondingly, their profitability increased in the post pandemic period when compared to the pandemic period (Figure 4.51). When cross tabulations were done between “Organisations that Utilised Organisational Re-engineering during the Pandemic’ and ‘Benefit from strategies implemented during the Covid-19 Pandemic’, significant relationships, and moderate to strong associations were found in the areas of increased revenue (Table 4.24), decreased cost (Table 4.25), increased profitability (Table 4.26), poised for future growth (Table 4.27), achieved growth (Table 4.28), greater agility (Table 4.29), improved customer service (Table 4.30), increased efficiency (Table 4.31) and more robust (Table 4.32).

Supportingly, Houy et al. (2010) explained that organisational re-engineering redesigned business processes and enabled new processes, the achievement of organisational level strategic outcomes and is inter-functional in its efforts. Corresponding to Figure 4.59, the responses from participants noted several actions were undertaken during the Covid-19 pandemic. 50% or more participants indicated that their organisation utilised change of business model, revision of budgets, concentration on profitable product lines, change of leadership style, restructure of human resources, implementation of project management techniques, change of mode of delivery of products and services, change in strategy, change of strategic, operational and tactical operations, implementation of improved systems, processes and policies, utilization of change management techniques and information technology infrastructure. Noteworthy of mention, is that specific organisational re-engineering dimensions were part of these actions and resulted in the benefit of increased profitability in the period after the Covid-19 pandemic when compared to the pandemic period. The findings of the research suggested that the benefits of the specific organisational re-engineering

dimensions contributed towards achieving business sustainability during turbulent times. This is displayed in Table 4.34.

4.6 Alignment of Research Questions to Hypotheses

The research was framed around four research question for testing six different hypotheses. Firstly, the research examined the actions performed by organisations during the Covid-19 pandemic. This question was framed with the view of answering research question 1. Secondly, these actions were analysed for any relationships with the financial performance of the surveyed organisations during and post the Covid-19 pandemic. This addressed research question 2. Thirdly, there was an examination of how the actions undertaken by organisations that successfully managed the Covid-19 pandemic were aligned to dimensions of organisational re-engineering. This addressed research question 3. The build-up of findings to this stage would have provided an initial linkage to each of the six research hypotheses. Fourthly, the research determined the beneficial aspects of organisational re-engineering and the five examined dimensions for the attainment of business sustainability during turbulent periods. This would have answered research question 4 and provided sufficient data for an evaluation of the validity of each hypothesis.

Grounded on the investigation of the research questions and in testing the various hypotheses, the research provided the varying dimensions for the effective implementation of organisational re-engineering that will support leaders to successfully lead their firms to sustainability during turbulent periods.

The research questions allowed for examining the strategic, operational, and tactical actions undertaken by leaders during the period of the Covid-19 pandemic and to ascertain whether they were in fact a dimension of organisational re-engineering. Additionally, the research also explored the contribution of these actions towards the successful implementation

of the concept of organisational re-engineering for the attainment of business sustainability during turbulent periods. This allowed for testing the first hypothesis:

H₀: Leadership strategic, operational and tactical decision-making does not drive the relationship between the implementation of organisational re-engineering and business sustainability during turbulent periods.

H₁: Leadership strategic, operational and tactical decision-making drives the relationship between the implementation of organisational re-engineering and business sustainability during turbulent periods.

Zuhaira and Ahmad (2021) identified information technology as one of the key elements necessary for business process management. The research questions of this research gathered data surrounding actions relating to information technology and further examined them as a dimension of organisational re-engineering necessary for the attainment of business sustainability during turbulent periods. The findings and conclusion of this research tested the second hypothesis:

H₀: Information technology infrastructure and adaptations are not necessary to achieve business sustainability during turbulent periods.

H₁: Information technology infrastructure and adaptations are necessary to achieve business sustainability during turbulent periods.

The findings suggested that managers would have adopted change management techniques. It was necessary to evaluate whether the adoption of systems and process improvements as a facet of change management led to successful outcomes in the post Covid-19 pandemic period. The findings and conclusion of this research tested the third hypothesis:

H₀: Systems and process improvement, as a facet of change management, does not positively moderate the relationship between organisational re-engineering and business sustainability.

H₁: Systems and process improvement, as a facet of change management positively moderate the relationship between organisational re-engineering and business sustainability.

The findings from the four research questions provided for an examination of whether project management practices allowed for the successful implementation of the organisational re-engineering. These findings and conclusions allowed for the testing of the fourth hypothesis:

H₀: The application of project management practices does not strengthen the relationship between organisational re-engineering and business sustainability.

H₁: The application of project management practices strengthens the relationship between organisational re-engineering and business sustainability.

The findings and its evaluation examined whether human resources management restructuring was in fact a significant contributor to post pandemic profitability and the sustainability of organisations. This was key for the streamlining of the human resources within an organisation in turbulent periods for achieving sustainability. The findings and conclusion of this research tested the fifth hypothesis:

H₀: Human resources management restructuring is not a necessary component to achieve business sustainability during turbulent periods.

H₁: Human resources management restructuring is a necessary component to achieve business sustainability during turbulent periods.

According to Li and Nazif (2021), organisational re-engineering reviews systems, policies, and organisational structures to raise performance levels and optimize organisational productivity. The research questions tested whether there was an independent-dependent relationship between the implementation of organisational re-engineering and the attainment of business sustainability. The findings and conclusion of this research tested the sixth hypothesis:

H₀: Organisational re-engineering does not lead to the sustainability of organisations.

H₁: Organisational re-engineering leads to the sustainability of organisations.

4.7 Summary

This Chapter provided a brief overview of the purpose of this research and recapped the research's problem. It also provided the rationale for conducting the research which was to determine how to effectively implement organisational re-engineering and lead organisations during periods of turbulence and to ensure business sustainability. Following this, the four research questions and the various hypotheses of the research were highlighted. The intent of this Chapter was to present the findings of the research and evaluate the data in the context of the literature review, for answering the various research questions, and for testing the various null hypotheses of this research.

The Chapter progressed to indicate the measures that were undertaken to ensure the trustworthiness of data collection and the research. This included exploring the concepts of credibility, transferability, dependability, and confirmability. Discussions were provided on how these various concepts of trustworthiness were included in the research to ensure the reliability and validity of the research. Following this, the subject of reliability and validity was again raised to a more in-depth level. This concept is very important for the research to ensure its credibility for future use and for the adoption of the various recommendations and conclusions of the research. Details were provided on the activities undertaken during the research to ensure its reliability and validity.

Following the above, the Chapter moved towards its main focus which was to provide the results of the findings of the research. Again, a brief overview was given of the methodology that was utilized to collect the data. This included using primary data collection tools of semi-structured interviews and closed-ended questionnaires, and secondary data sources. These results were triangulated to ensure reliable and valid conclusions of the research.

The presentation of findings was done on three main aspects. Firstly, the data from the semi-structured interviews were grouped and coded, and identifiable themes unearthed. These themes were summarised by interview question and presented and categorised under demographic data and for each of the respective research questions. Secondly, the themes were used to guide the preparation of the closed-ended questionnaire. Following the administration of the questionnaire, the findings were presented under demographic data and under each of the respective research questions. Data from secondary sources were also included where applicable under each research question. Lastly, the data from the quantitative aspect of the research were cross tabulated to find relationships among key datasets. These findings were used for testing the various null hypotheses of the research and for answering the research questions.

The demographic results of the research found that participants held the positions of Chief Executive Officers, Directors, Senior Managers and Owners. There were more male than female participants, with the majority of participants falling in the age category 56 to 65 years. Most participants were employed with their organisations for more than fifteen years, and held their leadership position for up to 10 years. These persons mainly held postgraduate University qualifications. All companies involved in the research were corporations and nationals of Trinidad and Tobago, and were evenly spread based on size, and amongst the sixteen (16) stratified business sectors of this research. These companies were mainly located in the localities within Caroni, St. George East, and St. George West districts, with many not having any branches.

For research question 1, it was found that 100% of participants were involved in the strategic and operational decision making within their company. All participants were engaged in liaising and reporting to the board of directors, monitoring performance and targets, development of budget, development of policies, assignment of duties, setting of strategic

objectives for the organisation and development of the strategic plan, with 90.9% of participants being involved in development of their organisation's vision and mission. All companies were affected by the Covid-19 pandemic. Areas affected included revenue, expenses, profitability growth, customer service, operations, management staffing, non-management staffing, operating hours, mode of delivery, projects, supply chain disruptions, reduced customer demand, delays in government office processing, raw material shortages, training, policies, systems, processes, communication, strategy, controls, increased freight cost, organisational structure, equipment maintenance and IT. To this end, all leaders were directly involved in strategy and decision making during the Covid-19 pandemic. Their actions included changing their strategies, management rotation, reduction of staff working hours, staff rotation, change in operational hours, change of systems, change of policies, change of procedures, implementation of controls on expenses, reaching out to customers, utilisation of business sustainability as a business objective, temporarily close, cancel supplier orders and utilise change management strategies, work from home, change their management team, conduct staff re-organisation, cut staff, change mode of delivery to online, change organisational structure, strengthen its infrastructure, utilised project management techniques to implement changes and projects, had delays in business investments, created new sources of revenue, diversified operations, change leadership, implemented reduction of wages and salaries, reduced product and service offerings, change software and close branches. Very few of them indicated that a lack of resources was responsible for any hindrance of actions during the Covid-19 pandemic.

For Research Question 2, 100% of leaders indicated that the measures implemented helped to alleviate the problems caused by the Covid-19 pandemic. The impact of the Covid-19 pandemic ranged from being moderate, major, and severe. However, the majority of participants indicated that the impact was severe. All participants indicated that their

profitability had declined during the Covid-19 pandemic with an increase in the post pandemic period due to the actions that they had undertaken during the Covid-19 pandemic period. However, post pandemic profitability was mostly lower than pre-pandemic profitability. There was a range of reasons given for the increase in post pandemic profitability. These included: focus on niche market, change of leadership, revision of strategic plan, change of supply chain, diversification of business, closure of unprofitable branches, contraction of business, change of business model, revision of budgets, concentration on profitable product lines, change of leadership style, restructure of human resources, implementation of project management techniques, change of mode of delivery of products and services, change in strategy, change of strategic, operational and tactical operations, implementation of improved systems, processes and policies, utilization of change management techniques and information technology infrastructure. Noteworthy, some of these actions are directly related to the dimensions of organisational re-engineering that are being tested by the various null hypotheses of this research. More specifically, leaders claimed that change of leadership, change of leadership style, restructure of human resources, implementation of project management techniques, change of strategic, operational and tactical operations, implementation of improved systems, processes and policies, utilisation of change management techniques and information technology infrastructure were all responsible for improving their profitability post the Covid-19 pandemic. These actions are all dimensions of organisational re-engineering. Using crosstabulation, 62.5% of organisations that utilised organisational re-engineering in the period of the Covid-19 pandemic had resultant increased profits in the period after the Covid-19 pandemic.

The results of data collection for research question 3 indicated that the majority of participants had some understanding of the concept of organisational re-engineering, with most of them believing that they had actually used organisational re-engineering during the

pandemic. The results found that several actions were responsible for increasing organisations' profitability post the Covid-19 pandemic. Of particular note, many of these actions were dimensions of organisational re-engineering. This included change of leadership, change of leadership style, restructure of human resources, implementation of project management techniques, change of strategic, operational and tactical operations, implementation of improved systems, processes and policies, utilisation of change management techniques and information technology infrastructure. These dimensions were all included in the conceptual framework of this research.

The findings suggested that leadership had a significant impact on post pandemic sustainability. More specifically, a change in the management team and management rotation were key activities that impacted post pandemic sustainability. Information technology infrastructure and adaptations also had a significant impact on post pandemic sustainability. More specifically, the strengthening of IT infrastructure was a key action in this respect. Additionally, the use of project management to implement changes and projects had a considerable impact on post pandemic sustainability while human resources management restructuring related actions pointedly impacted post pandemic sustainability of organisations. Multivariate ranking was performed to simultaneously rank the various variable constructs' impact on post pandemic sustainability. Project management had the greatest impact, followed by change management, human resources management, information technology, and leadership.

The fourth research question revealed that all of the surveyed organisations had recovered from the pandemic and that all participants indicated that their organisations had benefitted and were on a sustainable path from their actions undertaken throughout the Covid-19 pandemic. They all indicated that their organisations had no growth during the pandemic with contractions to their businesses. The findings found that businesses benefited from the strategies implemented by organisational leaders during the Covid-19 pandemic. The major

benefits were: improved customer service, greater agility, increased efficiency, poised for future growth and more robust. to a lesser extent, other benefits included increased profitability, achieved growth, decreased cost, and increased revenue. Organisational re-engineering dimensions were part of these actions and resulted in the benefit of increased profitability in the period after the Covid-19 pandemic when compared to the pandemic period. Based on cross tabulations, significant relationships and associations were also found between organisations that utilised organisational re-engineering during the pandemic and benefit from strategies implemented during the Covid-19 pandemic. Additionally, based on an analysis of the specific actions undertaken by organisational leaders that led them to be on a sustainable path following the Covid-19 pandemic, it is notable that several of these actions can be considered dimensions of organisational re-engineering.

To end the Chapter, the results of the findings were evaluated against the literature review conducted in Chapter Two of this research. The purpose was to interpret the results in light of existing theories. Again, this was categorised according to demographic data and by each research question. Many similarities were found between the results of the research and on existing theories. These similarities and differences were identified and explanations for unexpected or conflicting results were provided.

This Chapter provided the backdrop for later discussing the implications and significance of the research, and for providing recommendations and conclusions of this research. The chapter evaluated the results of this research against the literature review conducted in Chapter Two. Overall, the collection of the data was successful. The findings were sufficient for answering the various research questions and for testing the null hypotheses of this research. The next Chapter of this research discussed the implications and significance of the research, and provided recommendations and conclusions of this research.

CHAPTER FIVE: IMPLICATIONS, RECOMMENDATIONS, AND CONCLUSIONS

The underlying problem that this research resolved was how to effectively implement organisational re-engineering and lead organisations during periods of turbulence. It has generally been found that several leaders have difficulty in effectively implementing organisational re-engineering and leading their organisations to sustainability during crisis periods (Duchek, 2020). This is evident by the high number of business closures during turbulent periods. It is therefore imperative that leaders adequately deal with these scenarios (Schoemaker et al., 2018) in order to attain sustainability during turbulent periods. If organisations are not responsibly steered, this can cause the closure of many organisations (Dwipriyoko, 2020).

Primary and secondary data was captured and triangulated from business leaders for the pre-period, post-period and the actual time of the Covid-19 pandemic using semi-structured interviews, closed-ended questionnaires, newspaper articles, media clippings and annual reports. The major limitation encountered during the data collection process was that all interviewed participants refused to allow the recording of their interviews. To effectively deal with this issue and to ensure that no bias was included in the process, interview notes were taken, and participants were asked to review the notes to ensure that the notes were an accurate reflection and transcription of what they had communicated during the interview process.

The actions of organisational leaders during these periods were analysed to determine which actions brought success and sustainability to organisations during the Covid-19 pandemic. This thus allowed for an in-depth comprehension of the complexity of the impact and outcomes of the Covid-19 pandemic on organisations that used organisational re-engineering during this period. This therefore facilitated the application of the findings to the

implications, recommendations, and conclusions of this research and on the usage of organisational re-engineering during turbulent periods.

5.1 Implications

The implications of the findings of this research were done by firstly analysing the demographic data that was collected from the research and then examining the findings with respect to each of the four research questions. Potential limitations that may have affected the interpretation of the results would be highlighted along with how the results responded to the research problem. Furthermore, the alignment of the results with the elements of the conceptual framework would be outlined. The main elements of the conceptual framework where the research focused are leadership, strategic, operational and tactical decision making, as a mediating variable, and information technology infrastructure and adaptations, human resources restructuring, project management practices, and change management systems and process improvement, as moderating variables. Discussions would surround whether the results were expected given the literature review, and any unexpected or conflicting results would be explained. Additionally, the implications to practice would be explained with reference to relevance to future turbulent periods and to the literature review. These findings would then be cross referenced to each of the various null hypotheses of this research and to the previously presented literature review, following which recommendations and conclusions of the research were drawn. The research would also include how the results built on the already existing body of research. It must be noted that all participants met the selection criterion for participation in this research.

5.1.1 Demographic Data:

The initial objective of data collection from both the semi-structured interviews and closed-ended questionnaires was to obtain the participants' job title, number of years worked

in the organisation, number of years in current job position, educational levels, age, and gender. The purpose of this data was to ascertain whether these factors had any significant relationships to leadership in the period of the Covid-19 pandemic. Additionally, data was also obtained on the business structure of participants' companies, business location, number of branches of participants' organisations, business sector, operating region of participants' organisations and size of participants' businesses. This information was gathered to ascertain whether there was any correlation with any one of these variables to the actions undertaken by leaders during the pandemic and the resultant benefits from these actions.

The findings of the research found that the persons who agreed to participate in the research from the various organisations consisted of Directors, Chief Executive Officers, Senior Managers and Owners. The findings also suggested that these persons were the key decision makers within their organisations. From the questionnaire, findings showed that the actions of these leaders would have directly affected the success or failure of organisations during the pandemic. Given that these key persons were the respondents for this research, this would have therefore lent to the trustworthiness of the research and to its enhanced reliability and validity. These findings are consistent with the literature review in Chapter Two, where persons in key leadership positions have the responsibility of leading their organisations to successful outcomes, especially during turbulent periods. Wu et al. (2021) commented that leadership actions during turbulent periods can bring about exceptional impacts upon businesses and their internal and external stakeholders. The world is often plagued with turbulent situations that demand leaders who possess knowledge and experience in order to effectively deal with these situations.

On the other hand, the research's results and conclusions would have been adversely affected due to systematic errors if the responses that were received from these participants were untruthful. Nevertheless, the benefit of the doubt was given that the responses provided

by these participants were truthful. In order to validate the responses of participants, the mixed methodology was employed where responses from both the qualitative and quantitative techniques were compared for consistency. Further, this data was triangulated with secondary data to corroborate the responses from participants. To add to the validity of the data, participants were fully briefed of the research and explanations given for any questions that arose.

Based on the conceptual framework as presented in Figure 2.3 in Chapter Two, there were other factors that affected business sustainability. These included economic, legal, political, cultural, and social factors. There may also be other factors that were not captured in the conceptual framework of this research. However, for the purpose of this research, it was assumed that these variables were controlled and had no impact on the business sustainability of organisations following the turbulent period of the Covid-19 pandemic. The research therefore focused on the actions of leaders during the period of the Covid-19 pandemic and the subsequent benefits that accrued to these organisations in the post pandemic period.

From the 384 participants, it was found that the majority were males (70%). This could be explained by the fact that males have historically held leadership positions, more than females (Tiwari et al., 2018). Nevertheless, there was not expected to be any bias in the results of the questionnaire, as there was still a substantial number of female participants (30%) in the research. In fact, the diversity of both genders enriched the data for the research and provided for a more comprehensive conclusion. Based on analysing the data, there was no significant action undertaken by a woman leader that was different to their male counterparts. Notably, the actions of both genders were very similar and consistent across industries. It can therefore be concluded based on the findings of the research that gender did not significantly influence the choice of action that led to the attainment of business sustainability in the post Covid-19 pandemic period.

The majority of participants of this research fell within the age bracket of 56 to 65 years, with 59.9% of the participants possessing more than 15 years working experience within their particular organisation and 80.2% having up to ten years' experience in their current job position. The significant experience of these participants in their places of employment was expected to lend rich data towards this research. By convention, the experience of the participants in their respective places of employment were expected, given that it is usual for persons of this age category to hold senior positions within organisations and to have many years of work experience. This is in support of the work of AlKnawy (2018) who stated, "When organisations encounter a crisis, the most senior executives are at the spotlight and have responsibility to lead the organisation to safe grounds" (p. 1). Supporting, van Gastel (2025) noted that older managers have more experience and institutional knowledge and are better able to lead organisations than their younger compatriots.

Further, 59.9% of participants held a post graduate qualification. Based on a crosstabulation between 'Educational Level' and 'Utilisation of Organisational Re-engineering during the Covid-19 Pandemic', there was a 'significant relationship' between these two variables. The p value was 15.532, $df = 1$, and the α value was 0.001. This signified that there was a 'significant relationship' between these two variables. The results from the questionnaire therefore indicated that educational levels played a key role in the usage and implementation of organisational re-engineering within organisations. Based on the findings, it can be concluded that the possession of advanced educational levels was responsible for leaders taking a more structured approach to dealing with the impacts of the Covid-19 pandemic. While a wide range of actions were undertaken across the board by leaders, the more highly educated leaders used organisational re-engineering actions, which subsequently led to the sustainability of their organisations in the post Covid-19 pandemic period. It can therefore be concluded that the variables age, years in particular organisation or years in current job position and

educational levels do influence the actions undertaken by leaders during turbulent periods and hence will have a significant impact and benefit to organisations in times of crisis.

The findings of the research found that all the sampled companies were corporations within Trinidad and Tobago, with the majority being nationals and limited liability companies. There was also a variation of the types of businesses that were sampled. Of particular note, all sampled companies were affected by the Covid-19 pandemic. This finding is consistent with Sahu (2020), who noted that the Covid-19 pandemic can be considered as one of the most turbulent periods in recent history that affected all organisations worldwide. Given that all the sampled organisations were corporations within Trinidad and Tobago and were of different business types, this allowed for a thorough understanding of the actions undertaken by leaders using a case study approach. This lent itself to the application of the implications, recommendations, and conclusions of this research to other and future turbulent periods.

The geographical spread of these companies was mainly from the Caroni, St George East, and St George West districts. This is due to the districts of Caroni, St. George East and St. George West being the most commercialised, industrialised and densely populated in Trinidad and Tobago. Further, there was an equal distribution of the impact on companies of small, medium, or large sizes, and also an equal distribution among the 16 stratified business sectors of companies that were affected by the Covid-19 pandemic. The impacts ranged from being moderate, major, and severe. However, the degree of impact varied arbitrarily with no correlation between size or industry, and post pandemic profitability or sustainability. It can therefore be concluded based on the findings of this research that the turbulence of the Covid-19 pandemic was widespread affecting all companies in all sectors of all sizes. This would facilitate the implications, recommendations, and conclusions of this research to be applied to organisations of all sizes and in all business sectors.

Overall, several demographic factors had a significant impact on the sustainability of organisations in the post-pandemic period. While gender did not play any significant role, age, educational levels, and years of experience are significant variables that affect leadership and the actions of leaders during periods of crisis. Additionally, the characteristics of the sampled organisations – all being nationals of Trinidad and Tobago, varied in business type, different business sectors, different business sizes and widespread geographic locations – all contributed to the application of the research’s implications, recommendations, and conclusions to organisations of all sizes and in all business sectors, and also, to other and future turbulent periods.

5.1.2 Research Question 1:

Research question 1 sought to discover “*What were the actions undertaken by organisations for the duration of the Covid-19 pandemic?*” On analysing the results of the research, it was found that all of participants were directly involved in the strategic and operational decision making within their respective companies, as almost every facet of their businesses was affected by the Covid-19 pandemic (Sahu, 2020). They were all therefore called upon to be involved in liaising and reporting to their board of directors, monitoring performance and targets, development of budgets, development of policies, assignment of duties, setting of strategic objectives for the organisation and development of their strategic plans. Similarly, the majority of participants were involved in the development of their organisation’s vision and mission.

All participant companies were affected by the pandemic and as such had to undertake specific actions to assist their organisations during the Covid-19 pandemic. These included changing their strategies, management rotation, reduction of staff working hours, staff rotation, change in operational hours, change of systems, change of policies, change of procedures, implementation of controls on expenses, reaching out to customers, utilisation of business

sustainability as a business objective, temporary closure, cancellation of supplier orders, utilisation of change management strategies, employees working from home, change of management team, staff re-organisation, staff cuts, change in the mode of delivery to online, change of organisational structure and strengthening of IT infrastructure, utilisation of project management techniques to implement changes and projects, delays in business investments, creation of new sources of revenue, diversification of operations, change in leadership, reduction of wages and salaries, reduction of product and service offerings, change of software and closure of branches. Details of the usage of these activities are highlighted in Figure 4.43.

The above multitude of actions utilised by leaders during this turbulent period compounded the view of (Duchek, 2020), where it was stated that the influences of success or failure of organisations during turbulent times have not been documented or explored in a systematic and holistic manner. This led to the research gap where this research has sought to address by providing guidance to organisational leaders on how to best implement organisational re-engineering and lead their organisations during turbulent periods using the concept of organisational re-engineering. Hammer and Champy (1993) noted that business process re-engineering involved “the fundamental rethinking and radical redesign of business process to achieve dramatic improvement in critical contemporary measures of performance such as cost, quality, service, and speed” (p. 32).

On analysis of the specific actions undertaken by leaders during the Covid-19 pandemic, many of these actions were elements of the five dimensions of organisational re-engineering under focus in this research. However, given the wide range of actions undertaken during this period, it is difficult to ascertain which specific or combination of actions resulted in benefits to the participant organisations in the post-pandemic period. To mitigate against this limitation, further analysis was done on the number of participants that used each action. This allowed for a better understanding of the respective dimensions of organisational re-

engineering and to ascertain whether these actions resulted in post-pandemic benefits. This facilitated a more structured approach in dealing with future turbulent periods.

It can therefore be concluded that given the wide array of actions undertaken by leaders during this period, there was no clear or structured manner by which leaders sought to deal with the turbulence of this period. This invariably was caused by the lack of any clearly defined or systematic methodology that could be used by leaders during turbulent periods. This reinforces the research gap as was identified in the literature review of this research. Previous researchers such as Duchek (2020), Boiral et al. (2021), Balasubramanian and Fernandes (2022), Megahed and Hassan (2022) all agreed that there was no systematic approach towards using organisational re-engineering or with leaders managing during turbulent periods. These actions used by the leaders during this crisis period will next be later analysed for how or if they affected the financial performance of organisations throughout and after the Covid-19 pandemic and also for being a dimension of organisational re-engineering.

5.1.3 Research Question 2:

The second research question of this research is *“How have the actions of leaders during the Covid-19 pandemic affected the financial performance of organisations throughout and after the Covid-19 pandemic?”* All participants indicated that the actions that they undertook during the pandemic helped to alleviate the problems caused by the Covid-19 pandemic and that there was no need for any additional actions during this period. We can therefore conclude that the respective actions were sufficient for relieving the associated turbulence during the Covid-19 period. Unfortunately, the research was unable to capture data from companies that did not survive the pandemic era and thus it cannot be determined exactly as to what actions were undertaken by these closed organisations that resulted in their demise.

Nevertheless, it can arguably be concluded that companies that did not use the actions that surfaced in research question 1, inevitably failed and subsequently closed.

The data also revealed that all the surveyed organisations had a decline in their profitability in the Covid-19 period, with all of them having a comparative increase in profitability in the post Covid-19 period. This finding was supported in the Literature Review that was conducted in Chapter Two. Additionally, 44% of the organisations indicated that their post Covid-19 pandemic profitability increased when compared to pre-pandemic profitability. However, 56% indicated that their post Covid-19 pandemic profitability decreased when compared to pre-pandemic profitability. It can thus be concluded that the actions that were used by organisations during the pandemic had varying degrees of success, given that some organisations had surpassed their pre-pandemic profitability, while some did not. This view was supported by (Megahed & Hassan, 2022) and (Appiah et al., 2022) when they postulated that there was no study that dealt with a specific set of actions or an integrated approach that leaders could successfully utilise to manage any type or size of organisation throughout the Covid-19 pandemic or through any crisis period.

The data revealed several reasons for increases in profitability in the post Covid-19 pandemic period. Noteworthy, 12.5% or 48 organisations indicated that they focused on niche markets and changed their leadership respectively. Also, 96 organisations or 25% of organisations responded that they revised their strategic plan and changed their supply chain, whilst 120 or 31.3% of organisations indicated that they diversified their business. Furthermore, 144 or 37.5% of participating companies indicated that they closed unprofitable branches whilst 168 or 43.8% of participants contracted their business. 216 or 56.3% of participants indicated that they revised budgets, concentrated on profitable product lines, and changed their leadership style. 264 or 68.8% of organisations restructured human resources whilst 288 or 75% implemented project management techniques and changed the mode of

delivery of products and services respectively. More than 75% of participants changed strategies, change strategic, operational and tactical operations, implement improved systems, processes and policies, utilised change management techniques and implemented information technology infrastructure. Business leaders all indicated that these actions helped their businesses to recover and increase profitability post the Covid-19 pandemic.

Of particular note, some of these actions are directly related to the dimensions of organisational re-engineering. This would be examined in research question 3. Research conducted by (Al-Basal et al., 2021) on a wide cross section of different industries found that the implementation of organisational re-engineering reduced production costs by reducing operational and activity costs and by minimising non-value-adding activities and processes by the redesign of processes, flowcharts, and distribution for production. This would have thus increased profitability. Chen et al. (2016) noted that the implementation of organisational re-engineering helps organisations to meet their objectives, which consequently leads to increased efficiencies and effectiveness and reductions in overhead costs. Business sustainability can be measured by improvements in revenue, cost, quality, service, speed, competitiveness, and performance (Bayomy et al., 2021; Hammer & Champy, 1993).

It can thus be concluded that actions undertaken by leaders during the Covid-19 pandemic positively impacted their organisations and resulted in an increase in profitability in the post-pandemic period. This conclusion is consistent with the findings of this research and is supportive of the foundational theories that were examined in the Literature Review. However, there may have been external factors such as economic, legal, political, cultural, and social environments that may have positively impacted the organisations in the post-pandemic period. These factors were considered as controlled variables in the research. This lent opportunity for further research where the impact of these controlled variables could be assessed.

5.1.4 Research Question 3:

The third research question for this research was “*How are the actions of organisations that successfully managed the Covid-19 pandemic aligned to dimensions of organisational re-engineering?*” From the data obtained, many activities were undertaken by leaders during the period of the Covid-19 pandemic that resulted in improved financial performance following the period of the Covid-19 pandemic. However, leaders practised these actions with little to no structured approach to dealing with the turbulence created by the Covid-19 pandemic. This is evidenced again in Figure 4.52 where leaders held varying perspectives on the concept of organisational re-engineering.

The findings found that the actions undertaken by leaders could have been sub-divided into strategic, operational and tactical decision-making actions. These were consistent with transformational, transactional, and adaptive leadership styles, which when all taken together reinforced the concept of the Full Range Leadership Theory. It built on the body of knowledge of using leadership at different functional levels throughout the organisation for the successful implementation of organisational re-engineering for the attainment of business sustainability.

Based on cross tabulating leadership variables to business sustainability, it was found that strategic, operational and tactical decision-making activities were instrumental actions that significantly impacted the post Covid-19 pandemic’s sustainability positively. This is in alignment with the conceptual framework of this research where leadership was a mediating variable in the achievement of business sustainability. These findings were consistent with (Nkurunziza et al., 2019) who found leadership to be the foremost impetus for organisational re-engineering advancements. According to Wisittigars and Siengthai (2019), crisis, dynamic and unpredictable conditions necessitate leadership with particular skills and traits to carry organisations successfully through these scenarios.

It can therefore be concluded that the strategic, operational and tactical actions undertaken by leaders during the period of the Covid-19 pandemic were in fact dimensions of organisational re-engineering. These were key activities that must be undertaken as a leadership dimension. These contributed towards the successful implementation of the concept of organisational re-engineering for the attainment of business sustainability during turbulent periods. These findings and conclusions built on the existing body of research by defining a key aspect of leadership that was necessary for the successful implementation of organisational re-engineering for the attainment of business sustainability. This supports the first alternative hypothesis of this research:

H1: Leadership strategic, operational and tactical decision-making drives the relationship between the implementation of organisational re-engineering and business sustainability during turbulent periods.

The views of Nkurunziza et al. (2019) are supported by Petrović et al. (2020) who stated, “Applying the concept of reengineering is a very complex process where people need to have a good manager with authority and knowledge of the job he is doing” (p. 143). The findings of the research reinforced this statement as the majority of participants in this research (80.2%) had up to 10 years of experience in their current job position and 59.9% of them held a postgraduate university degree as their highest level of educational qualification. Additionally, four (4) job positions were unearthed for job title. These were: Director, Chief Executive Officer, Senior Manager and Owner. This again is supportive of the literature review as persons in these positions were expected to be persons “with authority and knowledge of the job” (Nkurunziza et al., 2019).

As noted previously, several actions were undertaken by organisations during the Covid-19 pandemic. Nkomo and Marnewick (2021) iterated that project management was critical to achieving organisational change. Specifically, as noted in Table 4.12 and Figure 4.43,

63.5% of participants indicated that their organisation utilised project management techniques to implement changes and projects during the Covid-19 pandemic.

Supporting, based on the data from Figure 4.55 and Table 4.13, the implementation of project management techniques positively impacted 288 out of the 384 surveyed organisations (75%) and approximately two thirds of the surveyed organisations that used project management as a dimension of organisational re-engineering had a positive impact on their post pandemic sustainability. Business leaders can apply project management techniques for practice in future turbulent periods in order to achieve business sustainability.

However, the approaches adopted by some leaders in implementing their strategies may not have followed the five structured stages of the project management life cycle – initiation, planning, execution, monitoring and controlling, and closing. This would have hindered the effectiveness of successfully implementing their strategies and thus preventing the full benefit to their organisations. This is in itself one of the reasons for failure of organisational re-engineering (Fetais et al., 2022b). Nevertheless, the strategy of using project management practices brought some level of sustainability and contributed to the post pandemic profitability of organisations.

The use of project management practices contributed towards the successful implementation of the concept of organisational re-engineering and did in fact contribute towards business sustainability in the post Covid-19 pandemic period. Project management practices can therefore be considered as a key moderating variable in the conceptual framework of this research for utilising organisational re-engineering to achieve business sustainability during turbulent periods.

It can therefore be concluded that the use of project management practices during the period of the Covid-19 pandemic resulted in positive benefits for the majority of organisations. A deeper analysis of the actions undertaken by leaders during the Covid-19 pandemic period

revealed that all the actions that were undertaken necessitated project management practices for their respective successful implementation. In fact, all leaders indicated that the actions that they undertook contributed to the sustainability of their businesses in the post pandemic period. This was attributable to the best use and management of available resources during this turbulent period to produce effective and successful outcomes. Had project management practices not been used, then some of the organisations would not have been able to achieve sustainability in the post Covid-19 pandemic period. This view is supported by Packendorff (1995) who iterated that project management is an essential tool for aiding with the advancement of organisational re-engineering and for the attainment of business sustainability. Furthermore, Bayomy et al. (2021) noted that effective project management eliminates the associated implementation problems of organisational re-engineering which then results in business sustainability. Project management practices facilitated the best use and management of available resources with structured planning, continuous monitoring and evaluation, and timely feedback to allow for the successful implementation of the organisational re-engineering strategies. These findings and conclusions built on the existing body of research and supported the fourth alternative hypothesis of this research:

H₁: The application of project management practices strengthens the relationship between organisational re-engineering and business sustainability.

The results of the research found that changes in organisational structure, staff re-organisation, staff cuts, work from home, a reduction in working hours and staff rotation all contributed to post pandemic sustainability. These are all facets of human resources management restructuring which is a dimension of organisational re-engineering restructuring. According to the research findings, whenever human resources management restructuring was used in the implementation of organisational re-engineering, there were positive outcomes and greater robustness for organisations (Azhar et al., 2013). However, there are sometimes

negative impacts upon employees who may have been forced to exit from their organisation or even receive salary cuts. Wang and Seifert (2017) commented:

Employees who had wage cuts or freezes (with 5 percent inflation rate) are significantly and negatively associated with their job satisfaction and organizational commitment, even when controlling for important variables such as perception of job insecurity and the degree of adverse impact caused by recession on the organization studied. That is to say, facing the same perception of job loss, those who experienced pay reductions are significantly unhappier and less committed than those who had pay rises. (p. 935)

Chopra (2020) reinforced this opinion stating that there is a positive correlation existing amongst the variables of good HR practices and business performance. To further support this view, Zhiqiang et al. (2021) espoused that “organizational investment in human resource practices is essential to gain, sustain, and improve the skills of employees to enhance productivity and efficiency” (p. 1). The opinions of these scholars corresponded to the findings of the research where it was found that 68.8% of participants noted that ‘restructure of human resources’ as being one of the reasons for post pandemic profitability. Human resources management was a moderating variable that strengthened the relationship in the conceptual framework between the implementation of organisational re-engineering and business sustainability during turbulent periods. Based on the findings, leaders can effectively use human resources management restructuring practices for practice and usage in future crisis periods to achieve business sustainability.

The management of human resources allowed the attainment of the critical mass of employees for effectively and efficiently performing the required functions and adding value to the organization during turbulent periods. This has its foundation on the theoretical framework of the Human Capital Theory where employees are not just labour costs. They are strategic resources that contribute to long-term organisational success. These findings are

consistent with the literature review and built on the body of knowledge by defining and adding human resource management restructuring as a moderating variable in the conceptual framework, allowing for the successful implementation of organisational re-engineering for attaining business sustainability.

It can therefore be concluded that human resources management restructuring was in fact a significant contributor to post pandemic profitability and the sustainability of organisations. The streamlining of the human resources within an organisation in turbulent periods is key to achieving sustainability. Often, human resources are not effectively deployed and it is necessary to review all processes and procedures within organisations to determine whether 'value' is being optimised. This often necessitates re-designing processes and procedures, staff training, staff re-deployment and staff cuts in order to obtain the critical mass of employees to effectively and efficiently perform the required functions and add value to the organisation. During the pandemic, leaders adopted a number of human resources measures to ensure the continuity and sustainability of their organisations. These measures included staff rotations, work from home and staff cuts. This view is supported by Asriati et al. (2022) who noted that a competitive advantage is gained when human resources restructuring practices are used to aid with the implementation of an organisation's operating strategy. The findings and conclusion of this research built on the existing body of research and supports the alternative hypothesis:

H₁: *Human resources management restructuring is a necessary component to achieve business sustainability during turbulent periods.*

The results of the research found that 100% of participants noted that information technology infrastructure was one of the reasons for their increased profitability post the Covid-19 pandemic. This factor was the most prevalent factor provided by respondents for their increased profitability post the Covid-19 pandemic. Further, 72.7% of respondents signalled

that they had strengthened their information technology infrastructure during the Covid-19 pandemic, while 279 out of the 384 participants stated that information technology was one of the reasons for their business sustainability and profitability in the post Covid-19 pandemic. It must however be noted that there are many interpretations of what is information technology. 78.8% of respondents noted that ‘work from home,’ 18.2% of respondents noted ‘change in software,’ 72.7% of respondents noted ‘change mode of delivery to online’ and 100% of respondents noted “change in systems, policies and processes’ as the reasons for a positive impact in their post pandemic sustainability. Different leaders would have categorised information technology infrastructure and adaptations in different ways and hence would have evaluated and employed varying information technology strategies. Nevertheless, information technology infrastructure and adaptations were found to be the most used dimension of organisational re-engineering for the achievement of business sustainability during crisis periods. These findings were consistent with the literature review as presented in Chapter Two.

It can therefore be concluded that information technology infrastructure and adaptations as a dimension of organisational re-engineering is fundamental to restructuring organisations (Khashman, 2019), and was an important moderating variable for practice and future crisis periods. This view was supported by many scholars who all agreed that the integration of information technology systems was crucial for improving and increasing cost and competitiveness, efficiency and effectiveness which then led to successful organisational re-engineering (Larsen, 2003). Hasanah et al. (2022) commented that:

In the business context, the internet has a transformational impact that creates a new paradigm in business, in the form of digital marketing or internet marketing. The term internalization refers to the process by which a company engages in electronic business activities (e-commerce or e-business), particularly by utilizing the internet as a medium, market, and supporting infrastructure. (p. 168)

The findings of this research have built on the existing body of research. According to Love et al. (1996, as cited in Ahmed et al., 1995), information technology is an “innovative agent that enables new and different alternatives to organising and operating business enterprises” (p. 1). It allowed the restructure of organisations in turbulent periods to meet the requirements of the dynamic environment. During the Covid-19 pandemic, leaders effectively used information technology to facilitate work from home and business continuity. They adopted strategies for working at home and communication through platforms such as Google Meet, Zoom, Skype, Webex and Teams. They also utilized payment platforms and e-commerce such as PayPal, Apple Pay, Google Pay, End Cash, Sure Pay and Bill Express to allow online payments and business continuity. This view is supported by Grover et al. (1998) when he postulated that “IT will cause process change which can lead to higher productivity” (p. 143). The use of information technology is not singular to any one industry but its application is widespread and was used in all industries during the turbulent period of the Covid-19 pandemic. Flanagan and Marsh (2000) remarked that “Information technology (IT) has been widely applied across many economic sectors in order to increase competitiveness and reduce costs” (p. 423). Attaran (2003) placed great importance on the utilisation of information technology during the implementation of organisational re-engineering highlighting that process redesign without using information technology was likely to not succeed. Zuhaira and Ahmad (2021) supported this view when they identified information technology as one of the key elements necessary for business process management. The findings and conclusion of this research supported the alternative hypothesis:

H₁: Information technology infrastructure and adaptations are necessary to achieve business sustainability during turbulent periods.

Based on the results of the research, it was found that 81.8% of participants indicated that the ‘Utilisation of Change Management Techniques’ was one of the reasons for their

organisation being on a sustainable growth path. Additionally, 360 out of the 384 participants indicated that the 'Utilisation of Change Management Techniques' was one of the reasons for increased profitability in the post pandemic period. Added to this, there were several other actions undertaken by participants that strengthens the relationship between the implementation of organisation re-engineering and attainment of business sustainability. These included change of management team, change of mode of delivery, change of organisational structure, and change of strategies, systems, policies, and procedures. It is therefore evident that systems and process improvements as a facet of change management was an important element for strengthening the relationship between the implementation of organisational re-engineering and the attainment of business sustainability.

In the process of adapting to the turbulence of the Covid-19 pandemic and in the implementation of various actions during this period, it was necessary that leaders utilised systems and process improvements as a facet of change management to effectively transition the various changes to their organisations. Change management addresses the interrelationships of the various dimensions of an organisation (Cao et al., 2001) to ensure success. Senior (2002) noted that the process of organisational change was continuous, and it was necessary to harmonise the organisation's strategy, processes, people, and structure. Accordingly, Idogawa et al. (2023) postulated that change management was a fundamental instrument for the achievement of flexibility, change, novelty, and advantage for organisations.

Managers would have adopted change management techniques, but not in a structured way. Ideally, according to Kurt Lewin, the change model should involve three stages. These stages include unfreeze, change, and refreeze. Nevertheless, the adoption of systems and process improvements as a facet of change management led to successful outcomes in the post Covid-19 pandemic period. Systems and process improvements as a facet of change management has been proven to be a moderating variable in the conceptual framework between

the implementation of organisational re-engineering and business sustainability in turbulent periods. The findings of the research built on an already established body of knowledge for change management and will be applicable for practice in future crisis situations. The findings and conclusion of this research therefore supported the alternative hypothesis:

H₁: Systems and process improvement, as a facet of change management, positively moderates the relationship between organisational re-engineering and business sustainability.

Based on the findings of the research, it can reasonably be concluded that some of the actions undertaken by organisational leaders during the pandemic were aligned to five dimensions of organisational re-engineering. These dimensions are leadership, strategic, operational and tactical decision making, as a mediating variable, and information technology infrastructure and adaptations, human resources restructuring, project management practices, and change management systems and process improvement as moderating variables. The findings of the research also confirmed five related alternative hypotheses of the research.

5.1.5 Research Question 4:

The fourth research question for this research was “*What are the benefits of organisational re-engineering to business sustainability during turbulent periods?*”. The findings of the research found that all participating organisations had recovered from the Covid-19 pandemic and they all also benefited from the actions that had been undertaken during the Covid-19 pandemic.

The findings of the research indicated a range of benefits that were derived from the strategies implemented by organisational leaders during the Covid-19 pandemic. The major benefits were improved customer service, greater agility, increased efficiency, poised for future growth, more robust, increased profitability and growth, decreased cost, and increased revenue.

In fact, business sustainability can be measured by improvements in revenue, cost, quality, service, speed, competitiveness, and performance (Bayomy et al., 2021; Hammer & Champy, 1993). Contributing to these benefits were several actions that were undertaken by leaders during the Covid-19 pandemic. 100% of organisations indicated that they were now on a sustainable path due to their actions undertaken during the Covid-19 pandemic.

Noteworthy of mention, however, was that specific organisational re-engineering dimensions were part of these actions and resulted in the above-mentioned benefits in the period after the Covid-19 when compared to the Covid-19 pandemic period. This was detailed above in relation to research question 3. The findings of the research are consistent with the literature review presented in Chapter Two. Fetais et al. (2022a) postulated that the adoption of organisational re-engineering reshapes an organisation and results in improved quality of goods and services, cost reductions, increased competitiveness and efficiencies and maintenance of a competitive advantage. Furthermore, Alhawamdeh (2021) alluded that the execution of organisational re-engineering in the face of intense competition increases competitiveness. In fact when cross tabulations were done between “Organisations that Utilised Organisational Re-engineering during the Pandemic’ and ‘Benefit from strategies implemented during the Covid-19 Pandemic’, significant relationships and strong associations were found in the areas of increased revenue (Table 4.24), decreased cost (Table 4.25), increased profitability (Table 4.26), poised for future growth (Table 4.27), achieved growth (Table 4.28), greater agility (Table 4.29), improved customer service (Table 4.30), increased efficiency (Table 4.31) and more robust (Table 4.32).

Upon analysing the actions undertaken by leaders during the Covid-19 pandemic, it has been found that many of these actions related directly to the five dimensions of organisational re-engineering that are under the focus of this research.

The following Table 5.1 provides for a matching of the actions undertaken by leaders during the Covid-19 pandemic to one of the dimensions of organisational re-engineering: leadership, information technology, change management, project management, human resources management.

REASON	DIMENSION OF ORGANISATIONAL RE-ENGINEERING
Focus on niche market	Leadership; Information Technology; Change Management
Change of Leadership	Leadership; Change Management; Human Resources Management
Revision of Strategic Plan	Leadership; Information Technology; Change Management; Project Management; Human Resources Management
Change of Supply Chain	Leadership; Information Technology; Change Management Project Management; Human Resources Management
Diversification of business	Leadership; Information Technology; Change Management; Project Management; Human Resources Management
Closure of unprofitable branches	Leadership; Information Technology; Change Management; Project Management; Human Resources Management
Contraction of business	Leadership; Information Technology; Change Management; Project Management; Human Resources Management
Change of business model	Leadership; Information Technology; Change Management; Project Management; Human Resources Management
Revision of Budgets	Leadership; Information Technology; Change Management; Project Management; Human Resources Management
Concentration on profitable product lines	Leadership; Information Technology; Change Management; Project Management; Human Resources Management
Change of leadership style	Leadership; Change Management; Human Resources Management
Restructure of Human Resources	Leadership; Information Technology; Change Management Project Management; Human Resources Management
Implementation of Project Management techniques	Leadership; Information Technology; Change Management; Project Management
Change of mode of delivery of products and services	Leadership; Information Technology; Change Management; Project Management; Human Resources Management
Change in strategy	Leadership; Information Technology; Change Management; Project Management; Human Resources Management
Change of strategic, operational and tactical operations	Leadership; Information Technology; Change Management; Project Management; Human Resources Management
Implementation of improved systems, processes and policies	Leadership; Information Technology; Change Management; Project Management; Human Resources Management
Utilization of Change Management techniques	Leadership; Information Technology; Change Management; Project Management; Human Resources Management
Information Technology infrastructure	Leadership, Information Technology; Change Management; Project Management; Human Resources Management

Table 5.1. *Matching of the actions undertaken by leaders during the Covid-19 Pandemic to one of the dimensions of Organisational Re-engineering.*

It is therefore evident that the actions undertaken by leaders during the Covid-19 pandemic were in fact dimensions of organisational re-engineering. Therefore, the benefits of the specific implementation of organisational re-engineering dimensions contributed towards

achieving business sustainability during turbulent times. These actions can be applied for practice and for future crisis positions.

According to Li and Nazif (2021), organisational re-engineering reviews systems, policies, and organisational structures to raise performance levels and optimize organisational productivity. Eke and Achilike (2014) postulated that organisational re-engineering allowed organisations to look at their overall performance and implement changes, processes, and strategies for becoming cost leaders. It combined changes in job designs, management and leadership styles, processes, technology, and systems. In a study conducted by Budiman et al. (2021), success was found in using organisational re-engineering during the Covid-19 pandemic to support the sustainability of its sales commodities. The findings and conclusion of this research supported the alternative hypothesis and built on the existing body of research:

H₁: Organisational re-engineering leads to the sustainability of organisations.

5.2 Contribution to Body of Knowledge/ Innovation

The problem that this research sought to address was the challenge in the effective implementation of organisational re-engineering for the achievement of business sustainability during crisis periods (Duchek, 2020). Leaders are faced with a host of uncertainties during turbulent periods (Bottan et al., 2020) and it was generally found that several leaders have difficulty in effectively implementing organisational re-engineering during turbulent periods. The underlying problem was that no holistic model existed that covered how to successfully implement organisational re-engineering for business sustainability during turbulent periods.

This research dealt with this problem, filled the research gap, and contributed towards the body of knowledge surrounding the implementation of organisational re-engineering by providing operational steps, implementation strategies, and measurable action points for each of the five definitive dimensions that must be undertaken during the organisational re-

engineering process for its successful implementation. These dimensions were leadership, human resources management, project management, information technology and change management. By utilising the suggested strategies surrounding these dimensions, the uncertainties and confusion surrounding the concept and implementation of organisational re-engineering would be eliminated.

Further, the usage of these five dimensions provided a defined framework for effectively implementing organisational re-engineering during turbulent periods. The advantages of this implementation would sensitise leaders to the benefits of applying organisational re-engineering techniques to their organisation. Additionally, it filled the research gap of this research surrounding the misunderstandings and lack of clarity regarding the usage and implementation of organisational re-engineering (Novikov et al., 2016). Leaders are now aware of how they can use and successfully implement this tool for leading their organisations to sustainability during turbulent periods. Leaders can also use this knowledge to better prepare and steer their organisations into the right direction so that their organisations would survive turbulent times.

5.3 Recommendations for Application

The concept of organisational re-engineering is not new and has historically had mixed results. The major reason for its failure has more to do with the confusion surrounding its implementation rather than with the concept itself (Teng et al., 1998; Fetais et al., 2022b). Accordingly, the concept of implementing organisational re-engineering should be fully understood, and explored as a viable option for utilization in periods of turbulence.

It has generally been found that several leaders have difficulty in effectively implementing organisational re-engineering and leading their organisations to sustainability during crisis periods (Duchek, 2020). The implementation and use of organisational re-

engineering provided a valuable framework for leaders to lead their organisations during these periods. Lokhande et al. (2021) postulated that the concept of the approach of organisational re-engineering was the transformation of a system into a new or modified form with benefits of positive effects on performance. This view is supported by Evstafyeva et al. (2018), who stated “a targeted implementation of the business reengineering project gives the manager the opportunity to directly affect the company’s value factors” (p. 133).

As evident in the survey results, organisational leaders adopted a wide range of activities to cope with the effects of the Covid-19 pandemic. While some of the actions were dimensions of organisational re-engineering, it is apparent that there was no systematic methodology of managing their businesses during this crisis period. This may have resulted in many business failures.

On analysing the actions taken by organisational leaders during the Covid-19 pandemic, it was found that leaders used many different actions in an effort at curbing the impacts of the Covid-19 pandemic on their organisations. A deeper analysis of these actions revealed that many of these actions were related to a dimension of organisational re-engineering. Had leaders adopted a more systematic approach in dealing with the crisis brought about by the Covid-19 pandemic, there may have been greater derived benefits. Organisational re-engineering can bring substantial benefits to organisations, but must be done with proper implementation (Fetais et al., 2022b). The organisations in this research did benefit from the actions that they undertook during the Covid-19 pandemic as many of these actions were in fact elements of the different dimensions of organisational re-engineering.

As noted in Table 5.1, the majority of the actions performed by leaders during the period of the Covid-19 pandemic can be grouped into one of the five dimensions of organisational re-engineering that were earlier explored in this research - leadership, information technology, change management, project management and human resources management. Added to this,

the research findings showed that the majority of organisations indicated that they had benefitted from the implementation of these actions.

In analysing the other demographic factors, it was found that educational levels, age and experience played key roles in the usage of organisational re-engineering within organisations. The findings revealed that the possession of advanced educational levels, mature age and experienced leaders were correlated to leaders taking a more structured approach to dealing with the impacts of the Covid-19 pandemic. These leaders were better able to use organisational re-engineering as an effective tool for manoeuvring their businesses through the pandemic period. These leaders were found to be more knowledgeable in the use of organisational re-engineering and therefore were able to better apply the methodology for this concept which led to organisational benefits and sustainability. These findings were supported by Wisittigars and Siengthai (2019) who iterated that crisis, dynamic and unpredictable conditions necessitate leadership with particular skills and traits to carry organisations successfully through these scenarios. These findings are consistent with (Nkurunziza et al., 2019) who found leadership to be the foremost impetus for organisational re-engineering advancements. Of particular note, 'Change in the Management Team' and 'Management Rotation' were instrumental activities that significantly impacted post pandemic sustainability positively. It is therefore recommended that in order to achieve sustainability during turbulent periods that organisations consider changes in their management team and management rotation and hire mature leaders with higher levels of education and experience.

Additionally, Petrović et al. (2020) stated, "Applying the concept of reengineering is a very complex process where people need to have a good manager with authority and knowledge of the job he is doing" (p. 144). The findings of the research supported this statement as the majority of participants in this research (80.2%) had up to 10 years of experience in their current job position and 59.9% of them held a postgraduate university

degree as their highest level of educational qualification. It is therefore necessary, that apart from selecting leaders with a high level of education, it is also necessary to select leaders who are familiar with the workings of the particular industry and who also have leadership experience.

The collected data revealed that there were no differences in results based on the gender of leadership. An analysis of the collected data did not reveal any significant action undertaken by a woman leader that was different to their male counterparts. It can therefore be recommended that organisations hire and retain leaders with the best experience and qualifications, and that gender should not have any role in the choice of leadership of an organisation. This can be achieved by explicitly identifying recruitment criteria as pertains to education, skills, experience, and age. Consideration should also be given for years of experience in their particular industry as well as track record of achievements. Leaders should be mature in age and have at least some level of post graduate training. New recruits should have a probationary period where their performance is assessed based on predetermined criteria and scoring sheets.

On further analysing the actions of leaders, it was noted that the actions that they undertook were not singular, but rather a combination of many different actions. This is in fact in keeping with the concept of organisational re-engineering where (Hammer & Champy, 1993) noted that business process reengineering involves fundamentally restructuring an organisation to achieve enhanced results. Ashayeri et al. (1998) reinforced this view stating that re-engineering requires thorough actions in order to transform an organisation. With this in mind, it is recommended that leaders examine all facets of their businesses during turbulent periods. All facets of organisations need to be redesigned in order to achieve organisational success. Al-Basal et al. (2021) noted organisational re-engineering necessitated the minimisation of non-value-adding activities and processes by the redesign of processes,

flowcharts and distribution for production. The failure of organisational re-engineering occurs when actions are taken in isolation of each other without any consideration that the business is in fact a system with interrelated parts. Actions that affect one sub-system without consideration for other sub-systems usually results in chaos. Leaders need to explore the synergies and interrelationships of all facets of their businesses to ensure that their actions positively impact the entire business entity as a whole. The interconnectivity between subsystems is critical and provides synergistic benefits to the entire system. “Actions taken at one time and in one subsystem have ripple effects in other systems and downstream over time” (Waldman, 2007). Leaders need to thoroughly examine all policies, processes, procedures, and workflows for inefficiencies and take the necessary steps to eliminate them. This involves providing clarity over the organisation’s vision and mission and rolling out SMART goals and objectives. This has to filter into setting milestones, key performance indicators, and timebound performance targets.

On examining the actions undertaken by leaders during the crisis period, it was found that all the actions that were undertaken necessitated project management techniques for their implementation. In fact, project management ranked the highest in the multivariate ranking of the five variable constructs in the research findings. This can be attributable to leaders’ utilisation of the most efficient use of scarce resources during this turbulent period to produce effective and successful outcomes. Packendorff (1995) noted that project management is an essential tool for aiding with the advancement of organisational re-engineering and for the attainment of business sustainability. It is therefore recommended that leaders embrace the use of project management techniques as part of their implementation of organisational re-engineering. This involves at the broadest level to follow the five steps of project management – initiation, planning, execution, monitoring and control, and closing. Leaders need to establish

charters, timelines and work breakdown structures, and monitoring mechanisms. Also, there has to be change control processes and alignment of team skills with goals.

According to the findings of the research, the streamlining of the human resources within an organisation in turbulent periods is key to achieving sustainability. Whenever human resources management is used in the implementation of organisational re-engineering, there are positive outcomes and greater robustness for organisations (Azhar et al., 2013). Chopra (2020) reinforced this opinion stating that there is a positive correlation amongst the variables of good HR practices and business performance. Often, human resources are not effectively deployed, and it is necessary to review all processes and procedures within organisations to determine whether 'value' is being optimised. This often necessitates re-designing processes and procedures, staff training, staff re-deployment and staff cuts in order to obtain the critical mass of employees to effectively and efficiently perform the required functions and add value to the organisation. At the strategic level, recruitment, onboarding procedures, training, and employee management must be in line with organisational objectives. In order to ensure the effectiveness of these strategies, there must be supportive policies, systems, communication, and culture. At the ground level, measurable action points should include key performance indicators over retention, turnover, and employee satisfaction.

The results of the research found that 100% of participants noted that information technology infrastructure was one of the reasons for their increased profitability post the Covid-19 pandemic. This factor was the most prevalent factor provided by respondents for their increased profitability post the Covid-19 pandemic. This dimension of organisational re-engineering is fundamental to restructuring organisations (Khashman, 2019). This view is supported by many scholars who all agreed that the integration of information technology systems was crucial for improving and increasing cost and competitiveness, efficiency and

effectiveness which then leads to successful implementation of organisational re-engineering (Larsen, 2003). Almutairi and Ghandour (2021) noted that:

The business environment can be unpredictable and unstable. In order to not only survive but also maintain their competitive advantage, organisations must be sustainable (able to operate long-term), resilient and adaptable. They need business solutions that will satisfy their needs and achieve their targets in a context of change over a long period. Most organisations invest heavily in enterprise systems (ESs) as a critical means to execute business processes, achieve goals, and increase competitiveness through the use of data and technology.

Attaran (2003) placed great importance on the utilisation of information technology during the implementation of organisational re-engineering highlighting that process redesign without using information technology was likely to not succeed. Gunasekaran and Nath (1997) commented that information technology is a driver for organisational re-engineering. It is necessary that information technology be considered in the organisational re-engineering process by the inclusion of technological advancements. It is important to note that information technology can be utilised as a framework to analyse the organisational re-engineering process, following which the processes can then be re-engineered. It is recommended that information technological support be provided through up to date and efficient hardware, software, security systems for automation and digitisation. This must be supported with key performance indicators surrounding uptime, response times, and cybersecurity enforcement.

In the process of adapting to the turbulence of the Covid-19 pandemic and in the implementation of various actions during this period, it was necessary that leaders utilised change management techniques to effectively transition the various changes to their organisations. Change management addresses the interrelationships of the various dimensions

of an organisation (Cao et al., 2001) to ensure success. Senior (2002) noted that the process of Organisational change was continuous, and it was necessary to harmonise the organisation's strategy, processes, people, and structure. It is recommended that change management is properly planned and executed, and is supported by communication, training, and support staff. Measurable actions points should include disruption times, stakeholder satisfaction, acceptance rates.

A further exploration of the actions of leaders indicated that all the organisations benefitted from the organisational re-engineering actions undertaken during the pandemic. The major benefits were improved customer service, greater agility, increased efficiency, poised for future growth, more robust, increased profitability and growth, decreased cost, and increased revenue. Apart from this, all organisations indicated that they now considered themselves to be on a pathway of continuous sustainability. Consequently, it can be concluded that the implementation of organisational re-engineering actions during turbulent periods leads to many benefits inclusive of increased profitability and business sustainability. Business sustainability can be measured by improvements in revenue, cost, quality, service, speed, competitiveness, and performance (Bayomy et al., 2021; Hammer & Champy, 1993). This is in keeping with the work of (Harika et al., 2021) who stated that re-engineering is expected to improve processes, enhance efficiency, provide cost savings, increase value, and create a sustainable competitive advantage. This is reinforced by (Chen et al., 2016) who noted that organisational re-engineering helps organisations to meet their objectives, which consequently leads to increased efficiencies and effectiveness and reductions in overhead costs. Gunasekaran and Nath (1997) noted that business process re-engineering is a key asset for leaders that can help to improve the performance of their organisations. It is top-down driven and executes fundamental changes over a period of time. The effectiveness of organisational re-engineering is based on three premises. These are "(i) a process, not product perspective, ii) cross-functional

co-ordination or integration, and iii) consistency between goals and improvement plans” (Gunasekaran & Nath, 1997, p. 93). This research thus exemplified the positive impact of organisational re-engineering during turbulent times (Njuguna & Wanjohi, 2021).

This research provided the benefits of implementing organisational re-engineering during turbulent periods and thus sensitized leaders of the imminent danger of not re-engineering during turbulent times (Zaboli et al., 2013). It filled the existing research gap of the misunderstandings and lack of clarity surrounding the implementation and usage of organisational re-engineering (Novikov et al., 2016) and provided the dimensions of organisational re-engineering that will assist leaders in the implementation, management, and operations of organisations during turbulent periods. The research thus lent assistance to organisations in implementing organisational re-engineering and manoeuvring their organisations during turbulent periods with the anticipation of positive organisational outcomes. Fetais et al. (2022a) postulated that the adoption of organisational re-engineering reshapes an organisation and results in improved quality of goods and services, cost reductions, increased competitiveness and efficiencies and maintenance of a competitive advantage.

5.4 Recommendations for Future Research

This research has provided a valuable roadmap for leaders in steering their businesses during turbulent periods. It has presented the key dimensions for the implementation of organisational re-engineering that leaders can utilise holistically in crisis periods (Denner et al., 2021) to take their businesses to sustainability. However, during the course of this research, certain matters arose that can be considered for future research in this area.

Of particular note, the recommendations and conclusion of this research were generalised (Varpio et al., 2021) based primarily on the actions undertaken by leaders during the Covid-19 pandemic. However, the soundness of the recommendations and conclusion could

have been enhanced if similar research was conducted (Sanip, 2020) in another turbulent period. This would have allowed for a deeper analysis of the actions undertaken by leaders for consistency and comparability, and for the determination of whether their actions can be generalised widely to other turbulent periods.

Further, the findings, recommendations and conclusions of the research are all based on actions of leaders taken from a set of sampled corporations within Trinidad and Tobago, with the majority being nationals and limited liability companies. It is not apparent whether leaders in other jurisdictions would have undertaken similar actions (Khanna et al., 2020) to the leaders in Trinidad and Tobago. While it may seem based on the literature review that most organisations suffered similar consequences during this turbulent period (Orru et al., 2021), it is unclear as to what specific actions were undertaken by leaders globally and outside of Trinidad and Tobago. It is therefore recommended that comparable research be conducted in another jurisdiction to ascertain if the actions of leaders were similar.

Additionally, many organisations have moved away from traditional organisational structures and have now adopted agile methodologies and flexible organisational structures (Gerster et al., 2020). These structures are expected to enhance resilience and adaptability which may result in the implementation of organisational re-engineering having a different impact on these organisations. There is therefore room for an exploration of organisational re-engineering in different organisational structures.

To compound this issue, world leaders around the world would have managed their countries differently during this period (Khanna et al., 2020). Added to this, third world countries like Trinidad and Tobago may have had to lead their businesses differently during this period when compared to first world countries (Dodds et al., 2020). This again detracts from the generalisation of the recommendations and conclusions of this research to all corporations around the world. It would therefore be in order for similar research to be

undertaken with a more diversified sample that spans countries from around the world with different levels of economic statuses.

Also, it is not known whether similar actions undertaken by leaders in one country had the same impact on organisations in another country (Dodds et al., 2020). In fact, it is unknown as to whether these actions may have even caused business closures. It is therefore necessary to conduct additional research on what factors may have caused permanent closure during this period. This information would be useful, as it would indicate whether some organisational re-engineering actions caused business failures or was the failure due to the poor implementation of organisational re-engineering. There also needs to be an exploration as to whether businesses came to their natural end of life (Abatecola, 2013) during the pandemic period, or was their closure triggered or even hastened during the Covid-19 pandemic (Denner, 2021).

The research was done primarily to explore the impact of organisational re-engineering on business sustainability during the turbulent periods. While this research found that organisational re-engineering had a positive impact on business sustainability in the post Covid-19 pandemic era, it may be necessary to test these findings in another turbulent period and ascertain whether similar findings are found (Sanip, 2020). Similar findings would reinforce the alternative hypotheses of this research, whereas different findings may necessitate rejecting the alternative hypotheses and formulating new ones or accepting the null hypotheses.

In the conduct of this research, it was assumed that the variables legal, economic, political, cultural and social factors (Tsai et al., 2013) would be kept controlled and did not have an impact on business sustainability. However, in reality, these factors may have a significant impact on the sustainability of organisations. It may therefore be necessary to explore the relationship of these factors for business sustainability.

The results of this research provided evidence where the adoption of organisational re-engineering during the Covid-19 pandemic period led to post pandemic profitability and

sustainability. However, it is uncertain as to whether this organisational success may only be relevant to the short term, or whether it would be sustained over the medium and long terms (Wu et al., 2017). It may therefore be prudent to undertake similar research in the future and ascertain whether the actions undertaken by leaders during the pandemic also led to medium and long-term profitability and sustainability.

It is therefore evident based on the above that there remain many unexplored and related areas to this research. To better comprehend the full extent of the impact of the use of organisational re-engineering during turbulent periods in leading to business sustainability, it may be necessary to conduct additional research. The results of those studies may impact the acceptance of the alternative hypotheses of this research.

5.5 Conclusions

This research explored dimensions of organisational re-engineering that will assist organisational leaders in successfully navigating their businesses during turbulent times. The research emphasized the importance of adopting organisational re-engineering for the sustainability of companies in Trinidad and Tobago during turbulent periods. The recent Covid-19 pandemic was used as a case study for investigating organisational re-engineering during a turbulent period and for addressing the research gap surrounding the uncertainty on the effective implementation of organisational re-engineering as identified by the literature review. The actions of organisational leaders during these periods were analysed to determine which actions brought success and sustainability to organisations during and after this turbulent period. This allowed for an in-depth comprehension of the complexity of the impact organisational re-engineering on organisations during a turbulent period.

This research was conducted to address the difficulty that leaders may have in effectively implementing organisational re-engineering and thus leading their organisations to

sustainability during crisis periods (Duchek, 2020). Leaders are faced with a host of uncertainties during turbulent periods (Bottan et al., 2020) and many do not possess the requisite knowhow to successfully implement organisational re-engineering and manoeuvre their businesses during these times (Duchek, 2020). This is evident by the high number of business closures during turbulent periods. It is therefore imperative that leaders adequately deal with these scenarios (Schoemaker et al., 2018) in order to attain sustainability during turbulent periods. If organisations are not responsibly steered, this can cause the closure of many organisations (Dwipriyoko, 2020).

This research was conducted using a mixed methodology (Natow, 2020) combining both quantitative and qualitative techniques (Queirós et al., 2017) for a sequential exploratory design (Teddlie & Tashakkori, 2003). The qualitative data provided an indication of relationship between concepts or variables while the quantitative research tested the various null hypotheses of the research. The use of this mixed methodology allowed convergence, corroboration, and correspondence of the results for filling and complementing any data and analysis gaps of each methodology (Greene et al., 1989). There was a continuous review and a comparison of the findings to existing literature research on organisational re-engineering.

The data was obtained from both primary and secondary data sources (Johnston, 2017). Primary sources included semi-structured interviews (Kallio et al., 2016) and closed-ended questionnaires (Zhou et al., 2017), while secondary sources included document reviews (Creswell, 2008), annual reports, newspaper clippings and media reports. The quantitative data was gathered from a sample taken from a wide cross-section of existing organisations in Trinidad and Tobago, using stratified multistage sampling (Etikan & Bala, 2017) and supported by simple random sampling (Noor et al., 2022). The qualitative sample and the secondary data samples were chosen using convenience sampling.

The collected data was evaluated using mathematical tools, content analysis and thematic analysis, inclusive of correlation, summaries, grouping, coding, and reporting. NVivo and SPSS software were used to assist with the analysis of the data. Data gathered from quantitative and qualitative techniques and the secondary data were triangulated against each other for increased validity and reliability of the research (Golafshani, 2003).

The entire research was conducted within ethical parameters, with all participants being respected and briefed both verbally and in writing regarding the purpose of the research. They all gave written permission prior to data collection. All collected data was coded to safeguard the identities of participants in the research and were locked away in a secure location. All research was performed in a systematic and efficient approach to warrant the reliability and validity of the research. The research designs provided a guided pathway for the research process.

The four research questions for this research were:

1. What were the actions undertaken by organisations for the duration of the Covid-19 pandemic?
2. How have the actions of leaders during the Covid-19 pandemic affected the financial performance of organisations throughout and after the Covid-19 pandemic?
3. How are the actions of organisations that successfully managed the Covid-19 pandemic aligned to dimensions of organisational re-engineering?
4. What are the benefits of organisational re-engineering to business sustainability during turbulent periods?

The research null hypotheses that were tested were:

1. **H₀:** Leadership strategic, operational and tactical decision-making does not drive the relationship between the implementation of organisational re-engineering and business sustainability during turbulent periods.

2. **H₀:** Information technology infrastructure and adaptations are not necessary to achieve business sustainability during turbulent periods.
3. **H₀:** Systems and process improvement, as a facet of change management, does not positively moderate the relationship between organisational re-engineering and business sustainability.
4. **H₀:** The application of project management practices does not strengthen the relationship between organisational re-engineering and business sustainability.
5. **H₀:** Human resources management restructuring is not a necessary component to achieve business sustainability during turbulent periods.
6. **H₀:** Organisational re-engineering does not lead to the sustainability of organisations.

During the initial stage of data collection using the semi-structure interviews, several common responses were found. The guiding principle for the conduct of the interviews was the attainment of saturation. This was achieved with the conduct of sixteen (16) interviews. The results of the findings from the semi-structured interviews and the review of secondary data sources were used to guide the preparation of the closed-ended questionnaire. The questionnaire was administered to three hundred and eighty-four (384) participants. The findings were categorised according to demographic data and by each research question.

5.5.1 Demographic Data:

The demographic findings provided data on experience, educational levels, age, and sex of the participants. All 384 participants met the criteria used for the selection of participants. The participants consisted of key decision makers within the organisations and comprised of Directors, Chief Executive Officers, Senior Managers and Owners. Given that

these persons held key influential positions within their organisations, their actions would have directly affected the success or failure of organisations during this turbulent period.

The findings found that 70% of the participants were males suggesting that males continue to hold the majority of leadership positions (Tiwari et al., 2018). However, the analysis of the data found that there was no significant action undertaken by a woman leader that was different to their male counterparts suggesting that gender did not significantly influence the choice of action that led to the attainment of business sustainability in the post Covid-19 pandemic period. Moran (1992) noted:

Social scientists have generally maintained that there are no differences in male and female leadership styles. The preponderance of social science research has found that there are no reliable differences between men and women who occupy leadership positions in organizations. (p. 481)

It can therefore be concluded that gender does not play any significant role in the leadership of organisations in turbulent periods.

Most participants fell within the age bracket of 56 to 65 years, possessed more than 15 years working experience and held up to ten years' experience in their current job position. These results were expected given that it is usual for persons of this age category to hold senior positions within organisations and to have many years of work experience. By convention, the experience of the participants in their respective places of employment were expected. This finding was also consistent with the literature review. Wisittigars and Siengthai (2019) iterated that crisis, dynamic and unpredictable conditions necessitate leadership with skills and traits to carry organisations successfully through these scenarios.

Most participants held a post graduate qualification. A crosstabulation between 'Educational Level' and 'Utilisation of Organisational Re-engineering during the Covid-19 Pandemic', revealed a 'significant relationship' between these two variables, suggesting that

the possession of advanced educational levels was responsible for leaders taking a more structured approach to dealing with the impacts of the Covid-19 pandemic. Cole and Snider (2019) commented that current and future leaders need to have a solid educational foundation, especially management related in order to effectively lead their organisations to a sustainable pathway. They further stated that expertise in supply chain sustainability plays a crucial role in them becoming effective leaders. Additionally, Cole and Snider recommended the importance of gender equality and the need for leaders to have confidence in their abilities in order to lead their organisation through turbulent periods. It can therefore be concluded that the variables age, years in particular organisation or years in current job position and educational levels in fact influenced the actions undertaken by leaders during the pandemic and hence significantly impacted to the benefit of organisations in the post pandemic period.

The findings of the research found that all sampled companies were affected by the Covid-19 pandemic. This finding is consistent with Sahu (2020), who noted that the Covid-19 pandemic affected all organisations worldwide. Further, there was an equal distribution of the impact on companies of small, medium, or large sizes, and also an equal distribution among the 16 stratified business sectors of companies that were affected by the Covid-19 pandemic. It can therefore be concluded that the turbulence of the Covid-19 pandemic was widespread affecting all companies in all sectors of all sizes.

5.5.2 Research Question 1:

Research question 1 sought to discover “*What were the actions undertaken by organisations for the duration of the Covid-19 pandemic?*” On analysing the results of the research, it was found that all of participants were involved in the strategic and operational decision making within their respective companies. Leaders undertook a wide range of actions during this period in an attempt to steer their organisations to success during the Covid-19 pandemic. This compounds the view of (Duchek, 2020), where it was stated that the influences

of success or failure of organisations during turbulent times have not been documented or explored in a systematic and holistic manner. It can therefore be concluded that given the wide array of actions undertaken by leaders during this period suggests that there was no clear or structured manner by which leaders sought to deal with the turbulence of this period. This invariably was caused by the lack of any clearly defined or systematic methodology that could be used by leaders during turbulent periods.

5.5.3 Research Question 2:

The second research question of this research is *“How have the actions of leaders during the Covid-19 pandemic affected the financial performance of organisations throughout and after the Covid-19 pandemic?”* All participants indicated that the actions that they undertook during the pandemic helped to alleviate the problems caused by the Covid-19 pandemic and that there was no need for any additional actions during this period. This suggested that the respective actions were sufficient for relieving the associated turbulence during the Covid-19 period and that companies that did not adopt these actions inevitably failed and subsequently closed.

The data revealed that all organisations had a decline in their profitability in the Covid-19 pandemic, with all of them having a comparative increase in profitability in the post Covid-19 period. However, there were varying degrees of success as only a fair number of organisations indicated that their post Covid-19 pandemic profitability increased when compared to pre-pandemic profitability. This was as a direct consequence of the type of actions undertaken by leaders during the pandemic period. The majority of successful companies revised their budgets, concentrated on their profitable product lines, changed their leadership style, restructured their human resources, implemented project management techniques, changed the mode of delivery of their products and services, changed their strategies and their

strategic, operational and tactical operations, implement improved systems, processes and policies, utilised change management techniques and implemented information technology infrastructure and adaptations. These actions were directly related to the dimensions of organisational re-engineering. Chen et al. (2016) noted that the implementation of organisational re-engineering helps organisations to meet their objectives, which consequently led to increased efficiencies and effectiveness and reductions in overhead costs. Research conducted by (Al-Basal et al., 2021) on a wide cross section of different industries found that organisational re-engineering reduced production costs by reducing operational and activity costs and by minimising non-value-adding activities and processes by the redesign of processes, flowcharts, and distribution for production. This would have thus increased profitability.

It can be concluded that all organisations were affected by the turbulence brought about by the Covid-19 pandemic. This resulted in many negative consequences to organisations, inclusive of a decrease in their sales and profitability. Following the actions of leaders during the period of the Covid-19 pandemic, all organisations experienced an increase in their profitability in the post Covid-19 pandemic period when compared to the period during the Covid-19 pandemic.

5.5.4 Research Question 3:

The third research question for this research is *“How are the actions of organisations that successfully managed the Covid-19 pandemic aligned to dimensions of organisational re-engineering?”* From the data obtained, many activities were undertaken by leaders during the period of the Covid-19 pandemic that resulted in improved financial performance following the period of the Covid-19 pandemic. Some of these actions can be considered as dimensions of leadership. In particular, actions related to strategic, operational and tactical decision making

resulted in the successful implementation of organisational re-engineering for attaining business sustainability. A crosstabulation of these leadership variables to business sustainability found that strategic, operational and tactical decision making were instrumental activities that significantly impacted post pandemic sustainability positively. Nkurunziza et al. (2019) also found leadership to be the foremost impetus for organisational re-engineering advancements. Pandey (2014) commented:

Globalization and disruptive changes have made the organizations realize the need and importance of leadership in turbulent times. One critical factor for the success of organisations in such turbulent times will be the leaders at the helm of affairs. To grasp these opportunities and drive business success, leaders will need to demonstrate new approaches and diverse sets of behavior. Effectively leading through turbulence calls for sustaining one's values and remaining calm when others around are not able to do so. The leader who can keep positive attitude during turbulent times and avoid negative approach will lead a better and more productive group of followers. (p. 1)

These findings and conclusions supported the first alternative hypothesis of this research:

H₁: Leadership strategic, operational and tactical decision-making drives the relationship between the implementation of organisational re-engineering and business sustainability during turbulent periods.

It is therefore recommended that in order to achieve sustainability during turbulent periods that organisations consider implement decisions at all functional levels – strategic, operational, and tactical. These include the hire of leaders with higher levels of education. It is also necessary to select leaders who are familiar with the workings of their particular industry and who also have leadership experience. Additionally, gender should not have any role in the choice of leadership of an organisation. Leaders must examine all facets of their businesses during turbulent periods. All facets of organisations need to be redesigned in order to achieve

organisational success. Al-Basal et al. (2021) noted organisational re-engineering necessitated the minimisation of non-value-adding activities and processes by the redesign of processes, flowcharts, and distribution for production. The failure of organisational re-engineering occurs when actions are taken in isolation of each other without any consideration that the business is in fact a system with interrelated parts. Actions that affect one sub-system without consideration for other sub-systems usually results in chaos. Leaders need to explore the synergies and interrelationships of all facets of their businesses to ensure that their actions positively impact the entire business entity.

The research found that most participants used project management practices to implement changes and projects during the Covid-19 pandemic. This resulted in positive outcomes in 75% of the participants. Further 66% of the total participants reported a positive impact on post Covid-19 sustainability. Nkomo and Marnewick (2021) iterated that project management practices were critical to achieving organisational change. It is therefore evident that the use of project management techniques during the period of the Covid-19 pandemic resulted in positive benefits for the majority of organisations. Those that did not use project management practices would not have been able to achieve sustainability in the post Covid-19 pandemic period. Packendorff (1995) noted that project management practices is an essential tool for aiding with the advancement of organisational re-engineering and for the attainment of business sustainability. Bayomy et al. (2021) supported this view noting that effective project management eliminates the associated implementation problems of organisational re-engineering which then results in business sustainability. These findings of the research supported the fourth alternative hypothesis of this research:

H₁: The application of project management practices strengthens the relationship between organisational re-engineering and business sustainability.

It is therefore recommended that leaders embrace the use of project management practices as part of their implementation of organisational re-engineering.

The results of the research found that changes in organisational structure, staff re-organisation, staff cuts, work from home, a reduction in working hours and staff rotation all contributed to post pandemic sustainability. These are all facets of human resources management which is a dimension of organisational re-engineering. Azhar et al. (2013) noted that whenever human resources management is used in the implementation of organisational re-engineering, there are positive outcomes and greater robustness for organisations. Chopra (2020) reinforced this opinion stating that there is a “positive relationship between good HR practices and business performance” (p. 1). Further supporting this view was Zhiqiang et al. (2021) who noted that “organizational investment in human resource practices is essential to gain, sustain, and improve the skills of employees to enhance productivity and efficiency” (p. 1). Asriati et al. (2022) noted that competitive advantages are gained when human resources management is effectively utilised for implementing an organisation’s operating strategy. Campos-García et al. (2024) commented that there is a positive correlation between the variables of business sustainability and human resources practices. To begin with, the various attributes of human resources such as skills and culture have a critical role in the attainment of business sustainability. Employees can influence the building of a competitive advantage for an organisation. In addition to the above, employees also play an equally important role in the attainment of sustainability through their voluntary actions. These all aided organisations to maintain and promote sustainability during turbulent times.

The findings of this research supported the alternative hypothesis:

H₁: Human resources management restructuring is a necessary component to achieve business sustainability during turbulent periods.

The streamlining of the human resources within an organisation in turbulent periods is key to achieving sustainability. It is necessary to review all processes and procedures within organisations to determine whether ‘value’ is being optimised. This often necessitates re-designing processes and procedures, staff training, staff re-deployment and staff cuts in order to obtain the critical mass of employees to effectively and efficiently perform the required functions and add value to the organisation. Abdulazeez (2023) noted:

Human Resource Management (HRM) has a positive impact on organisational performance. Additionally, HRM has been found to have a positive influence on the adoption of Business Process Reengineering (BPR). Furthermore, it has been observed in the literature that BPR has a positive effect on organisational performance. According to the review, Business Process Reengineering (BPR) has a positive impact on organisational performance. The pivotal role played by Human Resource Management (HRM) in the organisation was demonstrated to be a critical determinant of the success of Business Process Reengineering (BPR). The findings will hold significance for organisations seeking to implement Business Process Reengineering (BPR) as a means to improve their overall performance during the aftermath of the COVID-19 pandemic. (p. 864)

All participants of the research noted that information technology infrastructure and adaptations were the reasons for their increased profitability post the Covid-19 pandemic. These factors were the most prevalent factors provided by respondents for their increased profitability post the Covid-19 pandemic. The majority noted that they had strengthened their information technology infrastructure during the Covid-19 pandemic and information technology was one of the reasons for their business sustainability post the Covid-19 pandemic. Additionally, 78.8% of respondents noted that ‘Work from Home,’ 18.2% of respondents noted ‘Change in Software,’ 72.7% of respondents noted ‘Change Mode of Delivery to online’ and 100% of

respondents noted “Change in Systems, Policies and Processes’ as the reasons for a positive impact in their post pandemic Sustainability. The research found that information technology infrastructure and adaptations was a significant factor that contributed to the post pandemic profitability and sustainability of organisations. Larsen (2003) iterated that the integration of information technology systems was crucial for improving and increasing cost and competitiveness, efficiency and effectiveness which then leads to the successful implementation of organisational re-engineering. Love et al. (1996), as cited in (Ahmed et al., 1995), information technology is an “innovative agent that enables new and different alternatives to organising and operating business enterprises” (p. 1). It allows the restructure of organisations in turbulent periods to meet the requirements of the dynamic environment. Grover et al. (1998) postulated that “IT will cause process change which can lead to higher productivity” (p. 143). Flanagan and Marsh (2000) remarked that “Information technology (IT) has been widely applied across many economic sectors in order to increase competitiveness and reduce costs” (p. 423). Attaran (2003) placed great importance on the utilisation of information technology during the implementation of organisational re-engineering highlighting that process redesign without using Information Technology was likely to not succeed. Chaudhry et al. (2023) commented

Innovation through technology has enabled most firms to escape competition and create competitive advantage. Most firms have embarked on being innovative since it significantly impacts competition by creating new markets, making innovative companies become monopolistic and escape the existing competitive markets. (p. 1)

The findings of this research thus supported the alternative hypothesis:

H₁: Information technology infrastructure and adaptations are necessary to achieve business sustainability during turbulent periods.

The use of change management techniques was one main reason noted by participants for their organisations being on a sustainable growth path and for increased profitability in the post Covid-19 pandemic. Change management was an important element for post pandemic success of organisations. In the process of adapting to the turbulence of the Covid-19 pandemic and in the implementation of various actions during this period, it was necessary that leaders utilized change management techniques to effectively transition the various changes to their organisations. Uddin and Ferdous (2020) noted:

In changing stage, every organization faces some difficulties or challenges like stress, conflict, team building, organizational structure and human resource management. But management and leadership are the best weapon to overcome the challenges and achieve the goals. Leadership is the ability to make an impression of will of leader that induces obedience, admiration, loyalty and collaboration. But contemporary literature says leadership is the way of influencing others to accumulate the understanding on task and way of doing it as well as facilitate the efforts to achieve the objectives. (p. 44)

According to Cao et al. (2001), change management addresses the interrelationships of the various dimensions of an organisation to ensure success. Idogawa et al. (2023) postulated that change management was a fundamental instrument for bringing flexibility, novelty, and advantages to organisations. Given that the adoption of change management techniques resulted in positive outcomes to organisations during the Covid-19 pandemic, it can be concluded that the findings of this research are in support of the alternative hypothesis:

H₁: Systems and process improvement, as a facet of change management, positively moderates the relationship between organisational re-engineering and business sustainability.

Based on the findings of the research, it can reasonably be concluded that some of the actions undertaken by organisational leaders during the pandemic were aligned to the five

dimensions of organisational re-engineering. These dimensions are leadership, project management, information technology, human resources management and change management. The findings of the research also confirmed five related alternative hypotheses of the research.

5.5.5 Research Question 4:

The fourth research question for this research is '*What are the benefits of organisational re-engineering to business sustainability during turbulent periods?*'. The findings of the research found that all participating organisations had recovered from the Covid-19 pandemic and they all also benefited from the actions that had been undertaken during the Covid-19 pandemic. Crosstabulations between "Organisations that Utilised Organisational Re-engineering during the Pandemic" and 'Benefit from strategies implemented during the Covid-19 Pandemic', showed significant relationships in the areas of increased revenue, decreased cost, increased profitability, poised for future growth, achieved growth, greater agility, improved customer service, increased efficiency and more robust. Additionally, association test done using Cramer's V found moderate to strong associations between these variables. Also, a 'N' value of 384 was indicative of a sufficient sample size for reliability of results. Bayomy et al. (2021) noted that business sustainability can be measured by improvements in revenue, cost, quality, service, speed, competitiveness, and performance.

Noteworthy of mention, however, is that specific organisational re-engineering dimensions were part of these actions and resulted in the above-mentioned benefits in the period after the Covid-19 when compared to the Covid-19 pandemic period. These dimensions were leadership, project management, information technology, human resources management and change management. Multivariate ranking indicated that project management was the most influential variable followed by change management, human resources management, information technology, and leadership. Fetais et al. (2022a) postulated that the adoption of organisational re-engineering reshapes an organisation and results in improved quality of goods

and services, cost reductions, increased competitiveness and efficiencies and maintenance of a competitive advantage. Furthermore, Alhawamdeh (2021) alluded that the execution of organisational re-engineering in the face of intense competition increases competitiveness. It is therefore evident that the benefits of the specific organisational re-engineering dimensions contributed towards achieving business sustainability during turbulent times.

According to Li and Nazif (2021), organisational re-engineering reviews systems, policies, and organisational structures to raise performance levels and optimize organisational productivity. Eke and Achilike (2014) postulated that organisational re-engineering allowed organisations to look at their overall performance and implement changes, processes, and strategies for becoming cost leaders. Dagher and Fayad (2024) noted that organisational re-engineering as “a visionary strategy for managers wishing to reengineer their distressed firms for enhanced organizational sustainability through advancing organizational performance” (p. 17). In a study conducted by Budiman et al. (2021), success was found in using organisational re-engineering during the Covid-19 pandemic to support the sustainability of its sales commodities. Adayemi and Aremu (2008) supports the conclusions of this research and commented:

Business process reengineering has become useful weapon for any corporate organisations that is seeking for improvement in their current organizational performance and intends achieve cost leadership strategy in its operating industry and environment. It recommended that reengineering process remains effective tools for organizations striving to operate as effectively and efficiently as possible and organizations are required to reengineer their business processes in order to achieve breakthrough performance and long term strategy for organizational growth and performance. (p. 121)

The findings and conclusion of this research therefore supported the alternative hypothesis:

H₁: Organisational re-engineering leads to the sustainability of organisations.

Within the limitations of this research, this research exemplified the positive impact of the implementation of organisational re-engineering during turbulent times (Njuguna & Wanjohi, 2021). It allowed leaders to be sensitized of the dangers of not re-engineering during turbulent times (Zaboli et al., 2013). It filled the existing research gap of the misunderstandings and lack of clarity surrounding the implementation and usage of organisational re-engineering (Novikov et al., 2016) and provided the dimensions of organisational re-engineering that will assist leaders in the implementation, management, and operations of organisations during turbulent periods. This research has thus provided a valuable roadmap for leaders in implementing organisational re-engineering and in steering their businesses to sustainability during turbulent periods. It has presented the key dimensions of organisational re-engineering that leaders can implement and utilise holistically in crisis periods (Denner et al., 2021) to take their businesses to sustainability.

REFERENCES

- Aaltio, I., & Heilmann, P. (2010). Case study as a methodological approach: From locality to understanding the essence. *Encyclopedia of case study research*, 66-76. Retrieved February 13, 2025, from https://www.researchgate.net/profile/Pia-Heilmann/publication/260965244_Case_study_as_a_methodological_approach/links/5c122467a6fdcc494ff0a553/Case-study-as-a-methodological-approach.pdf
- Abatecola, G. (2013). Survival or failure within the organisational life cycle. What lessons for managers?. *Journal of General Management*, 38(4), 23-38.
<https://doi.org/10.1177/030630701303800403>
- Abdolvand, N., Albadvi, A., & Ferdowsi, Z. (2008). Assessing readiness for business process reengineering. *Business Process Management Journal*, 14(4), 497-511.
<https://doi.org/10.1108/14637150810888046>
- Abdulazeez, A. S. (2023). Business process re-engineering (bpr) and human resource management (hrm) as a route to organisational performance in the aftermath of the covid-19 pandemic. *International Journal of Innovative Science and Research Technology*, 8(7). 864-871. DOI: 10.5281/zenodo.8189089
- Abrams, Z. (2020). Leadership in times of crisis. *American Psychological Association*, 51(5) 42. <https://www.apa.org/monitor/2020/07/leadership-crisis>
- Abu Samra, M. A. (2014). Leadership skills of faculty members at Al-Istiqlal university: Cadets' point of views. *World Journal of Education*, 4(3), 36.
[doi:10.5430/wje.v4n3p36](https://doi.org/10.5430/wje.v4n3p36)
- Acharya, A., Prakash, A., Saxena, P., Nigam, A. (2013). Sampling: Why and How of it? *Indian Journal of Medical Specialities*, 4(2), 330-333. Retrieved from <https://www.researchgate.net/profile/Anita-Acharya->

2/publication/256446902_Sampling_Why_and_How_of_it_Anita_S_Acharya_Anupam_Prakash_Pikee_Saxena_Aruna_Nigam/links/0c960527c82d449788000000/Sampling-Why-and-How-of-it-Anita-S-Acharya-Anupam-Prakash-Pikee-Saxena-Aruna-Nigam.pdf

- Adayemi, S., & Aremu, M. A. (2008). Impact assessment of business process reengineering on organisational performance. *European Journal of Social Sciences*, 7(1). Retrieved March 8, 2025, from https://www.researchgate.net/publication/228341515_Impact_Assessment_of_Business_Process_Reengineering_on_Organisational_Performance
- Adeoye-Olatunde, O. A., & Olenik, N. L. (2021). Research and scholarly methods: Semi-structured interviews. *Journal of the american college of clinical pharmacy*, 4(10), 1358-1367. <https://doi.org/10.1002/jac5.1441>
- Agarwal, R., Mehrotra, A., Alofaysan, H., & Mahto, R. V. (2025). Digital technologies and green infrastructure: Advancing a resilient circular supply chain. *Technovation*, 148, <https://doi.org/10.1016/j.technovation.2025.103329>.
- Ahmad, S., Wasim, S., Irfan, S., Gogoi, S., Srivastava, A., & Farheen, Z. (2019). Qualitative v/s. quantitative research-a summarized review. *population*, 1(2). DOI:10.18410/jebmh/2019/587
- Ahmed, I., & Ishtiaq, S. (2021). Reliability and validity: Importance in Medical Research. *JPMA. The Journal of the Pakistan Medical Association*, 71(10), 2401-2406. DOI: 10.47391/JPMA.06-861
- Ahmed, S. K. (2024). Research Methodology Simplified: How to Choose the Right Sampling Technique and Determine the Appropriate Sample Size for Research. *Oral Oncology Reports*, 100662. <https://doi.org/10.1016/j.oor.2024.100662>

- Akoglu, H. (2018). User's guide to correlation coefficients. *Turkish journal of emergency medicine*, 18(3), 91-93. <https://doi.org/10.1016/j.tjem.2018.08.001>
- Al-Anqoudi, Y., Al-Hamdani, A., Al-Badawi, M., & Hedjam, R. (2021). Using machine learning in business process re-engineering. *Big Data and Cognitive Computing*, 5(4), 61. <https://doi.org/10.3390/bdcc5040061>
- Al-Basal, M. F. R. A., & Almomani, S. N. (2021). The impact of business process reengineering (BPR) on the reduction of the production costs in the jordanian public shareholding companies listed on the ASE. *Economic Researcher Review*, 9(1), 104-118. <https://www.asjp.cerist.dz/en/downArticle/85/9/1/160316>
- Albizu, E., Olazaran, M., & Simon, K. (2004). BPR and change management: A case study of a large spanish electricity company. *International journal of innovation management*, 8(04), 355-379. <https://doi.org/10.1142/S136391960400109X>
- Algahtani, A. (2014). Are leadership and management different? A review. *Journal of management policies and practices*, 2(3), 71-82. DOI: 10.15640/jmpp.v2n3a4
- Alharahsheh, H. & Pius, A. (2020). A review of key paradigms: positivism vs interpretivism. *Global Academic Journal of Humanities and Social Sciences*, 2(3), 39-43. doi: 10.36348/gajhss.2020.v02i03.001
- Alhawamdeh, T. (2021). The impact of business process reengineering on cost reduction of international business operating in the middle east. *The Journal of Asian Finance, Economics and Business*, 8(10), 87-95. doi:10.13106/jafeb.2021.vol8.no10.0087
- Al-Hawary, S. I. S., & Al-Syasneh, M. S. (2020). Impact of dynamic strategic capabilities on strategic entrepreneurship in presence of outsourcing of five stars hotels in Jordan. *Business: Theory and Practice*, 21(2), 578-587. doi:10.3846/btp.2020.11895

- AlKnawy, B. (2018). Leadership in times of crisis. *BMJ Leader*, leader-2018.
<https://doi.org/10.1136/leader-2018-000100>
- Allen, D. (2002). Standard life: which came first... the good leader or the good follower?(perspectives). *Nursing Standard*, 17(8), 22-23. Retrieved July 1, 2023, from <https://www.proquest.com/scholarly-journals/which-came-first-good-leader-follower/docview/219839421/se-2?accountid=188730>
- Almajali, D. A., Masa'deh, R. E., & Tarhini, A. (2016). Antecedents of ERP systems implementation success: a study on Jordanian healthcare sector. *Journal of Enterprise Information Management*, 29(4), 549-565. <https://doi.org/10.1108/JEIM-03-2015-0024>
- Al-Mashari, M., & Zairi, M. (2000). Revisiting BPR: a holistic review of practice and development. *Business process management journal*, 6(1), 10-42.
<https://doi.org/10.1108/14637150010283045>
- Almeida, F. (2018). Strategies to perform a mixed methods study. *European Journal of Education Studies*. <https://doi.org/10.5281/zenodo.1406214>
- Almutairi, A., & Ghandour, A. (2021). Enterprise Systems Adaptability and its Role to Determine Organisation Sustainability and Resilience: A Systematic Literature Review. Retrieved March 8, 2025, from <https://aisel.aisnet.org/menacis2021/4/>
- Amaratunga, D., Baldry, D., Sarshar, M., & Newton, R. (2002). Quantitative and qualitative research in the built environment: application of “mixed” research approach. *Work study*, 51(1), 17-31. <https://doi.org/10.1108/00438020210415488>
- Anney, V. N. (2015). Ensuring the Quality of the Findings of Qualitative Research: Looking at Trustworthiness Criteria. *Journal of Emerging Trends in Educational Research and Policy Studies (JETERAPS)*, 5(2), 272-281.

- Appiah, K. O., Addai, B., Ekuban, W., & Boateng, J. S. (2022). Management research and the impact of COVID-19 on performance: A bibliometric review and suggestions for future research. *Future Business Journal*, 8(1), 1–19. <https://doi.org/10.1186/s43093-022-00149-1>
- Appiahene, P., Ussiph, N., & Missah, Y. M. (2018). Information Technology Impact on Productivity: A Systematic Review and Meta-Analysis of the Literature. *International Journal of Information Communication Technologies and Human Development (IJICTHD)*, 10(3), 39-61. <https://doi.org/10.4018/IJICTHD.2018070104>
- Armstrong M (2016), *Armstrong's Handbook of Strategic Human Resource Management*, London: Kogan Page
- Arora, K. C. (2009). *Total quality management*. New Delhi: Kataria & Sons.
- Asenahabi, B. M. (2019). Basics of research design: A guide to selecting appropriate research design. *International Journal of Contemporary Applied Researches*, 6(5), 76-89.
Retrieved March 4, 2025, from
https://www.researchgate.net/publication/342354309_Basics_of_Research_Design_A_Guide_to_selecting_appropriate_research_design
- Asikhia, O., Nneji, N., Olafenwa, A., & Owioye, O. (2021). Change management and organisational performance: A review of literature. *International Journal of Advances in Engineering and Management*, 3(5), 67-69. DOI: 10.35629/5252-03056779
- Aspers, P., Corte, U. (2019). What is qualitative in qualitative Research. *Qual Sociol*, 42(2), 139–160. <https://doi.org/10.1007/s11133-019-9413-7>
- Asriati, N., Syamsuri, S., Thoharudin, M., Wardani, S. F., & Kusuma Putra, A. H. P. (2022). Analysis of business behavior and HRM perspectives on post-COVID-19 SME business sustainability. *Cogent Business & Management*, 9(1), 2115621. <https://doi.org/10.1080/23311975.2022.2115621>

- Atefi, K. (1997). *Formal models of business process reengineering for design and design validation* MA Sc (Doctoral dissertation, Thesis, Department of Mechanical & Industrial Engineering, University of Toronto, Toronto).
- Attaran, M. (2003). Information technology and business-process redesign. *Business Process Management Journal* 9(4), 440-458. <https://doi.org/10.1108/14637150310484508>
- Avolio, B. J., & Gardner, W. L. (2005). Authentic leadership development: Getting to the root of positive forms of leadership. *Leadership Quarterly*, 16(3), 315-338. <https://doi.org/10.1016/j.leaqua.2005.03.001>
- Avolio, B., Walumba, F., & Weber, T. (2009). Leadership: Current theories, research and future directions. *Annual Review of Psychology*, 60, 421–449. doi:10.1146/annurev.psych.60.110707.163621
- Awolusi, O. D., & Atiku, O. S. (2019). Business process re-engineering and profitability in the Nigerian oil and gas industry: The mediating influence of operational performance. *Information Management and Business Review*, 11(3 (I)), 13-26. Retrieved November 29, 2022, from https://www.researchgate.net/publication/344351981_Business_Process_Re-Engineering_and_Profitability_in_the_Nigerian_Oil_and_Gas_Industry_The_Mediating_Influence_of_Operational_Performance
- Azhar, Z., Nawaz, M., & Gul, A. (2013). Role of human resources management in the effectiveness of business process reengineering. *Journal of Resources Development and Management-An Open Access International Journal*, 1. Retrieved August 18, 2023, from <https://core.ac.uk/download/pdf/234695996.pdf>
- Azzopardi, S. (2014). *The Evolution of Project Management*. Retrieved from Project Smart: <http://www.projectsmart.co.uk/evolution-of-project-management.html>

- Bako, Y. A., & Banmeke, M. B. (2019). The impact of business process re-engineering on organizational performance (A study of commercial banks and micro-finance banks in Ilaro). *Journal of Management and Technology [JORMATECH]*, 5(1), 1-14.
<https://www.researchgate.net/publication/342686758>
- Balasubramanian, S., & Fernandes, C. (2022). Confirmation of a crisis leadership model and its effectiveness: Lessons from the COVID-19 pandemic. *Cogent Business & Management*, 9(1), 2022824. <https://doi.org/10.1080/23311975.2021.2022824>
- Balda, J. B., & Mora, F. (2011). Adapting leadership theory and practice for the networked, millennial generation. *Journal of Leadership Studies*, 5(3), 13-24.
[doi:10.1002/jls.20229](https://doi.org/10.1002/jls.20229)
- Bamford, D. R., & Forrester, P. L. (2003). Managing planned and emergent change within an operations management environment. *International journal of operations & production management*, 23(5), 546-564.
<https://doi.org/10.1108/01443570310471857>
- Bans-Akutey, A., & Tiimub, B. M. (2021). Triangulation in research. *Academia Letters*, 2(3392), 1-7. <https://doi.org/10.20935/AL3392>
- Barroga, E., & Matanguihan, G. J. (2022). A practical guide to writing quantitative and qualitative research questions and hypotheses in scholarly articles. *Journal of Korean medical science*, 37(16). <https://doi.org/10.3346/jkms.2022.37.e121>
- Barua, A., Sophie Lee, C. H., & Whinston, A. B. (1996). The calculus of reengineering. *Information Systems Research*, 7(4), 409-428.
<https://doi.org/10.1287/isre.7.4.409>
- 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)1 91-105.

http://buscompress.com/uploads/3/4/9/8/34980536/riber_7-s1_sp_h17-083_91-105.pdf

- Bass, B. (1990). *Bass and Stogdill's Handbook of Leadership: Theory, Research & Managerial Applications*, 3rd Ed., The Free Press, New York, NY.
- Bass, B., and Avolio, B. (1994). *Improving organizational effectiveness through transformational leadership*. Thousand Oaks, CA: Sage Publications.
- Bass, B. M. (2008). *The Bass handbook of leadership: Theory, research, and managerial applications* (4th ed.). New York, NY: Free Press.
- Bayomy, N. A., Khedr, A. E., & Abd-Elmegid, L. A. (2021). Adaptive model to support business process reengineering. *PeerJ Computer Science*, 7, e505.
<https://doi.org/10.7717/peerj-cs.505>
- Becker-Blease, J. R., Kaen, F. R., Etebari, A., & Baumann, H. (2010). Employees, firm size and profitability of US manufacturing industries. *Investment Management and Financial Innovations*. Retrieved December 25, 2023, from
https://scholars.unh.edu/account_facpub/22/
- Beeton, S. (2005). The case study in tourism research: A multi-method case study approach. *Tourism research methods: Integrating theory with practice*, 37, 48.
- Bennis, W. (2010). We need leaders. *Leadership Excellence*, 27(12), 4.
- Bennis, W. G. and Nanus, B. (1997). *Leaders: The Strategies for Taking Charge*. Harper Collins, New York.
- Bergelson, I., Tracy, C., & Takacs, E. (2022). Best practices for reducing bias in the interview process. *Current urology reports*, 23(11), 319-325.
<https://doi.org/10.1007/s11934-022-01116-7>
- Bhardwaj, P. (2019). Types of sampling in research. *Journal of Primary Care Specialties*, 5(3), 157-163.

- Bhatt, G. D. (2000). Exploring the relationship between information technology, infrastructure and business process re-engineering. *Business Process Management Journal*, 6(2), 139-163. <https://doi.org/10.1108/14637150010324085>
- Bhawna and Gobind (2015). Research methodology and approaches. *IOSD Journal of Research & Method in Education*, 5(3), 48-51. doi: 10.9790/7388-05344851
- Bhunia, A., Mukhuti, S. S., & Roy, S. G. (2011). Financial performance analysis-A case study. *Current Research Journal of Social Sciences*, 3(3), 269-275. Retrieved November 25, 2022, from <https://www.airitilibrary.com/Publication/alDetailedMesh?docid=20413246-201105-201612270036-201612270036-269-275>
- Bhushan, R., & Verma, P. (2016). Here's why firms across sectors are hiring women in key finance leadership role. *The Economic Times. English Edition E-Paper*. <https://economictimes.indiatimes.com/magazines/panache/heres-why-firms-across-sectors-are-hiring-women-in-key-finance-leadership-roles/articleshow/53371595.cms>
- Bizness Académie. (2012). *A short history of PRINCE2®*. Retrieved from Bizness Académie: <http://biznessacademie.com/en/2012/08/a-short-history-of-prince2/>
- Boar, B. H. (1997). *Strategic thinking for information technology: How to build the IT organization for the information age*. John Wiley & Sons, Inc.
- Bodla, M. A., & Nawaz, M. M. (2010). Comparative study of full range leadership model among faculty members in public and private sector higher education institutes and universities. *International Journal of Business and Management*, 5(4), 208-214. doi:10.5539/ijbm.v5n4p208
- Boiral, O., Brotherton, M.-C., Rivaud, L., & Guillaumie, L. (2021). Organisations' management of the covid-19 pandemic: A scoping review of business articles. *Sustainability* 13(7), 3993. <https://doi.org/10.3390/su13073993>

- Bollen, K. A. (1989). *Structural equations with latent variables* (Vol. 210). John Wiley & Sons.
- Booth, R. (1994). What on earth is business process re-engineering? *MANAGEMENT ACCOUNTING-LONDON-*, 72, 18-18.
- Bork, C. E., & Francis, J. B. (1985). Developing effective questionnaires. *Physical Therapy*, 65(6), 907-911. <https://doi.org/10.1093/ptj/65.6.907>
- Bottan N., Hoffmann B., & Vera-Cossio D. (2020). The unequal impact of the coronavirus pandemic: Evidence from seventeen developing countries. *PLoS ONE* 15(10): e0239797. doi.org/10.1371/journal.pone.0239797
- Boudreau, J. W., & Ramstad, P. M. (2005). Talentship, talent segmentation, and sustainability: A new HR decision science paradigm for a new strategy definition. *Human Resource Management: Published in Cooperation with the School of Business Administration, The University of Michigan and in alliance with the Society of Human Resources Management*, 44(2), 129-136. <https://doi.org/10.1002/hrm.20054>
- Boudreau, M. C., & Robey, D. (1996). Coping with contradictions in business process re-engineering. *Information Technology & People*, 9(4), 40-57. <https://doi.org/10.1108/09593849610153421>
- Bröker, A. (1998). Global business process re-engineering: a system dynamics-based approach. *International Journal of Operations & Production Management*, 18(9/10), 817-831. <https://doi.org/10.1108/01443579810225478>
- Brown, N. (2021). *Authentic leadership in crisis scenarios: a phenomenological examination of the lived experience of corporate leaders during the COVID-19 pandemic*. Pepperdine University. Retrieved April 27, 2023, from

<https://www.proquest.com/openview/b8a5e697304ea6b5bc1cac0324ba1851/1?pq-origsite=gscholar&cbl=18750&diss=y>

Bryman, A. (2006). Integrating quantitative and qualitative research: how is it done?

Qualitative research, 6(1), 97-113. <https://doi.org/10.1177/1468794106058877>

Budiman, K., Subhan, S., & Efrilianda, D. A. (2021). Business process reengineering to support sustainability of the sales commodities in large transaction with quotation

system. *Sci. J. Inform*, 8(1), 84-91. <http://journal.unnes.ac.id/nju/index.php/sji>

Bullock, R. J., & Batten, D. (1985). It's just a phase we're going through: a review and synthesis of OD phase analysis. *Group & Organization Studies*, 10(4), 383-412.

<https://doi.org/10.1177/105960118501000403>

Burian, P. E., Maffei, F. R., III, Burian, P. S., & Pieffer, M. A. (2014). Leadership systems model: An integration of people, process, and behaviors in A dynamic and evolving environment. *International Journal of Management & Information Systems*, 18(4), 261-269. doi:10.19030/ijmis.v18i4.8821

Burnes, B. (1996). *Managing change*. Pitman, London

Burnes, B. (2004). *Managing change: A strategic approach to organisational dynamics*. Pearson Education.

Burton, B. K., & Goldsby, M. (2005). The Golden Rule and business ethics: An examination. *Journal of Business Ethics*, 56(4), 371–383. doi.org

By, R. T. (2005). Organisational change management: A critical review. *Journal of change management*, 5(4), 369-380. <https://doi.org/10.1080/14697010500359250>

Campos-García, I., Alonso-Muñoz, S., González-Sánchez, R., & Medina-Salgado, M. S. (2024). Human resource management and sustainability: Bridging the 2030 agenda. *Corporate Social Responsibility and Environmental Management*, 31(3), 2033-2053. DOI: 10.1002/csr.2680

- Cao, G., Clarke, S., & Lehaney, B. (1999). Towards systemic management of diversity in organizational change. *Strategic Change*, 8(4), 205-216.
[https://doi.org/10.1002/\(SICI\)1099-1697\(199906/07\)8:4<205::AID-JSC417>3.0.CO;2-R](https://doi.org/10.1002/(SICI)1099-1697(199906/07)8:4<205::AID-JSC417>3.0.CO;2-R)
- Cao, G., Clarke, S., & Lehaney, B. (2001). A critique of BPR from a holistic perspective. *Business process management journal*, 7(4), 332-339.
<https://doi.org/10.1108/EUM0000000005732>
- Cao, G., Clarke, S., & Lehaney, B. (2004). The need for a systemic approach to change management—a case study. *Systemic Practice and Action Research*, 17, 103-126.
<https://doi.org/10.1023/B:SPAA.0000018906.16607.cc>
- Capowski, G. (1994). Anatomy of a leader: Where are the leaders of tomorrow?. *Management Review*, 83(3), 10. Retrieved July 4, 2023, from <https://www.proquest.com/openview/1305dc6e05746dfb778bbf2247028a4d/1?pq-origsite=gscholar&cbl=41493>
- Carcary, M. (2009). The research audit trial—enhancing trustworthiness in qualitative inquiry. *Electronic journal of business research methods*, 7(1), 11-24. Retrieved February 27, 2025, from <https://academic-publishing.org/index.php/ejbrm/article/view/1239/1202>
- Carr, A. S., & Smeltzer, L. R. (2002). The relationship between information technology use and buyer-supplier relationships: an exploratory analysis of the buying firm's perspective. *IEEE Transactions on engineering management*, 49(3), 293-304. DOI: 10.1109/TEM.2002.803389
- Central Statistical Office (2022). *Business and Industry*. Retrieved December 2, 2022, from <https://cso.gov.tt/subjects/business-and-industry-2/>

- Chaudhry, K., Chaudhry, M., & Chaudhry, A. (2023). Competitiveness through technology and innovation. 10.13140/RG.2.2.18707.86568.
- Chen, J. H., Yang, L. R., & Tai, H. W. (2016). Process reengineering and improvement for building precast production. *Automation in Construction*, 68, 249-258.
<https://doi.org/10.1016/j.autcon.2016.05.015>
- Chen, M. (1999). BPR methodologies: Methods and tools. In *Business Process Engineering: Advancing the State of the Art* (pp. 187-211). Boston, MA: Springer US.
- Chinn, P. L., & Kramer, M. K. (2018). *Knowledge Development in Nursing*. Elsevier Gezondheidszorg.
- Chiu, Y. C. (2010). *An Introduction to the History of Project Management: From the earliest times to AD 1900*. Eburon Uitgeverij BV.
- Chopra, R. (2020). Strategic Human Resource Management and its Impact on Organisational Performance. *Global Journal of Enterprise Information System*, 9(3), 89-93.
Retrieved from <https://www.gjeis.com/index.php/GJEIS/article/view/314>
- Ciotti, M., Ciccozzi, M., Terrinoni, A., Jiang, W. C., Wang, C. B., & Bernardini, S. (2020). The covid-19 pandemic. *Critical Reviews in Clinical Laboratory Sciences*, 57(6), 365-388. <https://doi.org/10.1080/10408363.2020.1783198>
- CIPD (2012). *Responsible and sustainable business: HR leading the way a collection of thought process*. London: CIPD.
- Cleland, J. (2015). Exploring versus measuring: considering the fundamental differences between qualitative and quantitative research. *Researching medical education*, 1-14.
<https://doi.org/10.1002/9781118838983.ch1>
- Cohen, L., Manion, L. & Morrison, K., (2013). *Research methods in education*. Routledge.
- Colbert, B. A., & Kurucz, E. C. (2007). Three conceptions of triple bottom line business sustainability and the role for HRM. *People and Strategy*, 30(1), 21.

<https://www.proquest.com/openview/eb15be3a0f7ca4faf5eb469212c4827f/1.pdf?pq-origsite=gscholar&cbl=52465>

Cole, R., & Snider, B. (2019). Managing in turbulent times: The impact of sustainability in management education on current and future business leaders. *Journal of Cleaner Production*, 210, 1622-1634. <https://doi.org/10.1016/j.jclepro.2018.11.135>

Connelly, L. M. (2016). Trustworthiness in qualitative research. *Medsurg nursing*, 25(6), 435. Retrieved February 25, 2025, from <https://www.proquest.com/openview/44ffecf38cc6b67451f32f6f96a40c78/1?pq-origsite=gscholar&cbl=30764>

Copola Azenha, F., Aparecida Reis, D., & Leme Fleury, A. (2021). The role and characteristics of hybrid approaches to project management in the development of technology-based products and services. *Project Management Journal*, 52(1), 90-110. <https://doi.org/10.1177/8756972820956884>

Creswell, J. (2008). *Educational Research: Planning, conducting, and evaluating quantitative and qualitative research* (3rd ed.). Upper Saddle River, NJ: Pearson Education.

Creswell, J. W., & Miller, D. L. (2000). Determining Validity in Qualitative Inquiry. *Theory Into Practice*, 39(3), 124–130. <https://doi.org/10.1201/b14832http://www.jstor.org/stable/1477543>

Crowe, S., Cresswell, K., Robertson, A., Huby, G., Avery, A., & Sheikh, A. (2011). The case study approach. *BMC medical research methodology*, 11(1), 1-9. <https://doi.org/10.1186/1471-2288-11-100>

CSC Index (1994). *State of Reengineering Report*. North America and Europe, CSC Index, Inc., London.

- Cummings, S., Bridgman, T., & Brown, K. G. (2016). Unfreezing change as three steps: Rethinking Kurt Lewin's legacy for change management. *Human relations*, 69(1), 33-60. <https://doi.org/10.1177/0018726715577707>
- Dagher, J., & Fayad, L. (2024). Business Process Reengineering: A Crucial Approach for Enhanced Organizational Sustainability. In *Navigating the Intersection of Business, Sustainability and Technology* (pp. 25-59). Singapore: Springer Nature Singapore.
- Dahal, B. (2024). Participants' right to withdraw from research: Researchers' lived experiences on ethics of withdrawal. *Journal of Academic Ethics*, 22(1), 191-209. <https://doi.org/10.1007/s10805-024-09513-y>
- Daniels, R. A., Miller, L. A., Mian, M. Z., & Black, S. (2022). One size does not fit all: Understanding differences in perceived organisational support during the covid-19 pandemic. *Business and Society Review*, 127, 193-222. <https://doi.org/10.1111/basr.12256>
- Davenport, T. H., & Short, J. E. (1990). The new industrial engineering: information technology and business process redesign. *Sloan Management Review*, 31(4), 11-27. Retrieved November 21, 2022, from <https://dspace.mit.edu/bitstream/handle/1721.1/48613/newindustrialeng00dave.pdf>
- Davenport, T. H. (1993). *Process innovation: reengineering work through information technology*. Harvard business press.
- Dawadi, S., Shrestha, S., & Giri, R. A. (2021). Mixed-methods research: A discussion on its types, challenges, and criticisms. *Journal of Practical Studies in Education*, 2(2), 25-36. <https://doi.org/10.46809/jpse.v2i2.20>
- Denna, E. L., Perry, L. T., & Jasperson, J. (1998). Reengineering and REAL business process modeling. *Business Process Change: Reengineering Concepts, Methods and Technologies*, 350-375. Retrieved November 30, 2022, from <https://ebpm.ir/wp->

content/uploads/2017/10/Business-Process-Change_-_Reengineering-Concepts-Methods-and-Technologies-1998.pdf#page=367

Denner, N., Koch, T., & Senger, S. (2021). Faces of companies: Personalization of corporate coverage in crisis and non-crisis periods. *Journalism*, 22(11), 2747-2763.

<https://doi.org/10.1177/1464884920901615>

Denzin, N. K. (1978). *The research act: A theoretical introduction to sociological methods*.

New York: Praeger. doi:10.2307/2065439

DePree, M. (1989). *Leadership is an art*. New York: Dell Publishing.

DeSimone, J. A., & Harms, P. D. (2018). Dirty data: The effects of screening respondents

who provide low-quality data in survey research. *Journal of Business and*

Psychology, 33, 559-577. <https://doi.org/10.1007/s10869-017-9514-9>

Dey, P. K. (1999). Process re-engineering for effective implementation of projects.

International journal of project management, 17(3), 147-159.

[https://doi.org/10.1016/S0263-7863\(98\)00023-4](https://doi.org/10.1016/S0263-7863(98)00023-4)

Di Bella, J. (2009). The Effects of Leading Questions. Retrieved February 27, 2025, from

http://www.jeffboulton.ca/mdm_project/03.pdf

Dimitrovska, M., Stamenkova, L. P., & Stošić, L. (2023). Leadership in times of crisis.

SCIENCE International journal, 2(1), 19-23. DOI:

<https://doi.org/10.35120/sciencej020119d>

Dirani, K. M., Abadi, M., Alizadeh, A., Barhate, B., Garza, R. C., Gunasekara, N., Ibrahim,

G., & Majzun, Z. (2020). Leadership competencies and the essential role of human

resource development in times of crisis: a response to Covid-19 pandemic. *Human*

Resource Development International, 23(4), 380-394.

<https://doi.org/10.1080/13678868.2020.1780078>

- Dodds, K., Broto, V. C., Detterbeck, K., Jones, M., Mamadouh, V., Ramutsindela, M., ... & Woon, C. Y. (2020). The COVID-19 pandemic: Territorial, political and governance dimensions of the crisis. *Territory, Politics, Governance*, 8(3), 289-298.
<https://doi.org/10.1080/21622671.2020.1771022>
- Drucker, P. F. (1980). *Managing in turbulent times*. Harper & Row.
- Duchek, S. (2020). Organizational resilience: a capability-based conceptualization. *Business Research*, 13(1), 215-246. Retrieved April 16, 2023, from
<https://link.springer.com/article/10.1007/s40685-019-0085-7>
- Dunphy, D., & Stace, D. (1993). The strategic management of corporate change. *Human relations*, 46(8), 905-920. <https://doi.org/10.1177/001872679304600801>
- Dvir, D. O. V., Sadeh, A., & Malach-Pines, A. (2006). Projects and project managers: The relationship between project managers' personality, project types, and project success. *Project Management Journal*, 37(5), 36-48.
<https://doi.org/10.1177/875697280603700505>
- Dwipriyoko, E. (2020). Partial business process re-engineering in new generation cooperatives enterprise architecture implementation. *Journal of Physics*, 1477(5), 52033. doi:10.1088/1742-6596/1477/5/052033
- Dyllick, T., & Hockerts, K. (2002). Beyond the business case for corporate sustainability. *Business strategy and the environment*, 11(2), 130-141.
<https://doi.org/10.1002/bse.323>
- Eagly, A. H., & Karau, S. J. (2002). Role congruity theory of prejudice toward female leaders. *Psychological Review*, 109(3), 573-598. doi:10.1037//0033-295X.109.3.573
- Edema, A. J. , Mathew, S. U. , & Uwah, I. E. (2019). Business Process Reengineering and Sustainability the Moderating Role of Technology in Manufacturing Companies in Cross River State. *AKSU Journal of Management Sciences (AKSUJOMAS)*. 4(2), 86-

96. <https://aksujomas.org.ng/articles/19/12/business-process-reengineering-and-sustainability-the-moderating-role-of-technology-in-manufacturing-companies-in-cross-river-state/>
- Eke, G. J., & Achilike, A. N. (2014). Business process reengineering in organizational performance in Nigerian banking sector. *Academic Journal of Interdisciplinary Studies*, 3(5), 113. Doi:10.5901/ajis.2014.v3n5p113
- Elapatha, V. W., & Jehan, S. N. (2020). An analysis of the implementation of business process re-engineering in public services. *Journal of Open Innovation: Technology, Market, and Complexity*, 6(4), 114. <https://doi.org/10.3390/joitmc6040114>
- Elfil, M., & Negida, A. (2017). Sampling methods in clinical research; An educational review. *Emergency (Tehran, Iran)*, 5(1), e52. Retrieved November 27, 2022, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5325924/>
- Eloranta, E., Hameri, A. P., & Lahti, M. (2001). Improved project management through improved document management. *Computers in Industry*, 45(3), 231-243. [https://doi.org/10.1016/S0166-3615\(01\)00099-9](https://doi.org/10.1016/S0166-3615(01)00099-9)
- Elrod, P. D., & Tippet, D. D. (2002). The “death valley” of change. *Journal of organizational change management*, 15(3), 273-291. <https://doi.org/10.1108/09534810210429309>
- Engidaw, A. E. (2022). Small businesses and their challenges during COVID-19 pandemic in developing countries: in the case of Ethiopia. *Journal of Innovation and Entrepreneurship*, 11(1), 1. <https://doi.org/10.1186/s13731-021-00191-3>
- Ercikan, K., Roth, W. (2006). What good is polarizing research into qualitative and quantitative? *Educational Researcher*, (35)5, 14–23. <https://doi.org/10.3102/0013189X035005014>

- Erdogan, B., Anumba, C., Bouchlaghem, D., & Nielsen, Y. (2005, September). Change management in construction: the current context. In *21st Annual ARCOM Conference* (pp. 1085-1095). SOAS, University of London. Association of Researchers in Construction Management.
- Errida, A., & Lotfi, B. (2021). The determinants of organizational change management success: Literature review and case study. *International Journal of Engineering Business Management*, 13. <https://doi.org/10.1177/18479790211016273>
- Etikan, I., & Bala, K. (2017). Sampling and sampling methods. *Biometrics & Biostatistics International Journal*, 5(6), 00149. doi: 10.15406/bbij.2017.05.00149
- 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.
- Evstafyeva, E., Charaeva, M., Kroklicheva, G. and Paleev, A. (2018). Business processes' reengineering in the context of increasing the firm's value. *European Research Studies Journal*, 21(1). 125-135. Retrieved January 2, 2023, from https://www.um.edu.mt/library/oar/bitstream/123456789/33911/1/Business_Processes_Reengineering_in_the_Context_of_Increasing_the_Firms_Value_2018.pdf
- Fasna, M. F. F., & Gunatilake, S. (2019). A process for successfully implementing BPR projects. *International journal of productivity and performance management*, 68(6), 1102-1119. <https://doi.org/10.1108/IJPPM-09-2018-0331>
- Fazlzadeh, A., Ghaderi, E., Khodadadi, H., & Nezhad, H. B. (2011). An Exploration of the Relationship between CRM Effectiveness and the Customer. *International Business Research*, 4(2), 238-249. DOI: 10.5539/ibr.v4n2p238
- Fetais, A., Abdella, G. M., Al-Khalifa, K. N., & Hamouda, A. M. (2022a). Business process re-engineering: A literature review-based analysis of implementation measures. *Information*, 13(4), 185. <https://doi.org/10.3390/info13040185>

- Fetais, A., Abdella, G. M., Al-Khalifa, K. N., & Hamouda, A. M. (2022b). Modeling the relationship between business process reengineering and organizational culture. *Applied System Innovation*, 5(4), 66. <https://doi.org/10.3390/asi5040066>
- Field, A. (2018). *Discovering Statistics Using IBM SPSS Statistics* (5th ed.). SAGE Publications.
- Fielding, N., Schreier, M., (2001). Introduction: On the compatibility between qualitative and quantitative research methods. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, 2(1). <http://nbn-resolving.de/urn:nbn:de:0114-fqs010146>.
- Finlay, L. (2006). ‘Rigour’, ‘Ethical Integrity’ or ‘Artistry’? Reflexively Reviewing Criteria for Evaluating Qualitative Research. *British Journal of Occupational Therapy*, 69(7), 319–326. <https://doi.org/10.1177/030802260606900704>
- Flanagan, R., & Marsh, L. (2000). Measuring the costs and benefits of information technology in construction. *Engineering, Construction and Architectural Management*, 7(4), 423-435. <https://doi.org/10.1108/eb021164>
- Flood, R. L. (1996). Total systems intervention: local systemic intervention. In *Critical systems thinking: Current research and practice* (pp. 95-115). Boston, MA: Springer US.
- Fombrun C, Tichy N and Devanna M (1984), Strategic Human Resource Management, New York: Wiley
- Freitas, L. & Wang, H. (2020). The impact of public health interventions on the first and second waves of covid-19 in Trinidad and Tobago – A simple epidemic model. *Caribbean Medical Journal* 12(7). doi:10.48107/CMJ.2020.12.007

- Fugard, A. J., & Potts, H. W. (2015). Supporting thinking on sample sizes for thematic analyses: a quantitative tool. *International Journal of Social Research Methodology*, 18(6), 669-684. <https://doi.org/10.1080/13645579.2015.1005453>
- Fusch Ph D, P. I., & Ness, L. R. (2015). Are We There Yet? Data Saturation in Qualitative Research. *Walden Faculty and Staff Publications*. 455. <https://scholarworks.waldenu.edu/facpubs/455>
- Fusch, P. Fusch, G. E. & Ness, L. R. (2018). Denzin's paradigm shift: Revisiting triangulation in qualitative research. *Journal of Social Change*, 10(1), 19-32. doi:10.5590/JOSC.2018.10.1.02
- García-Madurga, M. Á., & Esteban-Navarro, M. Á. (2020). A project management approach to competitive intelligence. *Journal of Intelligence Studies in Business*, 10(3). DOI: <https://doi.org/10.37380/jisib.v10i3.636>
- Gardner, W. L., Coglisier, C. C., Davis, K. M., & Dickens, M. P. (2011). Authentic leadership: A review of the literature and research agenda. *The Leadership Quarterly*, 22(6), 1120-1145. <https://doi.org/10.1016/j.leaqua.2011.09.007>
- George, B. (2003). *Authentic leadership: Rediscovering the secrets to creating lasting value*. Jossey-Bass.
- Geralis, M., & Terziovski, M. (2003). A quantitative analysis of the relationship between empowerment practices and service quality outcomes. *Total Quality Management & Business Excellence*, 14(1), 45-62. <https://doi.org/10.1080/14783360309707>
- Gerster, D., Dremel, C., Brenner, W., & Kelker, P. (2020). How enterprises adopt agile forms of organizational design: A multiple-case study. *ACM SIGMIS Database: the DATABASE for Advances in Information Systems*, 51(1), 84-103. <https://doi.org/10.1145/3380799.3380807>

- Given, L. M. (2008). *The SAGE Encyclopaedia of Qualitative Research Methods*. SAGE Publications.
- Goertz, G. & Mahoney, J. (2012). *A Tale of Two Cultures: Qualitative and Quantitative Research in the Social Sciences*. Princeton University Press, 2012.
<https://doi.org/10.1515/9781400845446>
- Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The qualitative report*, 8(4), 597-607. doi: 10.46743/2160-3715/2003.1870
- Goldratt, E. (1997). *Critical Chain*. Great Barrington: North River Press
- Gray, D. E. (2021). *Doing Research in the Real World*. Sage Publications Limited.
- Gray, J. H., Densten, I. L., & Sarros, J. C. (2003). Size matters: Organisational culture in small, medium, and large Australian organisations. *Journal of Small Business & Entrepreneurship*, 17(1), 31-46. <https://doi.org/10.1080/08276331.2003.10593311>
- Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational evaluation and policy analysis*, 11(3), 255-274. <https://doi.org/10.3102/01623737011003255>
- Greene, J., & McClintock, C. (1985). Triangulation in evaluation: Design and analysis issues. *Evaluation Review*, 9(5), 523-545. doi: 10.1177/0193841X8500900501
- Grover, V. (1999). From business reengineering to business process change management: a longitudinal study of trends and practices. *IEEE Transactions on Engineering Management*, 46(1), 36-46. DOI: 10.1109/17.740036
- Grover, V., Jeong, S. R., Kettinger, W. J., & Teng, J. T. (1995). The implementation of business process reengineering. *Journal of Management Information Systems*, 12(1), 109-144. <https://doi.org/10.1080/07421222.1995.11518072>
- Grover, V., Teng, J., Segars, A. H., & Fiedler, K. (1998). The influence of information technology diffusion and business process change on perceived productivity: The IS

executive's perspective. *Information & management*, 34(3), 141-159.

[https://doi.org/10.1016/S0378-7206\(98\)00054-8](https://doi.org/10.1016/S0378-7206(98)00054-8)

Groznik, A., & Maslaric, M. (2010). Achieving competitive supply chain through business process re-engineering: A case from developing country. *African Journal of Business Management*, 4(2), 140. Retrieved July 18, 2023, from https://d1wqtxts1xzle7.cloudfront.net/34974424/02e7e5249e493d0da1000000-libre.pdf?1412286498=&response-content-disposition=inline%3B+filename%3DAchieving_competitive_supply_chain_throu.pdf&Expires=1689706401&Signature=UMu6G4iziIGUPklW3oBgSAs6cc1MY9uvw21BrWi~HQZHHck-yMOuoYzFOStmIhZOKOBIWFDRAUtTMsw9eqYewVcoO-fACbN3R6YxNpUV1qEIOP3qo0eHorZ89mazf4Ld~JkDCyU9Jlc4ujJrtu0shRsHYH5LmyD1YgB0jlB4-KiNy46LXFISNtSM7cf5tljmaUtgB8HwWpsMkJ-Ie3EmoBvcBYGnakMQerHEGAL99P9m33QxPVN1TjDssleptGE3tnjmd~RXvr9U0XjDASzoVGIOrk7ELTVuS-EjJQvimOEp~hnutPdRvkLTH1wWYzy4bAM6UEiLtL321gKTFDADKw__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA

Groznik, A., & Maslaric, M. (2012). A process approach to distribution channel re-engineering. *Journal of Enterprise Information Management*.

<https://doi.org/10.1108/17410391211204383>

Grundy, T. (1993). *Managing strategic change*. London: Kogan Page.

Guesalaga, R., Gabrielsson, M., Rogers, B., Ryals, L., & Cuevas, J. M. (2018). Which resources and capabilities underpin strategic key account management? *Industrial marketing management*, 75, 160-172.

<https://doi.org/10.1016/j.indmarman.2018.05.006>

- Guimaraes, T., & Bond, W. (1996). Empirically assessing the impact of BPR on manufacturing firms. *International Journal of Operations & Production Management*.
<https://doi.org/10.1108/01443579610125750>
- Gumpili, S. P., & Das, A. V. (2022). Sample size and its evolution in research. *IHOPE Journal of Ophthalmology*, 1(1), 9-13. doi:10.25259/IHOPEJO_3_2021
- Gunasekaran, A., & Nath, B. (1997). The role of information technology in business process reengineering. *International journal of production economics*, 50(2-3), 91-104.
[https://doi.org/10.1016/S0925-5273\(97\)00035-2](https://doi.org/10.1016/S0925-5273(97)00035-2)
- Hackman, J. R., & Oldham, G. R. (1976). Motivation through the design of work: Test of a theory. *Organizational behavior and human performance*, 16(2), 250-279.
[https://doi.org/10.1016/0030-5073\(76\)90016-7](https://doi.org/10.1016/0030-5073(76)90016-7)
- Hagar, C. (Ed.). (2011). *Crisis information management: Communication and technologies*. Elsevier.
- Haggerty, K. D. (2004). Ethics creep: Governing social science research in the name of ethics. *Qualitative sociology*, 27(4), 391-414.
doi:10.1023/B:QUAS.0000049239.15922.a3.
- Hall, E. A., Rosenthal, J., & Wade, J. (1994). How to make reengineering really work. *McKinsey Quarterly*, 107-107. Retrieved June 16, 2023, from <https://nzbef.org.nz/wp-content/uploads/2019/05/Article-How-to-Make-Re-engineering-Really-Work.pdf>
- Hall, G., & Rosenthal, J. (1993). How to make reengineering really work. *Harvard business review*, 71(6), 119-131. Retrieved October 14, 2023, from <https://nzbef.org.nz/wp-content/uploads/2019/05/Article-How-to-Make-Re-engineering-Really-Work.pdf>

- Hall, R. D., & Rowland, C. A. (2016). Leadership development for managers in turbulent times. *Journal of management development*, 35(8), 942-955.
<https://doi.org/10.1108/JMD-09-2015-0121>
- Hameed, N. S. S., Salamzadeh, Y., Rahim, N. F. A., & Salamzadeh, A. (2021). The impact of business process reengineering on organisational performance during the coronavirus pandemic: Moderating role of strategic thinking. *Foresight*, 24(5), 637-655. <https://doi.org/10.1108/FS-02-2021-0036>
- Hammer, M. & Stanton, S. (1995). *The reengineering revolution*. HarperCollins, New York, NY.
- Hammer, M. (1990). Reengineering work: Don't automate, obliterate. *Harvard Business Review*, 68(4), 104-112. Retrieved November 21, 2022, from <https://hbr.org/1990/07/reengineering-work-dont-automate-obliterate>
- Hammer, M. (2002). Process management and the future of six sigma. *MIT Sloan management review*. Retrieved June 8, 2023, from <https://sloanreview.mit.edu/article/process-management-and-the-future-of-six-sigma/>
- Hammer, M. and Champy, J. (1993). *Reengineering the corporation: A manifesto for business for business revolution*. Harper Business: NY.
- Hammer, M., & Champy, J. (2009). *Reengineering the corporation: Manifesto for business revolution*, a. Zondervan.
- Hammer, M.; Hershman, L. (2010). *Faster cheaper better: The 9 levels for transforming how work gets done*; Crown Business: New York, NY, USA.
- Handoko, T.H. (2010). *Personell and Human Resources Management*; BPFE-Yogyakarta: Yogyakarta, Indonesia.

- Harari, O. (1996). Why did reengineering die?. *Management Review*, 85(6), 49.
<https://www.proquest.com/openview/82fb8e42f40675adff90880e004179fe/1?pq-origsite=gscholar&cbl=41493>
- Haq, Z. U., Rasheed, R., Rashid, A., & Akhter, S. (2023). Criteria for assessing and ensuring the trustworthiness in qualitative research. *International Journal of Business Reflections*, 4(2). <https://doi.org/10.56249/ijbr.03.01.44>
- Harika, A., Sunil Kumar, M., Anantha Natarajan, V., & Kallam, S. (2021). Business process reengineering: issues and challenges. In *Proceedings of Second International Conference on Smart Energy and Communication* (pp. 363-382). Springer, Singapore. Retrieved December 3, 2022, from https://link.springer.com/chapter/10.1007/978-981-15-6707-0_35
- Harrington, H. J. (1991). *Business Process Improvement*, McGraw-Hill: New York.
- Hashem, G. (2020). Organizational enablers of business process reengineering implementation: An empirical study on the service sector. *International Journal of Productivity and Performance Management*, 69(2), 321-343.
<https://doi.org/10.1108/IJPPM-11-2018-0383>
- Hasanah, A. U., Shino, Y., & Kosasih, S. (2022). The role of information technology in improving the competitiveness of small and sme enterprises. *IAIC Transactions on Sustainable Digital Innovation (ITSDI)*, 3(2), 168-174. DOI: 10.34306/itsdi.v3i2.561
- Hatcher W. (2020). A failure of political communication not a failure of bureaucracy: The danger of presidential misinformation during the covid-19 pandemic. *The American Review of Public Administration*, 50(6-7) 614-620. doi:10.1177/0275074020941734
- Hawkins, C. (2009). Leadership theories-managing practices, challenges, suggestions. *The Community College Enterprise*, 15(2), 39-62.
<https://www.schoolcraft.edu/pdfs/cce/15.2.39-62.pdf>

- Hernita, H., Surya, B., Perwira, I., Abubakar, H., & Idris, M. (2021). Economic Business Sustainability and Strengthening Human Resource Capacity Based on Increasing the Productivity of Small and Medium Enterprises (SMEs) in Makassar City, Indonesia. *Sustainability*, 13(6), 3177. MDPI AG.
<http://dx.doi.org/10.3390/su13063177>
- Herzog, N. V., Polajnar, A., & Tonchia, S. (2007). Development and validation of business process reengineering (BPR) variables: A survey research in Slovenian companies. *International journal of production research*, 45(24), 5811-5834.
<https://doi.org/10.1080/00207540600854992>
- Hill, F. M., & Collins, L. K. (1998). The positioning of BPR and TQM in long-term organisational change strategies. *The TQM magazine*, 10(6), 438-446.
<https://doi.org/10.1108/09544789810239182>
- Holden, K. E., & Raffo, D. M. (2014). A potential generation gap: Perspectives on female leadership. *Gender in Management*, 29(7), 419-431. doi:10.1108/GM-11-2014-0132
- Hollander, A., E. Denna, et al. (1999). *Accounting, information technology, and business solutions*, McGraw-Hill Higher Education.
- Hollander, E., (2012). *Inclusive leadership. The essential leader-follower relationship*. Routledge.
https://books.google.tt/books?hl=en&lr=&id=LHiak0kfQTWC&oi=fnd&pg=PR5&dq=inclusive+leadership+organizational+effectiveness&ots=vktl7RGtLm&sig=kkIJFF52UY7pSrrORSFkfwu8YI&redir_esc=y#v=onepage&q=inclusive%20leadership%20organizational%20effectiveness&f=false
- Horner, M. (1997). Leadership theory: past, present and future. *Team Performance Management: An International Journal*, 3(4), 270-287.
<https://doi.org/10.1108/13527599710195402>

- Hossain, D. M. (2012). Mixed method research: An overview. *Postmodern Openings*, 3(12), 137-151. Retrieved November 13, 2023, from <https://www.ceeol.com/search/article-detail?id=166684>
- House, R. J. (1977). *A 1976 theory of charismatic leadership*. In: Hunt, J. G., Larson, L. L.(Eds.): *Leadership: The cutting edge*. Carbondale, Edwardsville, Southern Illinois University Press, pp. 189-205.
- Houy, C., Fettke, P., & Loos, P. (2010). Empirical research in business process management–analysis of an emerging field of research. *Business Process Management Journal*, 16(4), 619-661. <https://doi.org/10.1108/14637151011065946>
- Hox, J., & Boeije, H. (2005). Data Collection, Primary vs. Secondary. *Encyclopedia of Social Measurement*, (1) 593-599.
- Hugman, R., Pittaway, E., & Bartolomei, L. (2011). When ‘do no harm’ is not enough: The ethics of research with refugees and other vulnerable groups. *British Journal of Social Work*, 41(7), 1271-1287. <https://doi.org/10.1093/bjsw/bcr013>
- Idogawa, J., Bizarrias, F. S., & Câmara, R. (2023). Critical success factors for change management in business process management. *Business Process Management Journal*. <https://doi.org/10.1108/BPMJ-11-2022-0625>
- Inyang, B. J. (2007). *Management theory: principles and practices* (2nd ed.). Calabar: MERB PUBLISHERS.
- Ivankova, N. V., Creswell, J. W., & Stick, S. L. (2006). Using mixed-methods sequential explanatory design: From theory to practice. *Field methods*, 18(1), 3-20. <https://doi.org/10.1177/1525822X05282260>
- Jackson, N. (1997). BPR'96-A report on the Business Process Re-engineering conference organised by Business Intelligence and held at the end of October in London. *Management Services*, 41(2), 34-37.

- Jain, N. (2021). Survey versus interviews: Comparing data collection tools for exploratory research. *The Qualitative Report*, 26(2), 541-554. DOI:10.46743/2160-3715/2021.4492
- Jerab, D., & Mabrouk, T. (2023). Strategies for Effective Organizational Restructuring: A Comprehensive Guide. <https://dx.doi.org/10.2139/ssrn.4584665>
- Jick, T. D. (1979). Mixing qualitative and quantitative methods: Triangulation in action. *Administrative Science Quarterly*, 24, 602-611. doi:10.2307/2392366
- Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational researcher*, 33(7), 14-26. DOI:10.3102/0013189X033007014
- Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2007). Toward a definition of mixed methods research. *Journal of mixed methods research*, 1(2), 112-133. doi: 10.1177/1558689806298224
- Johnston, M. (2017). Secondary data analysis: A method of which the time has come. *Qualitative And Quantitative Methods in Libraries*, 3(3), 619-626. Retrieved November 26, 2022, from: <http://www.qqml-journal.net/index.php/qqml/article/view/169>
- Jordaan, B. (2019). Leading organisations in turbulent times: Towards a different mental model. *Leading in a VUCA World*, 38(4), 59. https://doi.org/10.1007/978-3-319-98884-9_4
- Joslin, R., & Müller, R. (2015). Relationships between a project management methodology and project success in different project governance contexts. *International journal of project management*, 33(6), 1377-1392. <https://doi.org/10.1016/j.ijproman.2015.03.005>

- Jugdev, K., Thomas, J., & Delisle, C. L. (2001). Rethinking project management: old truths and new insights. *International Project Management Journal*, 7(1), 36-43. Retrieved September 16, 2023, from https://www.researchgate.net/profile/Janice-Thomas-2/publication/258933412_Rethinking_project_management_-_Old_truths_and_new_insights/links/00b7d52cc676ef1f95000000/Rethinking-project-management-Old-truths-and-new-insights.pdf#page=36
- Jupp, V. (2006). *The SAGE Dictionary of Social Research Method*. SAGE Publications Ltd.
- Kabir, S. (2016). *Basic Guidelines for Research. An Introductory Approach for All Discipline. First Edition*. Bangladesh: Book Zone Publication.
- Kallio, H., Pietilä, A. M., Johnson, M., & Kangasniemi, M. (2016). Systematic methodological review: Developing a framework for a qualitative semi-structured interview guide. *Journal of advanced nursing*, 72(12), 2954-2965. <https://doi.org/10.1111/jan.13031>
- Kang, E., & Hwang, H. J. (2023). The importance of anonymity and confidentiality for conducting survey research. *Journal of Research and Publication Ethics*, 4(1), 1-7. doi: <http://dx.doi.org/10.15722/jrpe.4.1.202303.1>
- Kar, N. (2011). Ethics in research. *Odisha Journal of Psychiatry*. 17. 23-28. Retrieved from https://www.researchgate.net/publication/224894197_Ethics_in_research
- Karim, M.R. (2007). *Analysing the Role of Triangulation in Research*. Munich, GRIN Verlag. <https://www.grin.com/document/207958>
- Karma. P.M. (2008). *Ancient project management*. Retrieved from PM Karma: <http://pmkarma.blogspot.com/2008/11/ancient-project-management.html>
- Karunarathna, I., Gunasena, P., Hapuarachchi, T., & Gunathilake, S. (2024). Comprehensive data collection: Methods, challenges, and the importance of accuracy. *Uva Clinical*

- Research*, 1-24. Retrieved February 26, 2024, from https://www.researchgate.net/profile/Indunil-Karunarathna/publication/383155455_Comprehensive_Data_Collection_Methods_Challenges_and_the_Importance_of_Accuracy/data/66beea8e8d00735592560f16/Comprehensive-Data-Collection-Methods-Challenges-and-the-Importance-of-Accuracy.pdf
- Kaul, V., Shah, V., & El-Serag, H. (2020). Leadership during crisis: Lessons and applications from the covid-19 pandemic. *Gastroenterology*, 159(3) 809-812.
[https://www.gastrojournal.org/article/S0016-5085\(20\)30679-X/fulltext#relatedArticles](https://www.gastrojournal.org/article/S0016-5085(20)30679-X/fulltext#relatedArticles)
- Kaushik, M., & Guleria, N. (2020). The impact of pandemic COVID-19 in workplace. *European Journal of Business and Management*, 12(15), 1-10. Retrieved February 23, 2025, from https://www.researchgate.net/profile/Neha-Guleria-2/publication/353659460_The_Impact_of_Pandemic_COVID_19_in_Workplace/links/6109085c1ca20f6f86f718be/The-Impact-of-Pandemic-COVID-19-in-Workplace.pdf
- Kavanagh, A. & Goldizen, A. W. & Noad, M. J. (2016). Factors affecting the reliability and validity of behavioural datasets: Assessing the impact of observers' experience and native language on studies of wild animals. *Aquatic Mammals* 2016, 42(1), 1-11. doi: 10.1578/AM.42.1.2016.1
- Khan, N. (2020). Critical Review of Sampling Techniques in the Research Process in the World. Retrieved from: <http://dx.doi.org/10.2139/ssrn.3572336>
- Khanna, R. C., Cicinelli, M. V., Gilbert, S. S., Honavar, S. G., & Murthy, G. V. (2020). COVID-19 pandemic: Lessons learned and future directions. *Indian journal of ophthalmology*, 68(5), 703-710.

- Khashman, A. M. (2019). The Effect of Business Process Re-Engineering on Organizational Performance: The Mediating Role of Information and Communications Technology. *International Journal of Business and Management*, 14(9), 132-149. <https://doi.org/10.5539/ijbm.v14n9p132>
- Kiger, M. E., & Varpio, L. (2020). Thematic analysis of qualitative data: AMEE Guide No.131. *Medical Teacher*, 42(8), 846–854. Retrieved March 24, 2024, from <https://doi.org/10.1080/0142159x.2020.1755030>
- Kim, H. M., & Ramkaran, R. (2004). Best practices in e-business process management: Extending a re-engineering framework. *Business process management journal*, 10(1), 27-43. <https://doi.org/10.1108/14637150410518310>
- King, I. (1996). The road to continuous improvement: BPR and Project Management. *IIE solutions*, 28(10), 22-28. <https://link.gale.com/apps/doc/A18860063/AONE?u=anon~1d30f3ab&sid=googleScholar&xid=70e95632>
- King, J. L., & Kraemer, K. L. (1984). Evolution and organizational information systems: an assessment of Nolan's stage model. *Communications of the ACM*, 27(5), 466-475. <https://doi.org/10.1145/358189.358074>
- King, W. R. (1994). Process reengineering. The strategic dimensions. *Information System Management*, 11(2), 71-73. <https://doi.org/10.1080/10580539408964639>
- Klein, M. M. (1995). Requirements for successful reengineering. *INFOR: Information Systems and Operational Research*, 33(4), 225-233. <https://doi.org/10.1080/03155986.1995.11732283>
- Koenig, M., Eagly, A. H., Mitchell, A., & Ristikari, T. (2011). Are leader stereotypes masculine? A meta-analysis of three research paradigms. *Psychological Bulletin*, 137(4), 616-642. doi:10.1037/a0023557

- Kolb, J. A. (1999). The effect of gender role, attitude toward leadership, and self-confidence on leader emergence: Implications for leadership development. *Human Resource Development Quarterly*, 10(4), 305-320. doi:10.1002/hrdq.3920100403
- Kothari, P. (2019). Redefining the project manager role in scrum. Retrieved September 24, 2023, from <https://www.agileconnection.com/article/redefining-project-manager-role-scrum>
- Kotter, J. P. (1990). *A force for change: How leadership differs from management*. New York, NY: Free Press
- Krejcie, R.V., & Morgan, D.W. (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement*, 30, 607-610. <https://doi.org/10.1177/001316447003000308>.
- Kwak, Y. H.. (2003). Brief History Of Project Management. In K. A. Carayannis, *The Story of Managing Projects* (p. Chapter 2). Quorum Books.
- Kyngäs, H., Kääriäinen, M., & Elo, S. (2020). The trustworthiness of content analysis. *The application of content analysis in nursing science research*, 41-48. Retrieved July 9, 2024, from https://link.springer.com/chapter/10.1007/978-3-030-30199-6_5
- Lakshman, M., Sinha, L., Biswas, M. (2000). Quantitative vs qualitative research methods. *Indian J Pediatr* 67, 369–377. <https://doi.org/10.1007/BF02820690>
- Larsen, B. (2003). Courts of the Future; Law and Information Technology. *Swedish View: An anthology produced by the IT Law Observatory of the Swedish ICT Commission*. Stockholm, SOU, 112, 225-238.
- Lee, G. G., & Pai, J. C. (2003). Effects of organizational context and inter-group behaviour on the success of strategic information systems planning: an empirical study. *Behaviour & Information Technology*, 22(4), 263-280. <https://doi.org/10.1080/0144929031000136548>

- Li, N., & Nazif, H. (2022). Systematic literature review on business process re-engineering approaches in logistics. *Kybernetes*, 51(10), 3009-3024. <https://doi.org/10.1108/K-09-2020-0579>
- Liang B, Lu H. (2006) Conducting Fieldwork in China: Observations on Collecting Primary Data Regarding Crime, Law, and the Criminal Justice System. *Journal of Contemporary Criminal Justice*, 22(2), 157-172. doi:10.1177/1043986206286918
- Ligus, R. G. (1993). Methods to help reengineer your company for improved agility. *Industrial Engineering*, 25(1), 58-59.
- Lincoln, Y. S., & Guba, E. (1985). *Naturalistic Inquiry*. SAGE Publications.
- Lippe, M., Johnson, B., & Carter, P. (2019). Protecting student anonymity in research using a subject-generated identification code. *Journal of Professional Nursing*, 35(2), 120-123. <https://doi.org/10.1016/j.profnurs.2018.09.006>
- Lokhande, D. A., Venkateswaran, D. C., Ramachandran, D. M., Chinnasami, S., & Vennila, T. (2021). A Review on Various Implications on Re engineering in Manufacturing. *REST Journal on Emerging trends in Modelling and Manufacturing*, 7(3), 70-75. Retrieved April 13, 2023, from <http://restpublisher.com/wp-content/uploads/2022/01/1.-A-Review-on-Various-Implications-on-Re-engineering-in-Manufacturing.pdf>
- Love, P. E., MacSporran, C., & Tucker, S. N. (1996, August). The application of information technology by Australian contractors: toward process re-engineering. In *Proceeding of International Conferences on Lean Construction, The University of Birmingham, UK*. Retrieved July 12, 2023, from https://d1wqtxts1xzle7.cloudfront.net/88951492/attachment-464b6b76-b5dc-4003-8195-6dfa6f23724f-libre.pdf?1658732824=&response-content-disposition=inline%3B+filename%3DThe_application_of_information_technolog.pdf

&Expires=1689176969&Signature=AUOxcPIWZBNSRCN-
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 OnSyWdjPxqBLbzKQQGduKl5LJkdEUAcYDwJwiclggVJQB3S9tJvW~-
 cGCPOWW8g3AVROlPqQ__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA

Luecke, R. (2003). *Managing change and transition* (Vol. 3). Harvard Business Press.

Mack, N. (2005). Qualitative research methods: A data collector's field guide.

Macke, J., & Genari, D. (2019). Systematic literature review on sustainable human resource management. *Journal of cleaner production*, 208, 806-815.

<https://doi.org/10.1016/j.jclepro.2018.10.091>

Majeed, A. (2013). Application of business process through talent management: An empirical study. *Journal of Marketing and Management*, 4(2), 46. Retrieved June 17, 2023, from

<https://www.proquest.com/openview/045cbe7efc042bfc198e69ce670fc709/1?pq-origsite=gscholar&cbl=2032031>

Majid, M. A. A., Othman, M., Mohamad, S. F., Lim, S. A. H., & Yusof, A. (2017). Piloting for interviews in qualitative research: Operationalization and lessons learnt. *International Journal of Academic Research in Business and Social Sciences*, 7(4), 1073-1080. DOI: 10.6007/IJARBS/v7-i4/2916

Makwana, D., Engineer, P., Dabhi, A., & Chudasama, H. (2023). Sampling methods in research: A review. *Int. J. Trend Sci. Res. Dev*, 7(3), 762-768.

www.ijtsrd.com/papers/ijtsrd57470.pdf

- Manandhar, N., & Joshi, S. K. (2020). Importance of consent in the research. *International Journal of Occupational Safety and Health*, 10(2), 89-91.
<https://doi.org/10.3126/ijosh.v10i2.33284>
- Mandal, J., Parija, M., & Parija, S. C. (2012). Ethics of funding of research. *Tropical parasitology*, 2(2), 89–90. <https://doi.org/10.4103/2229-5070.105172>
- Manuti, A., Giancaspro, M. L., Molino, M., Ingusci, E., Russo, V., Signore, F., Zito, M., et al. (2020). “Everything will be fine”: A study on the relationship between employees’ perception of sustainable HRM practices and positive organizational behavior during COVID19. *Sustainability*, 12(23), 10216. MDPI AG.
<http://dx.doi.org/10.3390/su122310216>
- Marzano, M. (2022). Ethical Issues in Covert, Security and Surveillance Research. *Research Ethics and Integrity*, 8, 41-53. <https://doi.org/10.1108/S2398-601820210000008005>
- Margherita, A., & Heikkilä, M. (2021). Business continuity in the covid-19 emergency: A framework of actions undertaken by world-leading companies. *Business Horizons*, 64(5), 683-695. <https://doi.org/10.1016/j.bushor.2021.02.020>
- Mark, M. & Shotland, R. (1984). *Problems in drawing inferences from multiple methodologies*. Joint Meeting of the Evaluation Network and the Evaluation Research Society, San Francisco.
- Márquez, M. G., & Delgado, A. R. (2017). An exploratory sequential design to validate measures of moral emotions. *Psicothema*, 29(2), 261-267. Retrieved November 15, 2023, from <https://www.redalyc.org/pdf/727/72750577018.pdf>
- Marsh, E. R. (1975). The harmonogram of karol adamiecki. *Academy of management Journal*, 18(2), 358-364. <https://doi.org/10.5465/255537>

- Martin, J. (2015). Transformational and transactional leadership: An exploration of gender, experience, and institution type. *Portal: Libraries and the Academy*, 15(2), 331-351. doi:10.1353/pla.2015.0015
- Martinez, E. V. (1995). Successful reengineering demands IS/business partnerships. *MIT Sloan Management Review*. <https://sloanreview.mit.edu/article/successful-reengineering-demands-isbusiness-partnerships/>
- Maslanka, A. M. (2004). *Evolution of leadership theories* (Doctoral dissertation, Grand Valley State University). Retrieved July 4, 2023, from <https://scholarworks.gvsu.edu/cgi/viewcontent.cgi?article=1627&context=theses>
- Maul, R. S., Weaver, A. M., Childe, S. J., Smar, P. A., & Bennett, J. (1995). Current issues in business process re-engineering. *International Journal of Operations & Production Management*, 15(11), 37-52. <https://doi.org/10.1108/01443579510102882>
- Maxwell, J C (1998). *21 Irrefutable Laws of Leadership*. Nashville, Tennessee: Thomas Nelson, Inc.
- Maxwell, J. A. (2005). *Qualitative Research Design: An Interactive Approach*. SAGE Publications.
- McConnell, T. (2010). The inalienable right to withdraw from research. *Journal of Law, Medicine & Ethics*, 38(4), 840-846. doi:10.1111/j.1748-720X.2010.00537.x
- McCusker, K., & Gunaydin, S. (2015). Research using qualitative, quantitative or mixed methods and choice based on the research. *Perfusion*, 30(7), 537-542. <https://doi.org/10.1177/0267659114559116>
- McKimm J., & Vogan C. (2020). Followership: much more than simply following the leader. *BMJ Leader*, 4(2) 41-44. <http://dx.doi.org/10.1136/leader-2019-000162>

McKniff, K. (2016). *What is Qualitative Research?* | NVivo Blog. QSR International.

Retrieved March 21, 2024, from <https://www.qsrinternational.com/nvivo-qualitative-dataanalysis-software/resources/blog/what-is-qualitative-research>.

Megahed, N. & Hassan, A. (2022). A blended learning strategy: Reimagining the post-covid-19 architectural education. *Archnet-IJAR*, 16(1), 184-202.

<https://doi.org/10.1108/ARCH-04-2021-0081>

Memon, M. A., Cheah, J. H., Ramayah, T., Ting, H., Chuah, F., & Cham, T. H. (2019).

Moderation analysis: Issues and guidelines. *Journal of Applied Structural Equation Modeling*, 3(1), 1-11. Retrieved June 27, 2023, from

[https://www.researchgate.net/profile/Mumtaz-](https://www.researchgate.net/profile/Mumtaz-Memon/publication/331175332_Moderation_Analysis_Issues_and_Guidelines/links/5c6abcea299bf1e3a5b012cd/Moderation-Analysis-Issues-and-Guidelines.pdf)

[Memon/publication/331175332_Moderation_Analysis_Issues_and_Guidelines/links/5c6abcea299bf1e3a5b012cd/Moderation-Analysis-Issues-and-Guidelines.pdf](https://www.researchgate.net/profile/Mumtaz-Memon/publication/331175332_Moderation_Analysis_Issues_and_Guidelines/links/5c6abcea299bf1e3a5b012cd/Moderation-Analysis-Issues-and-Guidelines.pdf)

Menezes, A. (2016). Business Ethics and Its Importance in Banking Industry. *International Journal of Scientific Research and Modern Education (IJSRME)*, 1(2), 196-201.

[https://d1wqtxts1xzle7.cloudfront.net/91154055/139-](https://d1wqtxts1xzle7.cloudfront.net/91154055/139-libre.pdf?1663394110=&response-content-disposition=inline%3B+filename%3DBusiness_Ethics_And_Its_Importance_In_Ba.pdf&Expires=1741454042&Signature=Qnu1vSk1gzNb6cKzrKrKEMxCdtwbDi~RKoR1HJBvYr6diLR9giWqOOtGSpgtf0kWaBz1e7LLKph7gEymPYHZ1yICPqfjdrpOKzGjOi8A-0XQPU6xK5rWl7RSxfYtzs6hmaL4JhjNwWFmgZk11U1dq2W3DEiLHkyqkXqP0GXkWHBrtEEidER600JV7SMsNqmFbzE1nRu0DuLo12ho5cKfRuFuKI3yv2iknFPA4QBs756hhN1Mrlqpi6nveCC7jZoh7KBId9vSdUE49oWjxIh7fJ4vSbO8BribGYfSp6ihGK8dATrQM6XtktxkxgClbX3VRpb0GiDoCjCYzgAhiGQ__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA)

[libre.pdf?1663394110=&response-content-](https://d1wqtxts1xzle7.cloudfront.net/91154055/139-libre.pdf?1663394110=&response-content-disposition=inline%3B+filename%3DBusiness_Ethics_And_Its_Importance_In_Ba.pdf&Expires=1741454042&Signature=Qnu1vSk1gzNb6cKzrKrKEMxCdtwbDi~RKoR1HJBvYr6diLR9giWqOOtGSpgtf0kWaBz1e7LLKph7gEymPYHZ1yICPqfjdrpOKzGjOi8A-0XQPU6xK5rWl7RSxfYtzs6hmaL4JhjNwWFmgZk11U1dq2W3DEiLHkyqkXqP0GXkWHBrtEEidER600JV7SMsNqmFbzE1nRu0DuLo12ho5cKfRuFuKI3yv2iknFPA4QBs756hhN1Mrlqpi6nveCC7jZoh7KBId9vSdUE49oWjxIh7fJ4vSbO8BribGYfSp6ihGK8dATrQM6XtktxkxgClbX3VRpb0GiDoCjCYzgAhiGQ__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA)

[disposition=inline%3B+filename%3DBusiness_Ethics_And_Its_Importance_In_Ba.p](https://d1wqtxts1xzle7.cloudfront.net/91154055/139-libre.pdf?1663394110=&response-content-disposition=inline%3B+filename%3DBusiness_Ethics_And_Its_Importance_In_Ba.pdf&Expires=1741454042&Signature=Qnu1vSk1gzNb6cKzrKrKEMxCdtwbDi~RKoR1HJBvYr6diLR9giWqOOtGSpgtf0kWaBz1e7LLKph7gEymPYHZ1yICPqfjdrpOKzGjOi8A-0XQPU6xK5rWl7RSxfYtzs6hmaL4JhjNwWFmgZk11U1dq2W3DEiLHkyqkXqP0GXkWHBrtEEidER600JV7SMsNqmFbzE1nRu0DuLo12ho5cKfRuFuKI3yv2iknFPA4QBs756hhN1Mrlqpi6nveCC7jZoh7KBId9vSdUE49oWjxIh7fJ4vSbO8BribGYfSp6ihGK8dATrQM6XtktxkxgClbX3VRpb0GiDoCjCYzgAhiGQ__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA)

[df&Expires=1741454042&Signature=Qnu1vSk1gzNb6cKzrKrKEMxCdtwbDi~RK](https://d1wqtxts1xzle7.cloudfront.net/91154055/139-libre.pdf?1663394110=&response-content-disposition=inline%3B+filename%3DBusiness_Ethics_And_Its_Importance_In_Ba.pdf&Expires=1741454042&Signature=Qnu1vSk1gzNb6cKzrKrKEMxCdtwbDi~RKoR1HJBvYr6diLR9giWqOOtGSpgtf0kWaBz1e7LLKph7gEymPYHZ1yICPqfjdrpOKzGjOi8A-0XQPU6xK5rWl7RSxfYtzs6hmaL4JhjNwWFmgZk11U1dq2W3DEiLHkyqkXqP0GXkWHBrtEEidER600JV7SMsNqmFbzE1nRu0DuLo12ho5cKfRuFuKI3yv2iknFPA4QBs756hhN1Mrlqpi6nveCC7jZoh7KBId9vSdUE49oWjxIh7fJ4vSbO8BribGYfSp6ihGK8dATrQM6XtktxkxgClbX3VRpb0GiDoCjCYzgAhiGQ__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA)

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[kzGjOi8A-](https://d1wqtxts1xzle7.cloudfront.net/91154055/139-libre.pdf?1663394110=&response-content-disposition=inline%3B+filename%3DBusiness_Ethics_And_Its_Importance_In_Ba.pdf&Expires=1741454042&Signature=Qnu1vSk1gzNb6cKzrKrKEMxCdtwbDi~RKoR1HJBvYr6diLR9giWqOOtGSpgtf0kWaBz1e7LLKph7gEymPYHZ1yICPqfjdrpOKzGjOi8A-0XQPU6xK5rWl7RSxfYtzs6hmaL4JhjNwWFmgZk11U1dq2W3DEiLHkyqkXqP0GXkWHBrtEEidER600JV7SMsNqmFbzE1nRu0DuLo12ho5cKfRuFuKI3yv2iknFPA4QBs756hhN1Mrlqpi6nveCC7jZoh7KBId9vSdUE49oWjxIh7fJ4vSbO8BribGYfSp6ihGK8dATrQM6XtktxkxgClbX3VRpb0GiDoCjCYzgAhiGQ__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA)

[0XQPU6xK5rWl7RSxfYtzs6hmaL4JhjNwWFmgZk11U1dq2W3DEiLHkyqkXqP0G](https://d1wqtxts1xzle7.cloudfront.net/91154055/139-libre.pdf?1663394110=&response-content-disposition=inline%3B+filename%3DBusiness_Ethics_And_Its_Importance_In_Ba.pdf&Expires=1741454042&Signature=Qnu1vSk1gzNb6cKzrKrKEMxCdtwbDi~RKoR1HJBvYr6diLR9giWqOOtGSpgtf0kWaBz1e7LLKph7gEymPYHZ1yICPqfjdrpOKzGjOi8A-0XQPU6xK5rWl7RSxfYtzs6hmaL4JhjNwWFmgZk11U1dq2W3DEiLHkyqkXqP0GXkWHBrtEEidER600JV7SMsNqmFbzE1nRu0DuLo12ho5cKfRuFuKI3yv2iknFPA4QBs756hhN1Mrlqpi6nveCC7jZoh7KBId9vSdUE49oWjxIh7fJ4vSbO8BribGYfSp6ihGK8dATrQM6XtktxkxgClbX3VRpb0GiDoCjCYzgAhiGQ__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA)

[XkWHBrtEEidER600JV7SMsNqmFbzE1nRu0DuLo12ho5cKfRuFuKI3yv2iknFPA](https://d1wqtxts1xzle7.cloudfront.net/91154055/139-libre.pdf?1663394110=&response-content-disposition=inline%3B+filename%3DBusiness_Ethics_And_Its_Importance_In_Ba.pdf&Expires=1741454042&Signature=Qnu1vSk1gzNb6cKzrKrKEMxCdtwbDi~RKoR1HJBvYr6diLR9giWqOOtGSpgtf0kWaBz1e7LLKph7gEymPYHZ1yICPqfjdrpOKzGjOi8A-0XQPU6xK5rWl7RSxfYtzs6hmaL4JhjNwWFmgZk11U1dq2W3DEiLHkyqkXqP0GXkWHBrtEEidER600JV7SMsNqmFbzE1nRu0DuLo12ho5cKfRuFuKI3yv2iknFPA4QBs756hhN1Mrlqpi6nveCC7jZoh7KBId9vSdUE49oWjxIh7fJ4vSbO8BribGYfSp6ihGK8dATrQM6XtktxkxgClbX3VRpb0GiDoCjCYzgAhiGQ__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA)

[A4QBs756hhN1Mrlqpi6nveCC7jZoh7KBId9vSdUE49oWjxIh7fJ4vSbO8BribGYfSp](https://d1wqtxts1xzle7.cloudfront.net/91154055/139-libre.pdf?1663394110=&response-content-disposition=inline%3B+filename%3DBusiness_Ethics_And_Its_Importance_In_Ba.pdf&Expires=1741454042&Signature=Qnu1vSk1gzNb6cKzrKrKEMxCdtwbDi~RKoR1HJBvYr6diLR9giWqOOtGSpgtf0kWaBz1e7LLKph7gEymPYHZ1yICPqfjdrpOKzGjOi8A-0XQPU6xK5rWl7RSxfYtzs6hmaL4JhjNwWFmgZk11U1dq2W3DEiLHkyqkXqP0GXkWHBrtEEidER600JV7SMsNqmFbzE1nRu0DuLo12ho5cKfRuFuKI3yv2iknFPA4QBs756hhN1Mrlqpi6nveCC7jZoh7KBId9vSdUE49oWjxIh7fJ4vSbO8BribGYfSp6ihGK8dATrQM6XtktxkxgClbX3VRpb0GiDoCjCYzgAhiGQ__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA)

[6ihGK8dATrQM6XtktxkxgClbX3VRpb0GiDoCjCYzgAhiGQ__&Key-Pair-](https://d1wqtxts1xzle7.cloudfront.net/91154055/139-libre.pdf?1663394110=&response-content-disposition=inline%3B+filename%3DBusiness_Ethics_And_Its_Importance_In_Ba.pdf&Expires=1741454042&Signature=Qnu1vSk1gzNb6cKzrKrKEMxCdtwbDi~RKoR1HJBvYr6diLR9giWqOOtGSpgtf0kWaBz1e7LLKph7gEymPYHZ1yICPqfjdrpOKzGjOi8A-0XQPU6xK5rWl7RSxfYtzs6hmaL4JhjNwWFmgZk11U1dq2W3DEiLHkyqkXqP0GXkWHBrtEEidER600JV7SMsNqmFbzE1nRu0DuLo12ho5cKfRuFuKI3yv2iknFPA4QBs756hhN1Mrlqpi6nveCC7jZoh7KBId9vSdUE49oWjxIh7fJ4vSbO8BribGYfSp6ihGK8dATrQM6XtktxkxgClbX3VRpb0GiDoCjCYzgAhiGQ__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA)

[Id=APKAJLOHF5GGSLRBV4ZA](https://d1wqtxts1xzle7.cloudfront.net/91154055/139-libre.pdf?1663394110=&response-content-disposition=inline%3B+filename%3DBusiness_Ethics_And_Its_Importance_In_Ba.pdf&Expires=1741454042&Signature=Qnu1vSk1gzNb6cKzrKrKEMxCdtwbDi~RKoR1HJBvYr6diLR9giWqOOtGSpgtf0kWaBz1e7LLKph7gEymPYHZ1yICPqfjdrpOKzGjOi8A-0XQPU6xK5rWl7RSxfYtzs6hmaL4JhjNwWFmgZk11U1dq2W3DEiLHkyqkXqP0GXkWHBrtEEidER600JV7SMsNqmFbzE1nRu0DuLo12ho5cKfRuFuKI3yv2iknFPA4QBs756hhN1Mrlqpi6nveCC7jZoh7KBId9vSdUE49oWjxIh7fJ4vSbO8BribGYfSp6ihGK8dATrQM6XtktxkxgClbX3VRpb0GiDoCjCYzgAhiGQ__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA)

- Mento, A., Jones, R., & Dirndorfer, W. (2002). A change management process: Grounded in both theory and practice. *Journal of change management*, 3(1), 45-59.
<https://doi.org/10.1080/714042520>
- Middleton, F. (2019). Reliability vs validity: what's the difference. Available at:
<https://www.scribbr.com>.
- Milan, R., Milan, B., Marko, C., Jovanovic, V., Dalibor, B., Bojic, Z., & Avramovic, N. (2014). Implementation of business process reengineering in human resource management. *Engineering Economics*, 25(2), 211-222.
<https://doi.org/10.5755/j01.ee.25.2.4590>
- Miller, G. (1995). Reengineering: orty useful hints. *Hospital Materiel Management Quarterly*, 17(2), 37-46. Retrieved June 8, 2023, from
<https://europepmc.org/article/med/10152531>
- Ming-Jian, S., & Ming-Chia, C. (2007). The relationship of leadership, team trust, and team performance: A comparison of the service and manufacturing industries. *Social Behavior and Personality*, 35(5), 643-657. doi:10.2224/sbp.2007.35.5.643
- Mishra, A. K. (2024). Harmony in innovation: Navigating global business landscapes through emerging technologies and dynamic management strategies. In *Proceedings of the 4th International Conference on Harmony in Innovation: Navigating global business landscapes through emerging technologies and dynamic management strategies* (pp. 1040-1047).
- Miteu, G. D. (2024). Ethics in scientific research: A lens into its importance, history, and future. *Annals of Medicine and Surgery*, 86(5), 2395-2398. doi:
10.1097/MS9.0000000000001959
- Mizrak, F. (2024). Effective change management strategies: Exploring dynamic models for organizational transformation. In *Perspectives on artificial intelligence in times of*

turbulence: Theoretical background to applications (pp. 135-162). IGI Global. DOI: 10.4018/978-1-6684-9814-9.ch009

Mohajan, H. (2018). Qualitative research methodology in social sciences and related subjects.

Journal of Economic Development, Environment and People, 7(1), 23-48.

https://mpira.ub.uni-muenchen.de/85654/1/MPRA_paper_85654.pdf

Moran, B. (1992). Gender differences in leadership. *Library trends*, 40(3), 475-491.

Retrieved March 7, 2025, from

<https://www.ideals.illinois.edu/items/7750/bitstreams/27115/object>

Moran, J. W., & Brightman, B. K. (2001). Leading organizational change. *Career*

development international, 6(2), 111-119.

Mufudza, T. (2018). Dynamic strategy in a turbulent business environment. *Strategic*

Management-a Dynamic View. doi: 10.5772/intechopen.81250

Mukherji, A. (2002). The evolution of information systems: their impact on organizations and structures. *Management Decision*, 40(5), 497-507.

<https://doi.org/10.1108/00251740210430498>

Munck, L., Dias, B. G., & Borim-de-Souza, R. (2012). Competences for Organizational

Sustainability: A Proposal for an Analytical Tool for Assessing Eco-

Efficiency. *Business Management Dynamics*, 1(9), 30.

<https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=d137af77ef28f4b8140b3b0baab0425a71c7ffb5>

Munthe-Kaas, H. M., Glenton, C., Booth, A., Noyes, J., & Lewin, S. (2019). Systematic

mapping of existing tools to appraise methodological strengths and limitations of qualitative research: first stage in the development of the CAMELOT tool. *BMC*

medical research methodology, 19(1), 1-13. [https://doi.org/10.1186/s12874-019-](https://doi.org/10.1186/s12874-019-0728-6)

0728-6

- Musonda, I., & Okoro, C. S. (2022). A hermeneutic research on project management approaches applied in a business process re-engineering project. *Business Process Management Journal*, 28(8), 66-89. <https://doi.org/10.1108/BPMJ-11-2021-0694>
- Nah, F. F. H., Zuckweiler, K. M., & Lee-Shang Lau, J. (2003). ERP implementation: chief information officers' perceptions of critical success factors. *International journal of Human-computer Interaction*, 16(1), 5-22.
https://doi.org/10.1207/S15327590IJHC1601_2
- Nanton, C. R. (2015). *Shaping Leadership Culture to Sustain Future Generations of Women Leaders*. http://digitalcommons.www.na-businesspress.com/JLAE/NantonCR_Web12_3_.pdf
- Narayan, K. G., Sinha, D. K., & Singh, D. K. (2023). Sampling techniques. In *Veterinary Public Health & Epidemiology: Veterinary Public Health-Epidemiology-Zoonosis-One Health* (pp. 111-123). Singapore: Springer Nature Singapore. DOI: https://doi.org/10.1007/978-981-19-7800-5_12
- Natow, R. S. (2020). The use of triangulation in qualitative studies employing elite interviews. *Qualitative research*, 20(2), 160-173.
<https://doi.org/10.1177/1468794119830077>
- Nicolaides, A., & McCallum, D. (2013). Inquiry in action for leadership in turbulent times: Exploring the connections between transformative learning and adaptive leadership. *Journal of Transformative Education*, 11(4) 246-260. doi: 10.1177/1541344614540333
- Njuguna, A. W., & Wanjohi, P. (2021). Effect of business process re-engineering on performance of agro-processing firms in Nairobi City County. *The Strategic Journal of Business & Change Management*, 8(4), 33-54. Retrieved April 16, 2023, from <http://strategicjournals.com/index.php/journal/article/view/2084>

- Nkomo, A., & Marnewick, C. (2021). Improving the success rate of business process re-engineering projects: A business process re-engineering framework. *South African Journal of Information Management*, 23(1), 1-11.
<http://dx.doi.org/10.4102/sajim.v23i1.1259>
- Nkurunziza, G., Munene, J., Ntayi, J., & Kaberuka, W. (2019). Business process reengineering in developing economies: Lessons from microfinance institutions (MFIs) in Uganda. *Innovation & Management Review*, 16(2), 118-142.
<https://doi.org/10.1108/INMR-03-2018-0010>
- Noble, H., & Smith, J. (2015). Issues of validity and reliability in qualitative research. *Evidence Based Nursing*, 18(2), 34-35. Retrieved July 21, 2024, from
<https://doi.org/10.1136/eb.2015-102054>
- Noor, S., Tajik, O., & Golzar, J. (2022). Simple random sampling. *International Journal of Education & Language Studies*, 1(2), 78-82.
<https://doi.org/10.22034/ijels.2022.162982>
- Northouse, P. (2007). *Leadership theory and practice*. Thousand Oaks, CA: Sage Publications.
- Norton, D. P. (1995). Managing benefits from information technology. *Information Management & Computer Security*, 3(5), 29-35.
<https://doi.org/10.1108/09685229510793022>
- Novikov, V. S., Pykhtin, A. I., Gureva, M. A., Sozinova, A. A., & Prokhorova, M. P. (2016). Re-engineering as the process of business adaptations. *International Journal of Economics and Financial Issues*, 6(1), 126-132. Retrieved December 2, 2022, from
<https://dergipark.org.tr/en/pub/ijefi/issue/31979/352555?publisher=http-www-cag-edu-tr-ilhan-ozturk>
- Nunnally, J. C. (1978). *Psychometric Theory: 2d Ed*. McGraw-Hill.

- O’riordan, J. (2022). *The practice of human resource management*. An Foras Riaracháin Institute of Public Administration. Retrieved July 28, 2023, from <http://portal.belesparadisecollege.edu.et:8080/library/bitstream/123456789/845/1/11.%20The%20practice%20of%20human%20resource%20management%20author%20Joanna%20O%E2%80%99Riordan.pdf>
- O’Cathain, A., Murphy, E., & Nicholl, J. (2007). Why, and how, mixed methods research is undertaken in health services research in England: A mixed methods study. *BMC health services research*, 7(85), 1-11. <https://doi.org/10.1186/1472-6963-7-85>
- Olsen, W. (2004). Triangulation in social research: qualitative and quantitative methods can really be mixed. *Developments in sociology*, 20, 103-118. <https://www.federica.eu/users/9/docs/amaturo-39571-01-Triangulation.pdf>
- Omair, A. (2014). Sample size estimation and sampling techniques for selecting a representative sample. *Journal of Health specialties*, 2(4), 142. DOI: 10.4103/1658-600X.142783
- Omona, J. (2013). Sampling in Qualitative Research: Improving the Quality of Research Outcomes in Higher Education. *Mackerere Journal of Higher Education* 4 (2). DOI: 10.4314/majohe.v4i2.4
- Onn, C. W., & Sorooshian, S. (2013). Mini literature analysis on information technology definition. In *Information and Knowledge Management*, 3(2), 139-140. Retrieved July 13, 2023, from <https://core.ac.uk/download/pdf/234671309.pdf>
- Orieno, O. H., Ndubuisi, N. L., Eyo-Udo, N. L., Ilojiana, V. I., & Biu, P. W. (2024). Sustainability in project management: A comprehensive review. *World Journal of Advanced Research and Reviews*, 21(1), 656-677. DOI: 10.30574/wjarr.2024.21.1.0060

- Orru, K., Nero, K., Nævestad, T. O., Schieffellers, A., Olson, A., Airola, M., ... & de los Rios Pérez, D. A. (2021). Resilience in care organisations: challenges in maintaining support for vulnerable people in Europe during the Covid-19 pandemic. *Disasters*, 45, S48-S75. <https://doi.org/10.1111/disa.12526>
- Oxford Business Group, (2024). *The Report: Trinidad & Tobago 2016*. Retrieved March 15, 2024, from [https://oxfordbusinessgroup.com/reports/trinidad-tobago/2016-report/economy/economic-backbone-initiatives-help-secure-funding-and-opportunities-for-small-and-medium-sized-enterprises#:~:text=A%20small%20enterprise%20in%20T%26T,%2410m%20\(%241.5m\)](https://oxfordbusinessgroup.com/reports/trinidad-tobago/2016-report/economy/economic-backbone-initiatives-help-secure-funding-and-opportunities-for-small-and-medium-sized-enterprises#:~:text=A%20small%20enterprise%20in%20T%26T,%2410m%20(%241.5m))
- Ozcelik, Y. (2010). Do business process reengineering projects payoff? Evidence from the United States. *International Journal of Project Management*, 28(1), 7-13. <https://doi.org/10.1016/j.ijproman.2009.03.004>
- Packendorff, J. (1995). Inquiring into the temporary organization: new directions for project management research. *Scandinavian journal of management*, 11(4), 319-333. [https://doi.org/10.1016/0956-5221\(95\)00018-Q](https://doi.org/10.1016/0956-5221(95)00018-Q)
- Palinkas, L. A., Aarons, G. A., Horwitz, S., Chamberlain, P., Hurlburt, M., & Landsverk, J. (2011). Mixed method designs in implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*, 38, 44-53. <https://doi.org/10.1007/s10488-010-0314-z>
- Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and policy in mental health*, 42(5), 533–544. <https://doi.org/10.1007/s10488-013-0528-y>

- Palys, T., & Lowman, J. (2006). Protecting research confidentiality: Towards a research-participant shield law. *Canadian Journal of Law and Society/La Revue Canadienne Droit et Société*, 21(1), 163-185. doi:10.1353/jls.2006.0040
- Pandey, S. (2014). What makes an ideal leader during turbulent times?”. *Golden Research Thoughts*, 4(3). Retrieved March 7, 2025, from https://www.academia.edu/11039196/WHAT_MAKES_AN_IDEAL_LEADER_DURING_TURBULENT_TIMES
- Paper, D., & Chang, R. D. (2005). The state of business process reengineering: a search for success factors. *Total Quality Management & Business Excellence*, 16(1), 121-133. <https://doi.org/10.1080/1478336042000309907>
- Park, K. O. (2018). The relationship between BPR strategy and change management for the sustainable implementation of ERP: An information orientation perspective. *Sustainability*, 10(9), 3080. <https://doi.org/10.3390/su10093080>
- Pasaribu, R. D., Anggadwita, G., Hendayani, R., Kotjoprayudi, R. B., & Apiani, D. I. N. (2021). Implementation of business process reengineering (BPR): Case study of official trip procedures in higher education institutions. *Journal of Industrial Engineering and Management*, 14(3), 622-644. DOI: 10.3926/jiem.3403
- Pathak, V., Jena, B., & Kalra, S. (2013) Qualitative Research. *Perspectives in Clinical Research; Mumbai* (4)3, 192. doi:10.4103/2229-3485.115389
- Patrawala, S. A., Sheth, S. J., & Dedania, Z. (2023). Analysing the efficacy of morphine in cancer patients: A paired t-test approach using SPSS.
- Peterson, T., & Van Fleet, D. (2004). The ongoing legacy of R.L. Katz. An updated typology of management skills. *Management Decision*, 42(10) 1297-1308. Doi: 10.1108/00251740410568980

- Petrović, N., Terek, E., Petković, T., Sajfert, D., & Rajković, J. (2020). The role of reengineering and TQM in improving the quality of business in organizations. *Acta Technica Corviniensis-Bulletin of Engineering*, 13(1), 143-147.
<https://acta.fih.upt.ro/pdf/2020-1/ACTA-2020-1-25.pdf>
- Pinto, J. K. (2000). Understanding the role of politics in successful project management. *International Journal of Project Management*, 18(2), 85-91.
[https://doi.org/10.1016/S0263-7863\(98\)00073-8](https://doi.org/10.1016/S0263-7863(98)00073-8)
- Polkinghorne, D. E. (2005). Language and meaning: Data collection in qualitative research. *Journal of counseling psychology*, 52(2), 137. <https://doi.org/10.1037/0022-0167.52.2.137>
- Powers, B. A., & Knapp, T. R. (2006). *Dictionary of Nursing Theory and Research*. Springer Publishing.
- Project Management Institute (PMI) (2013). *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)*, 5th edn. Project Management Institute, Hoboken, NJ
- Purcell J et al (2003), Understanding the People and Performance Link, CIPD: London
- Qadri, S. U., Ma, Z., Raza, M., Li, M., Qadri, S., Ye, C., & Xie, H. (2023). COVID-19 and financial performance: Pre and post effect of COVID-19 on organization performance; A study based on South Asian economy. *Frontiers in Public Health*, 10, 1055406.
- Queirós, A., Faria, D., & Almeida, F. (2017). Strengths and limitations of qualitative and quantitative research methods. *European Journal of Education Studies*. doi: 10.5281/zenodo.887089
- Rahman, M. S. (2020). The advantages and disadvantages of using qualitative and quantitative approaches and methods in language “testing and assessment” research: A literature review. <https://doi.org/10.5539/jel.v6n1p102>

- Raza, A. A. (2023). Leadership and Organizational Culture in Turbulent Times: Insights from Pakistani Businesses. *Pakistan Journal of Management & Social Science*, 1(2), 55-62. Retrieved February 27, 2025, from <https://pakistanjournalofmanagement.com/index.php/Journal/article/view/7/41>
- Reeves, M. & Deimler, M. (2011). Adaptability: the new competitive advantage. *Harvard Business Review*. <https://hbr.org/2011/07/adaptability-the-new-competitive-advantage>
- Reijers, H. A., & Mansar, S. L. (2005). Best practices in business process redesign: An overview and qualitative evaluation of successful redesign heuristics. *Omega*, 33(4), 283-306. <http://doi.org/10.1016/j.omega.2004.04.012>
- Resnik, B. (2020). What Is Ethics in Research & Why Is It Important? National Institute of Environmental Health Sciences. Retrieved from: <https://www.niehs.nih.gov/research/resources/bioethics/whatis/index.cfm>
- Reynolds, G. L. (2007). The impact of facilities on recruitment and retention of students. *New Directions for Institutional Research*, 2007(135), 63-80. Retrieved March 29, 2024, from <https://doi.org/10.1002/ir.223>
- Rhee, K. S., & Sigler, T. H. (2015). Untangling the relationship between gender and leadership. *Gender in Management: An International Journal*, 30(2), 109-134. doi:10.1108/GM-09-2013-0114
- Rieley, J., & Clarkson, I. (2001). The impact of change on performance. *Journal of Change management*, 2(2), 160-172. <https://doi.org/10.1080/714042499>
- Riggio, R. E., & Newstead, T. (2023). Crisis leadership. *Annual Review of Organizational Psychology and Organizational Behavior*, 10(1), 201-224. <https://doi.org/10.1146/annurev-orgpsych-120920-044838>
- Riyanto, A., Primiana, I., & Azis, Y. (2018). Reengineering support for competitive advantage through organizational basis, information and communication technology:

a literature review. *Problems and perspectives in management*, 16(3), 464.

<https://www.proquest.com/openview/1b0b7c15e62e17f0ae51b2604713d3b6/1?pq-origsite=gscholar&cbl=4368393>

Robbins, S. P., & Coulter, M. (2005). *Management* (8th ed.). Saddle River, NJ: Pearson Education.

Roque, A., Moreira, J.M., Dias Figueiredo, J., Albuquerque, R., & Gonçalves, H. (2020). Ethics beyond leadership: Can ethics survive bad leadership? *Journal of Global Responsibility*, 11(3) 275-294. <https://doi.org/10.1108/JGR-06-2019-0065>

Ruslin, R., Mashuri, S., Rasak, M. S. A., Alhabsyi, F., & Syam, H. (2022). Semi-structured Interview: A methodological reflection on the development of a qualitative research instrument in educational studies. *IOSR Journal of Research & Method in Education (IOSR-JRME)*, 12(1), 22-29. DOI: 10.9790/7388-1201052229

Saeed, F., Mohammed, F., & Gazem, N. (2019). *Emerging Trends in Intelligent Computing and Informatics: Data Science, Intelligent Information Systems and Smart Computing*. Springer Publishing.

Sahu P. (2020). Closure of universities due to coronavirus disease 2019 (covid-19): Impact on education and mental health of students and academic staff. *Cureus*, 12(4), e7541. <https://doi.org/10.7759/cureus.7541>

Salimifard, K., Abbaszadeh, M. A., & Ghorbanpur, A. (2010). Interpretive structural modeling of critical success factors in banking process re-engineering. *International Review of Business Research Papers*, 6(2), 95-103. Retrieved July 19, 2023, from https://d1wqtxts1xzle7.cloudfront.net/76459114/7._20Salimi-libre.pdf?1639643668=&response-content-disposition=inline%3B+filename%3DInterpretive_structural_modeling_of_crit.pdf&Expires=1689785821&Signature=OmvNIYIVv6k5SqmnRK7qVeRn2FLLj3qiuFFhyj1

K49rE6VVw5s1WUmmxnoIIItfTzEMtHs8FGbP1clM1rZJY4-
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 JJcp9Jg__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA

San Cristóbal, J. R., Carral, L., Diaz, E., Fraguera, J. A., & Iglesias, G. (2018). Complexity and project management: A general overview. *Complexity*, 2018.

<https://doi.org/10.1155/2018/4891286>

Sandelowski, M. (1986). The problem of rigor in qualitative research. *Advances in Nursing Science*, 8(3), 27–37. Retrieved June 15, 2022, from

<https://doi.org/10.1097/00012272-198604000-00005>

Sanip, S. (2020). Research methodological challenges and recommendations for conducting a comparative qualitative longitudinal study across two countries on different continents. *International Journal of Qualitative Methods*, 19.

<https://doi.org/10.1177/1609406920917493>

Santos, K. D. S., Ribeiro, M. C., Queiroga, D. E. U. D., Silva, I. A. P. D., & Ferreira, S. M. S.

(2020). The use of multiple triangulations as a validation strategy in a qualitative study. *Ciencia & saude coletiva*, 25, 655-664. [https://doi.org/10.1590/1413-](https://doi.org/10.1590/1413-81232020252.12302018)

[81232020252.12302018](https://doi.org/10.1590/1413-81232020252.12302018)

Sari, R. (2024). Assurance Practices for Ethical and Sustainable Business Practices. *Advances in Managerial Auditing Research*, 2(2), 97-108.

<https://doi.org/10.60079/amar.v2i2.342>

- Sarosa, S., & Zowghi, D. (2003). Strategy for adopting information technology for SMEs: Experience in adopting email within an Indonesian furniture company. *Electronic Journal of Information Systems Evaluation (EJISE)*, 6(2), 165-176. Retrieved July 13, 2023, from <https://opus.lib.uts.edu.au/bitstream/10453/6127/1/2003001932.pdf>
- Saunders, M. N. K., Lewis, P., & Thornhill, A. (2012). *Research methods for business students*. Harlow, England: Pearson
- Saunders, M. N. K., Lewis, P., & Thornhill, A. (2015). *Research Methods for Business Students* (7th ed.). Pearson.
- Schaefer, G. & Wertheimer, Alan. (2010). The Right to Withdraw from Research. *Kennedy Institute of Ethics journal*. 20. 329-52. Retrieved from https://www.researchgate.net/publication/49852146_The_Right_to_Withdraw_from_Research
- Schoemaker, P. J., Heaton, S., & Teece, D. (2018). Innovation, dynamic capabilities, and leadership. *California management review*, 61(1), 15-42.
<https://doi.org/10.1177/0008125618790246>
- Schoemaker, P. J. H., & Day, G. (2021). Preparing Organizations for Greater Turbulence. *California Management Review*, 63(4), 66-88.
<https://doi.org/10.1177/00081256211022039>
- Senge, P., Smith, B., Kruschwitz, N., Laur, J., & Schley, S. (2008). *The necessary revolution: How individuals and organizations are working together to create a sustainable world*. New York, NY: Doubleday.
- Senior, B. (2002). *Organisational change*. (2nd edn) Harlow.
- Seymour, T., & Hussein, S. (2014). The history of project management. *International Journal of Management & Information Systems (IJMIS)*, 18(4), 233-240. DOI <https://doi.org/10.19030/ijmis.v18i4.8820>

- Shaw, M. E., & Stogdill, R. M. (1974). Handbook of leadership: A survey of theory and research. *Administrative Science Quarterly*, 19(4), 584-585.
<https://doi.org/10.2307/2391816>
- Shaw, S., & Barrett, G. (2006). Research governance: regulating risk and reducing harm?. *Journal of the Royal Society of Medicine*, 99(1), 14–19.
<https://doi.org/10.1258/jrsm.99.1.14>
- Shenhar, A. J., & Dvir, D. (2007). *Reinventing project management: the diamond approach to successful growth and innovation*. Harvard Business Review Press.
- Shufutinsky, A., Long, B., Sibel, J. R., & Burrell, D. N. (2021). Shock leadership: Leading amidst pandemics and other chaotic change. In *Global perspectives on change management and leadership in the post-COVID-19 era* (pp. 136-159). IGI Global.
DOI: 10.4018/978-1-7998-6948-1.ch009
- Siedlecki, S. L. (2022). Conducting interviews for qualitative research studies. *Clinical Nurse Specialist*, 36(2), 78-80. DOI: 10.1097/NUR.0000000000000653
- Siegal, W., Church, A.H., Javitch, M., Wacławski, J., Burd, S., Bazigos, M., Yang, T., Anderson-Rudolph, K. & Warner Burke, W. (1996). Understanding the management of change: An overview of managers' perspectives and assumptions in the 1990s. *Journal of organizational change management*, 9(6), 54-80.
<https://doi.org/10.1108/09534819610150521>
- Sileyew, K. J. (2019). Research design and methodology. *Cyberspace*, 1-12. DOI: 10.5772/intechopen.85731
- Silva, A. (2016). What is leadership?. *Journal of business studies quarterly*, 8(1), 1.
Retrieved July 5, 2023, from
<https://www.proquest.com/openview/da932f3ddd496ce36e7f30f9e133b141/1?pq-origsite=gscholar&cbl=1056382>

- Silvius, A. G., & Schipper, R. P. (2014). Sustainability in project management competencies: analyzing the competence gap of project managers. *Journal of Human Resource and Sustainability Studies*, 2(2), 40-58. DOI: 10.4236/jhrss.2014.22005
- Singer, E., & Levine, F. J. (2003). Protection of human subjects of research: Recent developments and future prospects for the social sciences. *The Public Opinion Quarterly*, 67(1), 148-164. <https://www.jstor.org/stable/3521670>
- Sivarat, N., Thamma, P., & Kenaphoom, S. (2021). Full Range Leadership Concepts. *Ilkogretim Online*, 20(3). DOI: 10.17051/ilkonline.2021.03.147
- Smith, D. (2011). Five principles for research ethics. Cover your bases with these ethical strategies. *Monitor Staff* 34(1). Retrieved from <https://www.apa.org/monitor/jan03/principles>
- Soeari, E. K., Ilhami, R., & Achmad, W. (2023). The role of leadership in the development of public organizations. *Journal of Governance*, 7(4), 877-884. <http://dx.doi.org/10.31506/jog.v7i4.17903>
- Spicker, P. (2011). Ethical covert research. *Sociology*, 45(1), 118-133. DOI: 10.1177/0038038510387195
- Srinivas, S., Nazareth, R. P., & Shoriat Ullah, M. (2021). Modeling and analysis of business process reengineering strategies for improving emergency department efficiency. *Simulation*, 97(1), 3-18. <https://doi.org/10.1177/0037549720957722>
- Stahl, N. A., & King, J. R. (2020). Expanding Approaches for Research: Understanding and Using Trustworthiness in Qualitative Research. *Journal of Developmental Education*, 44(1), 26–28. <http://www.jstor.org/stable/45381095>
- Stebbins, M. W., Shani, A. B., Moon, W., & Bowles, D. (1998). Business process reengineering at Blue Shield of California: the integration of multiple change

- initiatives. *Journal of Organizational Change Management*, 11(3), 216-232.
<https://doi.org/10.1108/09534819810216256>
- Stellefson, M., Chaney, J. D., Chaney, B. H., & Paige, S. R. (2020). *Exploring the Role of Social Media in Health Promotion*. MDPI.
- Stogdill, R.M. (1974). *Handbook of leadership: A survey of theory and research*. New York: The Free Press
- Stonehouse, G., & Snowdon, B. (2007). Competitive advantage revisited: Michael Porter on strategy and competitiveness. *Journal of Management Inquiry*, 16(3), 256-273.
<https://doi.org/10.1177/1056492607306>
- SubbaNarasimha, P. N. (2001). Strategy in turbulent environments: the role of dynamic competence. *Managerial and decision Economics*, 22(4-5), 201-212.
- Subedi, D. (2016). Explanatory sequential mixed method design as the third research community of knowledge claim. *American Journal of Educational Research*, 4(7), 570-577. DOI:10.12691/education-4-7-10
- Sungau, J. (2019). Business process re-engineering. In *Modeling Methods for Business Information Systems Analysis and Design*. 15-33. IGI Global. DOI: 10.4018/978-1-5225-5522-3.ch002
- Suter, W. N. (2020). Questionable research practices: How to recognize and avoid them. *Home Health Care Management & Practice*, 32(4), 183-190.
<https://doi.org/10.1177/1084822320934468>
- Svejvig, P., & Andersen, P. (2015). Rethinking project management: A structured literature review with a critical look at the brave new world. *International journal of project management*, 33(2), 278-290. <https://doi.org/10.1016/j.ijproman.2014.06.004>
- Syed Mohamad, S. J. A. N., & Hauer, G. (2017). Effective Leadership in a Turbulent Organisational Environment. *International Journal of Supply Chain Management*,

- 6(2), 133-139. <https://ijis-scm.bsne.ch/ojs.excelingtech.co.uk/index.php/IJSCM/article/view/1471.html>
- Syed Ibrahim, M., Hanif, A., Jamal, F. Q., & Ahsan, A. (2019). Towards successful business process improvement—An extension of change acceleration process model. *PLoS One*, 14(11), e0225669. <https://doi.org/10.1371/journal.pone.0225669>
- Tabachnick, B. G., & Fidell, L. S. (2019). *Using multivariate statistics* (7th ed.). Pearson.
- Taherdoost, H. (2022). What are different research approaches? Comprehensive review of qualitative, quantitative, and mixed method research, their applications, types, and limitations. *Journal of Management Science & Engineering Research*, 5(1), 53-63. <https://doi.org/10.30564/jmser.v5i1.4538>
- Takeuchi, H., & Nonaka, I. (1986). The new product development game. *Harvard Business Review*, 64(1), 137-146. Retrieved September 18, 2023, from <http://damiantgordon.com/Methodologies/Papers/The%20New%20Product%20Development%20Game.pdf>
- Talwar, R. (1993). Business re-engineering—A strategy-driven approach. *Long range planning*, 26(6), 22-40. [https://doi.org/10.1016/0024-6301\(93\)90204-S](https://doi.org/10.1016/0024-6301(93)90204-S)
- Tansey, O. (2007). Process tracing and elite interviewing: a case for non-probability sampling. *PS: Political Science & Politics*, 40(04), 765-772.
- Taylor, A. (2017). An examination of the relationships between agile leadership factors and curriculum reform in higher education (Order No. 10260136). Available from ProQuest One Academic. (1884308256). Retrieved from <https://www.proquest.com/dissertations-theses/examination-relationships-between-agile/docview/1884308256/se-2?accountid=188730>

- Teddlie, C., & Tashakkori, A. (2003). Major issues and controversies in the use of mixed methods in the social and behavioral sciences. *Handbook of mixed methods in social and behavioral research*, 1(1), 13-50.
- Teng, J. T., Jeong, S. R., & Grover, V. (1998). Profiling successful reengineering projects. *Communications of the ACM*, 41(6), 96-102.
<https://doi.org/10.1145/276609.276625>
- Teresiene, D., Keliuotyte-Staniuleniene, G., Liao, Y., Kanapickiene, R., Pu, R., Hu, S., & Yue, X. G. (2021). The impact of the COVID-19 pandemic on consumer and business confidence indicators. *Journal of Risk and Financial Management*, 14(4), 159.
<https://doi.org/10.3390/jrfm14040159>
- Thong, J. Y., & Yap, C. S. (1995). CEO characteristics, organizational characteristics and information technology adoption in small businesses. *Omega*, 23(4), 429-442.
[https://doi.org/10.1016/0305-0483\(95\)00017-I](https://doi.org/10.1016/0305-0483(95)00017-I)
- Thurmond, V. A. (2001). The point of triangulation. *Journal of nursing scholarship*, 33(3), 253-258.
- Timane, R. (2012). Business Process Reengineering (BPR) to Business Model Reengineering (BMR). Available at SSRN 2194107. <http://dx.doi.org/10.2139/ssrn.2194107>
- Tiwari, M., Mathur, G., & Awasthi, S. (2018). Gender-Based Discrimination Faced by Females at Workplace: A Perceptual Study of Working Females. *Journal of Entrepreneurship Education*, 21 1. <https://www.abacademies.org/articles/Gender-based-discrimination-faced-by-females-at-workplace-1528-2651-21-3-202.pdf>
- Travkina, E., & Luigi, P. (2020). Culture shock: Covid-19 and the cultural and creative sectors. (2020). *OECD Policy Responses to Coronavirus (COVID-19)*.
[doi:10.1787/08da9e0e-en](https://doi.org/10.1787/08da9e0e-en)

- Trochim, T., Donnelly, D., & Kanika, A. (2015). *Research Methods: The Essential Knowledge Base* (2nd ed.). Cengage Learning.
- Tsai, M. S., Tsai, M. C., & Chang, C. C. (2013). The direct and indirect factors on affecting organizational sustainability. *J. Mgmt. & Sustainability*, 3, 67.
DOI:10.5539/jms.v3n4p67
- Tsoukatos, E. (2021a). Lecture week 7: *Sampling Methods for Quantitative and Qualitative Research*. UNICAF University. UU-DBA-810 Quantitative and Qualitative Research Methods.
- Tsoukatos, E. (2021b). Lecture week 8: *Ethical Considerations in Research*. UNICAF University. UU-DBA-810 Quantitative and Qualitative Research Methods.
- Uddin, S. M., & Ferdous, J. (2020). Exploring the challenges of organizational leadership and management. *Journal of ELT and Education*, 3(2), 44-50. <https://jee-bd.com/journal/3272020>
- Uthman, A. (2024). The Relevance of Human Resources Management to Today's Business Environment. *International Journal of Social Science and Human Research*, 7(05), 2620-2628. DOI: 10.47191/ijsshr/v7-i05-10
- Valiris, G., & Glykas, M. (1999). Critical review of existing BPR methodologies: the need for a holistic approach. *Business process management journal*, 5(1), 65-86.
<https://doi.org/10.1108/14637159910249117>
- van Gastel, D. (2025). The Influence of Older Subordinates on Young Managers' Leadership Style: A. *Human Resource Management*. Retrieved May 16, 2026, from <https://arno.uvt.nl/show.cgi?fid=185259>
- Van Teijlingen, E., & Hundley, V. (2001). The importance of pilot studies. *Social research update*, (35), 1-4. Retrieved February 24, 2025, from https://eprints.bournemouth.ac.uk/10149/1/SRU35_pilot_studies.pdf

- Van Teijlingen, E., & Hundley, V. (2002). The importance of pilot studies. *Nursing Standard (through 2013)*, 16(40), 33. Retrieved March 6, 2023, from <https://www.proquest.com/openview/e1c79ecc86d8b228530d189b81b25f63/1?pq-origsite=gscholar&cbl=30130>
- Van Wart, M. (2003). Public-sector leadership theory: An assessment. *Public administration review*, 214-228. Retrieved July 2, 2023, from <https://drh.tecnico.ulisboa.pt/files/sites/45/PA-PublicSectorLeadershipTheory1.pdf>
- Vardarlier, P. (2016). Strategic approach to human resources management during crisis. *Procedia-Social and Behavioral Sciences*, 235, 463-472. <https://doi.org/10.1016/j.sbspro.2016.11.057>
- Varpio, L., O'Brien, B., Rees, C. E., Monrouxe, L., Ajjawi, R., & Paradis, E. (2021). The applicability of generalisability and bias to health professions education's research. *Medical Education*, 55(2), 167-173. <https://doi.org/10.1111/medu.14348>
- Von Bertalanffy, L. (1972). The history and status of general systems theory. *Academy of management journal*, 15(4), 407-426. <https://doi.org/10.5465/255139>
- Waldman, J. D. (2007). Thinking systems need systems thinking. *Systems Research and Behavioral Science*, 24(3), 271- 284. <https://doi.org/10.1002/sres.828>
- Wang, W., & Seifert, R. (2017). Pay reductions and work attitudes: the moderating effect of employee involvement practices. *Employee Relations*, 39(7), 935-950. <https://doi.org/10.1108/ER-04-2016-0078>
- Wang, Y., Peng, X., & Prybutok, V. (2022). The importance of information technology to organizational results within the Baldrige award. *Quality Management Journal*, 29(1), 3-17. <https://doi.org/10.1080/10686967.2021.2006584>
- Webb, E. J., Campbell, D. T., Schwartz, R. D., & Sechrest, L. (1966). *Unobtrusive measures*. Chicago: Rand McNally. doi:10.1017/s0021932000007604

- Webster, F. M., Knutson, J., Dinsmore, P. C., & Cabanis-Brewin, J. (2004). What is Project management. *The AMA handbook of project management*, 1-10. Retrieved September 1, 2023, from <http://ndl.ethernet.edu.et/bitstream/123456789/87881/11/The%20AMA%20handbook%20of%20project%20management.pdf#page=24>
- Webster, K. (2011). Publishing Ethical Research: A Step-by-Step Overview. *Journal of Counseling and Development*, 89(3) 301-307. <https://doi.org/10.1002/j.1556-6678.2011.tb00093.x>
- Weiss, T., & Hartle, F. (2023). *Reengineering Performance Management Breakthroughs in Achieving Strategy through People*. CRC Press.
[https://books.google.tt/books?hl=en&lr=&id=KATLEAAAQBAJ&oi=fnd&pg=PR13&dq=Weiss,+T.,+%26+Hartle,+F.+\(2023\).+Reengineering+Performance+Management+Breakthroughs+in+Achieving+Strategy+through+People.+CRC+Press&ots=m2gIJClr1Z&sig=gGn0RYRwisVRxE0s8VT-b5ppYXg&redir_esc=y#v=onepage&q=Weiss%2C%20T.%2C%20%26%20Hartle%2C%20F.%20\(2023\).%20Reengineering%20Performance%20Management%20Breakthroughs%20in%20Achieving%20Strategy%20through%20People.%20CRC%20Press&f=false](https://books.google.tt/books?hl=en&lr=&id=KATLEAAAQBAJ&oi=fnd&pg=PR13&dq=Weiss,+T.,+%26+Hartle,+F.+(2023).+Reengineering+Performance+Management+Breakthroughs+in+Achieving+Strategy+through+People.+CRC+Press&ots=m2gIJClr1Z&sig=gGn0RYRwisVRxE0s8VT-b5ppYXg&redir_esc=y#v=onepage&q=Weiss%2C%20T.%2C%20%26%20Hartle%2C%20F.%20(2023).%20Reengineering%20Performance%20Management%20Breakthroughs%20in%20Achieving%20Strategy%20through%20People.%20CRC%20Press&f=false)
- Wenzel, M., Stanske, S., & Lieberman, M. B. (2020). Strategic responses to crisis. *Strategic Management Journal*, 41(7/18), 3161. DOI: 10.1002/smj.3161
- Weyers, M.L., Strydom, H. & Huisamen, A. (2008). Triangulation in social work research: The theory and examples of its practical application. *Social Work/Maatskaplike Werk*, 44(2), 207–222. <https://doi.org/10.15270/44-2-251>
- Wicks-Nelson, R. (2015). *Abnormal Child and Adolescent Psychology, DSM-5 Update*. Routledge.

- Wilcox, A. B., Gallagher, K. D., Boden-Albala, B., & Bakken, S. R. (2012). Research data collection methods: from paper to tablet computers. *Medical care*, S68-S73. Retrieved November 14, 2023, from <https://www.jstor.org/stable/23216661>
- Windarto, Y., Hersant, R., & Putro, E. (2021). Developing home service system; Business process reengineering for motorcycle workshop. *Indonesian Journal of Information Systems*, 3(2), 94-104. <https://doi.org/10.24002/ijis.v3i2.4144>
- Wisittigars, B., & Siengthai, S. (2019). Crisis leadership competencies: the facility management sector in Thailand. *Facilities*, 37(13/14) 881-896. <https://doi.org/10.1108/F-10-2017-0100>
- Wolfe, D. (1968). American Association for the Advancement of Science. *Science*.
- Wu, L., Subramanian, N., Abdulrahman, M. D., Liu, C., & Pawar, K. S. (2017). Short-term versus long-term benefits: Balanced sustainability framework and research propositions. *Sustainable Production and Consumption*, 11, 18-30. <https://doi.org/10.1016/j.spc.2016.09.003>
- Wu, P. F. (2011). A mixed methods approach to technology acceptance research. *Journal of the AIS*. <https://ssrn.com/abstract=1937656>
- Wu, Y. L., Shao, B., Newman, A., & Schwarz, G. (2021). Crisis leadership: A review and future research agenda. *The Leadership Quarterly*, 32(6), 101518. <https://doi.org/10.1016/j.leaqua.2021.101518>
- Xu, A., Baysari, M. T., Stocker, S. L., Leow, L. J., Day, R. O., & Carland, J. E. (2020). Researchers' views on, and experiences with, the requirement to obtain informed consent in research involving human participants: a qualitative study. *BMC medical ethics*, 21(1), 1-11. <https://doi.org/10.1186/s12910-020-00538-7>
- Yarrish, K., Zula, K., & Davis, E. (2010). An exploration of differences of leadership perceptions related to a student's gender within the college of business at a small

liberal arts institution. *American Journal of Business Education*, 3(11), 69-75.

doi:10.19030/ajbe.v3i11.64

- Yilmaz, K. (2013). Comparison of quantitative and qualitative research traditions: Epistemological, theoretical and methodological differences. *European Journal of Education* (48)2 311-325.
- https://vulms.vu.edu.pk/courses/STAT730/Downloads/Comparison_mological_Theoretical_And_Methodological_Differences.pdf
- Yin, R. K. (1994). *Case Study Research: Design and Methods* (2nd ed., vol. 5). Thousand Oaks, Calif.: Sage.
- Yip, C., Han, N. R., & Sng, B. L. (2016). Legal and ethical issues in research. *Indian journal of anaesthesia*, 60(9), 684–688. <https://doi.org/10.4103/0019-5049.190627>
- Zaboli, R., Seyedin, S., & Malmoon, Z. (2013). Early warning system for disasters within health organisations: A mandatory system for developing countries. *Health promotion perspectives*, 3(2), 261–268. <https://doi.org/10.5681/hpp.2013.030>
- Zaccaro, S., Rittman, A., & Marks, M. (2001). Team leadership. *The Leadership Quarterly*, 12(4) 451-483. [https://doi.org/10.1016/S1048-9843\(01\)00093-5](https://doi.org/10.1016/S1048-9843(01)00093-5)
- Zafari, K., Biggemann, S., & Garry, T. (2020). Mindful management of relationships during periods of crises: A model of trust, doubt and relational adjustments. *Industrial Marketing Management*, 88, 278-286.
- <https://doi.org/10.1016/j.indmarman.2020.05.026>
- Zahoor, A., Ijaz, S., & Muzammil, T. (2015). Effective management system: a key to BPR success. *European Journal of Business and Management*, 7(25), 41-48.
- Zaini, Z., & Saad, A. (2019). Business process reengineering as the current best methodology for improving the business process. *Journal of ICT in Education*, 6, 66-85. DOI: <https://doi.org/10.37134/jictie.vol6.7.2019>

- Zairi, M., & Sinclair, D. (1995). Business process re-engineering and process management: a survey of current practice and future trends in integrated management. *Management decision*, 33(3), 3-16. <https://doi.org/10.1108/00251749510085021>
- Zhiqiang, M., Khan, H. S. U. D., Chughtai, M. S., & Mingxing, L. (2021). Re-engineering the human resource strategies amid and post-pandemic crisis: Probing into the moderated mediation model of the high-performance work practices and employee's outcomes. *Frontiers in Psychology*, 12, 710266. <https://www.frontiersin.org/articles/10.3389/fpsyg.2021.710266/full>
- Zhou, R., Wang, X., Zhang, L., & Guo, H. (2017). Who tends to answer open-ended questions in an e-service survey? The contribution of closed-ended answers. *Behaviour & Information Technology*, 36(12), 1274-1284. <https://doi.org/10.1080/0144929X.2017.1381165>
- Zinser, S., Baumgärtner, A., & Walliser, F. S. (1998). Best practice in reengineering: A successful example of the Porsche research and development center. *Business Process Management Journal*, 4(2), 154-167. <https://doi.org/10.1108/14637159810212325>
- Zohrabi, M. (2013). Mixed method research: Instruments, validity, reliability and reporting findings. *Theory and practice in language studies*, 3(2), 254-262. DOI: 10.4304/tpls.3.2.254-262
- Zuhaira, B., & Ahmad, N. (2021). Business process modeling, implementation, analysis, and management: The case of business process management tools. *Business Process Management Journal*, 27(1), 145-183. <https://doi.org/10.1108/BPMJ-06-2018-0168>

APPENDICES

Appendix A

World Leaders approval ratings, March – June 2020



Appendix B
INTERVIEW

Statement of Informed Consent

I have read the foregoing information about this study, or it has been read to me. I have had the opportunity to ask questions and discuss it. I have received satisfactory answers to all questions and I have received enough information about this study. I understand that I am free to withdraw from this study at any time without giving a reason for withdrawing and without negative consequences. I understand that my data will remain anonymous and confidential, unless stated otherwise.

I consent voluntarily to be a participant in this study.

☐ Yes

☐ No

I consent to the use of audio recordings for the purposes of my participation in this study.

☐ Yes

☐ No

Participant's Signature:_____

Date:_____

- Job Title:_____
- Gender:
☐ Male ☐ Female
- How old are you?
☐ Under 18 ☐ 36 to 55 ☐ 65 to 80
☐ 18 to 35 ☐ 56 to 65 ☐ Above 80
- How many years have you worked in this Organisation?

- How many years have you held this position?

- What is your highest level of education?_____
- What business structure(s) do your company belong to?

- Where is the geographical district location of your Organisation's local headquarters?

- How many branches does your organisation have in Trinidad?

- What is the **main** sector to which your organisation belongs?

- Does your company operate locally, regionally or internationally?

- Would you classify your organisation as small, medium or large category?

- Are you involved in the strategic and operational decision-making and actions of the Organisation?

☐ Yes

☐ No

- o If 'Yes', can you give some examples of the strategic and operational decision making that you have been involved in?

- Was your Organisation affected by the Covid-19 Pandemic?

☐ Yes

☐ No

- How did the Covid-19 Pandemic affect your Organisation?

- What was your involvement in the strategy and decision making of your Organisation during the Covid-19 Pandemic?

- What specific actions did the Organisation undertake during the Covid-19 Pandemic?

- How did these measures help/alleviate the problems caused by the Covid-19 Pandemic?

- Did your Organisation receive a Government Covid-19 grant/subsidy?

- Was this grant/subsidy helpful to your Organisation?

- Overall, what would you say was the impact of the Covid-19 Pandemic on your Organisation?

- Are there any actions that could have been done differently during the Covid-19 Pandemic to lead your Organisation?

- Would you say that a lack of resources may have been responsible for any hinderance in actions that could have been taken during the Covid-19 Pandemic? Explain.

- Given that the Pandemic is now officially ended, have your Organisation recovered from the impact of the Covid-19 Pandemic? Explain.

- How did your actions undertaken during the Covid-19 Pandemic benefit the Organisation after the Pandemic?

- Would you say that your Organisation had growth or suffered a decline during the Covid-19 Pandemic? Explain

- How was your Organisation's profitability affected during the Covid-19 Pandemic?

- How did this compare to your Organisation's pre-pandemic profitability?

- How does your Organisation's profitability in the post Covid-19 Pandemic period compare to your Organisation's profitability pre and during the Covid-19 Pandemic?

- What is your understanding of the concept of Organisational Re-engineering?

- Would you say that your actions during the Covid-19 Pandemic can be considered as Organisational Re-engineering? Explain

- How has your Organisation benefited from the strategies implemented during the Covid-19 Pandemic? Explain

- Based on the actions undertaken during the Covid-19 Pandemic, do you think that your Organisation is currently in a sustainable path? Explain

Appendix C
QUESTIONNAIRE

Statement of Informed Consent

I have read the foregoing information about this study, or it has been read to me. I have had the opportunity to ask questions and discuss it. I have received satisfactory answers to all questions, and I have received enough information about this study. I understand that I am free to withdraw from this study at any time without giving a reason for withdrawing and without negative consequences. I understand that my data will remain anonymous and confidential, unless stated otherwise.

I consent voluntarily to be a participant in this study.

☐ Yes

☐ No

Participant's Signature:_____

Date:_____

1. Job Title: _____

2. Gender:

- ☐ Male ☐ Female ☐ Prefer not to say

3. How old are you?

- ☐ Under 18 ☐ 36 to 55 ☐ 65 to 80
☐ 18 to 35 ☐ 56 to 65 ☐ Above 80

4. How many years have you worked in this Organisation?

- ☐ Less than 3
☐ 3 to 10
☐ 11 to 15
☐ 15 to 20
☐ Over 20

5. How many years have you held your current job position?

- ☐ Less than 1
☐ 1 to 5
☐ 5 to 10
☐ Over 10

6. What is your highest level of education?

- ☐ No formal education
☐ Primary
☐ Secondary
☐ University Undergraduate
☐ University Postgraduate
☐ Professional Qualifications

7. Please select the business structure(s) to which your company belongs

(Select all that applies):

- | | |
|--|--|
| ☐ Corporation | ☐ Partnership |
| ☐ Co-operative | ☐ Sole Proprietorship |
| ☐ Franchise | ☐ National |
| ☐ Parent | ☐ Transnational |
| ☐ Subsidiary | ☐ International |
| ☐ Limited Liability Company | ☐ Conglomerate |

8. Please indicate the geographical district of your organisation's local headquarters:

- | | |
|--|--|
| ☐ Caroni | ☐ St. George West |
| ☐ Nariva/ Mayaro | ☐ St. Patrick |
| ☐ St. Andrew/ St. David | ☐ Victoria East |
| ☐ St. George East | ☐ Victoria West |
| ☐ Tobago | |

9. How many branches does your organisation have in Trinidad?

- | | |
|------------------------------|------------------------------|
| ☐ 0 | ☐ 4-6 |
| ☐ 1-3 | ☐ >6 |

10. Please select the **main** sector to which your organisation belongs:

- | | |
|---|--|
| ☐ Accommodation | ☐ Manufacturing and Distribution |
| ☐ Administrative and Support Services Activities | ☐ Printing and Publishing |
| ☐ Arts, Entertainment and Recreation | ☐ Professional, Scientific and Technical Activities |
| ☐ Construction | ☐ Real Estate |
| ☐ Education | ☐ Tourism |
| ☐ Financial and Insurance Activities | ☐ Transport |
| ☐ Food Processors and Drinks | ☐ Wholesale and Retail Trade |
| ☐ Government | |
| ☐ Information, Communication and Technology | |

11. Select the regions in which your company operates:

- ☐ Locally ☐ Regionally ☐ Internationally

12. To which category does your organisation fall under?

- ☐ Small ☐ Medium ☐ Large

13. Are you involved in the strategic and operational decision-making and actions of your organisation?

- ☐ Yes ☐ No

14. Tick which decisions you were involved in: (*Select all that applies*)

- ☐ Development of Vision and Mission
- ☐ Development of the Strategic Plan
- ☐ Set Strategic Objectives for the Organisation
- ☐ Assignment of duties to line managers for operational and tactical objectives
- ☐ Development of Policies
- ☐ Develop projected budget
- ☐ Monitor the Organisation's performance and target
- ☐ Liaise and report to the Board of Directors

15. Was your Organisation affected by the Covid-19 Pandemic?

- ☐ Yes ☐ No

16. If your response to **Question 15** is 'No', then select the reason(s) why and then, end the Questionnaire.

- ☐ Business operations were remote
- ☐ Business was digitally adapted
- ☐ Business was not dependent on any external factors
- ☐ Not Applicable

17. Which of the following areas in your Organisation were affected by the Covid-19 Pandemic?

(Select all that applies):

- | | |
|---|---|
| ☐ Revenue | ☐ Distribution of goods and services |
| ☐ Expenses | ☐ Raw material shortages |
| ☐ Profitability Growth | ☐ Training |
| ☐ Customer Service | ☐ IT |
| ☐ Operations | ☐ Policies |
| ☐ Management Staffing | ☐ Systems |
| ☐ Non-management Staffing | ☐ Processes |
| ☐ Operating hours | ☐ Communication |
| ☐ Mode of delivery | ☐ Strategy |
| ☐ Projects | ☐ Organisational Structure |
| ☐ Supply chain disruptions | ☐ Controls |
| ☐ Reduced customer demand | ☐ Increased freight cost |
| ☐ Delays in government office processing | ☐ Equipment maintenance |

18. Were you directly involved in strategy and decision making during the Covid-19 Pandemic?

- ☐ Directly ☐ Indirectly ☐ Not involved

19. What specific actions did your Organisation undertake during the Covid-19 Pandemic?

(Select all that applies)

- | | |
|--|---|
| ☐ Change strategy | ☐ Close branches |
| ☐ Delays in Business investments | ☐ Change systems |
| ☐ Change leadership | ☐ Change policies |
| ☐ Change management team | ☐ Change procedures |
| ☐ Management Rotation | ☐ Change organisational structure |
| ☐ Work from home | ☐ Created new sources of revenue |
| ☐ Staff re-organisation | ☐ Implemented controls on expenses |
| ☐ Staff cuts | ☐ Diversified operations |
| ☐ Permanent Closure | ☐ Cancel supplier orders |
| ☐ Temporary Closure | ☐ Reached out to customers |
| ☐ Reduction in staff working hours | ☐ Strengthened IT Infrastructure |
| ☐ Staff Rotation | ☐ Utilized Change Management Strategies |
| ☐ Reduction of wages and salaries | ☐ Used Project Management Techniques to implement changes and Projects |
| ☐ Change in operation hours | ☐ Utilized Business Sustainability as a Business Objective |
| ☐ Change mode of delivery to online | |
| ☐ Reduced product and service offerings | |
| ☐ Change software | |

20. Did any of these measures help/alleviate the problems caused by the Covid-19 Pandemic?

- ☐ Yes ☐ No

21. Was the Government Covid-19 grants/subsidies any assistance to your Organisation?

☐

Yes

☐

No

22. On a scale of insignificant to severe, how would you rate the **overall impact** of the Covid-19 Pandemic on your Organisation?

1	2	3	4	5
☐ Insignificant	☐ Minor	☐ Moderate	☐ Major	☐ Severe

23. Is there anything that could have been done differently during the Covid-19 Pandemic to lead your Organisation?

☐

Yes

☐

No

24. If your response to Question 23 is 'Yes', then please give details:

25. Was a lack of resources responsible for any hinderance in actions that could have been taken during the Covid-19 Pandemic?

☐

Yes

☐

No

26. Has your Company recovered from the impact of the Covid-19 Pandemic?

☐

Yes

☐

No

27. Did the actions undertaken during the Covid-19 Pandemic benefit the Organisation after the Pandemic?

☐

Yes

☐

No

28. Did your Organisation grow during the Covid-19 Pandemic?

☐

Yes

☐

No

29. Did your Organisation contract during the Covid-19 Pandemic?

☐

Yes

☐

No

30. Was there an increase in profitability **during** the Covid -19 Pandemic?

☐

Yes

☐

No

31. Was there an increase in profitability **post** the Covid-19 Pandemic period?

☐

Yes

☐

No

32. If there was an increase in profitability **post** the Covid-19 Pandemic, please select the reason(s) for the increase?

(Select all that applies)

- | | |
|---|---|
| ☐ N/A | ☐ Implementation of improved systems, processes and policies |
| ☐ Revision of Strategic Plan | ☐ Restructure of Human Resources |
| ☐ Change in strategy | ☐ Implementation of Project Management techniques |
| ☐ Change of strategic, operational and tactical operations | ☐ Change of Leadership |
| ☐ Revision of Budgets | ☐ Change of leadership style |
| ☐ Diversification of business | ☐ Information Technology infrastructure |
| ☐ Contraction of business | ☐ Utilization of Change Management techniques |
| ☐ Focus on niche market | ☐ Change of Supply Chain |
| ☐ Concentration on profitable product lines | ☐ Change of mode of delivery of products and services |
| ☐ Closure of unprofitable branches | |
| ☐ Change of business model | |

33. How does your post Covid-19 Pandemic profitability compare to your Organisation's pre pandemic profitability?

- ☐ Increased
 ☐ Decreased
 ☐ Unchanged

34. What is your understanding of the concept of Organisational Re-engineering?

- ☐ Change of Vision and Mission
- ☐ Revision of Strategic Plan
- ☐ Revision of strategy
- ☐ Change of strategic, operational and tactical operations
- ☐ Revision of Budgets
- ☐ Radical change in the way the Organisation Operates
- ☐ Change in Policies
- ☐ Change in Procedures
- ☐ Staff Changes
- ☐ Restructure of the Business

35. Would you say that your Organisation utilised Organisational Re-engineering during the Covid-19 Pandemic?

- ☐ Yes
☐ No

36. How has your Organisation benefited from the strategies implemented during the Covid-19 Pandemic?

- ☐ Increased revenue
- ☐ Decreased cost
- ☐ Increased Profitability
- ☐ Poised for future growth
- ☐ Achieved Growth
- ☐ Greater Agility
- ☐ Improved customer service
- ☐ Increased efficiency
- ☐ More robust

37. Based on the actions undertaken during the Covid-19 Pandemic, do you think that your Organisation is in a sustainable path presently?

- ☐ Yes
- ☐ No

Appendix D

UREC APPROVAL



UREC Decision, Version 2.0

Unicaf University Research Ethics Committee Decision

Student's Name: Charles Nischal Balkaran

Student's ID #: R2106D12313675

Supervisor's Name: Dr. Girish Nuckchady

Program of Study: UU-DBA-900-1

Offer ID /Group ID: O47667G49141

Dissertation Stage: DS1

Research Project Title:

THE IMPORTANCE OF ORGANISATIONAL RE-ENGINEERING IN TURBULENT TIMES: A CASE STUDY APPROACH USING THE COVID-19 PANDEMIC IN TRINIDAD AND TOBAGO

Comments: Comment: The sample size is too small for a study that includes a quantitative component

Decision*: A. Provisionally approved without revision or comments

Date: 03 Mar 2023

*Provisional approval provided at the Dissertation Stage 1, whereas the final approval is provided at the Dissertation stage 3. The student is allowed to proceed to data collection following the final approval.

Appendix E

UREC FINAL APPROVAL



UREC Decision, Version 2.0

Unicaf University Research Ethics Committee Decision

Student's Name: Charles Nischal Balkaran

Student's ID #: R2106D12313675

Supervisor's Name: Girish Nuckchady

Program of Study: UU-DBA-900-3

OfferID / GroupID: O54853G56266

Dissertation stage: DS3

Research Project Title: An Exploration of the Impact of Organisational Re-engineering for Business Sustainability during Turbulent Periods: A Case Study Approach using the Covid-19 Pandemic in Trinidad and Tobago

Ethical conditions for approval: No comments.

Methodological recommendations:

Decision*: A. Approved without revision or comments

Date: December 15, 2023

*Provisional approval provided at the Dissertation Stage 1, whereas the **final** approval is provided at the Dissertation stage 3. The student is allowed to proceed to data collection following the final approval.

Appendix F

GATEKEEPER LETTER 1 – TEMPLATE

	UU_GL - Version 2.0
Gatekeeper letter	
Institution / Organization :	Central Statistical Office
Address:	47 Frederick Street, Port of Spain
Date:	04-Dec-2023
Subject:	Request for Information
Dear Director, I am a doctoral student at Unicaf University, Malawi. As part of my degree, I am carrying out a study on "An Exploration of the Impact of Organisational Re-engineering for Business Sustainability during Turbulent Periods: A Case Study Approach using the Covid-19 Pandemic in Trinidad and Tobago". I am writing to seek your permission to authorize and provide a listing by sector of all the registered businesses in Trinidad and Tobago for use in this research. This information will be used as the survey population for the selection of a sample for the conduct of interviews and the administration of a questionnaire. This data collection process is expected to last approximately four weeks. There will be strict confidentiality and anonymity in the use and analysis of this data. Subject to approval by Unicaf Research Ethics Committee (UREC), this study will be used to ascertain and assess the actions of organisational leaders during the recent Covid-19 Pandemic to determine whether their actions were successful in leading their organisations to business sustainability. There will also be a determination as to whether these actions were dimensions of Organisational Re-engineering. This study will be supervised by Dr. Girish Chowbay Nuckchady. Thank you in advance for your time and consideration in assisting with this study. Kindly let me know if you require any further information or need any further clarifications.	
Yours Sincerely,	
Charles N. Balkaran	
Student's Name:	Charles N. Balkaran
Student's E-mail:	charlesbalkaran@yahoo.com
Student's Address and Telephone:	San Raphael, Trinidad. (868)760-5425
Supervisor's Title and Name:	Dr. Girish Chowbay Nuckchady
Supervisor's Position:	Doctoral Supervisor - Unicaf University.
Supervisor's E-mail:	g.nuckchady@unicaf.org

Appendix G

GATEKEEPER LETTER 2 – TEMPLATE

	UU_GL - Version 2.0
Gatekeeper letter	
Institution / Organization :	
Address:	
Date:	04-Dec-2023
Subject:	Permission for Survey Interview
Dear Sir/Madam, I am a doctoral student at Unicaf University, Malawi. As part of my degree, I am carrying out a study on "An Exploration of the Impact of Organisational Re-engineering for Business Sustainability during Turbulent Periods: A Case Study Approach using the Covid-19 Pandemic in Trinidad and Tobago". I am writing to seek your permission to participate in a short interview for this research. Your participation in this study will assist in providing guidance to organisational leaders during turbulent periods on the best strategies for ensuring business sustainability. There will be strict confidentiality and anonymity with the use and analysis of this data. Subject to approval by Unicaf Research Ethics Committee (UREC), this study will be used to ascertain and assess the actions of organisational leaders during the recent Covid-19 Pandemic to determine whether their actions were successful in leading their organisations to business sustainability. The recent Covid-19 Pandemic is being used as a case study for this Research Paper. There will also be a determination as to whether these actions were dimensions of Organisational Re-engineering. This study will be supervised by Dr. Girish Chowbay Nuckchady. Thank you in advance for your time and consideration in assisting with this study. Kindly let me know if you require any further information or need any further clarifications.	
Yours Sincerely,	
Charles N. Balkaran	
Student's Name: Charles N. Balkaran Student's E-mail: charlesbalkaran@yahoo.com Student's Address and Telephone: San Raphael, Trinidad. (868)760-5425 Supervisor's Title and Name: Dr. Girish Chowbay Nuckchady Supervisor's Position: Doctoral Supervisor - Unicaf University. Supervisor's E-mail: g.nuckchady@unicaf.org	

Appendix H

GATEKEEPER LETTER 3 – TEMPLATE

	UU_GL - Version 2.0 ☐
Gatekeeper letter	
Institution / Organization :	
Address:	
Date:	04-Dec-2023
Subject:	Permission for Questionnaire Completion
Dear Sir/Madam, I am a doctoral student at Unicaf University, Malawi. As part of my degree, I am carrying out a study on "An Exploration of the Impact of Organisational Re-engineering for Business Sustainability during Turbulent Periods: A Case Study Approach using the Covid-19 Pandemic in Trinidad and Tobago". I am writing to seek your permission to participate in the completion of a short questionnaire for this research. Your participation in this study will assist in providing guidance to organisational leaders during turbulent periods on the best strategies for ensuring business sustainability. The data gathered from this questionnaire will be used with the strictest confidentiality and will be kept in a secure location. Your participation will also be kept anonymous. Subject to approval by Unicaf Research Ethics Committee (UREC), this study will be used to ascertain and assess the actions of organisational leaders during the recent Covid-19 Pandemic to determine whether their actions were successful in leading their organisations to business sustainability. The recent Covid-19 Pandemic is being used as a case study for this Research Paper. There will also be a determination as to whether these actions were dimensions of Organisational Re-engineering. This study will be supervised by Dr. Girish Chowbay Nuckchady. Thank you in advance for your time and consideration in assisting with this study. Kindly let me know if you require any further information or need any further clarifications.	
Yours Sincerely, Charles N. Balkaran	
Student's Name: Charles N. Balkaran Student's E-mail: charlesbalkaran@yahoo.com Student's Address and Telephone: San Raphael, Trinidad. (868)760-5425 Supervisor's Title and Name: Dr. Girish Chowbay Nuckchady Supervisor's Position: Doctoral Supervisor - Unicaf University. Supervisor's E-mail: g.nuckchady@unicaf.org	

Appendix I

STATEMENT OF INFORMED CONSENT

		UU_IC - Version 2.1 ☐
Informed Consent Form Part 1: Debriefing of Participants		
Student's Name:	Charles N. Balkaran	
Student's E-mail Address:	charlesbalkaran@yahoo.com	
Student ID #:	R2106D12313675	
Supervisor's Name:	Dr. Girish Chowbay Nuckchady	
University Campus:	Unicaf University Malawi (UUM)	
Program of Study:	DBA - Doctorate of Business Administration	
Research Project Title:	An Exploration of the Impact of Organisational Re-engineering for Business Sustainability during Turbulent Periods: A Case Study Approach using the Covid-19 Pandemic in Trinidad and Tobago	
	Date:	04-Dec-2023
Provide a short description (purpose, aim and significance) of the research project, and explain why and how you have chosen this person to participate in this research (maximum 150 words). The purpose of the research is to explore the impact of organisational re-engineering for business sustainability during turbulent times. An examination and analysis will be conducted of leaders' actions and their effectiveness utilized to lead organisations during turbulent periods. This is necessary as many leaders are unaware of how to successfully lead their organisations during turbulent periods. The recent Covid -19 Pandemic in Trinidad and Tobago will be used as a case study given that it was one of the most recent major turbulent periods. This thesis will sensitize organisations to the benefits of Organisational Re-engineering and it will provide an alert for the imminent danger of not re-engineering during turbulent times. It will also provide the dimensions of organisational re-engineering that will assist leaders in the leadership, management and operations of their organisations during turbulent periods. Your participation in this study will assist in ascertaining your actions taken during the Covid-19 Pandemic and to assess whether these actions were successful in leading to business sustainability. The above named student is committed to ensuring participant's voluntarily participation in the research project and guaranteeing there are no potential risks and/or harms to the participants. Participants have the right to withdraw at any stage (prior or post the completion) of the research without any consequences and without providing any explanation. In these cases, data collected will be deleted. All data and information collected will be coded and will not be accessible to anyone outside this research. Data described and included in dissemination activities will only refer to coded information ensuring beyond the bounds of possibility participant identification.		
I, <u>Charles N. Balkaran</u> , ensure that all information stated above is true and that all conditions have been met.		
Student's Signature:		
1		

Informed Consent Form

Part 2: Certificate of Consent

This section is mandatory and should to be signed by the participant(s)

Student's Name:	Charles N. Balkaran
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I have read the foregoing information about this study, or it has been read to me. I have had the opportunity to ask questions and discuss about it. I have received satisfactory answers to all my questions and I have received enough information about this study. I understand that I am free to withdraw from this study at any time without giving a reason for withdrawing and without negative consequences. I consent to the use of multimedia (e.g. audio recordings, video recordings) for the purposes of my participation in this study. I understand that my data will remain anonymous and confidential, unless stated otherwise. I consent voluntarily to be a participant in this study.

Participant's Print name:

Participant's Signature:

Date:

If the Participant is illiterate:

I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had an opportunity to ask questions. I confirm that the aforementioned individual has given consent freely.

Witness's Print name:

Witness's Signature:

Date:

Appendix J

UNICAF UNIVERSITY – RESEARCH ETHICS APPLICATION FORM

	REAF_DS - Version 3.3 ☐
UNICAF UNIVERSITY RESEARCH ETHICS APPLICATION FORM DOCTORAL STUDIES	UREC USE ONLY: Application No: _____ Date Received: _____
Student's Name: Charles N. Balkaran	
Student's E-mail Address: charlesbalkaran@yahoo.com	
Student's ID #: R2106D12313675	
Supervisor's Name: Dr. Girish Chowbay Nuckchady	
University Campus/Program: Unicaf University Malawi: DBA - Doctorate of Business Administration	
Research Project Title: An Exploration of the Impact of Organisational Re-engineering for Business Sustainability during Turbulent Periods: A Case Study Approach using the Covid-19 Pandemic in Trinidad and Tobago	
1. Please state the timelines involved in the proposed research project: Estimated Start Date: 14-Nov-2022 Estimated End Date: 31-Jul-2025	
2. External Research Funding (if applicable): 2.a. Do you have any external funding for your research? ☐ YES ☒ NO If YES, please answer questions 2b and 2c. 2.b. List any external (third party) sources of funding you plan to utilise for your project. You need to include full details on the source of funds (e.g. state, private or individual sponsor), any prior / existing or future relationships between the funding body / sponsor and any of the principal investigator(s) or co-investigator(s) or student researcher(s), status and timeline of the application and any conditions attached. 2.c. If there are any perceived ethical issues or potential conflicts of interest arising from applying for and/or receiving external funding for the proposed research then these need to be fully disclosed below and also further elaborated on, in the relevant sections on ethical considerations later on in this form.	
1	

3. The research project

3.a. Project Summary:

In this section fully describe the purpose and underlying rationale for the proposed research project. Ensure that you pose the research questions to be examined, state the hypotheses, and discuss the expected results of your research and their potential.

It is important in your description to use plain language so it can be understood by all members of the UREC, especially those who are not necessarily experts in the particular discipline. To that effect ensure that you fully explain/define any technical terms or discipline-specific terminology (use the space provided in the box).

The purpose of the research is to explore the dimensions of Organisational Re-engineering that will assist leaders to successfully lead their organisations to sustainability during turbulent times. An examination and analysis will be conducted of Leaders' actions and their effectiveness utilized to lead organisations during turbulent periods. This is necessary due to the challenges faced by Organisational Leaders in the implementation of Organisational Re-engineering during turbulent periods. This has led to the demise of many businesses. The recent Covid-19 Pandemic in Trinidad and Tobago will be used as a case study given that it was one of the most recent major turbulent periods. The study would focus on discovering and understanding the experiences, perspectives, and thoughts of this period, so as to generalise and extrapolate the results of this study to turbulent periods.

Organisational Re-engineering has emerged as one of the key tools that leaders can use to successfully manage their businesses during turbulent periods. The research questions for this paper are:

1. What were the actions undertaken by organisations during the Covid-19 Pandemic? This question will produce data of the different actions undertaken by organisational leaders during the Pandemic. These actions will be collated, summarized and analyzed for their inter-relatedness to dimensions of Organisational Re-engineering.
2. How have the actions of organizational leaders during the Covid-19 Pandemic impacted the financial performance of organisations throughout and after the Covid-19 Pandemic? There is expected to be a positive correlation between Organisational Re-engineering actions undertaken by leaders and the firm's financial results.
3. How are the actions of organisations that successfully managed the Covid-19 Pandemic aligned to the dimensions of Organizational Re-engineering? It is expected that the successful actions undertaken were Organisational Re-engineering actions.
4. What are the benefits of Organisational Re-engineering to business sustainability during turbulent periods? It will improve processes, efficiency and value and provide cost saving and a sustainable competitive advantage.

These Research Questions will be used to guide the Research Methodology to test the six hypotheses that were developed from the Literature Review of this study.

3.b. Significance of the Proposed Research Study and Potential Benefits:

Outline the potential significance and/or benefits of the research (use the space provided in the box).

This research paper will seal the gap on the successful use of Organisational Re-engineering during turbulent periods by providing the dimensions of Organisational Re-engineering that will assist organisational leaders in successfully implementing and navigating their businesses during turbulent periods. It would also exemplify the positive impact of Organisational Re-engineering during turbulent times. In so doing, it will focus on the Covid-19 Pandemic which can be considered as the most turbulent era in recent history that affected all organisations worldwide. The study will identify, document and analyze the actions that contributed towards the success or failure of organisations during the Covid-19 Pandemic. This thesis will sensitize organisations to the benefits of Organisational Re-engineering and it will provide an alert for the imminent danger of not re-engineering during turbulent times. It will fill the existing research gap of the misunderstandings and lack of clarity surrounding the usage and implementation of Organisational Re-engineering and in their leadership, management and operations of their organisations during turbulent periods. It will also provide a basis for further research in this field. The outcome of this study is expected to lend assistance to organisations in maneuvering through turbulent periods with the anticipation of positive organisational outcomes.

4. Project execution:

4.a. The following study is an:

- ☒ experimental study (primary research)
- ☒ desktop study (secondary research)
- ☐ desktop study using existing databases involving information of human/animal subjects
- ☐ Other

If you have chosen 'Other' please Explain:

4.b. Methods. The following study will involve:

- ☐ a Quantitative methodology
☐ a Qualitative methodology
☒ a mixed methods approach

If you have chosen mixed methods please state below whether you are going to proceed with triangulation or not.

- ☒ YES ☐ NO

4.c. Please state below which tools you are going to use:

A	B	C
Select the tools to be used in your study	Select how the tools selected in column A will be administered (select one or more)	Select what types of questions will be included in the tools previously selected in column A (select one or more)
Interviews ☒	☒ Face-to-face ☒ Online with camera (synchronous live discussion with camera) ☐ Audio only (synchronous live discussion without camera, i.e., via phone)	☒ Open-ended questions ☐ Close-ended questions ☒ Includes section related to demographics
Focus Groups ☐	☐ Face-to-face ☐ Online with camera (synchronous live discussion with camera) ☐ Audio only (synchronous live discussion without camera, i.e., via phone)	☐ Open-ended questions ☐ Close-ended questions ☐ Includes section related to demographics
Questionnaire ☒	☒ Face-to-face self-administered questionnaire ☐ Online, i.e., via phone or any other platform. The researcher reads the questions to the participants ☒ Online asynchronous self-administered questionnaire (i.e., via email)	☐ Open-ended questions ☒ Close-ended questions ☒ Includes section related to demographics

A	B	C
Select the tools to be used in your study	Select how the tools selected in column A will be administered (select one or more)	Select what types of questions will be included in the tools previously selected in column A (select one or more)
Experiments ☐	☐ Face-to-face ☐ Online with camera (synchronous live discussion with camera) ☐ Audio only (synchronous live discussion without camera, i.e., via phone) ☐ Asynchronously via any online platform	☐ Open-ended questions ☐ Close-ended questions ☐ Includes section related to demographics
Tests ☐	☐ Face-to-face ☐ Online with camera (synchronous live discussion with camera) ☐ Audio only (synchronous live discussion without camera, i.e., via phone) ☐ Asynchronously via any online platform	Provide a brief description of the test in the box 'Other' below.
Other	Both instruments would initially be tested on a pilot group.	

5. Participants:

5 a. Does the Project involve the recruitment and participation of additional persons other than the researcher(s) themselves?

☒ YES If YES, please complete all following sections.

☐ NO If NO, please directly proceed to Question [7](#).

5 b. Relevant Details of the Participants of the Proposed Research

State the number of participants you plan to recruit, and explain in the box below how the total number was calculated.

Number of participants

Qualitative sampling size: Approx 15 to 30 participants until saturation is achieved.
Quantitative sampling size: 384 participants. Total potential participants: Approx 414.
Population: 26,046 companies within Trinidad and Tobago. The sample will be selected using stratified multistage and simple random sampling. The sampling formula from the National Education Association will be utilised.

Describe important characteristics such as: demographics (e.g. age, gender, location, affiliation, level of fitness, intellectual ability etc). It is also important that you specify any inclusion and exclusion criteria that will be applied (e.g. eligibility criteria for participants).

Age range From To

Gender ☒ Female
☒ Male

Eligibility Criteria:

- Inclusion criteria
- Exclusion criteria

Disabilities/Disorders: You should only include the participants who can provide informed consent for themselves. Individuals who have a mental disability and are not in a position to provide their own consent should not participate in the study. Please provide information for any other disabilities/disorders the participants may have:

Other relevant information (use the space provided in the box):

5 c. Participation & Research setting:

Clearly describe which group of participants (described in 5b) is completing/participating in the material(s)/tool(s) described in 4c above (use the space provided in the box)

Face to face and online semi-structured interviews with thirty-three (33) pre-determined questions will be used to obtain information about the actions undertaken by organisational leaders. These interviews will be conducted with business leaders in their places of employment or place of preference. Where this is not practical, the option to conduct the interviews via online platforms like Zoom or Google Meet will be offered. A closed-ended questionnaire with thirty-seven (37) questions, using tick-boxes and rating scales will subsequently be developed and administered to organisational leaders directly or through online using a Google Form. As far as possible, it will be mandatory that participants answer all questions. The sample for the interviews would be different to the sample to be used for the questionnaire. However, the sample for both techniques would include Board Members or Executive Managers of the sampled organisations.

5 d. Recruitment Process for Human Research Participants:

Clearly describe how the potential participants will be identified, approached and recruited (use the space provided in the box).

The population for this study consist of 26,046 registered businesses within Trinidad and Tobago. This listing will be obtained from the Central Statistical Office of Trinidad and Tobago. Using stratified multistage and simple random sampling, a sample of approx 414 participants from 16 main sectors will be selected. Contact information for the selected sample will be obtained through a Google search, afterwhich the Executive Secretaries of the Board of Directors and Executive Management of each sampled company will be contacted. The Executive Secretaries of each of these companies will be initially emailed and/or telephoned, following which a formal letter will be sent seeking agreement for a Board Member or Executive Manager to participate in the study. Follow up for consent and timing will be done through the Executive Secretaries. Once permission is granted, arrangements will be made for the administration of the interview and the questionnaire.

5 e. Research Participants Informed Consent.

Select below which categories of participants will participate in the study. Complete the relevant Informed Consent form and submit it along with the REAF form.

Yes	No	Categories of participants	Form to be completed
☒	☐	Typically Developing population(s) above the maturity age *	Informed Consent Form
☐	☒	Typically Developing population(s) under the maturity age *	Guardian Informed Consent Form

* Maturity age is defined by national regulations in laws of the country in which the research is being conducted.

5 f. Relationship between the principal investigator and participants.

Is there any relationship between the principal investigator (student), co-investigators(s), (supervisor) and participant(s)? For example, if you are conducting research in a school environment on students in your classroom (e.g. instructor-student).

☐ YES ☒ NO

If YES, specify (use the space provided in the box).

6. Potential Risks of the Proposed Research Study.

6 a. i. Are there any potential risks, psychological harm and/or ethical issues associated with the proposed research study, other than risks pertaining to everyday life events?

☐ YES ☒ NO

If YES, specify below and answer the question 6 a.ii.

6 a.ii Provide information on what measures will be taken in order to exclude or minimise risks described in 6.a.i.

6 b. Choose the appropriate option

		Yes	No
i.	Will you obtain a written informed consent form from all participants?	☒	☐
ii.	Does the research involve, as participants, people whose ability to give free and informed consent is in question?	☒	☐
iii.	Does this research involve participants who are children under maturity age? If you answered YES to question iii, complete all following questions. If you answered NO to question iii, do not answer Questions iv, v, vi and proceed to Questions vii, viii, ix and x.	☐	☒
iv.	Will the research tools be implemented in a professional educational setting in the presence of other adults (i.e. classroom in the presence of a teacher)?	☐	☐
v.	Will informed consent be obtained from the legal guardians (i.e. parents) of children?	☐	☐
vi.	Will verbal assent be obtained from children?	☐	☐
vii.	Will all data be treated as confidential? If NO, explain why confidentiality of the collected data is not appropriate for this proposed research project, providing details of how all participants will be informed of the fact that any data which they will provide will not be confidential.	☒	☐
viii.	Will all participants/data collected be anonymous? If NO, explain why and describe the procedures to be used to ensure the anonymity of participants and/or confidentiality of the collected data both during the conduct of the research and in the subsequent release of its findings.	☒	☐

		Yes	No
ix.	Have you ensured that personal data and research data collected from participants will be securely stored for five years?	☒	☐
x.	Does this research involve the deception of participants? If YES, describe the nature and extent of the deception involved. Explain how and when the deception will be revealed, and who will administer this debrief to the participants:	☐	☒

6 c. i. Are there any other ethical issues associated with the proposed research study that are not already adequately covered in the preceding sections?

☐

Yes

☒

No

If YES, specify (maximum 150 words).

6.c.ii Provide information on what measures will be taken in order to exclude or minimise ethical issues described in 6.c.i.

Consent from participants will be obtained and they will be provided with a written and verbal brief of the study prior to the start of the data collection. The brief would include the purpose of the study, the research methods, the intention of the research, the time frame, benefits, contact persons, confidentiality and how to withdraw from the study. Analysis of the data would be done at a group level so as to protect identities. To avoid the risk of harm to the participants, names will be coded, and identifiers will not be used. All data and documentation will be stored in locked cabinets and will be destroyed five years after

6 d. Indicate the Risk Rating.

☐

High

☒

Low

7. Further Approvals

All researchers are advised to check the regulations pertaining to research and General Data Protection Regulation (GDPR) of the country in which the research will take place as each country may have different restrictions on conducting research. Are there any other approvals required (i.e., from a ministry or public agency in the country, in addition to ethics clearance from UREC) in order to carry out the proposed research study?

☒ YES ☐ NO If YES, specify.

Permission will be required from each participating organisation to utilize their data for analysis in this research study.
Central Statistical Office of Trinidad and Tobago to provide of a list of registered companies within Trinidad and Tobago.

8. Application Checklist

Mark ☒ if the study involves any of the following:

- ☐ Children and young people under 18 years of age, vulnerable populations such as children with special educational needs (SEN), racial or ethnic minorities, socioeconomically disadvantaged persons, pregnant women, elderly, malnourished people, and ill people.
- ☐ Research that foresees risks and disadvantages that would affect any participant of the study such as anxiety, stress, pain or physical discomfort, harm risk (which is more than is expected from everyday life) or any other act that participants might believe is detrimental to their wellbeing and/or has the potential to / will infringe on their human rights / fundamental rights.
- ☐ Risk to the well-being and personal safety of the researcher.
- ☐ Administration of any substance (food / drink / chemicals / pharmaceuticals / supplements / chemical agent or vaccines or other substances (including vitamins or food substances) to human participants.
- ☐ Results that may have an adverse impact on the natural or built environment.

9. Further documents

Check that the following documents are attached to your application:

		ATTACHED	NOT APPLICABLE
1	Recruitment advertisement (if any)	☐	☒
2	Informed Consent Form / Guardian Informed Consent Form	☒	☐
3	Research Tool(s)	☒	☐
4	Gatekeeper Letter	☒	☐
5	Any other approvals required in order to carry out the proposed research study, e.g., institutional permission (e.g. school principal or company director) or approval from a local ethics or professional regulatory body.	☒	☐

10. Final Declaration by Applicants:

- (a) I declare that this application is submitted on the basis that the information it contains is confidential and will only be used by Unicaf University for the explicit purpose of ethical review and monitoring of the conduct of the research proposed project as described in the preceding pages.
- (b) I understand that this information will not be used for any other purpose without my prior consent, excluding use intended to satisfy reporting requirements to relevant regulatory bodies.
- (c) The information in this form, together with any accompanying information, is complete and correct to the best of my knowledge and belief and I take full responsibility for it.
- (d) I undertake to abide by the highest possible international ethical standards governing the Code of Practice for Research Involving Human Participants, as published by the UN WHO Research Ethics Review Committee (ERC) on <http://www.who.int/ethics/research/en/> and to which Unicaf University aspires to adhere.
- (e) In addition to respect any and all relevant professional bodies' codes of conduct and/or ethical guidelines, where applicable, while in pursuit of this research project.



I agree with all points listed under Question 10

Student's Name: Charles N. Balkaran

Supervisor's Name: Dr. Girish Chowbay Nuckchady

Date of Application: 20-Nov-2023

Important Note:

Save your completed form (we suggest you also print a copy for your records) and then submit it to your UU Dissertation/project supervisor (tutor). **In the case of student projects, the responsibility lies with the Faculty Dissertation/Project Supervisor.** If this is a student application, then it should be submitted via the relevant link in the VLE. Please submit only electronically filled in copies; do not hand fill and submit scanned paper copies of this application.