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# **ORGANISATIONAL CHANGE LEADERSHIP**

## **CHANGE LEADERSHIP APPROACHES**

An empirical investigation of Change Leadership Approaches of Principals in the Implementation of Education Reform Changes in Papua New Guinea Secondary Schools.

**By**

**George Bopi – Kerepa**

PhD Candidate (Management and Commerce)

College of Business, Law and Governance

James Cook University.

### **Supervisory Team**

- ❖ Dr Murray Prideaux: Management (College of Business, Law & Governance-JCU)
- ❖ Professor John Hamilton: Management (College of Business, Law & Governance-JCU)
- ❖ Dr Singwhat Tee: Management (College of Business, Law & Governance-JCU)

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## **Originality Statement**

To the best of my knowledge and belief, the work presented in this thesis is originally mine, except where acknowledged herein. No attempt has been made to present contributions from other researchers as my own, and all sources used in this research are given appropriate citation. Material in this research have not been submitted, in part or whole for another degree at this university or any other university. Every reasonable effort has been made to gain permission and acknowledge the owners of copyright materials. I will be happy to hear from any copyright owner who has been omitted or incorrectly acknowledged.

**George Bopi-Kerepa**

30 November 2020

## Dedication

This thesis is dedicated to my late daughter Esther Marie Bopi-Kerepa, who passed away on 19 July 2019 during my data collection period, after bravely fighting an aggressive mouth cancer. Her last text message to me on 18 July 2019 was for me to complete this PhD. Nothing fills the void she left behind, but I was motivated to fulfil her last wish to her memory. Equally, it is dedicated to the rest of my family who made it possible for me to enrich my experiences at great expense to their own needs.

- ❖ My late father Joseph Kerepa, who always said, “Hard work never kills a man, but hunger does”. He never ceased to work until in his mid-90’s when he departed on 26 August 2011. Perseverance and hard work ethics are the best gifts he passed on, which enabled me to complete this.
- ❖ My mother who is now in her mid-eighties, Maria Kerepa, who tirelessly toiled rugged terrains at Koibuga, in the highlands of PNG, to raise seven of us. Her sheer resilient attitude and strength has inspired me to complete this journey, in spite of a few challenges along the way.
- ❖ My wife, who I first met at university, fell in love with, and against all odds has stuck with me through thick and thin, Dessie Vinun Bopi-Kerepa. Without her relentless support, this project would have not been realised.
- ❖ My children: Christopher Mara Bopi-Kerepa and his most loving wife Stephanie and their children Geordie, George and Christofen; my daughter Victoria Malata Bopi-Kerepa and her child Clayton; and my sons Reuben and Roger, for not giving me any headache but coping my absence with prayers during this journey.
- ❖ My eldest sister Vicky Kerepa, upon whose shoulders I was able to achieve much success in my life and at great personal expense to her own. Vicky’s ‘anything is possible’ attitude has also been the source of inspiration for me to achieve this.
- ❖ My late sisters, Sabina Kerepa, who was a medical scholar, and Christina Kerepa, who was a group financial controller for a multinational company. Both have been my greatest supporters in anything I ever wanted to do and would have been so happy to share this moment with them.
- ❖ My brother Michael Kerepa and his wife Rubie Kerepa and their children; my brother Raphael Kerepa and his wife Joyce and their children, and my last sister Jeroldyn Kerepa. They continue to selflessly be the rock upon which I base my achievements.

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Finally, I offer my sincere thanks to James Cook University Graduate Research School, and specifically the College of Business, Law & Governance, for always providing advice and support to my research study endeavours.

**George Bopi-Kerepa**

## **Statement of the Contribution of Others**

Research contained herein this thesis is a result of team-based collaboration between George Bopi-Kerepa, Dr Murray Prideaux, Dr Singwhat Tee and Professor John Hamilton. Dr Murray Prideaux guided every step of research process, meeting with me weekly, from brainstorming and planning research, to data capture techniques and analysis, to thesis write-up, and at every step of the way. Dr Tee and Professor Hamilton guided me on the quantitative research path.

This research was made possible through the generous support from Australian Awards. The research throughout PNG was generously supported by: James Cook University; the National Gaming Board of PNG; Fr. Jan Czuba, Secretary for Higher Education, Research, Science and Technology; and the Kerepa family.

Ethics associated with this research and thesis complies with current laws of Australia and all permits necessary for the project were obtained (JCU Human Ethics H7592).

The original research data is retained in the College of Business, Law & Governance. This is in accordance with JCU research data: storage and management guidelines.

**George Bopi-Kerepa**

## **Abstract**

### **Aim**

Unprecedented changes continue to challenge normal work practices in organisations. The COVID-19 pandemic has been the ultimate test for leadership as organisational leaders cope with extraordinary demands and uncertainties. A transition into an uncertain ‘new normal’ will be more challenging, as pre-COVID-19 change initiatives in organisations have low success rates worldwide. This elevates the need for effective change leadership models to guide organisational leaders to navigate through these uncertainties.

PNG’s low Human Development Indices (HDI) highlights the country’s dire need for reformation to adapt to changing demands and uncertainties. The overall HDI is dragged down by PNG’s low education outcomes. To redress this, the country introduced major reforms in education in 1993. By 2014, the reforms achieved 40% success/completion rate. The protracted progress of the education reform highlights the importance of improving leadership, specifically change leadership approaches, that engage teachers to commit to implementing reform changes in schools.

This study developed a change leadership approach model to examine the leadership approaches in PNG secondary schools. The change leadership approach model is proposed to support PNG school principals to effectively and progressively implement the education reform changes to completion. The successful completion of the education reforms may invariably improve PNG’s low HDI.

### **Focus of the Study**

The focus of the study was Organisational Change Leadership. The education reforms provide the opportunity to study change leadership as is practiced in PNG secondary schools. The field of leadership research, with particular emphasis on change and change leadership, is reviewed to identify leadership approaches (behaviour and styles) that provide guidance for leading change in organisations. The parent discipline is organisational leadership and the field of study is change leadership. To assess change leadership approaches, leader-follower relations and employee engagement constructs were examined for leadership impact. The relationship between leadership approaches (independent variables) and the impact constructs (dependent variables) provided the Change Leadership Approach (CLA) Research Model for the study. The literature review: (1) shows the logical progression from organisational leadership and change leadership; (2) to a discussion of leader’s change leadership

approaches; (3) focusing particularly on principal-staff relations and teacher engagement in the study; and (4) the development of research questions, to test the research hypotheses in the CLA Research Model.

### **Problem Statement**

To improve on the protracted progress of the education reforms in PNG, reports have suggested to: (1) improve leadership at the school level; (2) improve teacher commitment; and (3) provide adequate resources (PNGSLR, 2016; TERPNG, 2014). Based on the gaps in the literature in addressing the need to improve the progress of implementing the education reform, the Research Problem is:

*To examine change leadership approaches in PNG secondary schools in the implementation of education reforms.*

From a change perspective, this study examines change leadership approaches of PNG secondary school principals, in implementing the reform changes. The findings of the research may inform on the appropriate change leadership approaches school leaders can use to improve the implementation of the reforms. Invariably, lessons from the research may improve the progress of the reform implementation, to eventually improve access and quality of education, with net improvements on the HDI.

### **Research Design**

The study explored the influence relations between principal's change leadership approaches (independent variable) and dependent variables – principal-teacher relations and teacher engagement, in the implementation of education reforms. Extant literature provides examples and knowledge about the relations between the variables, but lack context and knowledge of the direction and strength of the relations within the change process perspective. Based on existing propositions, this study used exploratory research design to test *a posteriori* hypotheses by examining data-sets and looking for potential relations between variables. The study used a mixed methods research design approach, which is most suited to the context of leadership and the perceived change leadership approaches and construct variables measured. The exploratory analysis from the data provides the relationships that support the best change leadership approaches that school principals can apply in improving the implementation of the education reform changes.



## **Conclusions**

The data were validated by comparing demographic information with previously published data and official records from the National Department of Education in PNG. Descriptive statistics were analysed, and the data were found to have normal distribution. Overall, SEM measures of goodness-of-fit of the CLA Research Model were excellent. The qualitative results provide support for the SEM path model and demonstrate how change leadership approaches may be measured in a three-dimensional space. Further analysis provides insight into how PNG secondary school principals are thinking with interesting word frequency effects.

There is strong support for transformational and transaction leadership approaches having impact on teacher relations and engagement with impact on reform change results. This research makes real-world contributions to how organisational change leaders may achieve reform transformation, through various pathways; and supports conceptualisation of change leadership. Future contribution includes developing the CLA Research Model as a theoretical transformation or change model.

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## Abbreviations

AGFI:	Adjusted Goodness-Of-Fit
AMOS:	Analysis of Moment Structures
AVE:	Average Variance Extracted
CFA:	Confirmatory Factor Analysis
CFI:	Comparative Fit Index
CISL:	Cambridge Institute for Sustainability Leadership
CLA:	Change Leadership Approach
DFAT:	Department of Foreign Affairs and Trade
EFA:	Exploratory Factor Analysis
ELT:	Evolutionary Leadership Theory
GFI:	Goodness-of-Fit
GNI:	Gross National Income
GoPNG:	Government of Papua New Guinea
HDI:	Human Development Indicator
KMO:	Kaiser-Meyer-Olkin
LMX:	Leader-Member Exchange
MLQ:	Multifactor Leadership Questionnaire
MRI:	Mean Rating Index
MTDP:	Medium Term Development Plan
NDoE:	National Department of Education
NIP:	New Ireland Province
OECD:	Organisation for Economic Co-operation and Development
OMR:	Optical Mark Recognition
PNG:	Papua New Guinea
PNGLSR:	Papua New Guinea Leadership Summit Report
RCI:	Relative Chi-square
RMR:	Root Mean square Residual
RMSEA:	Root Mean Square Error Approximation
SEM:	Structural Equation Modelling
SHRM:	Society for Human Resources Management
SoA:	State of America's Schools
SPSS:	Statistical Package for the Social Sciences
TERPNG:	Taskforce on Education Reforms in Papua New Guinea



TIPNG:	Transparency International Papua New Guinea
TLI:	Tucker-Lewis Index
UNDP:	United Nations Development Programme
UWES:	Utrecht Work Engagement Scale
VUCA:	Volatility, Uncertainty, Complexity and Ambiguity
WGI:	Worldwide Governance Indicator
$\chi^2$ :	Chi-square

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# CHAPTER 1. INTRODUCTION

Chapter 1 introduces Organisational Change Leadership as the focus of this study. The Papua New Guinea (PNG) government directed education reforms in secondary schools presented the opportunity to examine change leadership approaches. Section 1.1 sets the study scene by discussing change leadership approaches in organisations. Section 1.2 provides an overview of change leadership in the PNG context and explains the education reform agenda. Section 1.3 presents literature gaps. Section 1.4 introduces the research problem. Section 1.5 presents the aim of the research and research questions. Section 1.6 discusses the justification and contributions of the study. Section 1.7 discusses the theoretical considerations of the research. Section 1.8 presents the definitions of the key terms used in the study. Section 1.9 outlines the study to guide the thesis and section 1.10 concludes the chapter.

## 1.1 Organisational Change Leadership

The challenges of change leadership are demonstrated by mediocre change success worldwide. According to Heracleous and Bartunek (2020), worldwide, 60-70 % of change efforts fail. The high rate of change failure highlights the importance of change leadership in implementing change.

Change has become necessary, frequent, imposing, and disruptive, and part of normal organisational progress (Van der Wal, 2017; Christensen, 2016). Technology, social-political-economic shifts, pandemics, and environmental changes are challenging the nature of society, globally. There is an increasing need to adopt new technologies, innovations, and best practices to adapt to changes whilst sustaining competitive advantage (Jung, Kang & Choi, 2020; Waddell et al., 2019).

Organisations that do not adapt to change are likely to fail (Heracleous & Bartunek, 2020; Hechanova, Caringal-Go & Magsaysay, 2018). Forbes (2017) reported that only 60 of the Fortune 500 companies in 1995 worldwide were still operating in 2017. In the United States of America (USA), in 2017, the six largest companies by market value did not exist in 1967 (Forbes, 2017). This raises questions as to organisational leaders' capacity to align their organisations to adapt to the demands of the changing environment (Hechanova, et al., 2018). Further, "companies don't fail because of changes in the environment, they fail because their leaders are either unwilling or incapable of dealing with said change" (Forbes, 2017, p.32). Hence, a critical aspect of effective leadership is the ability to lead change constantly to adapt to the changing environment (Heracleous & Bartunek, 2020; Hechanova et al., 2018; Jarrel,

2017), specifically in the shifting work environment (Ganon-Shilon & Schechter, 2016; Brezicha et al., 2015; Beycioglu & Kondakci, 2014).

### **1.1.1 Approaches to Change Leadership**

Studies of organisational leadership have traditionally been based on Trait Theory and focused on the leader and the traits, personal qualities, and skills leaders displayed (Schweiger et al., 2020; Northouse, 2016; Raymond, 2010). According to the trait theory, success in organisations is largely attributed to its leaders with less regard for workers, environmental, and situational factors (Spector, 2016; Yukl, 2012). Contemporary work environments are frequently driven by technology with a workforce that is highly skilled and knowledgeable. According to Heimans and Timms (2018), this has dramatically altered the traditional leadership and management paradigms and imperatives, specifically the power to achieve organisational results. Power, as an influence relation process in organisations, is defined as “one’s ability to achieve goals and produce intended effects” (Heimans & Timms, 2018, p.2). In the highly skilled and knowledgeable workforce environment, the power to achieve organisational outcomes has shifted from leaders to followers (Jung et al., 2020; Schedlitzki & Edwards, 2018). This power shift is also changing the work setting from traditional bureaucratic and centralised structures to more empowered, holacratic and decentralised arrangements (Pritchard, 2018).

Organisational change success may no longer be the sole preserve of the leader in contemporary empowered work environments; it is dependent on the collective input of all actors in an organisation (Hechanova et al., 2018; Epitropaki et al., 2017). Hence, inclusive approaches to leadership are required to achieve organisational change success. A leadership shift from command and direct approaches to influencing and engaging followers and followership in order for their organisations to adapt to change is required. This shifts the models of leadership practice from leader-centred to follower-centred approaches (Hechanova et al., 2018; Henkel & Bourdeau, 2018; Schedlitzki & Edwards, 2018; Northouse, 2016). From a change process perspective, leadership requires the interaction of all organisational actors (Fairhurst, Jackson & Foldy, 2020).

The process theory of leadership, also referred to as the processual perspective (Fairhurst et al., 2020), is based on the social change theory of leadership (McRay, 2015) and relational leadership theory (Fischer et al., 2016; Northouse, 2013). The social change model of leadership is a process where group members in an organisation work towards a common vision and goals (Fischer et al., 2016), referred to as collective or processual leadership

(Fairhurst et al., 2020). The relational leadership model involves a process of inclusion, empowerment, and ethical practices towards the achievement of organisation goals (Epitropaki et al., 2017; Uhl-Bien et al., 2014). The focus is on the purpose of the organisation and activities directed at achieving organisational change and outcomes. Process theory emphasises relational (leader follower interactions -followership), situations, and tasks where change is co-created (Epitropaki et al., 2017; Northouse, 2013).

Despite a shift towards co-creation, studies continue to focus on the leaders' role in shaping employee attitudes and commitment to organisational change (Van der Voet et al., 2015; Hechanova & Cementina-Olpoc, 2013). However, such studies propose leader-centric change approaches with predictable change outcomes within a static operating environmental context (Peiris-John et al., 2020; Hechanova et al., 2018).

An emerging perspective on change leadership is to view change as a process in the context of followers, nature of the tasks, and situation variables (Schedlitzki & Edwards, 2018; Crevani & Endrissat, 2016). The follower-centric perspective, underpinned by process theory, postulates that followers have their own model or concept of an ideal leader as determined by the environment, tasks, and situation (Peiris-John et al., 2020; Henkel & Bourdeau, 2018; Voet et al., 2015). Therefore, greater employee engagement is contingent upon aligning change leadership approaches to meet follower perspectives and situational variables (Hechanova et al., 2018). The engagement of workers is critical to co-creating change outcomes in the change process.

The inevitable nature of change means organisational leaders are required to adapt their leadership approaches for leading change (Evans, 2020; Shaw-VanBuskirk et al., 2019; Stouten et al., 2018; Van der Wall, 2017). This is challenging in public sector organisations (Waddell et al., 2019; Heimans & Timms, 2018) and schools with similar bureaucratic structures (Kools et al., 2020; Bissessar, 2014; Jones & Harris, 2014; Yukl, 2013; Lunenburg, 2010). A traditional leader-centric leadership approach paradigm, prevalent in public bureaucratic systems, may impede organisational change and progress in the contemporary work environments with highly skilled and knowledgeable workforce, such as schools (Schweiger et al., 2020; Heimans & Timms, 2018; Van der Wall, 2017; Yukl, 2013).

### **1.1.2 Change Leadership Literature**

Few studies have examined change leadership and its effects on the implementation of organisational change (Hechanova et al., 2018; Stouten et al., 2018; Van der Voet, 2015; Van der Voet et al., 2015), particularly in a PNG context. Studies in organisational change,

reforms, and change leadership place less emphasis on change leadership approaches from a processual perspective (Fairhurst et al., 2020; Alvesson & Jonsson, 2018) and lean more towards leader-centric approaches in leading change (Peiris-John et al., 2020; Hechanova et al., 2018). The processual perspective focuses leadership approaches on the change process (Fairhurst et al., 2020) and the relationship leaders have in engaging their followers (Northouse, 2018; Fischer et al., 2016) in pursuing common goals (Epitropaki et al., 2017; Uhl-Bien et al., 2014).

First, organisational change literature describes change leadership within the context of a static organisational work environment. These studies use change process models, such as Lewin's Unfreeze-Change-Refreeze, to understand how leaders manage, imbed and implement change in organisations (Hussain et al., 2018; Stouten et al., 2018). Such an approach assumes that for change to happen, normal activities are suspended for change interventions to be identified, reorganised, and implemented, and new behaviours are adopted over time (Hossan, 2015). However, the reality is that change programmes themselves are processes that need to be led and managed, and often run in tandem with ongoing activities (Fairhurst et al., 2020; Hechanova et al., 2018).

Second, change leadership is often focused on the role of the leader in the organisational change process, and not on leading the change process (Alvesson & Jonsson, 2018). The leader is observed as the heroic figurehead or change champion, and followers as passive participants (Epitropaki et al., 2017; Uhl-Bien et al., 2014; Oc & Bashshur, 2013), resulting in an emphasis on the leader-centric approach to change leadership (Hechanova et al., 2018; Northouse, 2013). According to Latkin et al. (2018), the leader-centric approach produces what they claim as social desirability bias; whereby, such studies tend to present the best versions of the leaders (Farnsworth, 2020) to be viewed favourably by others (Krumpal, 2013). These studies tend to be more prescriptive, such as in determining style/model/strategy of leadership that lead to the intended change results (Băeșu & Bejinaru 2013; Yukl, 2013). However, leaders that adopt a leader-centric approach to change leadership often encounter resistance when implementing change programmes (Waddell et al., 2019; Bissessar, 2014). Given the inherent uncertainties that change brings, such emphasis on leaders ignore followers as key players in the change process (Epitropaki et al., 2017; Northouse, 2016; Uhl-Bien et al., 2014).

Finally, in organisational change literature, the emphasis is change management, rather than change leadership (Kotter, 2014; Garavan et al., 2013). Change leadership is often viewed interchangeably with change management (Nicholson & Odom, 2019; Hechanova et

al., 2018). Change management views change as “an intermittent project with a discrete beginning and end, addressing one or two big-ticket items, such as restructuring the organisation or implementing a new IT system” (Tams, 2018, p.2). On the other hand, change leadership is a proactive approach (Nicholson & Odom, 2019), where change is viewed as an opportunity to grow and improve, rather than an agenda to project manage (Hechanova et al., 2018; Jarrel, 2017). Change leaders adopt a follower-centric approach where change is co-created in the implementation process (Epitropaki et al., 2017; Northouse, 2013). Change leaders consider change effects of workers, the change process, and the resources needed to achieve change results. Change leaders establish leader-employee relations by establishing trust with their staff. In so doing, change is implemented based on the strong relationship that provides the foundation for employee engagement in the change process (Tams, 2018; Garavan et al., 2013).

## **1.2 Organisational Change Leadership in PNG**

To contextualise this study, a brief overview of PNG is presented in section 1.2.1. The change leadership challenges that prompted this study are explained with particular focus on the education reform in the country.

### **1.2.1 Papua New Guinea**

Papua New Guinea (Figure 1.1) is a country of approximately eight million people, with over 800 different languages, each representing unique cultures, traditional values, and governing systems (CIA World Fact Book, 2020; Lederman, 2015; Nanau, 2011; Aime, 2006; Prideaux, 2006;). The country is divided into 4 regions, 22 provinces, and 89 districts. The formal economy is dominated by resources and services industry sectors (World Bank, 2020). The largest employer is the public sector, with a workforce of approximately 360,000 spread across thirty departments, state owned enterprises, and institutions including schools (GoPNG MTDP III, 2018). Education and health services in PNG are administratively decentralised through provincial and local level governments. However, resourcing and policies are determined centrally through national departments of education and health (Kwa, 2016). Despite the established service delivery network and a relatively significant number of public servants, the country seriously lags behind in many social and economic indicators (World Bank, 2020; Kwa, 2016).



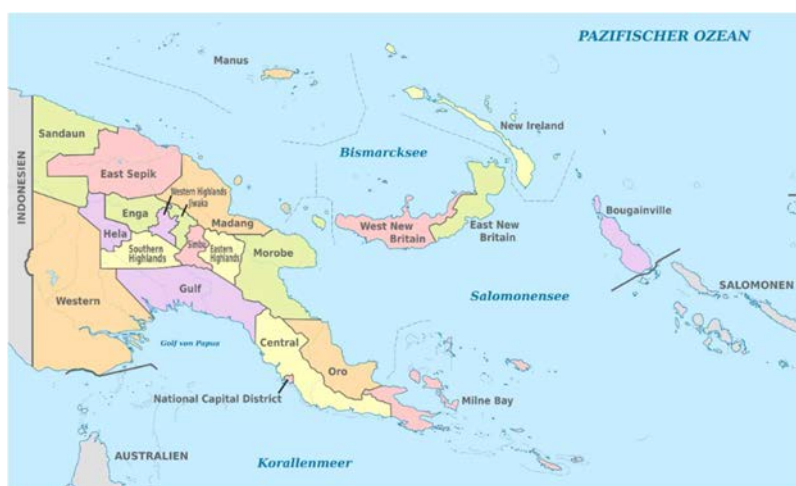


Figure 1.1 Map of PNG (Google Maps, 2020)

### 1.2.2 Organisational Change Leadership Challenges in PNG

The challenges of change and leadership in PNG are demonstrated by the low Human Development Indicator (HDI) published annually by the United Nations Development Programme (UNDP). The HDI is a composite indicator that measures the progress of three dimensions of human development: (1) a long and healthy life; (2) access to knowledge; and (3) a decent standard of living (UNDP, 2019). A long and healthy life is measured by life expectancy. Level of knowledge is measured by mean years of schooling among the adult population, and access to schooling for children. Standard of living is measured by Gross National Income (GNI) per capita.

PNG was ranked among the low human development category at 155 out of 189 countries in 2018 (UNDP, 2019). Among the three human development dimensions, education ranks the lowest, even among similar developing countries. Apart from social and economic challenges that all countries face, leadership, and governance reportedly contribute to PNG's low HDI performance. Hayward-Jones (2016) examined leadership challenges in PNG and highlighted weak governance as a principle cause to low development. The World Bank's Worldwide Governance Indicators (WGI) places PNG at the 25<sup>th</sup> percentile ranking among all countries, ranging from 0 (lowest) to 100 (highest) (World Bank, 2020). According to Davila, Elvira, Ramirez, and Zapat-Cantu (2012 p.20), governance and leadership have a symbiotic relationship since "good leadership can 'energise' governance, while good governance can serve to sustain leadership." PNG's weak governance is, therefore, an indication on poor leadership (Prideaux, 2018, 2008, 2006; Hayward-Jones, 2016; Kwa, 2016). Poor leadership leads to low staff morale (Prideaux, 2018; 2008), increases work stress and burnout (Fisher, 2010), poor resources mismanagement (Kwa, 2016), lack of

motivation (Rich et al., 2010) and corruption (TIPNG, 2018; Essacu, 2016). This eventually leads to organisational failures in PNG (Hayward-Jones, 2016; Kwa, 2016; Ambang, 2007).

Addressing poor service delivery has been an ongoing policy agenda in PNG since political independence in 1975. Service delivery is dependent, *inter alia*, on the quality of leadership, governance and resources, including human resources such as public servants (Hayward-Jones, 2016; Kwa, 2016). In attempting to improve service delivery, the National Government introduced reform policies to improve infrastructure, education, and health services in 1993. However, despite ongoing reform agendas and investments in improving service delivery, the HDI along with WGI have continued to decline. This decline highlights PNG's apparent difficulty in effectively leading the reform agenda and highlights the country's challenges in effectively leading and managing change (Hayward-Jones, 2016; Kwa, 2016).

There is paucity of literature on change leadership in PNG. Scant literature on public sector leadership in PNG are mainly reports by development agencies such as DFAT Australia (2019), Asian Development Bank (ADB, 2020), and World Bank (2020). These reports highlight the need for effective change leadership in approaching development challenges in PNG (Hayward-Jones, 2016; Kwa, 2016).

This study examined change leadership as practiced by principals in secondary schools in implementing Government directed education reforms. The findings in this research may have implications for wider government led reform efforts, and contribute to the body of knowledge of change leadership, particularly in a PNG context.

### **1.2.3 Education Reforms in PNG**

Education reforms were introduced by the national government in 1993 to improve educational outcomes, specifically to increase access to and improve quality of education in PNG by 2005 (NDoE, 1991). Reports on the progress of the education reforms, presented in the PNG Leadership Summit Report (PNGLSR, 2016) indicate that, in most instances, education reforms have not achieved expected targets and outcomes, including improving the declining HDI. Annual reports by the National Department of Education (NDoE, 2013), and the Taskforce on Education Reforms in PNG (TERPNG, 2014), report that less than 40% of secondary schools had undergone system changes. The reports highlighted that resource shortages, lack of teacher commitment and engagement, and weak school leadership were key issues to be redressed (PNGLSR, 2016; TERPNG, 2014).

The protracted time and low level of success of the reform process raises questions as to how the reform changes are being implemented at the school level. This study examined how reform changes are implemented by principals in PNG secondary schools.

### 1.3 Research Problem and Research Questions

Section 1.1 and 1.2 establishes the background and context to the study and highlight the research problem. Identifying the research problem at the outset sets the search parameters in literature and guides research activities. Questions of ‘who’, ‘what’, ‘where’, ‘how’ and ‘why’ guides researchers to confine problems within the appropriate parameters (Prideaux, 2005), and informs the research approach (Saunders, Lewis & Thornhill, 2012).

The background information reveals: (1) the protracted progress and the low outcomes of the education reform; (2) that no study has been conducted to investigate the overall effectiveness of the reforms; and (3) that reports have highlighted the need for effective leadership at the school level to implement the reforms (PNGSLR, 2016; TERPNG, 2014). Hence, this study looks at principals’ change leadership approaches in the implementation or change process of the reforms in secondary schools. From a change leadership perspective, the key research problem is to establish how these reforms are being led in secondary schools. Hence, the research problem is:

***To examine change leadership approaches in PNG secondary schools in the implementation of education reforms.***

To address the research problem, existing literature is explored to identify various change leadership approaches. Specific to this problem is to identify leadership approaches in response to challenges presented by the changes and the change processes in implementing the education reform.

To address the Research Problem, six Research Questions guided the investigation in the study.

- Research Question 1 (RQ1): What leadership approach(es) do secondary school principals in PNG use to lead reform changes?
- Research Question 2 (RQ2): What leadership approach(es) influence teacher engagement in implementing reform changes?
- Research Question 3 (RQ3): What leadership approach(es) influence principal-teacher Relations in implementing reform changes?
- Research Question 4 (RQ4): Does teacher engagement influence school change output in implementing reform changes?
- Research Question 5 (RQ5): Does principal-teacher relation influence school change output in implementing reform changes?

Research Question 6 (RQ6): Does principal change leadership approach influence overall education reform outcome in implementing reform changes?

The research problem highlights change leadership approaches as the predictor for influencing the implementation process of education reforms in schools. To investigate the research problem using the research questions, the predictor variable and the outcomes are summarised in Figure 1.2.

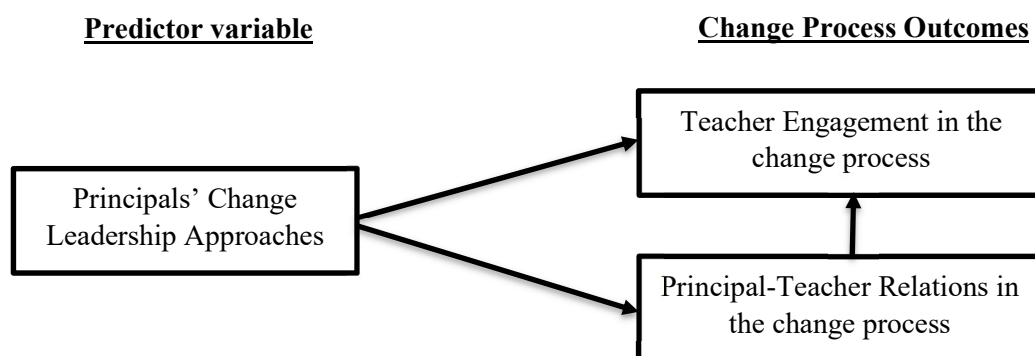


Figure 1.2 Predictor-Outcome variables

The predictor-outcomes variables show the underlying causal mechanisms in a predictor-mediator-outcome logic (Rose, Holmbeck, Coakley & Franks, 2004) in the change process. Change leadership approach predictor variables are proposed to influence teacher engagement and principal-teacher relations in the change process. Literature on: (1) organisational change, change leadership, change leadership in school organisations; and (2) teacher engagement and principal-teacher relations constructs were explored, to examine the impacts of change leadership approaches of principals. Based on the gaps in the literature, research hypotheses are proposed (chapter 2).

## 1.4 Literature Gaps

The research problem set the search parameters in literature review in Chapter 2. Literature have been explored on: (1) change leadership approaches (behaviours and styles) of transformational, transactional, laissez faire and authoritarian leadership; (2) principal-teacher relations; (3) teacher engagement; and (4) their impact on change outputs and outcomes, of the education reforms in PNG secondary schools.

According to extant literature traditional leader-centric management approaches to leading organisations in the face of constant changes has resulted in 60-70% failure in the change efforts (Heracleous & Bartunek, 2020; Hechanova et al., 2018; Jarrel, 2017). To

effectively lead change in organisations there is a greater need for a follower-centric leadership approach where employees are more involved in the change process (Peiris-John et al., 2020; Henkel & Bourdeau, 2018; Northouse, 2018; Voet et al., 2015). Constantly changing work environments demand organisational leaders adapt to increased engagement with employees. Based on the literature review (Chapter 2) Table 1.1 summarises the gaps in the extant literature.

Table 1.1 Gaps in the literature

<b>Research Gaps (RG)</b>
<b>RG1.</b> Change leadership literature is based on the static and predictable nature of organisations.
<b>RG2.</b> Studies focus more on the role of leaders in organisational change process as opposed to leading change processes.
<b>RG3.</b> Literature is biased towards leader-centric, rather than follower-centric approaches to change leadership.
<b>RG4.</b> Organisational change literature is biased towards change management, not change leadership.
<b>RG5.</b> Lack of change leadership studies in PNG
<b>RG6.</b> Lack of change leadership approach model that examines the implementation process of organisational change in a PNG context

## 1.5 Research Aim

The aim of this research was to study what change approaches principals in PNG secondary schools use to implement education reform changes. Findings from the research may provide suggestions for improving the progress of implementing the education reforms. The premise of the study is that principals' change leadership approaches influence teachers who are directly responsible for reform change outcomes. Hence, teachers' perception of principals' leadership approaches, may identify effective change leadership approaches that influence reform change outcomes.

## 1.6 Research Focus

The research problem confines the research to focus on change and change leadership. Change is a process that happens within a space of going from the known to the unknown; the familiar to the unfamiliar (Evans, 2020; Heracleous & Bartunek, 2020; Rohr, 2020). Rohr (2020, p.1) defines this space as the Liminal Space:

“The ‘what was’ and the ‘next.’ It is a place of transition...and not knowing... where we are between the familiar and the unknown...where the old world is

left behind, while we are not yet sure of the new existence.....in that space, genuine newness begins... where the old world falls apart, and a newer world is revealed.”

Within that space, conventional approaches to leadership, based on existing leadership structures, hierarchies, approaches and practices have minimal effect (Shaw-VanBuskirk et al., 2019). In that liminal space, leadership emerges depending on situation, task and contingent upon who has the necessary skills and knowledge to provide leadership (Shaw-VanBuskirk et al., 2019; Northouse, 2018). This study focused on examining change leadership approaches of PNG secondary school principals within that liminal space.

## 1.7 Contributions of the Study

There is lack of research on change leadership in PNG, specifically in schools in implementing reform changes. Existing studies focus largely on cross cultural challenges and leadership in PNG (Prideaux, 2018, 2008, 2006; McLeod, 2015, 2008; Nanau, 2011; Ambang, 2008; Aime, 2006; Saffu, 2003). A study on secondary school leadership by Tivinarlik and Wanat (2006) examined how the transactional impact of *Wantok System* influences principals' leadership behaviour. *Wantok System* is a network system based on kinship popularly applied in Melanesian cultures (Prideaux, 2008; Tivinarlik & Wanat, 2006) *Wantok*, literally meaning 'one talk' or 'one or same language' group (Nanau, 2011). The term is used to express relationships and networks linking people in local, district, provinces, and regions (Essacu, 2016; Narakobi, 1983). In earlier studies, Maha (1992) and Quarshie (1992) examined the promotion of teachers to principals' positions based on the *Wantok System*. Lahui-Ako, (2001) examined instructional leadership behaviour in secondary schools to establish the link between effective teacher leadership and teaching practices and student learning outcomes. Kelep-Malpo (2007) examined the influence of Christianity and gender on school leadership practices in schools in New Ireland Province of PNG. These studies establish the link between the impact of leadership decisions on teachers and school performance.

To contribute to closing the knowledge gap of change leadership in schools in the context of implementing education reform changes in PNG, lessons from similar studies in other countries were explored. For instance, Koford, Krejsler, and Moos (2008) found that school leadership impacts on learning outcomes through teachers. Furthermore, Bredeson (2005) argued that school leadership must constantly engage teachers through capacity

building and establish effective relations to increase student achievement. Oreg and Berson (2011) examined the role of school principals in Israel, reporting that when principals are open and exhibit transformational leadership behaviours, teacher intentions to resist to change are greatly reduced. In a similar study in Malaysia, Tajasom and Ahmad (2011) reported that principals' transactional and transformational leadership approaches positively affected school climate. Leithwood et al. (2020) found transformational and transactional leadership approaches encouraged staff collaboration, teacher engagement, and improvement leading to improved school performance.

This study adopted process and relational theories of leadership, which maintains that engagement of employees is enhanced when leaders align their approaches to meet follower perspectives and situational variables (Hechanova et al., 2018; Uhl-Bien et al., 2014). This follower-centric approach to change positively influences leadership effectiveness with positive impact on result outputs and outcomes (Peiris-John et al., 2020; Henkel & Bourdeau, 2018). The follower-centric approaches to leadership explored in previous research contribute to the study's research framework and model. For instance, leadership as a process, according to Uhl-Bien et al. (2014, p.83), is "co-created in social and relational interactions between people." Without followers, there is no leadership. In the twenty first century work environment, with highly skilled and knowledgeable workforce, studies have observed that follower-centric leadership approaches are effective in leading change (Epitropaki et al., 2017; Phillips, 2015; Uhl-Bien et al., 2014; Yukl, 2013; Lunenburg, 2012). This thesis contributes theoretical and practical value to the body of knowledge in this field of research. Table 1.2 summarises the theoretical and practical contributions of the thesis.

Table 1.2 Thesis contribution

Research Gap	Research Questions	Theoretical Contribution	Practical Contribution
<p><b>RG1.</b> Change leadership literature is based on the static and predictable nature of organisations.</p> <p><b>RG2.</b> Studies focus more on the role of leaders in organisational change process as opposed to leading change processes.</p> <p><b>RG3.</b> Literature is biased towards leader-centric, rather than follower-centric approaches to change leadership.</p> <p><b>RG4.</b> Organisational change literature is biased towards change management, not change leadership.</p> <p><b>RG5.</b> Lack of change leadership studies in PNG</p> <p><b>RG6.</b> Lack of change leadership approach model that examines the implementation process of organisational change in a PNG context</p>	<p><b>RQ1.</b> What leadership approach (es) do secondary school principals in PNG use to lead reform changes?</p> <p><b>RQ2.</b> What leadership approach (es) influence teacher engagement in implementing reform changes?</p> <p><b>RQ3.</b> What leadership approach (es) influence principal-teacher relations in implementing reform changes?</p> <p><b>RQ4.</b> Does teacher engagement influence school change output in implementing reform changes?</p> <p><b>RQ5.</b> Does principal-teacher relation influence school change output in implementing reform changes?</p> <p><b>RQ6.</b> Does principal change leadership approach influence overall education reform outcome in implementing reform changes?</p>	<p>1. Change Leadership Approach (CLA) Research Model: Dynamic multidimensional systems path model framework to enhance the development of examining change leadership approaches in PNG schools and public sector organisations.</p> <p>2. Change leadership constructs: Transformational and transactional leadership.</p> <p>3. Change impact/mediating constructs: Principal-teacher relations and teacher engagement.</p> <p>4. A shift in focusing on leader-centric approaches to follower-centric approaches to change leadership.</p> <p>5. Contributes to literature on change leadership.</p>	<p>1. Evidence supporting transformational and transactional leadership approaches to leading change.</p> <p>2. CLA framework to examine change leadership approaches in implementing government directed reforms.</p> <p>3. Basis for designing targeted change leadership approach development programmes.</p>
		Exploratory approach to develop change leadership theory/model using the multidimensional systems approach framework to examine change leadership approaches and practices in leading organisational change	Framework and evidence to support the use of a CLA framework when implementing change in schools and may be applicable in public sector organisations

## 1.8 Theoretical Considerations

The change leadership conceptual framework developed in this study extends the existing change leadership literature and may have wider application in primary schools and other government organisations in PNG and possibly beyond. The conceptual framework is summarised in Figure 1.3.



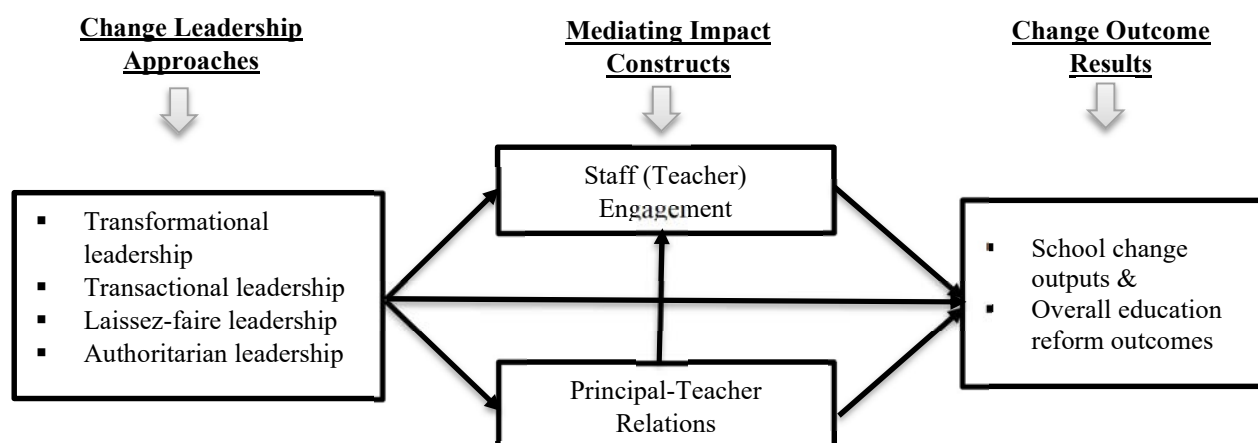


Figure 1.3 Conceptual framework

### 1.8.1 Nature and Justification of the Research

The research examined change leadership approaches used by principals of secondary schools to establish ‘Principal-Teacher Relations’ and ‘Teacher Engagement,’ to implement education reforms in PNG secondary schools. The study explored influence relations between principals’ change leadership approaches (independent variable) and dependent variables – ‘Principal-Teacher Relations’ and ‘Teacher Engagement.’ The study used a mixed-method inductive and deductive research approach. Table 1.3 summarises the research methods and approaches used in the study.

Table 1.3 Inductive and Deductive Research Approaches

Attribute	Qualitative Methods	Quantitative Methods
<b>Research Approach</b>	Inductive Approach:	Deductive Approach:
	Literature review and underlying theories explored to establish the premise of the study, research questions developed, gaps in the literature established and hypotheses formulated.	The hypotheses are tested using survey questions, data collected, and the results analysed using Structural Equation Modelling (SEM) to validate the constructs using SPSS. Interview data is analysed using NVivo to objectively establish causation among the construct variables, patterns, and impacts.

The study adopted both inductive and deductive research approaches. Inductive approach starts with the literature review and the theories that underlie the change leadership approaches and the impact constructs (Goddard & Melville, 2004). Inductive research “involves the search for patterns from observation and the development of explanations – theories – for

those patterns through series of hypotheses” (Bernard, 2011, p.7). Deductive approach, on the other hand, explores existing literature and studies and then tests the hypotheses that emerge from existing theories (Saunders, Lewis & Thornhill, 2012). Inductive approach was used to explore the literature, determine the gaps in the literature and formulate the research questions and hypotheses. Deductive approach was used to test the hypotheses. Survey instruments and semi-structured interviews questions were used to collect quantitative and qualitative data from teachers and principals to test the hypotheses.

Extant literature provided knowledge of relations between the variables but offers little knowledge of the direction and strength of the relations within the change process perspective. Additionally, extant literature is biased towards a Western perspective, whilst lacking a PNG context (Prideaux, 2018; 2008; 2006; Essacu, 2016; Nanau, 2011). Based on existing propositions, this research used the inductive/deductive research approach to test the hypotheses by examining datasets and looking for potential relations between variables (Baehr, 2003). The exploratory analysis of the data provided the relationships that support the best change leadership approaches that schools can apply in improving the implementation of the education reform.

Studying change leadership in the context in which it is found is important, especially in the current complex and evolving work environments, including secondary schools (König & Kansteiner, 2020; Hechanova et al., 2018). According to Stentz, Plano, Clark, and Matkin (2012), a mixed methods research approach is useful for exploring leadership approaches and practices using: (1) widely accepted and validated instruments; and (2) qualitative research as a means to conceptualise how leaders approach or provide their leadership.

### **1.8.2 Research Paradigm**

This research adopted positivist and interpretive paradigms. A positivist paradigm leads to quantitative research. It explains the empirical data collection features on observable behaviours of the sample and data analysis (Collins, 2010). The interpretive paradigm explores meanings and interpretations by studying cases in their natural settings and uses the data collected for analytic induction (Wilson, 2010). The interpretive paradigm adopts an ontological position which assumes that reality is constructed out of social interactions among group members (Denzin & Lincoln, 2005). The interpretive paradigm leads to qualitative research. Table 1.4 summarises the paradigms of this research.

Table 1.4 Research Paradigms (Collins, 2010; Wilson, 2010)

<b>Positivist</b>	<b>Interpretivist /Constructivist</b>
Objectivist	Subjectivist
Empirical	Anti-positivist
Quantitative	Qualitative

### 1.8.3 Methodology

The mixed-methods research approach, incorporating both quantitative and qualitative methods, was used to collect data for the study. The mixed methods approach is suggested to avoid “blind spots of a mono-method study, as well as expanding and strengthening the conclusions of a study.” (König & Kansteiner, 2020, p.1). This includes descriptive and confirmatory research approaches methods (Schoonenboom & Johnson, 2017; Shields & Rangarjan, 2013). The descriptive research captures participant characteristics (demographics) and allows for statistical investigation. Confirmatory research identifies measures around leadership approaches of school principals and targets their measured impact with establishing relations and engaging teachers in the effective implementation of education reform changes. Research methodology used is summarised in Figure 1.4.

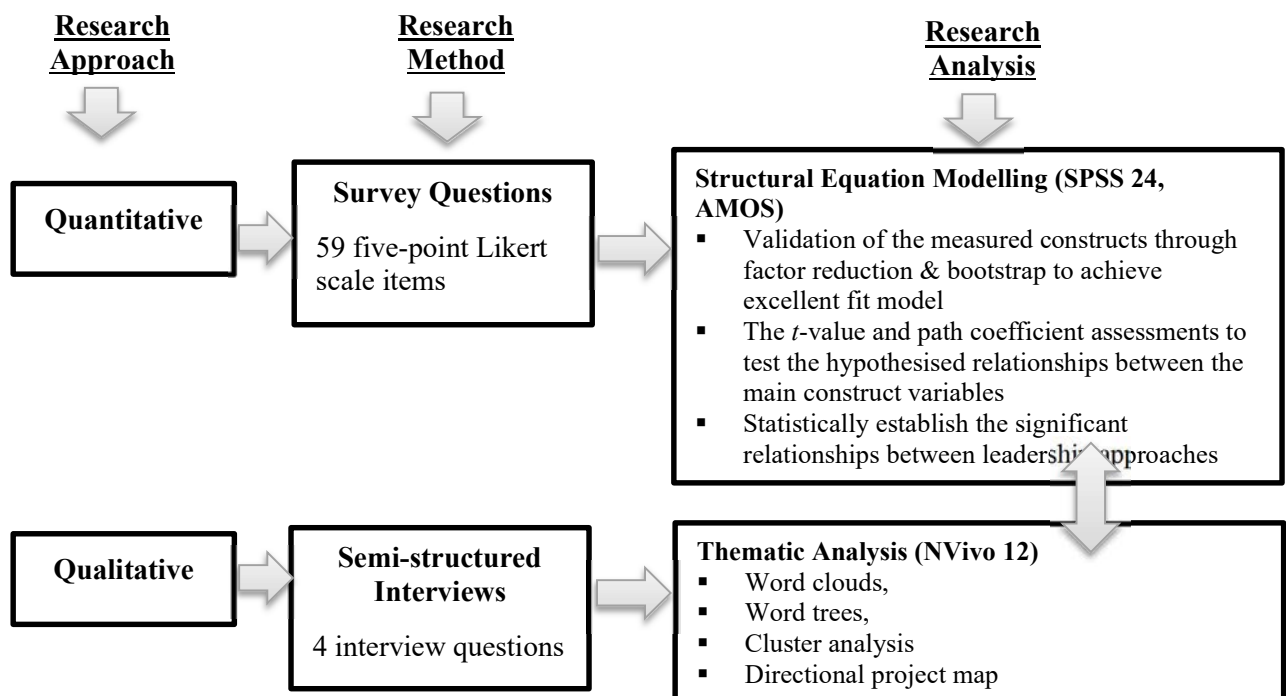


Figure 1.4 Research methodology: Mixed-methods research approach

### ***1.8.3.1 Scope of the Study***

The research was designed to capture: (1) valid quantitative data from secondary school teachers, using an instrument (questionnaire); and (2) qualitative data from their principals. The qualitative data were captured using semi-structured interview questions. According to Noble and Heale (2019), semi-structured interviews offer great deal of flexibility as a guided conversation between the researcher and participant, and provide the researcher with the ability to probe the participant for additional details.

The study population was drawn from a total of 3,757 secondary school teachers in 98 secondary schools throughout PNG (NDoE, 2019). A total of 47 (48%) schools were randomly selected and visited across 14 (out of 22) provinces. Survey sample size was 578, resulting in a margin of error of  $\pm 3\%$  / 95% confidence level (Dillman et al., 2009). A total of 735 survey responses were received. Completed questionnaires were electronically scanned and imported directly into SPSS. The data was cleansed, and examined for gaps, resulting in the final sample size  $n=650$ , an acceptable rate of 88.8% (Dillman et al., 2009). The final sample ( $n=650$ ) represented 17% of the survey population. Qualitative data was collected by face-to-face interview from 37 (38%) secondary school principals.

The quantitative data from teachers and qualitative interview data from the principals was triangulated with the literature and analysed to determine areas of agreement as well as areas of divergence in the study (DeJonckheere & Vaughn, 2019; Carter et al., 2014).

### ***1.8.3.2 Analysis***

Research questions determine the nature of the research approach. The ‘what’ and ‘does’ questions require answers in both quantitative and qualitative formats. First, research questions RQ1, RQ2, and RQ3 required the frequency of leadership approach as perceived by respondents (teachers) from the constructs assessed. Secondary data (published annually by NDoE) on the status of the progress of the reforms in each school was observed, and the principals’ interview data triangulated to provide the qualitative analysis and judgement. Second, research questions RQ4, RQ5, and RQ6, required qualitative analysis and interpretation of the quantitative data collected.

Survey data were analysed using Structural Equation Modelling (SEM) where the constructs were validated through factor reduction and bootstrap using SPSS/AMOS to achieve excellent model fit. Interview data was analysed using NVivo word cloud, NVivo word trees, and NVivo 3D cluster analysis, positioning each change leadership approach and change impact constructs into three-dimensional positioning space. The NVivo directional

project map supports the SEM path model analysis. The research model was validated by triangulating the conceptual model, SEM path model, and NVivo results.

#### **1.8.4 Research Bias**

Biases can potentially threaten the validity of the findings in the research. According to Prideaux (2005, p.7), these include: “selecting data that agrees with the researcher’s existing theory; selecting data that appears significant to the researcher; reactivity to the researcher by study participants; effects of the study setting on the researcher; and changes in the researcher as a consequence of conducting the research.”

According to Maxwell (1996), it may not be possible to completely eliminate biases. The measures taken by the researcher to mitigate potential bias are discussed below. The researcher has been a senior public servant within the office and ministry of Prime Minister in PNG from 2015 to May 2017. Prior to that, he has been an academic and management consultant, mostly in human capital development projects in higher education and training in PNG, and in Australian TAFE institutions for 15 years. Each role was relinquished upon taking the offer to complete this research study.

However, given that the researcher has been within the public policy domain in his previous roles, this raises questions of possible biases in this research. In this setting, two potential biases are possible: (1) researcher bias; and (2) participant bias (Farnsworth, 2020). To counter the possibility of researcher and participant biases, the following approaches were taken.

1. According to Farnsworth (2020), mitigating researcher bias assures impartiality so that findings can be relied upon. To achieve this, the following approaches were taken:
  - A research plan was developed outlining protocols and the right tools to be used in the research. This was submitted to the James Cook University (JCU) research ethics committee and approved (ethics approval number H7592 – see Appendix E).
  - All necessary approvals were sought and granted from the PNG Research Council which is the peak research body in the country, the Secretary of the NDoE, and from the secondary school principals selected (see Appendix F and G).
  - Letters were written to all the secondary school principals, inviting their school to participate in the study. The role of the researcher and the purpose of the

study were clearly outlined in the letter. Participating schools consented to issues raised in the research, by agreeing to participate (see Appendix H and I).

- The researcher took no position on the issues discussed.
2. Participant or response bias in this research refers to social desirability bias (Latkin et al., 2018), where the participant wants to present the best versions of themselves (Farnsworth, 2020), and to be viewed favourably by others (Krumpal, 2013). The approaches to mitigating participant bias were:
- Assured confidentiality and anonymity in the data collection and analysis (Farnsworth, 2020; Krumpal, 2013). Principals were informed (and agreed to participate on these terms) that their interview data would not be shared with anyone else and that their names or schools will not be released (see Appendix J).
  - Semi-structured questions were used to confine feedback to specific questions asked (see Appendix C).
  - Taking a judgement free approach to disseminating information on the research to participants (Farnsworth, 2020).
  - The four interviewee questions confined principals to assess their own leadership rather than how they perceive they are viewed by others. This minimised the possibility of principals providing feedback that would make themselves look good by others (Latkin, et al., 2018; Krumpal, 2013).
  - Interviews were conducted face-to-face to ensure that they were confined to the four interviews questions. At the beginning of each interview, the researcher clearly articulated his personal role, and did not take any position on the issues discussed.

During the interviews, the researcher only asked questions, listened attentively, and allowed for discussions to flow freely. The researcher did not express any opinion regarding the discussions. According to Maxwell (1996, p.91), this satisfies the view that “validity in qualitative research is not the result of indifference, but integrity.”

## 1.9 Definitions of Terms

The following terms in Table 1.5 are used throughout the study.

Table 1.5 Definition of terms

Terms	Definition
Change	The term change used in the study specifically pertains to the process of moving from the known to the unknown, familiar to the unfamiliar (Heracleous & Bartunek, 2020; Waddell et al., 2019). Change is also used with the terms ‘reforms, transformation, impacts and outcomes’ (Evans, 2020; Heimans & Timms, 2018; Van der Wal, 2017).
Change leadership	The behaviours of leaders (and managers) in shaping organisational change and “creating capacity among employees to implement the change” (Higgs & Rowland 2007, p.18).
Change leadership approach	Leadership behaviour, style, and practice that establishes leader-member relations and engages employees to commit to implementing change (Schedlitzki & Edwards, 2018; Crevani & Endrissat, 2016). In the study, transformational, transactional, laissez-faire, and authoritarian leadership approaches are examined.
Change Leadership Approach (CLA) framework	CLA framework shows the components and direction which indicates the overall perspective of the research (Kivunja, 2018). A framework is descriptive and shows relevant concepts and how they relate to each other (Creswell & Plano Clark, 2011). In this study, the CLA framework indicates that a quantitative approach is used to address the research problem.
Change Leadership Approach (CLA) Research Model	CLA Research Model is developed within the research framework and indicates the theoretical concepts and constructs of the empirical investigation ((Kivunja, 2018). A model is more prescriptive, specific and with a narrow scope (Creswell & Plano Clark, 2011). In this study, the CLA Research Model is the prescriptive tool used to identify the construct variables for investigation.
Education reform	The term ‘education reform’ is used in the study to describe the deliberate process to the system structures and processes of the education system (OECD, 2016; World Bank, 2016).
Implementation	Implementation refers to the actual leading and managing of the education reforms.
Leadership approach	Encompasses leadership behaviour and style, and leadership-in-practice (Northouse, 2016).

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Organisation	Refers to private or public institutions or entities, including schools, that combine and bring together human efforts and resources (materials, equipment, and technology) systematically and effectively, through structured systems and processes to accomplish desired results (Kools et al., 2020; Almatrooshi et al., 2016).
Overall education reform outcomes	Refers to aggregated changes from individual school changes that address: (1) Access - increased enrolments in secondary education; and (2) Quality – improvements in the quality of learning reflected in the annual school results reflected in the Mean Rating Indices (MRI).
Principal-teacher relations	The relational dynamic between principal and teachers that provides the basis for change leadership process in implementing the education reform changes (Biehl, 2019; Northouse, 2016; Uhl-Bien et al., 2014).
Reform changes	Reform changes in the study refer to the education reform.
School change outputs	Refers to: (1) the system changes from high school to secondary school status; (2) the full development of the school based curriculum; and (3) the school academic performances as measure by the MRI.
Teacher engagement	Teacher engagement refers to teachers that reflect greater commitment and contribute their knowledge, skills, and abilities in achieving school goals (Sirota & Klein, 2013). Engagement is achieved by satisfying three engagement factors: (1) achievement; (2) camaraderie; and (3) equity/fairness.
Tok Pisin	Tok Pisin is the lingua franca spoken throughout PNG. <i>Tok</i> is derived from English "talk", but also means "word", "speech", or "language". <i>Pisin</i> derives from the English word <i>pidgin</i> ; which in turn, may have its origins traced to the word <i>business</i> , which is descriptive of the typical use of pidgins as inter-ethnic trade languages (SIL/WBT, 2015).

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## 1.10 Future Research

This thesis has explored the change leadership body of knowledge. Future research should explore:

- Impact on change leadership approaches to workforce engagement in other organisations, including businesses, in PNG.
- Replicating this study in primary schools to compare the differences and similarities of change leadership approaches with secondary schools in PNG.



- Assessing change leadership approaches in in public sector organisation implementing government directed reforms with similar change agendas in other developing countries.
- Comparative analysis on benchmarking change leadership approaches in PNG to developed countries.

## **1.11 Organisation of the Research Study**

Chapter 1 introduces the thesis and provides the background and rationale for studying change leadership. The background provides an overview of the current education system and reform in PNG, and the role of the principal in leading the reform changes. This chapter presents the research problem and outlined the purpose of the study and the research questions that guided the study.

Chapter 2 reviews the relevant extant literature, specifically organisational leadership, organisational change process and change leadership approaches, teacher engagement and principal-teacher relations, examining the relevant theories and models. The chapter examines widely recognised leadership approaches: transformational, transactional, laissez-faire, and authoritarian approaches, and provides a rationale for their applicability in the study. Based on the review of the literature, the literature gaps are established, research questions developed, and research hypothesis proposed, to address the research problem. The Change Leadership Approach (CLA) framework is developed to address the gaps in the literature, resulting in the CLA Research Model to test the hypotheses proposed.

Chapter 3 describes the quantitative and qualitative research methodologies used to gather the data required in the study, and explains steps taken in developing the data collection instruments. The chapter explains the data sampling techniques and data analysis used for model testing to address each of the research questions.

Chapter 4 reports the results of the research survey and provides the analysis for testing the hypotheses in the CLA Research Model. First, through Structural Equation Modelling (SEM) analysis, the constructs are validated through factor reduction and bootstrap to achieve excellent fit model. The *t*-value and path coefficient assessments are used to test the hypothesised relationships between the main construct variables, thereby statistically establishing the significant relationships between leadership approaches and their variable constructs. Second, the chapter presents the analysis of the qualitative data using NVivo word cloud, NVivo word trees, and NVivo 3D cluster analysis positioning each change leadership approach and change impact constructs into three-dimensional positioning space. The NVivo

directional project map supports the SEM path analysis and model. Hence, the CLA Research Model is validated by triangulating the conceptual model, SEM path model, and NVivo results. Hence, the change leadership approach conceptual model, SEM path model, and the NVivo results support and strengthen the validity of the CLA Research Model.

Chapter 5 discusses the findings of the study and concludes the thesis. The chapter answers the research questions to answer the research problem. The implications on how the principal's change leadership approaches influence teacher engagement and builds principal-teacher relations are highlighted. The chapter presents the practical, research, and overall contributions the research makes and explains the limitations of the study along with suggestions for future studies.

## **1.12 Chapter 1 Summary**

Chapter 1 introduced organisational change leadership and established the background to the research problem. The purpose of the research was established to guide the enquiry to answer the research problem. A mixed-methods approach was used to collect data for analysis. A significance of the research is that it is the first study of change leadership in PNG. The study draws on extant literature, largely based on theories and practices elsewhere, and adapts the instruments to measure change leadership and management approaches in secondary schools in PNG.

Chapter 2 introduces the theoretical framework for the study and examines the relevant literature to formulate the Research Problem, Research Questions and Hypothesis underpinning this study.

## CHAPTER 2: LITERATURE REVIEW

### 2.1 Introduction

Chapter 1 introduced the background to the research problem of this study. Chapter 2 establishes the theoretical foundation for this study. The review of the literature examines the study background by “enabling the work to be set in the context of both existing evidence (and theory) and its practical applications” (Rojon & Saunders, 2012, p.55). This ensures that the methodology used to research the concepts around organisational change leadership does not repeat the scant body of knowledge of leadership in PNG. The objectives of this chapter are to:

- critically review the relevant extant literature on organisational change leadership to develop a conceptual framework to guide change leadership approaches.
- locate gaps in the existing change leadership literature, particularly in PNG, to identify the research problem.
- develop research questions and research hypotheses based on the conceptual framework to address the research problem.
- develop a research model to test the hypothesised propositions in answering the research questions.
- demonstrate how this research contributes to closing the knowledge gap and enhancing change leadership approaches in secondary schools in PNG.

Organisational leadership, as the parent discipline, is very broad. To help confine the review of the literature to organisational change leadership, the approach taken is displayed in Figure 2.1. The research study classification model “shows the relationship between the parent discipline, the field of study, immediate disciplines, the research focus, research problem, and research questions” (Prideaux, 2005, p.29).

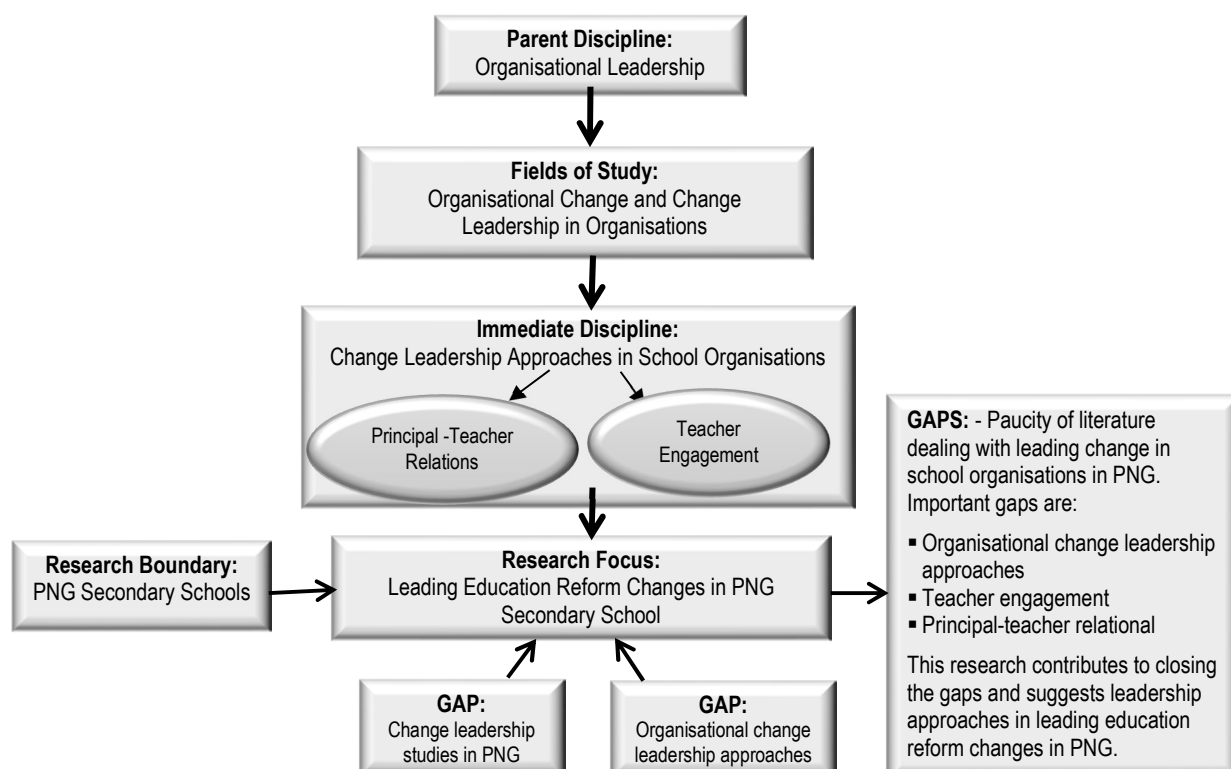


Figure 2.1 Research study classification model (Adapted from Prideaux, 2005, p.29)

This chapter begins by reviewing the literature on organisational leadership and leadership theories and approaches in section 2.2. Section 2.3 examines the literature on organisational change and change processes, theories, and models. Section 2.4 explores the literature on change leadership in school organisations with particular reference to PNG secondary schools. Section 2.5 examines leading education reform changes in PNG secondary schools and the research problem. The Change Leadership Approach (CLA) Research Model is developed and guides the investigation into the leadership approach and impact constructs. Literature around the CLA and impact constructs is explored and gaps identified. Research hypotheses and questions are developed to guide the investigation into change leadership approaches to address the research problem. Section 2.6 concludes the chapter.

## 2.2 Organisational Leadership

Leadership lacks a universally accepted definition (CISL, 2016). Leadership has been given a variety of meanings and interpretations by various scholars based on their schools of thought (Kjellström, Törnblom & Stålné, 2020). For instance, Harrison (2018), Yukl (2013) and Northouse (2013), view leadership as a field of study in social and management sciences; while Amanchukwu et al. (2015) and Goff (2003), see it as a practical and professional skill that can be acquired, to influence others. Other scholars such as Hechanova et al. (2018) and, Schedlitzki and Edwards (2018), view leadership as an important and effective response to challenges and opportunities. According to Kjellström et al. (2020, p.435) “the meaning of leadership is ambiguous and confusing...and leadership has become an all-encompassing good that is vaguely described.” Grint (2005) argued that little agreement has been reached on the definition of leadership, and that leadership is an “Essentially Contested Concept (ECC)” (p.17).

Definitions and concepts of leadership are embedded in experiences in different organisational settings, disciplines, situations, and tasks (Bohl, 2019; Block, 2014). Leadership occurs in “dynamic environments that are enigmatically laced with intricacies and complexities” that makes it difficult to study using existing models and frameworks (Block, 2014, p.233). Hence, leadership is a phenomenon defined according to one’s experience, observations, and perceptions (Bohl, 2019; Menon et al., 2014).

Defining leadership requires that it is observed as it relates to different elements in an operating environment. This is referred to as the ontological approach, where studies reduce the elements of a phenomenon to observe the engagement and collaborations of actors (Bohl, 2019; Menon et al., 2014). The ontological approach examines leadership objectively as it relates to interactions between and among leaders and followers, and the situational imperatives that influence leadership (Jensen et al., 2012). Ontological definitions provide a richer understanding of the concept of leadership within discrete contexts (Menon et al., 2014; Jensen et al., 2012).

Leadership, from an ontological approach, is defined as a process of social influence in relationships, inspiring followers (Kruse, 2013; Northouse, 2013; Oc & Bashshur, 2013; Yukl, 2013) to share and pursue common visions and goals (Igbal et al., 2015; Zeitchik, 2012). Leadership, through the ontological lens, is a social relational construct, with a directional focus, and influenced by followership (Schedlitzki & Edwards, 2018; Kruse, 2013). Themes of followership, influence, process, leader-follower collaborations,

and goal achievement emerge from these definitions and provide the scope for examining leadership in organisations.

Through the constructionist perspective, leadership is a social construct and is manifested within the context of relations (Jiang et al., 2015; Drath, 2001), rather than an innate possession embodied in individuals (Galbin, 2014; Ospina & Schall, 2001). According to the constructionist view, leadership is learned and earned, complemented by inherent traits. The social constructionism perspective holds that a great deal of human endeavour is influenced by: (1) social and interpersonal influences (Jiang et al., 2015); (2) situational variables (Schedlitzki & Edwards, 2018); and (3) the nature of tasks (Crevani & Endrissat, 2016), that determine leadership behaviours and approaches.

According to Evolutionary Leadership Theory (ELT), leadership's primary role is to facilitate group performance and effectiveness (Vught & Ronay, 2013). The ELT proposes that: (1) relationships between leaders and followers are necessary to group performance and effectiveness; (2) adaptive behavioural strategies evolve to solve social problems; and (3) organisational structures and supporting systems and processes must align consistently with the 'innate psychological mechanisms' of leading and following (Alznauer, 2016; Vught & Ronay, 2010). Therefore, leadership evolves as a process to address issues in a given social and organisational setting and situation (Alznauer, 2016; Crevani & Endrissat, 2016; Vught & Ronay, 2013). The situational approach to leadership is determined by the environment (situation), tasks (issues), and employees (following) in organisations (Hechanova et al., 2018; Henkel & Bourdeau, 2018; Schedlitzki & Edwards, 2018; Northouse, 2016, 2013).

The situational approach determines that organisational leaders adjust their leadership approaches "to meet the changing needs of subordinates" (Northouse, 2013, p. 99) and the tasks at hand. Situational leadership describes leadership approaches that are specific to the leader, followership, situational variables, and tasks (Henkel & Bourdeau, 2018). This shifts leadership practice from leader-centrism to an approach that embeds leadership among followers that directly attend to the situation and tasks on hand (Schedlitzki & Edwards, 2018; Hechanova, et al., 2018). Leadership is, therefore, a process of achieving collective rather than individual goals, and is also referred to as collective leadership (Fairhurst, Jackson & Foldy, 2020; Alverson & Jonsson, 2018).

Although follower and situational approaches have great value in organisational leadership practice, Glynn and DeJord (2010) claimed that there is lack of extensive research that helps define specific aspects of the approach and its effectiveness. Aamodt (2016) and Glynn and DeJordy (2010) suggested that no particular leadership approach is universally

effective, and theories rely on abstract leadership types that are difficult to identify. However, such criticism lends support to the claim that there is no universally accepted definition or approach to defining leadership. Therefore, leadership is best defined specific to the context of a subject or situation under observation.

The dilemma in defining leadership is reflected in the different perspectives on the subject throughout the ages. Different concepts and models of leadership that shape current thinking are captured in the various theories that have emerged around leadership over time. These are discussed in the next section.

### **2.2.1 Leadership Theories**

Historically, dominant leaders influenced the narrative and perception on leadership. The traits that leaders had are captured in the ‘Great Man’ and ‘Trait’ theories that proclaim the heroic leader-centric approaches to leadership (Schweiger et al., 2020; Bohl, 2019; Spector, 2016). The leader-centric approach of leadership postulates that everything rises and falls on the leader, and followers as passive actors (Heimans & Timms, 2018; Epitropaki et al., 2017). According to these views, leaders are viewed as heroes with unique talents and attributes they are naturally endowed with. Overtime, the heroic Great Man and Trait theories were challenged when, according to Schweiger et al. (2020), leadership was viewed as a collective, collaborative, and consensual effort of followers, and influenced by leaders’ behaviour and style. The behaviour or style theories differ from the Great Man and Trait theories in proposing that leadership is a skill that can be learnt, not born with, and that anyone can be a leader (Bohl, 2019; Northouse, 2016). However, these theories support the heroic leader-centric views of leadership that the locus of authority still rests with the leader. The contemporary view of leadership holds that leadership is socially constructed and emerges through the interaction (process) of all actors within an organisation (Schweiger et al., 2020; Northouse, 2016; Raelin, 2016). Therefore, leadership is contingent on the situation, tasks, and followers, and is, therefore, influenced by these elements (Schweiger et al., 2020; Epitropaki et al., 2017; Northouse, 2016, 2013). These leadership theories are briefly summarised in Table 2.1 and are explored in more detail in the next section.

Table 2.1 A summary of Leadership Theories (Adapted from CSIL, 2016)

Theory/School	Description	Relevance to the study	References
Great Man or Trait school	Focus on traditional heroic outstanding individual leaders and their traits and characteristics to understand their accomplishments as leaders.	<ul style="list-style-type: none"> <li>▪ <i>Big Man</i> leadership model in PNG</li> <li>▪ Leader-centric approaches to leadership</li> </ul>	Northouse, 2018, 2016; Prideaux, 2018; Spector, 2016; Kouzes & Posner, 2019; Jiang et al, 2015; Harter, 2008
Behavioural or Styles school	<ul style="list-style-type: none"> <li>▪ Leadership is described in terms of people-and task orientation.</li> <li>▪ Different combinations of these produce different approaches to leadership</li> </ul>	Leadership approaches specific to leading education reform changes in PNG secondary schools	Harrison, 2018; Amanchukwu, et al., 2015; Northouse, 2018, 2016; Lewin et al., 1939; Blake & Mouton, 1985; Kouzes & Posner, 2019
Situational or Contingency school	<ul style="list-style-type: none"> <li>▪ Emphasises the importance of situational context in shaping leaders' responses to be more relational or task motivated, for instance, more authoritative or participative, contingent on the situation or task.</li> <li>▪ Leaders' influence is contingent or dependent or based on various factors (like positional power), that determines the appropriate leadership approach.</li> </ul>	Leadership specific to: <ul style="list-style-type: none"> <li>▪ change leadership, and</li> <li>▪ establishing leader-member relations and staff engagement, in</li> <li>▪ PNG school organisations</li> </ul>	Hersey & Blanchard, 1974; Vroom & Jago, 2007; House & Mitchell, 1974; Schweiger et al., 2020; Epitropaki et al, 2017; Northouse, 2018, 2016, 2013
Process school	<ul style="list-style-type: none"> <li>▪ Leadership emerges within a process.</li> <li>▪ Attributes, behaviour, and followership complement and contribute to leadership</li> </ul>	<ul style="list-style-type: none"> <li>▪ Change leadership in the process of change.</li> <li>▪ Follower-centric approaches to leadership</li> </ul>	Northouse, 2018, 2016, 2013; Epitropaki et al, 2017; Phillips, 2015

### 2.2.1.1 Great Man or Trait School

According to Spector (2016), traditionally, leadership studies start with the Great Man and Trait theories, in which the idea of a leader is seen through the social lens of what it takes to achieve a position of responsibility in society and organisations. Great man and trait theories are based on physical, psychological, or personality traits in order to explain effective leaders (Kouzes & Posner, 2019; Jiang et al., 2015). The theories assume that a leader possesses innate characteristics, and that leadership is genetically inherited and passed on (Harrison, 2018). Some writers note that the historical narrative that sets leadership up as heroic and a masculine concept is still prevalent in present times (Northouse, 2016; Spector, 2016; Grint, 2011).

The traditional PNG model of leadership is based on the great man and trait theories. The most frequently cited PNG leadership model is the '*Big Man*' approach (Prideaux, 2018, 2008, 2006; Lederman, 2015; Ambang, 2008; McLeod, 2008; Tivinarlik & Wanat, 2006).



Lederman (2000. p.1162) defined *Big Man*, a phrase derived from the PNG Pidgin (*Tok Pisin*) term '*Bikpela Man*', as a "prominent man", referring to male leaders whose leadership "is achieved by means of public oratory, informal persuasion, and the skilful conduct of both private and public wealth exchange".

The *Big Man* model is derived from the chieftain, patriarchal, and matriarchal systems (Lederman, 2015; McLeod, 2015, 2008; Ambang, 2008; McLeod, 2008; Prideaux, 2008; Tivinarlik & Wanat, 2006). The chieftain system is hereditary, while the patriarchal system is based primarily on man attaining leadership based on wealth, warrior or oratory skills (Essacu, 2019; Lederman, 2015; Prideaux, 2006). The matriarchal system is based on land ownership arrangements which rest with women (Essacu, 2019; Lederman, 2015; McLeod, 2015, 2008; Nanau, 2011). The *Big Man* was born into the role and leadership attributes and accepted profiles. The *Big Man* model of leadership is prevalent today and is observed to be manifest in modern organisations (Lederman, 2015; Ambang, 2008; McLeod, 2008; Prideaux, 2008; Tivinarlik & Wanat, 2006).

However, the Great Man and Trait theories focus on leadership as the sole domain of the leader, to the exclusion of the environmental and situational factors (Spector, 2016; Yukl, 2012; Grint, 2011). These theories suggest that people cannot learn how to become leaders. MacGregor (2003) noted that the great man concept of leadership is morally flawed, citing the cases of Hitler, Napoleon, and other tyrants, which challenges the credibility of the great man theory. Spector (2016) cited gender prejudice in the theory, arguing its irrelevance in the current context, where women are increasingly holding leadership positions.

There are no ontological, epistemological, or etymological studies of the *Big Man* leadership model and its application in modern PNG organisations. Scant extant literature tends to focus on the impact of *Big Man* approach to leadership from a behavioural perspective. Hence, the *Big Man* model of leadership approach is purported to contribute to lack of: (1) transparency (TIPNG, 2020); (2) good governance (Hayward-Jones, 2016); and (3) leadership (Essacu, 2019; Prideaux, 2018; Ketan, 2013; Koim, 2013). Whilst the *Big Man* model of leadership is entrenched in PNG traditional practices, its application and impact in contemporary PNG organisations is yet to be established.

### **2.2.1.2 Behavioural or Styles School**

Behavioural or Styles theories emerged as a response to criticisms on great man and trait theory approaches to leadership. Theorists (for example, Kouzes & Posner, 2019; Lewin & Volberda, 1999; Blake & Mouton, 1985) began to research leadership as a set of behaviour,

by evaluating the behaviours of successful leaders, determined a behaviour taxonomy, and profiled broad leadership approach styles. According to this theory, great leaders are made, not born, and anyone can learn to become leaders (Harrison, 2018; Northouse, 2018, 2016; Amanchukwu, et al., 2015).

Behavioural and style theories postulate that the effectiveness of the leader depends on his/her behaviour and approach style, which can be observed and learned. According to the theory, the effectiveness of a leader is based on how the leader behaves or approaches issues, rather than on personality characteristics (Harrison, 2018; Northouse, 2013). Leader behaviour and style is not innate but can be learned (Amanchukwu et al., 2015; Goff, 2003). In this way, effective leaders can be trained. These theories also propose that leadership behaviour and approach styles can be shaped by people through dyadic relationships; communication, authority delegation, planning, setting systems, and processes, among others. Hence, group success contributes to the success of the leader.

In some societies in PNG, leadership is not inherited. In these more egalitarian societies, leadership selection or ascension is based on behavioural and style theories. The leader achieves or attains leadership status through the display of skills such, as public speaking, warrior skills, or physical attributes (Ketan 2007). For instance, Prideaux (2006) noted that in the Sepik (northwest region of the country), leaders are selected. Ketan (2013) observed this to be similar in the highlands region. In both regions, a '*Big Man*' earns his position. Underlying these leadership models, traditionally, followership is based on kinship.

However, according to Yukl (2012), behavioural theories tend to focus on an abstract concept of behaviour types that were often difficult to identify. Like traits, no universal style is established as effective across different settings and, like trait theory, there are far too many categories of leader behaviour and approach styles (Harrison, 2018; Northouse, 2016; Amanchukwu et al., 2015). This is profoundly manifest in PNG, given its social diversity with over 800 different language groups. Each language group has its own unique system of governance, leadership approaches, and practices, resulting in disparate behaviours and styles of leadership approaches manifested in contemporary organisations (Priduax, 2008, 2006). This is compounded by environmental forces that impact on organisational performance, such as adjusting to changes imposed by technology, natural calamities, and pandemics. No study has been done to examine leadership approaches and practices that may define success in organisations to establish the behaviour and styles of effective leadership approaches.

### ***2.2.1.3 Situational or Contingency School***

Situational and Contingency theories appeared as a reaction to criticisms in the trait and behavioural theories of leadership. According to situational and contingency theories, leadership is dependent on the nature and characteristics of the situation (Tsolka, 2020; Saipudin, 2019; Northouse, 2018; Groves & LaRocca, 2011; Bass, 2008; Lewin & Volberda, 1999). These theories assume that different situations call for different characteristics, that no single optimal psychographic profile of a leader exists, and that no leadership approach style is precise as a stand-alone (Hodgson & White, 2003). In a given situation, the leadership behaviour and approach style are reliant upon the factors, such as the quality, situation of the followers, or a number of other variables. For instance, Shaw-VanBuskirk, Lim, and Jeong (2019, p.645) in exploring the concept of liminal leadership, suggested that situational or contingency theories describe “a state of betwixtness or betweeness”, where the appropriate leadership approach is required. This includes internal and external dimensions of the environment that requires leaders to adapt to that particular situation. Liminal leadership occurs in a space “between the familiar and the unknown...where the old world is left behind...and the new existence emerges” (Rohr, 2020, p.1). In that liminal space leadership emerges depending on situation, task and contingent upon who has the necessary skills and knowledge to provide leadership (Shaw-VanBuskirk et al., 2019; Northouse, 2018).

Lewin and Volberda (1999) and Bass (2008) synthesised the trait and situational approaches to normalise the descriptive models of leadership climates. They define three leadership approaches, identifying in which situations each style works better. For instance, authoritarian leadership approach is accepted in periods of crisis, but resented during normal daily and routine management; transformational and democratic leadership approaches are acceptable in situations that require greater involvement of team members; and, laissez-faire leadership approaches are appreciated where high degree of freedom is required, but as a ‘hands off’ approach, the leader can be perceived as a failure in decisively dealing with organisational problems. In most cases, leaders do not change only the dynamics and environment, employees within the organisation also change. Therefore, a leadership approach that is operative in some circumstances may not be effective in other situations (Harrison, 2018). Similarly, leadership approaches that have been effective in the past may be ineffective today (Kraft, 2018). For instance, in the early 1900s, autocratic leadership approaches predominate organisations, but are now regarded as ineffective in a more democratic work environment (Harrison, 2018; Kraft, 2018).

Situational and contingency theories propose that there is no ‘one-size-fits-all’ leadership approach style or behaviour (Tsolka, 2020; Saipudin, 2019; Northouse, 2016). Leadership approach, therefore, is contingent upon situation favourableness (Bass, 2008), situation variables (Vroom & Jago, 2007), and motivation, satisfaction, and acceptance of a leader by followers (House & Mitchell, 1974). The situation determines the leadership behaviour and approach. Leadership in PNG organisations have largely been ‘reacting to situations’ and contingent on the quality of the workforce and resources (Booth, 2009). Criticisms towards poor public service delivery outputs and outcomes have been based on an ineffective public sector workforce and lack of adequate resources (Brown et al, 2015; Kalinoe, 2009). However, no study has been conducted in PNG to observe leadership behaviours and approach styles based on situational and contingency models in organisations.

However, situational and contingency models of leadership have been criticised for being too prescriptive and rigid with little or no flexibility (Mulder, 2013; Northouse, 2013). Mulder (2013) argued that for leadership to fit in and be influenced by situation variables may potentially get the leaders being overwhelmed by the situation more than them providing leadership. Northouse (2013) and Polston-Murdoch (2013) argued that contingency variables, such as environmental factors and employee characteristics, that moderate leader behaviour-outcome relationships, are outside the control of the follower-task structure, authority system, and work group. They state that environmental factors determine and influence the type of leader behaviour required if the employee outcomes are to be fully realised. Follower characteristics provide the focus for control, experience, and perceived ability. Personal characteristics of employees determine how the environment influences leadership approaches (Mulder, 2013; Polston-Murdoch, 2013; House & Mitchell, 1974).

From a change and social constructionist perspective, the situational and contingency theories explain that leadership emerge in process of organisational change. Schweiger et al. (2020) referred to this as processual leadership, given its dynamic interactions among actors (organisational members) in the process of implementing change. This is further discussed in section 2.4.2, as a process model guiding the examination of change leadership approaches in organisational change.

#### ***2.2.1.4 Process School***

The Process theory proposes that leadership influence is a dyadic multidimensional process. Process entails actions and change. Therefore, the process theory suggests that leadership can be acquired and emerges as a result of the interactions, or when a situation and

task demands (Schweiger et al., 2020; Northouse, 2018). Shaw-VanBuskirk et al. (2019) suggests leadership, as a result of interactions contingent on the situation, as adaptive leadership. Shaw-VanBuskirk and colleagues add that adaptive leadership is used by what they claim as the liminal leader adapting to, “the followers, groups, context and situation” (p.647). The process theory of leadership suggests that “leadership is an event that depends on the interaction between leader and the follower” (Northouse, 2018, p.7). Apart from traits, leaders require knowledge and skills in the process of leadership (Northouse, 2016). Northouse (2013, p.43) referred to this as “the skills approach to leadership” and knowledge and abilities are acquired or learnt along the way, as informed by the situation or task. While leadership emerges along the process, leadership skills and knowledge are influenced by the leader’s personal attributes or traits, such as beliefs, values, ethics, and character. These two approaches to leadership are captured in Figure 2.2.

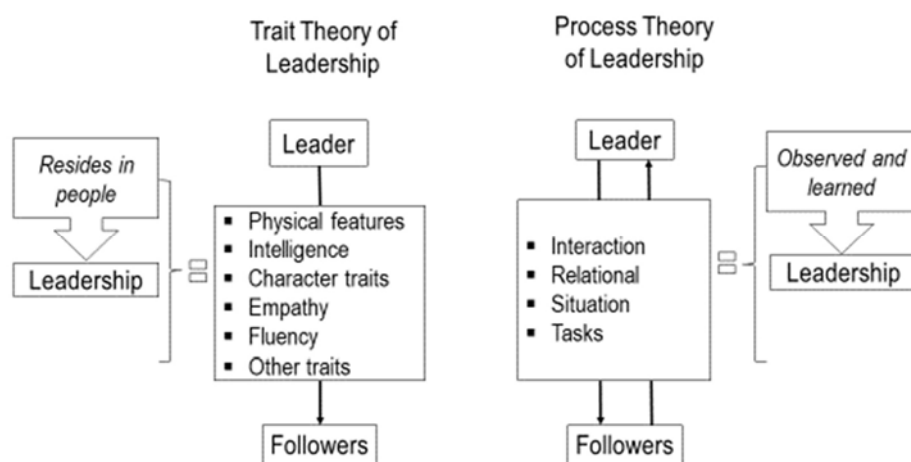


Figure 2.2 Approaches to Leadership (adapted from Northouse, 2013)

According to Northouse (2018), knowledge and skills contribute directly to the process of leadership, while trait attributes influence one’s leadership approach. For instance, Northouse (2018) suggests that a leader may learn communication or counselling skills, but the traits determine how one communicates or counsels. A leader with empathy (a trait attribute) will most likely make a better counsellor than one who thinks employees are simply there to follow orders. Therefore, trait defines the leader’s personal quality and impact of leadership, while process defines followership in leading organisations. While both the leader and follower may have the same sets of knowledge and skills, as a process, leadership can be learnt, and certain traits demarcate the leadership and followership roles in a given situation and task. Hence, according to the process theory of leadership, when a situation or

task demands it, anyone with the right skills and knowledge may provide leadership in the change process.

The process theory is based on followership. Followership is a conscious decision based on the approach behaviours of leaders and relationships among employees, situational variables, and task demands (Shaw-VanBuskirk et al., 2019; Epitropaki et al., 2017; Uhl-Bien et al., 2014). The social constructionist perspective examines leadership within the context of followership (Epitropaki et al., 2017; Uhl-Bien et al., 2014; Oc & Bashshur, 2013).

Leadership studies have traditionally emphasised more on the role and importance of the leader as antecedent to followership (Oc & Bashshur, 2013). However, leaders and followers demonstrate different attributes depending on the organisational settings and task demands (Epitropaki et al., 2017). According to Uhl-Bien et al. (2014), such oversight stems from the confusion and misunderstanding about how leadership relates to followership constructs. This confusion occurs because “we have not understood leadership as a process that is co-created in social and relational interactions between people” (p.83). When leadership is examined as a process, the role of followership becomes evidently crucial; “without followers and following behaviours there is no leadership” (p.83).

According to Raymond (2010), followership “requires the organisational attribute of a willingness to be led, but also the interpersonal attribute of the capability to respond (knowledge, experience)” (p.37). Leadership requires decisiveness, problem recognition and solving, capacity to prioritise, and possessing the interpersonal attributes of engaging followership. Followership is not merely compelling and impelling subordinates to acquiesce into submission. Hence, followership is not the same as following:

“Following is impelled (consciously or unconsciously influenced) by actions of leaders...following is reactive. In contrast followership is a priori choice (self-conscious) of the individual in the context of his or her relationship to the nominal leader” (Raymond, 2010; p.38).

Followership is a conscious act or interaction on part of the follower, with no or little regard for rank or authority. Followers often make the conscious choice to participate or engage in organisational success (Uhl-Bien et al., 2014; Raymond, 2010).

In modern work environments, it is increasingly being observed that the process view of leadership drives organisational change success (Schweiger et al., 2020; Shaw-VanBuskirk et al., 2019; Epitropaki et al., 2017; Phillips, 2015; Groves & LaRocca, 2011; Raymond, 2010). However, leadership and followership, based on the process and trait theories of leadership as they apply to organisations in PNG, have not been fully explored. However,

attempts at examining the impacts of the *Big Man* approach to leadership, and *Wantok System* in the context of followership, have been explored. *Wantok System* is derived from *Wantok*, which in PNG *Tok Pisin* literally means ‘one talk’ or ‘one or same language’ group.

According to Nanau (2011, p.32), “*Wantok* is a term used to express patterns of relationships and networks that link people in families and regional localities and is it also a reference to provincial, national and sub-regional identities.” This creates a network of *Wantoks* (from the same group) or kinship that is commonly referred to as the *Wantok System* (Prideaux, 2018, 2008, 2006; Nanau, 2011; Ambang, 2008; Aime, 2006). Leadership and followership have been observed to be influenced by the *Wantok System* in organisations (Prideaux, 2018, 2008, 2006; Nanau, 2011; Ambang, 2008) and in schools (Tivinarlik & Wanat, 2006; Maha, 1992; Quarshie, 1992). This is further discussed in section 2.4.3.

### 2.2.2 Leadership Approaches

The trait and behavioural theories of leadership highlight leadership as a function of knowledge and skills, and attributes that determine leader behaviour and approaches. Organisational success is dependent on leadership approaches of leaders (Shaw-VanBuskirk et al., 2019; Akinbode & Shuhumi, 2018; Lussier & Achua, 2016). The situational and contingency theories place leadership within the context of the change process and its influencing forces (Shaw-VanBuskirk et al., 2019; Henkel & Bourdeau, 2018; Magsaysay & Hechanova, 2017; Schedlitzki & Edwards, 2018; Crevani & Endrissat, 2016). Leadership, according to the situational and contingency theories, is modelled on and reflects organisational behaviour (Henkel & Bourdeau, 2018; Daft, 2016; Yukl, 2013). The process theory suggests that leadership emerges in the process of interactions within a given situation or tasks, and followership is involuntary. The situational, contingency, and process theories place leadership as a collective and collaborative phenomenon. This perspective is referred to as the follower-centric approach to leadership (Northouse, 2016; Schweiger et al., 2020).

Based on these leadership concepts, transformational, transactional, laissez-faire, and authoritarian approaches of leadership are explored to: (1) examine leadership behaviour and approaches (trait and behavioural theories); (2) which influence followership and engagement of employees (process theory); (3) as it applies to leading change (situational and contingency theories), in organisational change. Transformational, transactional, laissez-faire, and authoritarian leadership approaches are examined for their greater utility in organisational change leadership. The underlying theories to these leadership approaches are summarised in Table 2.2, and these change leadership approaches are discussed further in the next sections.

Table 2.2 Change leadership approach theories.

Change Leadership Approach & References	Attributes	Applied to this study	Criticisms
<b>Transformational Theory</b> Faupel & Süß, 2019; Northouse, 2018; Jones, 2018; Allen et al, 2016; Choi et al, 2016; Yukl, 2013; Nikezic et al, 2012; Bass & Avolio, 2000	<ul style="list-style-type: none"> <li>Shared vision and goals</li> <li>Shared and inclusive leadership</li> <li>Self determination</li> <li>Intrinsic motivation</li> <li>Model behaviour</li> <li>Charismatic</li> <li>Problem-solving</li> <li>Social exchange – relational and leader-member exchange</li> <li>Employee (staff/follower) engagement</li> <li>Long-term and transformational change</li> </ul>	<ul style="list-style-type: none"> <li>Greater utility for inspiring followership, employee engagement in the change process</li> <li>Emphasis on interdependence of followers and leaders in school organisations</li> <li>Focus on long-term change</li> <li>Strong connection to the process of addressing the needs of followers resulting in increased motivation, energy and interaction of staff</li> </ul>	<ul style="list-style-type: none"> <li>Ambiguity underlying its influence and process</li> <li>Overemphasis of the theory as a dyadic event</li> <li>Overemphasis on transformational leadership characteristics (traits &amp; behaviour) and less focus on leadership as process in transformation</li> <li>Ambiguity about transformational behaviours</li> <li>Heroic bias on part of the leader</li> </ul>
<b>Transactional Theory</b> Northouse, 2018; Xenikou, 2017; Khan, et al., 2016; Sultana et al, 2015; Yukl, 2013; Sadeghi & Pihie, 2012; Bass, 2008	<ul style="list-style-type: none"> <li>Managerialism</li> <li>Contingent rewards</li> <li>Performance based and driven change outcomes</li> <li>Extrinsic motivation</li> <li>Short-term incremental change</li> <li>Social exchange based on agreements</li> </ul>	<ul style="list-style-type: none"> <li>Exchange relationship between leader and follower in the change process</li> <li>School organisational design and management behaviour influence on leading education reform changes</li> <li>Employee engagement contracts and agreements in implementing change process</li> </ul>	<ul style="list-style-type: none"> <li>Short-term focused</li> <li>Shallow temporary exchanges of gratification leading to staff resentments</li> <li>Disregards situational and contextual factors</li> <li>Considered unethical behaviour</li> <li>Leaders transact for personal gains</li> <li>Ambiguity underlying its approach</li> </ul>
<b>Laissez-faire Theory</b> Uslu, 2019; Al-Malki & Juan, 2018; Harrison, 2018; Northouse, 2018; Yukl, 2013; Chaudhry & Javed, 2012; Hess, 2010; Bass, 2008; Barnett et al., 2005;	<ul style="list-style-type: none"> <li>Absence of authority- ‘hands off’ approach</li> <li>Informal leadership</li> <li>Managerialism</li> <li>Contingent on level of competency and skills in workforce</li> <li>Empowered teams with high level competencies and trust can foster innovation and find solutions</li> </ul>	<ul style="list-style-type: none"> <li>School organisations as highly skilled and collegial environment for assessing laissez-faire approaches to leadership</li> <li>An ‘escape’ strategy or leadership approach in the change process – going from the familiar or known to the unknown – in implementing education reform changes</li> </ul>	<ul style="list-style-type: none"> <li>Leaders perceived to be uninvolved, indifferent and unengaged</li> <li>Leaders seek minimal power, make less contributions &amp; become liabilities</li> <li>Poor performance outcomes</li> <li>Role confusion when directions are unclear</li> </ul>
<b>Authoritarian Theory</b> Wang & Guan, 2018; Prideaux, 2018, 2008; Schaubroeck et al, 2017; Bhatti et al, 2012; Chaudhry & Javed, 2012; Bass, 2008	<ul style="list-style-type: none"> <li>Control and punish approach</li> <li>Appeals to time-urgency tasks or goals</li> <li>Appeals to paternalistic</li> <li>Appeals to high dependent workforce and work environments</li> </ul>	<ul style="list-style-type: none"> <li>School organisational leadership are traditionally authoritarian</li> <li>The PNG <i>Big Man</i> model of leadership based on paternalism is authoritarian</li> <li>Government directed reforms and their application to leading change</li> </ul>	<ul style="list-style-type: none"> <li>Exclusive and paternalistic</li> <li>Submission out of fear</li> <li>Short term focused</li> <li>Lack of innovation and low productivity</li> </ul>



### ***2.2.2.1 Transformational Leadership***

Transformational leadership is largely embraced as an effective concept and style of leadership (Gemedā & Lee, 2020; Tian et al., 2020; Lai et al., 2020; Shaw-VanBuskirk et al., 2019; Jones, 2018; Northouse, 2018; Allen et al., 2016; Choi et al., 2016; Nikezic et al., 2012). According to Northouse (2018), transformational leadership approach is a process of engaging with followers to create a connection that increases motivation, morality, and commitment in both the leader and the follower. Transformational leadership is described as people oriented, and has the potential of building great followers and leaders (Bass & Avolio, 2000). For instance, in South Korea, Heliyon, (2020) observed that transformational leadership approach “had a significant positive relationship with employees' work engagement and innovative work behaviour” (p.1). Transformational leadership inspires and attracts followers based on its advance moral values and ideals (Tian et al., 2020). According to Jones (2018), transformational leadership “is more aspirational and explicit in centring the role of influential individuals in the transformation of their followers” (p.556).

Transformational leadership approach inspires positive changes in those who follow.

Transformational leaders are energetic, enthusiastic, trustworthy, passionate, and are admired and respected by their followers (Shaw-VanBuskirk et al., 2019; Choi et al., 2016). These leaders are concerned with and involved in the change process and focused on helping every group member succeed individually as well (Lai et al., 2020; Shaw-VanBuskirk et al., 2019; Northouse, 2018; Allen et al., 2016).

Transformational leadership distinguishes itself from other theories, based on its alignment to a greater good, as it necessitates the involvement of the followers in change processes or activities in organisations (Gemedā & Lee, 2020; Tian et al., 2020; Shaw-VanBuskirk et al., 2019; Northouse, 2018; Jones, 2018; Nikezic et al., 2012). According to Burns (2005), this leader is highly visible, is strategic and forward looking, focuses on the big picture, and has people who take care of the mundane tasks.

Groves and LaRocca (2011) claimed that relationship theories are also known as transformational theories, as the approach focuses on the connections formed between leaders and followers. Transformational leaders motivate and inspire people. They help followers see the importance and greater good and benefits of the task. Transformational leaders are focused on the performance of group members, but also want every individual to realise their potential. Leaders with this approach style often have high ethical and moral standards (Groves & LaRocca, 2011). According to Bass and Avolio (1994), leaders that are designated as transformational diagnose individualised “needs of their followers and then elevate those

needs to initiate and promote development” (p.522). In line with transformational criteria of *Individualised Consideration*, this requires some modification of the approach to individual followers (Heliyon, 2020; Lai et al., 2020; Northouse, 2018; Bass, 2010).

According to Faupel and Süß (2019), the constantly changing environment and developments due to digitisation, globalisation, and demographic shifts, require transformational leadership approach for effective organisational change. Transformational leadership approaches positively affect employees’ attitudes towards the change process (Herrmann, Felfe & Hardt, 2012) and reduce cynicism about change (DeCelles, Tesluk & Taxman, 2013). Transformational leaders have a positive outlook, are often charismatic, pose innovative problem-solving skills, create a positive vision, and inspire followers for change (Faupel & Süß, 2019). Employees’ personal needs are considered, and individuals are allowed the opportunities to grow personally (Bass, 2010).

Bass and Avolio (2000) defined transformational theory as the synthesis of five dimensions or characteristics of leadership:

1. *Idealised attributes or charisma*. This is related to the followers’ belief in the leader and the vision one has which invokes followers’ admiration for, trust in, and devotion to that person. The leader has ideals and attributes that followers ascribe to, such as making personal sacrifices, dealing with crises situations, and demonstrating self-confidence and energy to achieve goals. The leader displays charisma that draws followers to him or her, working towards a common goal. A charismatic leader is considered to be dynamic, relentless and hardworking, confident, competent, successful, and a positive role model (Gemeda & Lee, 2020; Lai et al., 2020; Tian et al., 2020; Jones, 2018; Northouse, 2018; Herrmann et al., 2012; Judge & Piccolo, 2004).
2. *Individual consideration dimension of leadership*. This is related to how a leader treats their followers based on their individual needs and capabilities, rather than as part of a group. This pertains to whether the leader is considerate of the group members, and displays coaching behaviour and provides mentorship (Northouse, 2018; Bass, 2010). Such an approach involves investing in individual’s growth and progress within the organisation (Lai et al., 2020; Jones, 2018).
3. *Idealised behaviour or influence characteristics of leadership*. This is related to how a leader is observed as espousing important values, beliefs, and a sense of mission and purpose (Northouse, 2018). The leader models the behaviour he or she seeks in others

(Gemedda & Lee, 2020; Lai et al., 2020; Tian et al., 2020; Jones, 2018; Avolio & Bass, 2000).

4. *Inspirational motivation dimension*. This refers to leaders' ability to envisage desired outcome or vision, articulate strategies on how it can be achieved, set performance standards, and demonstrate determination and confidence towards achieving the outcome (Northouse, 2018; Avolio & Bass, 2000). It relates to the leaders' belief in their ability to make a difference by "creating an image of what the organisation can become", inspiring such vision in their followers, as well as the motivation to achieve it (Gemedda & Lee, 2020; Lai et al., 2020; Tian et al., 2020; Kouzes & Posner, 2019, p.58).
5. *Intellectual stimulation*. This is the ability of the leader to stimulate and challenge his or her followers to rethink ideas, challenge existing status quo, reframe problems, and find new ways of solving problems (Northouse, 2018). Intellectual stimulation is about leaders helping group members to become more innovative and creative (Gemedda & Lee, 2020; Lai et al., 2020; Tian et al., 2020; Jones, 2018; Bass, 2010).

Transformational leadership is primarily focused on the follower (Lai et al., 2020; Tian et al., 2020; Shaw-VanBuskirk et al., 2019; Northouse, 2018). Leaders engage in interactions with followers based on common values, beliefs, and goals towards a common vision (Bass, 2010). Transformational leaders seek to satisfy higher needs of followers which results in establishing a relationship between leader and follower, further leading to higher motivation and engagement (Lai et al., 2020; Faupel & Süß, 2019; Shaw-VanBuskirk et al., 2019). In line with this, leadership is defined as a process that is determined by the relationship and the alignment of mutual needs and values of leader and follower (Northouse, 2018; Burns, 2005; Barker, 2001). Transformational leaders are considered by their ability to identify the need for change, gain the agreement and commitment of followers, and create a vision that guides and embeds the change (Tian et al., 2020; Faupel & Süß, 2019).

However, Jones (2018) noted that transformational leadership studies are more focused on psychological characteristics (traits and behaviours) of leaders and less on the leadership process in transformation. Yukl (2012) identified several weaknesses of transformational leadership, which include: (1) ambiguity underlying its influence and processes; (2) an overemphasis of the theory on leadership processes at a dyadic level; (3) ambiguity about transformational behaviours; and (4) heroic bias. Hence, organisational

success cannot be solely attributed to transformational leadership when other dynamics and processes are not considered.

Despite these perceived weaknesses, transformational theory provides greater utility for leadership approaches that are purposely driven by a vision that inspires leaders and followers to collectively pursue an end outcome. According to Fairhurst et al. (2020), this results in collective leadership, where all actors within an organisation are co-creators of success and change. There is greater synergy that transpires from transformational leadership approaches that yield higher participation, engagement, and collaboration among actors within an organisation (Fairhurst et al., 2020; Heliyon, 2020; Jones, 2018). Transformational leaders respond well to the changing needs of both the organisation and team members (Jones, 2018; Choi et al., 2016; Nikezic et al., 2012). They are led by a common vision and purpose, and inspire and empower staff to make changes in themselves to realise their full potential (Fauve & Süß, 2019; Northouse, 2018; Allen et al., 2016; Nikezic et al., 2012).

Transformational leadership approaches in PNG are not well studied. Based on the extant literature on leadership practices in PNG, transformational leadership appears to exist within the context of *Wantok System* (Prideaux, 2018, 2008, 2006; Tivinarlik & Wanat, 2006). For instance, Tivinarlik and Wanat (2006) observed that the appointment of secondary school principals in New Ireland Province based on *Wantoks* has resulted in followership, compliance, and poor school performance. However, this establishes a direct link to how agency is created along the lines of kinship (*Wantok System*) which influences leadership behaviour. Appointments based on the *Wantok System* have been observed to produce negative outcomes (Essacu, 2019, 2016; TIPNG, 2018; Koim, 2013; Prideaux, 2008, 2006; Maha, 1992; Quarshie, 1992).

#### **2.2.2.2 Transactional Leadership**

Transactional leadership theory is based on the exchange relationship between a leader and followers (Gemedra & Lee, 2020; Tian et al., 2020; Shaw-VanBuskirk et al., 2019; Northouse, 2018; Bass, 2008). According to Northouse (2018), transactional leadership approach focuses on the exchanges that occur between leaders and followers. Transactional leadership is also known as managerial leadership and tends to focus on the role of supervision, organisation, and group performance (St. Thomas University, 2018). Leaders who use this approach focus on specific tasks and use rewards and punishments to motivate followers (Tian et al., 2020; Xenikou, 2017; Sultana et al., 2015). Transactional theory is based on reciprocity, where leaders not only influence followers, but are under influence of

their followers as well (Shaw-VanBuskirk et al., 2019; Northouse, 2018; Sultana et al., 2015; Bass & Avolio, 1997). Miller and Miller (2001) add that transactional leadership is an exchange interaction for some valued resource which “is usually episodic, short-lived and limited to the exchange transaction” (p.182). According to Bass (2008), these exchanges allow leaders to accomplish their performance objectives, complete required tasks, maintain the current organisational situation, and motivate followers through contractual agreement. The transactional leadership approach directs the behaviour of followers toward achievement of established goals by emphasising extrinsic rewards, avoiding unnecessary risks, and focusing on improved organisational efficiency (Lai et al., 2020; Northouse, 2018).

Tian et al. (2020) described transactional leadership as a task and result oriented approach. Northouse (2018) described it as that in which leader-follower associations are grounded upon a series of agreements between followers and leaders. Shaw-VanBuskirk et al. (2019, p.649) described transactional leadership approach as providing the “external motivation necessary in situations where the leader and the follower work together.” For instance, Gameda and Lee (2020) observed from their study in South Korea that transactional leadership approach has a “significant positive relationship with employees' task performance” (p.1). Within such arrangements, transactionalism is usually perceived as an approach to engage followership (Phillips, 2015). In turn, transactional leadership allows followers to fulfil their own self-interest, minimise workplace anxiety, and concentrate on clear organisational objectives (Tian et al., 2020; Northouse, 2018; Xenikou, 2017; Sadeghi & Pahe, 2012).

According to Avolio, Bass, and Jung (1999) transactional leadership is based on the attributes of contingent reward and management-by-exception. Contingent reward is based on active and positive transactions between leaders and subordinates based on agreed targets and outputs being rewarded. Management-by-exception includes monitoring performance and taking corrective measures when problems occur. According to Avolio et al. (1999), the application of the transaction styles of leadership is contingent upon situations and context:

1. Contingent reward leadership approach style focuses on achieving results in exchange for rewards (Sultana et al., 2015). According to Bass and Avolio (2000), while transformational leadership builds enthusiasm through emotional appeals, values, and belief systems, “transactional leadership engenders compliance by appealing to the wants and needs of individuals” (p.34). This style is considered a management approach where contingent rewards motivate employees to perform (Lai et al., 2020; Northouse, 2018; Khan, Nawaz & Khan, 2016; Sultana et al., 2015). Contingent

reward covers performance-based material rewards, direction-setting, reciprocity, and confidence-building in organisations (Gemeda & Lee, 2020; Khan, et al., 2016; Avolio & Bass, 2004).

2. Management by exception (active) approach style is based on trust in workers. Transactional leaders only intervene when there are exceptions to the process or the rule (Gemeda & Lee, 2020; Northouse, 2018; St. Thomas University, 2018). However, as Khan, et al. (2016) observed, this approach is hallmarked by “poor communication, maintenance of the status quo, and lack of confidence” (p.4). According to Bass and Avolio (2000), this leadership approach “does not inspire workers to achieve beyond expected outcomes, however, if a target is achieved, that means the system has worked, everyone is satisfied, and the business continues as usual” (p.35). There is less risk taking being involved and no new ideas has driven the change initiatives. As Khan et al. (2016) noted, there is inherent trust by leaders in the workers to perform well; hence, there is a tendency to avoid rocking the boat. However, according to Tian et al. (2020), this approach monitors the followers’ actions and corrects mistakes as they occur.
3. Management by exception (passive) approach style involves the leader waiting passively until there is a mistake before feedback and corrective actions are implemented (Gemeda & Lee, 2020; Northouse, 2018; St. Thomas University, 2018). According to Bass and Avolio (2000), this style of leadership “avoids specifying agreement, and fails to provide goals and standards to be achieved by staff. Sometimes, a leader waits for things to go wrong before taking action” (p.35).

However, Groves and LaRocca (2011) argue that transactional leadership practices result in short-term relationships of exchange with the leader, based on shallow, temporary exchanges of gratification, and often create resentments among participants. Yukl (2011) and Yukl and Mahsud (2010) argue that transactional leadership approach disregards situational and contextual factors related to organisational challenges. Groves and LaRocca (2011) also claim that this approach harbours unethical behaviour, as the practice often sacrifices long-term benefits for immediate and short-term gains.

Further, Yukl (2012) argues that transactional leadership has the tendency for leaders to pursue their own objectives given the power position advantage. The opportunity for incentives to be used to pursue personal goals is high. Yukl (2012) also notes that there is

ambiguity surrounding transactional leadership pertaining to situational variables, with omissions of the important behaviours required for this approach.

Despite the probable negative effects, Kim and Lee (2011) found that the use of contingent rewards in transactional leadership can have a positive impact on work engagement, satisfaction, and performance. For instance, when expectations and performance outputs and outcomes are clearly defined and agreed upon, followers are more likely to be engaged and achieve their goals (Wongyanon, 2015). Therefore, the contingent rewards approach, that fosters employee engagement and job satisfaction, needs to be considered as a positive leadership approach (Lai et al., 2020; St. Thomas University, 2018).

The existing arrangements under which teachers in PNG operate have resulted in the current low educational outcomes (PNGLSR, 2016; TERPNG, 2014). These arrangements include low wages, and poor working conditions and school environments, many in far remote locations (Rena, 2011; Tivinarlik & Wanat, 2006). Transactional leadership approaches target to motivate workers to achieve goals, thereby improving productivity (Gemeda & Lee, 2020; St. Thomas University, 2018; Khan et al., 2016; Sultana et al., 2015). Teacher motivations include addressing their current working conditions to impel commitment in achieving the education reform outcomes in PNG schools (PNGLSR, 2016; TERPNG, 2014).

### ***2.2.2.3 Laissez-faire Leadership***

According to Chaudhry & Javed (2012), Laissez-faire is a French expression, when translated it literally means ‘*to let it do*’ and is often associated with leaving employees to their own devices. Laissez-faire leadership is sometimes referred to as delegative leadership and is a leadership approach in which leaders take a hands-off approach and allow group members to make the decisions (Gemeda & Lee, 2020; Al-Malki & Juan, 2018; Northouse, 2018; Anbazhagan & Kotur, 2014). According to Northouse (2018), laissez-faire leadership is a ‘let-things-ride’ approach, where the leader abdicates responsibility, delays decisions, provides no feedback, and makes little effort to help followers meet their needs. Anbazhagan and Kotur (2014) found that this approach leads to low productivity among group members.

Laissez-faire leadership is a passive or lack of leadership approach, where leaders may provide resources, but do not involve in leading the process. They trust that employees exercise the freedom to work towards solutions on their own, therefore not interfering or intervening (Uslu, 2019; Harrison, 2018; Northouse, 2018; Amanchukwu et al., 2015). This approach is particularly effective in situations such as in creative teams and work

environments, where group members are more knowledgeable than the group's leader (Al-Malki & Juan, 2018). The laissez-faire approach style allows group members the autonomy to demonstrate their knowledge and skills in assigned tasks. This autonomy improves work satisfaction and is best used in situations where employees have a high-level of passion and intrinsic motivation for their work (Amanchukwu et al., 2015; Chaudhry & Javed, 2012; Barnett et al., 2005). Such level of trust and freedom allowed to group members encourages innovation, faster decision-making, and personal growth (Al-Malki & Juan, 2018; Amanchukwu et al., 2015).

However, Bass (1998) explained that laissez-faire leadership theory, either as “management by exception,” or “informal leadership”, is “apathetic to the needs of subordinates” (p.148). This leadership approach does not initiate or effectively implement change through engaging followers. The laissez-faire leader avoids “taking stands on issues, does not emphasise results, and refrain (s) from intervening, and fail (s) to perform follow-up” (Bass, 1998, p.148). Therefore, the danger of this approach is that the leader may come across as uninvolved, indifferent, or unengaged (Gemeda & Lee, 2020; Uslu, 2019; Chaudhry & Javed, 2012). For instance, Gemeda and Lee (2020) observed that in South Korea “Laissez-faire leadership approach had a significant negative relationship with task performance” (p. 1). Hess (2010) added that laissez-faire leaders seek minimal power, make less contribution, and are themselves liabilities to the organisation. Hence, the drawbacks are that such an approach may result in poor performance and outcomes (Harrison, 2018), and there can be confusion over roles in the group or team (Uslu, 2019; Barling & Frone, 2017). For instance, research by Barnett et al, (2005) revealed that laissez-faire leadership approach “may foster collegial relations to the point where no one group member's decision-making is considered more important than another's and so a genuine atmosphere of working together is created” (p. 12). The cohesion of this group may be due to a lack of leadership initially, that has resulted in creating the need for support among group members. Such an approach also leads to lack of accountability of poor results (Gemeda & Lee, 2020; Uslu, 2019; Harrison, 2018; Barling & Frone, 2017).

Despite the perceived absence of leadership in innovative, collegial workforces, the laissez-faire leadership approach fosters independent work environments. Contingent on adequate resourcing and support, employees in independent work environments are observed to be more empowered, more satisfied with their work, and more productive (Uslu, 2019; Al-Malki & Juan, 2018; Harrison, 2018; Northouse, 2018; Amanchukwu et al., 2015). The laissez-faire approach has not been empirically tested in school leaders in PNG. However,



reports have highlighted the lack or absence of leadership in schools as a cause to the protracted progress on the education reforms in PNG (PNGLSR, 2016; TERPNG, 2014).

#### ***2.2.2.4 Authoritarian Leadership***

Authoritarian leadership is the approach where leaders make all the decisions without accepting participation from group members (Wang et al., 2019; Wang & Guan, 2018; Bass & Bass, 2008). It is also referred to as the autocratic leadership approach (Daft, 2015). It is on the extreme end of achieving transformational change where power and decision-making resides with the leader (Shaw et al., 2020; Bass & Bass, 2008). The leader does not delegate authority or permit subordinates to participate in policy and decision making, instead he/she directs, controls, and commands (Wang et al., 2019; Heimans & Timms 2018; Lunenburg, 2012). Authoritarian leaders prefer to focus on results and tasks rather than on employees, and any change may be short-term due to low motivation of group members (Northouse, 2018; Wang & Guan, 2018; Daft, 2015). The leadership is further hallmarked by punitive measures that threaten more than correct undesirable employee behaviour or poor performance (Shaw et al., 2020; Wang et al., 2019).

Authoritarian/autocratic leadership approach is often assessed as unpleasant, dominant, insensitive, and demotivating for employees, resulting in passive aggressiveness and resistance in the workplace (Shaw et al., 2020; Wang et al., 2019; Wang & Guan, 2018; Janse, 2018; Bhatti et al., 2012). Milosevic, Maric and Lobcar (2020) referred to authoritarian as harbouring on the dark side of leadership given its toxic, destructive, abusive, and ineffective nature of approach. Using social exchange theory and power dependence theory, Wang et al. (2019) have established that authoritarian leadership approach has a negative influence on task performance through leader-member exchange (LMX). In describing different approaches to leadership, Northouse (2013, p. 49) claimed that “an authoritarian leadership style may lead to lower employee motivation.” Bass and Bass (2008) described authoritarian leadership approach as one of the most complex issues, as “it refers to the way power is distributed, whose needs are met, and how decisions are made” (p. 442).

Despite its undesirable and destructive influence, and ineffectiveness in organisations in terms of follower outcomes, some scholars suggest the authoritarian leadership approach may exert positive effects. For instance, studies conducted in Taiwan (Cheng et al., 2004) and China (Tian & Sanchez, 2017) found authoritarian leadership approaches to be conducive to employee responses and positively correlated with affective trust. Other studies have also indicated positive (and even negative) relationships between authoritarian leadership and

employee engagement and performance (Cheng et al., 2003; Farh & Cheng, 2000). Based on data from 211 supervisor-subordinate dyads in Chinese organisations, Wang and Guan (2018) observed that “authoritarian leadership is positively associated with employee performance and learning goal orientation mediates this relationship” (p.1). They further attested that this is possible when observed from the employee perspective. When employees trust the leader and can identify with the organisation’s goals, they will be motivated to building up their own competence levels to improve or exceed in their performances (Wang & Guan, 2018).

Wang and Guan (2018) noted that authoritarian leadership stems mostly from a “cultural tradition where a father has absolute authority and power over his children and other family members in a traditional Chinese family” (p.2). They also pronounced that this approach is prevalent in Asia-Pacific as well as in Latin America and the Middle East. In such similar settings, leaders assume a father-like role with an authoritative leadership approach over employee submission and acquiescence, along with punitive measures for poor or non-performance (Chen et al., 2017). The father-like paternalistic authoritative approach is also embedded in the hierarchical differences that exist in organisations.

However, Wang et al. (2016) argued that such a paternalistic authoritative leadership approach, based on hierarchical difference, can yield negative outcomes, such as fear of leader and work pressure leading to staff turnover. On the other hand, recent studies found that authoritarian leadership has positive influence on employee behaviour and performance (Schaubroeck et al., 2017; Tian & Sanchez, 2017). According to Schaubroeck et al, (2017), the authoritarian leadership approach is effective: (1) when leaders set specific and unambiguous goals and targets to their subordinates; (2) within a homogenous group setting with a high sense of identity as a group; and (3) where the leader personally sets high performance standards.

1. According to goal setting theory, when clear and specific goals and targets are set, eliminating ambiguity, employees perform well with higher levels of achievement under authoritarian leadership (Schaubroeck et al., 2017). Therefore, authoritarian leaders are observed only to exercise tighter control on the process without compromising employee performance.
2. In a homogenous setting, where group cohesion and identify is at its highest levels, authoritarian leadership approach is tolerated and accepted in pursuit of common specific goals and targets (Wang & Guan, 2018; Rast et al., 2013). Authoritarian leadership offers a better sense of identity, attitudes, and behaviour to be a member of a team or group (Schaubroeck et al., 2017).

3. Authoritarian leaders often demand best performance by setting strict controls and clear guidelines and rules, issuing punishments and rewards. This motivates employees to perform well, delivering high quality work outputs (Chen et al., 2017).

Additionally, Janse (2018) noted that there are some situations, such as in the army or disciplined forces and special institutions, where authoritarian leadership approach is desired. In other cases, such as when employees: (1) do not perform well due to incompetence or inexperience; and/or (2) are lazy or do not take initiative to perform tasks, an authoritarian approach is usually warranted as an intervention. Hence, the notion of an authoritarian leadership approach having more dissonant characteristics remains inconclusive. More studies are needed in different contexts, cultures, and localities to explore the relationship between authoritarian leadership approaches and employee engagement and performance.

The societal structure upon which most PNG societies are based is hierarchical, with an autocratic form of governance with predominantly paternalistic leadership approaches (Ketan 2007). The literature on contemporary leadership in PNG refers to both traditional and modern governance systems (Essacu, 2019; Ambang, 2008; Prideaux, 2008, 2006; Tivinarlik & Wanat 2006). The modern governance system refers to the structures, rules, and processes of appointing leaders in modern institutions and organisations, in accordance with democratic values and systems (Prideaux & Beg, 2007; Tivinarlik & Wanat, 2006). Conversely, the traditional governance system still operates at the community level, based on the various cultural values and social structures (Ambang, 2008). This creates leadership approaches based on two distinct platforms; the *Big Man* and the modern organisational leader. This has created a hybrid model, described by Martin (2013) as the rise of “*Big Shot*” leaders, which includes women. Martin (2013) suggested that the traditional obligations expected of *Big Man* approach to serve their people are overtaken, in the case of the *Big Shot*, by his or her pursuit to join the ranks of emerging socioeconomic elites. In modern institutions and organisations, this often creates tensions in decision making by leaders and decision taking by followers (Essacu, 2019; Prideaux, 2018, 2006, 2008; Lambing, 2008).

The paternalistic approaches to leadership in PNG are referred to as the *Big Man* approach (Essacu, 2019; Lederman, 2015; Ambang, 2008; Prideaux, 2008, 2006). In the traditional PNG context, a decision from the *Big Man* is final and, therefore, binding and expected to be followed. However, in modern organisations and intuitions, such an approach is criticised as being exclusive based on ‘one-man decision making’ and an antithesis to effective leadership (Ambang, 2008; Ketan 2007). Currently, there are no empirical studies to

establish the application of the authoritarian *Big Man* approach to leadership in schools and other organisations in PNG.

### **2.2.3 Summary of Organisational Leadership**

Considering the views of different scholars, leadership is summarised as an influence construct that engages followers to achieve organisational goals and change. From a change perspective, leadership is a process construct in a changing work environment

The great man, trait, behavioural, and styles theories define the practice of leadership based on the leader. They are, therefore, leader-centric theories of leadership where the focus of leadership is on the leader. The situational and contingency theories place leadership within the context of situations and tasks, and the onus of leadership on followership. The process theory embeds leadership as a co-created involuntary act or interaction among actors within an organisation. This is a fundamental shift from the traditional leader-centric to follower-centric approaches to leadership and reflects the shifts in power dynamics as they play out in modern organisations.

There is a need to explore leadership as relational construct to observe leadership practices in organisations in different settings. The Western and PNG leadership approach models suggest that concepts of leadership are complex and diverse. The leadership process and approach models provide a clear normative framework to understand leadership. However, there is relatively weak empirical support for these leadership approach constructs from an ontological perspective (Aamodt, 2016; Glynn & DeJordy, 2010). They are also artificial distinctions between these approaches in that most successful leaders are likely to express most or all of these ‘ideal types’ of leadership approaches (Hechanova et al., 2018; Northouse, 2018).

Based on these leadership concepts and theories, the next section examines the literature on organisational change. Change requires the continuous creation and adaptation into new systems and processes which require leadership.

## **2.3 Organisational Change**

Organisational change refers to actions taken by organisations to make transitions from their current state to a desired future state. This involves making changes to existing systems and structures to addressing human resources issues (Evans, 2020; Bastardoza & Van Vugt, 2019; Waddell et al., 2019; Van de Wall, 2017). According to Evans (2020, p.367) “change can adopt a number of different forms, including small yet distinct incremental

adjustments or continuous ongoing developments and can be planned or emergent.” While some changes are iterative processes and routine, others are transformational, requiring wholesale system-wide structural and cultural changes (Aljohani, 2016; Kuipers et al., 2014; Burnes 2004; Bate, 1995; Van de Ven & Poole, 1995;). All changes in organisations are underscored by their need to adapt to a changing environment.

Advances in knowledge, technology and innovation, globalisation, competitive pressures, and natural calamities and pandemics are increasingly changing the workplace environment and organisations (Evans, 2020; Stouten et al., 2018; Jarrel, 2017; Van der Wall, 2017; Laurentiu, 2016; Voet et al., 2015). Change is “inevitable for any type of organisation” anywhere in both the developed and developing world (Shaw-VanBuskirk et al., 2019, p.643). According to Van der Wall (2017), the frequent rate of change in the world is overwhelming organisations to a state of Volatility, Uncertainty, Complexity and Ambiguity (VUCA). The COVID-19 pandemic epitomises VUCA, completely altering the work environment and business practices to ‘new normals.’ For instance, according to Sneade and Shubham, (2020), during the COVID-19 lockdown, online purchases, home deliveries, and virtual communication have sustained hundreds of millions of people. Many businesses adjusted by harnessing technology to reach this contact-free market space; with Italy, for example, experiencing 81% ecommerce transactions. According to McKinsey (2020), schools and higher education and training institutions are now able to deliver learning online, and telemedicine platforms are increasingly used to provide medical services. McKinsey (2020) reported that, by end of March 2020, telemedicine use increased by 200% in Europe and 50% in the USA. Similar increases were reported in Asia-Pacific, including Australia (Sneade & Shubham, 2020).

According to the PriceWaterhouseCoopers survey on CEO on redefining business success in a changing world in PNG, the survey found that the impacts of globalisation and technology has transformed the work environment (PWC, 2016). For instance, the survey found that the CEOs in PNG see more threats to their businesses in meeting the demands of consumers within a globalised world “with many dimensions of power, growth and threats – a transition that we call multi polar” (PWC, 2016, p 6). In the survey, 90% of the PNG CEOs view that skilled, educated and an adaptable workforce is a top business priority.

This presents challenging operating environments, especially for public sector organisations to adapt, by instituting appropriate change interventions (Waddell et al., 2019; Heimans & Timms, 2018). The changing nature of work and the work environment requires that organisational leaders employ a variety of approaches to effectively navigate through

VUCA and lead change (Shaw-VanBuskirk, et al., 2019; Gunzel-Jensen et al., 2018). Adapting to evolving new ideas and best practices require that existing structures and systems are constantly reformed. Therefore, effective change strategies and leadership approaches are needed to constantly adapt to the changing environment (Shaw-VanBuskirk, et al., 2019; Waddell et al., 2019; Van de Wall, 2017). Corporations and public state entities are adopting a wide range of change policy strategies and initiatives, “to ‘modernise’, ‘reform’, ‘innovate’, ‘de-bureaucratise’ and ‘professionalise’ existing institutions and practices” (Van der Wall, 2017, p. 32). Reform processes, that seek to restructure, downsize, introduce new innovations, improve quality, and re-engineer systems and work practices, have serious implications for the technical, operational, financial, and human resources aspects of organisations and systems that support them (Waddell et al., 2019; Hechanova, et al., 2018; Van der Wal, 2017). This presents challenges for organisations that have been structured on the old management paradigms to provide effective change leadership (Schweiger et al., 2020; Heimans & Timms, 2018).

According to Heracleous and Bartunek (2020) 60-70% of change efforts fail worldwide, citing lack of employee engagement and resistance as one of the primary causes. The involvement and engagement of employees is paramount to achieving change success (Bastardoza & Van Vugt, 2019; Wickham, 2019; Fullan, 2006). Change processes are usually misunderstood by employees, as they are given limited opportunities to be involved in the development of organisational change practices (Evans, 2020; Heracleous & Bartunek, 2020). Consequently, they struggle to understand and modify practices and processes that are new, with some in a constant state of renewal, and/or are complex and ambiguous, resulting in uncertainties (Waddell et al., 2019; Van der Wal, 2017; Fullan 2006). Hence, organisational change leaders need to reconsider their approaches in setting directions, building relations, and motivating employees to be fully engaged (Hechanova et al., 2018; Van der Wal, 2017).

### **2.3.1 Change Process and Theories**

Change is generally accepted as a process, and not as an event (Evans, 2020; Heracleous & Bartunek, 2020; Van de Wall, 2017). Change process “involves moving from the known to the unknown” (Waddell et al., 2019, p.155) and is classified in many ways that emphasises its nature and context. Bate (1995), in defining the magnitude of change, claimed that change may be incremental over time, or transformational. Kanter, Stein and Jick (1992) described organisational change as a process-driven activity. Dunphy and Stace (1993) observed that facilitating the forces of change is contingent upon roles of individuals,

organisational design, and leadership approach styles. There can be multiple changes that include changing the internal systems, processes, structures, procedures, technology, training and development, and approaches to meeting customer needs within organisations (Kanji & Moura, 2003; Lycke, 2003). Change, therefore, is a “shift in behaviour of the whole organisation” (Kanter et al., 1992).

However, the rate of change is now faster than ever (Schweiger et al., 2020; Monahan, 2016). According to Lussier (2019), the “period between 2015 and 2020 is poised to redefine virtually every facet of how we live and work” (p. 366). Current events, like the COVID-19 pandemic, highlights this and demonstrates the need for organisational leaders to focus on leading change as an ongoing process in organisations (McKinsey, 2020; Jarrel, 2017).

Literature on the theory and process of change is drawn from several social science disciplines. According to Crawford and Nahmais (2010), the change process draws on a broad literature, including strategic management, psychology, organisational behaviour, human resources, and communication. Change literature has been influenced by the work of earlier scholars, theorists, and practitioners including Kotter (2014), Burns (2005), Anderson and Anderson (2001), Dunphy and Stace (1993), Mintzberg et al. (1988) and Lewin (1951). Theories underpinning change process are summarised in Table 2.3. These change theories are classified under four common archetypes: life cycle, evolutionary, dialectical, and teleological.

Table 2.3 Change Theory Archetypes (adapted from Van de Ven & Poole, 1995)

<b>Theory Archetype &amp; Pioneer Scholars</b>	<b>Core Philosophy</b>	<b>Applied in this study</b>
Life Cycle Theory Jean Piaget (1936) and Auguste Comte (1841), both cited in Van de Ven & Poole (1995).	<ul style="list-style-type: none"> <li>▪ Events progress in a linear and sequential manner.</li> <li>▪ Change can be anticipated in a logical way in line with the logical constructs of organisations.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Order of change.</li> <li>▪ The order of impact on change leadership approaches to leader-member exchange (establishing relations and change agency) and employee engagement to change outcomes.</li> </ul>
Evolutionary Theory Charles Darwin (1859), Van de Ven et al. (1995), all cited in Van de Ven & Poole (1995).	Change is best understood against the wider backdrop of life being a series of events relating to competitive survival which are governed by natural selection processes that are inherent in every human organism.	<ul style="list-style-type: none"> <li>▪ Change occurs as a result of a process which eventually impacts on the ‘whole’.</li> <li>▪ Changes in employee behaviour in the process overtime results in change in the organisation.</li> </ul>

Dialectical Theory Georg Wilhelm Hegel (1801), Karl Marx (1848), and Sigmund Freud (1950), all cited in Van de Ven & Poole (1995).	<ul style="list-style-type: none"> <li>▪ All existence is shaped by opposition and conflict, where contradiction is a natural state.</li> <li>▪ Think of thesis-antithesis-synthesis.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Change is a result of multidimensional causal effects.</li> <li>▪ Change leadership influences leader-member relations and follower engagement to achieve change outcomes.</li> </ul>
Teleological Theory Max Weber (1937), Churchman (1971), Singer (1959), all cited in Van de Ven & Poole (1995).	Change is enacted through goal-setting mechanisms whereby functional organisation is adaptable to the change requirements at any given point in time; co-operation and consensus building being the key watchwords.	<ul style="list-style-type: none"> <li>▪ Change agendas are led by a vision of the change outcomes.</li> <li>▪ Change as a co-created outcome.</li> <li>▪ Organisations adapt to reform or new changes.</li> <li>▪ Change is embedded and sustained.</li> </ul>

Van de Ven and Poole (1995) split these theory archetypes into: (1) first-order change; and (2) second-order change. According to 'first-order change', processes of change build on the past processes' outcomes and achievements. As Van de Ven and Poole (1995) described, "There is a built in prescribed basis of action where future adaptations to any given scenario are founded on deterministic laws that have governed how things have operated in the past" (p. 523). Based on the first order change, they suggest that "'second-order change' is in essence 'constructive', meaning that there is a conscious break with (the) past basic assumptions or framework" (p.523).

Van de Ven and Poole's (1995) change archetypes firstly present change as a process that involves several events, decisions, and actions. Second, these events, decisions and actions are linked in some sort of progressive pattern. However, change is not always progressive and follows certain sequences in the direction change is intended (Hayes, 2014; Mitchell, 2013). According to this hypothesis, life-cycle and evolutionary theory are deemed as being of first-order (prescribed) change, whilst teleological and dialectic theory are second-order (constructive/ emergent) changes (Hayes, 2014; Kim & Mauborgne, 2014; Senge, 2014; Dolfsman & Leydesdorff, 2005).

However, Bryman (2011) argued that the monumental complexity of change process theory across disciplines cannot be adequately explained by creating a relatively simple model with four components. Bryman (2011) noted that it is not possible to devise an overarching theoretical framework which satisfactorily explains every aspect of change process theory throughout all disciplines under the social sciences umbrella.

According to these theories, change in organisations is a transition from one state to another desired state that improves organisational performance. Therefore, change is linear, logically progressing from the current 'known to the unknown'. Such change is most likely to cause conflicts in the process, thereby creating resistance as the familiar operating



environment shifts. Therefore, to achieve change, initial change process must begin with preparing and aligning existing elements of the organisation to adapt to the change process. This includes in major part, preparing and engaging employees.

Building on from the change theories, to examine the process of change in organisations, a clear change order framework is needed. Higgs and Rowland (2005) considered the nature of change from different perspectives and explored combinations of the scale of the change and its relative impact on core organisational direction. A common classification for examining types of change is differentiating incremental and radical change (Burnes 2004; Van de Ven & Poole, 1995). Aljohani (2016) listed four types of change that organisations go through: operational, strategic, cultural, and political changes. However, such classifications tend to vary and are limiting (Higgs & Rowland, 2007). Therefore, in this study, different ‘orders’ of change are adapted and improved from Aljohani (2016) and Kuipers et al. (2014) to: (1) individual and group/team change (first-order); (2) sub-system change (second-order), organisation change (third-order), and sector change (fourth-order). Table 2.4 provides a summary of the taxonomy of orders of change.

Table 2.4 Orders of Change (modified from Kuipers et al., 2014, p.3.)

Order	Description	Applied in this study	References
First-Order: Individual and group/team change	<ul style="list-style-type: none"> <li>Operational change</li> <li>Engagement of employees</li> <li>Individual accountability</li> <li>Skilled workforce and aligned</li> <li>Group/team reflect the norms and values of the organisation</li> </ul>	<ul style="list-style-type: none"> <li>Principal change leadership approach</li> <li>Principal-teacher relations</li> <li>Teacher engagement</li> </ul>	Cameron & Green, 2020; Aljohani, 2016; Burnes, 2004.
Second-Order: Sub-system change	<ul style="list-style-type: none"> <li>Operational and strategic change</li> <li>Adaptation of systems or structures</li> <li>Occurs within part of an organisation or sub-system</li> <li>Is incremental</li> </ul>	<ul style="list-style-type: none"> <li>School system change</li> <li>School-based curriculum developed</li> </ul>	Aljohani, 2016; Burnes, 2004; Carnall, 2007; Van de Ven & Poole 1995
Third-Order: Organisation change	<ul style="list-style-type: none"> <li>Cultural change</li> <li>Transformational change</li> <li>Movement in core organisational paradigms</li> <li>Organisation-wide</li> <li>Whole systems change</li> </ul>	<ul style="list-style-type: none"> <li>School status change from high to secondary school (year 9-12)</li> <li>Use of school based curriculum &amp; assessed</li> </ul>	Aljohani, 2016; Burnes, 2004; Carnall, 2007; Van de Ven & Poole 1995
Fourth-Order: Sector-wide change or reforms	<ul style="list-style-type: none"> <li>Political change</li> <li>Identity change</li> <li>Cross-organisational change</li> <li>Change spans specific organisational boundaries</li> <li>Affects many organisations/sector-wide change</li> </ul>	<ul style="list-style-type: none"> <li>Improved educational outcomes</li> <li>Improved HDI of the country</li> </ul>	Aljohani, 2016; Gratton 2005; Tsoukas & Papoulias 2005

The orders of change demonstrate that organisational change begins at the individual employee level, on an incremental basis, and spirals upwards or outwards to impact on organisational and sector-wide transformations. The framework describes the orders of change from: (1) the individual employee behaviour change and engagement level, which (2) invariably influences changes at the operational sub-system or unit level, leading to (3) changes in the organisation's culture and, consequently, (4) results in major sector wide reform changes. The orders of change framework demonstrate that, ideally for organisations, big changes begin fundamentally at the micro individual level. However, this is not the case in reality, and often highlights the differences between private and public sector organisations (Kuipers et al., 2014).

The differences in change success between public and private sector organisations reflects the nature and structure of governance (decision making) and implementation (systems and processes of implementing changes) used (Evans, 2020; Kools et al., 2020; Beycioglu & Kondakci, 2014). According to Kuipers et al. (2014), the fundamental difference between private and public organisations are the political and juridical context. Political refers to making change decisions, and juridical refers to how these decisions are implemented according to set guidelines, agreements, or contracts. Rainey (1997; cited in Kuipers et al., 2014, p.6) distinguished private and public organisations by their: (1) environmental characteristics (such as the intensity of political influence); (2) transactions between organisation and environment (such as the production of public goods); and (3) structures and processes of organisations (such as the clarity of organisational goals and bureaucracy). Hence, change in public organisations flows contrary to this change order.

In public organisations, change policies are determined at the top political level and directed downwards (Beycioglu & Kondakci, 2014; Langley et al., 2013; Tsoukas & Chia, 2002). For instance, in education reforms, change policies are made at the top of the centralised government system and directed down to different levels of government and institutions for implementation (OECD, 2016; World Bank, 2016; Gallucci, 2008; Louis, 2009; Stein & Coburn, 2008). World Bank (2016) and OECD (2016) reported that such change interventions do not always result in significant progress in school systems. The top-down change approach is criticised for assuming that large scale system wide change is a linear and uniform process, influenced from the top. Such an approach ignores the uniqueness of individual organisations, such as schools, and staff that need to be initially changed (first-order) in order for change to cascade (second- and third-order) to system wide (fourth-order) changes (Payne et al., 2008; Ryan, et al., 2008).

Change scholars in the broader field of organisation science agree that effective change begins at the individual/unit (first-order) level (Aljohani, 2016; Kuipers et al, 2014; Lok & De Rond, 2013). Therefore, effective change has to begin from the bottom-up (Beycioglu & Kondakci, 2014; Langlely et al., 2013). Louis (2009, p.44) suggested that change occurs in the form of “small-scale increments and mostly in the form of adjustments to stimuli” by organisational members. Hence, change slowly emerges and unfolds on a continual basis rather than a result of a planned and top-down effort (Beycioglu & Kondakci, 2014; Langlely et al., 2013).

However, Fullan (2006) criticised this individualised and incremental change approach for being essentially slow and fails to bring sustained improvements at a larger scale. Although bottom-up consistent change perspectives have been examined extensively in the broader field of organisation science, it has received less scholarly interest from educational change researchers (Gallucci, 2008; Gilstrap, 2007).

### **2.3.2 Change Process Models**

Models simplify concepts and attempt to provide some basis for identifying strategies to produce desired outcomes (Serrat, 2017; Senge, 2014). The organisational change literature reveals many prescriptive models, on how to best implement change. Most models typically specify steps considered applicable across a variety of organisational change approaches (Chikere & Nwoka, 2015; Hayes, 2014). However, Kotter’s integrative model of organisational dynamics (Kotter, 2014), Weisbord’s six-box model (Weisbord, 1976), and Burke-Litwin causal model of organisation performance and change (Burke and Litwin (1992), are considered for their relevant change process models in this study. Generally, good change process models: (1) are relevant to the particular change issues under consideration; (2) help change agents to recognise cause-and-effect relationships; and (3) focus on elements change agents can influence (Hayes, 2014; Burke, 2013). In recognising the utility of component models examined, these holistic (total system) models for diagnosing change processes are summarised in Table 2.5.

Table 2.5 Change Process Models (Kotter, 2014; Burke &amp; Litwin, 1992; Weisbord, 1976)

<b>Characteristics of change models</b>	<b>Kotter's integrative model of organisational dynamics (Kotter, 2014)</b>	<b>Weisbord's six-box model (Weisbord, 1976)</b>	<b>Burke-Litwin causal model of organisation performance and change (Burke &amp; Litwin, 1992)</b>
<b>Relevance to organisational change</b>	Suitable for one-off change initiatives	<ul style="list-style-type: none"> <li>▪ Focus on planning, incentives, and rewards</li> <li>▪ Too much focus on managerialism and incremental change</li> </ul>	<ul style="list-style-type: none"> <li>▪ Focus both on organisational leadership and managerialism</li> <li>▪ Allows flexibility and visibility to monitor change as an ongoing process</li> </ul>
<b>Cause-and-effect relationships (Total systems)</b>	Inward looking approach on internal structural elements; hence, lose sight of outside forces	Internal organisation focused	<ul style="list-style-type: none"> <li>▪ Total system model, impact on one element has impact on others</li> <li>▪ Internal and external (environmental) factors are considered.</li> </ul>
<b>Elements change agents (individuals and teams) can influence</b>	Proposes predictable outcomes	Focus on delegation of authority, control, accountability, and performance assessment	<ul style="list-style-type: none"> <li>▪ Identifies 12 different drivers (elements) of change</li> <li>▪ Inputs and outputs are clearly identified.</li> </ul>

Of these change process models, the Burke-Litwin causal model of organisation performance and change provides an inclusive framework (Figure 2.3). It highlights the causal relationship between and among elements within an organisation, and identifies different drivers of change. The model comprises twelve interrelated elements, presented in Figure 2.3, that “represent our choices of what we consider to be primary for organisational understanding and analysis” (Burke, 2013, p. 226).

The Burke-Litwin model is an open systems model. The external environment element at the top of the model represents the inputs. The outputs are represented by the individual and organisational performance elements at the bottom. It identifies the cause-and-effect relationships, with feedback loops in both directions, among the twelve organisational dimensions that are key to organisational change (Cummings & Worley, 2005). The external environment affects the organisation's performance (Chawane et al., 2003). The remaining ten elements at the different levels of the change process represent the process of transforming inputs into outputs. For instance, strategy and organisational culture reflect aspects of the whole organisational or total system (Jones & Brazzel, 2006; French & Bell, 1999). The work unit climate element, situated within the local unit level, is where motivation, individual needs, values, tasks, and roles define individual level elements.

According to Burke and Litwin (1992), elements located higher in the model, such as mission and strategy, leadership, and organisational culture, exert greater impact on other

elements, than lower elements do on higher elements. The top boxes are deemed the transformational factors and lower boxes are considered transactional factors concerned with the day-to-day functions of the organisation. A change in any of these areas would almost certainly affect the whole organisation. According to Burke (2013), the elements located lower down in the model can have some impact on those above them; the position in the model reflects the ‘weight’ or net causal impact. In this study, the Burke-Litwin model is adapted to assess change process in school organisations in PNG.

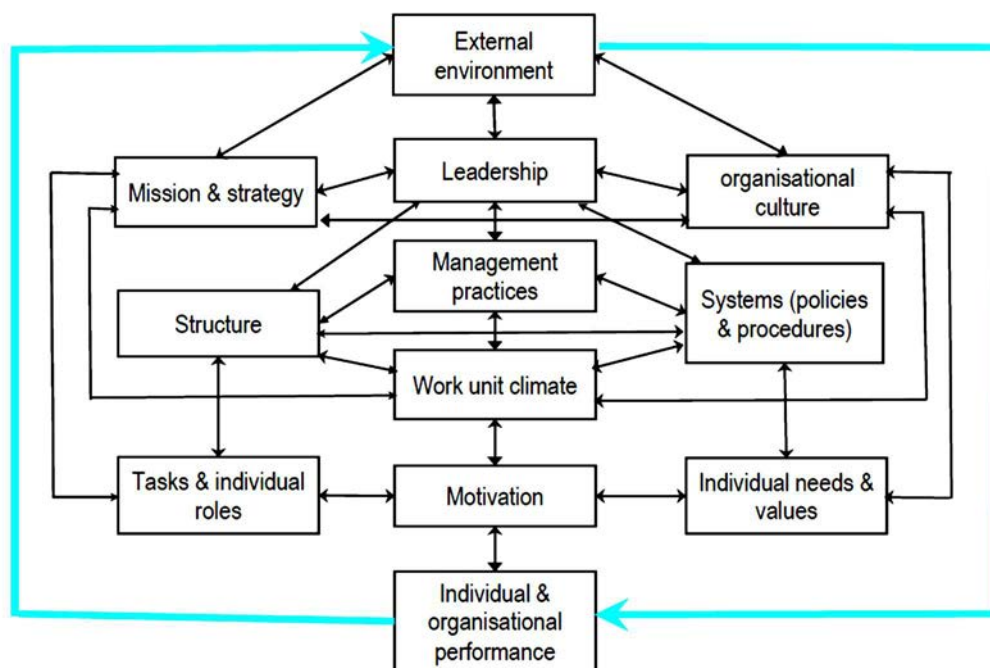


Figure 2.3 The Burke-Litwin Causal Model of Organisational Performance and Change (adapted from Burke and Litwin, 1992, p.528)

The utility of the Burke-Litwin model of organisational change is threefold. First, the model broadly identifies the key elements within an organisation that impact the change process. The model can be adapted to suit specific organisational elements. For instance, applied to a school organisational context, the external environment would include addressing education reform policies on improving educational outcomes to reflect society needs. In addressing the reform changes, school leadership would entail instituting the school system and curriculum changes to implement policy changes. Achieving such policy change requires fundamental system and operational changes in schools. At the initial stage, school leaders would have to ensure that teachers are adequately prepared, resourced, and engaged (first-order changes). The first-order change is critical to establishing the platform to achieve other changes along the process (Aljohani, 2016). Without resources, adequate training, and engaged teachers, the school principal alone is unable to implement any change. First-order

changes take time and any change achieved is incremental (Burke, 2013; Chawane et al., 2003; French & Bell, 1999). By consistently ensuring that the first-order changes take hold, this alters a school's operating systems over time, transforming it continuously to facilitate the new changes (second-order changes). This results in a new school operating environment (whole systems change), and new culture (third-order changes) (Aljohani, 2016; Kuipers et al., 2014). Third-order changes aggregated across the education system solidify the transformational changes across the education system and overall achievement of the policy agenda that meets society needs.

Second, the model can be adapted to specifically identify the elements that leverage change. This allows organisational leaders to target key areas of focus to minimise internal resistance. For instance, in implementing the education reforms in PNG schools: (1) reassessing and reassigning tasks and roles of individual teachers; and (2) attending to teachers' individual requirements and values, would ensure their needs are adequately addressed, to be engaged and committed. Reducing teaching loads for teachers directly involved in the reforms, providing adequate resources and training, and motivating them would be strategies principals would have within their power to engage their staff, to achieve the initial first-order change.

Finally, as a total systems model, it allows for the assessment of each element as it impacts on the implementation of the change process and overall change outcomes. The model can be adapted to assess how each element connects and impacts other elements in the change process. For instance, adapted to examining the education reform changes in schools, leadership and its impacts on teacher engagement can be examined to assess the overall progress of the reforms; such as a change in teacher engagement would improve student learning and performance, and improve the overall standing and morale of school.

However, according to Jones and Brazzel (2006), change should not always start with elements prescribed at the top of the model. Hence, this is a predictive model, and postulates the nature of causal relationships, and forecasts the likely effects of changing certain elements. Interventions are determined by the nature and scale of change, to secure transformational or incremental change (French & Bell, 1999). The model demonstrates these two distinct sets of organisational dynamics: (1) the need for a fundamental shift in values and behaviour to achieve organisational transformation; and (2) the behaviour to perform routine tasks and achieve incremental changes. It is also noted that the model assumes that small incremental changes invariably lead to transformational change and, from an imposed change

perspective, the processes in the model may take a long time to respond (Jones & Brazzel, 2006).

On balance, the Burke-Litwin model provides a clear framework to examine the change process in implementing change in organisations. The model facilitates the development of a framework to specifically examine change leadership in school organisations in PNG in the implementation of the education reforms. This is discussed in section 2.4.

### **2.3.3 Summary of Organisational Change**

Organisational change is necessary to adapt change imposed by the advances in technology, globalisation, and natural calamities and pandemics. Changes continuously alter the work environments and workplace settings worldwide. Current change interventions and efforts are producing dismal result outcomes that require effective change leadership.

Life cycle, evolutionary, dialectical, and teleological theories define the nature of change and guide approaches in examining change processes. From an organisational level, change is manifested in various orders from individual and group change (first-order), to subsystems (second-order) and organisations (third-order) changes. The sector wide changes that involve multiple institutions and organisations, such as in major public sector reforms, are classified as fourth-order changes that require wider policy interventions. The Burke-Litwin model of organisational performance and change provides the holistic total systems framework to examine change leadership in organisations.

Organisational change leadership is discussed in the next section. Based on the change theories and process models discussed above, school principals' leadership approaches in implementing education reform changes in PNG are discussed.

## **2.4. Organisational Change Leadership in Schools**

Change theories, explored in section 2.3.1, defined change as a process that transforms existing elements within an organisation to a desired state. The change process is just as important as the change outcomes. Change transformation occurs in different orders and stages overtime. Leadership theories, explored in section 2.2.1, explained that leaders influence the change process through the traits and skills they possess, and can achieve effective results through followership and being led by the demands of tasks and situational variables in organisations. Leadership requires the interaction of all actors in the change process (Fairhurst et al., 2020; Shaw-VanBuskirk et al., 2019), where change is co-created

(Uhl-Bien et al., 2014). This section examines organisational change leadership in school organisations.

#### **2.4.1. School Organisation**

An organisation is defined as the necessary combination of human efforts, material equipment brought together in a systematic and effective correlation to accomplish the desired results within a given environment (Kools et al., 2020; Almatrooshi, Singh & Farouk, 2016; OECD, 2016; Ackoff, 2010). According to Kools et al. (2020), schools are organisations for learning. Hence, a school is an organisation consisting of a physical learning environment (classrooms and other facilities) in which students are brought together for the purpose of learning under the direction of teachers. The school organisation is about the actual organisation of resources, activities, events, and people (staff and students) of a school (OECD, 2016). From an organisational leadership and management perspective, in a school, different people are assigned and are responsible for various duties, and ideally given the powers and resources to discharge their duties effectively (Kools et al., 2020). This includes the creation of an environment conducive for work and learning, and greater co-ordination among teachers in schools (Kools et al., 2020; OECD, 2016).

From a systems perspective, schools are social entities comprised of a system of interrelated and interdependent elements, such as staff, students, community (within and the wider society), physical infrastructure, and organisational settings, all functioning as a single operating unit (Kools et al., 2020; Daft, 2016; Ackoff, 2010; Lunenburg, 2010; Senge, 2014; Chawane et al., 2003). Lunenburg (2010) defined schools as social systems where people work together in a coordinated manner to attain common goals. As social systems, schools are generally regarded as open systems (Kools et al., 2020; Daft, 2016; Chikere & Nwoka, 2015; Ackoff, 2010). Open systems theory postulates that all living entities cannot function without their environment as they are dependent on it for their sustenance (Ackoff, 2010; Chawane et al., 2003). There is mutual coexistence and harmony (balance) between the living entity and its environment. In essence, schools as social entities are living organisms since they interact and react with and meet their environment's needs and demands (Kools et al., 2020; Lunenburg, 2010; Senge, 2014).

Schools are a part of a system of interrelated components that are embedded in, and strongly influenced by a larger and complex education system (Daft, 2016; Chikere & Nwoka, 2015; Hayes, 2014; Ackoff, 2010; Fullan, 2006). School success and sustainability in the long-term is dependent on how internal school components align (fit) with the wider



education system to meet the needs of society (Hayes, 2014; Schneider et al., 2003). As such, schools are institutions that implement broader policies that are channelled through them to meet societal needs. For instance, the PNG Education Reforms are designed to improve access for and quality in education to meet the country's broader policy in improving its HDI. To achieve this, school changes are required to align its system structures to improve access and curriculum changes to enhance the quality of education.

Organisational arrangements and dynamics for schools have changed significantly over time due to profound societal changes (OECD, 2016; World Bank Group, 2016; Bissessar, 2014; Jones & Harris, 2014). School context and system differences have different implications for school leadership and management practices in different countries and regions (OECD, 2016; World Bank Group, 2016; Lindberg, 2014; Stein, 2010).

#### **2.4.2 Change Leadership in School Organisations**

Change leadership is defined as the behaviours of leaders (and managers) in shaping organisational change and creating capacity among change recipients to implement the change (Cameron & Green, 2020; Higgs & Rowland, 2007). According to an American Management Association survey (American Management Association, 1994), the key to successful change is leadership. Based on this, Yukl (2013) stated that a leader is only effective if he or she succeeds to adapt the organisation to a changing environment through continuous revitalisation. Yukl emphasised the importance of understanding the reasons for resistance to change, the sequential phases in the change process, and the various strategies to successfully implement change.

Change leadership, according to Hooper and Potter (2000, p.8), requires “developing a vision of the future, crafting strategies to bring that vision into reality, and that everybody in the organisation is mobilising their energies towards the same goals.” Sull and Homkes (2015) conducted a five-year longitudinal study, based on 250 companies and over 8,000 managers, looking at coordination, collaboration, and alignment of staff. They concluded that lack of change leadership has contributed to failures in coordinating, aligning and mobilising staff to collaborate effectively in achieving change targets and goals. In line with the 60-70% reported failures in change interventions observed worldwide (Jarrel, 2017), the challenge for change leadership is ominously pervasive. Therefore, arguably the key strategy for successful change outcomes is to engage the workforce (Cameron & Green, 2020; AbRahman, 2017; Carlsson, 2016).

#### ***2.4.2.1 Leadership, Management and Change in School Organisations***

Leadership and management are terms often used interchangeably (Nizarudin, 2017; Lunenberg, 2011). Kotter (2014) highlighted the tensions between management and leadership. They explain that management is concerned with maintaining the status quo, whereas leadership is concerned with change. According to Kotter (2014), a key distinction regarding leadership is that it is linked to the notion of change. Kotter (2014) suggested that: (1) management produces orderly results which keep things working efficiently; (2) leadership creates useful change; and (3) both are needed for organisational success. Grint (2011) suggested that leadership is also effective in addressing resistance to change and in problem-solving as it is about the creation of change. Management is about coping with problems that reoccur (Kotter, 2014) and leadership deals with new and complex problems (Tonkinwise, 2015) that do not have clear answers or endpoints and are largely ambiguous in nature (Nizarudin, 2017; Grint, 2011).

In practice, however, leadership and management are applied arbitrarily. According to Lunenberg (2011), leading and managing are not only complementary; they are basically the same concept used to describe different arrangements related to organisational performance and effectiveness. Together, leading and managing form the framework for skills and abilities necessary for leaders to drive organisational change and success (Nizarudin, 2017; Lunenberg, 2011).

In view of the shifting workplace dynamics, traditional ‘reductionist’ change management approaches that favour ‘micro trends’ are at the risk of being less adaptable to holistic change that is required in organisations (Fairhurst et al., 2020; Cameron & Green, 2020; Heimans & Timms, 2018; Van der Wal, 2017). This shift highlights that further empirical support is needed to distinguish leadership and management practice.

The bureaucratic management or administrative system is observed to predominantly exist in modern schools (Gumus et al., 2018; Nizarudin, 2017; Lindberg, 2014; Yukl, 2013; Van Dierendonck, 2011). Principals are responsible for the operation of schools within a wider system run by a central bureaucracy (OECD, 2016) and the roles within the school are clearly defined (Langley et al., 2013). Further, Yukl (2013) observed that teachers operate in relative isolation from each other and the principal’s role is commonly considered that of a bureaucratic administrator or head teacher, or a combination of both. The bureaucratic administrator or manager is seen as responsible for the overall operation, or implementation, of the school. This person is responsible for overseeing compliance to centralised legislative and regulated guidelines and only accountable for the use of resources and outcomes

(Mulford, 2003). The head teacher is seen as *primus inter pares*, first among equals (Reinke, 2004, cited in Van Dierendonck, 2011), but retains a lesser degree of teaching responsibilities and much of their time is committed to non-teaching administrative tasks (Yukl, 2013; Van Dierendonck, 2011). This often results in taking a narrowly focused administrative and managerial approaches to addressing system wide changes (Gumus et al., 2018; Nizarudin, 2017; Lindberg, 2014).

The study of twelve effective schools by Day et al. (2001) highlighted several dilemmas in school leadership. One of these dilemmas relates to management which is linked to systems and leadership, which pertains to the development of people. Day and colleagues linked leadership to values or purpose, while management related to the technicalities on implementation. Leadership and management are equally prominent for schools to operate effectively and achieve their goals and outcomes. As Bolman and Deal (1997) claimed, “Leading and managing are distinct, but both are important ... The challenge of modern organisations requires the objective perspective of the manager as well as the flashes of vision and commitment wise leadership provides” (p.12-13).

According to Leithwood et al. (2020), in practice, principals are rarely aware of whether they are leading or managing in their day-to-day work; they are simply carrying out their duties. Implementing change requires both leadership and management skills, which is expected from school leaders. This involves managing existing ongoing activities to meet annual school outcomes whilst leading the implementation of school change process (Shilon & Schechter, 2019; Gawlik, 2015; Lunenburg, 2012).

Despite the different studies in educational change and types of leadership approaches, educational change theory needs further development to gain deeper understanding of educational reform (Leithwood et al., 2020; Ganon-Shilon & Schechter, 2019; OECD, 2016; Gawlik, 2015; Hallinger 2010).

### **2.4.3 Role of Principals in School Organisational Change**

Studies show that implementing education reforms is a continuous process (Ganon-Shilon & Schechter, 2019; McDonnell & Weatherford, 2016; Young & Lewis, 2015). Principals play the crucial role as agents of change and are fully under pressure to implement change in schools (OECD, 2016). Effective education reform outcomes depend on the successful leadership of principals in their schools (Ganon-Shilon & Schechter, 2019; OECD, 2016; Gawlik, 2015; Hallinger & Ko, 2015). Principals are expected to mobilise staff and resources towards achieving the reform outcomes at the school level (Ganon-Shilon &

Schechter, 2019; Werts & Brewer, 2015; Fullan, 2014; Lunenburg, 2012). In this regard, principals are required to engage staff, meet their development needs, set clear goals, and gather the resources to achieve the reform goals (OECD, 2016; World Bank Group, 2016; Gawlik, 2015; Klassen & Chiu, 2011).

Schools in PNG operate within multiple contexts – provinces and districts at the subnational level, and the national education system administrated by the central government, parent, and local community associations (OECD, 2016). Such an arrangement often presents dynamic tensions between existing school goals and programmes, and the reform demands for principals to manage (Ganon-Shilon & Schechter, 2019; Gawlik, 2015). This challenges principals who must balance the internal processes, such as addressing teachers' needs and mobilising resources, as the school adapts reform demands to local conditions (OECD, 2016; Brezicha, Bergmark, & Mitra, 2015; Gawlik, 2015). According to Hopfenbeck, Flórez-Petour and Tolo (2015), such tensions may result in a superficial implementation of the reforms.

Education reforms expand the role of principals, placing additional demands on their leadership, on top of their normal tasks (Ganon-Shilon & Schechter, 2019; OECD, 2016). The demands of the reforms expect principals “to build teams, establish vision, cultivate leadership skills in teachers, use data to inform instruction while constantly observing and implementing reform guidelines” (Ganon-Shilon & Schechter, 2019, p.281). Principals are often expected to have the leadership and management skills to do so (OECD, 2016; World Bank Group, 2016; Hallinger & Ko, 2015; Lunenburg, 2012).

The tensions between school goals and reform demands, coupled with the expanded role principals have to implement reforms, have resulted in different outcomes in schools across a region or country (Ganon-Shilon & Schechter, 2019; OECD, 2016). Schools have been observed to achieve different levels of progress and outcomes while implementing the same reform policy (Koyama, 2014; Louis & Robinson, 2012). The main factor in achieving different reform results rests with the principals' authority to make strategic choices in the implementation process (Coburn, Hill & Spillane, 2016; Fullan, 2014). According to Ganon-Shilon and Schechter (2019, p.281), “principals' choices and actions while maximising their own local interests influence the institutionalisation of education reforms.” This depends on principals' leadership approaches, resources available, and level of staff engagement and commitment. Additionally, implementing reform changes requires collaboration from all actors based on mutual trust (principal-teacher relations), shared goals (common vision), and a focus on the outcomes (Bridwell-Mitchell, 2015; Hallinger & Ko, 2015; Pesonen et al., 2015; Tschannen-Moran, 2014; Lunenburg, 2012).

#### **2.4.4 Summary of Organisational Change Leadership in Schools**

Organisational change leadership examines behaviour of leaders in shaping organisational change. As change is a process, traditional approaches to leading and managing organisations may not yield effective change results. There is a need for organisational leaders to focus on change leadership, as opposed to management, by building effective relations and motivating employees as a strategy to adapt to change (Hechanova et al., 2018; Van der Wal, 2017).

Change interventions in schools have been criticised for failing to bring system-wide sustained change in educational outcomes (World Bank Group, 2016; OECD, 2016; Payne, 2008; Fullan, 2006). Yet, there is limited research on change and change leadership approaches in schools (Jarrel, 2017; Ganon-Shilon & Schechter, 2016; Yukl, 2013; Harris & Dinham, 2011; Hallinger, 2010). Studies on leadership schools have been largely confined to school effectiveness or performance, specifically impacts on student learning outcomes and teaching practices (OECD, 2016; Gawlik, 2015; Brezicha et al., 2015).

In implementing education reforms, principals' roles are often divided between meeting school goals and meeting the demands of the reforms (Ganon-Shilon & Schechter, 2019; OECD, 2016; Gawlik, 2015). These require managing ongoing activities to leading changes in the reforms. To explore principals' change leadership approaches, education reform change implementation in PNG secondary schools are examined.

The following sections explore the change leadership approach model to address the gaps in the literature. This provides the rationale and the propositions for the study to examine change leadership approaches in PNG secondary schools.

#### **2.5 Leading Education Reform Changes in PNG Secondary Schools**

The Government of PNG (GoPNG) introduced changes to the education system in 1993 to increase school access and improve quality of education by 2005. The changes were introduced to improve educational outcomes. Improving access required a school system overhaul, and quality education required improvements to curriculum design and teacher quality (NDoE, 1991). The reforms achieved 40 % success by 2016 (PNGLSR, 2016) and are still ongoing. The protracted progress on the reforms continue to bear on the decline in educational outcomes which places PNG amongst the least developed country category in the world (UNDP, 2019).

Structural and curriculum changes to affect education reforms remain the central issues for schools and the education system in PNG. Change and development efforts in the school system and curriculum design are conceived as the primary managerial practice of school leaders (PNGLSR, 2016; NDoE, 1991). Principal leadership is central to these change interventions in bringing positive educational change outcomes at the school level (PNGLSR, 2016). Principals provide ‘shopfloor’ or first-level leadership functions at the end of the education service delivery system, where the initial change impact occurs (Aljohani, 2016; Kuipers et al., 2014). According to the NDoE Handbook (2018), the responsibilities of a secondary school principal in PNG include: (1) ensuring teaching and learning is progressing; (2) guiding, assessing and supervising teachers; (3) leading and managing school administrative functions, which includes planning and development, maintaining school facilities; and (4) building effective relationships with and among staff and the school community, which includes parents and the wider community. In leading the education reforms, principals are expected to have the leadership skills necessary to implement them. However, the protracted progress on the education reforms and the recommendations by the reports to improve leadership in schools warrant investigation, hence the research problem in the study. The research problem and the research questions to guide the study are described in the next section.

### **2.5.1 Research Problem and Research Questions**

The education reform in PNG has only achieved 40% success rate since its introduction in 1993 (PNGSLR, 2016; TERPNG, 2014). Literature on organisational change leadership and change leadership approaches have been explored to provide the theoretical context to understand the implementation of education reform changes in PNG secondary schools. Extant literature highlights the gaps are explored to provide the context in examining the protracted progress of the government directed education reforms in PNG. Hence, the Research Problem is:

***To examine change leadership approaches in PNG secondary schools in the implementation of education reforms.***

The literature establishes that change leadership approaches have a mediating impact on teacher engagement and principal-teacher relations to effect reform change outcomes. The literature identifies the key variables to measure in the research. These are: (1) change leadership approaches; (2) teacher engagement; (3) principal-teacher relations; and (4) school

change outputs and overall education reform outcomes. These are captured in the conceptual framework (Figure 2.4). To investigate the change leadership approach impacts on the mediating change impacts, and reform change outcomes, six research questions are proposed.

- Research Question 1 (RQ1): What leadership approach(es) do secondary school principals in PNG use to lead reform changes?
- Research Question 2 (RQ2): What leadership approach(es) influence teacher engagement in implementing reform changes?
- Research Question 3 (RQ3): What leadership approach(es) influence principal-teacher Relations in implementing reform changes?
- Research Question 4 (RQ4): Does teacher engagement influence school change output in implementing reform changes?
- Research Question 5 (RQ5): Does principal-teacher relation influence school change output in implementing reform changes?
- Research Question 6 (RQ6): Does principal change leadership approach influence overall education reform outcome in implementing reform changes?

### **2.5.2 The Reform Changes in PNG Secondary Schools**

There are 98 secondary schools, with 3,757 teachers throughout PNG (NDoE Handbook, 2018). According to the Taskforce on Education Reforms in PNG (TERPNG, 2014), the education reform in secondary schools aimed to achieve three major change outcomes: (1) a restructure of the school system to improve access for secondary education to achieve basic universal education level up to year 12; (2) develop school-based curriculum in the non-core subjects – the core subjects being English, Mathematics and Sciences; and (3) improve minimum qualifications of teachers to graduate level. The changes for the secondary school system restructure and curriculum reform are outlined in Table 2.6.

Table 2.6 Secondary School System Restructure and Curriculum Reform Process and Outcomes (adapted from the TERPNG, 2014).

Current (old)	Change Process	Output/outcomes (new)	Measures/ indicators
<b>School system structure</b> <i>High school system grades 7 – 10</i>	<ul style="list-style-type: none"> <li>▪ Move grades 7 &amp; 8 down to primary schools</li> <li>▪ Maintain grades 9 &amp; 10</li> <li>▪ Introduce grades 11 &amp; 12</li> <li>▪ Change school status from high school to secondary school</li> </ul>	<ul style="list-style-type: none"> <li>▪ Secondary school system grades 9 – 12</li> </ul>	<ul style="list-style-type: none"> <li>▪ Increased enrolments for secondary education.</li> </ul>
<b>Curriculum</b> <i>National school curriculum for all subjects</i>	<ul style="list-style-type: none"> <li>▪ Teachers (schools) to develop school-based non-core subjects</li> <li>▪ Maintain the core subjects (English, Mathematics &amp; Science)</li> <li>▪ Improve teacher competencies &amp; qualifications to teach at grades 9-12 level</li> </ul>	<ul style="list-style-type: none"> <li>▪ School-based curriculum on non-core subjects</li> <li>▪ Core subjects maintained &amp; examined nationally</li> <li>▪ Competent &amp; qualified teachers</li> </ul>	<ul style="list-style-type: none"> <li>▪ Annual national exams – Mean Ratings Index (MRI) of school performances</li> <li>▪ University graduate level teachers as a minimum qualification</li> </ul>

Based on the reports, there was an average rate of 4 schools completing the reform process annually, with close to 60% of the schools yet to complete the process after 23 years (PNGLSR, 2016; TERPNG, 2014). The protracted level of success concerns authorities on how these changes are being implemented at the school level. This requires examining school leadership, specifically on how these reform changes are being led by principals.

### 2.5.3 Leading Reform Changes in PNG Secondary Schools

According to the PNGLSR (2016), secondary school principals confront resource and fiscal constraints with inadequately qualified staff to effectively implement the reforms in their schools. The Medium-Term Development Plan 2018-2022 (GoPNG MTDP III, 2018) states that real investment in the school education sector overall has declined by 30% since 2006. This has inevitably placed a strain on resource concerns by schools. Notwithstanding these constraints, the critical challenge, which is highlighted by the reports, is the lack of leadership, in this case change leadership (PNGLSR, 2016; TERPNG, 2014). Here, the concerns are twofold:

First, Tozar, Senese and Violas (2009) noted that change is usually difficult in public organisations and may even be more complex and difficult in schools. It is not always clear how changes are accomplished, and the kind of leadership practices required to achieve them (Yukl, 2013; Lunenburg, 2010). Implementing new ideas with efficacy, such as curriculum and school system reforms, are complex processes that involve communicating with and inspiring the group members to implement them, while maintaining existing activities (Tozar



et al., 2009). However, there is limited research from the school leaders' perspectives regarding actions that are necessary to lead change in schools (Ganon-Shilon & Schechter, 2016; Brezicha et al., 2015; Russell & Bray, 2013).

Second, school principals in PNG, as is observed elsewhere (OECD, 2016; World Bank Group, 2016), are appointed based on their teaching effectiveness, and not on their leadership and management expertise. It is extremely rare for a principal to receive any leadership and management training either before or during their principalship tenure (World Bank Group, 2016). Teacher performance appraisals include classroom management as a management skill, and personal conduct as a leadership trait (Yukl, 2013; Lunenburg, 2010). According to the World Bank Group (2016), there is limited training available for preparing teachers to provide leadership. Principals oftentimes must learn on-the-job (Ganon-Shilon & Schechter, 2016; OECD, 2016; Yukl, 2013; Lunenburg, 2012, 2010).

There is limited empirical study on school organisational change and change leadership in PNG. Few studies on leadership in secondary schools have been conducted in New Ireland Province (NIP). Tivinarlik and Wanat (2006) examined principals' leadership styles and explored the impacts of school principals' appointments on their leadership. They concluded that secondary school principals' leadership practices and decision making often sway in favour of those that appoint them. For instance, they observed that principals often rely on their *Wantoks* to "get things done" and that such relationships are good for the school as they, "did not expect the same kind of commitment from people who were not their *Wantok*" (Tivinarlik & Wanat, 2006. p.11). This establishes a direct link to how agency is created along the lines of kinship (*Wantok System*) which influences leadership behaviour. Such practice has been observed to produce negative outcomes (Maha, 1992).

In earlier studies, Maha (1992) and Quarshie (1992) looked at the impacts of *Wantok System* on school leadership in selected secondary schools in PNG. They observed that appointments of principals based on the *Wantok System* compromised their leadership practices and consequently resulted in low school achievements. These studies concluded that the *Wantok System* has influenced the appointments of principals and their school leadership practices. Aime (2006) stated that this creates a duality in leadership approaches, oftentimes creating "confusion and much anxiety among the leaders and the followers" (p.61). The impact of *Wantok System* in public sector organisation have also been observed to favour "who you know", resulting in poor services (Prideaux, 2016) and corrupt practices (Essacu, 2019; Koim, 2013).

In other studies, Lahui-Ako (2001) examined instructional leadership in secondary schools, also in NIP. He examined the nature of instructional leadership as applied in secondary schools. He observed that school principals that facilitate instructional leadership by embedding it as normal school practice achieve higher teacher support and good academic results. Instructional leadership is a distributed leadership arrangement that occurs when teachers are empowered (Yukl, 2013; Lunenberg, 2011). Lahui-Ako (2001) surmised that schools that performed well had teachers who were empowered and effective school leaders.

Kelep-Malpo (2007) discussed the influence of Christianity and gender on school leadership practices in NIP. Kelep-Malpo focused on the respect men append to women and suggests that Christian women teachers occupying positions of leadership in secondary schools are favourably viewed by teachers. However, her paper is not based on empirical research, but does cite examples elsewhere that lend support to her claims.

Studying change leadership in PNG secondary schools is impelled and confronted by four issues. First, leadership has been identified as one of the primary issues to focus on in order to improve the implementation process of the education reforms (PNGLSR, 2016; TERPNG, 2014). Second, change leadership is observed to be difficult in most organisations, and is more complex in school systems (Yukl, 2013; Lunenburg, 2010; Tozar et al., 2009). Third, principals may not have the change leadership skills to provide leadership in the implementation process of the reforms (OECD, 2016; World Bank Group, 2016; Yukl, 2013; Lunenburg, 2010). Finally, there is limited research in change leadership in schools (Ganon-Shilon & Schechter, 2016; Brezicha et al., 2015; Russell & Bray, 2013). Furthermore, no study on change leadership has been conducted in PNG, adding to the paucity of leadership studies in general in the country. The protracted level of progress on the education reforms and the concerns on leading the reform changes, provided the motivation for this research.

#### **2.5.4 Change Leadership Approach Conceptual Framework**

Based on the extant literature, leaders and followers mutually influence the change process and outcomes. Leadership is dependent on followership and is defined as a process of social influence in relationships (Northouse, 2018; Kruse, 2013; Oc & Bashshur, 2013; Yukl, 2013). Leaders and followers mutually influence the change process and outcomes. From a follower-centric perspective, effective change process requires establishing leader-member or employee relations and engaging employees, to co-create change success (Peiris-John, Dizon, Sutcliffe, Kang & Fleming, 2020; Gunzel-Jensen et al., 2018; Hechanova et al., 2018; Uhl-Bien et al., 2014). The Society for Human Resources Management (SHRM, 2020)

published that good relationships among co-workers and leaders is a key engagement driver. The SHRM (2020) survey indicated that 40% of employees feel that relationships with co-workers and their supervisors are very important to their job satisfaction, and 77% of them were satisfied with these relationships. The research also showed that relationship building increases their “psychological meaningfulness”, safety, camaraderie, and loyalty, leading to overall engagement in the workplace (SHRM, 2020, p. 3).

Change leadership impacts on leader-member relations and employee engagements in PNG need to be investigated. In particular, a change model framework is needed to investigate leadership impacts on change processes in PNG secondary schools. A theory of change, according to Serrat (2017), is a specific model of how an idea or strategy contributes through a chain of early and intermediate outcomes to the intended result. It is “a theory of how and why” a concept works and helps navigate the complexity of change (Serrat, 2017, p.18). A theory of change can be empirically tested for expected steps on the hypothesised or proposed causal pathways to affect change impact constructs and results (Ghate, 2018; Serrat, 2017). The theory of change in this study proposes that the success of education reforms in PNG secondary schools is dependent on the change leadership approaches of principals.

According to the Burke-Litwin (1992) open systems causal model of organisational performance and change, leadership directly impacts on management practices and indirectly influences work units, employee motivation, and individual performance. Based on the theory of change and the Burke-Litwin model, the principal change leadership approach conceptual framework was developed (Figure 2.4). This framework proposes that principal change leadership approaches have direct influence on: (1) principal-teacher relations; (2) teacher engagement; and (3) education reform outputs and outcomes. The framework indicates that, impact on teacher relations and engagement in the change process directly impacts reform outputs and outcomes.

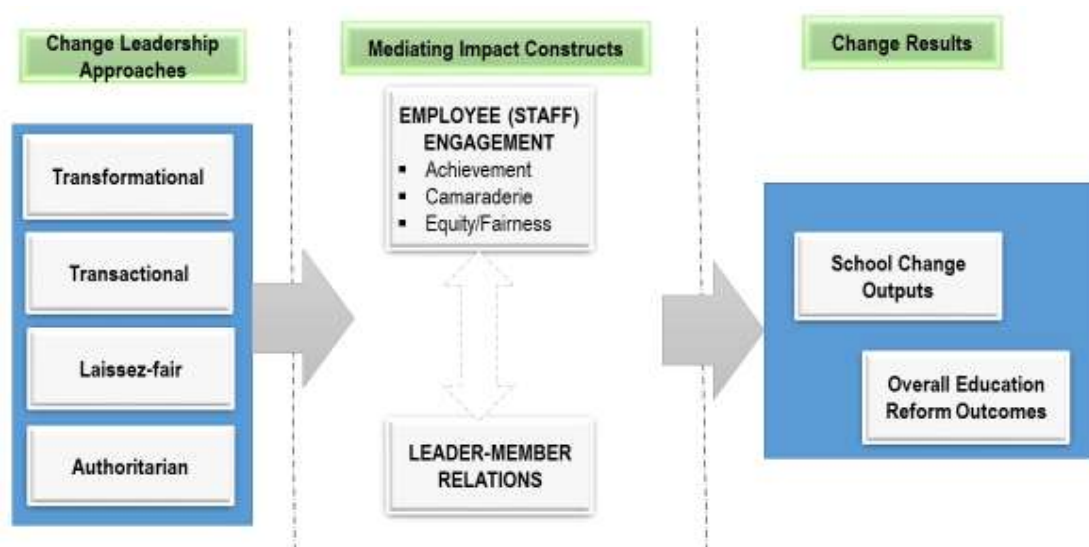


Figure 2.4 Principal change leadership approach conceptual framework.

The principal change leadership approach conceptual framework (Figure 2.4) demonstrates the intended impact paths in the process from change leadership approach, to impact constructs of teacher engagement and principal-teacher relations, as well as education reform outputs and outcomes. The framework identifies the causal relationship between the independent (principal change leadership approach) and the dependent impact constructs or variables. The framework is based on the situational, relational and process perspectives that leadership in the change process is co-created as a collective process (Fairhurst et al., 2020; Uhl-Bien et al., 2014; Oc & Bashshur, 2013). Followership is contingent on the dyadic relationship, not only between the leader and follower, but also between and among followers (Epitropaki et al., 2017; Raymond, 2010).

The framework is used to guide the literature review in the next section on the constructs within the framework, in investigating principals' change leadership approaches in PNG secondary schools.

#### 2.5.4.1 Change Leadership Approaches in PNG Secondary Schools

Modern education practices are based on appropriate leadership approaches (Yukl, 2013; Lunenburg, 2012, 2010). Leadership qualities vary by personality, approach, philosophy, situation, and behavioural traits learned through experience in varied positions of authority (Leithwood, et al., 2020). Leader success is then contingent upon the leadership approaches, competencies, and skills utilised (Shafique & Kalyar, 2018; Neason, 2014). The success of educational institutions is a result of its leaders' abilities to influence the organisation by motivating others to follow in the pursuit of common goals and meeting

educational outcomes (Yukl, 2013; Lunenburg, 2010). For instance, studies conducted in Israel (Oreg & Berson, 2011) and Malaysia (Tajasom & Ahmad, 2011) indicated strong correlations between principals' leadership approaches, teacher commitment, and student learning outcomes. The studies established that transformational leadership approaches yield higher teacher engagement.

Principal leadership approaches and behaviours elsewhere have been widely studied to have huge impacts on staff behaviour and student achievement (Leithwood, et al., 2020; Yukl, 2013; Lunenburg, 2010). Leadership approaches such as transformational and transactional leadership are frequently proposed as dominant models in change leadership (Leithwood et al. 2020; Gumus et al., 2018; Hauserman & Stick, 2013; Hallinger, 2003). Studies have also examined laissez-faire approach to leadership, citing its relevance within a more collegial setting, such as schools, where principals are often considered 'inter pares' or 'first among equals' where a 'hands off' approach to leadership is considered a best approach (Chaudhry & Javed, 2012; Hess, 2010; Barnett et al., 2005). Conversely, authoritarian leadership approach, often considered an antithesis to leadership in the general organisational literature, is considered effective in schools within specific cultural settings (Janse, 2018; Wang & Guan, 2018; Schaubroeck et al., 2017; Northouse, 2013; Bass, 2008).

Leader-centric approaches have dominated leadership literature and continue to influence leadership practice (Schweiger et al., 2020). However, the follower-centric approaches to organisational leadership are increasingly gaining currency in modern organisations. According to Heimans and Timms (2018), modern work environments have shifted from the old power authority to new power models in organisations. The old power model is based on highly bureaucratic and centralised organisational settings. The new power model is based on a holacratic, decentralised, and democratic arrangements (Heimans & Timms, 2018). This shift in power creates tensions between the old and new ways of thinking, decision-making, and leading and managing within organisations. Old power models are based on closed and closely guarded, inaccessible, and leader-driven bureaucratic structures and systems of governance and management (Waddell et al., 2019; Heimans & Timms, 2018; Van de Wall, 2017). The new twenty first century power model is open, accessible, participatory, peer-driven, and operating within a holacratic (decentralised management and organisational governance) structure and systems (Heimans & Timms, 2018; Van de Wall, 2017).

In the new arrangement, authority and decision-making are distributed throughout a holarchy of self-organising teams, rather than being vested in a bureaucratic management hierarchy.

Under this arrangement, follower-centric approaches to leadership have greater utility for success (Schweiger et al., 2020). According to Heimans and Timms (2018, p.42), the new power model “gains its force from people’s growing capacity and desire to go far beyond passive consumption of ideas and goods.” The follower-centric approach is contingent on understanding where the underlying locus of power is, during the interactions at work; who has it, how it is distributed, and how it influences decisions that facilitate organisational success and change (Heimans & Timms, 2018; Van de Wall, 2017). Figure 2.5 summarises the change leadership approaches according to their appeal as leader-centric or follower-centric.

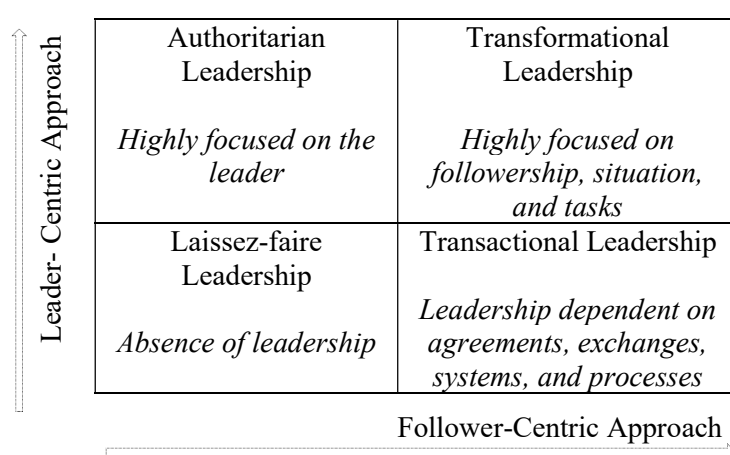


Figure 2.5 Leader/ Follower Centric Approaches to Leadership

The leader/follower centric matrix maps the four leadership approaches according to their appeal from highly leader-centric to highly follower-centric (Figure 2.5). Transformational leadership approach is highly follower-centric and is influenced by followership, situations, and tasks. On the other end of the spectrum, authoritarian leadership approach is highly leader-centric and is focused on the leader. Transactional leadership is based on both the leader and follower, and the approach is often negotiated based on situation variables and task demands. The laissez-faire approach is the absence of leadership and responsibility is often left to followers to determine.

#### 2.5.4.2 Teacher (Staff/Employee) Engagement

Based on the change leadership approach conceptual framework (Figure 2.4) key mediating impact to achieving change success is contingent on employee engagement in the change process. Employee engagement studies are more confined to the human resources management domain (Bakker et al., 2011), and are biased towards business settings

(Sonnentag, 2003). There are fewer studies attributed to the construct in education (Klassen et al., 2013). Some of these studies show that teacher engagement at work is vital as teachers' attitudes and motivation levels are transmitted to students (Klassen & Chiu, 2011; Roth, et al., 2007). In a reform based educational climate, teachers are expected to be committed to high-quality performance standards. Therefore, apart from resources, leadership is critical in guiding staff engagement in the change process (Lai et al., 2020; World Bank Group, 2016).

According to the World Bank Group (2016), teachers worldwide spend a substantial part of their lives working in schools, and schools already have a significant problem with low annual retention rates. For instance, a report published in USA noted that “one million teachers move in and out of schools annually, and between 40-50% quit within five years” (Neason, 2014). Along with other industries in the developed world, Beheshti (2018) reported in Forbes magazine that a staggering 87% of employees worldwide are not engaged. According to the Gallup (2018), only 13% of the employees worldwide (sampled across 142 countries) report that they are engaged in their work, that is, they are emotionally invested and focused on their work. The survey indicated that 63% are not engaged, while 24% reported as actively disengaged. In Australia, just 14% are engaged, with 15% actively disengaged and the remaining 71% not engaged (Gallup, 2018).

Aspects of teacher engagement and participation have been researched under various pseudonyms, such as ‘collective responsibility’ (Lee & Smith, 1996), ‘school-based professional community trust’ (Bryk, Camburn & Seashore Louise, 2013), and reform governance strategies such as ‘School-Based Management’ (Wohlstetter et al., 1994 cited in Bryk et al., 2013). Collectively, this research provides insight into teacher engagement processes in schools and is grounded in the proposition that teachers who work together and make decisions together will have increased buy-in for decisions and thus have greater impact on student learning and school achievement (Bryk et al., 2013; Lee & Smith, 1996).

According to State of America's Schools (SoA) report, of the 7,200 K-12 (Kindergarten to Year 12) teachers surveyed using the Gallup Q12, close to 70% of teachers self-reported as not engaged in their work (Gallup SoA, 2014). Out of these, 56% of teachers reported that they were not engaged in their work and 13% reported that they were “actively disengaged in their work”. Only 31% of teachers who reported being engaged in their work is of concern since disengaged teachers are less likely to “bring energy, insights, and resilience” to their daily work (Gallup SoA, 2014, p.18). They are also less likely to “trust, encourage, and engage their fellow teachers” (p.18), which are the three skills critical to teacher engagement.

Employee engagement is mostly researched in relation to followership (Bastardoza & Van Vugt, 2019; Gutermann et al., 2017). Employee engagement is defined as the strength of the mental and emotional connection employees feel toward their place of work (Lai et al., 2020; Wickham, 2019). Employee engagement is a positive state of work-related well-being, characterised by three elements: vigour, dedication, and absorption (Gutermann et al, 2017; Schaufeli, 2012; Bakker, Albrecht, & Leiter, 2010; Christian et al, 2011). However, literature on employee engagement within the context of change reveals that the change-related behaviours and attitudes, comprising elements of participation and commitment as perceived by followers, as largely lacking (Lai et al., 2020; Tian et al., 2020; Bakker & Xanthopoulou, 2013).

According to Christian, Garza and Slaughter (2011), employee engagement is a motivation concept. The core concepts of energy and involvement underpin staff engagement (Bakker et al., 2011). Saks (2006) proposed three domains of engagement: physical, emotional, and cognitive. These domains come under a higher-order engagement construct, whereby the individual domain is experienced simultaneously or holistically (Rich, LePine & Crawford, 2010; Sonnentag, 2003). Engagement reflects motivational (i.e., intrinsic and extrinsic) forces for behaviour (Schaufeli & Salanova, 2011; Berlach, 2010). The underlying engagement theories and models are briefly explored in next sections 2.5.4.2.1 – 2.5.4.2.3.

#### ***2.5.4.2.1 Kahn's Employee Engagement Theory***

According to William Kahn (1990), employee engagement is an enduring level of involvement by staff in being psychologically present in their roles and commitment to the organisation's values. He proposed that engagement happens when employees' personal selves are aligned with what they do in their work; "in engagement, people employ and express themselves physically, cognitively, and emotionally during role performances." (Kahn, 1990, p. 698). Hence, he suggested that being psychologically present has four dimensions: attentiveness, connectedness, integration, and a focus on role performances. The theory proposed that through an atmosphere of trust and safety, engagement can flourish (Christian et al., 2011). Individuals are engaged when tasks are challenging, clearly assigned, and varied, while autonomy is honoured (Shuck et al., 2012; Kahn, 1990).

Khan (1990) also suggested that engagement increases with "rewarding interpersonal interactions with co-workers" (p.707). Engaged employees are highly connected to their tasks, they are more efficient, and hence are more likely to take on more responsibilities (Christian,



Garza, & Slaughter, 2011). Engaged employees go beyond their assigned role to achieve the goals of the organisation (Christian et al., 2011; Kahn, 1990).

#### **2.5.4.2.2 Social Exchange Theory**

Alan Saks (2006) proposed the social exchange theory pertaining employee engagement. Social exchange theory explains why employees become more or less engaged in their jobs. The theory proposes that obligations are made through a series of interactions, in a give and take relationship, between parties who are in a state of reciprocal interdependence. This interaction is based on fairness between two parties that determines how successful the relationship is. The basic rule of social exchange theory is that relationships grow over time into trusting, loyal, and mutual coexistence, as long as the parties abide by agreed rules of exchange (AbuKhalifeh & Som, 2013).

Saks' (2006) studies focused on testing a model of the antecedents and consequences of job engagement and organisation engagements based on the social exchange theory. Saks found that the variables which lead to job engagement and organisation engagement are different. The consequences of job engagement and organisation engagement are also different. The findings revealed that there is a meaningful difference between the constructs of job engagement and organisation engagement (Saks, 2006).

#### **2.5.4.2.3 Sirota's Three-Factor Theory of Engagement**

The Sirota three-factor model incorporates Kahn (1990) and Saks' (2006) theories of engagement. According to Sirota's model (Sirota & Klein, 2014), presented in Figure 2.6, an engaged staff performs in a way that reflects greater level of commitment and invest their best knowledge, skills, and abilities in achieving the organisational goals. The model proposes that engagement is achieved through the satisfaction of three primary engagement factors:

- 1) *Achievement* – This involves taking pride in one's accomplishments, receiving recognition for it, and taking ownership in the organisation's achievements.
- 2) *Camaraderie* – This involves having good, positive, and cooperative relationships with other staff; a sense of community, belonging, and collegiality.
- 3) *Equity/fairness* – Being treated justly in relation to meeting basic conditions of employment with respect to all staff in the organisation, as well as in meeting minimum standards.



Figure 2.6 Sirota's Model of Employee Engagement (Sirota & Klein, 2014).

The Sirota's Three-Factor Theory of Engagement provides a useful model to examine the primary constructs of achievement, camaraderie and equity/fairness in Teacher-Engagement (Sirota & Klein, 2014; Sirota et al., 2005). The model connects the impacts on work engagement based on what teachers (employees) seek. The model is based on two dependent variables; (1) how teachers react, i.e., their level of engagement and performance, leading to (2) school reform outcomes, i.e., successful implementation of reforms in the school, school performance, improved school image, and teacher retention. The predictor (independent) variable in this model is 'what principals do'; i.e., the principal's leadership approach. Effective leadership, as the model implies, is based on how or what leaders do in response to meeting these desires, which in turn engages them (how teachers react) behaviourally, intellectually, and emotionally resulting in improved performance or outcomes. This is summarised in Figure 2.7.

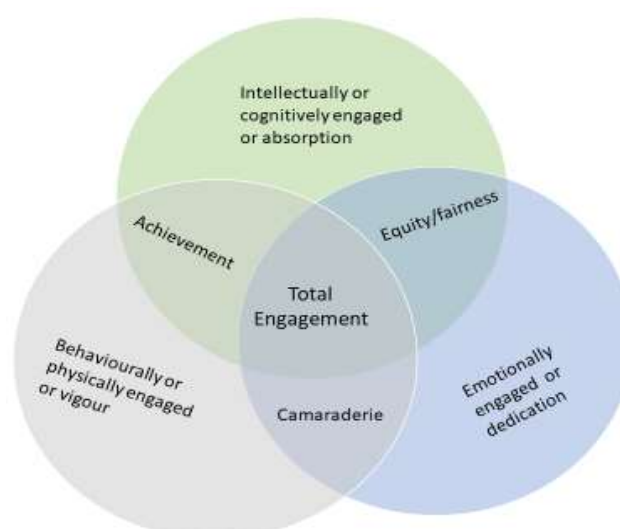


Figure 2.7 Staff Engagement and Satisfactory Factors (adapted from Sirota & Klein, 2014; Saks, 2006; Kahn, 1990)

According to Sirota's model of engagement, when the primary factors of achievement, camaraderie, and equity/fairness are achieved, teachers are highly engaged, eager, and willing to commit (Sirota et al., 2005). In turn they motivate and help others to improve their performance. They welcome the change initiatives and changes and develop greater level of customer satisfaction to increase the organisation's performance (Sirota & Kelin, 2013).

The Sirota three-factor model has been applied from assembly-line workers to research scientists, in North America, Europe, Latin America, and Asia, with consistency (Sirota & Klein 2014, p.3). Statistical analyses of the feedback indicated that the questions correlating most highly with employee morale and performance were those measuring the three factors - achievement, camaraderie, and equity/fairness. These factors complement the initial dimensions proposed by Kahn (1990): attentiveness, connectedness, integration, and a focus on role performances. It is also built on from Schaufeli et al. (2002), who termed them as: (a) vigour which entails behaviour with high energy, which is commonly termed behavioural-energetic; (b) dedication which entails being emotionally committed; and (c) absorption, which entails being intellectually focused. Applied to school context, these constructs are examined thus:

- *Intellectually or cognitively engaged or absorption.* Teachers fully concentrate and are engaged in their work, rather than just clocking in and out, constantly learn new ideas and innovations to improve their teaching and their professional development, while maintaining a generally positive view of the school and their relationship with it (Schwartz et al., 2014; Sirota & Klein, 2014; Bakker & Leiter, 2010; Schaufeli et al., 2002; Kahn, 1990).
- *Emotionally engaged or dedication.* Teachers are proud, passionate, enthusiastic, inspired, and challenged and feel a significant part of the school (Kannaiah & Shanthi, 2015; Sirota & Klein, 2014; Schaufeli et al., 2002; Kahn, 1990).
- *Behaviourally or physically engaged or vigour.* Teachers have high energy and mental resilience to go above and beyond their normal duties for the school, its stakeholders, and their colleagues (Schwartz et al., 2014; Sirota & Klein, 2014; Northouse, 2013; Schaufeli et al., 2002; Kahn, 1990).

Intellectually and behaviourally engaged employees demonstrate high sense of achievement in their roles. An intellectually and emotionally engaged workforce creates an environment where equity and fairness is established and celebrated. Behaviourally and emotionally engaged staff produce positive camaraderieship with a cooperative work

environment and a sense of community, belonging, and collegiality. The synergy is total engagement, as presented in Figure 2.7, where achievement is recognised; there is higher level of camaraderie and collegiality within a fair and equitable work environment.

However, there are weaknesses in these theories and models. For instance, Dewing and McCormack (2015) argued that the engagement concept applies to workers rather than including service users. They added that the concept focuses on cognitive knowledge and/or psychological processes. Further, they recommended a revised definition that balances different ways of engagement is required. They suggested that further research to define engagement in context to specific workplace environments and organisational culture.

Bakker, Albrecht and Leiter (2011) stated that engagement is an ambiguous idea and is often used synonymously with concepts, such as job satisfaction, organisational commitment, and workaholism. Schaufeli et al. (2002) considered work or employee engagement as an antipode of burnout, while others define it simply as employee happiness that leads to job satisfaction (Fisher, 2010; Rich et al., 2010). Although there are close relationships between engagement and other work-related motivation constructs, Rich et al. (2010) suggested that there is a need to study and tailor a more nuanced approach that engages teachers.

Shuck et al. (2012) suggested that an essential step in advancing research in work engagement is a context-specific, conceptual exploration of the construct of employee engagement. Shuck and colleagues' review of work engagement concluded that "the construct remains in a state of evolution, with disciplinary bridges needed between different communities of research" (p.11). Hence, a context specific teacher engagement tool, influenced by the principal leadership approach, is needed to tailor assess leadership approaches that influence the engagement of teachers comprising context-responsive physical, cognitive, and emotional dimensions (Rich et al., 2010).

Despite these concerns, employee engagement has rapidly become established as a major focus of academic research (Lai et al., 2020; Bastardoza & Van Vugt, 2019; Gutermann et al., 2017). The concerns are already the focus of research to further refine and develop work and employee engagement as a construct or discipline of study (Lai et al., 2020; Bastardoza & Van Vugt, 2019; Garcia-Sierra & Fernandez-Castro, 2018; Dewing & McCormack, 2015).

### 2.5.4.3 Principal-Teacher Relations

Based on the change leadership approach conceptual framework (Figure 2.4) another key mediating impact to achieving change success is contingent on quality of the relationship that exists between organisational leaders and employees in the change process. In this study, the principal-teacher relation is based on the Leader-Member Exchange (LMX) theory, which focuses on the interactions and quality of relationship between leaders and followers (Biehl, 2019; Northouse, 2018; Bauer & Erdogan, 2015; Uhl-Bien et al., 2014). According to Northouse (2018) the focus of LMX is on: (1) the leaders' traits, skills, styles, and behaviours; and (2) followers contingent on the situation and task. Therefore, effective leadership is contingent on effective leader-member exchanges that fosters the dyadic relationship between the leader and follower. This is summarised in Figure 2.8.

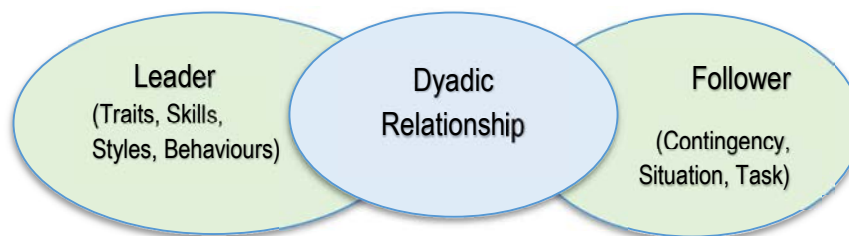


Figure 2.8 Leader-Member Exchange Theory (LMX) (Northouse, 2018)

According to process and relational leadership theories, leadership is a function of social and relational interactions (Biehl, 2019; Shaw-VanBuskirk et al., 2019; Schedlitzki & Edwards, 2018; Uhl-Bien et al., 2014), and is largely considered as an interactive process in leading change (Hechanova, et al., 2018; Gyimah, 2013). The theories focus on understanding the relational dynamics between leaders and followers. According to Shaw-VanBuskirk et al. (2019, p.650), “higher-quality LMX relationship predicts higher performance levels” and employee behaviour. Particularly, LMX theory proposes that relationship between leaders and members is central to change leadership processes leading to change transformations (Northouse, 2018, 2016; Bauer & Erdogan, 2015).

The importance of LMX in establishing leader-member relations, and follower outcomes, such as engagement and job performance, have been observed in several studies (Biehl, 2019; Gutermann et al, 2017; Bauer & Erdogan, 2015; Martin et al., 2015; Dulebohn et al., 2011; Restubog et al., 2010; Graen & Uhl-Bien, 1995). LMX is based on the level of trust, respect, communication, and mutual obligation and reciprocity that exists within a dyad (Biehl, 2019; Northouse, 2018; Bauer & Erdogan, 2015; Dulebohn et al., 2011). According to Graen and Uhl-Bien (1995), relationships: (1) are influenced by the “characteristics and

behaviours of leaders and members and occurs through a role-making process”; and (2) yields “very positive outcomes for leaders, followers, work units, and the organisation in general” (p.229). Gutermann et al. (2017) added that leader’s personal behaviours and level of engagement often plays a major factor in engaging followership. Role modelling the kind of behaviour leaders expect from followers naturally draws followership and, therefore, is an effective leader-member relations approach strategy.

However, the LMX has a number of conceptual weaknesses. First is the influence of culture and time on establishing effective relations. According to Gonzalez–Roma (2016), the influence of culture is largely underexplored. There is lack of detailed knowledge on how different values affect leaders’ and followers’ perceptions of effective exchanges and the time it takes to develop relations. Bauer and Erdogan (2015), in their research into assignments of expatriate managers around the globe, highlighted the need for expatriate managers to be mindful of cultural differences between themselves and the local workforce to ensure the development of effective exchanges impacting individual and organisational performance. Second, Gonzalez–Roma (2016) argued that it is not clear how single dyads affect each other and how inequality in dyadic relationships affects the overall performance of the work group. For instance, Qian et al. (2015) warn that previous negative experiences and leader-member relations may influence leaders’ and followers’ current and future efforts in developing relationships. Finally, Gonzalez–Roma (2016) added that, there is still conceptual ambiguity concerning the nature of exchange relationships with a lack of empirical insight into how these change over time and how role negotiation occurs.

Despite these criticisms, the LMX theory has added to the conceptual understanding of leadership processes significantly through its unique focus on the dyadic individual leader-follower relationships. The LMX theory also highlights the importance of communication and the relational nature of leadership (Shaw-VanBuskirk et al., 2019; Gonzalez–Roma, 2016; Bauer & Erdogan, 2015; Meng & Wu, 2015).

According to OECD (2012a, b) reports, current trends in educational leadership foreground the importance of principals’ social relationships in shaping learning climates in schools, especially in yielding higher levels of teacher engagement (Vieluf et al., 2012). Brookover et al. (2005) have also established that the quality of principal-teacher relations does impact on teacher engagement and eventual educational outcomes in school. In the United States, nearly half of the states have included principal-teacher relations in principal evaluations (Connelly & Bartoletti, 2012), and interest in transformational and distributed

leadership among principals and teachers is evident in both educational practice and research (Hulpia et al., 2011; Scribner et al., 2007; Spillane, 2006).

There is greater emphasis on strong social relationships among and between students and teachers, as a critical contributor to improved learning (Mainhard et al., 2011; Moolenaar et al., 2011; Price, 2011; Spilt et al., 2011; Pitts and Spillane, 2009). However, there is less focus on the relationship between principals and teachers (Barnett & McCormick, 2016). Teachers form an important part of the social context of schools within which principals administrate. Principals depend heavily on their teachers to achieve school goals. Studies suggest that leadership affects student learning indirectly, through conditions such as school structure, school culture, and teacher engagement (Thoonen et al., 2012; Hallinger & Heck, 2010).

However, while current work on educational leadership and its connection to system-wide reforms suggests the importance of this social context for successful leadership, there is limited understanding of the nature, quality, and importance of principal-teacher relationships for successful school learning environments (Finnigan et al., 2013; Harris & Dinham, 2011; Day & Johansson, 2009). It is proposed that leadership influence on the overall reform changes and improvement to students' learning, works through the principals' influence on teachers and the learning climate that ensues (Hallinger, 2003; Heck & Hallinger, 2010). LMX, transformational and transactional theories provide the theoretical basis for observing principal-teacher relationships that influence teacher engagement and learning climates in schools (Hulpia et al., 2011; Spillane, 2006). Gutermann et al. (2017) stated that few studies have found that LMX positively relates to and impacts employee engagement and performance (Gutermann et al, 2017; Breevaart et al., 2015).

According to Myers (2006), the application of the LMX theory in schools is limited. The significant components of LMX theory, such as trust, respect, mutual obligation, and collaboration among teachers are important relational elements for effective schools (The Wallace Foundation, 2013). Grant, Seiders and Hindman (2013) posited that building high level of trust among teachers is critical to cultivating high-quality relationships in schools. Hence, the LMX theory provides the theoretical framework for observing relationship dynamics in school organisations, due to the similarity of the language used in educational literature (The Wallace Foundation, 2013).

#### **2.5.4.4 Change Results**

Based on the change leadership approach conceptual framework (Figure 2.4) change results are outcomes of the change process. Change results are the end process of change. Based on the core philosophy of change theories covered earlier in section 2.3 (Tables 2.3 and 2.4), change results are categorised into: first-, second-, third- and fourth-order. First- and second-order changes are incremental change results that evolve out of existing staff, work units, or teams/groups, and processes in the organisation. Change must initially enhance or correct existing aspects of an organisation, often focusing on the improvement of a skill or process, at the individual and group/team level, and at the divisional or sub-system levels (Cameron & Green, 2020). Such incremental change efforts are often targeted to improve individual behaviours (Burnes, 2004) or adjustments to the existing systems and processes (Daft, 2016; Chikere & Nwoka, 2015).

Third- and fourth-order changes are transformational or “break with the past” change results (Van de Ven & Poole, 1995, p.523). These are the transitional or transformational change results (Burnes, 2004). Transitional change results can be episodic, planned, or radical outcomes that are different from the existing systems and processes (Kuipers et al., 2014). Transformational change results are a shift in paradigm and assumptions made by the organisation leaders and members (Cameron & Green, 2020). Transformations can significantly alter the organisation in terms of its structure, processes, culture, and strategy (Kuipers et al., 2014; Ackoff, 2010; Burnes, 2004; Van de Ven & Poole, 1995).

#### **2.5.5 Investigating Principal Change Leadership Approach in PNG Secondary Schools**

The change leadership approach conceptual framework indicates that principals’ change leadership approaches influence: (1) teacher engagement; (2) principal-teacher relations; and (3) impacts on education reform outputs and outcomes. These constructs are further explored in the research model.

##### **2.5.5.1 Change Leadership Approach Research Model**

Based on the change leadership approach conceptual framework (Figure 2.4), the change models and theories (Table 2.8), and the organisational change and change leadership process model (Figure 2.9), the research model is developed. The Change Leadership Approach (CLA) Research Model is expanded to reflect the multidimensional nature of leadership influence and is presented in Figure 2.10. The study incorporates change



leadership approaches, leader-member relations, and employee engagement constructs into the CLA Research Model. The CLA Research Model proposes that principals' leadership approaches have a direct impact on: (1) principal-teacher relations; (2) teacher engagement; and (3) change results. The CLA Research Model also proposes that teacher engagement is also influenced by principal-teacher relations. This suggests that teacher engagement is also contingent on the good relations established in school organisations. The indirect impact on change results (school change outputs and overall education reform outcomes) are also proposed in the research model. The model proposes that the overall education reform outcome is directly dependent on school change output; that is, individual school changes amount to the education reform success.

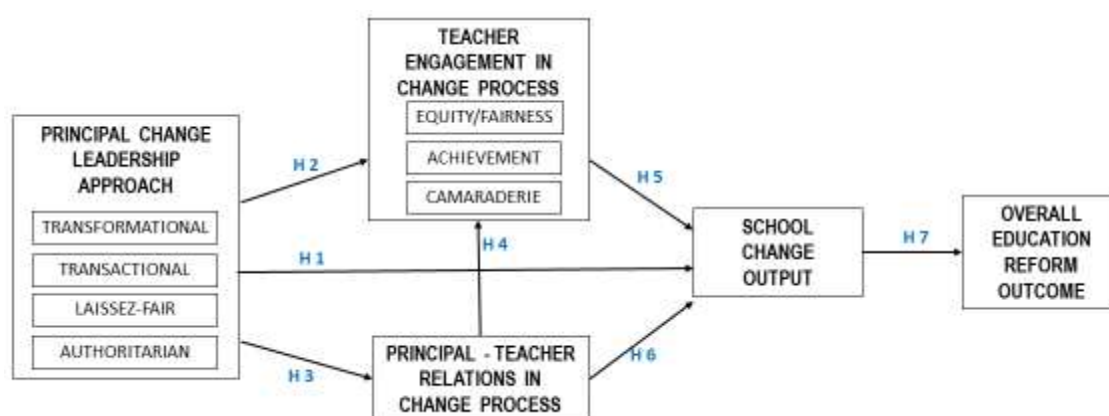


Figure 2.9 Change Leadership Approach (CLA) Research Model.

The CLA Research Model is a dynamic multidimensional total systems model. The CLA Research Model describes principal change leadership approaches as inputs that impact on principal teacher relations and teacher engagement as throughputs, in the change processes. In the present study, transformational, transactional, laissez-faire, and authoritarian leadership are considered relevant change leadership approaches that yield follower relationship and engagement (Faupel & Süß, 2019; Uslu, 2019; Al-Malki & Juan, 2018; Jones, 2018; Harrison, 2018; Wang & Guan, 2018; Schaubroeck et al., 2017; Xenikou, 2017; Allen et al., 2016; Choi et al., 2016; Sultana et al., 2015).

The CLA Research Model indicates the seven causal pathways hypothesised. Based on the literature gaps, research propositions were hypothesised, to test the research questions. These are articulated in the next section.

### **2.5.5.2 Change Leadership Approaches: Literature Gaps and Hypothesis**

The literature explored on change leadership is based largely on the static and predictable nature of organisations (Hechanova, et al., 2018). The literature is also biased towards the Western leadership models and practices (Schedlitzki & Edwards, 2018; Tian & Sanchez, 2017).

Leadership studies are biased towards a leader-centric approach based on the trait and behavioural theories. There are fewer studies on leadership as a relational construct based on followership, the nature of the tasks, and situation variables (Schedlitzki & Edwards, 2018; Crevani & Endrissat, 2016). According to the process theory of leadership, the follower-centric perspective proposes that followers have their own model or concept of an ideal leader (Henkel & Bourdeau, 2018; Voet et al., 2015). Therefore, greater employee engagement to achieve change outcomes is contingent upon aligning the change leadership approaches to meet follower perspectives and requirements (Hechanova, et al., 2018).

There is paucity of leadership literature in PNG (Prideaux, 2018, 2008, 2006). Generally, studies that examine change leadership in schools are also lacking (OECD, 2016; World Bank Group, 2016). Existing studies contribute to balancing the literature which is heavily weighted towards school learning improvements and biased on administration and management (Hallinger & Heck, 2010). In light of the overwhelming lack of empirical studies in change leadership in PNG this study proposes to explore the change leadership approaches of PNG secondary school principals in implementing the education reforms.

#### **2.5.5.2.1 Proposed Hypothesis**

Drawing on the role of leadership in organisations (Hattie, 2015; Leithwood & Mascal, 2008), Jacobson (2011) described leadership practices that improve student achievement as a result of reform changes as: (1) establishing direction; (2) building capacity among members of the school community; and (3) restructuring the school as needed. Transformational, transactional, laissez-faire, and authoritarian leadership approaches, in their respective settings, are proposed to generally impact on principal-teacher relations (Shafique & Kalyar, 2018; Spaten, 2016; Mainhard et al., 2011; Moolenaar et al., 2011; Spilt et al., 2011) and teacher engagement (Bakkker et al., 2010; Waddell et al., 2019; Hayes, 2014) in achieving reform change results (outcomes). Based on earlier findings, the present study aims to examine how change leadership approaches impact on change results (outcomes) in the implementation of education reforms in PNG secondary schools. That is, the eventual

success of the education reforms in a school is contingent upon the leadership approach of the principal. Hence, the present study proposes that:

***Hypothesis 1 (H1). The principal's change leadership approach influences school change results: school outputs and the overall education reform outcomes.***

### **2.5.5.3 Teacher Engagement: - Literature Gaps and Hypothesis**

The literature explored on employee engagement studies are mostly confined to the business setting and found in the human resources management literature (Bakker et al., 2011). Public sector organisations use employee engagement as a performance evaluation tool (Klassen et al., 2013). Employee engagement research is often based on followers within a static operating (work) environment (Lai et al., 2020; Bakker & Xanthopoulou, 2013). Therefore, there is need for context specific studies in public organisations, such as schools (Shuck et al., 2012; Klassen and Chiu, 2011; Rich et al., 2010; Northouse, 2013) in the context of change leadership. There has been no empirical study in PNG to indicate the level of staff engagement in the workplace. More teacher engagement studies are needed to assess change success in implementing educational changes (OECD, 2012a; Yukl, 2013). In light of the lack of empirical studies in staff engagement in PNG this study proposes to explore teacher engagement in PNG secondary schools in implementing the education reforms.

#### ***2.5.5.3.1 Proposed Hypothesis***

Based on the employee engagement theories and models explored, the present study aimed to examine how change leadership approaches of principals' impact on teacher engagement in the implementation of education reforms in PNG secondary schools. This is based on the premise that the more the teachers perceive the principal's leadership approach to be fair and equitable, fostering achievement and camaraderie among staff (Sirota & Klein, 2014), the more engaged teachers are in implementing reform change programmes in schools (Schaufeli & Salanova, 2011). Hence, the present study proposes that:

***Hypothesis 2 (H2). Principal's change leadership approach influences teacher engagement in change process.***

#### **2.5.5.4 Principal -Teacher Relations: Literature Gaps and Hypotheses**

The literature explored highlights that there are limited number of studies on leader-member relations and its link to work engagement, and specifically in schools (Ganon-Shilon & Schechter, 2019; OECD, 2016; Bauer & Erdogan, 2015; Bridwell-Mitchell, 2015; Hallinger & Ko, 2015; The Wallace Foundation, 2013; Lunenburg, 2012, 2010;). Extant literature highlights that leader-employee relations positively impact employee engagement and performance (Gutermann et al., 2017; Breevaart et al., 2015). However, most studies are confined to business settings (Bakker et al., 2011). Limited studies have been conducted in PNG, and in secondary schools, highlighting the contributions this study adds to the context specific literature (Northouse, 2013; Shuck et al., 2012; Harris & Dinham, 2011; Klassen & Chiu, 2011; Rich et al., 2010). In light of the lack of empirical studies in leader-member relations in PNG this study proposes to explore principal- teacher relations linking to staff engagement in PNG secondary schools in implementing the education reforms.

##### ***2.5.5.4.1 Proposed Hypotheses***

Expanding on these earlier findings, the present study aims to examine how LMX may explain staff engagement impacts between leaders and followers. Positive leader-member relations in turn engage employees to commit to tasks at hand further resulting in positive performance outcomes. This is premised on the propositions that: (1) effective leadership approaches influence the quality of the relations between the principal and teachers (Heck & Hallinger, 2010; Wheelan & Kesselring, 2005; Brookover et al., 2005; Hallinger, 2003); and, (2) leadership is co-created in that teacher engagement is also influenced by the quality of principal-teacher relations (Fairhurst et al., 2020; Grant et al., 2013; The Wallace Foundation, 2013). Hence, to examine this in change leadership approaches in PNG secondary schools, two propositions are made:

***Hypothesis 3 (H3). Principal's change leadership approaches influence principal-teacher relations in change process.***

***Hypothesis 4 (H4). Principal-teacher relations influences teacher engagement in change process.***

#### **2.5.5.5 Change Results (Outputs and Outcomes): Literature Gaps and Hypotheses**

According to the literature explored, studies have established that leaders have an indirect impact on change results through their employees (McDonnell & Weatherford,

2016; Danisman et al., 2015; Young & Lewis, 2015; Bass, 2008; Bass & Stogdill, 1990). Studies in schools have also noted that school principals indirectly impact on school outcomes (Leithwood et al., 2020; Ganon-Shilon & Schechter, 2019; Gawlik, 2015; Hallinger & Ko, 2015; Yukl, 2013; Bhatti et al., 2012; Chaudhry & Javed, 2012; Oreg & Berson, 2011; Tajasom & Ahmad, 2011). Few studies conducted in PNG have established the direct impact teachers have on student learning (Lahui-Ako, 2001), but have not fully explored the indirect impact principals have on school results. Based on the relationship between principals' change leadership approaches, and the impact it has on principal-teacher relations and teacher engagement, this study proposes to: (1) establish the link between the principal leadership approach and change results; and (2) identify the influence or impact process among the constructs observed.

Additionally, the lack of empirical investigation into the progress of the PNG education reforms is reportedly lacking (PNGLSR, 2016). This has prompted this study to examine change leadership approaches used in schools. The findings provide invaluable insight into improving change leadership approaches in schools in implementing reform changes. In light of the literature explored on change leadership approaches this study proposes that education reform change outcomes are a result of establishing principal-teacher relations and in engaging teachers in PNG secondary schools.

#### ***2.5.5.5.1 Proposed Hypotheses***

Based on the proposition that engaged teachers (Sirota & Klein, 2014; Shuck & Wollard, 2010; Robischon, 2009), and effective principal-teacher relations (Heck & Hallinger, 2010; Brookover et al., 2005; Wheelan & Kesselring, 2005; Hallinger, 2003), impact the overall education reform outcomes (OECD, 2016), three propositions are made:

***Hypothesis 5 (H5). Teacher engagement in change process influence school change outputs.***

***Hypothesis 6 (H6). Principal-teacher relations in change process influence school change outputs.***

***Hypothesis 7 (H7). School change outputs influence overall education reform outcomes.***

### 2.5.6 Summary of Leading Education Reform Changes in PNG Secondary Schools.

To address the research problem the literature was examined to explore change leadership approaches in implementing education reforms in PNG secondary schools. Education reform outcomes are contingent on change leadership approach as a predictor variable and teacher engagement and principal-teacher relations, as mediating variables. The extant literature highlights gaps in change leadership approaches explored in this study. Based on the proposition that reform outcomes are based on principal-teacher relations and teacher engagement, hypotheses are proposed to research the relationships between variables. The key literature gaps and proposed hypotheses are summarised in Table 2.7 to investigate the impact of change leadership approaches in implementing the education reform in PNG secondary schools guided by the research questions.

Table 2.7 Research gaps and proposed hypotheses

Research Gap (RG)	Proposed Hypotheses (H)
<b>RG1.</b> Change leadership literature is based on the static and predictable nature of organisations.	<b>H1.</b> The principal's change leadership approach influences school change results: school outputs and the overall education reform outcomes.
<b>RG2.</b> Studies focus more on the role of leaders in organisational change process as opposed to leading change processes.	<b>H2.</b> Principal's change leadership approach influences teacher engagement in change process.
<b>RG3.</b> Literature is biased towards leader-centric, rather than follower-centric approaches to change leadership.	<b>H3.</b> Principal's change leadership approach influence principal-teacher relations in change process.
<b>RG4.</b> Organisational change literature is biased towards change management, not change leadership.	<b>H4.</b> Principal-teacher relations influences teacher engagement in change process
<b>RG5.</b> Lack of change leadership studies in PNG	<b>H5.</b> Teacher engagement in change process influence school change outputs.
<b>RG6.</b> Lack of change leadership approach model that examines the implementation process of organisational change in a PNG context	<b>H6.</b> Principal-teacher relations in change process influence school change outputs.
	<b>H7.</b> School change outputs influence overall education reform outcomes.

Leading changes in the education reform have protracted since their introduction in 1993. Leadership, at the school level, has been identified as one of the causes for the protracted progress. The extant literature highlights that leading change remains a global challenge and is, therefore, more challenging in PNG.

To investigate change leadership in PNG secondary schools, a change leadership approach framework was developed focusing on (1) examining transformational, transactional, laissez-faire and authoritarian leadership approaches impact on, (2) principal-

teacher relations and teacher engagement with eventual impact on, (3) school change outputs and overall education reform outcomes.

Based on the gaps in the extant literature, research hypotheses were proposed to investigate the research question in addressing the research problem using the CLA Research Model. The research gaps, research questions and proposed hypotheses to be tested are summarised in Table 2.9.

Table 2.8 Research Gaps, Questions and Hypotheses

Research Gap (RG)	Research Question (RQ)	Proposed Hypotheses (H)
<b>RG1.</b> Change leadership literature is based on the static and predictable nature of organisations. <b>RG2.</b> Studies focus more on the role of leaders in organisational change process as opposed to leading change processes. <b>RG3.</b> Literature is biased towards leader-centric, rather than follower-centric approaches to change leadership. <b>RG4.</b> Organisational change literature is biased towards change management, not change leadership. <b>RG5.</b> Lack of change leadership studies in PNG <b>RG6.</b> Lack of change leadership approach model that examines the implementation process of organisational change in a PNG context	<b>RQ1.</b> What leadership approach(es) do secondary school principals in PNG use to lead reform changes?	<b>H2.</b> Principal's change leadership approach influences teacher engagement in change process. <b>H3.</b> Principal's change leadership approach influence principal-teacher relations in change process.
	<b>RQ2.</b> What leadership approach(es) influence teacher engagement in implementing reform changes?	<b>H2.</b> Principal's change leadership approach influences teacher engagement in change process.
	<b>RQ3.</b> What leadership approach(es) influence principal-teacher relations in implementing reform changes?	<b>H3.</b> Principal's change leadership approach influence principal-teacher relations in change process. <b>H4.</b> Principal-teacher relations influences teacher engagement in change process
	<b>RQ4.</b> Does teacher engagement influence school change outputs in implementing reform changes?	<b>H5.</b> Teacher engagement in change process influence school change outputs. <b>H7.</b> School change outputs influence overall education reform outcomes.
	<b>RQ5.</b> Does principal-teacher relation influence school change outputs in implementing reform changes?	<b>H6.</b> Principal-teacher relations in change process influence school change outputs.
	<b>RQ6.</b> Does principal change leadership approach influence overall education reform outcome in implementing reform changes?	<b>H1.</b> The principal's change leadership approach influences school change results: school outputs and the overall education reform outcomes.

## 2.6 Chapter 2 Summary

This chapter has explored the literature to provide the theoretical framework in addressing the research problem in this study. This is summarised in Figure 2.11.

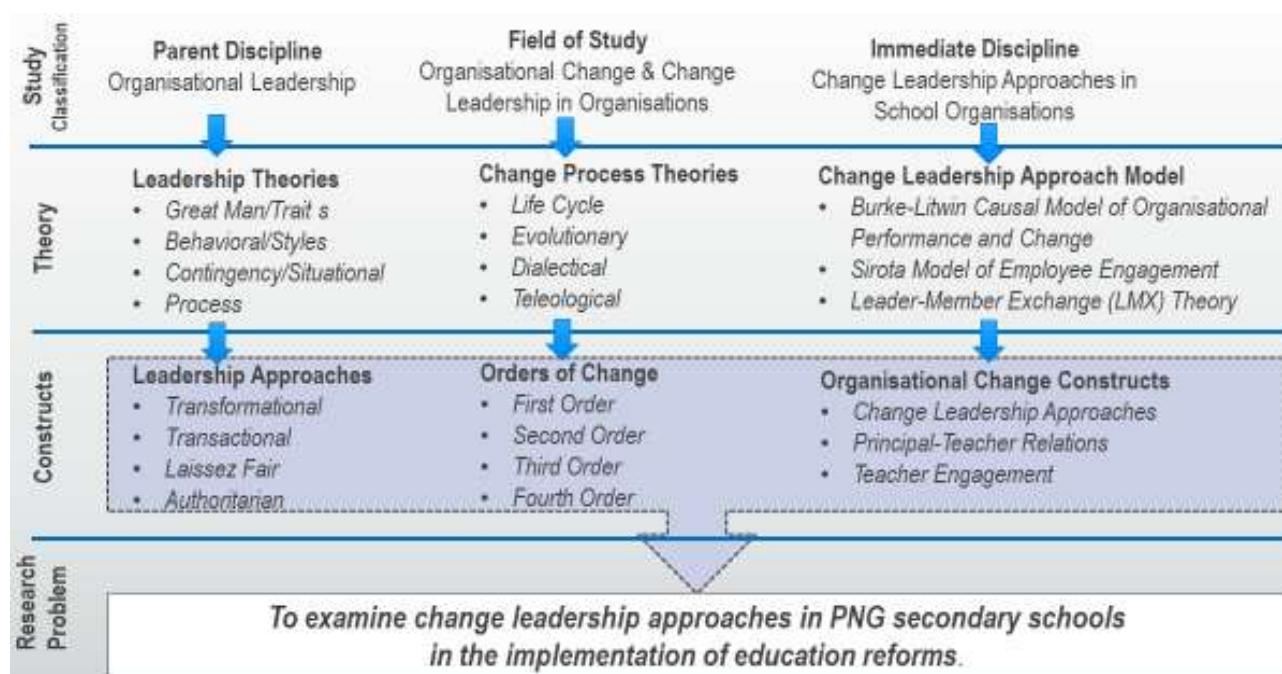


Figure 2.10 Theoretical framework

Transformational, transactional, laissez-faire, and authoritarian leadership theories underline the change leadership approaches examined in the study. These leadership approaches are observed to: (1) build effective leader-member relations; and (2) engage staff, to achieve change results in organisations (Northouse, 2013; Yukl, 2013). The different schools of leadership - great man, trait, behavioural, styles, situational, contingency, and process theories - define the practice of leadership on the leader and followership. The leader-centric theories focus on the leader. The situational and contingency theories place leadership within the context of situations and tasks and on followership. The process theory embeds leadership as an interaction among actors within an organisation.

Change is defined as a process. Life cycle, evolutionary, dialectical, and teleological theories define the nature of change and guide approaches in examining change processes. The change theories and models guide the development of the change leadership approach model in the study. The core philosophies of the four change archetypes explored enable the study to determine incremental and transformational change results (Van de Ven & Poole,



1995) at the individual, team or group, organisation, and system wide levels (Cameron & Green 2020).

Based on the Burke-Litwin causal model of organisational performance and change process model, Sirota model of employee engagement, and leader-member exchange theory the CLA conceptual framework and CLA Research Model was developed. The CLA Research Model proposes to examine change leadership approaches that PNG secondary school principals use to: (1) establish principal-teacher relations, and (2) engage teachers, in implementing education reform changes. The literature explored the underlying theories and models that underpin these constructs to inform the research. The change models and theories for investigating the research problem are summarised in Table 2.8.

Table 2.9 Change models and theories for investigating research problem

Model/Theory	Key features relevant to investigating research problem	Reference
Burke-Litwin causal model of Organisational performance and change model (Figure 2.3)	<ul style="list-style-type: none"> <li>Leadership is placed at the top of change</li> <li>Focus both on organisational leadership and managerialism</li> <li>Allows flexibility and visibility to monitor change as an ongoing process</li> <li>Total system model, impact on one element has impact on others</li> <li>Internal and external (environmental) factors are considered</li> <li>Identifies 12 different drivers (elements) of change</li> <li>Inputs and outputs are clearly identified</li> </ul>	Burke, 2013; Jones & Brazzel, 2006; Cummings & Worley, 2005; Chawane et al., 2003; Burke & Litwin, 1992
Sirota's Model of employee engagement (Figure 2.6)	<ul style="list-style-type: none"> <li>Identifies the primary constructs of achievement, camaraderie and equity/fairness in employee engagement</li> <li>Connects the causal impacts of on work engagement on what leaders do to meet what employees seek, and how employees reach to impact on business outcomes</li> <li>Total engagement is achieved when employees are: (1) intellectually or cognitively engaged or absorbed; (2) emotionally engaged or dedicated; and (3) behaviourally or physically engaged or vigorous</li> </ul>	Kannaiah & Shanthi, 2015; Schwartz et al., 2014; Sirota & Klein, 2014; Kahn, 1990
Leader-Member Exchange (LMX) (Figure 2.8)	<ul style="list-style-type: none"> <li>Leadership is a function of social and relational interactions</li> <li>Effective leadership is contingent on effective leader-member exchanges</li> <li>Dynamic dyadic relationships create agency for positive employee behaviour and engagement</li> </ul>	Biehl, 2019; Shaw-VanBuskirk et al., 2019; Northouse, 2018

Based on the extant literature, change is a process over time (Evans, 2020; Heracleous & Bartunek, 2020; Waddell et al., 2019), and leadership is central to influencing organisational change (Cameron & Green, 2020; Northouse, 2018). Three factors provide the elements for a specific model to examine organisational change. First, the Burke-Litwin causal model (Figure 2.3) of organisational performance and change (Burke & Litwin, 1992) identifies leadership is the critical element in driving change. Leaders integrate with the

environment and influence change within the organisation to meet external demands and changes. Second, based on the extant literature, employee relations and employee engagement are key predictor variables to mediate change in organisations. Finally, change in organisations is a process over time as demonstrated in Figure 2.11. Within that process in time, change leadership approaches are critical in engaging employees (teachers/staff) to achieving the overall change objectives and outcomes.

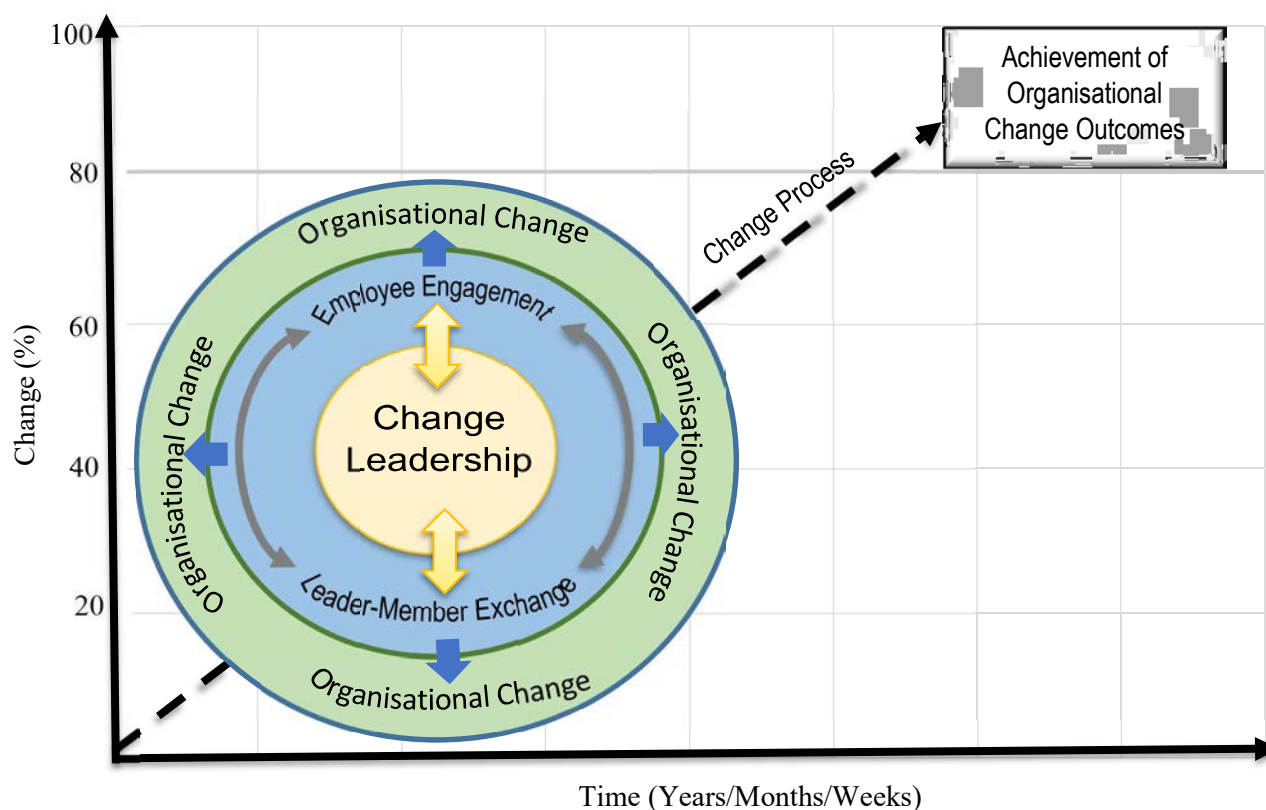


Figure 2.11 Organisational change and change leadership process model

The organisational change and change leadership process model (Figure 2.9) places change leadership at the centre to influencing change. Organisational leaders' change approach is mediated through leader-member exchange (LMX) or principal-teacher relations and employee or teacher engagement, to impact on change in the implementation process. According to the model, the initial changes happen in the process of implementation when effective employee relations are established and employees are engaged. Over time, organisational change outcomes are achieved.

The CLA Research Model guided the study in identifying gaps in the literature. The research hypotheses were proposed and research questions were developed to find answers to

the research problem. Based on the literature review and research model developed in this chapter, the next chapter presents the research instruments developed and methods used to collect and analyse data.

## **CHAPTER 3. RESEARCH METHODOLOGY**

### **3.1 Introduction**

Chapter 2 reviewed the extant literature on leadership, change, and change leadership approaches with reference to leading change in school organisations. This chapter describes the research approach and methods adopted to obtain data to test the hypotheses developed in the Change Leadership Approach (CLA) Research Model. Section 3.2 presents an overview of the research approach setting and methodology. Section 3.3 reports on the sample size and sampling procedures. Section 3.4 describes the data survey instruments and data collection procedures. Section 3.5 describes the data analysis procedures and measures. Lastly, section 3.6 concludes the chapter.

### **3.2 Research Methodology**

#### **3.2.1 Research Approach Paradigm**

The research adopts the positivist and interpretivist paradigms. A positivist paradigm collects data on observable behaviours to test theory to broaden understanding of the phenomena (Kivunja & Kuyini, 2017; Collins, 2010). The positivist paradigm reflects the scientific inquiry in that the real world can be observed objectively and measured using quantitative and qualitative approaches (Yin, 2002). The positivist approach stresses the importance and reliability of data in doing quantitative research in large scale surveys such as this, covering a study population of 3,757 secondary school teachers throughout PNG, to uncover change leadership approach impacts in implementing education reforms. The interpretive paradigm discovers meanings and interpretations by studying cases intensively in their natural settings and using the resulting data for analytic induction (Wilson, 2010). Interpretive paradigm adopts an ontological position which assumes that reality is constructed and arises out of social interaction (Denzin & Lincoln, 2005). The interpretive paradigm leads to qualitative research. The CLA Research Model assumptions are in line with the positivist and interpretivist paradigms.

To collect the quantitative data, a questionnaire survey was used. The qualitative data were captured using semi-structured interviews. The conduct of the research was guided by the James Cook University's code for the responsible conduct of research policy and principles for ethical conduct on privacy, accuracy, property, and accessibility

(<https://www.jcu.edu.au/jcu-connect/ethics-and-integrity/human-ethics>). Data collected were safeguarded and analysed. Fundamentally, the research conduct was considerate of individual participant's right to dignity, respect, and the right to make choices (Kivunja & Kuyini, 2017).

### **3.2.2 Mixed-Methods Research Design Approach**

This study used a mixed methods research design approach, which is most suited to the context of leadership and the perceived leadership approaches and constructs measured (König & Kansteiner, 2020; Hechanova et al., 2018; Stenz et al., 2012). Marshall (1996) noted, "...the choice between quantitative and qualitative research methods should be determined by the research question, not by the preference of the researcher" (pg. 522). The 'what' and 'does' questions require answers in both quantitative and qualitative formats.

Combining the two research approaches generates an appreciation for the current reality which provides the patterns to predict emerging trends and insights. The mixed method approach avoids "blind spots of a mono-method study, as well as expanding and strengthening the conclusions of a study." (König & Kansteiner, 2020, p.1). Pertaining to this study, the mixed-methods approach involves descriptive and confirmatory research approaches methods (Shields & Rangarjan, 2013). The descriptive research captures participant characteristics (demographics) and allows for statistical investigation. Confirmatory research identifies measures around leadership approaches of school principals and targets their measured impact with building relations and engaging teachers in implementing the education reform change process in PNG secondary schools.

Combining both methods provides a more complete analysis (Saunders et al., 2012; Creswell & Plano Clark, 2011; Zhang, 2010). The quantitative data from teachers and qualitative interview data from the principals were triangulated with the literature, and analysed to determine areas of agreements or convergence, as well as areas of divergence (DeJonckheere & Vaughn, 2019; Carter et al., 2014).

### **3.2.3 Methodological Approach**

The CLA Research Model (Figure 2.10, chapter 2) facilitates empirical testing of theoretical relationship pathways extracted from literature and hypotheses, presented in chapter two. To test the hypotheses in this model, data is collected using questionnaire implemented onsite in school locations.

The survey is based on quantitative methods grounded in positivist paradigm of enquiry (Kivunja & Kuyini, 2017). The positivist perspective underlies deductive methods

with demonstrated hypothesised relationships (Garson, 2015). Such hypothesised relationships are used to quantify observable consequences by running statistical analyses for obtaining results testing whether these hypothesised relationships hold or not (Garson, 2015).

According to Cooper and Schindler (2001), causal hypotheses provide the basis for directing the nature of constructs under investigation. Causal hypothesis testing is suitable for scientific application, especially when the research approach aims to test assumptions underlying scientific observations (Garson, 2015). From an objective approach, this research statistically answers the research questions.

### **3.3 Sampling Procedures**

#### **3.3.1 Survey Population and Sample Size**

The standard statistical analysis, including structural equation modelling (SEM), recommends a sample of twenty cases per construct (Hair et al., 2010) to test SEM path models. An adequate sample size is therefore required to assess the significance of the SEM path model in the CLA Research Model. To maximise survey response rate, this survey was conducted on school locations.

There are 3,757 teachers teaching in 98 secondary schools currently undergoing reform process throughout PNG (NDoE Handbook, 2018). A total of 72 secondary schools were randomly selected and were formally written to, to participate in the survey. The schools were selected in every province in each of the four regions of the country. Follow-up phone calls, texts, and WhatsApp messages were sent to gauge feedback.

To minimise sampling error from across the country and for convenience, cluster random sampling methodology was used. Cluster random sampling is a way to randomly select participants with a similar background and operating environment that are geographically spread out (Dillman et al., 2009). Cluster random sampling used in this research survey ensured that a reasonable sample size was surveyed that was representative of the total secondary school teacher population. Secondary schools are geographically clustered in the four regions of the country. To target a reasonable sample, schools were randomly selected in provinces within each of the four regions, from whence teachers were randomly selected to participate.

Probability sampling methodology was used to determine the sample size and sampling errors. In probability sampling “it is the size of the sample, not the proportion of the

population sampled, that affects precision” (Dillman et al., 2009, p55). Hence to achieve greater precision, the following statistical formula is widely used to determine the size of the complete sample needed for a study (Dillman et al, 2009):

$$N_s = \frac{(N_p)(p)(1-p)}{(N_p - 1)(B/C)^2 + (p)(1-p)}$$

Where:

$N_s$  = completed sample size needed

$N_p$  = size of population

$P$  = proportion of the population expected to fill in the survey (80/20 split in this survey)

$B$  = acceptable level of sampling error or margin of error (in this study, this was 0.03 = ±3%)

$C$  = Z score associated with the confidence level (in this study, this was 1.96 which corresponds to the 95% level)

Hence, from the 3,757 teachers (population size) a sample size of 578 was targeted to achieve an estimate sample with a margin of error of ±3% with a 95% confidence level. This is shown below:

$$N_s = \frac{(3,757)(0.8)(1-0.8)}{(3,757-1)(0.3/1.96)^2 + (0.8)(1-0.3)} = 578$$

### 3.3.2 The Unit of Analysis

The unit of analysis refers to what is being focused on in a study to produce knowledge about a subject under investigation (Crevani & Endrissat, 2016). The unit of analysis in this study refers to the constructs in the CLA Research Model under observation. It provides the answers for “the ‘what’ and ‘who’ is being studied in a business research” (Kumar, 2018, p.71). In this study, the ‘what’ constituted the six construct theories (transformational, transactional, laissez-faire, authoritarian leadership, engagement, and leader-member relations theories) used to investigate principal change leadership approaches and its impacts on the CLA Research Model. The ‘who’ refers to the school principal’s change leadership approach, as perceived (assessed) by teachers in selected schools in the study. The change impacts and results of the change leadership approaches, as per the CLA Research Model, are further assessed and validated using interviews and secondary data from the annual reports on the education reform in PNG.

### 3.3.3 Construct Measurements

It is acknowledged that many important conceptions of change leadership and change leadership approaches exist in literature. This study focuses on six change leadership

approach constructs in the context of leading change: (1) transformational; (2) transactional; (3) laissez-faire; (4) authoritarian; (5) staff engagement; and (6) leader-member relations. These have been researched most extensively (Yukl, 2013). Theoretical studies argue that various leadership theories are based on particular theoretical foundations and are, therefore, distinct constructs (Bormann & Rowold, 2018). However, empirical research studies also reveal considerable overlaps between these leadership constructs (Bormann & Rowold, 2018; Wang et al., 2005). For instance, based on a study of various industries in China (Wang et al., 2016) and in South Africa (Mahembe, Engelbrecht & Wakelin, 2017), both leader-member relations and transformational leadership were significantly related to staff engagement.

To capture the impact of the distinct change leadership approach constructs measured, the following approaches were taken to improve validity and reliability. First, for consistency and to reduce measurement bias, the research adapted literature-defined measurement constructs used in previous research. Second, to reduce ambiguity and ensure high level of participation and feedback, all the schools that participated in this survey were physically visited and the goal of the study was communicated to the participants. Full anonymity was assured, and respondents voluntarily filled out the survey during work time. Third, the research survey instrument captured the independent and dependent constructs to be completed within 20 minutes, to minimise maturation bias (time effect bias), and were collected simultaneously (Hair et al., 2010). Fourth, for consistency, all construct measures used the same 5-point Likert scale from 1 (*'I strongly disagree'*) to 5 (*'I strongly agree'*). Finally, to assess construct validity and reliability, the research used procedures recommended by Nunnally and Bernstein (1994, cited in Mahembe et al., 2017) and used leadership studies across different organisational and geographical settings (Mahembe et al., 2017; Cheng et al., 2004). In this research, the change leadership approach construct measures had Cronbach Alpha ( $\alpha$ ) reliability greater than 0.6 (Hair et al., 2010). Cronbach Alpha ( $\alpha$ ) measures reliability or internal consistency of constructs measured in the five-point Likert scale items. Cronbach Alpha ( $\alpha$ ) of 0.6-0.7 indicates an acceptable level and 0.8 or greater a very good level of reliability (Mahembe et al., 2017; Hair et al., 2010). Values higher than 0.95 may indicate redundancy, which means testing the same question(s) but in a different guise, hence may not be acceptable (Lui et al., 2018).

### 3.3.4 Pilot Study

The research instrument was developed in three phases. First, following the literature review (chapter 2), the items of the instrument were created. These were adapted from the



Multifactor Leadership Questionnaire (MLQ), developed by Bass and Avolio (2004), to assess transformational, transactional, laissez-faire, and authoritarian leadership dimensions and their impacts (principal-teacher relations and teacher engagement) using a five-point Likert scale. Second, the face, context, and content validity of the instrument (Veal, 2006; Zikmund, 2003) was discussed with the author's primary and secondary supervisors. Finally, the developed instrument was piloted with 35 teachers in two secondary schools in Port Moresby, PNG.

The pilot study gauged the interview and response times which informed the timeframe on the actual survey and interviews (Creswell & Plano Clark, 2011). The pilot also provided critical feedback on the clarity of the questions and how participants understood them and ascertained whether the layout of the items and the frequency-response scale were user-friendly (Cohen, Manion & Morrison, 2000). The validity and reliability of the scale were analysed using statistical methods, ensuring that the instrument yielded the consistent results in the trial among the respondents (Neuman, 2006). The pilot survey assessed the internal consistency of the instrument and the level of consistency between scales, measured by the Cronbach Alpha ( $\alpha$ ) reliability analysis.

The resulting survey was a paper-based principal leadership approach survey questionnaire consisting of 59 five-point Likert scale items (see Appendix A). The detailed conceptual and operational definitions, proposed relationships, and measurement domains in the CLA Research Model are further discussed in the next section.

### **3.4 CLA Research Model Constructs**

#### **3.4.1 Principal Leadership Approach Constructs**

Observing principal leadership approaches in a change process are summarised into four approach typologies: (1) transformational (Northouse, 2018, 2013; Leithwood et al., 2020; Bass, 2008; Burns, 1978); (2) transactional (Northouse, 2018, 2013; Bass, 2008; Burns, 1978); (3) laissez-faire (Al-Malki & Juan, 2018; Harrison, 2018; Northouse, 2018; Hess, 2010; Barnett et al., 2005; Bass, 1998); and (4) authoritarian or autocratic (Northouse, 2018, 2013; Wang & Guan, 2018; Schaubroeck et al., 2017; Bass & Bass, 2008; Cheng et al., 2003).

### 3.4.1.1 Transformational Leadership

Transformational leadership is measured by modifying the MLQ 5X-Short Form sample items (Northouse, 2013, p.213). Transformational Leadership includes 5 scales: idealised influence (attributes); idealised influence (behaviour); inspirational motivation; intellectual stimulation; and individualised consideration. Added to these scales are the dynamics of democratic and distributed leadership approaches that further define transformational leadership as a shared phenomenon that enhances greater participation of staff (Leithwood et al., 2020; Spillane, 2006; Gronn, 2002). Hence, the survey instrument developed for the present research contained eight questions. Question one in the survey instrument in Table 3.1 provides the example of the question development/adaptation used.

Table 3.1 Transformational leadership item measure

Item sourced from MLQ 5X as modified by Northouse (2013)	Item developed/adapted in the study
<i>“The leader talks optimistically about the future”</i>	<i>“In my opinion the principal, articulates a motivating vision of the future”</i>

Table 3.1 measures inspirational motivation on communicating vision; i.e., assessing leader’s ability to articulate a compelling vision. Other questions have also been adapted to suit this study. The survey items assessing transformational leadership were:

*In my opinion the principal:*

1. *articulates a motivating vision of the future*
2. *displays a sense of power and confidence in the interest of the school*
3. *emphasises the importance of having a collective sense of purpose*
4. *talks about his/her most important values*
5. *challenges us to formulate new ways of solving problems*
6. *helps us to develop our strengths and potentials*
7. *includes us in the overall decision-making process*
8. *provides school structure that entrusts us to participate in improving our teaching performance*

### 3.4.1.2 Transactional Leadership

The transactional leadership was measured by modifying the MLQ 5X-Short Form items (Northouse, 2013, p. 213). Transactional leadership includes two scales, contingent reward and management by exception (active). The developed survey instrument contained

seven questions. Question nine in the survey instrument in Table 3.2 provides the example of the question development/adaptation used.

Table 3.2 Transactional leadership item measure

Item sourced from MLQ 5X as modified by Northouse (2013)	Item developed/adapted in the study
<i>“The leader provides me with assistance in exchange for my efforts”</i>	<i>“In my opinion the principal, provides us with assistance in exchange for our efforts”</i>

Table 3.2 measures incentives or practices where assistance or engagement was contingent based on performance outputs. Other questions were also adapted to suit this study. The survey items assessing transformational leadership were:

*In my opinion the principal:*

1. *provides us with assistance in exchange for our efforts*
2. *makes it clear to us what we receive when our performance targets are achieved*
3. *makes it clear to us the consequence of not achieving our performance targets*
4. *directs our attention towards failures to attain expected performance standards*
5. *adheres to the school’s operational structure*
6. *depends on the staff being self-motivated*
7. *encourages us to contribute our personal talents*

### 3.4.1.3 Laissez-fair Leadership

Laissez-faire leadership approach was measured by modifying the MLQ 5X-Short Form items (Northouse, 2013, p. 213). Laissez-faire leadership includes two scales, laissez-faire and management by exception (passive). The developed survey instrument contained six questions. Question seventeen in the survey instrument in Table 3.3 provides the example of the question development/adaptation used.

Table 3.3 Laissez-fair leadership item measure

Item sourced from MLQ 5X as modified by Northouse (2013)	Item developed/adapted in the study
<i>“The leader avoids getting involved when important issues arise”</i>	<i>“In my opinion the principal, avoids getting involved when education reform matters arise”</i>

Table 3.3 measures avoidance of leadership in decision-making in important matters in the organisation which, adapted to this study included matters relating to the education reform. Other questions were also adapted to suit this study. The survey items assessing transformational leadership were as follows:

*In my opinion the principal:*

1. *gives minimal guidance to staff*
2. *avoids getting involved when education reform matters arise*
3. *generally, takes a 'hands-off' approach to issues*
4. *avoids making decisions*
5. *delays responding to any matter until a problem has escalated*
6. *allows us to determine what is to be done and how to do it*

#### **3.4.1.4 Authoritarian Leadership**

Authoritarian leadership is measured using a scale developed by Cheng et al, (2003). The original version was in Chinese but has been translated into English and used in previous studies (e.g., Schaubroeck et al., 2017; Tian & Sanchez, 2017). The developed survey instrument contained five questions. Question twenty-two in the survey instrument in Table 3.4 provides the example of the question development/adaptation used.

Table 3.4 Authoritarian leadership item measure

Item sourced from Cheng et al, (2003).	Item developed/adapted in the study
<i>"My supervisor determines all decisions in the organisation whether they are important or not"</i>	<i>"In my opinion the principal, always retains all decision-making authority"</i>

Table 3.4 measures the authoritarian approach of leadership in retaining all decision-making powers in the organisation. Other questions were also adapted to suit this study. The survey items assessing transformational leadership were:

*In my opinion the principal:*

1. *retains all decision-making authority*
2. *tells us what to do, how to do it and when he/she wants it to be done*
3. *rarely considers suggestions made by subordinates*
4. *closely monitors subordinates to ensure they are performing*
5. *makes decisions based on his/her personal views*

Further information on the survey items can be found in Appendix A and B.

### 3.4.2 Teacher Engagement Constructs

Teacher engagement (intellectual, emotional, and behavioural) questions were divided into: (1) achievement, (2) camaraderie, and (3) equity/fairness (Sirota & Kelin, 2013, p.3). Principal/teacher relations questions assessed the overall impact of the leadership approach that underscores teacher engagement.

The Utrecht Work Engagement Scale (UWES), proposed by Schaufeli et al. (2002), was also adapted to this study. It was adopted in the employment engagement survey by the State of Washington in 2017 (Washington State, 2018). UWES demonstrates good internal consistency and test-retest reliability using confirmatory factor analyses and the three scale scores making it a reliable instrument with acceptable psychometric properties. Using Sirota's engagement model, a behavioural-energetic (vigour), an emotional (dedication), and a cognitive or intellectual (absorption) component to the construct were measured. The instrument consisted of fifteen items grouped into the three subscales: achievement, camaraderie, and equity/fairness.

#### 3.4.2.1 Achievement

The developed survey instrument for measuring achievement contained six questions. Question thirty-five in the survey instrument for achievement in Table 3.5 provides the example of the question development/adaptation used.

Table 3.5 Achievement item measure

Item sourced from UWES, Schaufeli (2002) and used in Sirota engagement model (Sirota & Kelin, 2013) and Washington State (2018)	Item developed/adapted in the study
<i>"I receive recognition for a job well done"</i>	<i>"I have received recognition for doing good work"</i>

Table 3.5 measures recognition for good work by the leaders in an organisation as an appreciation of achievement on the part of individual staff. This encourages participation and in turn enhances engagement and performance (Schaufeli, 2002). Other questions were also adapted to suit this study. The survey items assessing achievement were as follows:

*During the reform implementation process at the school:*

1. *I know what is expected of me*

2. *I have resources I need to do my work*
3. *I have opportunity to make good use of my skills and knowledge*
4. *I have received recognition for doing good work*
5. *I have opportunities at school to learn and grow professionally*
6. *I contribute more than what is expected of me*

### 3.4.2.2 Camaraderie

The developed survey instrument for measuring camaraderie contained four questions. Question thirty-eight in the survey instrument in Table 3.6 provides the example of the question development/adaptation used.

Table 3.6. Camaraderie item measure

Item sourced from UWES, Schaufeli (2002) and used in Sirota engagement model (Sirota & Kelin, 2013) and Washington State (2018)	Item developed/adapted in the study
<i>"A spirit of cooperation and teamwork exists in my work group"</i>	<i>"There is a spirit of cooperation and teamwork"</i>

Table 3.6 measures teamwork spirit and cooperation among staff, which are essential for camaraderieship. Such a work environment enhances staff engagement, commitment, and better performance (Schaufeli, 2002). Other questions were also adapted to suit this study. The survey items assessing camaraderie were:

*During the reform implementation process at the school:*

1. *there is a spirit of cooperation and teamwork*
2. *the school functions as one team*
3. *I enjoy working with my colleagues*
4. *teachers are committed to doing quality work*

### 3.4.2.3 Equity/Fairness

The developed survey instrument for measuring equity/fairness contained four questions. Question twenty-nine in the survey instrument in Table 3.7 provides the example of the question development/adaptation used.

Table 3.7 Equity/Fairness item measure

Item sourced from UWES, Schaufeli (2002) and used in Sirota engagement model (Sirota & Kelin, 2013) and Washington State (2018)	Item developed/adapted in the study
<i>“People are treated fairly in my work group”</i>	<i>“The principal’s actions are consistently fair”</i>

Table 3.7 measures if staff consider the principal’s approaches to issues to be consistent and fair. This is a critical element in demonstrating equity/fairness with staff. Staff who perceive leaders to be consistently fair are more engaged and commit to their tasks, which positively improves organisational performance and outcomes (Schaufeli, 2002). Other questions were also adapted to suit this study. The survey items assessing equity/fairness were:

*During the reform implementation process at the school:*

1. *the principal treats me with respect*
2. *the principal keeps me informed about the reform process*
3. *the principal’s actions are consistently fair*
4. *the principal considers my suggestions towards the goals of the education reform and processes*
5. *the principal generally makes fair decisions*

Further information on these survey items can be found in Appendix A and B.

### 3.4.3 Principal-Teacher Relations

This study adopted three dimensions of the LMX theory proposed by Graen and Uhl-Bien (1995), which foster positive relations between organisational leaders and staff. These are respect, trust, and obligation. Mutual respect for capabilities of others builds reciprocal trust and enduring obligations to commit to tasks emanating from the professional or working relationship, as opposed to personal or friendships relationships. These dimensions were measured using LMX 7 instrument scale, which was modified by Schriesheim et al. (1999) from the initial scales developed by Graen and Uhl-Bien (1995), and adapted and used by other researchers (The Wallace Foundation, 2013; Yukl, 2012). These instruments were adapted for use in this study.

The developed survey instrument for principal-teacher relations, as adapted from the LMX 7, contained seven questions. Question forty-two in the survey instrument in Table 3.8 provides the example of the question development/adaptation used.

Table 3.8 Principal-Teacher relations item measure

Item sourced from LMX 7 (Schriesheim et al, 1999; Graen and Uhl-Bien, 1995).	Item developed/adapted in the study
<i>“Do you know where you stand with your leader...do you usually know how satisfied your leader is with what you do?”</i>	<i>“I have an effective working relationship with the principal”</i>

Table 3.8 measures the personal working relations with organisational leaders. It was adapted from LMX 7 (Graen & Uhl-Bien, 1995) and contextualised in this study. It is expressed in the form of answering the original LMX 7 item. Other questions were also adapted to suit this study. The survey items assessing equity/fairness were as follows:

*During the reform implementation process at the school:*

1. *I have an effective working relationship with the principal*
2. *there is positive trust in the school among teachers, senior staff, and principal*
3. *the principal offers sound/sensible advice on professional and personal issues*
4. *fulfilling the needs of staff is a leadership priority of the principal*
5. *the principal delegates duties and responsibilities to staff*
6. *the principal maintains a professional approach with teachers*
7. *I feel comfortable working with the principal*

Further information on these survey items can be found in Appendix A and B.

### 3.4.4 Education Reform Change Outputs and Overall Outcomes

The CLA Research Model ultimately leads to reform change results in the present study. Thus, school change outputs and overall education reform outcomes are directly assessed, as perceived by teachers, as per: (1) teacher engagement to education reform outcomes; (2) principal-teacher relations to education reforms outcomes; and (3) actual education reform outcomes, in the schools. The items developed were specific to this study.



#### **3.4.4.1 Teacher Engagement to Education Reform Process Output Success**

To assess reform process output success from engaged teachers, four items were developed, including:

*In my opinion, my engagement with the reform process has resulted in:*

- 1. the success of the school system reform in our school*
- 2. the successful development of the school-based curriculum*
- 3. improved teaching and learning in the school*
- 4. improving student academic performances as measured by the MRI*

#### **3.4.4.2 Principal-Teacher Relations to School Change Outputs**

To assess school change process outputs from principal-teacher relations, the same four items (as in section 3.4.4.1) were relevant:

*In my opinion, my relationship with the principal has resulted in:*

- 1. the success of the school system reform in our school*
- 2. the successful development of the school-based curriculum*
- 3. improved teaching and learning in the school*
- 4. improving student academic performances as measured by the MRI*

#### **3.4.4.3 School Change Outputs to Overall Education Reform Outcomes**

To assess the overall education reform outcomes, three items were developed, namely:

*In my opinion, the reform implementation process in our school has:*

- 1. met student learning requirements and performance targets*
- 2. improved teacher engagement and commitment*
- 3. met the reform outcome expectations within the timeline*

Further information on the survey items can be found in Appendix A and B.

#### **3.4.5 Data Collection Approach**

Participating schools were physically visited, and the survey administered on site. The survey was conducted for five months from April 1<sup>st</sup> to August 31<sup>st</sup>, 2019. This approach was considered the most appropriate, partly due to lack of reliable communications network, including postal services, in the country, and to reduce survey errors resulting from coverage and nonresponse (Dillman et al, 2009). To eliminate any undue influence and coercive bias (Largent et al., 2013): (1) school principals were not involved in any way in administering the

survey - their consent and approval was sought, but they were not involved nor influenced the survey; (2) no incentives nor inducements were made, prior, during, or after the survey was conducted; and (3) teacher participation was totally voluntary. The researcher spent an average of 5 minutes explaining the purpose of the study, followed by giving time for participants to volunteer in the survey.

#### **3.4.5.1 Coverage**

Coverage is defined as all members of the population (secondary school teachers) having a “known, nonzero chance of being included in the sample for the survey and when those who are excluded are different from those who are included on measure of interest” (Dillman et al., 2009, p. 17). Hence, to achieve high coverage, the list of secondary school teachers was obtained from the NDoE Handbook (2018). Schools were randomly selected for each region in the country. In each school, teachers were randomly selected to participate in the survey.

#### **3.4.5.2 Response**

The survey was conducted in all school locations. Before administrating the survey, teachers were informed on the purpose and goal of the study. Hence, participation was voluntary and those that did not wish to participate abstained. This greatly reduced nonresponse and minimised errors in filling the response to the items in the survey.

Data were collected from 735 respondents. Eighty-five responses were rejected due to incompleteness. Duplicate responses were also removed. The final research sample size was  $N=650$ , which is considered adequate for this type of research from the survey population ( $N_p$ ) of 3,757 (Hair et al., 2010). The margin of error achieved (i.e., sampling error) was at the 95% confidence level with an 80/20 split was 0.023 or 2.3% of the true population value. This was calculated using the formula thus:

$$B = C \sqrt{\frac{p(1-p)}{N_s} - \frac{p(1-p)}{N_p}} \quad B = 1.96 \sqrt{\frac{0.3(1-0.3)}{650} - \frac{0.3(1-0.3)}{3,757}} = 0.023$$

#### **3.4.6 Principals' Interviews**

Qualitative data were collected through semi-structured interviews with secondary school principals and contained information which cannot be measured quantitatively. The aim of collecting qualitative data was to further support the CLA Research Model by

triangulating with the quantitative data to validate the findings (DeJonckheere & Vaughn, 2019). Four open-ended questions were asked to gauge each principal's views along the constructs in the CLA Research Model. The questions were:

1. *How would you describe your leadership approach in implementing the education reform changes in your school?*
2. *What is your relationship like with teachers and how does that influence your leadership in implementing the education reform changes?*
3. *What are your approaches in engaging teachers to stay committed and engaged in implementing the reform changes?*
4. *What are the major achievements in the overall implementation of the education reform policy in your school?*

These questions were developed from the four constructs in the survey instruments around the CLA Research Model: (1) Principals Change Leadership Approach; (1) Principal-Teacher Relations; (3) Teacher Engagement; and (4) Education Reform Outputs and Outcomes.

A total of 37 principals (7 females and 30 males) participated in the face to face interviews. Average time spent for each interview was around 30 minutes. Consent for all interviews was sought from the respective principals who agreed to be interviewed. All interviews and discussions were formally held in the principal's office. The principals expressed for their interviews not to be recorded in any visual or audio format. Hence, all interviews were recorded in handwritten format by the researcher. All written records were double-checked with the interviewee to confirm that what was written was the same as their feedback and discussions.

### **3.5. Data Analysis**

#### **3.5.1 Construct Development and Reliability**

Before testing the CLA Research Model, measurement construct reliability needed to be established. Construct validity is concerned with the extent to which an instrument measures the concepts that it purports to measure (Hair et al., 2010). This reliability can be examined through confirmatory factor analysis (CFA).

An exploratory factor analysis (EFA) was conducted to establish internal consistency of measurement constructs and to determine whether each observed construct

variable (item) should be retained or excluded. This process was followed by CFA to validate all construct measures of the CLA Research Model.

The final selected 650 cases were used to test hypotheses and construct measures proposed for the CLA Research Model. Using CFA with maximum likelihood and 200 oblimin rotation, every measurement construct underwent elimination of any cross-load  $< 0.30$ . Acceptable reliability for each construct must include  $KMO > 0.6$  and Bartlett's  $p < 0.05$ , with all residuals  $< 0.05$  (Cunningham, 2008). Kaiser-Meyer-Olkin (KMO) test is a measure of how suited the data is for factor analysis; the lower the proportion, the more suited the data are (Hair et al., 2010; Cunningham, 2008). Congeneric shape of each construct was internally checked, cross-checked, and reduced sequentially item by item, averaging to its (final construct) single composite construct. Final construct measures with required validity and reliability are detailed in chapter 4.

### 3.5.2 Model Testing

SEM is a powerful quantitative data analytical technique that estimates and tests the theoretical relationships among observed and latent variables. It combines regression and factor analysis. It is also a path analytical method for handling multiple relationships and assessing relationships from exploratory analysis to confirmatory analysis (Hair et al., 2010). SEM uses path analysis methods to assess multiple relationships from EFA to CFA. SEM has been used in previous studies to investigate the associations between the measured leadership approach, principal-teacher relations, and teacher engagement (Northouse, 2013; Yukl, 2013; Lunenburg, 2010). In this study, SEM tested the CLA Research Model through path model construction and analysis using both AMOS 25 and SPSS 25.

Path analysis consists of a group of models that illustrates the influence of a set of variables or constructs on one another (Hair et al., 2010). Path analysis is considered to be an extension of the regression model in which the causal model is tested. The main purpose for using path analysis is to estimate the magnitude and significance of hypothesised causal connections between different sets of variables or constructs displayed, through the use of path diagrams. Each variable or construct in the model needs to go through regression, regardless of whether this construct is dependent or independent in relation to the other variables. Reproduction of the correlation matrix is done through the model and this reproduced matrix is compared with the observed correlation matrix as one method of determining goodness-of-fit.

A variety of goodness-of-fit indicators are calculated using AMOS 22 (Arbuckle,

2015), and used for path analysis. The proposed path analysis model contains the change leadership approach, principal-teacher relations, teacher engagement, and reform change result dimensional constructs.

The CLA Research Model was tested using SEM path analysis using AMOS 22 with parameter estimation for maximum-likelihood method. This method allows for simultaneous examination of multiple direct and indirect predicted paths. It provides global fit indices between the theoretical model and data. The CLA Research Model includes the following constructs or variables: (1) principal leadership approach; (2) principal-teacher relations in change process; (3) teacher engagement in change process; and (4) school change outputs and overall reform outcomes.

### 3.5.3 Indices Fit

Change and change leadership literature identify three forms of SEM: (1) measurements model; (2) structural model; and (3) the model that combines measurements and structure models in a single analysis (McQuitty, 2004). The present study uses the combination approach for path model analysis.

SEM is a quantitative and statistical modelling technique. This technique estimates, specifies, and tests theoretical relationships between observed endogenous variables or constructs and latent, unobserved, exogenous variables or constructs (Byrne, 1994). SEM uses a complementary set of CFAs that combines covariance structure, regression, and factor analysis. The SEM approach begins with a model specification that links the variables or constructs assumed to build relationships that affect other variables and directions (Kline, 2011). Model specification is visually represented through theoretical hypotheses. In the estimation process, SEM produces regression weights, variance, covariance, and correlation in its iterative procedures converged on a set of parameter estimates (Iacobucci, 2010; Schumacker & Lomax, 2004).

Goodness-of-fit indices are produced in the estimation process. Fit indices are then evaluated to check whether the proposed model is a fit to the data or not, or whether any modification is required to increase fit. The model fit indices are divided into three basic types: (1) absolute, (2) incremental or comparative, and (3) indices of model parsimony. In each type, there are different fit indices and some rules of thumb about the required minimum value for good fit (Arbuckle, 2015; Byrne, 1994). However, researchers emphasise that many different fit indices are found to have some problems in the evaluation process (Kline, 2011), because different fit indices are reported differently in

different studies and different reviewers of the same manuscript suggest the indices that they prefer. For example, Xia and Yang (2019), and Kenny and McCoach (2003) argue that there is no consistent standard for evaluating an acceptable model, and emphasise only chi-square ( $\chi^2$ ), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and Root Mean Square Error Approximation (RMSEA) as common fit indices.

### 3.5.4 Chi-square

Chi-square ( $\chi^2$ ) is a statistical method to assess the goodness-of-fit between a set of observed values and those expected theoretically. It measures the absolute discrepancy between the matrix of implied variances and covariance to the matrix of empirical sample variances and covariance. This statistically tests whether the matrix of implied variances and covariance are significantly different to the matrix of sample variances and covariance. The model is considered acceptable if chi-square is not significant.

However,  $\chi^2$  is very sensitive in relation to the sample size and model complexity (Kenny & McCoach, 2003). When the sample size is large, the  $\chi^2$  test shows that the data are significantly different from those expected on a given theory, even though the difference may be so very slight as to be negligible or unimportant on another criteria (Gulliksen & Tukey, 1958, cited in Hair et al., 2010). An alternative measure is through its associated degree of freedom (df). Some researchers refer to this as normed  $\chi^2$ , or relative chi-square (RCI). RCI is the  $\chi^2$  measure per df with an index of model parsimony (McQuitty, 2004).

RCI is less sensitive to sample size. Accordingly, a value of normed  $\chi^2$  greater than 1 and smaller than 2 indicates a very good model fit (Hair et al., 2010; Byrne, 1994). The accepted criterion varies across different researchers, ranging from less than 2 (Ullman, 2006) to less than 3 (Kline, 2011).

### 3.5.5 Root Mean Square Error Approximation (RMSEA)

The chi-square statistics reflect the discrepancy between the observed covariance matrix derived from the data and the predicted covariance matrix by the model. Sample size is a critical element on which both chi-square and the multivariate normality in the data rely (Hu & Bentler, 1999). Therefore, RMSEA is reported, which is used to calculate the estimated average absolute difference between the model covariance estimates and the observed covariance.

A RMSEA value of  $< 0.05$  indicates a close fit, whereas a value  $< 0.08$  is still considered acceptable (Xia & Yang, 2019; Hu & Bentler, 1999; Browne & Cudeck, 1992).

However, Vandenberg & Lance (2000) recommended RMSEA cut-off value of 0.10 to still be acceptable.

### 3.5.6 Comparative Fit Index (CFI)

In this study, CFI was also calculated. CFI provides a measure that indicates better ways for the theoretical model to fit the data, compared with a base model constraining all constructs to be uncorrelated with each other. The CFI is a more robust and reliable statistic than chi-square for models with constructs showing deviations from multivariate normality. A CFI value of 0.95 or above is considered a good fit (Hu & Bentler, 1999). A model with a CFI of  $> 0.90$  is occasionally considered acceptable (Xia & Yang, 2019; Vandenberg & Lance, 2000; Bentler, 1990).

### 3.5.7 Other Fit Indices

Steenkamp, Batra and Alden (2003) reported the use of  $\chi^2$ , TLI, and CFI as fit measures to test moderating effects in research models. Based on their research, Knight and Cavusgil (2004) reported CFI, TLI, IFI, and RMSEA as fit measures. McQuitty (2004) suggested a set of goodness-of-fit indices that are less sensitive to sample size. These indices are: TLI, as suggested by Marsh, Balla and McDonald (1988, cited in McQuitty, 2004); IFI, TLI, and CFI, as suggested by Bentler (1990); and RMSEA, CFI, and TLI, as suggested by Fan, Thompson and Wang (1999).

Conversely, some researchers postulated that it is difficult to apply all fit indices (Xia & Yang, 2019; Hulland, Chow and Lam, 1996). Hence, the present research uses a set of goodness-of-fit indices, which are commonly reported and used in literature (Xia & Yang, 2019; Hair et al., 2010; Hulland et al., 1996; Bollen & Stine, 1992; Marsh et al., 1988) to assess degree of overall fitness of the CLAS Research Model. These indices are  $\chi^2/df$ , RMSEA, CFI, PMR, GFI, Bollen-Stine P, TLI, and AGFI, which were considered in this study, as shown in Table 3.9.

Table 3.9 Goodness-of-fit indices: assessing measurement &amp; structural models

Fit Indices	Description	Cut-offs (model fit)	Reference
$\chi^2$	Indicates discrepancy between proposition model and data; tests null hypothesis estimates covariance-variance deviates from sample covariance-variance matrix due to sampling error.	$p > 0.05$	Kenny & McCoach (2003)
$\chi^2/df$	Chi-square test, sensitive sample size and only meaningful when considering degrees of freedom. Its value is divided by degrees of freedom.	2-1 or 3-1	Kline (2011) Ullman (2006)
RMSEA	How a model fits population covariance matrix. Considers degrees of freedom.	$< 0.05$ good fit; $< 0.08$ acceptable fit.	Browne & Cudeck (1992) Hu & Bentler (1998) Steiger (1990)
GFI	Squared residuals from prediction with actual data. Not adjusted for degrees of freedom.	$> 0.90$	Byrne (1994)
AGFI	GFI adjusts for degrees of freedom.	$> 0.90$	Hu & Bentler (1998)
TLI	Indicates model fit compared with a baseline model, normally the null model is adjusted for degrees of freedom (can take a value greater than one).	$> 0.90$	Hu & Bentler (1998)
CFI	Indicates how a model fits compared with baseline model, normally the null model is adjusted for degrees of freedom.	$> 0.90$	Byrne (1994) Hu & Bentler (1998)
RMR	RMR is an index of amount by which covariance and variance estimates differ from observed covariance and variance.	Smaller better 0= perfect fit	Weaver & Wuensch (2013)

### 3.5.8 Qualitative Data Analysis

The semi-structured interviews captured the qualitative data. The analysis of the interview records was carried out by the “Thematic Analysis” approach (Evans, 2018; Creswell & Plano Clark, 2011) using NVivo. Thematic analysis includes examining the data and looking for similar patterns or themes and presenting the data in figures, tables, graphs, and narrative discussions (Evans, 2018; Plano Clark, 2011). Thematic analysis allows the researcher to determine frequency of a particular theme as well as helping to understand the meaning beyond the theme. In the present study, an inductive approach (entering the study without pre-assumptions) was adopted to understand the meaning of themes emerging from the interview data. The following process was used:



1. *Organising the data.* The handwritten interview transcripts and data were transcribed and typed into a Microsoft Word document. These were then read back to the principals to verify. The final record of the interviews was coded and filed accordingly per school.
2. *Reading and understanding.* The recorded scripts of the interviews were based on the major constructs used in the study. These are: (1) Change Leadership Approaches; (2) Principal-Teacher Relations; and (3) Teacher Engagement. The literature (chapter 2) on these constructs provided the various themes emerging in the interview data.
3. *The interview data were analysed* using NVivo 12 Plus software. Analysis included building themes (parent nodes), assimilated within the quantitative CLA Research Model constructs. From this, sub-themes (child nodes) were analysed, with text enquiries or searches providing results, such as word clouds and word trees. Further cluster analysis was conducted on data to understand a 3D approach to construct correlations based on Jaccard's coefficient, comparing sets of data to see which data are shared. Jaccard's coefficient measures the similarity for the two sets of data, with a range from 0 to 100%. The higher the percentage, the more similar the two sets of data.

### **3.6. Chapter 3 Summary**

This chapter discussed the research methodology used for the study and the process of measuring the constructs. The research uses the mixed-methods approach. A total of 59, 5-point Likert scale items were developed. Four open-ended questions were asked to gauge each principal's views along the constructs in the CLA Research Model. Finally, chapter 3 examined the measurement development used for the model testing, through discussing fit indicators used for different measures and indices to determine goodness-of-fit. The results of these measures and goodness-of-fit are discussed in chapter 4.

## **CHAPTER 4. DATA ANALYSIS AND RESULTS**

### **4.1 Introduction**

Chapter 3 presented the research methods used to collect data and explains the process of measuring and analysing the data. Section 4.2 presents the results of the quantitative survey and explains the details of the descriptive data. Section 4.3 reports on the results of the CLA Research Model. Section 4.4 reports on the results of Structural Equation Modelling (SEM) CLA Research Model assessment. Section 4.5 presents the results of the principals' interview responses. Section 4.6 reports on the validation of the six research questions in the study, and section 4.7 concludes the chapter.

### **4.2 Quantitative Data Validation Process**

This section explains the validation process to ensure reliability and validation of the research data. Further, the CLA Research Model constructs (Figure 2.10) were assessed for outliers to ensure data normality (George & Mallery, 2013).

#### **4.2.1 Data Entry and Missing Data**

To ensure for data accuracy, validity, and reliability, completed survey forms were electronically scanned using Remark Office Optical Mark Recognition (OMR) survey reading software, connected to a scanner, and directly imported into SPSS, where the results were cleansed and examined for missing data. According to Hair et al (2010, p.57) this process “provides the critical insight into data for analysis” and involved: (1) the removal of irrelevant and duplicate values; (2) incorrectly formatted and entered data; and (3) incomplete data, using SPSS. From a total 735 responses, the examination process rejected 85 responses, which were partly filled and incomplete, double marked in the response fields, or missing demographic data. Responses with missing values (data) of less than 6% were accepted, as this was considered to be within the acceptable limit (Lui, Andres & Johnston, 2018; Hair et al., 2010). Missing values occurred when respondents did not respond to certain survey items (Cunningham, 2008). The final 650 accepted surveys (acceptance rate at 88.4%) were captured in SPSS for testing normality and outliers. This is consistent with similar previous research that provides critical insight into the data characteristics and analysis (Hair et al., 2010).

### 4.2.2 Respondents' Profile and Data Validation with Teacher Records

The demographic profiles are presented in Table 4.1 and were compared with teacher profile records from National Department of Education - Teaching Service Commission (NDoE, 2019), as shown in Figures 4.1 to 4.3.

Table 4.1 Demographic profile of research data with NDoE teachers' data (NDoE, 2019)

Variables (Demographic Profiles)	Description (Measure)	Percentage of respondents (%)	
		Research Data	NDoE Data (2019)
Gender			
	Male	49.5	64.7
	Female	50.5	35.3
Ages of Teachers			
	30 and less	23.6	24.7
	31-40	40.6	44.3
	41-50	23.3	20.6
	Above 50	12.5	10.4
Education Level of Teachers (Highest Qualification)			
	Diploma	16.5	23.2
	Bachelors	69.6	65.6
	Masters & above	13.8	11.2
Years of Teaching			
	10 and less	48.7	45.4
	11-15	16.8	23.9
	16-25	22.0	19.2
	Above 25	12.5	11.5

#### 4.2.2.1 Gender

Gender participation in this study was close to equal (female, 50.5%; males 49.5%). The national data on secondary school teachers in PNG at the time of conducting the research survey showed that 35.3% of teachers were females, and 64.7% males (NDoE, 2019). Schools visited for this study were located within urban and peri-urban locations, where female proportion of staff was almost equal to males. According to NDoE (2019), schools located in rural inaccessible areas have less than 10% female teachers on staff, who are mostly likely spouses of teachers. Despite the relatively low proportion of female employment in secondary schools nationally, their participation in the survey is significant overall.

#### 4.2.2.2 Ages of Teachers

The age profile data (Figure 4.1) shows 40.6% of the teachers were between the ages of 31 and 40. Again, this is consistent with the NDoE profiles of teachers in PNG, which indicates that 44.3% of secondary school teachers fall between 30-40 years of age.

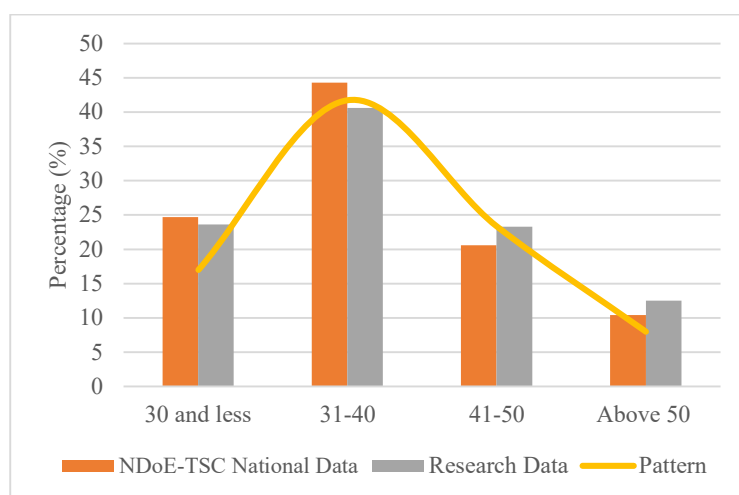


Figure 4.1 Ages of teachers

#### 4.2.2.3 Education Levels of Teachers

The education level profile (Figure 4.2) shows that 69.6% of the respondents had a graduate degree. These data are consistent with NDoE (2019) national data, showing 65.6% of the teachers in PNG have the minimum qualification of a Bachelor's degree.

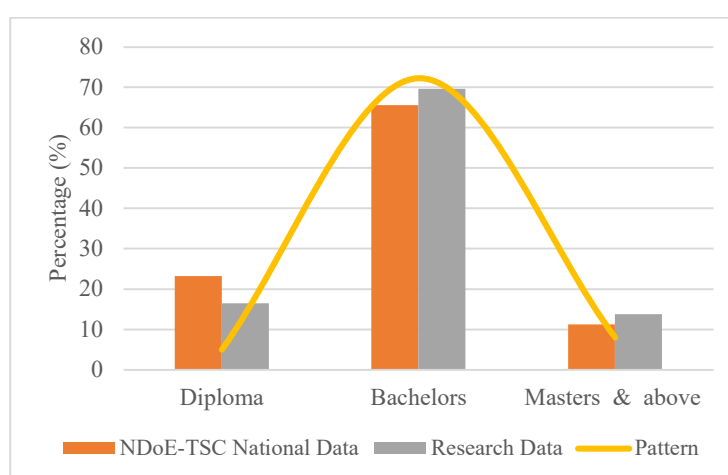


Figure 4.2 Education levels of teachers

#### 4.2.2.4 Years of Teaching (Experience)

Figure 4.3 shows 48.7% of survey participants have taught for less than 10 years. Again, this aligned with NDoE (2019) national data, where 45.4% of secondary school teachers in PNG fall into this category.

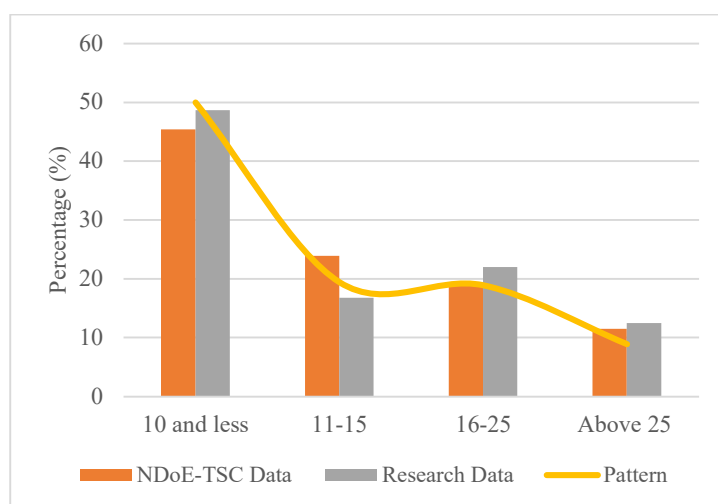


Figure 4.3 Years of teaching

#### 4.2.3 Normality and Outliers Assessment

Bai and Ng (2005), argue that data normality is usually a conventional assumption in the estimation process. However, highly skewed, and/or high kurtosis is indicative of non-normal data distribution (George & Mallery, 2013) and may indicate the presence of outliers (Tabachnick & Fidell, 2013). According to Tabachnick and Fidell (2013), an outlier is an observation or case with abnormal or “extreme value on one variable (a univariate outlier) or such a strange combination of scores on two or more variables (multivariate outlier) that they distort statistics” (p.66).

The change leadership approach constructs in the CLA Research Model from chapter two were assessed for normality and outliers. A normal distribution has a skewness of 0 and kurtosis within  $\pm 3$  (Lui et al., 2018; Hair et al., 2010; Glass, Peckham & Sanders, 1972). The skewness and kurtosis are displayed in Table 4.2; these are under  $\pm 1$  displaying high degrees of normality.

Table 4.2 Descriptive statistics

Construct	Min	Max	Mean	St Dev (SD)	Skewed	Kurtosis
Principal leadership approach:						
Transformational (PTF)	1.00	5.00	3.9254	.90880	-.870	.339
Transactional (PTS)	1.00	5.00	3.6700	.92576	-.581	-.044
Laissez-faire (PLF)	1.00	5.00	2.4431	.97033	.346	-.485
Authoritarian (PA)	1.00	5.00	3.1072	.92241	-.099	-.492
Teacher Engagement:						
Equity/fairness (TEF)	1.00	5.00	3.7635	.81310	-.606	.114
Achievement (TEA)	1.00	5.00	3.7451	.87412	-.572	-.183
Camaraderie (TEC)	1.00	5.00	3.5579	1.05967	-.493	-.636
Principal –Teacher Relations (PTR)	1.00	5.00	4.0369	.85539	-1.017	.648
Teacher engagement to school change outputs (TEO)	1.00	5.00	3.6528	.84351	-.446	.062
Principal- Teacher relationship to school change outputs (PTRO)	1.00	5.00	3.6087	.81873	-.386	.172
School change outputs to overall education reform outcomes (ERIO)	1.00	5.00	3.3415	0.93530	-.241	-.326
Valid N=650						

The skewness of each construct is near zero (0), with a slightly negative skewness, and means above 3 with small standard deviations. Normality plots were examined and indicated near-normality (Lui et al., 2018; Hair et al., 2010). This indicated respondents recognised and agreed these constructs are important for considering change leadership approaches. The kurtosis of each constructs was well within the normality range.

Additionally, to detect outliers with extreme values that were unique from the rest, Mahalanobis distance,  $> \chi^2 (11) = 30.143$  ( $p < .001$ ), was used to identify univariate and multivariate outliers (Tabachnick & Fidell, 2013). The statistical diagnostics revealed seven cases with a Mahalanobis distance greater than 30.143 (range: 31.640–41.026). These cases were removed individually to examine each impact on the SEM path model. Removing these outlier cases had no significant impact; it did not change the SEM path model and only resulted in minor changes in the model beta ( $\beta$ ) path weight and no significance in the fit indices. Therefore, it was decided to retain these seven cases for sample size purposes (Tabachnick & Fidell, 2013).

### 4.3 Results of Measuring CLA Research Model Constructs

This section presents the results of measuring the constructs in the CLA Research Model. The theoretical propositions in the CLA Research Model consist of relationships between independent and dependent constructs, leading to change results. Testing these

theories required measuring these constructs accurately, correctly, and in a scientific manner, using survey questions to establish the strength of their relationships (Lavrakas, 2008).

### **4.3.1 Change Leadership Approach Constructs**

#### ***4.3.1.1 Change Leadership Approach: Transformational Leadership***

The transformational leadership approach was examined using eight items, of which two were poorly correlated with residuals  $>0.05$ . Factor reduction was used to delete the two items. The remaining six items with residuals  $<0.05$  were used to measure transformational leadership approach. This did not affect content and face validity of the construct (Lui et al., 2018; Hair et al., 2010). The transformational leadership approach construct had a mean of 3.925, standard deviation 0.909, and Cronbach's alpha 0.925. This indicates high internal consistency (Lui et al., 2018; Hair et al., 2010). The final construct is presented in Table 4.3.

#### ***4.3.1.2 Change Leadership Approach: Transactional Leadership***

Transactional leadership approach was examined using seven items, of which three were poorly correlated with residuals  $>0.05$ . Factor reduction was used to delete the three items. The remaining four items with residuals  $<0.05$  are used to measure transactional leadership approach. This does not affect content and face validity of the construct (Hair et al., 2010; Lui et al., 2018). The transactional leadership approach construct has a mean of 3.670, standard deviation 0.926 and Cronbach's alpha 0.866. According to Hair et al (2010), this indicates high internal consistency. The final construct is presented in Table 4.3.

#### ***4.3.1.3 Change Leadership Approach: Laissez-faire Leadership***

The laissez-faire leadership approach was examined using six items, of which three were poorly correlated with residuals  $>0.05$ . Factor reduction was used to delete the three items. The remaining three items with residuals  $<0.05$  were used to measure laissez-faire leadership approach. This did not affect content and face validity of the construct (Lui et al., 2018; Hair et al., 2010). The laissez-fair leadership approach construct had a mean of 2.443, standard deviation 0.970, and Cronbach's alpha 0.820, indicating high internal consistency (Hair et al., 2010). The final construct is presented in Table 4.3.

#### ***4.3.1.4 Change Leadership Approach: Authoritarian Leadership***

The authoritarian leadership approach was examined using five items, of which two were poorly correlated with residuals  $>0.05$ . Factor reduction was used to delete the two items. The remaining three items with residuals  $<0.05$  were used to measure authoritarian leadership approach. This has no effect on content and face validity of the measured construct (Lui et al., 2018; Hair et al., 2010). The authoritarian leadership approach construct had a mean of 3.107, standard deviation 0.922, and Cronbach's alpha 0.687, indicating high internal consistency (Hair et al., 2010). The final construct is presented in Table 4.3.

### **4.3.2 Change Impact Constructs**

#### ***4.3.2.1 Teacher Engagement: Equity/Fairness***

Equity/fairness was examined using five items, of which one poorly correlated with residuals  $>0.05$ . Factor reduction was used to delete the item. The remaining four items with residuals  $<0.05$  are used to measure equity/fairness. This does not affect content and face validity of the construct (Lui et al., 2018; Hair et al., 2010). The Equity/fairness construct had a mean of 3.764, standard deviation 0.813, and Cronbach's alpha 0.850. According to Hair et al. (2010), this indicates high internal consistency. The final construct is presented in Table 4.3.

#### ***4.3.2.2 Teacher Engagement: Achievement***

Achievement was examined using six items, of which two were poorly correlated with residuals  $>0.05$ . Factor reduction was used to delete the two items. The remaining four items with residuals  $<0.05$  were used to measure achievement. This did not affect content and face validity of the construct (Lui et al., 2018; Hair et al., 2010). The achievement construct had a mean of 3.745, standard deviation 0.874, and Cronbach's alpha 0.725. According to Hair et al. (2010), this indicates high internal consistency. The final construct is presented in Table 4.3.

#### ***4.3.2.3 Teacher Engagement: Camaraderie***

Camaraderie was examined using four items, of which one poorly correlated with residuals  $>0.05$ . Factor reduction was used to delete this item. The remaining three items with residuals  $<0.05$  were used to measure camaraderie. This did not affect content and face validity of the construct (Lui et al., 2018; Hair et al., 2010). The camaraderie construct had a



mean of 3.558, standard deviation 1.060, and Cronbach's alpha 0.857, indicating high internal consistency (Hair et al., 2010). The final construct is presented in Table 4.3.

#### ***4.3.2.4 Principal-Teacher Relations***

Principal-teacher relationships was examined using seven items, of which three were poorly correlated with residuals  $>0.05$ . Factor reduction was used to delete the three items. The remaining four items with residuals  $<0.05$  were used to measure principal-teacher relationships. This did not affect content and face validity of the construct (Lui et al., 2018; Hair et al., 2010). The principal-teacher relationship construct had a mean of 4.037, standard deviation 0.855, and Cronbach's alpha 0.873, indicating high internal consistency (Hair et al., 2010). The final construct is presented in Table 4.3.

#### ***4.3.2.5 School Change Output: Teacher Engagement to School Change Outputs and Education Reform Outcomes***

Teacher engagement to education reform outcomes was examined using four items, of which one poorly correlated with residuals  $>0.05$ . Factor reduction was used to delete the item. The remaining three items with residuals  $<0.05$  were used to measure teacher engagement to education reform outcomes. This did not affect content and face validity of the construct (Lui et al., 2018; Hair et al., 2010). The teacher engagement to education reform outcomes construct had a mean of 3.653, standard deviation 0.844, and Cronbach's alpha 0.888. According to Hair et al. (2010), this indicates high internal consistency. The final construct is presented in Table 4.3.

#### ***4.3.2.6 School Change Output: Principal-Teacher Relations to School Change Outputs***

The principal-teacher relations to school change outcomes was examined using four items, of which one poorly correlated with residuals  $>0.05$ . Factor reduction was used to delete the item. The remaining three items with residuals  $<0.05$  were used to measure Principal-teacher relations to school change outputs. This did not affect content and face validity of the construct (Lui et al., 2018; Hair et al., 2010). The Principal-Teacher Relations to School Change Output construct had a mean of 3.609, standard deviation 0.819, and Cronbach's alpha 0.917. According to Hair et al. (2010), this indicates high internal consistency. The final construct is presented in Table 4.3.

### **4.3.3 Change Results: Overall Education Reform Outcomes**

The overall education reform outcomes were examined using three items. These items correlated with residuals  $< 0.05$ , which were used to assess the overall education reform outcomes (Lui et al., 2018; Hair et al., 2010). The overall education reform outcome construct had a mean of 3.342, standard deviation 0.935, and Cronbach's alpha 0.919, indicating high internal consistency (Hair et al., 2010). The outcome measurement is presented in Table 4.3.

### **4.3.4 Summary**

All the items load within the acceptable range  $> 0.50$  of and are considered significant (Hair et al., 2010). Further, Hair et al. (2010) suggests that Cronbach's alpha above 0.60 is acceptable for exploratory research. All Cronbach's alphas of constructs in this research were above the recommended value of 0.60.

When examining construct validity using average variance extracted (AVE), two constructs were  $< 0.50$ ; authoritarian leadership approach construct had 0.424, and achievement 0.492. However, Fornell and Larcker (1981) stated that if AVE is  $< 0.50$  and composite reliability is  $> 0.60$ , then convergent validity of the construct is still adequate. Hence, it is necessary to retain these items to deliver the principal leadership approach and teacher engagement constructs. The overall internal consistency and reliability of constructs were strong (Lui et al., 2018; Hair et al., 2010).

A single indicator construct approach was used as the approach in this study. This approach reduces the item-interactions present to some extent in the laissez-faire, authoritarian, achievement, and camaraderie constructs (Lui et al., 2018; Grace & Bollen, 2008). This approach also clarifies the causal pathways flowing across the model (Hair et al., 2010). The outcomes measurements for all the items are summarised in Table 4.3.

Table 4.3 CLA Research Model constructs

References for Constructs	MEASUREMENT Construct Measurement Items	ITEM LOADI NG	MEAN	STD DEV (SD)	CROBA CH ALPHA ( $\alpha$ )	CONST RUCT LOAD ( $SD \times \sqrt{\alpha}$ )	CONSTRU CT ERROR ( $SD \times (1-\alpha)$ )	AVE
Avolio & Bass, 2004; Judge & Piccolo, 2004; Antonakis, et al, 2016	<b>Principal Leadership Approach</b>							
	<i>Transformational:</i>	<i>ML</i>	<i>3.925</i>	<i>0.909</i>	<i>0.925</i>	<i>0.87</i>	<i>0.06</i>	<i>0.836</i>
	articulates a motivating vision of the future	<b>0.860</b>						
	displays a sense of power and confidence in the interest of the school	<b>0.847</b>						
	emphasises the importance of having a collective sense of purpose	<b>0.812</b>						
	challenges us to formulate new ways of solving problems	<b>0.810</b>						
	includes us in the overall decision-making process	<b>0.808</b>						
	provides school structure that entrusts us to participate in improving our teaching performance	<b>0.791</b>						
	<i>Transactional:</i>	<i>ML</i>	<i>3.670</i>	<i>0.926</i>	<i>0.866</i>	<i>0.86</i>	<i>0.11</i>	<i>0.853</i>
	provides us with assistance in exchange for my efforts	<b>0.762</b>						
	makes it clear to us what we receive when my performance targets are achieved	<b>0.834</b>						
	makes it clear to us the consequence of not achieving our performance targets	<b>0.836</b>						
	directs our attention towards failures to attain expected performance standards	<b>0.719</b>						
	<i>Laissez-faire:</i>	<i>ML</i>	<i>2.443</i>	<i>0.970</i>	<i>0.820</i>	<i>0.88</i>	<i>0.17</i>	<i>0.67</i>
	avoids getting involved when education reform matters arise	<b>0.745</b>						
Avolio & Bass, 2004; Rivera & Martinez, 2012	generally, takes a hands-off approach	<b>0.853</b>						
	avoids making decision	<b>0.734</b>						
	<i>Authoritarian:</i>	<i>ML</i>	<i>3.107</i>	<i>0.922</i>	<i>0.687</i>	<i>0.76</i>	<i>0.27</i>	<i>0.424</i>
	retains all decision-making authority	<b>0.627</b>						
	rarely considers suggestions made by subordinates	<b>0.704</b>						
	makes decisions based on his/her personal views	<b>0.620</b>						
	<b>Teacher Engagement</b>							
	<i>Equity/Fairness:</i>	<i>ML</i>	<i>3.764</i>	<i>0.813</i>	<i>0.850</i>	<i>0.75</i>	<i>0.10</i>	<i>0.837</i>
	the principal treats me with respect as a person	<b>0.666</b>						
	the principal's actions are consistently fair	<b>0.865</b>						
	the principal considers my suggestions towards the goals of the education reform and processes	<b>0.693</b>						
	the principal generally makes fair decisions	<b>0.838</b>						
	<i>Achievement:</i>	<i>ML</i>	<i>3.745</i>	<i>0.874</i>	<i>0.725</i>	<i>0.74</i>	<i>0.21</i>	<i>0.492</i>
	I have resources I need to do my work	<b>0.660</b>						
	I have opportunity to make good use of my skills and knowledge	<b>0.836</b>						
Schaufeli, 2012; Schaufeli et al, 2002; Sirrrota & Klein, 2013; Schwartz et al, 2014; Kahn, 1990; Bakker & Leiter, 2010	I have opportunities at school to learn and grow professionally	<b>0.585</b>						
	<i>Camaderie:</i>	<i>ML</i>	<i>3.558</i>	<i>1.060</i>	<i>0.857</i>	<i>0.98</i>	<i>0.16</i>	<i>0.689</i>
	there is a spirit of cooperation and teamwork existing	<b>0.896</b>						
	the school functions as one team	<b>0.930</b>						
	teachers are committed to doing quality work	<b>0.632</b>						
	<b>Principal -Teacher Relations</b>	<i>ML</i>	<i>4.037</i>	<i>0.855</i>	<i>0.873</i>	<i>0.80</i>	<i>0.09</i>	<i>0.875</i>
	the principal offers sound/sensible advice on professional and personal issues	<b>0.804</b>						
	the principal delegates duties and responsibilities to staff	<b>0.740</b>						
	the principal maintains a professional approach with teachers	<b>0.847</b>						
	I feel comfortable working with the principal	<b>0.794</b>						
	<b>Teacher Engagement to Reform Output</b>	<i>ML</i>	<i>3.653</i>	<i>0.844</i>	<i>0.888</i>	<i>0.79</i>	<i>0.08</i>	<i>0.733</i>
	the success of the school system reform in my school	<b>0.770</b>						
	improved teaching and learning in the school	<b>0.919</b>						
	improving student academic performances as measured by the MRI	<b>0.872</b>						
	<b>Principal-Teacher Relations to Reform Output</b>	<i>ML</i>	<i>3.609</i>	<i>0.819</i>	<i>0.917</i>	<i>0.78</i>	<i>0.06</i>	<i>0.856</i>
Sirrrota & Klein, 2013; Bakker & Leiter, 2010; Grant, et al., 2013	the success of the school system reform in our school	<b>0.935</b>						
	the successful development of the school-based curriculum	<b>0.905</b>						
	improved teaching and learning in my school	<b>0.935</b>						
	<b>Education Reform Implementation Process Outcome Success</b>	<i>ML</i>	<i>3.342</i>	<i>0.935</i>	<i>0.919</i>	<i>0.90</i>	<i>0.07</i>	<i>0.792</i>
	met student learning requirements and performance targets	<b>0.869</b>						
	improved teacher engagement and commitment	<b>0.933</b>						
	met the reform outcome expectations within the timeline	<b>0.866</b>						
Author generated								

## 4.4 Overall SEM CLA Research Model Fit

This section assesses propositions for testing the CLA Research Model through path model construction and analysis using both AMOS 25 and SPSS 25. A set of goodness-of-fit indices (Table 4.4) were used to assess the CLA Research Model.

### 4.4.1 Path Modelling

The SEM CLA path model indicated existence of seven significant pathways from principal leadership approaches to school outputs and overall education reform outcomes, with a significance  $p < 0.05$ . Each significant path segment showed a standardised regression coefficient beta ( $\beta$ ) weight and supported the proposed literature- developed hypothesis. The standardised beta ( $\beta$ ) coefficients in SEM had equal variances with a maximum value of 1.0, thus approximating effect sizes. Beta ( $\beta$ ) coefficients near zero had little effect, whereas increasing  $\beta$  values corresponded to increased importance of each causal relationship (Cunningham, 2008). The resultant SEM CLA path model had excellent fit. It was validated via bootstrapping (x200), which converged quickly within seventeen bootstraps.

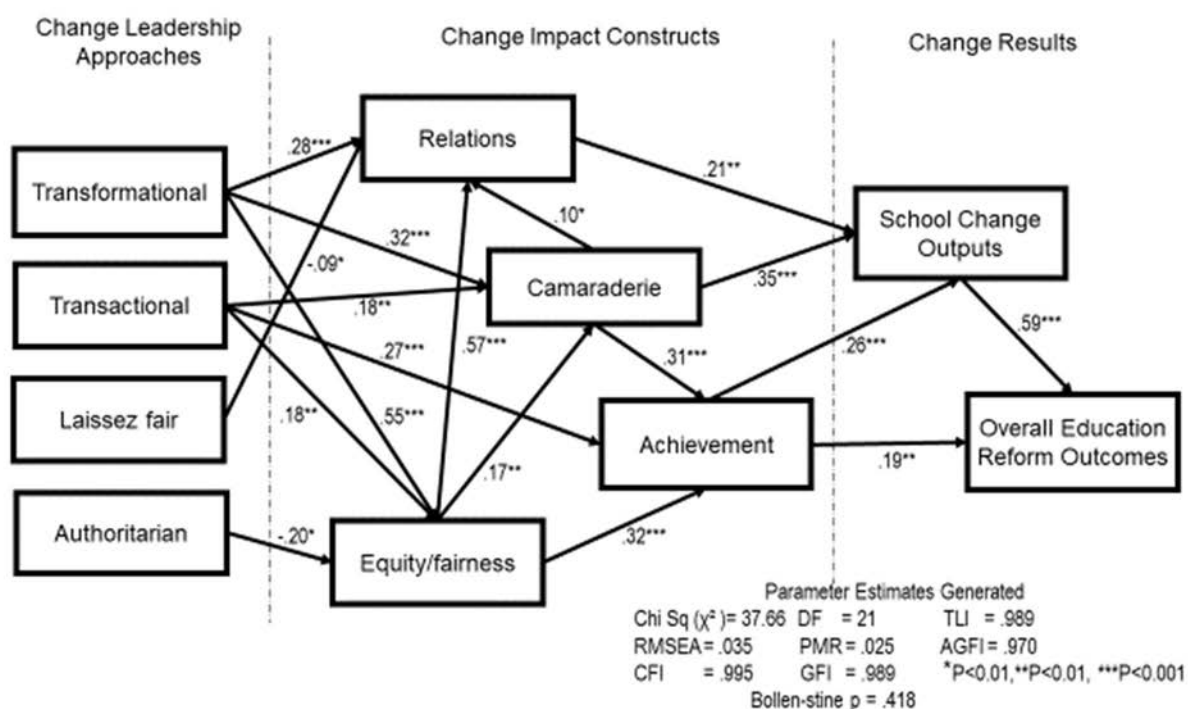


Figure 4.4 SEM CLA path model analysis

SEM path analysis delivered estimated coefficients and standard errors, and calculated t-values for all constructs in the CLA Research Model. Each estimate coefficient tested for

statistical significance for the hypothesised causal relationships when significance level was deemed appropriate. Traditionally this level is 0.05 and significance level of  $p < 0.05$  is considered an excellent fit (Lui et al., 2018; Hair et al., 2010).

The SEM CLA Research Model path indicated that principal leadership approaches did not directly influence education reform outputs and outcome success. However, according to the SEM path model analysis, principals' leadership approaches indirectly influenced the change outputs and outcomes through teacher engagement factors (equity/fairness, achievement, and camaraderie) and principal-teacher relations.

The SEM CLA Research Model path indicated that the four leadership approaches were not causally connected and correlated, but independently influence the impact constructs. Hence, the standardised total effects from SEM path analysis revealed the dominant change leadership approaches for: (1) predicting teacher engagement; (2) building positive principal-teacher relations; and (3) predicting education reform outcomes success, are transformational and transactional leadership.

All SEM paths were positive and unidirectional. This suggests education reform outcomes success is causal, mostly influenced by principals when using a combination of leadership approaches in building positive relations and engaging teachers.

#### 4.4.2 Goodness -of -Fit Measures

The SEM CLA Research Model (Figure 4.5) showed that all significant p-values  $< 0.05$ . The CLA Research Model indicated consistent excellent fit across all the SEM goodness-of-fit measures used in the study (Table 4.4).

Table 4.4 Goodness-Of-Fit measures

	$\chi^2/df$	RMSEA	CFI	RMR	GFI	Bollen-Stine P	TLI	AGFI
<b>Actual</b>	1.79	0.035	0.995	0.025	0.998	0.14	0.989	0.970
<b>Good fit</b>	2-1 or 3-1	< 0.05: good fit; <0.08: reasonable fit	> 0.90	< 0.05	> 0.90	> 0.05	> 0.90	> 0.90
<b>Reference</b>	Kline, 2011; Ullman, 2006	Browne & Cudeck, 1992; Hu & Bentler, 1999; Steiger, 1990	Byrne, 1994; Hu Bentler, 1998	Tabachnick & Fidell, 2012b	Byrne, 1994	Bollen & Stine, 1992	Hu & Bentle, 1998	Hu & Bentler, 1998

The normed Chi-square ( $\chi^2 / DF = 1.79$ , P (Bollen-Stine) = 0.14) indicated that a very strong model fit exists (Cunningham, 2008; Schumacker & Lomax, 2004). CFI, GFI, TLI, and AGFI values were all above 0.90; again, suggesting an excellent fit model (Hair et al.,

2010; Cunningham, 2008; Bentler, 1990). Both RMSEA and RMR were below their threshold values and, therefore, supported an excellent fit model (Lui et al., 2018; Hair et al., 2010).

Across all measures, the SEM CLA path analysis delivered an excellent fit, showing that a valid path model exists between the constructs in this research. This suggests the hypothesised pathways were significant.

#### 4.4.3 Hypothesis Testing

This section assesses the hypothesis for testing the CLA Research Model. The seven hypotheses in the CLA Research Model are summarised in Table 4.5.

Table 4.5 SEM output for hypothesised pathways

Hypothesis	Path	$\beta$	SEM SE	CR(t)	Results†
H1: Principal's leadership approach influences school change outputs and the overall education reform outcomes	Transformational>> Education reform outcome success	---	---	---	Not supported
	Transactional>> Education reform outcome success	---	---	---	Not supported
	Laissez-faire >> Education reform outcome success	---	---	---	Not supported
	Authoritarian>> Education reform outcome success	---	---	---	Not supported
H2: Principal's leadership approach influences teacher's engagement in change process	Transformational>>Equity	0.55***	0.080	6.875	Supported
	Transformational>>Camaraderie	0.32***	0.101	3.167	Supported
	Transformational>>Achievement	---	---	---	Not supported
	Transactional>>Equity	0.18**	0.079	2.221	Supported
	Transactional>>Camaraderie	0.18**	0.091	1.979	Supported
	Transactional>>Achievement	0.27***	0.062	4.307	Supported
	Laissez-faire >>Equity	---	---	---	Not supported
	Laissez-faire>>Camaraderie	---	---	---	Not supported
	Laissez-faire>>Achievement	---	---	---	Not supported
	Authoritarian>>Equity	-0.20*	0.038	-5.191	Supported
H3: Principal's leadership approach influences principal-teacher relations in change process	Authoritarian>>Camaraderie	---	---	---	Not supported
	Authoritarian>>Achievement	---	---	---	Not supported
	Transformational>>Relations	0.28***	0.049	5.723	Supported
	Transactional>>Relations	---	---	---	Not supported
H4: Teacher engagement influences principal-teacher relations in change process	Laissez-faire >>Relations	-0.09*	0.30	-3.010	Supported
	Authoritarian>>Relations	---	---	---	Not supported
	Equity>>Relations	0.57***	0.048	11.838	Supported
	Camaraderie>>Relations	0.10*	0.035	2.787	Supported
H5: Teacher engagement in change process influence school change outputs	Achievement>>Relations	---	---	---	Not supported
	Equity>>Achievement	0.32***	0.061	5.375	Supported
	Equity>>Camaraderie	0.17**	0.067	2.569	Supported
	Camaraderie>>Achievement	0.31***	0.52	5.922	Supported
H6: Principal-teacher relations in change process influence school change outputs	Equity>>School change outputs	---	---	---	Not supported
	Camaraderie>>School change outputs	0.35***	0.052	6.747	Supported
	Achievement>>School change outputs	0.26***	0.063	4.070	Supported
H7: School change outputs influence overall education reform outcomes	Relations>>School change outputs	0.21**	0.053	3.903	Supported
	School change output >> Overall education reform outcomes	0.59***	0.045	12.907	Supported
	Achievement>>Overall education reform outcomes	0.19**	0.048	3.966	Supported

† Results supported at significance levels:  $p \leq .001$ ,  $p \leq .01$ ,  $p \leq .05$  and  $p \leq .10$ .

The CLA Research Model is represented in Figure 4.5, to explain the hypothesised (H) pathways.

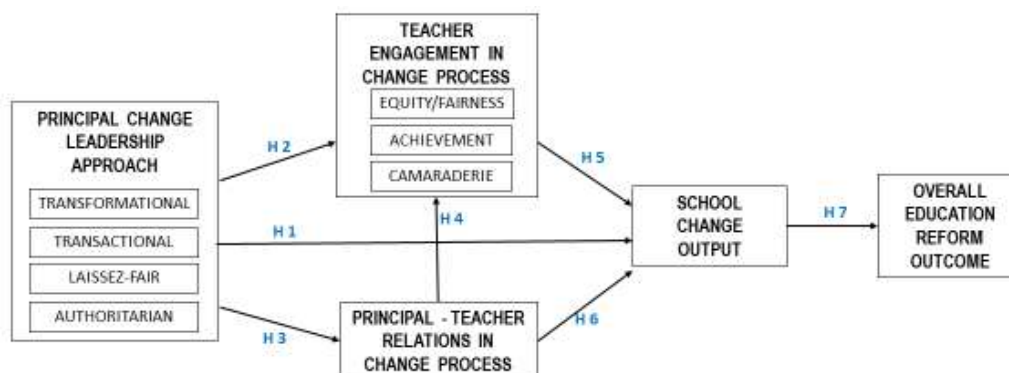


Figure 4.5 CLA Research Model

- H1. H1 was not supported. The SEM did not have a direct path to the change result output and outcomes from the Change Leadership Approach constructs. The Change Leadership Approach constructs directly influenced the change process through the change impact constructs, which in turn influenced the School Change Output and Overall Education Reform Outcome, indicating indirect support.
- H2. Transformational leadership approach to Teacher Engagement (Camaraderie and Equity/Fairness) was strongly supported. Transactional Leadership approach to Teacher Engagement (Achievement) was also strongly supported, and partially supported Camaraderie and Equity/Fairness. There was no support from Laissez-faire Leadership approach to Teacher Engagement. There was weak support from Authoritarian Leadership to Teacher Engagement (Equity/Fairness).
- H3. Transformational Leadership approach to relations was strongly supported. There was weak support from Laissez-fair Leadership approach to relations.
- H4. The direct pathway of Principal-Teacher Relations and Teacher Engagement was strongly supported by Equity/Fairness, and weakly supported by Camaraderie.
- H5. The direct pathway from Teacher Engagement to School Change Output was strongly supported by Achievement and Camaraderie. There was a direct influence path with partial support from Achievement to Overall Education Reform Outcome.
- H6. The direct pathway from Principal-Teacher Relations to School Change Output was partially supported.

- H7. The direct path from School Change Output to Overall Education Reform Outcome was strongly supported, with partial support directly from Achievement (Teacher Engagement).

#### **4.4.4 Summary**

The overall SEM CLA path model analysis had excellent fit. This indicates a valid path model exists between this study's constructs and propositions, suggesting the hypothesised pathways were significant. The results indicated that a combination of change leadership approaches was most likely suitable for establishing principal-teacher relations and engaging teachers in the implementation of education reforms in PNG secondary schools.

### **4.5 Qualitative Data: Interview with Principals**

Qualitative data were collected simultaneously with the quantitative data collection. The semi-structured interviews captured the relevant themes in the study.

#### **4.5.1 Qualitative Content Analysis**

Data were imported into NVivo project from a Microsoft Word document where it was analysed for frequencies and displayed as Figures 4.6 to 4.13. Next, data were sorted and coded into four themes (nodes), corresponding with the CLA Research Model and SEM path model constructs. The ten constructs were coded as child nodes and grouped under the respective 'parent' nodes corresponding with 'Change Leadership Approaches', 'Change Impact Constructs', and 'Change Results', as per the CLA Research Model. Once coded, data were analysed using text coding queries.

The first text query analyses frequency of coded words and summarised them in a word cloud (Figure 4.6). Further analysis of three most frequently used words were then developed into word trees (Figure 4.7, 4.8 & 4.9) to understand frequently used phrases associated with most commonly used words. Words appearing larger than other words in the word cloud were more frequently used. Similarly, the word tree displayed frequently used words and phrases. Further cluster analysis was conducted on data to understand a 3D approach to construct correlations based on Jaccard's coefficient, comparing sets of data to see which data are shared.



#### **4.5.1.1 Word Clouds**

Word clouds visually highlight the frequencies of the different words that appear in text data (DePaolo & Wilkinson, 2014). This visual representation of the most frequently used words in the principals' interviews allowed the researcher to have an overview of the main themes being revealed, as recorded in the text.

The word cloud shown in Figure 4.6 displays the most frequently used words from the open-ended questions, indicated by differences in word sizes. The words 'incentives' and 'relationship' appeared as the largest words followed by 'results', which were therefore the most frequently used words. The word 'incentives' is synonymous with rewards and motivations and closely associated with the transactional leadership approach (Avolio & Bass, 2004; Kahn, 1990; Yukl, 2011). The word 'relationship' is used synonymously to define transformational leadership (Mehdinezhad & Arbabi, 2015; Northouse, 2013; Kahn, 1990). The word 'results' is synonymously used with change, and change outcomes and outputs. According to the Macmillan Dictionary (2020), 'result' synonyms include outcome, influence, consequence, effect, impact, the aftermath and a result of a process or an event.

The frequent use of these large words highlights the principals' predominant change leadership approach, which can be interpreted as: (1) relationships are built and nurtured through incentives, (2) with the predominant change leadership approaches being transformational and transactional leadership, (3) resulting in change outcomes, at the school level.

The smaller the word in the cloud, the less frequently they appeared in the data. This most likely indicates words which were not 'top-of-mind' for principals engaged in the conversation (interview) regarding their leadership approach. The smaller words included 'delegating' 'consultative', 'collective', and 'democratic', indicating that these approaches were not on the 'top-of-mind' for principals as appropriate 'transformational' and 'transactional' change leadership approach strategies.



Figure 4.6 Word cloud of change leadership approaches

In summary, the word cloud portrays the principals' perceived change leadership approach and change impact construct strategies. Principals associate the words 'incentives', 'relationship', and 'result' with: (1) leadership approach; (2) impact on relations and teacher engagement; and (3) reform change results. They relate incentives as a key leadership approach strategy. They are thinking in terms of incentives as a means of establishing principal-teacher relations (relationship) and in engaging staff. This suggests that principals view transactional and transformational leadership approaches as appropriate for achieving change outcomes (results) in implementing the education reforms.

The word cloud indicated there are multiple pathways by which a principal can achieve desired change results. This is in-line with hypothesised propositions in the CLA Research Model (Figure 4.5).

#### 4.5.1.2 The Word Tree

A word tree is developed by selecting a word in a word cloud and exploring it for phrases based on frequency of use (Ignatow & Mihalcea, 2017). Again, larger words and phrases in the word tree have been used more frequently. Word trees allowed the researcher to examine the words 'incentives', 'relationship', and 'results' and their use in sentences or phrases in the principals' interview text data. The word tree provided a visual display of words connected to 'incentives', 'relationship', and 'results' through a branching system. This

displays the words and phrases that come before and after ‘incentives’, relationship’, and ‘results’ providing context for these words. According to Ignatow and Mihalcea (2017), word trees are an improvement over word clouds as the connected words and phrases are displayed.

The ‘incentive’ word tree (Figure 4.7) developed understanding of ways incentives were used in phrases captured from principals and their thinking. Incentive appears at the centre of the word tree. To the left of ‘incentive’ are words and phrases influencing and connected into the word ‘incentive’, and to the right are the words and phrase outcomes associated with the word ‘incentive’.

Examples include reoccurring phrases such as “I listen to and provide incentives to motivate teacher to implement” the reforms. Others expressed that “in the school we provide incentives to motivate staff”, and “staff engagement require right incentives to get them to commit.” These examples demonstrate the principals’ thinking around their change leadership approach.

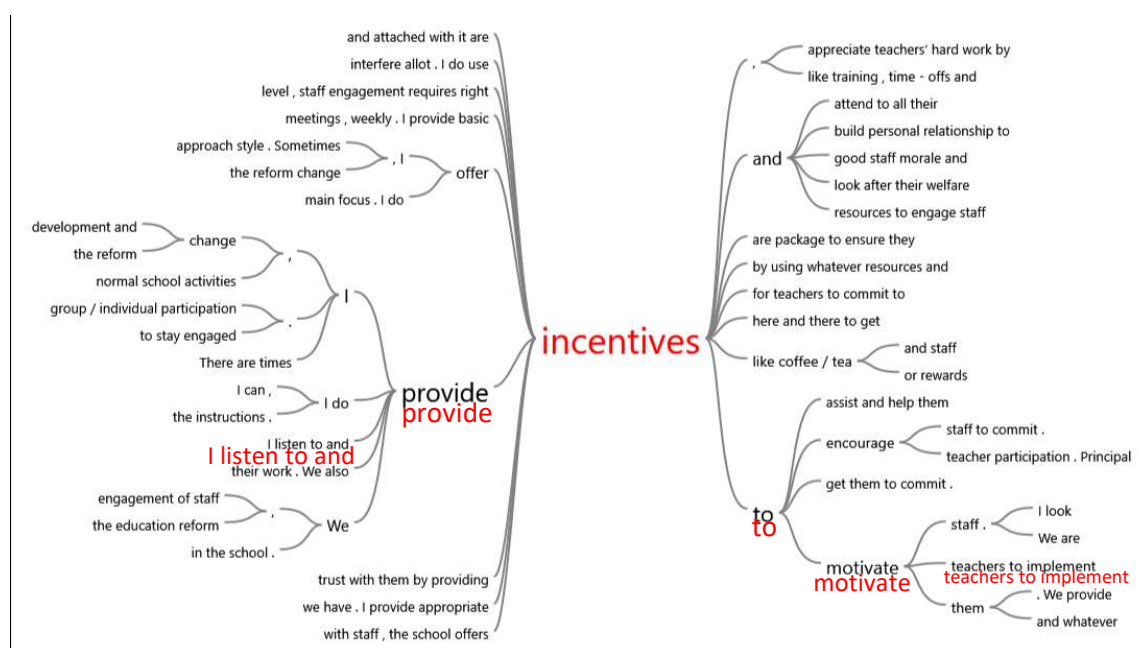


Figure 4.7 Word tree text search based on the word ‘incentives’

The second word tree examined ‘relationship’ as a commonly used word from the word cloud (Figure 4.6). Figure 4.8 demonstrates popular phrases, such as “provide incentives and build personal relationship with staff in implementing the” reforms, and even establishing “professional relationship with staff”, were considered by PNG secondary school principals in building principal-teacher relations and engaging teachers.

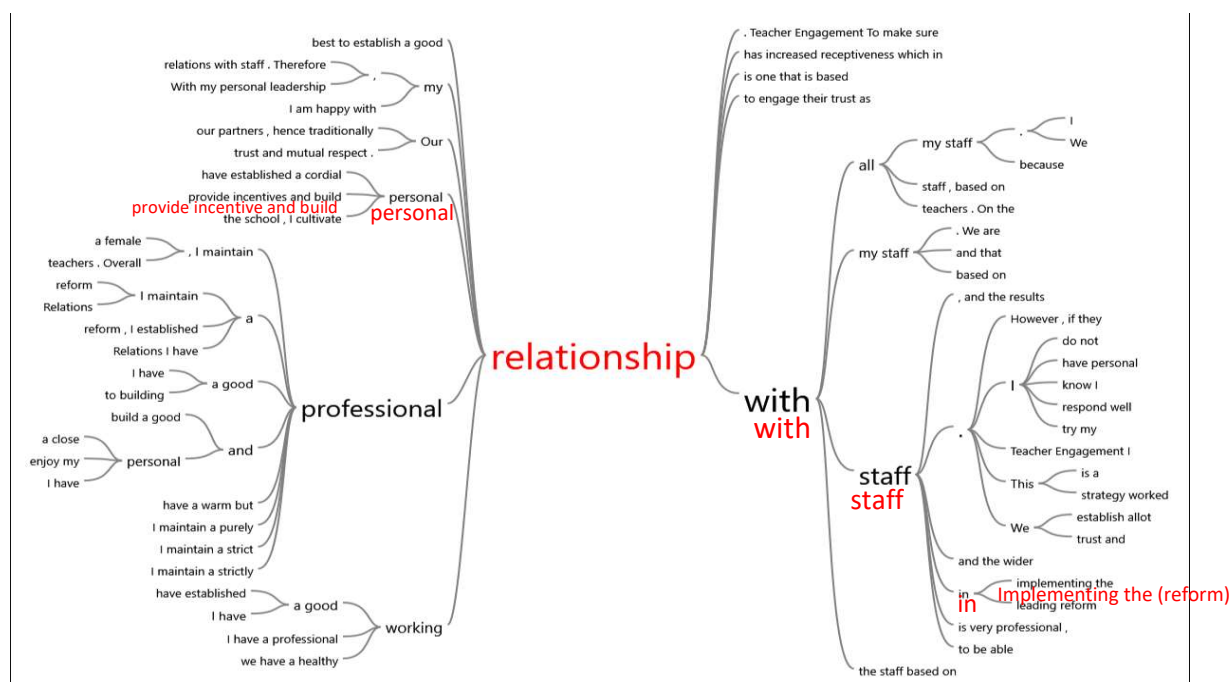


Figure 4.8 Word tree text search based on the word 'relationship'

The third word tree examined 'results' as a popular used word from the word cloud (Figure 4.6). Figure 4.9 demonstrates popular phrases perceived by principals, such as “openly appreciate and celebrate good results and good academic achievements” and establish good “teacher relations to get better results from the reform change” and “to engage staff to get results and good academic achievements” as reform change outcomes.



Figure 4.9 Word tree text search based on the word 'results'

In summary, the word trees showed multiple pathways through which principals approach change to engage staff to achieve education reform change outcomes in secondary schools. It also showed that principals likely prioritise their school's change leadership approach differently as they implement the reform changes. Hence, different principals framed change leadership approach perspectives differently, yet each perceived themselves to be delivering desired change results. This also suggests principals have multiple pathways through which they can deliver change outcomes. This finding further provides support for multiple transition pathways and offers support for the SEM CLA path model analysis (Figure 4.4).

#### ***4.5.1.3 Cluster Analysis***

Further qualitative analysis included 3D cluster analysis. Nodes were analysed by coding similarities between the constructs and were measured with Jaccard's coefficient. Jaccard's coefficient compares sets of data to see which data are shared and which are distinct (Ni Wattanakul et al., 2013). It is a measure of similarity for the two sets of data, with a range from 0 to 100%. The higher the percentage, the more similar the two sets of data.

In this study, the nodes were grouped according to the similarities between and among child nodes and/or parent nodes, with a range of 0 to 100%. The higher the percentage, the more similar the two constructs. The cluster analysis generated a 3D display of clusters of nodes, according to aggregates of data coding illustrating how each node was positioned in relation to the others.

To assess alignment with the CLA path model analysis, change leadership approach and change impact construct data were analysed using Jaccard's coefficient.

#### ***A. Change Leadership Approach***

Using the four leadership approach nodes, (transformational, transactional, laissez-faire, and authoritarian) and parent node (Change Leadership Approach), the Jaccard's coefficient summary is presented in Table 4.6.

Table 4.6 Change leadership approach Jaccard's coefficient

Change Leadership Approach	Jaccard's coefficient (%)
Transformational	66
Authoritarian	22
Transactional	21
Laissez-faire	11
Transformational\Authoritarian	9
Transactional\Authoritarian	8
Transformational\Transactional	6
Transformational\Laissez-faire	5
Laissez-faire\Authoritarian	5
Transactional\Laissez-faire	2

Transformational leadership approach was most strongly related to change leadership approach, followed by authoritarian and transactional approaches. There were weak relationships between and among the constructs. This was further demonstrated by the 3D cluster map displayed in Figure 4.10.

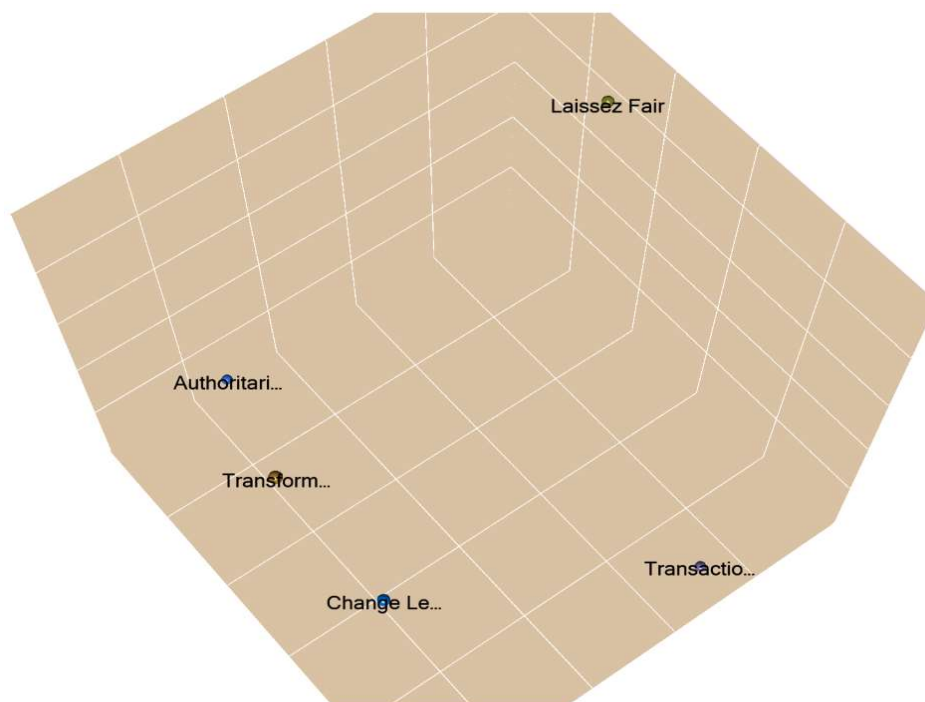


Figure 4.10 3D Cluster analysis of change leadership approaches

To illustrate possible 'leadership approach' relationships, the 3D cluster map (Figure 4.10) positioned 'laissez-fair' to the top right, 'transformational' and 'authoritarian' to the bottom left of the base, and 'transactional leadership' to the right of the base section of the

map. The clusters indicated their relative positions as they relate to ‘change leadership approach’ with ‘laissez-fair leadership’ a sizeable distance away from ‘transformational’, ‘authoritarian’, and ‘transactional’ leadership. Laissez-faire’s weak (and only) association with relations, as well as authoritarian’s weak (and only) association with equity/fairness, was also confirmed by the SEM CLA path analysis (Figure 4.4). These findings support and validate the ‘change leadership approach’ to ‘change impact constructs’ part of the SEM CLA path analysis (Figure 4.4), as: (1) transformational had a direct strong effect on relations (0.28 effect), camaraderie (0.32 effect), and equity/fairness (0.55 effect); (2) transactional has direct strong effect on achievement (0.57 effect), and partial effect on camaraderie (0.18 effect) and equity/fairness (0.18 effect). Thus, model validation was established between SEM (quantitative) and NVivo (qualitative) studies

Therefore, there was strong support for transformational and transactional leadership approaches in leading change. This suggests that, in this survey, PNG secondary school principals adopted transformational and transactional leadership approaches in leading the education changes.

### ***B. Change Impact Constructs***

Further cluster analysis was conducted with change impact constructs (relations, achievement, camaraderie, and equity/fairness). The Jaccard’s coefficient summary is presented in Table 4.7.

Table 4.7 Change impact constructs Jaccard’s coefficient

Change Impact Constructs	Jaccard's coefficient (%)
Camaraderie	45
Relations	40
Achievement	29
Relations\Camaraderie	26
Equity-Fairness	22
Camaraderie\Achievement	20
Relations\Achievement	6
Equity-Fairness\Camaraderie	6
Relations\Equity-Fairness	5
Equity-Fairness\Achievement	4

Camaraderie and relations were strongly related to change impact constructs, followed by achievement and equity/fairness. There was a strong relationship between the constructs of



relations and camaraderie, as well as between camaraderie and achievement. This is demonstrated by the 3D cluster map displayed in Figure 4.11.

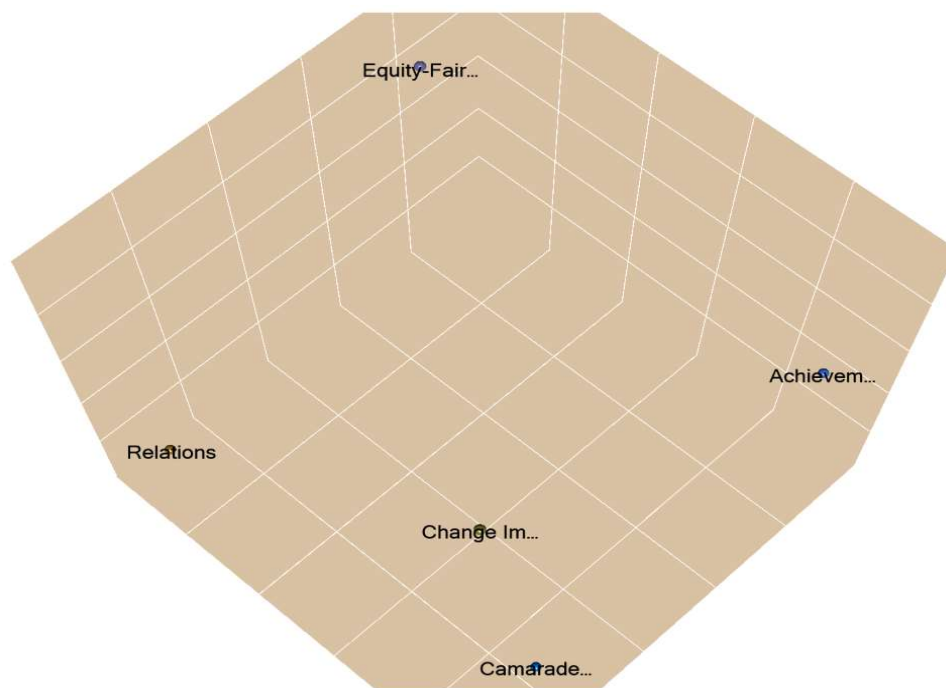


Figure 4.11 3D Cluster analysis of change impact constructs

To illustrate possible ‘change impact’ relationships, the 3D cluster map (Figure 4.11) positioned ‘camaraderie’ to the forefront of the base, with ‘relations’ to the left and ‘achievement’ to the right, all clustered at the base. The clusters indicate their relative positions as they relate to the change impact construct, with ‘equity/fairness’ a sizeable distance away from camaraderie, relations, and achievement. Equity/fairness was only weakly associated with the change impact construct. These findings support and validate the ‘change impact’ to ‘change results’ part of the SEM CLA path analysis (Figure 4.4), thereby validating the SEM and qualitative data.

### ***C. Change Results (School Outputs and Overall Reform Outcomes)***

Cluster analysis was conducted using the two change result nodes (school change outputs and overall reform outcomes) and parent node (change results). The Jaccard’s coefficient summary is presented in Table 4.8.



Table 4.8 Change results constructs Jaccard's coefficient

Change Results	Jaccard's coefficient (%)
School outputs	68
Overall reform outcomes	47

School outputs were strongly related to change results, followed by overall reform outcomes. This is demonstrated by the 3D cluster map displayed in Figure 4.12. To illustrate possible 'change results' relationships, the 3D cluster map (Figure 4.12) positioned 'overall reform outcomes' to the foreground of the base. 'School outputs' was placed at the top mid left and closer to 'change results', indicating its strong relationship. The clusters indicate their relative positions as they relate to 'change results'.

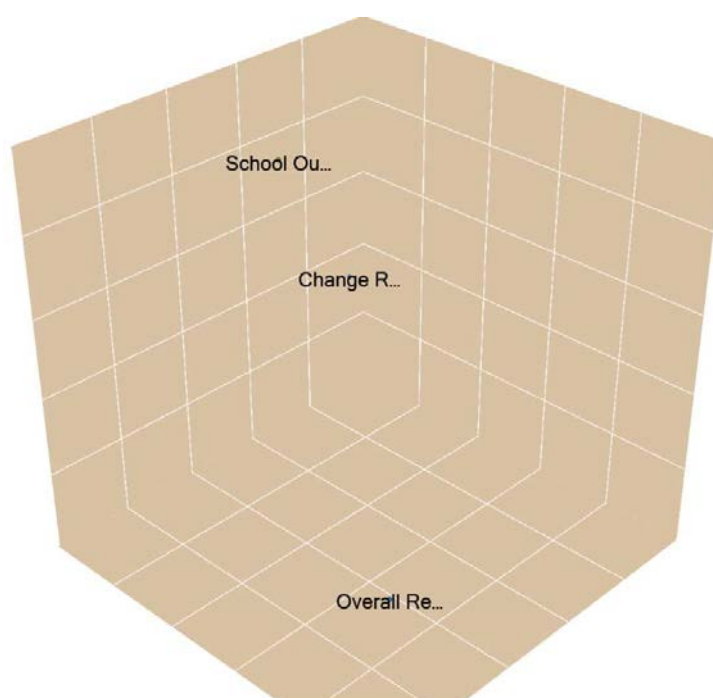


Figure 4.12 3D Cluster analysis of change results

The 3D cluster map (Figure 4.12) positioned 'school outputs' closer to 'change results' indicating a closer relationship to the construct. The 'overall reform outcomes' was further away, at the foreground of the base. These findings further support 'change impact' to 'change results' and the 'school change output' to 'overall reform outcomes', demonstrated in the SEM CLA path analysis (Figure 4.4). Hence, model validation was established between SEM and qualitative data.

The SEM CLA path analysis (Figure 4.4) demonstrated strong pathways between ‘change impact constructs (relations, camaraderie, and achievement)’ and ‘school change outputs’, with eventual impact on ‘overall reform outcomes’. On the 3D cluster analysis, the ‘overall reform outcomes’ position’s relative to school change outputs was also supported by the SEM path analysis. This suggests PNG secondary school principals were able to see immediate change outputs at the school level, with impact on the overall education reform outcomes.

In summary, the cluster analyses suggested transformational and transactional leadership approaches relate well with relations, camaraderie, and achievement to achieve school change outputs. These findings provide further evidence that multiple approaches may be used in combination to achieve change results. The cluster analyses indicated alignment with the CLA Research Model (Figure 4.5).

#### ***4.5.1.4 Directional Project Map***

Further data analysis was conducted by exploring nodes and interconnecting relationships. Relationship nodes were coded based on the CLA Research Model SEM path model directional pathways (Figure 4.4). These relationship nodes and construct nodes were analysed using project maps. The directional project map was developed with project items (nodes and relationships) added (Figure 4.13). This Directional Project Map demonstrates shaded circles representing CLA Research Model constructs (child and parent nodes), and arrowed circles representing relationship connector pathways, as per the SEM path analysis.

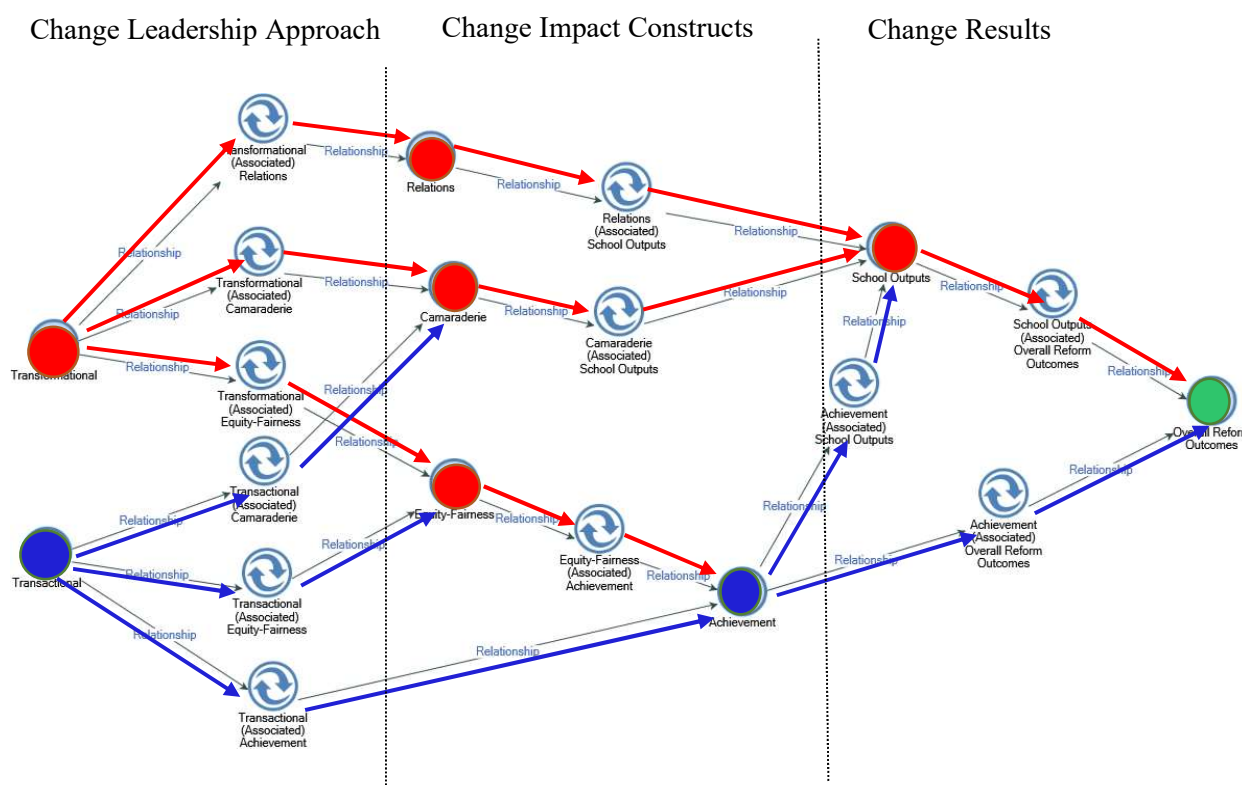


Figure 4.13 Directional Project Map assimilating SEM path model analysis

The directional project map indicates the different pathways taken by 'Change Leadership Approaches' (transformational and transactional) through 'Change Results' (Figure 4.13). Figure 4.13 demonstrates multiple unidirectional pathways, towards school outputs and overall reform outcomes. For example, the highlighted pathways indicate possible pathways for achieving change results. The red pathway shows transformational leadership, influencing relations to indirectly influence overall reform outcomes via school outputs; and the blue pathway shows a direction pathway from transactional leadership through achievement directly to both school outputs and overall reform outcomes.

#### 4.5.2 Summary

The qualitative findings from word cloud, word trees, 3D cluster analyses using Jacquards Coefficient, and directional project map support the quantitative SEM path model (Figure 4.4). Therefore, triangulated results from literature, and quantitative and qualitative data provide high levels of validity to the CLA Research Model (Figure 4.5).

## 4.6 Research Questions Validation

Based on the results from the SEM path analysis, word cloud, word tree, and 3D cluster analysis, this section examines the research questions posed in this study. The six research questions pertain to each independent and dependent variable construct, and the school change outputs and overall education reform outcomes.

### 4.6.1 Change Leadership Approach

*Research Question 1. What change leadership approach (es) do secondary school principals in PNG use to lead education reform changes?*

The SEM path analysis established a strong link between: (1) transformational leadership approach and teacher engagement constructs of camaraderie (0.32) and equity/fairness (0.55); (2) transformational leadership approach to relations (0.28); and (3) transactional leadership approach and equity/fairness (0.18), achievement (0.27), and camaraderie (0.18). The 3D cluster analysis further supports this, with camaraderie (Jaccard's coefficient 45%) and relations (40%) as strong 'change impact constructs', and were strongly related to transformational and transactional leadership approaches. These indicate the strong prevalence of transformational and transactional approaches to change leadership by principals in PNG secondary schools.

### 4.6.2 Teacher Engagement

*Research Question 2. What change leadership approach (es) influence teacher engagement in implementing reform changes?*

The SEM path analysis established a strong link between: (1) transformational leadership approach and teacher engagement constructs of camaraderie (0.32) and equity/fairness (0.55); and (2) transactional leadership approach and teacher engagement constructs of equity/fairness (0.18), achievement (0.27), and camaraderie (0.18). The word cloud and word tree demonstrated a high association of 'incentives' used in engaging staff. This indicates the overwhelming prevalence of transactional leadership approach to change leadership that influences teacher engagement in PNG secondary schools. Transformational leadership approach, according to the SEM analysis, strongly influenced camaraderie and equity/fairness. The 3D cluster analysis strongly supported transformational leadership approach, with Jaccard's coefficient at 66%.

### **4.6.3 Principal-Teacher Relations**

*Research Question 3. What change leadership approach (es) influence principal-teacher relations in implementing reform changes?*

The SEM path analysis established a strong link between transformational leadership and principal-teacher relations (0.28). The word cloud and word tree demonstrated a high association of 'relationship' emphasised in establishing principal-teacher relations. This indicates transformational leadership approaches to change leadership in PNG secondary schools directly influence principal-teacher relations. The 3D cluster analysis strongly supported transformational leadership approach, with Jaccard's coefficient at 66%.

### **4.6.4 Teacher Engagement to School Change Outputs**

*Research Question 4. Does teacher engagement influence school change outputs in implementing reform changes?*

The SEM path analysis established a strong link between teacher engagement constructs, achievement (0.26), and camaraderie (0.35) to school change outputs. The 3D cluster analysis supported camaraderie (Jaccard's coefficient at 45%) and achievement (29%). This indicates that engaged teachers who achieved a sense of accomplishment (achievement), and felt appreciated and recognised (camaraderie), did influence change results in implementing education reforms in PNG secondary schools.

### **4.6.5 Principal – Teacher Relations to School Change Outputs**

*Research Question 5. Does principal-teacher relations influence school change outputs in implementing reform changes?*

The SEM path analysis established partial support and link between principal-teacher relations (0.21) and school change outputs. This indicates that principal-teacher relations have some influence on school change outputs in PNG secondary schools in implementing reform changes. Furthermore, the word tree analysis and directional map strongly supported this by highlighting the personal and professional relationships that principals establish to influence school change outputs.

### **4.6.6 Principal Change Leadership Approach Influence on Overall Education Reform Outcomes**

*Research Question 6. Do principal change leadership approaches influence overall education reform outcomes in implementing reform changes?*

The SEM path analysis did not have a direct path to overall education reform outcomes. Hence, there was no direct link between principals' change leadership approaches to overall education reform outcomes. This indicates that principals' change leadership approaches did not have direct influence in overall education reform outcomes in implementing reform changes in PNG secondary schools. However, the SEM path analysis indicated indirect influence through the change process, linking strongly to transformational and transactional leadership approaches. This was strongly supported by the directional map analysis.

## 4.7 Chapter 4 Summary

This chapter summarised the analysis of responses and the results of the survey and interviews. The findings included the demographics, data validation, measurement constructs, SEM model fit, validation on the hypotheses, and research questions. Eighteen of the hypothesised correlations in the CLA Research Model reported as significant.

While the aims of SEM path analysis were to test the CLA Research Model and propositions, qualitative analyses aimed to provide support for quantitative results. The results indicated that a combination of change leadership approaches was most likely suitable for implementing education reforms in PNG. This combination approach by principals involved *in-situ* leading and building relationships, and in engaging teachers to achieve reform change results. The chapter also discussed the results of the quantitative (survey) and qualitative (interviews) data analysed, using a word cloud, word trees, 3D cluster analyses using Jacquards Coefficient, and directional project map, which supported the quantitative SEM CLA path model. The triangulated results from literature, quantitative, and qualitative data provide high levels of validity for the CLA Research Model.

The SEM Path Model analysis of the CLA Research Model established a strong link between school change leadership approaches and change impact constructs. Notably, transformational and transactional leadership approaches had a strong relationship to camaraderie, principal-teacher relations, and achievement.

Chapter 5 discusses the results in more depth, highlights the contributions and limitations of this study, and details opportunities for further research directions.

## **CHAPTER 5. DISCUSSIONS AND CONCLUSIONS**

### **5.1 Introduction**

Chapter 4 reported results of the data analyses using SEM path analysis and NVivo word cloud, word tree, cluster analysis, and directional project map. The hypotheses were tested, and research questions examined. The chapter concluded with a discussion of the change leadership approaches guided by the Change Leadership Approach (CLA) Research Model, developed from the analysis conducted in chapter 2, to address the research problem.

This chapter draws on extant literature to discuss the research findings to answer the research questions and research problem. Section 5.2 provides an overview of the thesis. Section 5.3 discusses the research findings by answering the research six questions. Section 5.4 draws conclusions from the findings in addressing the research problem. Section 5.5 discusses the theoretical, practical, and policy implications of the study. Section 5.6 discusses the theoretical and practical contributions to closing literature gaps in the field of change leadership in organisations. Section 5.7 acknowledges the limitations of the research. Section 5.8 offers directions for future research, and section 5.9 draws the conclusion to the thesis.

### **5.2 Research Overview**

The research problem was to examine change leadership approaches in PNG secondary schools in the implementation of the education reforms. Chapter 1 established the need to study change leadership approaches in the context of the ongoing education reforms in PNG. Chapter 1 also provides the background and highlights the significance of the study.

Chapter 2 examined the literature focusing on: (1) leadership as the parent discipline; (2) organisational change leadership as the field of study; (3) change leadership approaches as the immediate discipline of the study; and (4) the change impact mediating constructs, to achieve change outcome success. This study examined leader-member relations and employee engagement impacts of change leadership. Extant literature suggests change leadership may be a combination of transformational, transactional, laissez-faire, and authoritarian leadership approaches. Based on these leadership approaches, the change leadership conceptual framework (Figure 2.4) was developed. The research framework proposed that principals' leadership approaches influence principal-teacher relations and engage teachers to implement the reform changes, which in turn influences change outcomes. Based on the conceptual

framework, the CLA Research Model (Figure 2.10) was developed to investigate the change leadership approaches of PNG secondary schools.

Chapter 3 described the research methodology developed for the study. Quantitative and qualitative approach instruments were developed. Sampling techniques and selection of data for collection and analysis approaches justified.

Chapter 4 presented the SEM path model analysis of the CLA Research Model validity and model fit explanations. The qualitative analyses using NVivo word cloud, NVivo word trees, and NVivo 3D cluster analysis, positioning each change leadership approach and change impact constructs into relative three-dimensional positioning space were presented. The directional project map provided further evidence to support the quantitative SEM path model. The conceptual framework, SEM path model, and NVivo results triangulate to enhance the validity of the CLA Research Model.

### 5.3 Findings of the Research Questions

To explore the purpose of the study, six research questions were developed. Based on the gaps in the literature, seven research hypotheses were developed to test the research questions. The hypotheses test results are summarised in Table 5.1.

Table 5.1 Hypotheses test results and Research Questions

Hypotheses (H) Tested	Results	Research Question (RQ)
<b>H1.</b> The principal's change leadership approach influences school change results: school outputs and the overall education reform outcomes.	<b>Not supported:</b> <i>No direct path to the change result output and outcomes from the change leadership approach constructs.</i>	RQ6
<b>H2.</b> Principal's change leadership approach influences teacher engagement in change process.	<b>Supported:</b> <ul style="list-style-type: none"> <li>▪ <i>Transformational &gt;&gt; Equity (0.55***)</i></li> <li>▪ <i>Transformational &gt;&gt; Camaraderie (0.32***)</i></li> <li>▪ <i>Transactional &gt;&gt; Equity (0.18**)</i></li> <li>▪ <i>Transactional &gt;&gt; Camaraderie (0.18**)</i></li> <li>▪ <i>Transactional &gt;&gt; Achievement (0.27***)</i></li> </ul>	RQ1 & RQ2
<b>H3.</b> Principal's change leadership approach influences principal-teacher relations in change process.	<b>Supported:</b> <ul style="list-style-type: none"> <li>▪ <i>Transformational &gt;&gt; Relations (0.28***)</i></li> </ul>	RQ1 & RQ3
<b>H4.</b> Principal-teacher relations influence teacher engagement in change process.	<b>Supported:</b> <ul style="list-style-type: none"> <li>▪ <i>Equity &gt;&gt; Relations (0.57***)</i></li> <li>▪ <i>Camaraderie &gt;&gt; Relations (0.10*)</i></li> <li>▪ <i>Equity &gt;&gt; Achievement (0.32***)</i></li> <li>▪ <i>Equity &gt;&gt; Camaraderie (0.17**)</i></li> <li>▪ <i>Camaraderie &gt;&gt; Achievement (0.31***)</i></li> </ul>	RQ3 & RQ4



<b>H5.</b> Teacher engagement in change process influences school change outputs.	<b>Supported:</b> ▪ <i>Camaderie &gt;&gt; School Change Output (0.35***)</i> ▪ <i>Achievement &gt;&gt; School Change Output (0.26***)</i>	RQ4
<b>H6.</b> Principal-teacher relations in change process influence school change outputs.	<b>Supported:</b> ▪ <i>Relations &gt;&gt; School Change Output (0.21**)</i>	RQ5
<b>H7.</b> School change outputs influence overall education reform outcomes.	<b>Supported:</b> ▪ <i>School Change Output &gt;&gt; Overall Education Reform Outcome (0.59***)</i> ▪ <i>Achievement &gt;&gt; Overall Education Reform Outcome (0.19**)</i>	RQ4, RQ5 & RQ6

The empirical data and the interview results are discussed in sections 5.3.1 – 5.3.7 to answer the Research Questions.

### 5.3.1 Findings: Research Question 1

Research Question 1 investigated change leadership approaches principals use in the implementation of the education reform changes in PNG secondary schools. To test the research question, hypotheses 2 and 3 proposed that principals' change leadership approaches influence: (1) Teacher-Engagement; and (2) Principal-Teacher Relations, in the change process. These hypotheses were strongly supported statistically (Table 5.1) and qualitatively by the principals' interview responses (Figure 4.13).

Transformational, transactional, laissez-faire, and authoritarian leadership approaches have greater utility in change and process theories of leadership (Northouse, 2018; Schedlitzki & Edwards, 2018; Bass, 2008). The findings demonstrated strong support for transformational and transactional leadership approaches and are consistent with other studies.

Transformational and transactional leadership approaches have greater impact as leadership approaches in a constantly changing environment (Faupel & Süß, 2019; Shaw-VanBuskirk et al., 2019) that: (1) positively affects employee attitudes towards change process (Northouse, 2018; Herrmann et al., 2012); (2) reduces cynicism about change (DeCelles et al., 2013); (3) establishes positive relations (Northouse, 2018; Uhl-Bien et al., 2014); (4) engages followership (Northouse, 2018; Epitropaki et al., 2017; Sultana et al., 2015; Bass & Avolio, 1997); and (5) achieves positive change results (Xenikou, 2017; Sadeghi & Pihie, 2012; Bass & Steidlmeier, 1999).

### 5.3.2 Findings: Research Question 2

Research Question 2 investigated whether principals change leadership approaches influence teacher engagement in the implementation of the education reforms in PNG secondary schools. Research question 2 was tested in hypothesis 2 which proposed that

principals' change leadership approaches influence teacher engagement in the change process. This hypothesis was strongly supported statistically (Table 5.1) and qualitatively by the principals' interview responses (Figure 4.13). The findings demonstrated that transformational and transactional leadership approaches strongly influence teacher engagement.

These findings are consistent with those of Pereira and Gomes (2012), who examined the effectiveness of transformational and transactional leadership by exploring the relationships between the capacity of the human resource, leadership, organisational climate, and performance. Pereira and Gomes' (2012) findings suggested that a transformational leader: (1) promotes group spirit by fostering identification with the organisation and promoting a collective identity among the followers; (2) communicates expectations and thus enhances the followers' feeling of self-efficacy; and (3) acts as a behavioural model, that demonstrates the behaviours that are desired by the organisation. A study conducted by Faupel and Süß (2019) also highlighted that transformational and transactional leaders can increase their followers' work engagement, even in the face of obstacles, during the change process. Studies in schools by Yukl (2013) and Lunenburg (2010) demonstrated that there is a significant relationship between principal's transformational and transactional leadership approaches and teachers' work engagement.

### **5.3.3. Findings: Research Question 3**

Research Question 3 investigated whether the principals' change leadership approaches influence principal-teacher relations in implementing education reform changes. To investigate Research Question 3:

- (1) Hypothesis 3 proposed that principals' change leadership approaches influence principal-teacher relations in the process of implementing the reform changes.

Hypothesis 3 was strongly supported statistically (Table 5.1) and qualitatively by the principals' interview responses (Figure 4.13). A transformational leadership approach establishes principal-teacher relations. The findings supported Hulpia et al. (2011) and Spillane's (2006) propositions that LMX, transformational, and transactional theories provide the theoretical basis for observing Principal-Teacher relationships that influence Teacher Engagement and school performances. Hallinger and Heck (2010) and Hallinger (2010) observed that improvements to school performances worked through the principals' positive relationship with teachers. Studies by Biehl (2019), Gutermann et al. (2017), Bauer and Erdogan (2015), Martin et al. (2015), Dulebohn

et al. (2011), Restubog et al. (2010), and Graen and Uhl-Bien (1995) further support the proposition that transformational leadership positively influences followership and follower outcomes, such as work engagement and organisational performance.

- (2) Hypothesis 4 proposed that principal-teacher relations influence teacher engagement in the process of implementing reform changes. The SEM analysis results provided strong statistical support for the hypothesis (Table 5.1), and qualitative support was provided by principals' interview responses in which emphasis was heavily placed on 'relationship' (Figure 4.13). Teacher engagement constructs of Equity/Fairness and camaraderie supported the hypothesis.

This is consistent with research by Brookover et al. (2005), who concluded that the quality of relationships the principal has with their teachers does impact on their commitment and school performance. Effective relationships that are based on the principles of equality (equal as colleagues) and fairness (same treatment for all), fosters greater cooperation and collegiality, resulting in higher commitment to tasks (Sirota & Klein, 2014). Leadership approaches that foster such work environment create agency for continuous employee engagement (Cameron et al., 2003a). Studies by Biehl (2019), Gutermann et al. (2017), Bauer and Erdogan (2015), and Martin et al. (2015) further support the proposition that LMX (principal-teacher relations) impacts on work engagement and organisational performance.

#### **5.3.4 Findings: Research Question 4**

Research Question 4 investigated whether teacher engagement impacts on school change outputs in implementing the reform changes. To test research question 4, hypothesis 5 asserted that teacher engagement in the process of implementing the reforms influences school change outputs. This hypothesis was strongly supported statistically (Table 5.1) and qualitatively by the principals' interview responses (Figure 4.13). Teacher engagement constructs - achievement and camaraderie - supported school change outputs.

The findings indicated that engaged teachers, who achieved a sense of accomplishment (achievement) and were appreciated and recognised (camaraderie), positively influenced change results. These findings were consistent with Lee and Smith (1996) and Bryk et al. (2013), who established that teacher engagement in schools increased buy-in for decisions and thus had a greater impact on student learning and school achievement. Studies by Schwartz et al. (2014), Sirota and Klein, (2014), Bakker and Leiter, (2010) and Schaufeli

et al. (2002) further support the proposition that engaged teachers and employees directly impact on school and organisational performance results and outputs.

### **5.3.5 Findings: Research Question 5**

Research Question 5 investigated whether principal-teacher relations impact on school change output in the process of implementing the reform changes. To test research question 5, hypothesis 6 proposed that principal-teacher relations, in the implementation of the reforms, influenced school change output. This hypothesis was supported statistically (Table 5.1) and qualitatively by principals' interview responses (Figure 4.13). This is consistent with the Society for Human Resources Management (SHRM, 2020) report, which states that good relationships among co-workers and leaders lead to job satisfaction, engagement, and performance outputs. Positive relationships principals maintain with teachers have been observed to improve school performance and deliver better outcomes (Heck & Hallinger, 2010; Brookover et al., 2005; Wheelan & Kesselring, 2005). Studies by Biehl (2019), Gutermann et al. (2017), Bauer and Erdogan (2015), and Graen and Uhl-Bien (1995) further supports the proposition that LMX has a direct impact on organisational performance results and outputs.

### **5.3.6 Findings: Research Question 6**

Research Question 6 investigated whether principals' change leadership approaches influence the overall education reform outcome in the implementation of the reforms. To investigate Research Question 6:

- (1) Hypothesis 1 proposed that the principals' change leadership approach influences school output and the overall education reform outcomes. Based on the SEM path analysis results, this hypothesis was not supported statistically nor qualitatively by principals' interview responses. This finding is consistent with studies in Malaysia (Tajasom & Ahmad, 2011), Israel (Oreg & Berson, 2011), and by Leithwood et al. (2020), that indicated that principals have indirect influences on school performances. A recent meta-analysis study on the effects of leadership approaches on organisational performance conclude that leadership has a medium-to low-level direct effect on organisational performances (Danisman et al., 2015). Other studies have also established the indirect impact of principal leadership on school performances (Chen, Kadir & Ke, 2014; Dumay et al., 2013; Antoniou, 2013; Coelli & Green, 2012; Kyriakides et al., 2010; Day et al., 2009; Robinson et al., 2008; Robinson, 2007).

(2) Hypothesis 7 proposed that school change outputs influence overall education reform outcomes in the change process. This hypothesis was strongly supported statistically (Table 5.1) and qualitatively by principals' interview responses, in which heavy emphasis was placed on producing good 'results' in schools (Figure 5.13). This supports (and is supported by) the findings of the research questions which established that principals change leadership approaches' influence on principal-teacher relations and teacher engagement has an impact on the overall education reform outcomes.

These findings are consistent with the change paradigms of first-, second-, third- and fourth-orders of change, in change processes (Aljohani, 2016; and Kuipers et al., 2014; Higgs & Rowland, 2007). The order of changes revealed in the finding in response to Research Question 6 are summarised in Table 5.2.

Table 5.2 Order of changes in the implementation of education reform findings

Order of Change	Description of change
Fourth order change	Based on the progressive performance outputs of individual schools, achievement of the overall aim of the education reform, which is to improve access and quality of education in PNG
Third order change	Based on the progressive performance outputs, the overall education reform outcomes within the school are realised
Second order change	principal-teacher relations and teacher engagement impact on school performance and results - school change output
First order change	Principals' change leadership approach impacts on principal-teacher relations and teacher engagement.

### 5.3.7 Findings: Principals Interviews

The principals' interviews provided insights into their individual change leadership approaches in (1) establishing principal-teacher relations; (2) teacher-engagement; and (3) how these impact on achieving reform changes in their school. The findings revealed that principals' predominantly use of 'incentives', to establish and maintain 'relationship', with teachers to achieve 'results' (Figure 4.6, word cloud). The NVivo word tree analyses (Figures 4.7-4.9), and NVivo cluster analyses (Figures 4.10-4.12) highlight principals' use of transformational and transactional leadership approaches in implementing the reform changes. Additionally, NVivo Directional Project Map (Figure 4.13), supports the findings of the CLA path model analysis, where principals' change leadership approach influence on reform

change results and outcomes were mediated through teacher engagement and principal-teacher relation constructs.

The qualitative findings support the quantitative data in demonstrating that transformational and transactional leadership approaches are predominately applied in PNG secondary schools by principals in implementing reform changes. This is consistent with similar mixed methods studies in organisations within a changing environment context (Faupel & Süß, 2019; Shaw-VanBuskirk et al., 2019). Transformational and transactional leadership approaches yield positive employee attitudes towards change processes (Northouse, 2018; Herrmann et al., 2012) and reduce cynicism about change (DeCelles et al., 2013). Further, these approaches establish positive relations with staff (Northouse, 2018; Uhl-Bien et al., 2014), and effectively engage followership (Northouse, 2018; Epitropaki et al., 2017; Sultana et al., 2015; Bass & Avolio, 1997), resulting in achieving positive change outputs and outcomes (Xenikou, 2017; Sadeghi & Pihie, 2012; Bass & Steidlmeier, 1999).

## **5.4 Discussions: Addressing the Research Problem**

The research findings provide answers to the research problem. The findings reveal the predominant leadership approaches used by PNG secondary school principals to: (1) establish principal-teacher relations; and (2) engage teachers, in the implementation of education reform changes.

### **5.4.1 The Research Problem**

Research Problem is:

*To examine change leadership approaches in PNG secondary schools in the implementation of education reforms.*

The premise of the study was that, to achieve education reform success in PNG secondary schools, principals' change leadership approaches influence teacher engagement and principal-teacher relations. Sections 5.4.2 and 5.4.3 discuss the findings to answer the research problem.

### **5.4.2 Change Leadership Approaches**

To address the research problem, transformational, transactional, laissez-faire, and authoritarian approaches to leadership that support the implementation of change were

explored. First, the findings demonstrate that principals have an indirect impact on change outputs and outcomes mediated through teacher engagement and principal-teacher relations. This highlights that greater involvement by teachers is critical to achieving reform change success.

Second, based on extant literature, change leadership approaches appeal to teacher engagement and followership along a continuum that demonstrates the focus of leadership on the leader (leader-centric) or on the follower (follower-centric) (Figure 5.1). The leader-centric approach (on the left) is highly focused on the principal as the key determinant for change outcomes (Kouzes & Posner, 2019; Northouse, 2018; Spector, 2016; Jiang et al., 2015). At the opposite end of the continuum, the follower-centric approach is highly focused on teachers as key participants and determinants for change outcome success (Northouse, 2018; Epitropaki et al., 2017; Uhl-Bien et al., 2014; Raymond, 2010).

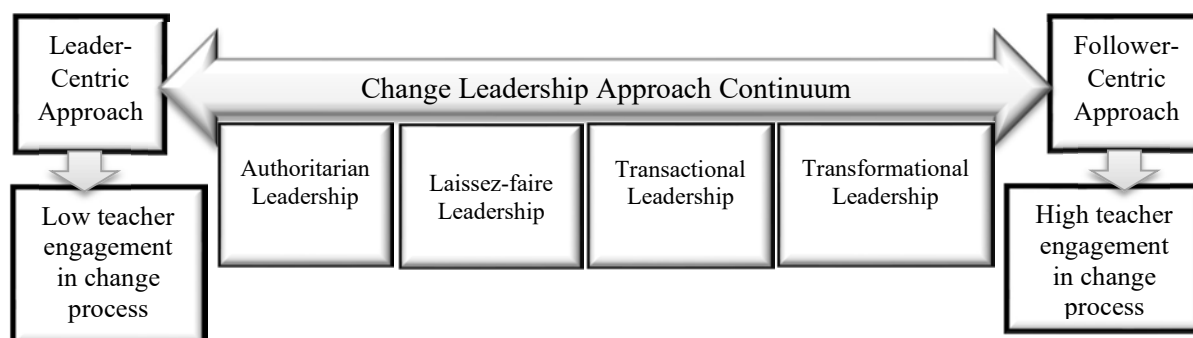


Figure 5.1 Leader/ Follower centric approaches to leadership

Based on the findings, transformational, followed by transactional leadership, approaches have higher appeal for creating followership and teacher engagement. On the other hand, the authoritarian leadership approach demonstrates low appeal. According to Northouse (2018), authoritarian approaches yield low engagement and followership. The laissez-faire leadership approach also had minimal appeal. Laissez-faire leadership is basically a hands-off or no leadership approach (Uslu, 2019; Al-Malki & Juan, 2018; Harrison, 2018).

Third, based on the extant literature and the findings, transformational and transactional leadership approaches support principal-teacher relation during the change process. Principal-teacher relations are critical to influencing teacher engagement and school performance (Hulpia et al, 2011; Hallinger & Heck, 2010; Hallinger, 2010; Sipllane, 2006).

In addressing the research problem, transformational and transactional leadership approaches were used by PNG secondary school principals in implementing the education reform changes.

### **5.4.3 Transformational and Transactional Leadership Approaches**

Transformational and transactional leadership approaches are used by principals in PNG secondary schools to establish and maintain staff relations and engagement. This is supported by Rickards and Clark's (2006) observations that effective change leaders employ both transformational and transactional approaches that are dependent upon followership. According to Northouse (2016, p.164), transformational leadership is the "process of engaging with others to create a connection that increases motivation, morality & commitment in both the leader & the follower." Transformational leadership approach builds personal relationships and adapts to the followers, context, and situation and provides stability in unstable and changing environments or conditions (Faupel & Süß, 2019; Shaw-VanBuskirk et al., 2019; Jones, 2018; Northouse, 2018). Transactional leadership "focuses on the exchange that occur between leaders and their followers" (Northouse, 2016, p.165). In such approach, the negotiation of transactional benefits between the leader and follower demands a modified approach to leadership to establish and maintain follower relations (Epitropaki et al., 2017; Uhl-Bien et al., 2014) and followership (Xenikou, 2017; Phillips, 2015; Sultana et al., 2015; Oc & Bashshur, 2013; Raymond, 2010).

The analysis of the principals' change leadership approach (Figure 4.6) revealed that 'incentives' were predominantly used in schools to: (1) establish principal-teacher relations; and (2) engage teachers. As one principal stated:

"There are no resources and support from the National Department of Education or the Government to implement these reforms in the school. So, I provide incentives to build personal relationships to motivate teachers to implement the reforms."

The provision of incentives as a practice is a transactional leadership approach (Northouse, 2018; Xenikou, 2017; Sultana et al., 2015; Khan, et al., 2016; Yukl, 2012). However, the underlying intention of incentives is to motivate teachers to engage in the process of implementing the education reforms. Work engagement is a motivation concept that also refers to the voluntary allocation of resources to accomplish tasks (Christian, Garza, & Slaughter, 2011; Klassen & Chiu, 2011; Roth et al., 2007). Resulting from inadequate reform resources ((PNGLSR, 2016), 'incentives' appear to be a viable approach strategy, and are



offered to motivate employees. Incentives include improved working conditions and wages and providing a safe workplace environment and work culture that supports work engagement (Stange, 2020; Wickham, 2019; Beheshti, 2018).

Analysis of principal's change leadership approaches highlight that building or establishing professional and personal 'relationship' with staff is used to engage teachers. One principal summarised this as follows:

“In order to implement the reforms, it requires a team effort from all of us in the school. My role in this is to build a good professional relationship with staff. This is important because, when there is a good working relationship with staff, it is easy to communicate and encourage each other to implement the reforms.”

The 'relationship' establishes the dyadic communication platform that facilitates effective principal-teacher relations. From the teachers' perspective, the dyadic relationship that enables effective communication is observed as a transformational leadership approach. Other principals expressed, “I am a good listener”, “I talk to my teachers and consult them”, “I make it my business to understand them”, and “my doors are always open”, to highlight a communication-friendly work environment required for establishing work relationships.

The importance of establishing relationships with staff is observed to be a key platform for engaging staff (Biehl, 2019; Martin et al., 2015; Dulebohn et al., 2011; Restubog et al., 2010; Graen & Uhl-Bien, 1995). For instance, a study by Gutermann et al. (2017) on leader-follower cross over effects on work engagements and performance outputs concluded that leaders' work engagement positively links to that of their leader follower relations (LMX), followership, and work engagement. Studies in Malaysian schools by Musah et al. (2018) and Matthias (2014) also established that high quality LMX relations lead to greater teacher acceptance of the principal, thereby improving teachers' effectiveness.

Further, establishing professional relationships is for the purpose of getting work done, within the formal rules of operation (Methot et al., 2016; Ashcraft, 2000). Principals stated that maintaining a professional relationship helps to ensure the reforms are implemented in compliance with the rules, regulations, or instructions from NDoE. This was articulated thus:

“I maintain a professional relationship with the staff, based on reform policy instructions and deadlines provided by the National Government. Teachers do know the consequences if we do not meet these requirements.”

Here, relationship building is formal, thus professional, and is ostensibly established to hold teachers accountable for lack of engagement. The relationship is observed to ensure

compliance to rules and regulations, and to hold staff accountable for noncompliance. This authoritarian leadership approach articulates a motive for establishing ‘relationships’ with staff.

Kohn (2005) observed that leaders have the power to create productive or counterproductive work environments and may be contingent upon the quality of the relationship between the leader and followers. According to Lee-Kim (2006), employees reacted according to the type of relationship established by leaders. Formal or professional relationships had the tendency to yield compliance to rules and regulations more than genuine engagement (Methot et al., 2016; Ashcraft, 2000). According to Raymond (2010), followership is a reaction based on the dyadic relationship and interaction. People react to how they are treated, which depends largely on the type and quality of relationship. This type of leadership is also called managerial leadership based on the transactional management by exception (passive) approach (Gemeda & Lee, 2020; Northouse, 2018; St. Thomas University, 2018). Leaders use this approach to focus on specific tasks and use rewards and punishments to motivate followers (Xenikou, 2017; Sultana et al., 2015; Bass & Avolio, 2000).

Establishing a ‘personal relationship’ with staff to produce better performance outcomes is important. Typically, the term personal relationship pertains to the social relationship leaders maintain with followers (Methot et al., 2016), and is seen to be an effective strategy to engage teachers. One principal stated:

“In the school, I cultivate personal relationship with my staff in implementing the reform. This allows me to get to know and understand them personally and individually. When problems come up, it is easy for me to talk to them and address their needs on a one-on-one basis.”

The emphasis on addressing “their needs on a one-on-one basis”, indicates the transactional nature of the approach to engaging staff (Xenikou, 2017; Sultana et al., 2015). Staff needs are met in exchange for their commitment and engagement. Again, the approach is intended to engage teachers, and the “one-on-one” approach allows principals to understand individual issues to be able to get them to engage. From the teachers’ perspective, this can be interpreted as a transformational approach, where they feel their issues are effectively addressed. However, reciprocity is based on the transactional contingent reward theory, where leaders not only influence followers, but are under influence of their followers as well (Sultana et al., 2015; Bass & Avolio, 1997). When the transacted ‘one-on-one’ agreements are met, the

relationship endures. The opposite is also true when the agreements are not met (Xenikou, 2017; Phillips, 2015; Sultana et al., 2015; Sadeghi & Pihie, 2012).

Finally, the present research demonstrated that there was an indirect impact of principals' change leadership approaches on change results. NVivo word and text analysis identified the principals' perceived "teacher relation" to achieve "better results from the reform change," and "engage staff to get results and good academic achievements". One principal observed:

"I don't physically get in touch with students and teach them in the classrooms on a daily basis, my teachers do. To get the results we need, my job is to look after teacher's needs."

Another principal stated:

"Maintaining good relationships with teachers is important because they get the job done in the end. Because I support my teachers well, we always get good results."

Another simply added:

"We get good academic results because my teachers are committed."

The connection to change results from principal-teacher relations and teacher engagement, from transformational and transactional leadership approaches, is well established in this study. This is consistent with similar studies in Malaysia (Tajasom & Ahmad, 2011), Israel (Oreg & Berson, 2011), and in studies by Leithwood et al. (2020), Danisman et al. (2015), and Yukl, (2013). The NVivo directional project map further highlights the multidirectional path flow from principals' transformational and transactional leadership approaches to change results.

In summary, research findings identified transformational and transactional approaches to change leadership, and provided insight into improving principals' change leadership approaches in implementing the reform changes. These findings have immediate application to improving change leadership approaches in secondary schools in progressing implementation of the education reforms. Implications from this study are discussed in section 5.5.

## **5.5 Implications of the Study**

At the time of submission of this thesis, education reforms are still in progress while a wider public sector reform agenda is also underway. Research findings have theoretical,

practical, and policy implications in education, particularly in schools, and may also have application in other public sector reforms in PNG.

### 5.5.1 Theoretical Implications

Generally, established change leadership and management approaches have resulted in low change outputs and outcomes (Hechanova et al., 2018; Henkel & Bourdeau, 2018; Epitropaki et al., 2017). The empirical findings in this study add to an understanding of change leadership approaches in implementing reform changes particularly in the PNG context. Transformational and transactional follower-centric process approach to establishing leader-member relations and employee engagement contributes to the theory of change leadership and organisational change.

The follower-centric process approach explored in this study provides insight into approaching change leadership in PNG secondary schools. By moving away from the traditional leader-centric approaches to leadership, this study highlights the multidimensional process approach to leading change in organisations. Process theory defines leadership as a social and goal-oriented influence process and seeks to answer the ‘how’ and ‘why’ about a phenomenon (Fischer et al., 2016; Northouse, 2016). The emphasis of the process approach is on the followers, situational variables, and tasks (Hechanova et al., 2018; Henkel & Bourdeau, 2018; Schedlitzki & Edwards, 2018; Epitropaki et al., 2017).

This study suggests that, given the lack of adequate resources and challenges presented in implementing the change in education reforms, principals transacted engagement of teachers and followership through building relations in the change process. This involved the use of incentives and leading from within and among the staff (teachers) (Stange, 2020; Wickham, 2019; Biehl, 2019; Martin et al, 2015; Restubog et al, 2020; Graen & Uhl-Bein, 1995), than leading from the front (Kouzes & Posner, 2019; Northouse, 2018; Spector, 2016; Jiang et al, 2015), to achieve change process outcomes.

The research also suggests that the traditional heroic leader-centric PNG *Big Man* leadership models (Prideaux, 2018, 2008, 2006, Essacu, 2016), are ineffective in PNG organisations. The exclusive nature of the *Big Man* approach often results in lack of engagement of followers (Lederman, 2015; Ambang, 2008). The study suggests that process or follower-centric approaches to leadership, as demonstrated by transformational and transactional leadership approaches, result in establishing positive leader-member relations and staff engagement.

Finally, the study demonstrates that the impact of change leadership is contingent on the direct impact it has on followers and followership in the change process. Hence, leader-centric approaches yield lower followership and engagement of staff (teachers) and often lead to regressive outcomes in the change process (Northouse, 2018; Spector, 2016; Jiang et al, 2015).

### 5.5.2 Practical Implications

This research found that principals use transformational and transactional leadership approaches in implementing the education reform changes in secondary schools in PNG. This approach is consistent with similar studies in different countries. The research finds that to achieve over all education reform change outcomes, the foundational first-order change in the change process begins initially with teachers. This is demonstrated by the order of changes observed in the study as presented in Table 5.3.

Table 5.3 Summary of Change Targets

Order of Change	Change Targets	Policy Direction
Fourth-order: Sector-wide change or reforms	<ul style="list-style-type: none"> <li>Improved educational outcomes: (1) Access - increased enrolments in secondary education; and (2) Quality - improvements in the quality of learning reflected in the annual Mean Rating Indices (MRI) and entry into tertiary education.</li> <li>Improvements in the Human Development Indices (HDI) of the country.</li> </ul>	
Third-order: Organisation change	<ul style="list-style-type: none"> <li>System and cultural change in schools – adapting to the (new) reformed changes.</li> <li>School status change from high to secondary school.</li> <li>School-based curriculum implemented.</li> <li>Teachers with a minimum university level graduate qualification.</li> <li>Improved capacity in schools to enrol more students.</li> </ul>	
Second-order: Sub-system change	<ul style="list-style-type: none"> <li>Operational arrangements like reduced teaching loads to relieve teachers to focus on reform agenda.</li> <li>Milestones established and rewards for achieving them.</li> </ul>	
First-order: Principals and teachers as frontline agents of change	<ul style="list-style-type: none"> <li>Training and development.</li> <li>Incentives.</li> <li>Resources.</li> <li>Individual responsibility and accountability measures.</li> </ul>	

Teachers are frontline change agents directly translating reform policy agendas into change outputs and outcomes. Principals are also frontline change agents as they provide the immediate leadership in engaging teachers. Therefore, as frontline change agents, first-order change in the education reforms in schools begin with teachers and principals. Initial first-order changes in schools occur when teachers respond favourably to change leadership approaches of principals. Changes in the behaviour and engagement of teachers represent the first-order changes (Cameron & Green, 2020; Aljohani, 2016).

Second-order changes are possible when the schools have teachers who are engaged and committed to the reform activities, consequently influencing the school's structures and systems to adapt to the new reform changes. Internal operational arrangements, such as reducing teaching loads of teachers engaged in the reforms, are readjusted, and realigned to free-up teachers to engage more in the reform activities. For instance, teachers engaged in developing the school-based curriculum are assigned decreased teaching loads. Additionally, teachers' performances are monitored, and milestones achieved are recognised to further encourage engagement and commitment. To achieve that, principals used 'incentives' as rewards for achieving milestones and building working relationships with teachers during the implementation process.

Third-order changes are reflected by the complete system changes within the school. For instance., under the old system, high schools enrolled students from grades 7 to 10. The education reform aimed to transform the high schools to secondary schools by moving the grades 7 and 8 to primary schools allowing secondary schools to focus on enrolling grades 9 to 12. Along with this change is the development of the school-based curriculum and the recruitment of qualified teachers at graduate level. Hence, the third-order change is made possible when engaged teachers (first-order change) commitment in the reforms influenced the operational arrangements within the school (second-order change).

Based on the first, second and third-order changes within the school, the fourth-order changes demonstrate the sector-wide transformational change that the education reform policy agenda set out to achieve. The fourth-order change reflects the changes in schools under the reform policy in addressing the overall educational outcomes of the country. Hence, the achievement of the overall education reform requires that initial practical investments be made to engage teachers in schools.

The Taskforce on Education Reforms in PNG (TERPNG, 2014) and PNG Leadership Summit (PNGLSR, 2016) reported that 60% of the secondary schools have not achieved the school changes under the education reform which started in 1993. This study has developed

the organisational change and change leadership process model that can be used to assess change leadership approaches of principals to improve the implementation process of the education reforms to full completion. The process model is proposed here in Figure 5.2.

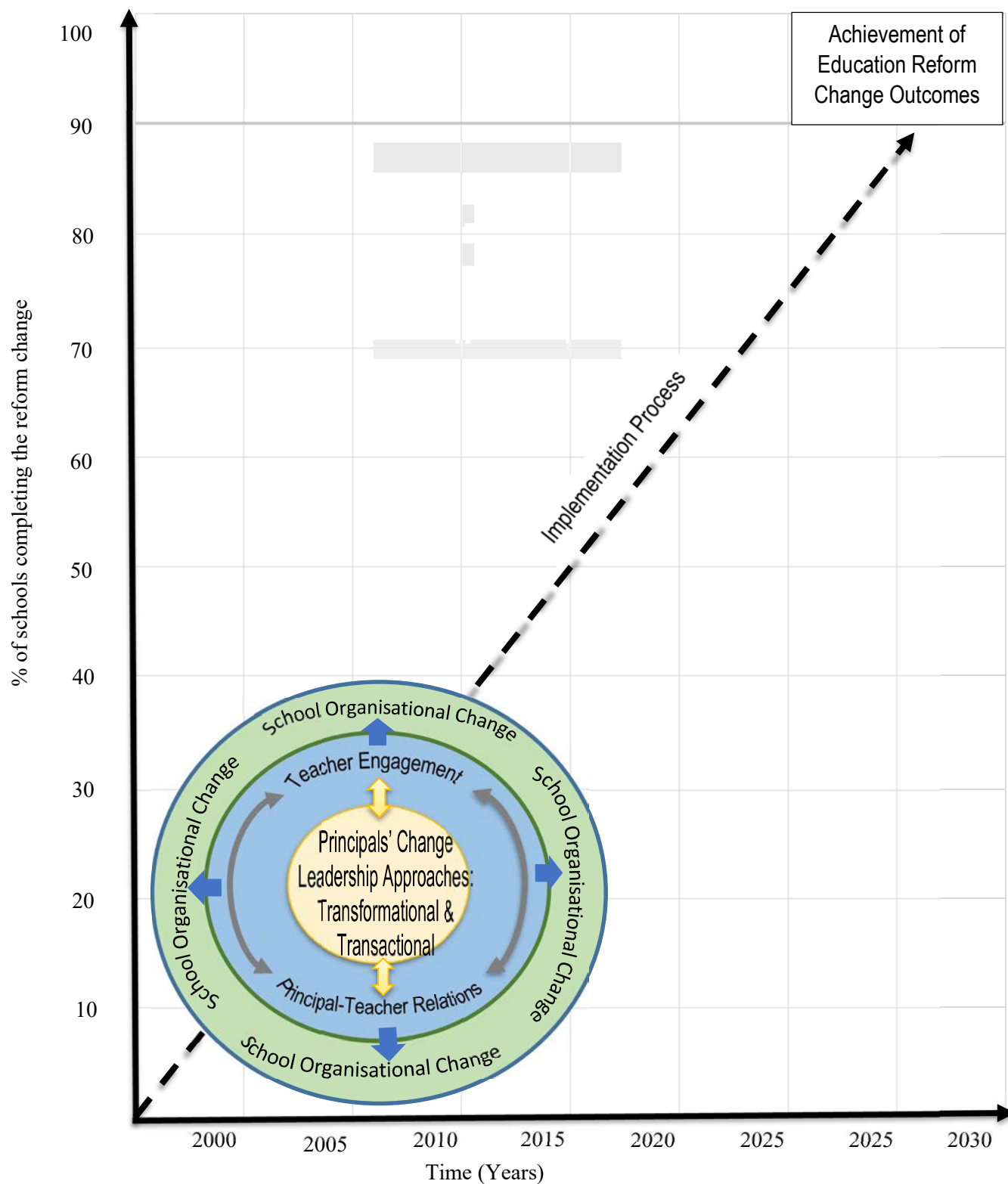


Figure 5.2 School change and principal change leadership process model

The CLA Research Model developed and tested by this thesis, the orders of change and the change leadership process model, provide the school system level models for the improvement of educational reform outcomes. Additionally, it provides value in improving change leadership approaches in secondary schools in PNG. The research identifies that principals' transformational and transactional follower-centric process approaches to change leadership establishes principal-teacher relations and engages teachers. Conversely, laissez-faire, and authoritarian approaches in change leadership yield low relational and engagement outcomes during the change process.

### **5.5.3 Policy Implications**

Implications for policy on improving change leadership approaches and teacher engagement in implementing the education reforms are: (1) leadership development; and (2) providing adequate support for teachers including resources.

#### **5.5.3.1 Leadership Development**

This research demonstrates new approaches to leadership development required to effectively lead changes in schools. Principals are experienced teachers appointed on the basis of their teaching performance. According to Yukl (2013), principals often take narrowly focused administrative and managerial approaches to addressing system wide changes. Administration and managerialism are leader-centric approaches that are common in school organisations (Daft, 2016; Chikere & Nwoka, 2015; Lindberg, 2014; Yukl, 2013; Van Dierendonck, 2011) and define school leadership in PNG (Tivinarlik & Wanat, 2006; Lahui-Ako, 2001; Maha, 1992; Quarshie, 1992). Implementing a reform agenda suggests a major mindset shift from the leader-centric administrative and managerial practices to a more inclusive follower-centric leadership approach (Elkington et al, 2017). Leadership, in this sense, is the force of influencing change, as opposed to the managerial approach of administrating with directions and compliance (Northouse, 2018, 2013; Epitropaki et al., 2017; Kruse, 2013; Yukl, 2013).

According to Schweiger et al. (2020), leader-centric approaches support the heroic image of leaders in organisations. The hero image of leadership is well embedded in PNG organisations and culture as the *Big Man* approach to leadership (Lederman, 2015; McLeod, 2015, 2008; Prideaux, 2008; McLeod, 2008; Tivinarlik & Wanat, 2006; Ambang, 2008). Leader-centric *Big Man* approaches to leadership in PNG are observed to yield negative outcomes in organisations (TIPNG, 2020; Prideaux, 2018; Hayward-Jones, 2016). To achieve



follower-centric approaches in leading changes, leadership development that is embedded in schools as an ongoing school processes is required (Elkington et al., 2017). This is important to develop teachers, some of whom will eventually become principals.

According to Schweiger et al. (2020, p.411-412), leadership development targets to achieve major paradigm shifts from “leader-centred leadership” to “processual perception on leadership.” Schweiger et al. (2020) argue that, as leadership is a social interaction process, it requires the involvement by all organisational actors. According to the process theory, situations and tasks impose different demands requiring leadership at different stages and in different levels in the change process (Schweiger et al., 2020). Hence, leadership approaches during the change process that rely solely on leaders, risk alienating other actors who are best placed to act. Therefore, leading the change process requires that all actors are involved. This shifts the onus of leadership to followership (Northouse, 2018; Epitropaki et al., 2017; Uhl-Bien et al., 2014; Oc & Bashshur, 2013).

In the highly collegial and dynamic school working environment, where principals are considered *primus inter pares*, first among equals (Reinke, 2004, cited in Van Dierendonck, 2011), a shift from leader-centric to follower-centric approach is feasible (Leithwood et al., 2020; Hallinger 2010; Raymond, 2010). Leadership development focused on inclusive processual or process leadership is needed to drive reform changes more effectively in PNG secondary schools. Follower-centric leadership approaches establish strong relationships among actors that provide the foundation for employee engagement in the change process (Schweiger et al., 2020; Tams, 2018; Epitropaki et al., 2017; Phillips, 2015; Garavan et al., 2013; Raymond, 2010).

#### **5.5.3.2 Resources to Support Teachers**

Adequate resourcing to support the reforms are also necessary. Principals’ use of ‘incentives’ to nurture ‘relationships’ and ‘motivate’ staff attest to this. This includes improving existing conditions of employment for teachers, as frontline change agents. According to the PNG leadership summit report, one of the recommendations made, pertaining to lack of teacher commitment in implementing the reforms, was for improving their employment conditions (PNGLSR, 2016). The reforms are being implemented alongside and above teachers’ normal workloads. Thus, to improve teacher engagement and commitment, their employment conditions, such as wages, leave entitlements, accommodation, and logistical support for travelling to rural and remote locations, also need

to be addressed. Additionally, adequate provision of curriculum materials and resources to support the development and implementation of the school-based curriculum is required.

## 5.6 Contributions of the Study

This thesis contributes to the understanding of change leadership, particularly in PNG secondary schools. This thesis reveals that change leadership approaches used by principals in PNG secondary schools are multi-dimensional.

The change leadership concept is considered critical as an executive leadership approach to leading change in fast-changing work environments (Schweiger et al., 2020; Elkington et al., 2017; Monahan, 2016). Secondary schools face continuous change challenges in terms of developing appropriate school-based curriculum, teacher-skills development, and school leadership that reflects the changing needs of society. This research provides a good ‘start-up’ position for future research directions around change leadership research and development in PNG.

### 5.6.1 Theoretical Contributions

The literature helped to lay the foundation for understanding the research problem. Table 5.4 sets out the theoretical contributions of this study.

Table 5.4 Theoretical Contributions

THEORETICAL CONTRIBUTIONS		
Research Gaps (RG)	Specific Contributions	Overall Contribution
<p><b>RG1.</b> Literature on change leadership is based on the static and predictable nature of organisations.</p> <p><b>RG2.</b> Studies focus more on the role of leaders in organisational change process as opposed to leading the change process.</p> <p><b>RG3.</b> Literature is biased towards leader-centric, rather than follower-centric approaches to change leadership.</p> <p><b>RG4.</b> Literature on organisational change is biased on change management, than on change leadership.</p> <p><b>RG5.</b> Lack of change leadership studies in PNG.</p> <p><b>RG6.</b> Lack of change leadership approach model that examines the implementation process of organisational change in a PNG context.</p>	<ol style="list-style-type: none"> <li>1. CLA conceptual framework Integrates theories from change leadership approaches, teacher-engagement and principal-teacher relations.</li> <li>2. CLA Research Model: Dynamic multidimensional systems path model framework to enhance the development of examining change leadership approaches in PNG schools and public sector organisations.</li> <li>3. Change impact/mediating constructs: teacher engagement and principal-teacher relations,</li> <li>4. A shift in focusing on leader-centric approaches to follower-centric approaches to change leadership.</li> </ol>	<p>Exploratory approach to develop change leadership theory/model using the multidimensional systems approach framework to examine change leadership approaches and practices in leading organisational change.</p>

The thesis focused on change leadership approaches in the process of implementing education reform changes in PNG secondary schools. Change process space is defined by Rohr (2020) as the liminal space. Within the liminal space, conventional approaches to leadership based on existing leadership structures, hierarchies, approaches, and practices have minimal effect (Shaw-VanBuskirk et al., 2019). In that liminal space, leadership emerges depending on situation and task, and is contingent upon who has the necessary skills and knowledge to provide leadership (Evans, 2020; Heracleous & Bartunek, 2020; Shaw-VanBuskirk et al., 2019; Northouse, 2018). The CLA framework was developed to conceptualise the change process in the liminal space. The framework provides a basis for developing theory or model to structure the construct variables to impact reform change outcomes. This is useful in developing interventions to improve the progress of the education reforms. Additionally, the CLA conceptual framework (Figure 5.3) can be used to assess the change leadership approaches of principals in schools.

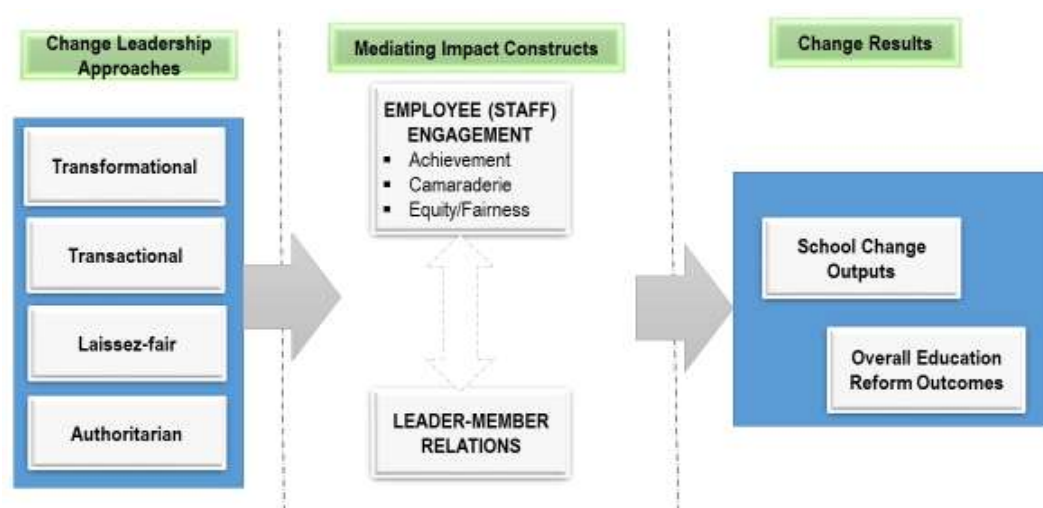


Figure 5.3 Change Leadership Approach (CLA) framework

The CLA framework extends Sirota's linear path model (Figure 2.6; Sirota & Klein, 2014) into a dynamic, multidimensional, and total systems process path model. The model reflects the multidimensional nature of leadership influence. The model describes the principals' change leadership approaches as inputs that impact on principal-teacher relations and teacher engagement as throughputs, in the change processes. As a process model, the emphasis of the model is in the process of change. Followership is indicated by: (1) the direct dyadic link between the principal and teachers; and (2) the link between teacher engagement and principal-teacher relations. The latter indicates that teacher engagement is also contingent on the quality of principal-teacher relations. The model adapts Sirota's three-factor model

which captures that intellectually and behaviourally engaged employees demonstrate high sense of achievement in their roles (Sirota & Klein, 2014; Sirota et al., 2005).

The CLA framework integrates theories from five fields - leadership, change, change leadership, leader-member relations, and employee engagement. Empirically, this research establishes the relational approach to leadership as an effective approach to change leadership in secondary schools in PNG. This study demonstrates that transformational and transactional leadership approaches positively influence teacher relations and engagement in implementing education reform changes. From process and relational leadership approach perspectives, this study demonstrates that principal-teacher relations and teacher engagement constructs are interrelated with change leadership approaches, and not independent components as shown in earlier studies.

### 5.6.2 Practical Contributions

The low rate of organisational change success globally (Heracleous & Bartunek, 2020) and in PNG (Kwa, 2016; Hayward-Jones, 2016), particularly the education reform (PNGLSR, 2016; TERPNG, 2014), suggests that existing leadership approaches need to be changed. The CLA approach framework and theories provide evidence for new ways of examining change leadership approaches to improve organisational change outcomes (Schweiger et al., 2020; Evans, 2020; Shaw-VanBuskirk et al., 2019). The research has significance for implementing education reform changes in primary schools, tertiary institutions, and public sector reforms in state institutions. Additionally, the present findings provide insight for the government in supporting the implementation of the change policy agendas. Other practical contributions that this thesis makes are captured in Table 5.5.

Table 5.5 Practical Contributions

<b>PRACTICAL CONTRIBUTIONS</b>		
<b>Research Gaps (RG)</b>	<b>Specific Contributions</b>	<b>Overall Contribution</b>
<b>RG1.</b> Change leadership literature is based on the static and predictable nature of organisations. <b>RG2.</b> Studies focus more on the role of leaders in organisational change process as opposed to leading change processes. <b>RG3.</b> Literature is biased towards leader-centric, rather than follower-centric approaches to change leadership.	1. Evidence supporting transformational and transactional leadership approaches to leading change. 2. CLA framework can be used to examine change leadership approaches in implementing government directed reforms. 3. Basis for designing targeted change leadership approach development programmes. For	Framework and evidence to support the use of a CLA framework in implementing change in schools and may be applied in public sector organisations.

<p><b>RG4.</b> Organisational change literature is biased towards change management, not change leadership.</p> <p><b>RG5.</b> Lack of change leadership studies in PNG.</p> <p><b>RG6.</b> Lack of change leadership approach model that examines the implementation process of organisational change in a PNG context.</p>	<p>instance, targeted leadership development programmes for future principals which can be offered in universities or as part of leader development programmes within schools.</p>	
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First, this study provides evidence that supports transformational and transactional leadership approaches build principal-teacher relations and engages teachers to commit to implementing education reform change in a PNG context. Second, the CLA framework was tested and provides a reliable research model to examine change leadership approaches in implementing government directed reforms. Finally, the CLA framework may serve as a useful model designing targeted change leadership approach development programmes.

## 5.7 Limitations

This thesis has several limitations which are noted below.

First, the results are based on the 47 (out of 98) schools in 14 provinces across the country. PNG's ethnic and social (cultural) diversity limits the generalisability of the findings. There are over 800 different languages and cultures in PNG (CIA World Fact Book, 2020; Prideaux, 2018; Lederman, 2015; Aime, 2006) spread across 89 districts, in 22 provinces (Kwa, 2016; Nanau, 2011). Hence, the findings and conclusions in this study may not be applicable to each school in PNG.

Second, diversity in schools and diversity management and leadership also limits the generalisability of the findings (Saylik, Potca, & Saylik, 2016; Ordu, 2015). According to Saylik et al. (2016, p.59), diversity is a "a mixture of different identities, backgrounds, experiences, beliefs, value judgements, ages, genders, demographic structures, professional experience, physical abilities, educational levels, family status, and personal dispositions and so on in any group, community or organization." Additionally, school differences, such as: church-run and state-run schools; public and private schools; girls' and boys' schools; and rural and urban schools, present different approaches to leadership (Ordu, 2015; Tivinarlik & Wanat, 2006; Lahui-Ako, 2001; Maha, 1992). Hence, the findings and conclusions in this study may not be applicable to each school.

Third, the measures in this research were developed based on the validity of previous measurement items. Multifactor Leadership Questionnaire (MLQ; 5x-Short) survey (Bass & Avolio, 2004) to measure change leadership approach constructs; the Utrecht Work Engagement Scale (UWES) survey (Schaufeli et al., 2002) to measure teacher engagement; and leader-member exchange (LMX) (Schriesheim et al., 1999; Graen & Uhl-Bien, 1995) to measure principal-teacher relations were adapted to the PNG school context.

Finally, theoretical validation of the study was limited by the paucity of leadership literature in the PNG context. Literature from countries similar to PNG and extant literature on change and change leadership have inspired direction for testing theoretical assumptions leading to understanding change and change leadership approaches. However, literature explored in this thesis laid the foundation to develop the CLA Research Model.

## **5.8 Future Research**

This study has identified several areas for future research in change leadership in PNG. Future research may balance research and practice, through developing action research models, in recursive relationships and settings. One possible research application includes investigating organisations in case study analysis, or the effects of change leadership approaches to workforce engagement. Extensions of this research may include implementing and testing the CLA Research Model as an organisational development model using action research. Replicating this study with secondary school principals in PNG, and using a recursive developmental model between change leadership and change impact constructs, may support outcomes of change results as a CLA Model. This can also be applied in primary schools to then compare the differences between change leadership approaches with secondary schools.

This study may also be conducted as an assessment model, with other organisations under reform in PNG. This may provide cross-organisational applicability of the model in terms of change leaders functioning in public organisations. Additionally, this provides further support for the CLA framework in the PNG context to understand different pathways to change transformation and success in the reforms currently being implemented. Further research may also include contrasting cross-country focus on other countries within the region undertaking similar reforms.

Another future research direction may include refining the change leadership measurement scale to include full range Multi-factor Leadership Questionnaire (MLQ; transactional-transformational leadership measure (Bass & Avolio, 1997). Future research

may use the CLA Research Model to assess the PNG *Big Man* approach to change leadership and establish how *Wantok System* influences leader-follower relations in engaging staff. The *Big Man* model of leadership is a leader-centric approach to leadership where followership is mandatory from a PNG Melanesian context (Lederman, 2015; McLeod, 2015, 2008). An ontological, epistemological or etymological study of the *Big Man* leadership model and its application to change leadership approaches in organisations using the CLA framework may provide further insight into its impact on leading change in PNG.

The influence of *Wantok System* in PNG secondary schools and organisations has been found to establish relations in organisations to in order to “get things done” (Tivinarlik & Wanat, 2006. p.11). Creating agency along with the *Wantok System* has produced negative outcomes in organisations in PNG (Essacu, 2019; Prideaux, 2016; Aime, 2006; Maha, 1992; Quarshie, 1992). The use of the CLA framework to investigate the impact of *Wantok System* in influencing relations in organisations would provide further insight into its impact on leading change in PNG.

Finally, the CLA framework can be used to examine change leadership approaches used by leaders in other sectors, including primary schools and tertiary institutions.

## 5.9 Conclusions

The need for change leaders is highlighted by the huge failures in achieving change results in organisations globally. This is even more challenging in PNG.

The PNG government introduced school systems, structure, and curriculum changes in 1993 to improve the low HDI. The education reforms have achieved low progress and, by 2014, achieved only 40% success. To improve the progress of the reforms, this study investigated change leadership approaches of principals in PNG secondary schools. Overall, this research concludes that transformational and transactional leadership approaches influence teacher relations and engagement in leading reform changes in secondary schools in PNG. From the change and relational perspective, transformational and transactional leadership approaches specifically show significant positive effects and are, therefore, suitable for establishing critical relationships to ensure staff are engaged in the change process, and in achieving change results.

The study provides a ‘take-up’ point from which additional change leadership approach models and change related construct developments may arise. Applied elsewhere, PNG public organisational leaders may adopt a combination of change leadership approaches to achieve reform outcome success.

Leadership is established as a social influence phenomenon. As a social construct, principals' change leadership approaches examined in the study have significant implications and immediate applications for change leadership in PNG school organisations. The observations and lessons from the study can potentially improve the progress of the ongoing education reforms as well as informing the implementation of other reforms.



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## APPENDIX A – Survey Questionnaire: Teachers

Leading and managing change in secondary schools: *Investigating the implementation process of education reforms in Papua New Guinea (PNG)*



Your answers are anonymous.

Survey Number			

PLEASE MARK YOUR RESPONSES LIKE THIS ➔ ● ➔ (fill in the circle)

### PLEASE TELL US A LITTLE ABOUT YOURSELF

- Are you Male ☐ Female ☐
- What is your age group? 21 to 30 ☐ 31 to 40 ☐ 41 to 50 ☐ 51 to 60 ☐ Over 61 ☐
- In which province were you born? Name of the Province \_\_\_\_\_
- What is your highest level of formal education achieved? Diploma ☐ Bachelor ☐ Post-Graduate ☐
- Where did you gain your highest qualification? PNG ☐ Other country ☐ If other, please write country name \_\_\_\_\_
- Please indicate your primary subject of teaching. English ☐ Mathematics ☐ Science ☐ Social Science ☐ Agriculture ☐ Appropriate Technology ☐ Sports ☐ Other ☐ If other, please name subject: \_\_\_\_\_
- What is your current position? Teacher ☐ Subject Master (SM) ☐ Senior SM ☐ Head of Department ☐ Deputy principal ☐ If other, please indicate \_\_\_\_\_
- How many years have you been teaching? 0-5 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ 21-25 ☐ 26-30 ☐ 31-35 ☐ 36-40 ☐ Over 41 ☐
- How many years have you been teaching in this (current) school? Please indicate a number. \_\_\_\_\_
- How many different principals have you taught under? Please indicate a number. \_\_\_\_\_
- Province where school is located. Name of this Province \_\_\_\_\_
- Status of the progress of the education reform in this school:  
Not started ☐ Progressing ☐ Near Completion ☐ Completed ☐

The following section seeks your views about leadership approach, teacher engagement and teacher/principal relationships in implementing education reform changes in your secondary school. Please fill in the appropriate circle to the responses on the right like this ➔ ● ➔ (fill in the circle)

Your thoughts/views on the Principal's Leadership Approach Please complete all questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
<b>In my opinion the Principal:</b>					
1. articulates a motivating vision of the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. displays a sense of power and confidence in the interest of the school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. emphasises the importance of having a collective sense of purpose	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. talks about his/her most important values	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. challenges us to formulate new ways of solving problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6.	helps us to develop our strengths and potentials	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.	includes us in the overall decision-making process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8.	provides school structure that entrusts us to participate in improving our teaching performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9.	provides us with assistance in exchange for our efforts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10.	makes it clear to us what we receive when our performance targets are achieved	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11.	makes it clear to us the consequence of not achieving our performance targets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12.	directs our attention towards failures to attain expected performance standards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13.	adheres to the school's operational structure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14.	depends on the staff being self-motivated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15.	encourages us to contribute our personal talents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16.	gives minimal guidance to staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17.	avoids getting involved when education reform matters arise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18.	generally, takes a 'hands-off' approach to issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19.	avoids making decisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20.	delays responding to any matter until a problem has escalated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21.	allows us to determine what is to be done and how to do it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22.	retains all decision-making authority	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23.	tells us what to do, how to do it and when he/she wants it to be done	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24.	rarely considers suggestions made by subordinates	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25.	closely monitors subordinates to ensure they are performing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26.	makes decisions based on his/her personal views	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Teacher Engagement</b> Please complete all questions		<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
<b>During the reform implementation process at the school:</b>						
27.	the principal treats me with respect	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28.	the principal keeps me informed about the reform process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29.	the principal's actions are consistently fair	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

30. the principal considers my suggestions towards the goals of the education reform and processes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. <b>the principal generally makes fair decisions</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. I know what is expected of me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. I have resources I need to do my work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. I have opportunity to make good use of my skills and knowledge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. I have received recognition for doing good work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36. I have opportunities at school to learn and grow professionally	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37. <b>I contribute more than what is expected of me</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38. there is a spirit of cooperation and teamwork	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39. <b>the school functions as one team</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40. <b>I enjoy working with my colleagues</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
41. teachers are committed to doing quality work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Principal/Teacher Relationship</b> Please complete all questions	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
<b>During the reform implementation process at the school:</b>					
42. I have an effective working relationship with the principal.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43. there is positive trust in the school among teachers, senior staff and principal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44. the principal offers sound/sensible advice on professional and personal issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45. fulfilling the needs of staff is a leadership priority of the principal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
46. the principal delegates duties and responsibilities to staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
47. the principal maintains a professional approach with teachers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
48. I feel comfortable working with the principal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Teacher Engagement to Education Reform Outcomes</b> Please complete all questions	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
<b>In my opinion, my engagement in the reform process has resulted in:</b>					
49. the success of the school system reform in our school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
50. the successful development of the school-based curriculum	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
51. improved teaching and learning in the school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

52. improving student academic performances as measured by the MRI	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Principal/Teacher Relationship to Education Reform Outcomes</b> Please complete all questions	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
<b>In my opinion, my relationship with the principal has resulted in:</b>					
53. the success of the school system reform in our school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
54. the successful development of the school-based curriculum	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
55. improved teaching and learning in the school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
56. improving student academic performances as measured by the MRI	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Education Reform Implementation Process Outcomes and Success</b> Please complete all questions	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
<b>In my opinion, the reform implementation process in our school has:</b>					
57. met student learning requirements and performance targets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
58. improved teacher engagement and commitment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
59. met the reform outcome expectations within the timeline	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## APPENDIX B – Measurement Item Development for Constructs

### RESEARCH QUESTIONNAIRES

#### 1. Define the subject and the variables to be measured

Study discipline	Research subject	Research focus
Organisational Change Leadership	Change leadership approaches of PNG Secondary school principals	Leading education reform changes in PNG secondary schools

#### 2. Research problem

To establish what change leadership approaches are currently being used in schools that can improve the progress of the implementation of education reforms in PNG.

#### 3. Research Questions and Hypotheses

Research Question (RQ)	Hypotheses (H) Tested
<b>RQ1.</b> What leadership approach (es) do secondary school principals in PNG use to lead reform changes?	<b>H2.</b> Principal's change leadership approach influences teacher engagement in change process. <b>H3.</b> Principal's change leadership approach influence principal-teacher relations in change process
<b>RQ2.</b> What leadership approach (es) influence teacher engagement in implementing reform changes?	<b>H2.</b> Principal's change leadership approach influences teacher engagement in change process.
<b>RQ3.</b> What leadership approach (es) influence principal-teacher relations in implementing reform changes?	<b>H3.</b> Principal's change leadership approach influence principal-teacher relations in change process <b>H4.</b> Principal-teacher relations influences teacher engagement in change process
<b>RQ4.</b> Does teacher engagement influence school change outputs in implementing reform changes?	<b>H5.</b> Teacher engagement in change process influence school change outputs. <b>H7.</b> School change outputs influence overall education reform outcomes.
<b>RQ5.</b> Does principal-teacher relation influence school change outputs in implementing reform changes?	<b>H6.</b> Principal-teacher relations in change process influence school change outputs.
<b>RQ6.</b> Does principal change leadership approach influence overall education reform outcome in implementing reform changes?	<b>H1.</b> The principal's change leadership approach influences school change results: school outputs and the overall education reform outcomes

#### 4. Causality and outcomes

<b>Questions to gauge change leadership in secondary schools</b>	<b>Outcomes from the questions</b>
▪ Leadership approaches	▪ An emergent leadership approach
▪ Principal-Teacher Relations	▪ Leadership approach influencing Principal-Teacher Relations
▪ Teacher engagement	▪ Leadership approach influencing Teacher Engagement
▪ School Change output and Overall Education Reform Outcomes	▪ Leadership approach that impacts School Change output and Overall Education Reform Outcomes

## 5. Questionnaire source summary

Research model Relation	Hypothesis	Research Question	Characteristics	Quantifiable variable	Question sources	Questionnaires
Principal leadership approach: ➔ Reform outcomes	<b>H1.</b> The principal's change leadership approach influences school change results: school outputs and the overall education reform outcomes	<b>RQ6.</b> Does principal change leadership approach influence overall education reform outcome in implementing reform changes?	– Direct influence	– Systems change – from <i>high</i> to <i>secondary</i> school – School-based curriculum developed	▪ Avolio & Bass (2004) ▪ Author contextualised	A. Multifactor Leadership Questionnaire
Principal leadership approach: ➔ Teacher engagement in change process	<b>H2.</b> Principal's change leadership approach influences teacher engagement in change process	<b>RQ1.</b> What leadership approach(es) do secondary school principals in PNG use to lead reform changes?	– Direct influence	– Teacher retention – Achievement – Camaraderie – Equity/fairness	▪ Sirota & Klein (2014) ▪ Author contextualised	C. Sirota 3-factor engagement questionnaire
Principal leadership approach: ➔ Principal teacher relations in change process	<b>H3.</b> Principal's change leadership approach influences principal-teacher relations in change process	<b>RQ2.</b> What leadership approach(es) influence teacher engagement in implementing reform changes?	– Direct influence	– Agency (co-creation)	▪ Leaders-Member Exchange (LMX) (Graen & Uhl-Bien, 1991)	B. LMX Questionnaire
Principal teacher relations in change process: ➔ Teacher engagement in change process	<b>H4.</b> Principal-teacher relations influences teacher engagement in change process	<b>RQ3.</b> What leadership approach(es) influence principal-teacher relations in implementing reform changes?	– Indirect influence – Agency	– Achievement – Camaraderie – Equity/fairness	▪ Sirota & Klein (2014) ▪ Author Contextualised	C. Sirota 3-factor engagement questionnaire
Teacher engagement in change process: ➔ Reform outcomes	<b>H5.</b> Teacher engagement in change process influence school change outputs	<b>RQ4.</b> Does teacher engagement influence school change outputs in implementing reform changes?	– Indirect influence	– School based curriculum developed – Annual school performances (MRI)	Author generated interview Qs	
Principal teacher relations in change process: ➔ Reform outcomes	<b>H6.</b> Principal-teacher relations in change process influence school change outputs	<b>RQ5.</b> Does principal-teacher relation influence school change outputs in implementing reform changes?	– Indirect influence	– School based curriculum developed – Annual school performance (MRI)	Author generated interview Qs	



## Change Leadership Approaches

### Adapted from Multifactor leadership Questionnaire

**H1: The Principal's leadership approach influence the education reform outcomes.**

- **RQ1.** What leadership approach(es) do secondary school principals in PNG use to lead reform changes?
- **RQ6.** Does principal change leadership approach influence overall education reform outcome in implementing reform changes?

Leadership approach	Approach Variable measured	Questions
Transformational	Inspirational Motivation (IM)	<b>The principal:</b> 1. articulates a motivating vision of the future 2. encourages us to contribute our personal talents 3. depends on the staff being self-motivated
	Idealized Influence attributes (IIA)	4. displays a sense of power and confidence in the interest of the school
	Idealized Influence behaviour (IIB)	5. emphasises the importance of having a collective sense of purpose 6. talks about his/her most important values
	Intellectual Stimulation (IS)	7. challenges us to formulate new ways of solving problems
	Individualized Consideration (IC)	8. helps us to develop our strengths and potentials
	Transformational-Democratic (TRD)	9. includes us in the overall decision-making process
	Distributed Leadership (DL)	10. provides school structure that entrusts us to participate in improving our teaching performance
Transactional	Contingent Reward (CR)	11. provides us with assistance in exchange for our efforts 12. makes it clear to us what we receive when our performance targets are achieved
	Management –by-Exception Active (MBEA)	13. makes it clear to us the consequence of not achieving our performance targets 14. directs our attention towards failures to attain expected performance standards 15. adheres to the school's operational structure
Laisses-faire	Laissez-Faire (LF)	16. gives minimal guidance to staff 17. avoids getting involved when education reform matters arise 18. generally, takes a 'hands-off' approach to issues 19. avoids making decisions 20. delays responding to any matter until a problem has escalated 21. allows us to determine what is to be done and how to do it
Authoritarian	Authoritarian (AUT)	22. retains all decision-making authority 23. tells us what to do, how to do it and when he/she wants it to be done 24. rarely considers suggestions made by subordinates 25. closely monitors subordinates to ensure they are performing 26. makes decisions based on his/her personal views

Adapted from Avolio & Bass (2004) and Author contextualised

## Teacher- Engagement

### Adapted from Sirota 3 Factor Engagement

#### H2. Principal's leadership approach influences teachers' engagement in change process.

- **RQ2.** What leadership approach(es) influence teacher engagement in implementing reform changes?

Leadership approach	Engagement variable measured	Questions
		<b>During the reform implementation process at the school:</b>
Sirota 3 factor Engagement  (Sirota & Klein, 2014)	Equity/fairness (EQF)	27. the principal treats me with respect 28. the principal keeps me informed about the reform process 29. the principal's actions are consistently fair 30. the principal considers my suggestions towards the goals of the education reform and processes 31. the principal generally makes fair decisions
	Achievement (ACH)	32. I know what is expected of me 33. I have resources I need to do my work 34. I have opportunity to make good use of my skills and knowledge 35. I have received recognition for doing good work 36. I have opportunities at school to learn and grow professionally 37. I contribute more than what is expected of me
	Camaraderie (CAM)	38. there is a spirit of cooperation and teamwork 39. the school functions as one team 40. I enjoy working with my colleagues 41. teachers are committed to doing quality work

## Principal-Teacher Relationship

### Adapted from Leaders-Member Exchange (LMX)

**H3: Principal's leadership approach influence principal-teacher relationship in change process.**

**H4: Principal-teacher relationship influences teachers' engagement in change process.**

- **RQ3.** What leadership approach(es) influence principal-teacher relations in implementing reform changes?

### Final Questions (Adapted from the LMX)

During the reform implementation process at the school:	
42. I have an effective working relationship with the principal.	Personal
43. there is positive trust in the school among teachers, senior staff, and principal	School
44. the principal offers sound/sensible advice on professional and personal issues	Leadership
45. fulfilling the needs of staff is a leadership priority of the principal	Leadership/School
46. the principal delegates duties and responsibilities to staff	Leadership
47. the principal maintains a professional approach with teachers	Personal/School
48. I feel comfortable working with the principal	Personal

## Education Reform Outcomes

By author

**H5. Teacher Engagement in change process influence School Change Outputs.**

**H6. Principal-Teacher Relations in change process influence School Change Outputs.**

**H7. School Change Outputs influence Overall Education Reform Outcomes.**

- **RQ4.** Does teacher engagement influence school change outputs in implementing reform changes?
- **RQ5.** Does principal-teacher relation influence school change outputs in implementing reform changes?

<b>In my opinion, my engagement in the reform process has resulted in:</b>	School Change Outputs
49. the success of the school system reform in our school	
50. the successful development of the school-based curriculum	
51. improved teaching and learning in the school	
52. improving student academic performances as measured by the MRI	
<b>In my opinion, my relationship with the principal has resulted in:</b>	
53. the success of the school system reform in our school	Overall Education reform Outcomes
54. the successful development of the school-based curriculum	
55. improved teaching and learning in the school	
56. improving student academic performances as measured by the MRI	
<b>In my opinion, the reform implementation process in our school has:</b>	
57. met student learning requirements and performance targets	
58. improved teacher engagement and commitment	
59. met the reform outcome expectations within the timeline	

## **APPENDIX C – Interview Questions: Principals**

1. How would you describe your leadership approach in implementing the education reform changes in your school?

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2. What is your relationship like with teachers and how does that influence your leadership in implementing the education reform changes?

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3. What are your approaches in engaging teachers to stay committed and engaged in implementing the reform changes?

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4. What are the major achievements in the overall implementation of the education reform policy in your school?

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## APPENDIX D –PNG Reports Cited in the Study

This section provides the abstracts to the reports cited in the thesis.

### 1. The Education Reform in Papua New Guinea. National Department of Education. Government of Papua New Guinea

#### Abstract

The reform of education has initiated major policy shifts in education in Papua New Guinea (PNG). The reform commenced in two provinces in 1993 and continues in the current planning cycle, though ‘there is still much to be done to reach our targets’ (National Department of Education (NDoE), 2005, v). The reform occurred within the context of the *Organic Law on Provincial Government* (1976), the *Education (Amendment) Act*, 1995 (which established the new structure of the education system), the *Teaching Service (Amendment) Act*, 1995, and various major government policies introduced from time to time such as the downsizing of the public service, a user pay policy, and supporting delivery of services at the provincial and district levels.

According to the Education Handbook (NDoE, 2000, pp12-17), the reform set out to improve access, equity, retention and quality at elementary, primary and secondary levels of education and established a lower-cost base at each level of education. The overall reform goals:

- All children to start school at the age of 6
- Children to use a language they know and understand
- Basic education to last 9 years for all children
- 50% of grade 8 children to go on to grade 9
- 50% of grade 10 children to go on to grade 11
- Elementary and primary schools to be close to home
- The curriculum to be relevant
- Education should be cost-effective and affordable

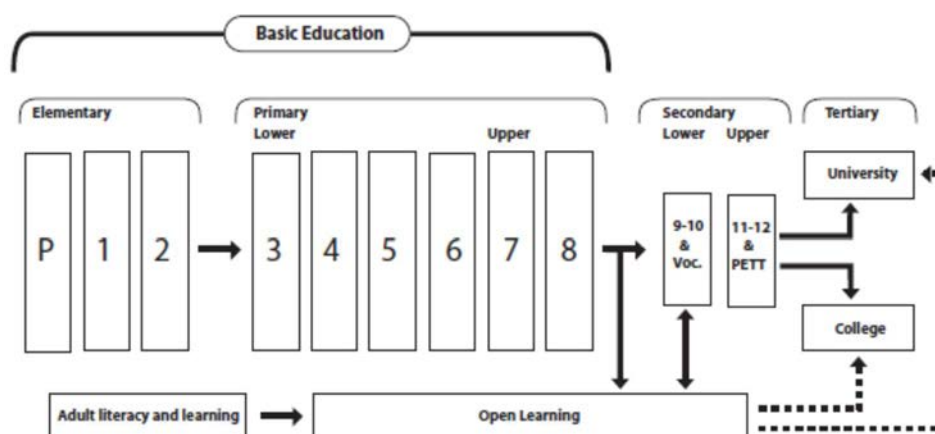
The specific goals to secondary schools are:

- Get more children into school and keep them there
- Give them a higher quality, more relevant education
- Make education more cost effective and affordable.

Table 1. Reform goals and outcomes

Goals	Strategy	Outputs	Outcomes	Measure
Improve Access and Retention	Structural reform	Transition from High School (grade 7 to 10) to Secondary Schools (grade 9 to 12)	<ul style="list-style-type: none"> <li>50% grade 8 students on to grade 9</li> <li>50% of grade 10 students on to grade 11</li> </ul>	Enrolments & Retention rates
Equity & cost effective	Tuition Fee Free Education	All school age children in school	<ul style="list-style-type: none"> <li>50% female enrolments</li> <li>High academic achievements</li> </ul>	<ul style="list-style-type: none"> <li>Enrolments</li> <li>MRI</li> </ul>
Quality	<ul style="list-style-type: none"> <li>Curriculum reform</li> <li>Improve Teacher qualification</li> </ul>	<ul style="list-style-type: none"> <li>Appropriate curriculum designed with PNG content</li> <li>Teachers with graduate diploma (primary) and degree (secondary)</li> </ul>	<ul style="list-style-type: none"> <li>Appropriate national curriculum</li> <li>School based curriculum</li> </ul>	Annual MRI

Figure 1 Reform system structure



Source: Education Handbook, NDoE, 2000. pp 11-12

The new reform structure has been progressively introduced since 1993, and runs parallel with the existing education system in many parts of the country. Thus, one system is expanding, and the other diminishing, until the reform is complete. For the foreseeable future, there will continue to be community schools offering Grades 1 to 6 and provincial high schools offering Grades 7 to 10 (NDoE, 2005, v).

The reorganisation of education involved the establishment of a three-year elementary education program, which consists of a preparatory year followed by Elementary Grades 1 and 2. Teaching is conducted in the child's first language, and elementary schools are located in villages

to minimise travel by small children, and to acknowledge the local responsibilities for this form of education. There is a formal connection between elementary schools and the newly designed primary schools, which replace the former community schools. After three years in the elementary school, students are enrolled in Grade 3 at primary school.

Primary schools provide education from Grades 3 to 8. The number of places for students at the upper primary school level has increased significantly as a result of this policy initiative and at a relatively low cost (World Bank 1999). In the past, many students were denied access to Grade 7 because of the shortage of Grade 7 spaces in conventional high schools.

A number of provincial high schools in each province have been redeveloped as secondary schools to provide upper secondary education from Grades 9 to 12. The original policy regarding secondary schools envisaged the development of one secondary school in those provinces that did not have a national high school (NEB 1995). In effect, this would result in the development of fourteen secondary schools. Politicians, in particular, and provincial education authorities have disregarded the policy and there are sixty-five secondary schools in Papua New Guinea in 2005. As a result, there has been a substantial increase in the number of Grade 12 graduates who are competing for scarce formal employment opportunities and places in tertiary institutions.

## **2. Taskforce on Education Reform in PNG (TERPNG, 2014). Government of Papua New Guinea**

### **Abstract**

The Taskforce on Education Reform in PNG (TERPNG) was established by parliament in 2013 to assess the progress on the Education Reform introduced in 1993. TERPNG assessed the reforms against the main reforms goals: (1) Improve access to and retention in schooling; and (2) Quality of education. In secondary schools the TERPNG found that:

#### ***1. Improve Access to and Retention in Schooling***

In 2014, there were a total of 68 secondary schools enrolling students from grade 9 to 12. There were still another 101 high schools yet to be reformed (converted) into secondary schools under the systems structure reform policy. This amount to 40% of the high schools under the old system that have been effectively reformed to secondary schools. This has resulted in a 20% increase in enrolment at grade 11 and 12 in secondary schools.

#### ***2. Quality of Education***

Two main reforms agendas were targeted to influence the equality of education in secondary schools. First, secondary schools were to develop their own non-core school based curriculum. The core subjects are English, Mathematics, Sciences and Social

Sciences. The school based non-core are subjects determined by the school and the respective provincial education authorities to be knowledge unique to their districts, provinces and regions. For instance, local dialects (languages), arts and crafts, home economics, agriculture, fisheries and local history. TERPNG found that all the schools have not fully developed their school based non-core subjects. The have sighted that school lacked teachers with curriculum development skills and lack of support resources has largely contributed to the lag.

Second, the education reform targeted to ensure that the minimum qualification for secondary school teachers was to be pegged at university graduate qualification level. TERPNG found that much progress has been made with the University of Goroka, where secondary school teacher qualifications are offered. However, less than 45% of the teachers in the 68 secondary schools had the minimum qualification required under the reform. TERPNG noted that this also made it difficult for the school based curriculum to be developed at the school level.

In light of the above scenario, TERPNG recommended the following:

- More resources were needed. Resources included financing, curriculum materials and physical infrastructure such as school libraries, internet connectivity, science laboratories and other resources that support learning.
- Increase the recruitment of school leavers to enrol to become teachers. TERPNG noted that there was lack of interest from school leavers to take up teaching positions due to low wages, school locations (many are located in isolated rural areas) and living conditions in schools.
- In line with the previous point, invest in improving teachers' welfare. To retain the current serving teachers' commitment, their low ages and living conditions needed to be redressed.
- School leaders, including principals, deputy principals, senior teachers and school governing council chairpersons, need training. This is deemed critical to motivating teachers and engaging buy-in from stakeholders (including higher education authorities, parents and community) to support the changes in schools.
- The National Department of Education (NDoE) needed to effectively monitor and assess the progress of the education reforms as an ongoing activity. This is important to ascertain the level of support input schools need and to lobby for funding support from the government and development partners.



### **3. PNG Leadership Summit Report (PNGLSR, 2016). Department of Prime Minister. Government of Papua New Guinea**

#### **Abstract**

The 2016 Leaders' Summit is the 5<sup>th</sup> Summit as a policy and performance accountability dialogue hosted by the Prime Minister. It has been successfully held since 2013 as it brought together political leaders (State Ministers and Provincial Governors) led by the Prime Minister and bureaucratic leaders led by the Chief Secretary to Government to take stock of the achievements of the past year and chart the priorities for the current year.

The PNG Leaders' Summit is an annual policy and performance accountability dialogue forum hosted by the Prime Minister of PNG. It is a platform that achieves several outcomes:

1. It provides a high level forum for policy dialogue between political leaders chaired by the Prime Minister and bureaucrats led by the Chief Secretary to Government. Since its inception in 2013, there has been consistency in attendance and participation by political and bureaucratic leaders. Major development agendas and policies have emanated from this forum.
2. It provides a forum for political leaders and bureaucrats to account for development performance and achievements in terms of service delivery through the respective subnational implementation of the performance agreements. Reports such as that by the Taskforce on Education Reforms in PNG (TERPNG) are presented to inform the government on the progress of the education reform.
3. It provides the platform for the Prime Minister, the Ministers and Provincial Governors to collectively define and approve priority development projects and allocate them to the respective agencies and provinces to implement. For instance based on the TERPNG reports, resources allocations to improve or complete the education reforms are determined and allocated through the respective provincial governments.
4. It allows the Ministers with their respective Agency Heads and Provincial Governors and their respective Provincial Administrators to know what their colleague Ministers and Governors are doing. In this way, they are able to find synergies between their priority projects and learn from each other implementation issues and challenges and collectively design management strategies moving forward.
5. It allows the Chief Executive Officers of the District Development Authorities to have presented their performances and achievements to the Leaders. These reports have reflected significant levels of progress in the districts.

The Performance Summary Report for 2016 sums up all the 2016 Performance Reports submitted by the National Departments and agencies, State-owned Enterprises, Commodity Boards, and Provincial Administrations. The summit focused on the performances and achievements of 2016 whilst also highlighting key achievements from 2013-2015.

The National Department of Education (NDoE) presented the TERPNG report (see document #2 TERPNG, 2014). The report was accepted with great concern that after 23 years of implementation it has achieved low success. The recommendations of the TERPNG was endorsed and provincial governments were made more responsible for its implementation. Funding to improve implementation and establishing new secondary schools was proposed in included in the Medium Term Development Plan (MTDP) III (GoPNG, 2018) to target the for 100% retention across the board from primary to secondary school enrolments by 2030. The forum also proposed to target for gender parity and improve access for schooling in rural areas. Finally, the forum directed the higher education sector to improve access for increased enrolment in tertiary institutions, with specific mentions for teacher education.

#### **4. Transparency International PNG (TIPNG, 2020)**

Transparency International Papua New Guinea (TIPNG) is a chapter of Transparency International, a world-wide non-profit, non-government organisation dedicated to fighting corruption. TIPNG began in 1997 with the aim of combatting corruption in PNG and promoting transparency, honesty and accountability in public and private dealings. Their membership is guided by a voluntary Board of Directors.

TIPNG believe that corruption is the abuse of power for private gain; it hurts everyone who depends on the integrity of people in positions of authority. TIPNG advocate in fighting corruption in PNG by educating and empowering people by providing the skills and a voice to make an active choice against corruption. They lobby to protect people and to reverse the consequences of corruption at all levels of PNG society.

The 2020 report is available online at:

<https://www.transparencypng.org.pg/?v=256616999035645> and

<https://www.facebook.com/watch/?v=256616999035645>. In the report, the chairman Peter Aitsi asks the government of PNG for greater accountability for public funds through greater transparency, in light of the COVID 19 pandemic. He also challenges leaders, especially the Prime Minister, not to repeat the mistakes of last leaders. He states the leadership and good governance continues to the biggest challenges for PNG's development.

Other reports from TIPNG are summarised below:

For generic reports, these are available at:

- [Levels & Consequences of Corruption: A Survey of 5 provinces \(2015\)](#)
- [Corruption Perceptions Survey \(2013\)](#)
- [National Integrity Systems Assessment: Papua New Guinea \(2003\)](#)

For specific reports, these are valuable at:

- [National Election Observation Report \(2017\)](#)
- [PNG Mining License Corruption Risks \(2017\)](#)
- [A review of 20 unresolved issues of national concern 2007-2017](#)

## **APPENDIX E –Ethical Clearance – James Cook University**

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## **APPENDIX G – Research, Science & Technology Clearance**

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## APPENDIX H – Information Sheet – Survey



### INFORMATION SHEET (Surveys)

PROJECT TITLE: **Leading and managing change in secondary schools: Investigating implementation process in education reforms in Papua New Guinea (PNG)**

Dear .....,

You are invited to take part in a research project investigating leadership styles and approaches used by principals to engage staff in managing disruptive changes imposed by current education reform policies in secondary schools in PNG.

The study is being conducted by George Bopi-Kerepa as part of his PhD programme in Strategic Change Leadership and Management at James Cook University, Australia. The study involves secondary schools, across the four regions of PNG.

Your school is invited to participate in this nationwide study. No similar research has been conducted on this scale in schools or in any public sector organisation in PNG to date. Your participation will contribute to explore and highlight leadership approaches that; (a) impact effective management of changes, and (b) influence teacher engagement (in the effective management of change). The study aims to, (a) identify dominant leadership approaches that positively impact on the effective management of changes in secondary schools, and (b) continue to developing leadership and management approaches contextualised to PNG.

If you agree to participate in the study, you will be invited to fill in a questionnaire which will take approximately 15-20 minutes to complete.

Taking part in this study is completely voluntary and you can stop taking part in the study at any time without explanation or prejudice. [implied consent by participating](#)

[Participation or non-participation will have no effect on employment and that the Principals will not know who has participated.](#)

Your responses and contact details will be strictly anonymous. The data from the study will be used in research publications and reports especially in universities and journal publications. You will not be identified in any way in these publications.

If you have any questions about the study, please contact the undersigned.

George Bopi-Kerepa  
College of Business, Law & Governance  
James Cook University

Content has been removed  
for privacy reasons

Dr Murray Prideaux PhD  
College of Business, Law & Governance  
James Cook University

Content has been removed  
for privacy reasons



## APPENDIX I – Information Sheet – Interviews



### INFORMATION SHEET (Interviews)

PROJECT TITLE: **Leading and managing change in secondary schools: Investigating implementation process in education reforms in Papua New Guinea (PNG)**

Dear .....,

You are invited to take part in a research project investigating leadership styles and approaches used by principals to engage staff in managing disruptive changes imposed by current education reform policies in secondary schools in PNG.

The study is being conducted by George Bopi-Kerepa as part of his PhD programme in Strategic Change Leadership and Management at James Cook University, Australia. The study involves secondary schools, across the four regions of PNG.

Your school is invited to participate in this nationwide study. No similar research has been conducted on this scale in schools or in any public sector organisation in PNG to date. Your participation will contribute to explore and highlight leadership approaches that; (a) impact effective management of changes, and (b) influence teacher engagement (in the effective management of change). The study aims to, (a) identify dominant leadership approaches that positively impact on the effective management of changes in secondary schools, and (b) continue to developing leadership and management approaches contextualised to PNG.

If you agree to participate in the study, you will be invited to be interviewed. The interview, with your consent, will be audio-taped, and should take approximately 20-30 minutes. The interview will be conducted at the school in your office or a location suitable to you.

Taking part in this study is completely voluntary and you can stop taking part in the study at any time without explanation or prejudice.

Your responses and contact details will be strictly anonymous. The data from the study will be used in research publications and reports especially in universities and journal publications. You will not be identified in any way in these publications.

**Participation or non-participation will have no effect on employment and that the Principals will not know who has participated.**

If you have any questions about the study, please contact the undersigned.

George Bopi-Kerepa  
College of Business, Law & Governance  
James Cook University

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for privacy reasons

Dr Murray Prideaux PhD  
College of Business, Law & Governance  
James Cook University

Content has been removed  
for privacy reasons

## APPENDIX J – Informed Consent Form



### INFORMED CONSENT FORM

PRINCIPAL INVESTIGATOR:	George Bopi-Kerepa
PROJECT TITLE:	Leading and managing change in secondary schools: <i>Investigating implementation process in education reforms in Papua New Guinea (PNG)</i>
SCHOOL:	College of Business, Law & Governance

I understand the aim of this research study is to investigate leadership approaches used by school principals to engage staff in managing changes imposed by education reform policies in secondary schools in PNG. I consent to participate in this project, the details of which have been explained to me, and I have been provided with a written information sheet to keep.

I understand that my participation will involve an interview and questionnaire and I agree that the researcher may use the results as described in the information sheet. I understand that the information I provide may be used in aggregate form and presented at conferences and published in journal articles.

I acknowledge that:

- taking part in this study is voluntary and I am aware that I can stop taking part in it at any time without explanation or prejudice and to withdraw any unprocessed data I have provided; and
- that any information I give will be kept strictly confidential and that no names will be used to identify me with this study without my approval;

Hence:

(Please tick to indicate consent)

I consent to be interviewed

☐

Yes

☐

No

I consent for the interview to be audio taped

☐

Yes

☐

No

Name: (printed)

Signature:

Date: