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MODELLING TRANSFORMATIONAL AND TRANSACTIONAL LEADERSHIP, INNOVATION AND PERFORMANCE IN SELECTED SOUTH AFRICAN UNIVERSITIES OF TECHNOLOGY: A BALANCED SCORECARD PERSPECTIVE

by

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DECLARATION

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

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This thesis is being submitted in fulfilment of the requirements for the degree of PhD Business Administration.

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This dissertation is the result of my own independent work/investigation, except where otherwise stated. Other sources are acknowledged by giving explicit references. A list of references is appended.

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ABSTRACT

Universities of Technology are an essential institutional type in South African higher education. However, their performance often lags behind that of traditional and comprehensive universities, which inspires the need to use research to seek ways of improving them. This study focuses on the interconnection between transformational and transactional leadership, organisational innovation and performance in South African universities of technology. Performance was measured based on the balanced scorecard perspective.

The study followed a quantitative method, using the views of 387 academic and non-academic professional respondents drawn from three South African universities of technology. Hypotheses were tested using correlations and regression analysis. The study identified three transformational leadership factors, namely idealised influence, intellectual stimulation and inspirational leadership that are relevant to the tested relationship. Six performance dimensions, namely internal growth, financial performance, internal processes, customer satisfaction, learning, and grants and income were also identified and used to measure performance.

The three transformational leadership factors, idealised influence, intellectual stimulation and inspirational leadership all correlated with and predicted innovation. In turn, innovation correlated with and predicted the six performance factors (internal growth, financial performance, internal processes, customer satisfaction, learning, and grants and income).

The study indicates that the transformational leadership style has a direct positive effect on institutional innovation in universities of technology. Furthermore, innovation is an important driver of performance. Therefore, universities of technology that place an emphasis on transformational leadership and innovation are likely to register superior performance.

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LIST OF ABBREVIATIONS

AGFI	Adjusted Goodness of Fit Index
AI	Artificial Intelligence
AMOS	Analysis of Moment Structures
ANC	African National Congress
AVE	Average Variance Extracted
BA	Bachelor of Arts
BSc	Bachelor of Science
BSC	Balanced Scorecard
BSc Eng	Bachelor of Science in Engineering
Bus	Black Universities
CATEs	Colleges of Advanced Technology
CBL	Competency Based Learning
CFA	Confirmatory factor analysis
CFI	Comparative Fit Index
CHE	Council on Higher Education
CL or II	Charismatic Leadership or Idealised Influence
CMB	Common Method Bias
CMV	Common Method Variance
CoEs	Colleges of Education
CoI	Commission of Inquiry
COVID-19	Coronavirus disease
CR	Composite Reliability
CR	Contingent Reward
CS	Customer satisfaction
CTP	Committee of Technikon Principals
CUs	Comprehensive Universities
CUT	Central University of Technology
DHET	Department of Higher Education and Training
DoE	Department of Education
DTI	Department of Trade and Industry

DUT	Durban University of Technology
EFA	Exploratory factor analysis
EPS	Earnings Per Share
FC	Financial Control
FP	Financial Performance
GAAP	General Accepted Accounting Principle
GFI	Goodness of Fit Index
GI	Grants and Income
HBR	Harvard Business Review
HBUs	Historically Black Universities
HE	Higher Education
HEI	Higher Education Institution
HEIs	Higher Education Institutions
HEMIS	Higher Education Information Management System
HEQF	Higher Education Qualifications Framework
HEQSF	Higher Education Qualifications Sub-Framework
HESA	Higher Education South Africa
HoAs	House of Assemblies
HoDs	House of Delegates
HoRs	House of Representatives
HSRC	Human Science Research Council
HWAUs	Historically White Afrikaans Universities
HWEUs	Historically White English Universities
HWIs	Historically White Institutions
HWUs	Historically White Universities
IBPs	Internal business processes
IEASA	International Education Association of South Africa
IFI	Incremental Fit Index
IG	Internal Growth
II	Idealised Influence
IL	Inspirational leadership
IM	Inspirational Motivation

IoT	The Internet of Things
IoTs	Institutes of Technology
IP	Internal Processes
IS	Intellectual Stimulation
IT	Information Technology
IWB	Innovative Work Behaviour
KMO	Kaiser Meyer Olkin
KPIs	Key Performance Indicators
L	Learning
LF	Laissez Faire
L&G	Learning and Growth
MBChB	Bachelor of Medicine and Bachelor of Surgery
MBE-A	Management by Exception (Active)
MBE-P	Management by Exception (Passive)
MLQ	Multifactor Leadership Questionnaire
MMR	Mixed Methods Research
MoE	Ministry of Education
NACI	National Advisory Council on Innovation
NCHE	National Commission on Higher Education
NFI	Normed Fit Index
NPHE	National Plan for Higher Education
NQF	National Qualifications Framework
NSFAS	National Student Financial Aid Scheme
NWG	National Working Group
OECD	Organisation for Economic Co-operation and Development
OI	Organisational Innovation
OP	Organisational Performance
UoT	University of Technology
PA	Path Analysis
PASO	Pan-African Students' Organisation
PMS	Performance Management System
PMSs	Performance Management Systems

PwC	Price Water-Coopers
R&D	Research and development
RBV	Resource-Based View
RMSEA	Random Measure of Standard Error Approximation
RMSEA	Root Mean Square Error of Approximation
ROA	Return on Assets
ROCE	Return on Capital Employed
ROE	Return on Equity
ROI	Return on Investment
SADC	Southern African Development Community
SADST	South African Department of Science and Technology
SAK	Financial Accounting Standards
SASCO	South African Students Congress
SCM	Supply Chain Management
SD	Standard Deviation
SEM	Structural Equation Modelling
SETIs	Science, Engineering and Technology Institutions
SMEs	Small and Medium-Sized Enterprises
SPSS	Statistical Packages for the Social Sciences
STEM	Science, technology, engineering, and mathematics
SV	Shared Variance
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TBVC	Transkei, Bophuthatswana, Venda and Ciskei
TFL	Transformational Leadership
TLI	Tucker-Lewis Index
TSL	Transactional Leadership
TTCs	Teachers' Training Colleges
TTL	Transformational/ Transactional Leadership
TUs	Traditional Universities
TUT	Tshwane University of Technology
TVET	Technical Vocational Education and Training Colleges
UAE	United Arab Emirates

UCGH	University of the Cape of Good Hope
UCT	University of Cape Town
UDUSA	Union of Democratic University Staff Association
UFH	The University of Fort Hare
UniZulu	University of Zululand
UoAScaTs	Universities of Applied Science and Technology
UoAScs	Technical Universities of Applied Sciences [Fachhochschulen]
UoATs	Universities of Applied Technology
UoTs	Universities of Technology
US	University of Stellenbosch
USaf	Universities South Africa
VAR	Virtual and Augmented Reality
VUCA	Volatility, Uncertainty, Complexity and Ambiguity
VUT	Vaal University of Technology
WHO	World Health Organisation
WIL	Work-Integrated Learning
WSU	Walter Sisulu University

CHAPTER 1: OVERVIEW OF THE STUDY

1.1 INTRODUCTION AND BACKGROUND

Contemporary literature shows that higher education institutions (HEIs) are operating in an increasingly complex and competitive environment. These institutions are under tremendous pressure to transform in order to be responsive to national and global economic, political and social changes (Daniel, 2015:904). Such changes include the growing need to increase the proportion of students in specific disciplines, entrenching workplace graduate attributes, and ensuring that the quality of learning programmes is both nationally and globally relevant. In light of such developments, transformation, innovation and performance at South African HEIs have been topical subjects since the dawn of democracy in 1994. These entities are among the oldest surviving types of social institutions in the modern day (De La Rey, 2015:4). While the primary business of HEIs was conceptualised as knowledge production, much has changed following the contemporary dynamic era (Pouris & Inglesi-Lotz, 2014:3).

Following the work of various researchers (for example, Bloom, Canning, Chan & Luca, 2013:24; Pouris & Inglesi-Lotz, 2014:3; Fongwa & Wangenge-Ouma, 2015:533), HEIs have evolved to become social institutions that contribute immensely to the social and economic development of nations through human capital (skills development). They also contribute to knowledge creation (through research), the distribution of new knowledge, maintenance and improvement of knowledge (innovation), and reduction of poverty through the creation of employment (Aponte-Hernández, 2016:30; Ndaruhutse & Thompson, 2016:8; Universities South Africa [USAf], 2016:4; Pachura, 2017:303).

Most HEIs in South Africa are affected by numerous performance-related challenges that may be traced back to ineffective leadership. As noted by Bateh, Cataneda and Farah (2013:114), leadership in driving or impeding organisational innovation remains one of the significant issues in most organisations. The lack of effective leadership has a direct impact on organisations' change and innovative capabilities. Innovation leadership, sometimes called leadership for innovation, focuses on creating an organisational environment where employees can deploy innovative practices to have new services or products through innovative culture support (Zuraik, 2017:8).

It is described as a variety of different actions, activities, behaviours and practices interacting with each other to produce innovative results, and its absence may lead to failure (Zuraik, 2017:18). This could be the case in the South African higher education environment, where five HEIs were placed under administration on different occasions in the last decade for ineffective leadership that led to poor

administration, erosion of the culture of teaching and learning, as well as the mismanagement of finances (Parliamentary Monitoring Group [PmG], 2013:2; Pityana & Ralebipi-Simela, 2019:30).

To function optimally, HEIs have to be adequately funded, considering the importance of their activities to the country's success. However, government subsidies have been declining in real terms, and the entire South African university system is poorly funded compared to other systems (Higher Education South Africa [HESA] 2014:11; USAf, 2016:2). While the financial sustainability of HEIs depends on tuition fees, the impact of the recent Fees Must Fall campaigns has exacerbated the situation, especially for those institutions that are solely dependent on student fees for their financial sustainability (Abraham, 2017:117; Jansen, 2018:2). This is because the capability of HEIs to collect the debt has seriously been compromised as some parents' hopes for free education heightened (Pillay, 2016:155). These developments depict an unsustainable scenario, since HEIs are non-profit-making organisations that mostly depend on students' fees.

To circumvent this situation, HEIs may have to rely on innovations to generate additional income. However, there are other challenges, as higher education is being subjected to substantial reforms, and one such new transformation is in the form of performance management that is implemented in HEIs across the world. Extant research suggests that, on many occasions, performance management systems have disrupted academic life (Kallio, Kallio, Tienary & Hyvonen, 2015:685). At the same time, a clear distinction between the performance of academic and non-academic (support) employees is not articulated and, as such, causes a conflict of roles between the two. Moreover, performance management is judged as discouraging innovation and novelty in universities (Kallio *et al.*, 2015:699). Still, other challenges that are a significant concern to most HEIs include increased research demands, changing employment conditions, and a lack of appropriately qualified full-time staff (Knott, Crane, Heslop, & Glass, 2015:1). Thus, higher education in South Africa faces unavoidable difficulties that require innovative solutions and standards to overcome.

This study is intended to investigate the relationship between transformational and transactional leadership, innovation and performance. It directs its focus to universities of technology (UoTs), an important type of higher education institution (HEI) in South Africa. In 2003, radical changes were made to South African higher education when the government announced the transition of technikons into UoTs. Some of the critical roles of UoTs include relevance and responsiveness to societies by producing more skilled, more competent and more employable students who are employer-centred, working together with private sectors, firms and other corporate institutions, offering short-courses, taking the

institution into the workplace, and constantly liaising with employers to ensure that prospective employees receive the relevant education and training (Du Pre', 2006:3). Therefore, UoTs have a different devotion and philosophy from traditional HEIs and are intended to make the higher education environment more varied and diverse in addition to contributing implicitly through innovation, by greater technology transfer and being internationally competitive.

It may be argued that without effective transformation-oriented leadership, the vision of a South African UoT system that meets international standards may not be realised. As put forward by Ameyaw, Theresa and Offei (2016:2), an effective leader is one who has determination and intelligence to inspire staff and empower them to accomplish the set goals. This study postulates that a combination of transformational and transactional leadership in UoTs will drive organisational innovation and enhance the performance of these institutions. Combining transformational/transactional leadership causes changes in individuals and social systems, and creates valuable and positive change in the followers to develop followers into leaders (Vito, Higgins & Denny, 2014:809; Masa'deh, Obeidat & Tarhini, 2016:695). This type of leadership focuses on the exchange between a leader and employee, when the leader also engages in creating a connection and motivates the staff further, thereby assisting them in developing to their maximum potential to reach a common, set organisational goal (Widiyanto, 2013:16). Leader behaviours are more likely to lead to increased positive responses if staff attribute the cause of such behaviours to the leader's values and motives (Mustafa, 2018:2). Therefore, this study presupposes that with such leadership, it is possible to enhance both the levels of innovation as well as the performance of UoTs in South Africa.

1.2 PROBLEM STATEMENT

According to Akgun, Ince, Imamoglu, Keskin and Kocaoglu (2014:889), innovation is not only the creation and capture of new value, but also the implementation of new methods in business practices, workplace organisations or external relations, as well as the improvement and transformation of managerial mind-sets and business models to cope with changes. It is an essential determinant of business performance in a changing competitive environment (Al-Ansari, Altalib & Sardoh, 2013:4). Prajogo and Oke (2016:243) suggest that innovation is one of the major drivers and tools for competitive advantage. In modern and highly competitive environments, it is perceived that organisations can only gain competitive advantages through innovation, which can lead to better performance (Hana, 2013:82; Mahr, Lievens, Blazevic, 2014:559; Boukis, 2016:273; Maimela & Samuel, 2016:1). However, in South Africa,

UoTs are underperforming and continue to move with repressed growth (CHE, 2013:36; Cloete, 2014:1357; CHE, 2014:36; 2016:108).

The uninspiring performances of UoTs have been attributed to the lack of proper leadership and innovation to keep them flowing in the challenging South African economic environment (PmG, 2013:1). This is supported by some authors (Pityana & Ralebipi-Simela, 2019:30) who note that UoTs in South Africa perform poorly due to ineffective leadership and poor administration, erosion of the culture of teaching and learning, and mismanagement of finances. As further mentioned by the PmG (2013:2), UoTs in South Africa are renowned for the lack of innovation, poor growth and development, and high levels of financial mismanagement. This has created a negative perception by some stakeholders in higher education, who perceive that the education offered by UoTs is inferior to that offered by other types of HEIs (Du Pre', 2010:6). In support of this view, the Department of Higher Education and Training (2018) indicates that the Higher Education Information Management System (HEMIS) database for 2016 reflects a variance in the number of students enrolled and the number of students who graduated in normal time in UoTs since a large percentage of students in UoTs took much longer periods of time than expected to complete their studies.

Letseka and Maile (2008:5) as well as Styger, Van Vuuren and Heymans (2015:2) and the Council on Higher Education (CHE) (2013:36) report that high drop-out and low pass rates, throughput rates, and the increased time to completion trends have emerged as major issues of concern in UoTs. This is because these students remain in the UoT's pipeline system for longer periods, leading to its congestion.

Additionally, the financial status of the UoTs is also negatively affected since they receive funding from their parent ministry based on the number of students that graduate. These developments suggest that there is a problem of low academic performance within these UoTs, which may be linked to poor performance by the institutions themselves (De Kadt, 2015:39). Therefore, this study intends to generate information on how transformational and transactional leadership can be harnessed to improve innovation, with the expectation that the performance of UoTs can improve in four critical areas identified through the balanced scorecard (BSC) perspective. The BSC takes into consideration four key performance areas, which are: customer satisfaction, financial performance, learning and growth, and internal processes.

Research shows that several studies (Walwyn, 2008:207; Maimela, 2015:21; Maimela & Samuel, 2016:11) have been conducted on South African HEIs in relation to performance management's varying perspectives. Scholars such as Seyama and Smith (2015:1) focus on the performance management system

that integrates individual performance with institutional strategy. Van Rooy and Coetzee-van Rooy (2015: 31) focus on the effect of the language of instruction and academic performance. In addition, Van Staden (2010:164) places emphasis on assessing the uniqueness and development of UoTs through the use of performance indicators. However, the relationship between transformational/transactional leadership, organisational innovation and organisational performance in UoTs mainly remains untested. Additionally, a database search conducted by the researcher shows that there has been no evidence of studies conducted that focused on the application of the BSC to measure performance in UoTs in South Africa in the past five years. Therefore, this study examined such gaps and proposes a model that integrates these variables in an attempt to enhance both innovation and performance in UoTs.

1.3 RESEARCH OBJECTIVES

Three forms of objectives, namely the primary, theoretical and empirical objectives, were formulated to guide this study.

1.3.1 Primary objective

The primary objective of this study is to develop and test a framework for transformational and transactional leadership, innovation and the BSC-based performance in South African UoTs.

1.3.2 Theoretical objectives

The following theoretical objectives were formulated:

1) to explore the literature on South African UoTs;
2) to analyse literature on transformational and transactional leadership theories;
3) to review the literature on organisational innovation;
4) to examine the literature on the BSC theory; and
5) to analyse literature on the theory of disruptive innovation.

1.3.3 Empirical objectives

The following empirical objectives were formulated:

1) to determine the perceptions of staff on the practice of transformational and transactional leadership within selected South African UoTs;
2) to determine the perceptions of staff on the levels of organisational innovation within selected South African UoTs;
3) to determine the perceptions of staff on the performance of selected South African UoTs, based on the BSC;
4) to examine the influence of transformational leadership on organisational innovation in selected UoTs in South Africa;

5) to determine the influence of organisational innovation on performance in selected UoTs in South Africa; and
6) to develop a model encompassing transformational/transactional leadership, innovation and the BSC performance, which is applicable to South African UoTs.

1.4 CONCEPTUAL FRAMEWORK

This study adopted the conceptual framework presented in Figure 1.1. to conceptualise the relationship between transformational/transactional leadership, organisational innovation and the BSC performance. Transformational and transactional leadership formed the predictor variable, with organisational innovation acting as the mediating variable, while the BSC performance was the outcome variable.

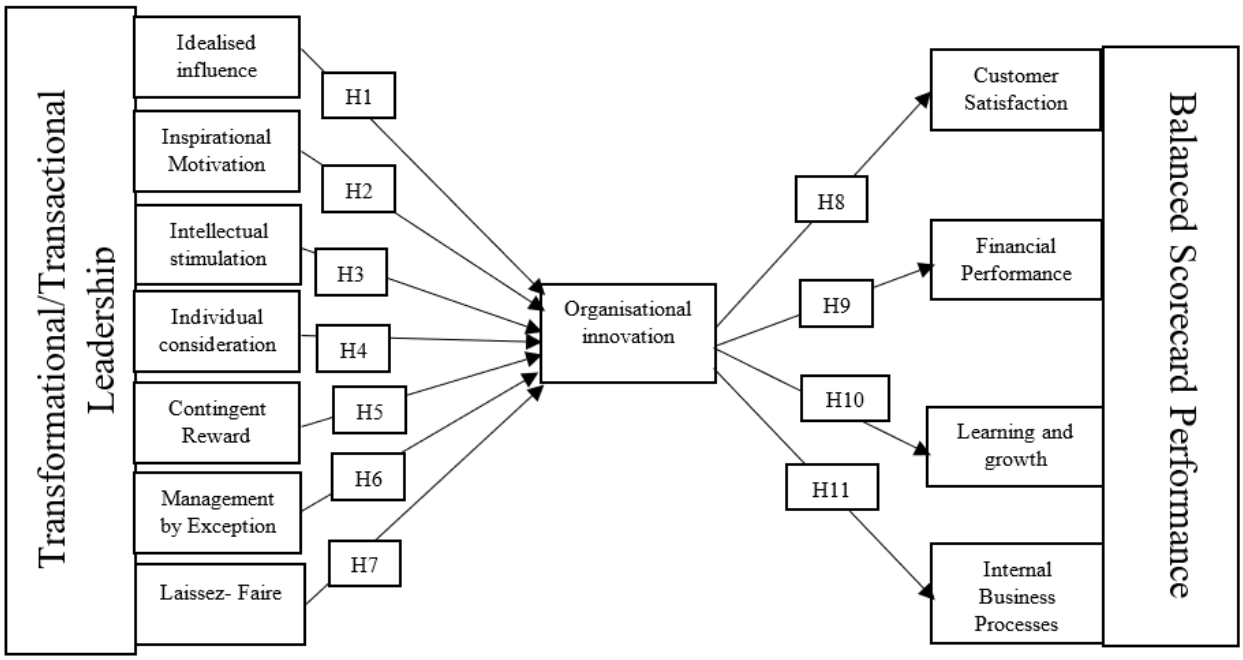


Figure 1.1: Conceptual framework for transformational/transactional leadership, innovation and the balanced scorecard performance in South African universities of technology

Source: Compiled by the researcher

1.5 RESEARCH HYPOTHESES

Based on the conceptual framework presented in Figure 1.1, the following hypotheses were developed:

H_1: There is a significant positive relationship between idealised influence and organisational innovation in South African UoTs.

H_2: There is a significant positive relationship between inspirational motivation and organisational innovation in South African UoTs.

H_3: There is a significant positive relationship between intellectual stimulation and organisational innovation in South African UoTs.

H_4: There is a significant positive relationship between individualised consideration and organisational innovation in South African UoTs.

H_5: There is a significant positive relationship between contingent reward and organisational innovation in South African UoTs.

H_6: There is a significant positive relationship between management by exception and organisational innovation in South African UoTs.

H_7: There is a significant positive relationship between laissez-faire leadership and organisational innovation in South African UoTs.

H_8: There is a significant positive relationship between organisational innovation and customer satisfaction in South African UoTs.

H_9: There is a significant positive relationship between organisational innovation and financial performance in South African UoTs.

H_{10}: There is a significant positive relationship between organisational innovation and learning and growth in South African UoTs.

H_{11}: There is a significant positive relationship between organisational innovation and internal business processes in South African UoTs.

1.6 RESEARCH THEORIES

The relationships tested in this study are based on three theories, namely the transformation/transactional leadership theory, the theory of disruptive innovation and the balanced scorecard perspective. These are discussed briefly in this section, and a more in-depth discussion is provided in Chapter 3.

1.6.1 Transformational and Transactional Leadership Theories

Leadership may be conceptualised as being either transactional or transformational (Burns, 1978:4). Transformational leaders stimulate and inspire followers to both accomplish extraordinary products and, in the process, develop their own leadership capacity, while transactional leaders are those who lead through a social exchange in which they either offer financial rewards for productivity or deny rewards for poor performance (Avolio & Bass, 2004:3; Sadeghi & Pihie, 2012:188). Bass and Riggio (2006:3) highlighted that the transformational/transactional theory of leadership has captured extensive attention from both researchers and management practitioners since its introduction. This theory is perceived as more appropriate for this study since the research considers that both transformational and transactional leadership styles are the predictor variables that are related to organisational innovation.

1.6.2 Theory of disruptive innovation

Disruption describes a process whereby a smaller organisation with fewer resources can successfully challenge established incumbent businesses. Corsi and Di Minin (2014:78) and King and Baatartogtokh (2015:77) state that the concept of disruptive innovation, as presented by Bower and Christensen in 1995, was subsequently advanced by Christensen in 1997 with his 'Innovator's Dilemma', seeking answers to why pronounced organisations pursuing innovation in mainstream markets suffer from market bias and are surpassed by entrant organisations introducing products based on new, disruptive technologies.

To clarify this phenomenon, Christensen differentiates between sustaining and disruptive technologies. The former refers to technologies that are receptive to an improvement, radical or incremental, of established products, along with the dimensions of performance that mainstream customers in major markets have historically valued (King & Baatartogtokh, 2015:77). Disruptive technologies, as suggested by Corsi and Di Minin (2014:78), on the other hand, are innovations for present products, but on attributes that differ from those that typical clients primarily appreciate. These types of innovations, which initially underperform with respect to the main attributes of sustaining technologies, become disruptive when they reach the same performance as the nourishing inventions on the attributes valued by mainstream customers.

Disruptive innovation is an innovation that changes the performance metrics, or consumer expectations, of a market by providing 1) radically new functionality, 2) discontinuous technical standards, or 3) new forms of ownership (Nagy, Schuessler & Dubinsky, 2016:122). The current research finds disruptive innovation applicable in that it is perceived by Weeks (2015: 417) to be a powerful lens to examine certain organisational developments. It improves understanding of the difficult dynamics associated with innovative products and offers suggestions on how organisations might introduce lower-performing, lower-cost items that are successful in the marketplace. The theory provides an advisory account for leaders in incumbent organisations when facing lower-cost, lower-performing products.

This framework is well suited for explaining why organisations succeed or fail when responding to disruptive innovations (Karimi & Walter, 2015:39). The present study assumes that UoTs operate in a unique and competitive environment, and as such, they vie for the same type of clients.

Institutions such as UoTs could only apply new innovations that are non-existent to outperform the well-established ones through disruptive innovations.

1.6.3 The balanced scorecard perspective

The need for institutions to align their performance measurement (PMSs) systems with their strategic goals is well documented in the management literature (for example, Eccles, 1991:131; Bititci, Carrie & McDevitt, 1997:46). Most of this literature has proposed numerous and diverse frameworks and processes (approaches) to develop performance management systems. One of the most popular frameworks among these is the BSC, which was proposed by Kaplan and Norton (1992:72). It emphasises a balance between the use of financial and non-financial measures to achieve strategic alignment. The framework uses four metrics, namely financial, customer service, internal business processes, and learning and growth perspectives.

Many organisations use the BSC framework as a business performance measuring tool (Zahoor & Sahaf, 2018:185). McDevitt, Giapponi and Solomon (2008:32) suggest that having integrated the non-financial aspect of organisational performance with the traditional financial aspect creates a balance between internal and external performance perspectives as well as between lagging and leading indicators. Kaplan and Norton (1996b:75; 2001:1) highlight that this may be accomplished by translating the organisational vision and strategy into a concrete set of performance measures clustered in these four measures. This framework is relevant to this study, where its four indices are applied as the measures of UoT performance.

1.7 LITERATURE REVIEW

This section briefly discusses literature pertaining to transformational as well as transactional leadership, organisational innovation and the BSC performance. A more comprehensive review of the literature on these topics is presented in Chapters 3 and 4 of this thesis.

1.7.1 Transformational and transactional leadership

Leadership is a social influence process in which the leader seeks the voluntary participation of subordinates to reach organisational goals, which makes a leader a person who delegates or influences others to act to carry out specified objectives (Nanjundeswaraswamy & Swamy, 2014:57). In agreement, Van Eeden, Cilliers and Van Deventer (2008:253) assert that leadership is perceived to be central to these changes (influences), and the full-range model of leadership (with transactional and transformational distinction as a basis) provides a framework to explore the role of the leader in a transforming workplace.

Transformational leadership is defined as a leadership style that can create major change and acts as a change agent, raises a high level of intrinsic motivation and loyalty among followers, introduces a new

image or view of the future, and creates a commitment to this image among followers (Sadeghi & Pihie, 2012:188). This leadership approach inspires followers to surpass self-interest and perceptions of their own confines to become more effective in pursuing collective goals (Schaubroeck, Lam & Cha, 2007:1020). Leaders are transformational when they exhibit high moral, ethical and personal conduct, referred to as idealised influence, inspirational motivation, intellectual stimulation and individual consideration.

Transactional leadership is perceived as the second part of the transformational leadership theory (Sadeghi & Pihie, 2012:188). Transactional leadership focuses on the exchanges that occur between leaders and their followers, which help followers fulfil their self-interests. It aims to monitor and control employees through rational or economic means (Bono & Judge, 2004:902). To augment transformational leadership, as pronounced by Muenjohn and Armstrong (2008:4), transactional leadership is primarily grounded in three components, identified as contingent reward (employees are rewarded or punished for their performance); laissez-faire leadership, where the leader avoids clarifying expectations; addressing conflicts and making decisions; and management-by-exception (active: leaders monitor performance, detecting mistakes and providing advice and guidance).

Transformational leadership is more popular in that all levels of managers, students and project leaders globally are in support thereof (Avolio & Bass, 2004:3). Specifically, they align themselves with leaders who have had the greatest transformational influence on them: leaders who are inspirational, intellectually stimulating, challenging, visionary, development-oriented, and determined to maximise performance. This study develops their discussion further and considers seven key dimensions of transformational and transactional leadership. Transformational leadership dimensions include four factors, namely idealised influence, inspirational motivation, intellectual stimulation, and individual consideration (Sadeghi & Pihie, 2012:188; Oncer, 2013:154).

Idealised influence provides a reference to a leader's envisioning, confidence and one who sets high standards for emulation (García-Morales, Jiménez-Barrionuevo & Gutiérrez-Gutiérrez, 2012:1040; Mohammad Al-Omari & Hung, 2012:311; Oncer, 2013:155; Deinert, Homan, Boer, Voelpel & Gutermann, 2015:1097; Xu, Wubbena & Steward, 2016:729; Ng, 2017:386). Inspirational motivation refers to leaders who inspire by motivating their followers, largely through high expectations. This provides followers with challenges and meaning to engage in shared goals and undertakings (García-Morales *et al.,* 2012:1040; Oncer, 2013:155; Deinert *et al.,* 2015:1097; Xu *et al.,* 2016:729).

Intellectual stimulation relates to transformation leadership that integrates an open architecture dynamic into processes of situation evaluation, vision formulation and patterns of implementation (García-Morales *et al*., 2012:1040; Oncer, 2013:155). Individualised consideration refers to how the individually considerate leaders work with followers, diagnose their needs, and elevate them to higher levels. The leaders treat each follower as an individual and provide coaching, mentoring and growth opportunities (Oncer, 2013:155; Xu *et al.*, 2016:729; Ng, 2017:386). The contingent reward is regarded as more constructive, a positive transaction involving directed, consultative or negotiated agreements between leaders and followers about expected objectives and tasks (Oncer, 2013:154; Xu *et al.*, 2016:729). Management-by-exception refers to the situation where transformational leaders monitor follower performance and correct followers' mistakes (Oncer, 2013:154; Xu *et al.*, 2016:729). Laissez-faire refers to the leadership style of leaders who commonly take a hands-off approach and do not make any attempts to motivate their followers and provide any guidance, decision-making and problem-solving (Xu *et al.*, 2016: 729).

1.7.2 Organisational innovation

Organisational innovation is the introduction of new organisational approaches for business management in the workplace and the relationship between the organisation and external agents. In line with Al-Ansari *et al*. (2013:4), innovation is perceived as an important determinant of any business in a changing and competitive sector. It is the creation and realisation of new value and the implementation of the latest methods in business practices, workplace organisation or external relations, and improvement and transformation of managerial mind-sets and business models to cope with changes (Akgun *et al.*, 2014:889). Both these assertions confirm that innovation is a significant driver and tool to gain a competitive advantage in organisations (Rosli & Sidek, 2013:2; Schultz, Salomo, de Brentani & Kleinschmidt, 2013:430; Prajogo & Oke, 2016:243).

1.7.3 Balanced scorecard performance

Theories and various methods have been employed to evaluate multiple organisational performance (Davis & Albright, 2004:135; Lawrie & Cobbold, 2004:611).

These include, *inter alia*, the performance measurement matrix (Keegan, Eiler & Jones, 1989:45), the results and determinants framework (Fitzgerald, Johnson, Brignall, Silvestro & Voss, 1991:44), the performance pyramid (Lynch & Cross, 1991:23), and the BSC (Kaplan & Norton, 1992:72). Among all these tested approaches, each one has its fundamental concepts, goals, advantages and disadvantages.

The approach chosen by management to examine organisational performance depends on the status and type of the organisation involved (Zangoueinezhad & Moshabaki, 2011:825). However, it may be argued that the BSC has emerged as arguably the most popular framework to measure organisational performance (Zahoor & Sahaf, 2018:186). Developing from this contention, Davis and Albright (2004:135) and Lawrie and Cobbold (2004:611) concur that the BSC is an extensive and comprehensive performance measuring tool for adequately planning and controlling how an organisation can achieve its intended and set goals and objectives. Therefore, this study considers the BSC perspective as the barometer to measure the performance of UoTs.

The BSC is a performance measurement tool consisting of financial and non-financial measures. It is composed of four key elements, namely: 1) financial, 2) customer, 3) internal business processes, and 4) learning and growth (Kaplan & Norton, 1996a:8). The financial perspective, often renamed stewardship, views organisational financial performance and financial resources. The financial perspective answers the question: How should the organisation appear to its shareholders? (Karathanos & Karathanos, 2005:222).

Furthermore, Karathanos and Karathanos (2005:222) indicate that the customer/stakeholder perspective views organisational performance from the customers' point of view or other key stakeholders that the organisation is designed to serve. The internal process perspective views organisational performance through the judgements of the quality and efficiency related to their products or services or other key business processes. The learning and growth perspective (also known as organisational capacity) views organisational performance through the eyes of human capital, infrastructure, technology, organisational culture and other dimensions that are key to the breakthrough of performance.

1.8 RESEARCH METHODOLOGY

All scientific research must be conducted using a relevant methodology (Neuman, 2014:69-85). A methodology provides a piece of research with its philosophy, the values and assumptions that drive the rationale for the investigation, and the standards that will be utilised for the interpretation of information and the drawing of conclusions (Almalki, 2016:290). This section covers subjects such as the research design, sampling design, procedures for data gathering, data analysis, and ethical considerations. A more detailed discussion of the research methodology is presented in Chapter 5.

1.8.1 Research approach, design and strategy

Research design may be defined as the plans and the procedures for research that span the steps from broad assumptions to comprehensive data collection methods, analysis and interpretation (Creswell, 2014:31). The research design can be in the form of quantitative, qualitative and mixed-method approaches. This study utilised a quantitative approach based on testing relationships in theory using statistical procedures. The quantitative approach was chosen on the basis that it uses mathematical models, which makes it more reliable and valid when measuring behaviour related to the relationships between various constructs (Dudwick, Kuehnast, Jones & Woolcock, 2006:3).

This study adopted a survey design in collecting data. Survey research designs involve the collection of data using a survey questionnaire as an instrument (Creswell, 2014:32). Survey research methods can be in the form of a longitudinal survey, which involves the collection of data over a long period, or a cross-sectional survey, which is the collection of research data over a short period of time (Norris, Plonsky, Ross & Schoonen, 2015:471). This study employs the cross-sectional strategy in collecting data in the selected South African UoTs. The strategy was chosen on the basis that it provides cheap methods of collecting data over a large sample, and it pairs well with quantitative designs (Alan, 2015:148).

1.8.2 Literature review

Literature appraisal on relevant constructs in this study was conducted with the sole determination of addressing its theoretical intentions. The literature review concentrated on hypothetical concepts such as transformational/transactional leadership (and the dimensions thereof), organisational innovation, disruptive innovation and the BSC performance. Secondary data used in this study was sourced from various and reliable online (internet) academic search engines such as Google Scholar, Emerald Insight, Researchgate, Science Direct, and JStor. Over and above these, extant and latent data in the form of digital records, magazines, video recordings, books, newspapers, parliamentary debates/discussions, government officials' speeches and reports, among others, was used as sources for data collection.

1.8.3 Empirical study

In this research, the empirical study involved the collection of primary data and focused on the sampling design, procedures for data collection, data analysis, as well as the validity and reliability of the applicable measuring tool(s).

1.8.4 Sampling design

A sampling design is a well-recognised topic in social research (Uprichard, 2013:4). It entails the researcher's provisional plan for a quantitative description of trends, attitudes or opinions of a population by studying a sample of that total population (Creswell, 2013:235). Samples are collected to understand a population because it is naturally not possible to observe all members of the population. Uprichard (2013:4) suggests that the main purpose of sampling is to make some inferences about a given population using a chosen sample. Based on this view, the sampling design of this study constituted the target population, sampling frame, sample size, sampling approach and sampling technique.

1.8.5 Target population

A target population refers to a complete group or set of the population from which data relevant to the study will be collected (Murphy, 2016:6; Asiamah, Mensah & Oteng-Abayie, 2017:1607). The target population for this study consisted of academics and non-academic professionals within UoTs in South Africa.

1.8.6 Sampling frame

A sampling frame is the list of all population units from which the sample units are identified (Kabir, 2016c:69). A sampling frame is referred to as the source material or device from which a sample is drawn in a quantitative study. It is a list of all those within a target population who can be sampled and may include individuals, households or institutions (Taherdoost, 2016:20). The sampling frame was made up of the various registers obtainable from the human resource departments within three UoTs in South Africa.

1.8.7 Sampling size

Sampling size refers to the determination by the researcher of the number of respondents that can be feasibly included in a statistical sample. A study by Jensen, Andersen, Bro, Bollingtoft, Eriksen, Holten, Jacobsen, Ladenburg, Nielsen, Salomonsen, Westergard-Nielsen and Wurtz (2019:13), which focused on transformational leadership, used 672 respondents. Azar and Ciabuschi (2017:328) used a sample size of 573, while Carvalho and Yordanova (2018:47) used a sample size of 298 in their studies on organisational innovation. Another study, by Antonsen (2014:40), who considered the BSC, used 146 respondents. This study considered a sample size of n=500 respondents based on these historical samples.

1.8.8 Sampling approach and technique

In any research study, sampling is extremely important, because it saves costs and reduces the time of including all units. Given the possible difficulty in obtaining responses from all expected respondents, this study followed a non-probability stance to select respondents given their flexible working schedules. Non-probability sampling methods are based on the premise that respondents are chosen based on their expertise and in-depth knowledge of the subject being discussed. Purposive sampling was used as the sampling technique for selecting respondents. Purposive sampling refers to identifying and selecting individuals or groups of individuals who are especially knowledgeable about or experienced with a phenomenon of interest (Palinkas, Horwitz, Green, Wisdom, Duan & Hoagwood, 2015:534). The rationale behind using purposive sampling is that it was deemed necessary to find respondents who had the knowledge and skills to address the objectives of the study (Campbell, Greenwood, Prior, Shearer, Walkem, Young, Bywaters & Walker, 2020:653).

1.8.9 Data collection method and measuring instrument

Once the target population, sampling frame, sampling technique and sample size have been determined, data has to be collected (Taherdoost, 2016a:26). Data collection is referred to as the process that informs how relevant information data on targeted variables to address the research problem will be collated (Sani, 2013:40). This study used a quantitative survey design to collect data. In this study, data was collected through a self-administered survey questionnaire distributed through the drop and collect method as well as the e-mail method.

The questionnaire was divided into four sections. Section A elicited the demographic details of the respondents. Questions in Sections B, C and D were adapted from previous studies. The adapted questions were adjusted accordingly and developed to contextualise them to the current study, using the feedback collated from a pilot study. Section B sought information from respondents about their managers' leadership styles. These questions were presented on Likert scale response options anchored by 1=never and 5= always. Section C sourced information from respondents on their perceptions of organisational innovativeness. Likert scales used in this section were anchored by 1= strongly disagree and 5= strongly agree. Section D sought information on the respondents' perceptions on university performance based on the four BSC measures, namely financial performance, customer satisfaction, internal processes, and learning and growth. The Likert scales used in this section were anchored by 1= far below standards and 5= far above standards. Lastly, the questions were closed-ended for simplicity

of answering. More details regarding the sources of the measurement scales and their validation are provided in section 5.10.

1.9 DATA ANALYSIS AND STATISTICAL APPROACH

This section provides an in-depth analysis of the data collected from the respondents. Data collected from Sections A and B, which sought to establish the respondents' demographic details and institution, was analysed using descriptive statistics. Data from Sections C through H that sought to test hypotheses was analysed using inferential statistics, namely Pearson correlations and regression analysis. The Statistical Packages for the Social Sciences (SPSS) (version 26.0) software was utilised to analyse the data.

1.9.1 Measurement instrument reliability and validity

In any empirical research, the inclusion of reliability and validity is key to authenticating the results thereof. Reliability and validity are common standard apparatuses to evaluate the appropriateness of research instruments and to increase reader confidence and lessen the error margin (Taherdoost, 2016b; Mohajan, 2017:1).

1.9.1.1 Reliability

The reliability of a measurement refers to the degree to which the measurement instrument is free from measurement error (Scholtes, Terwee & Poolman, 2011:237). Consequently, Cronbach's alpha coefficient was applied to test internal consistency. Minimum alpha values of 0.7 were required to accept the construct reliability (Heale & Twycross, 2015:66).

1.9.1.2 Validity

Validity refers to the degree to which the instrument measures the construct(s) it purports to measure (Scholtes *et al.*, 2011:239). It is concerned with the integrity of the conclusions that are drawn from a piece of research. Validity can be used to test the four major types of validity for authentication, the measurement instrument/tool for face, content, construct and predictive validity (Bryman, 2015:50). Face validity was established through a review of the questionnaire by a panel of quantitative research experts at a selected university of technology. Content validity was established by pilot testing the questionnaire with a conveniently selected sample of 50 respondents. Lastly, construct validity was measured through exploratory factor analysis and Pearson correlations (Alumran, Hou, Sun, Yousef & Hurst, 2014:4). Predictive validity was measured using regression analysis.

1.10 DEFINITIONS OF TERMS

This section outlines the definitions of all the constructs and terms that are used in this research framework.

Balanced scorecard: The BSC is a performance measurement framework developed by Kaplan and Norton (1996a), and consists of four interrelated elements, each containing objectives and measures from a distinctive perspective, namely financial control, customer satisfaction, internal processes, and learning and growth.

Financial control: Financial controls are the procedures, policies and means by which an organisation monitors and controls the direction, allocation and usage of its financial resources (Yogendrarajah, 2011:2; Zéman, Komáromi, Kapsdorferová, Hajós & Bárczi, 2014:31).

Customer satisfaction: Customer satisfaction refers to consumer fulfilment in line with responses, where consumers experience satisfaction with the product or service that they have purchased or received (Hertzberg, Rask & Bengtsson, 2020:7).

Internal processes: Internal processes are the collection of activities that take one or more kinds of input and create an output that is of value to the customer. These are processes used to address such aspects as productivity, accuracy, cycle time, core competencies and effective use of people and information resources (Weerasooriya, 2016:80).

Learning and growth: Learning and growth refer to the BSC perspective that assists an organisation to gain long-term performance through three main aspects, namely human resources, information resources and organisation resources (Utomo, Machmuddah & Setiawanta, 2019:57).

Income and grants: Income and grants may be perceived as the funds that universities receive or generate from student fees, donations and other sources as second stream income (Ntshoe & De Villiers, 2013:72).

Leadership: Leadership is a process by which an individual inspires others to achieve an objective and directs the organisation in a way that makes it more cohesive and coherent (Jeremy, Melinde & Ciller, 2012:5389; Sharma & Jain, 2013:310).

Transactional leadership: Transactional leadership is a style of leadership in which the leader promotes the compliance of his followers through both rewards and punishments (Ramadhanti, Singh & Kularajasingham, 2021:40).

Contingent reward: Contingent reward leadership can be defined as the degree to which the leader sets up constructive transactions with followers by clarifying expectations and establishing the rewards for meeting these expectations (Jiang, Bohle & Roche, 2019:521).

Management by exception (active): Management by exception (active) is a form of leadership in which a leader keeps check on performance of his/her workforce and directs them as and when needed. This is a leadership style where a leader not only concentrates on errors, but helps employees in dealing with such errors, complaints or failures (Hasija, Hyde & Kushwaha, 2019:152).

Management by exception (passive): Management by exception (passive) is a leadership style where leaders wait for mistakes to happen and then take action, which makes it a reactive approach (Hasija *et al*., 2019:152).

Laissez-faire: Laissez-faire refers to a hands-off, let-things-ride approach to influencing individuals in the workplace. Laissez-faire leadership is described as the absence of leadership and the avoidance of intervention (Tosunoglu & Ekmekci, 2016:90).

Transformational leadership: Transformational leadership is a form of leadership in which a leader adapts a more future-oriented management style, affords followers the opportunity to perceive events with an innovative point of view, influences followers to value the targets of the group more than their own personal goals, makes the necessary changes and improvements in their organisation, questions the current principles, and makes new principles so that the organisation can reach superior performance level (Sirin, Aydin & Bilir, 2018:2010).

Idealised influence: Idealised influence can be pronounced as the degree to which the leader behaves in commendable ways and exhibits principles and takes stands that cause followers to identify with the leader who has a clear set of values and acts as a role model for the followers (Odumeru & Ogbonna, 2013:356; Orabi, 2016:92).

Intellectual stimulation: This is termed the degree to which the leader challenges assumptions, inspires and encourages creativity in the followers, thereby providing a framework for followers to see how they associate (Smothers, Doleh, Celuch, Peluchette & Valadares, 2016:482).

Individual consideration: Individual consideration is generally referred to as the extent to which the leader focuses to each individual follower's needs, as well as weak and strong points, and acts as a mentor or coach and gives respect to and appreciation of the individual's contribution to the team (Zacher, Pearce, Rooney & McKenna, 2014:173)

Inspirational motivation: Inspirational motivation is regarded as the degree to which the leader outlines a vision that appeals to and inspires the followers with assurance about future goals, and offers meaning for the current tasks in hand (Orabi, 2016:92).

Higher education institution: According to the Republic of South Africa's Higher Education Act 101 of 1997, "higher education institution" means any institution that provides higher education on a full-time, part-time or distance basis and which is:

(a) merged, established or deemed to be established as a public higher education institution under this Act;
(b) declared as a public higher education institution under this Act; or
(c) registered or provisionally registered as a private higher education institution under this Act.

University of technology: This is a type of university that provides vocational-oriented diploma and degree programmes. The UoTs provide programmes in applied fields such as business, health sciences, design, performing arts, engineering, technology, and many more. The central aspect of this, though, is that most study programmes offered by UoTs have remained career-oriented and technology-based, with a significant mandatory portion of work-integrated-learning (WIL). Furthermore, UoTs have retained their strong links with commerce and industry in the planning, implementation and evaluation of their study programmes (Kongolo & Imenda, 2012:2).

Organisational innovation: Organisational innovation can be defined as the introduction of something new such as an idea, product, service, technology, processes and strategies to an organisation, most notably, with the objective to augment performance (Sapprasert & Clausen, 2012:1285).

Organisational performance: Organisational performance refers to the degree to which the organisation, with some informational, financial and human resources, locates itself efficiently on the business market (Conţu, 2020:398).

1.11 ETHICAL CONSIDERATIONS

Ethical issues in research command increased attention. The ethical considerations that need to be anticipated are extensive and reflected throughout the research process. Creswell (2013:92) describes them as reasonable approaches adopted before collecting data, during data collection and during reporting of research results to avoid violating the rights of respondents. In this study, several research ethics were considered and observed in collecting and reporting data. Permission to collect data was sought from responsible authorities to collect data from South African UoTs after the Higher Degrees

Committee had approved the study at VUT. Full details of the research were made available to the respondents to inform them that their involvement in the study is voluntary. Identities of respondents were not required in the questionnaire.

1.12 OUTLINE OF THE THESIS CHAPTERS

The final study is being presented in a thesis consisting of the following chapters:

Chapter 1: Introduction and background to the study

This chapter focuses on introducing the study and providing the background thereof. Also included is an outline of the problem statement, the research objectives, the conceptual framework, the formulation of hypotheses, a brief review of literature, a summary of the research methodology, and ethical considerations.

Chapter 2: A literature review on leadership in higher education in South Africa

This chapter focuses on leadership, leadership theories and styles, as well as a background on the significance and role of transformational/transactional leadership (and attention was given to its dimensions) within South African HEIs with a particular emphasis on UoT performance.

Chapter 3: A literature review on organisational innovation

This chapter analyses the literature on organisational innovation, its advent, its ancient and contemporary applications and its impact on organisational performance.

Chapter 4: A literature review on balanced scorecard performance

This chapter reviews the literature on the use of the BSC as a measure of organisational performance. Hypotheses are also formulated in this chapter.

Chapter 5: Research design and methodology

This chapter discusses the research methodology and design applied in the study. Subsequently, it further directs the discourse to the sampling design that was applied in choosing the research sample. The chapter also pronounces the appropriate research technique(s) applied in the study to gather information prior to discussing the approaches to be employed in the analysis and presentation of data.

Chapter 6: Data analysis and interpretation of results

This chapter deals with the analysis, interpretation and evaluation of the research results. It presents the study results and shows the processes involved in developing the results and their significance. These

results are based on the statistical analyses employed. The demographic profiles of the respondents, response rate, frequency analysis of constructs and inferential statistics are addressed. Finally, a comprehensive discourse of each set of results is provided.

Chapter 7: Conclusion and recommendations

In this chapter, the conclusions of the study are drawn from the results based on its objectives. Evolving from the results, it presents recommendations on appropriate practices to enhance leadership, innovation and organisational performance in UoTs.

1.13 CHAPTER CONCLUSION

Chapter 1 introduces the study by presenting key topics that form the nucleus of the research. These include topics such as the problem statement, research objectives, conceptual framework, research hypotheses, research theories, preliminary literature review, summarised research methodology, data collection and analysis, ethical considerations and the chapter outline. The next chapter is a literature review of the higher education environment in South Africa.

CHAPTER 2: BACKGROUND TO HIGHER EDUCATION IN SOUTH AFRICA

2.1 INTRODUCTION

The South African higher education system is founded on apartheid policies that systematically separated groups based on race classification. Developing from this racial classification, the apartheid system of segregation was made law in South Africa in 1948, and as such, the country was then formally divided into four racial groups, namely white, black, Indian and coloured. This system collapsed in 1994.

This collapse of apartheid in 1994 was signalled nationally and internationally as a victory for democracy and human rights in South Africa and the African continent as a whole. With the assumption of the democratic government led by the African National Congress (ANC) in 1994, various policies came into place to redress the imbalances created by the apartheid regime. However, the shift from apartheid education to the current education system in South Africa has not been without problems. Issues on education are often argumentative because they involve many stakeholders, such as politicians, political analysts, academics and ordinary community members.

It is, therefore, fundamental that a synopsis of the higher education landscape in South Africa is provided. As such, the key purpose of this chapter is to review the literature on the South African higher education environment. Firstly, the chapter discusses the South African higher education landscape pre- and post-1994. Secondly, it critically reflects on the developments and what has been achieved in South African higher education since 1994 and the ongoing challenges. Moreover, the chapter discusses the re-configuration of higher education in South Africa that resulted in establishing the universities of technology in the country. This includes an outline of aspects such as (1) the origin of UoTs in South Africa, (2) the concept and description of the UoT, and lastly, (3) some of the distinctive differences between a UoT and other HEIs in South Africa.

In relation to the above, the dominant focus of this chapter is positioned on the structure and transformation of higher education in the South African post-apartheid regime; this will, therefore, deliberate on, among others, students, staff and policy issues, funding frameworks and the current curriculum in HEIs in South Africa. These aspects are discussed to provide an overview of how the higher education system has transformed after the demise of the apartheid government in 1994.

2.2 CONCEPTUALISATION OF HIGHER EDUCATION

Higher education is regarded as a strategic sector for the development of knowledge-based economies that are emerging worldwide. This key sector is emerging within a context where knowledge and ideas are progressively generated and exchanged across national borders. Worldwide, as observed, there has been an incredibly high degree of cross-border mobility of students, scholars, study programmes, and higher education providers that operate in foreign countries (Hahn, 2005:1).

It is further suggested by the South African Higher Education Act 101 of 1997 that higher education embraces all post-secondary education, training and research guidance at educational institutions such as universities that are registered as HEIs by state authorities. These include all the activities that the state considers to be higher education, not only those that take place within ordinary universities and graduate schools.

In view of the above, educational institutions considered by the state as HEIs offer shorter short-term education and training courses. These may include polytechnics, junior colleges, and various forms of technical speciality institutions that offer courses of two to three years in length, and correspondence courses that make use of information technology (IT) and are targeted by a broad population of students. HEIs, particularly universities, are expected to perform four major functions. These functions are governance and management, teaching and learning education, research and contributing to society in the form of community outreach projects (Ekene & Oluoch-Suleh, 2015:91).

Higher education comprises all learning programmes that lead to qualifications that meet the requirements of the Higher Education Qualifications Sub-Framework (HEQSF), which is a sub-framework of the National Qualifications Framework (NQF) as contemplated in the South African Qualifications Authority (South African Higher Education Act 101 of 1997:5).

According to the Republic of South Africa's Higher Education Act 101 of 1997 (as amended), higher education is defined as learning programmes leading to a qualification that meets the requirements of the Higher Education Qualifications Framework (HEQF). The definition of higher education is substituted by Section 1 of Act 39 of 2008 (This Amendment *Act* No. *39 of 2008* was promulgated to amend the Higher Education *Act*, 1997, to make it consistent with the National Qualifications Framework *Act*, *2008 (NQF)*; and to provide for matters connected with it), which refers to higher education as meaning all learning programmes leading to a qualification higher than grade 12 or its equivalent in terms of the

NQF, and includes tertiary education as contemplated in Schedule 4 of the South African Constitution, a qualification that meets the requirements of the HEQF.

2.3 HIGHER EDUCATION IN SOUTH AFRICA: PRE- AND POST-1994

South African education, in general, was founded on apartheid policies by the colonial regime. As a result of these policies, the Bantu Education System was developed in South Africa's multi-racial society, but presented countless complications that divided society according to race and gender. A brief overview and historical perspective of higher education in South Africa pre- and post-1994 will be outlined in the following sections.

It would only be in 1873 that the first autonomous degree-granting institution would be established at the Cape, the University of the Cape of Good Hope (UCGH), later to become the University of South Africa. Therefore, the current formal university structure in South Africa began with establishing the University of the Cape of Good Hope (UCGH) in 1873. This was not a resident university. The University of Cape of Good Hope was only an examining body that quality-assured examinations and conferred degrees on those students who fulfilled the requirements for the degrees they enrolled for, irrespective of where they studied (Soudien, 2015:10).

However, this University of Cape of Good Hope was dominated by white men in power, who were less passionate about such a move and after substantial bitter negotiations, and the subsequent appointment of a Commission of Inquiry (CoI), the establishment of the University of the Cape of Good Hope was approved by the Cape parliament through Act 16 of 1873. This Act modelled the University of Cape of Good Hope on the University of London (as indicated in the preceding paragraph, it offered examinations but not tuition and had the power to confer degrees upon successful examination candidates).

2.4 HIGHER EDUCATION IN SOUTH AFRICA PRE-1994: APARTHEID AND SEGREGATED HIGHER EDUCATION

This section examines the literature on the present higher education system in South Africa viewed from the perspective of two key features that dominantly shaped its past, namely (1) apartheid and discrimination and (2) segregation. A highly unequal society evolved during the era of colonialism and exploitation and was marked by extreme forms of segregation and discrimination during the decades of apartheid (Mzangwa, 2019:2). This section intends to address some of the consequences of the apartheid legacy on higher education in South Africa.

2.4.1 Apartheid higher education in South Africa

The South African government pre-1994 aimed to mainly advance white supremacy and its aspirations, mainly through white male academics. Therefore, developing from 1948, the colonial state assumed full control of both the socio-economic and political domains as well as the domination and exploitation of resource-rich parts of the world (Sehoole, 2006:4; Mahabeer, Nzimande & Shoba, 2018:2). These controls and domination were done through European powers in the form of settler colonies (Mamdani, 1996:17; Kelley, 1999:1; Heleta, 2016:2). Subsequently, the assumption of authority by the National Party and the rise of apartheid in 1948 drastically reformed the South African education landscape as the Nationalist government sought to structure schools and universities in line with their racial ideology (Gibbon & Kabaki, 2004:123; Bunting, 2006:42; Sehoole, 2006:5; Chetty & Pather, 2015:2). Amid this so-called transformation, Du Pre' (2010:2) asserts that, in 1967, the South African government, mostly due to, among others, global economic and educational isolation, acknowledged the need for a highly qualified and skilled workforce as the South African economy followed global trends.

This acknowledgement prompted the government to establish six colleges of advanced technology (CATEs). This realisation of the need for a well-qualified and skilled labour force was taken a step further in 1979 when CATEs were converted to technikons, a new type of higher education institution offering career-oriented, post-school education. These technikons were mainly intended to offer three-year post-high school national diplomas comparable to the first three years of a university. This was subsequently followed by a national higher diploma on the fourth-year level (d'Almaine, Manhire & Atteh, 1997:437) that was eventually upgraded to the degree-awarding status (Du Pre', 2010:2).

Inferring from these scholars' submissions, the South African government during the Hendrik Frensch Verwoerd's era (the then Prime Minister of South Africa: 1958-66) would not have willingly transformed higher education had it not been due to the international isolation and having to align with global trends. This was a coercive change, and therefore the discrimination against, among other things, race and gender, and as such, they ensured that they subtly maintain white supremacy in whatever form.

Originating from this coercive change, the colonial dispensation left South Africa with a highly dubious and racially separated higher education system comprising a typology of historically white universities (HWUs) and historically black universities (HBUs), which also included two separate universities for Indians and coloureds. This system emerged from the founding of colleges that later evolved into the University of Cape Town (UCT) and the University of Stellenbosch (US) (Hay & Monnapula-Mapesela, 2009:11; Zeleza, 2009:115). Moreover, Bunting (2006:45) and Ramoupi (2014: 270) assert that against

the background of the political condition in the early 20th century in South Africa, white universities were also based on the language of tuition. This was a well-calculated move of excluding the majority of black students, particularly from Afrikaans-speaking white universities.

Apart from the language difference, there was also an observable difference between the academic, intellectual and socio-political cultures. These differences created a division in line with the racial groupings and the country of origin; the historically white English universities (HWEUs) were pro-Anglo-Saxon, and the historically white Afrikaans universities (HWAUs) followed the Dutch and German philosophical and theological traditions. Amid these divisions, the South African black community was left out and therefore was just between the English- and Afrikaans-speaking universities.

The formation of black universities (BUs) was intentionally grounded on a separate development policy. This separation was justified with the enactment of the University Education Act of 1959 approved by the then governing nationalist apartheid party. All BUs were coerced to embrace inferior and racially dividing curricula and management models used by Afrikaans universities (Reddy, 2004:8; Ramoupi, 2011:5). Apart from the race issue that racially divided curricula and management models used by Afrikaans universities, higher education institutions were classified according to ethnic groupings. The fundamental philosophy in these divisive curricula was to preserve the cultural identity of the white minority Afrikaans-speaking people (Heleta, 2016:3).

2.4.2 Segregated higher education in South Africa

In line with Bunting's study (2006:35), the apartheid government, under the influence of the ruling National Party, had, by the beginning of the 1980s, divided South Africa into five entities:

- The Republic of Transkei (formed from part of the old Cape Province).
- The Republic of Bophuthatswana (formed from part of the old Transvaal Province).
- The Republic of Venda (also formed from part of the old Transvaal Province).
- The Republic of Ciskei (formed from another part of the old Cape Province).
- The Republic of South Africa (which consisted of the vast majority of the land holdings of the old South Africa).

Consequently, the management of education for Africans was decentralised into self-governing regions and, with effect from 1976, four Bantustans (Transkei, Bophuthatswana, Venda and Ciskei (TBVC)) states were formed. These governments were responsible for black education. The application of a segregated higher education system, known as the Extension of University Education Act of 1959,

provided for the establishment of black HEIs. This establishment was the racial reconstruction of African history and a re-evaluation of the influences of colonialism on African people, society and culture (Brar & Brar, 2012:582).

In 1983, the Nationalist Party divided the parliament into three chambers with a separate representation of white voters as House of Assemblies (HoAs); Coloured voters were defined as House of Representatives (HoRs); and Indian voters representing the House of Delegates (HoDs). There was no provision or representation of Africans in parliament. Therefore, education within South Africa became its own affair for all groups except Africans. Education was a common affair vested in the central Department of Education and Training (South African History Online, 2019).

In line with this arrangement for higher education, as described, it had exceptional consequences for access to most Africans (they could not access higher education like other races) as all public HEIs were founded on racial segregation, and students from disadvantaged race groups could not be admitted without special permits obtained by the HEI from its administering government department.

This arrangement, driven by the different legal status and racial basis of different HEIs, led to complex differentiation in governance and funding arrangements. Accordingly, the legal and policy provisions for higher education under the nationalist regime were supposedly meant to generate and coerce a system of separate but equal features that catered for separate but particular needs simultaneously. The consequences of this legal and policy framework were to produce a higher education system that was highly disjointed and awkward; that was essentially undemocratic; that was 'effective' only in terms of inflexible categorisations enforced by the state; and whose duplications rendered it profoundly inefficient (CHE, 2004:21).

Apart from race, South African universities were also classified according to ethnicity, locality as well as provinces. The fundamental ideology in this divide was mainly to preserve the cultural identity of the oppressive minority of white Afrikaans-speaking society, as mentioned previously (Zeleza, 2009:114; Pietsch, 2013:1). Amid the implementation of apartheid policies, it is alleged that one of the most inhumane aspects within the higher education system before 1994 was the disparity in the distribution of resources to institutions; huge disparities between HBUs and historically white institutions (HWIs) in terms of facilities and capacities; and a skewed distribution of the student population in certain disciplines, with no more than a handful of non-white students in fields such as the sciences, engineering, and technology (Gibbon & Kabaki, 2004:123).

This disparity in the distribution of resources to institutions was the fulfilment of what Hendrik Verwoerd initiated and preached, and the same classification was transmitted in the governance of these institutions (Sehoole, 2006:5; Hay & Monnapula-Mapesela, 2009:11). According to the DoE (1996:9), racial differentiation and discrimination within higher education created a divided and fragmented system in which:

- resources were inequitably and inefficiently allocated;
- governance structures were undemocratic;
- access was highly skewed among racial lines;
- there was a lack of coordination, common goals or systematic planning; and
- there was an inability to respond to the economic and social needs of the majority of the population.

The preceding statement suggests that the apartheid regime did not allow African people to question anything related to education matters. The enforcement of Euro-Centric curricula onto Africans was a brutal distortion of their mental capabilities. Notwithstanding the fact that every country espouses the notion of an education system that is highly innovative, efficient and effective, this was not the case with the then ruling Nationalist Party (DoE, 1996:9).

2.4.3 Participation rate pre-1994

Before the dawn of democracy in 1994, the gross participation rate in higher education was a mere 17%. The participation rates were highly skewed; access to higher education was then rationalised by race: approximately 9% for Africans, 13% for coloureds, 40% for Indians and 70% for whites (CHE, 2004:62). In 1993, while black (African, coloured and Indian) South Africans comprised 89% of the population, black students constituted 52% of 473 000 students. Although constituting 77% of the population, African South Africans made up just 40% of enrolments. White South Africans comprised 11% of the population, but white students constituted 48% of enrolments. At 43%, there was also under-representation of women students. These statistics, taken together with the patterns of enrolments by fields of study, qualification levels, and mode of study, reflect the relative exclusion of black and women South Africans in higher education pre-1994 (HESA, 2014:1). These statistics suggest that higher education in South Africa pre-1994 was not a right for black South Africans, particularly women, but a privilege.

2.5 SOUTH AFRICAN HIGHER EDUCATION LANDSCAPE POST-1994

According to Badat and Sayed (2014:22), the non-racial, democratic South African government after 1994 came into being on a rising tide of expectations, legitimacy and political will. Educational institutions, particularly HEIs, were called on to address and respond to the essentials of all citizens living in South Africa and to the socio-economic development requirements of the new state. As such, there was great expectancy that the higher education system would be profoundly transformed by dismantling the old apartheid order and creating a new system grounded on the South African Freedom Charter pronouncement, asserting that the doors of learning and culture shall be open to all. Accordingly, Hay and Monnapula-Mapesela (2009:3) share the same sentiments with Badat and Sayed (2014:22) and relate that South Africa's new democratic government devoted itself in 1994 to transforming education as well as the inherited apartheid socio-economic configurations and institutionalised a new social order that was embraced by many South African scholars (Reddy, 2004:28). Among other documents articulating higher education transformation in South Africa, the national plan for higher education (NPHE) in South Africa (DoE, 2001:4) indicates that over the past 20 years, no field of education has escaped scrutiny, and there has been a wide array of 'transformation'-oriented initiatives.

Scrutinising NPHE, the assumption made is that to the most part, it has had a significant influence on the transformative vision of the higher education system outlined in the Education White Paper 3 – a programme for the transformation of the higher education system (DHET, 1997). This document suggested the implementation structure for higher education transformation and categorised the requisite strategic interventions and devices that would be essential for such an education system. It further offers an opportunity and challenge to map a route that locates the higher education system as a key engine driving and contributing to the reconstruction and development of South African society.

As much as the government promulgated policies intended to drive the transformation, some policies did not provide the necessary envisaged support. While considering this, much has to be done to redress the apartheid imbalances in an attempt to achieve the goals set in the NPHE (2001). In support of the preceding debates, Bozalek and Boughey (2012:691) insist that the apartheid system influenced the higher education system in many ways. On strengthening their argument, these scholars pronounce that through this apartheid system, separate institutions for black and white population groups were established. However, apartheid beliefs also defined the programmes these diverse kinds of institutions could offer, thereby following the roles perceived appropriate for individual (different) social groups (Gibbon & Kabaki, 2004:123). Eventually, this configuration developed into many aspects of the higher

education system that had an adverse effect on African students, such as access and funding (on both students and institutions) that ultimately influenced the graduation rates; and students' retention and dropout rates. More importantly, institutional autonomy, as well as academic freedom, were non-existent.

2.6 DEVELOPMENTS AND ACHIEVEMENTS IN SOUTH AFRICAN HIGHER EDUCATION POST-1994

Considering that South African higher education pre-1994 was overwhelmed with many challenges grounded on colonial and apartheid policies, there was a significant need for change towards redressing the inequalities based on these policies. In line with the 1994 South African constitution, as well as the Higher Education Act 101 of 1997, South African HEIs needed to advance social order and justice and redress social equity for the black majority and women of South Africa (Badat, 2010:22).

The assumption of power of the African National Congress (ANC) in 1994 resulted in a far-reaching political transformation in South Africa. This radical transformation covered all areas of society, including higher education. Therefore, transformation in education was designed in a specific way that would address apartheid ills. Higher education had to be transformed and had to play a key role in the liberation of the South African community and the African continent at large (Duvenhage, 2006:125; De Wet & Wolhuter, 2009:259). The 1995 White Paper for Education and Training stated the vision for transforming higher education as follows:

Transformation in higher education should be the goal of education and training policy to enable a democratic, free, equal, just and peaceful society to take root and prosper in our land, on the basis that all South Africans, without exception, share the same inalienable rights, equal citizenship, and common national destiny, and that all forms of bias (especially racial, ethnic and gender) are dehumanising. Research (DoE, 2001:2) indicates that the ANC government worked hard right from the start to achieve the set transformation objectives. As a result, they managed to achieve countless successes, although many plans miscarried and others had to be redesigned (Duvenhage, 2006:136; Badat, 2010:5). In the process, some aspirations were achieved:

An all-inclusive agenda and policy framework for higher education as clarified in various policy documents have been defined, even if the nature of the transformation agenda and certain elements necessitate an ongoing critical debate. The foundations have been laid for a new higher education landscape constituted by a single, coordinated and segregated system encompassing universities, universities of technology, comprehensive institutions, contact and distance institutions, and various colleges. Consequently, Badat (2004:21) claims that some significant achievements have been realised.

The rapid increase of enrolments in HEIs, quality improvements in parts of the system, desegregation and the opening up of opportunities to black and women students are unparalleled in South African history. In addition, the government has established a skills levy system that provides the necessary resources to enhance skills development in higher education.

2.6.1 Internationalisation of higher education in South Africa

There has been a shift and broadened participation of blacks, particularly women, within higher education to improve social equity and meet economic and social development needs; a crucial goal gave the legacy of the disadvantaged black and women South Africans, especially of the working class with poor rural origins (Badat, 2010:5). Although South Africa was locally and internationally isolated due to the apartheid policies and practices, the inauguration of democracy has brought a welcome internationalisation of the student body and also, to a more limited extent, of the academic workforce (Sehoole, Adeyemo, Ojo & Phatlane, 2019:213). This has brought about a significant change in the movement of international students. Consequently, there has been a tremendous increase in enrolment with students immigrating from other African countries and other overseas countries (Majee & Ress, 2020:468).

As MacGregor (2014:1) indicates, 52% were female, and 79% were from Africa, 8% were from Europe and North America, 4% were from Asia and 1% from elsewhere. The students were spread across a range of fields: 40% were studying for a bachelor's degree, 10% for an honours, 23% for master's, 19% for a PhD and 1% were doing postdoctoral research. Only 4% were on exchange or semester studies abroad, and 4% were other. According to the newly-published edition of Study South Africa – an annual publication of the International Education Association of South Africa (IEASA) – the number of international students has "grown dramatically" since 1994, the year the country achieved democracy, from 12 600 to 72 875 in 2012. As part of these achievements, South African higher education presents, both locally and internationally, significant strengths and many promises with respect to knowledge production and distribution, to contribute to social equity, economic and social development and democracy, and by and large, to the developmental needs of the Southern African Development Community (SADC) bloc as well as the African continent at large (Froneman, 2002:38).

2.6.2 Higher education policy developments in South Africa since 1994

In the period after 1994, with the change of government, former President Nelson Mandela appointed a National Commission on Higher Education (NCHE) with the key mandate to develop a policy framework for the transformation of South Africa's higher education sector that had comprised universities,

technikons, nursing, agriculture and teachers' training colleges (TTCs). Because of this mandate, the South African parliament in 1995 announced its intent to introduce the Higher Education Act 101 of 1997. This Act prompted the transformation agenda for a higher education policy in 1994. The country's new constitution was the major factor driving South African policy developments. This Higher Education Act 101 of 1997 was to realise a system of education that is transformed and democratised in alignment with the values guarding human dignity, equality, human rights and freedom, non-racism and non-sexism, and one that ensures the right to basic education for all citizens (Bill of Rights).

As it was essential to transform higher education in South Africa post-1994, this transformation could not be done without any guidelines. It was, therefore, essential for the DHET to put in place some guidelines or policies that would assist in driving that transformation. As such, the government, in collaboration with the DHET, promulgated and implemented these policies, among others:

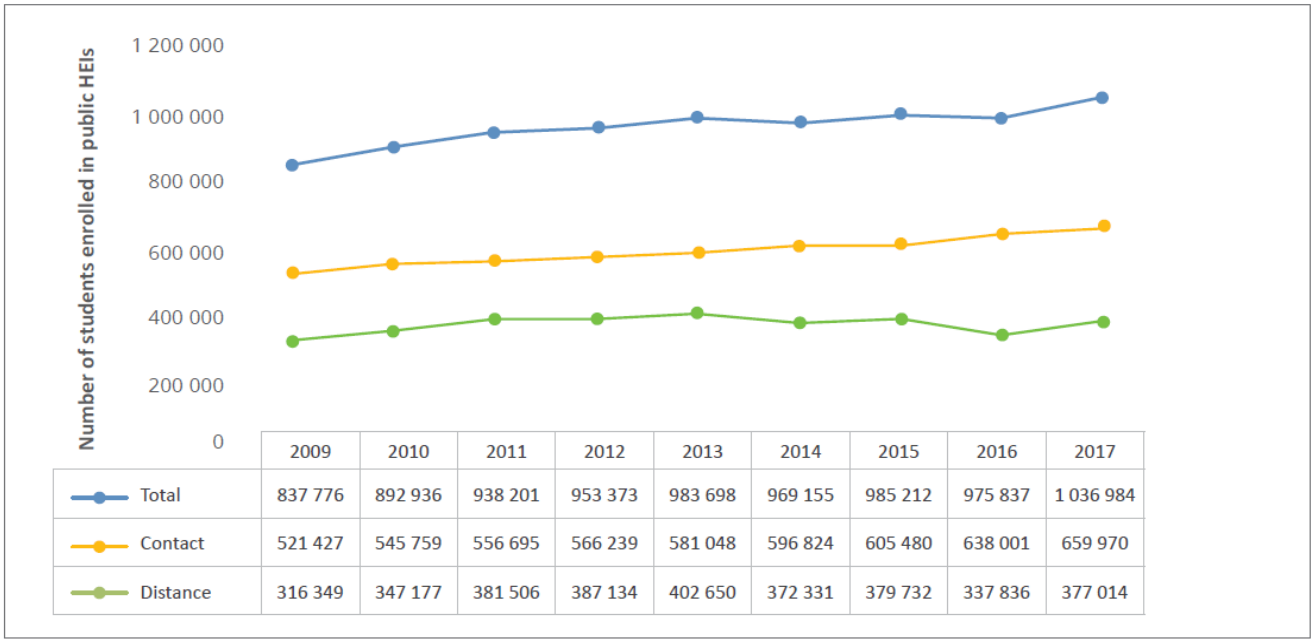
- South African Higher Education Act No. 101 of 1997;
- Education White Paper 3: A Programme for the Transformation of Higher Education (1997);
- The National Plan for Higher Education (2001);
- Green Paper for Post-School Education Training (2012); and
- Green Paper on Higher Education Transformation (1996)

The Higher Education Act 101 of 1997, as well as other policies such as the Education White Paper 3: a programme for the transformation of the higher education's mandate, was to help steer the transformation in higher education in South Africa, particularly in access and funding. The Education White Paper 3 (DoE, 1997) was one of the key policy documents developed subsequent to the enactment of the Higher Education Act 101 of 1997. In White Paper 3, it made a clear commitment that in addition to funding for redress and student financial aid, there is a need to encourage innovation and adaptation and build capacity in new areas.

In an attempt to achieve and implement the anticipated transformation in the entire South African higher education landscape, several key goals were formulated. These included stabilisation of HEIs and the entire higher education system, improving efficiency, encouraging inter-institutional and regional cooperation, improving student equity, enhancing institutional planning capacity, encouraging mission differentiation, improving staff equity, enhancing the quality and promoting development.

2.6.3 Access and participation in higher education post-1994

The enrolment statistics show that there have been significant achievements post-1994 in HEIs. These statistics reflect the audited figures by the external auditors appointed by the HEIs prior to being submitted to the DHET; therefore, the figures can be considered accurate (DHET, 2017:9). The number of students enrolled in public higher education institutions by attendance mode 2009-2017 is reflected in Figure 2.1.



	2009	2010	2011	2012	2013	2014	2015	2016	2017
Total	837 776	892 936	938 201	953 373	983 698	969 155	985 212	975 837	1 036 984
Contact	521 427	545 759	556 695	566 239	581 048	596 824	605 480	638 001	659 970
Distance	316 349	347 177	381 506	387 134	402 650	372 331	379 732	337 836	377 014

Figure 2.1: The number of students enrolled in public higher education institutions by attendance mode, 2009-2017

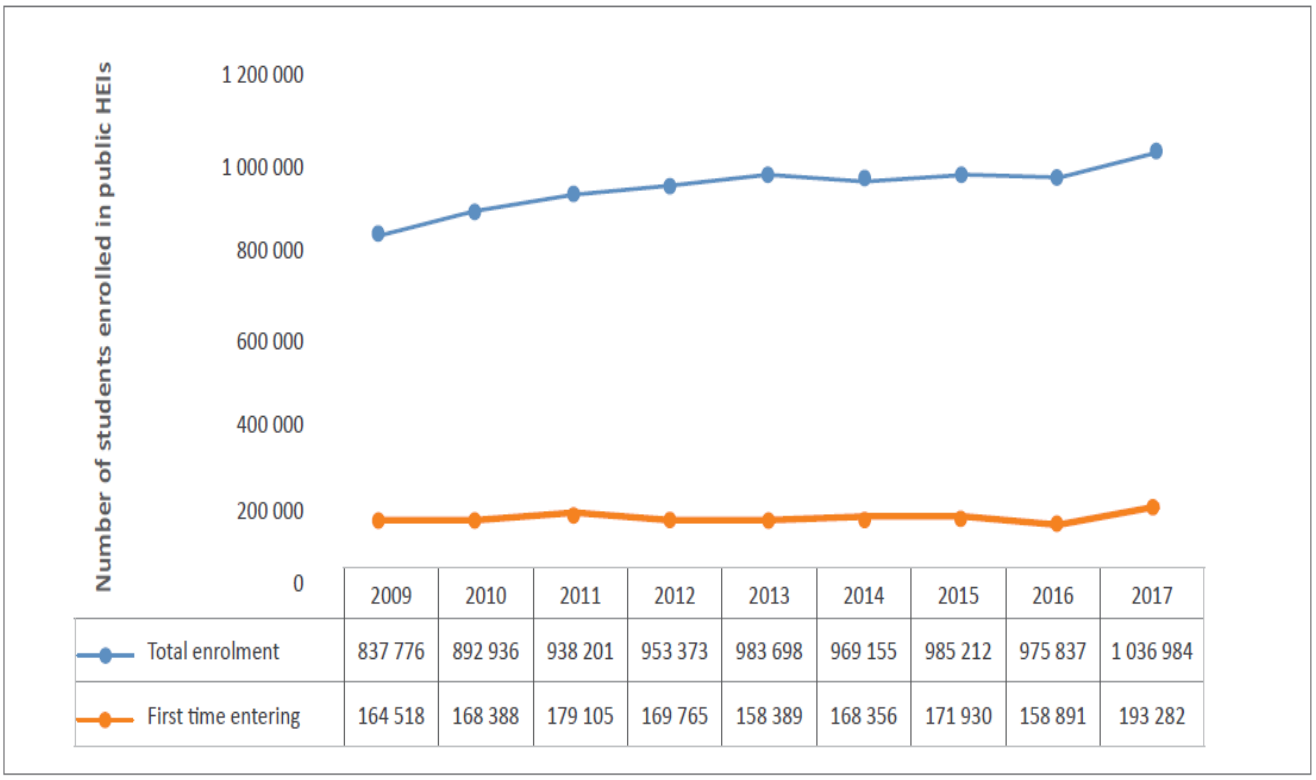
Source: DHET (2017:9)

Note 1: The contact mode of study involves personal interaction with lecturers or supervisors through lectures, seminars and practicals at the institution's premises.

Note 2: The distance mode of study involves personal interaction with lecturers or supervisors through distance education techniques, such as written correspondence, telematics and the internet.

Error! Reference source not found. indicates that the percentage of students enrolled through the contact mode out of the total enrolment has been steadily higher than that of students enrolled through distance mode between 2009 and 2017. According to DHET (2017:9), in 2017, total enrolment in public HEIs reached 1 036 984, which shows that the number of students enrolled through contact mode was 63.6% (659 970), while 36.4% (377 014) of students enrolled in distance modes of learning. This suggests a slight inclination of a decrease in students enrolled through distance mode between 2014 and 2016,

while an increasing trend for students enrolled in contact modes of learning has been observed throughout the period 2009 to 2017. Student enrolment increased for all modes of learning between 2016 and 2017 (DHET, 2017:14). First-time undergraduate students enrolled in public higher education institutions are reflected in figure 2.2.

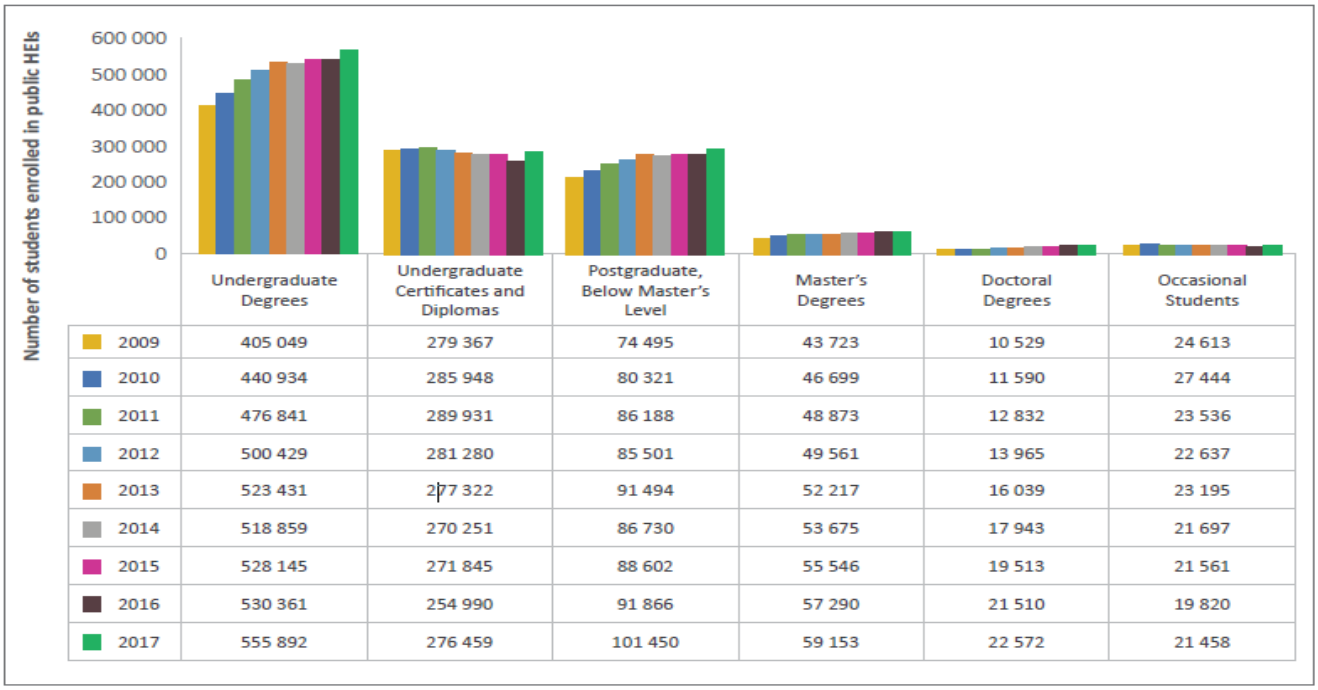


	2009	2010	2011	2012	2013	2014	2015	2016	2017
Total enrolment	837 776	892 936	938 201	953 373	983 698	969 155	985 212	975 837	1 036 984
First time entering	164 518	168 388	179 105	169 765	158 389	168 356	171 930	158 891	193 282

Figure 2.2: The number of first-time undergraduate students enrolled in public higher education institutions, 2009-2017

Source: DHET (2017:15)

Figure 2.2 reveals that the total number of first-time entering students in public HEIs in 2017 was 193 282, which was 18.6% of total enrolment. This represented a 21.6% (34 391) increase compared to the number of first-time entering students in 2016 (158 891), which was an achievement for higher education in South Africa. While the increase in enrolment since the dawn of democracy seems encouraging, issues of access are still very much a central discourse, especially within the context of quality education, student success and graduation rates in HEIs. The number of students enrolled in public higher education institutions by qualification type, 2009 to 2017, is reflected in Figure 2.3.



	Undergraduate Degrees	Undergraduate Certificates and Diplomas	Postgraduate, Below Master's Level	Master's Degrees	Doctoral Degrees	Occasional Students
2009	405 049	279 367	74 495	43 723	10 529	24 613
2010	440 934	285 948	80 321	46 699	11 590	27 444
2011	476 841	289 931	86 188	48 873	12 832	23 536
2012	500 429	281 280	85 501	49 561	13 965	22 637
2013	523 431	277 322	91 494	52 217	16 039	23 195
2014	518 859	270 251	86 730	53 675	17 943	21 697
2015	528 145	271 845	88 602	55 546	19 513	21 561
2016	530 361	254 990	91 866	57 290	21 510	19 820
2017	555 892	276 459	101 450	59 153	22 572	21 458

Figure 2.3: Number of students enrolled in public higher education institutions by qualification type, 2009-2017

Source: DHET (2017:13)

Figure 2.3 indicates that, in 2017, the majority of students in public HEIs enrolled for undergraduate degrees (555 892), followed by undergraduate certificates and (national) diplomas (276 459) and postgraduate below master's level (101 450). An ascending tendency can be witnessed for students enrolled for all qualification types throughout the period between 2009 and 2017, except for undergraduate certificates and diplomas and occasional students where a downward trend was recorded (DHET, 2017:13).

Student enrolments for doctoral degrees more than doubled over the period 2009 to 2017 (114.4% or 12 043). Increases were also recorded for undergraduate degrees (37.2% or 150 843), postgraduate below master's level (36.2% or 26 955) and master's degrees (35.3% or 15 430, respectively) between 2009 and 2017. However, enrolment for occasional students and undergraduate certificates and diplomas declined by small margins, 12.8% or 3 155 and 1.0% or 2 908, respectively, in the same period (ibid).

2.7 CHALLENGES IN SOUTH AFRICAN HIGHER EDUCATION POST-1994

Given that the South African education, in general, was founded on apartheid policies. However, when the African National Congress (ANC)-led government came to power in 1994, some transformational initiatives were brought in, intending to address these policies. However, there are some concerns relating

to these policy initiatives aimed at redressing apartheid's ills. As much as Badat and Sayed (2014:128) are vocals on these South African initiatives to transform higher education in South Africa, they, however, assert that decades post-1994, there seems to be little that can confirm the realisation of the expected freedom of education. Emanating from their concerns, they advance these very valid questions:

- Why does the right to learn ring hollow for many, while for others, quality public education is an everyday reality?
- How and in what ways and to what extent can deep-seated historical and structural inequalities be overcome?

Emerging from these questions, it is perceived that some decades later, officially integrated class-based HEIs, ongoing disparities and inequities, and poor academic achievement are still key features of the existing educational order. As such, it is claimed that as a consequence of policy reforms, the doors of learning for the majority of previously disadvantaged South African students remain firmly shut (Badat & Sayed, 2014:127). It is posited that the strategic challenges facing the South African higher education system remain as defined in the White Paper 3 (1997), namely:

- to redress past inequalities and to transform the higher education system to serve a new social order;
- to meet pressing national needs and to respond to new realities and opportunities (White Paper: 1.1). More specifically, as White Paper 3 indicates, the role of higher education in a knowledge-driven world is three-fold:
  - **Human resource development:** the mobilisation of human talent and potential through lifelong learning to contribute to the social, economic, cultural and intellectual life of a rapidly changing society.
  - **High-level skills training:** the training and provision of personal power to strengthen this country's enterprises, services and infrastructure. This requires the development of professionals and knowledge workers with globally equivalent skills, but who are socially responsible and conscious of their role in contributing to the national development effort and social transformation.
  - **Production, acquisition and application of new knowledge:** national growth and competitiveness are dependent on continuous technological improvement and innovation, driven by a well-organised, vibrant research and development system that integrates the research and training capacity of higher education.

These challenges are not in isolation; therefore, they have to be understood within the context of the impact on global higher education systems and the changes associated with the phenomenon of globalisation. However, with the introduction of a new Government of National Unity with Nelson Mandela at its head, it signalled a new just and democratic social order, including social justice in and through education. As such, the official demise of the apartheid regime was welcomed with hopefulness and expectations (Badat & Sayed, 2014:127).

Consequently, developing from hopefulness and expectations, there has been a sharp rise in student numbers, which indicates a major improvement in access to higher education. However, to be precise, these numbers were mere window-dressing more than anything else as some of these students often drop out and/or take more than five years struggling to complete the course and are eventually affected by the HEIs' academic exclusion policies.

2.7.1 Policy development and government steering after 1994

Despite the drive to develop policies in post-1994, one of the challenges was that the inherited system was still characteristically unequal, its academic input outdated in many respects, and, as such, it was not responding to the developing ideas of a democratic South Africa. Additionally, the fact that the culture of research in many universities, which seemed to be mismatched with the liberal agenda of the new South Africa and culture, was disturbing. However, the transformation agenda could have been perceived as unfair because it also isolated a large majority of people with its procedures (Hay & Monnapula-Mapesela, 2009:12).

When considering this challenge, it is imperative for policymakers to address it adequately because it still perpetuates the legacy of the past, and yet fails to profile and prepare South African HEIs to embrace the notion of internationalisation of higher education and other current global trends such as the fourth industrial revolution.

One of the crucial problems has been that because of financial limitations, the establishment of a new differentiated institutional landscape has not effectively and fully fixed the historical problem of South African higher education, namely educational material, financial and geographical (white) advantage and (black) disadvantage. The continued under-developed institutional capacities of disadvantaged black universities should have been emphasised by providing sufficient admission to rural poor and working-class black students: insufficient government support for the disadvantaged black universities to equalise

the quality of undergraduate provision has compromised their ability to facilitate equity of opportunity and outcomes.

The Green Paper (1996:10) recognised that a diverse university system steeped in inequality is the product of apartheid education policies and that reality still confronts us today. While our leading universities are internationally respected, our historically black universities continue to face severe financial, human infrastructure and other resource constraints. Universities of technology are in some instances experiencing mission drift, losing focus of their mission of producing technicians, technologists and other mid-level skills at the undergraduate level. This problem is also evident in comprehensive universities.

Consequently, it is declared that over some 30 years, South African policy initiatives have been promulgated in a very short space of time after 1994. As such, with their voluminous nature, lack of clarity of implementation steps, the vast number of organising bodies, as well as the wrong assumption that institutions and academics have enough capacity and support to implement these policies, have created and continue to create, among others, inactivity in policy implementation, fears of invasion of academic autonomy and academic freedom that sometimes causes unwarranted hostility and opposition to transformation (Hay & Monnapula-Mapesela, 2009:7). In view of this argument, it is deemed important for everyone else involved in policy evaluation to offer it time and witness its genuine and probable strengths and weaknesses in relation to its established objectives. Evaluation of public policies is a substantial instrument for promoting accountability for managers and leaders and everybody else to improve or change policies and promote unparalleled teaching and learning within public higher education institutions (Bester, 2009:1).

For this reason, Blamey and Mckenzie (2007:439) appropriately argue that, however slow the policy process may be, over time, the cumulative increments of evaluative policy analysis are not insignificant and are indeed worth waiting for. Accordingly, policy analysis must happen at various levels of the system, from the highest to the lowest echelons. This suggests that policy analysis must be all-inclusive, irrespective of the rank and level within the government and HEIs. The ultimate end is that any policy eventually affects everyone else either way, whether individuals like it or not. It is, therefore, the key to involving everyone else interested in this for the sake of objectivity.

2.7.2 Policy changes in South African higher education post-1994

Following South African history and the formulation of many policies, the objectives were perceived to be valid in light of the country's history. Fundamentally, these were intended, among others, to redress the elusive activities of apartheid and its discrimination policies and the inherited legacy of inequality that still materialises in some lifestyles and that seems to be transforming into many different forms.

It is not surprising that NCHE (1996:1) and the Education White Paper 3 (DoE, 1997) declare that many of these policies, promulgated from 1994 going forward, were intended to bring hope to South Africans and the African continent at large and be recognised worldwide. This anticipated hope was largely based on the notion that with several well-grounded policies in place, South African society and Africa as a whole would quickly realise the benefits resulting from their policy implementation. With dismay, their implementation soon became an immense exercise that eventually rendered some obsolete (Hay & Monnapula-Mapesela, 2009:7).

Due to the spill-over from the apartheid era to the first democratically elected government in South Africa (1994), higher education policies were highly problematic. Undoubtedly, post-apartheid South African higher education saw the need to introduce new policies that eventually became more immensely diverse and more complex (Odhav, 2009:33).

2.7.3 Policy review on access and academic developments

Innovation was never an easy endeavour (Akojee & Nkomo, 2007:391). Although scholars contend that the NPHE sets the agenda for higher education restructuring in South Africa (DoE, 2001), some challenges for policy analysis in South African higher education still exist. These include misconceptions about policy issues and their value by members of society who may hamper policy development, implementation, and analysis and review (Denning, 2005:1).

This denial is usually accompanied by negative critique and engagement in deliberate, confusing petty debates about what matters and what does not matter. This often shifts focus from the real purpose of the policy, with fear or unwillingness to take bold steps (make hard choices) in the advancement of transformation, particularly in cases where non-supporters have little to lose, or lack faith and resist policy analysis, planning, and implementation by other stakeholders, which delays emancipation through evaluation. Furthermore, in many higher education institutions, the already dwindling funds are misdirected and are not used for genuine transformation issues (Hay & Monnapula-Mapesela, 2009:17).

This implies a continued cycle of mediocrity in implementation, as well as a never-ending game of blaming the government. Policy needs to be scrutinised for the good it intends to impart to the stakeholders, and not according to its origins or the evaluators' diverse worldviews and ideologies. This renders the process free of bias to a certain extent, and among other challenges, poor policy planning and the inability to forecast accurately the essential requirements of managing the transformation of the higher education system as a massive and highly complex project can also be regarded as debilitating forces in reaping policy dividends after 15 years of policy steering by government (Hay & Monnapula-Mapesela, 2009:17).

2.7.4 Social integration and retention

Successful social and academic integration into university is a key imperative for undergraduate students (Fergy, Marks-Maran, Ooms, Shapcott & Burke, 2011:107). Additionally, it is pronounced that the student cohorts entering universities in South Africa post-1994 have become more varied (local and international students), and as a result, it becomes very difficult to understand the first-year experience of these students (Pather & Chetty, 2016:1). Numerous dynamics may influence the student to be persistent, withdraw or drop out from university. These include family background, countries of origin and their variations (either political, cultural, study language [colonial orientation], the spiritual, sexual orientations, peer group pressure and the freedom of being away from the watchful eye of the parent(s), among others) (Littlepage & Hepworth, 2016:62).

It is further pronounced that various experiences and characteristics from their family backgrounds and in habitable conditions may positively and negatively influence their integration into higher education (Pather, Norodien-Fataar, Cupido & Mkonto, 2017:163). According to Aljohani (2016:1), there are various student integration models advanced by many scholars such as Bean (1980:156), Astin (1993:387), Cabrera, Nora and Castaneda (1993:123) and Milem and Berger (1997:387). However, Tinto's framework of integration has been more popular among scholars, particularly by arguing that when students sense imbalance between the institution and their academic community, and how they perceive themselves within the completely unfamiliar community, it could result in them being in a hostile mode, which would increase the probability of drop-out. According to Tinto (1987:53), this isolation, as the absence of sufficient interactions whereby integration could be achieved, would increase the probability of drop-out. Lack of congruency and isolation can negatively influence students' overall university experience and academic performance. Tinto's (1993) student integration theory is illustrated in Figure 2.4.

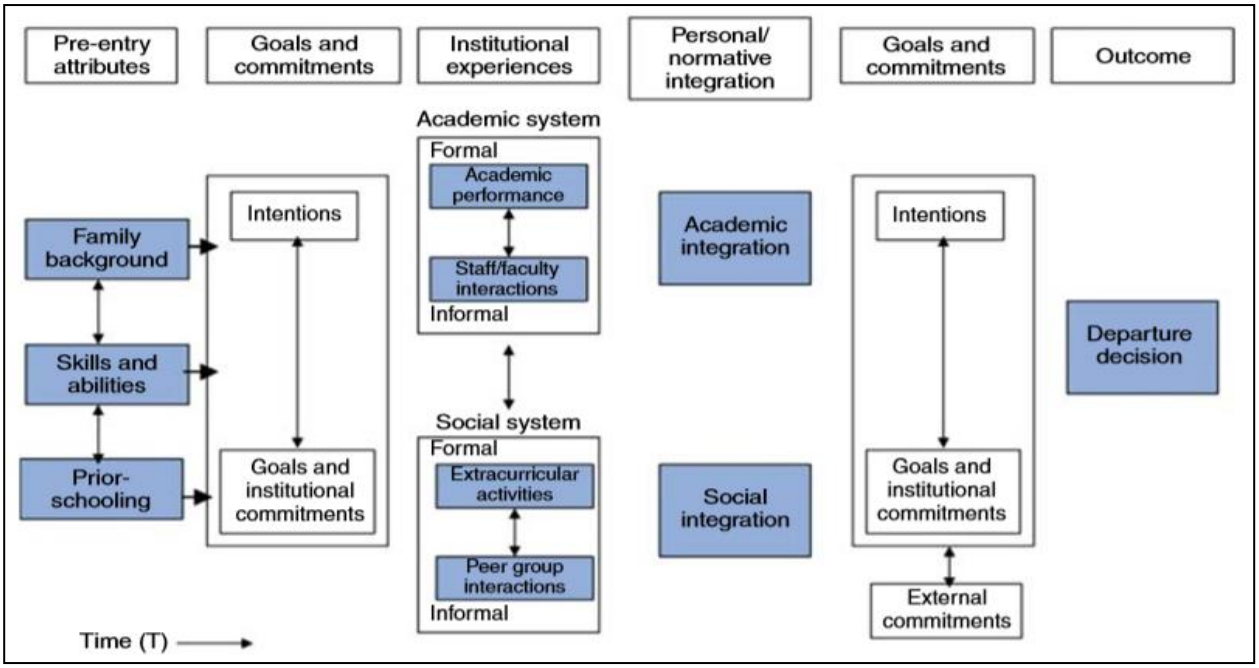


Figure 2.4: Tinto's student integration theory

Source: Chrysikos, Ahmed and Ward (2017:99)

Despite several theories that have been advanced to explain student dropout and withdrawal and persistence, only two theorists have provided a comprehensive framework on student departure decisions. These are Tinto's (1993:112) student integration model and Bean's (1981:4) attrition model (Cabrera, Castenada, Nora & Hengstler, 1992:123). In Figure 2.4, studies show that Tinto's (1993) student integration theory is the most widely quoted retention theory (Chrysikos, Ahmed & Ward, 2017:98). It is recommended as the most widely quoted theory to explain the student withdrawal process and has almost reached an overall prototype status in the field of higher education (Braxton, Milem & Sullivan, 2000:107; Guiffrida, 2006:451).

An analysis of Tinto's (1993) model indicates that three dominant circumstances need to be considered to achieve student persistence. The first condition is that students should have access to the institutional retention programmes that are intended to support them instead of the institution. The second condition is that retention programmes need to be all-inclusive; they should not classify students, but rather focus on all of them irrespective of their colour, gender or creed as well as their backgrounds, such as low-income class, middle class, the missing class or black minority students; instead, focus on the entire student population. The last of the three conditions is the nature or/and quality of the retention programming. A well-designed retention programme is considered as having the ability to offer a degree of integration for students in both social and academic communities (Chrysikos *et al*., 2017:98).

Evident from Tinto's (1993) student integration theory, there are three fundamental aspects: social and academic integration related to a student's commitment to the institution and outside efforts. As can be seen in Figure 2.4, students bring to university prior schooling experiences, skills and abilities. When these three aspects are combined, they lead to a set of student commitments, goals and intentions from and to an institution. This implies that students have made decisions where they are fully conscious of what they want to accomplish before their enrolment in their first academic year. Therefore, institutions must come on board by supporting student expectations, which, in turn, would probably increase student achievement (Chrysikos *et al*., 2017:99).

The fundamental issue is that students themselves should have the ability to develop social and academic integration skills both inside and outside the classroom, which Bean (1981:18) referred to as organisational variables and environmental variables. Students' connections may have a significant normalising effect on their socialisation to the attitudes and values of their immediate environment. Research notes that interactions such as these could also lead to an increased bond between students and their surroundings and the institution. Social integration and informal social integration involve interaction with peers, while formal social integration involves extracurricular activities (Astin, 1997:654).

Central to Tinto's (1993) model, as depicted in Figure 2.4, is that other than academic integration and social integration, there ought to be various relationships between all other issues formed by these factors. Noticeable would be the origin of the overall integration into the institution and the forms of interaction between the student and other members of the institution, especially during the crucial initial stage of his/her first year of higher education and the stages of transition from secondary school education and tertiary education that marked that year. In case one of these features affects one student negatively, it may also affect the others. Ultimately, academic performance appears, which is where the student may decide whether to persist, drop out or withdraw from studies (Tinto, 2006-2007:2).

2.7.5 Funding mechanisms

Funding for higher education in South Africa was characterised by a lack of funding, particularly for students from poor backgrounds. After 1994, a new, more goal-oriented, performance-related funding framework was introduced, and a National Student Financial Aid Scheme (NSFAS) was successfully established and expanded as a means of effecting social redress for poor students. Funding in South African education, in general, has been a challenge since its establishment by the colonialists. Moloi, Bojabotsheha and Mkwanazi (2014:473) highlight that education in South Africa, compared to most

other countries, gets a very large slice of the public pie – around 20% of total state expenditure. It receives the largest share of government spending.

They assert that as a result of the apartheid regime, the current government is in dire need of funds in trying to address the huge backlogs left for decades of apartheid education. In affirmation, Baijnath (2016:2) posits that South African higher education is facing serious financial problems; this was evidenced in the #FeesMustFall student protests at the end of 2015 as well as continuing unrest that has plagued several universities.

Arguably, in the colonial system, white South African children received quality and relevant schooling essentially for free, while their black counterparts had only 'Bantu education' that was not free and was designed to prepare them for being subservient servants as a keystone of the overall apartheid system. Consequently, due to the colonial and National Party-led apartheid regime, there have been massive inequalities and imbalances in all spheres of South Africa, which did not exclude education, particularly with access and funding.

In line with this, Akor and Roux (2006:423) opine that notwithstanding numerous policies being promulgated and implemented post-1994, there still are some uncertainties around the higher education funding formula. Resulting from these uncertainties, many grievances and dissatisfaction are picked up from various higher education stakeholders on how to garner sufficient resources to meet higher education and government funding challenges. Prevalent to this shortage of funds and resources, there is insurmountable pressure on academics to, among others:

- deliver more services with fewer resources;
- undertake academic capping since the system cannot fund uncontrolled growth of the student body;
- balance the latter between the need for access and equity;
- increase the number of students from previously disadvantaged backgrounds; and
- provide more opportunities to deserving students.

Despite several changes that have been made to the funding formula that even culminated in the development of the 2004 funding model, higher education funding remains a key challenge as it appears insufficient and is characterised by a steady decline. Additionally, some scholars declare that public higher education funding is currently a disputable issue in South Africa (Wangenge-Ouma & Cloete, 2008:906).

2.7.6 Government interference, institutional autonomy and academic freedom

The perceived government interference has often been pointed out as one of the key issues that HEIs have to deal with instead of concentrating on their core functions. This intensifies their challenges in that, apart from teaching, learning and research, HEIs have to concentrate on the challenges of insufficient funding, equity, racial imbalances as well as the redress of anomalies of the apartheid rule; they have to deal with the problem of government interference, perceived erosion of their self-sufficiency [autonomy] as well as academic freedom (Habib, Morrow & Bentley, 2008:140).

The HEIs receive state funds in the form of block grants and earmarked grants, and the state dictates the terms and conditions on how these funds should be disbursed. Consequently, the HEIs feel that their autonomy is being eroded. In response to their discontentment, it is sufficient to highlight that despite their intended accountability and transparency in the public system, the government has exposed HEIs to corporate scrutiny techniques and unfamiliar governance strategies that have imposed greater managerial control over the academic processes (Gray, 2017:3). Tapping from Pendlebury and Van der Walt (2006:83), public institutions are hybrid and may have a complicated and confused understanding of their own powers, responsibilities, limits and autonomy. Autonomy is commonly characterised by South African higher education leadership as something that must be protected from an unnecessarily interfering state. This assertion is in line with the submission by the then Mangosuthu Technikon to the CHE Task Team (n.d.), arguing that following certain government regulations, HEIs can only play their important role of advancing academic freedom provided the autonomy be responsive and relevant to the needs of the nation. This task team firmly asserts that academic freedom is one of the foundations of higher education and should be protected from governmental interference and over-regulation.

However, Gray (2017:7) advises that: “the higher education and training laws amendment Act enhances the powers of the minister to intervene in universities”. Therefore, the minister can appoint assessors and administrators in universities with financial and other maladministration or when a university council requested it. Subsequently, the minister may issue directives to a university council if he/she believes the institution has behaved in an unfair or discriminatory manner or against the interests of society.

The minister can then appoint an administrator to replace the council should it not comply with such directives. In the case of assessors appointed by the minister, the law previously had not prescribed their powers. The current amendments provide abundant powers to assessors, transforming their investigations into a formal legal process. The proposed new reporting requirements for universities also enhance the powers of the department by increasing the administrative burden on universities.

Until then, HEIs needed to develop a detailed annual report demonstrating that the institution conducts its core business consistent with its vision, mission and strategic plan; how it performs against its key performance targets; its cashflow projections of revenue and expenditure for the following year; and a register of identified and assessed risks and measures to mitigate them. However, currently, universities must prepare a five-year performance plan and report to the department twice a year. Specifically, universities must provide an annual report on the previous year by the end of June, a mid-term report by July/August, and an annual update of its performance plan by the end of October (USAf, 2014:1; Edmore, 2016:46).

Finally, in a democratic country, the state must ensure that there is accountability for the use of the public funds through the provision of progress reports and audit certificates that are provided on an annual basis by the HEIs. This provision protects the maladministration of these funds, thereby achieving the goals and objectives outlined in the Higher Education Act (No. 101 of 1997 as amended) that was drafted to drive the transformation in higher education. Although understandably, public funding of higher education is a mandate of the state, the state should be responsible for how public funds are spent and accounted for. HEIs, on the other hand, feel that their autonomy and academic freedom have been eroded. Contrary to their outcry for autonomy and academic freedom, it is incumbent for the state to regulate public funds and not allow a laissez-faire state of affairs to fail to fulfil its obligation to support higher education and the economic development of the country.

2.7.7 The 2004 funding framework for higher education in South Africa

The 2004 funding framework suggests that it might not be possible for the government to sustain stable funding levels because the country's expenditure is lower than international standards (CHE, 2004:207). Most of the earmarked budget was set aside for funds for the NSFAS. A small proportion of earmarked funds (2%) was available for other specific purposes, such as interest and recoveries payments on approved government loans. NSFAS is a statutory body, which receives an annual allocation of funds from the National Treasury through the Ministry of Education. NSFAS also raises funds from South African and international donors. The planning aspects of the 2004 funding framework are explained in Figure 2.5.

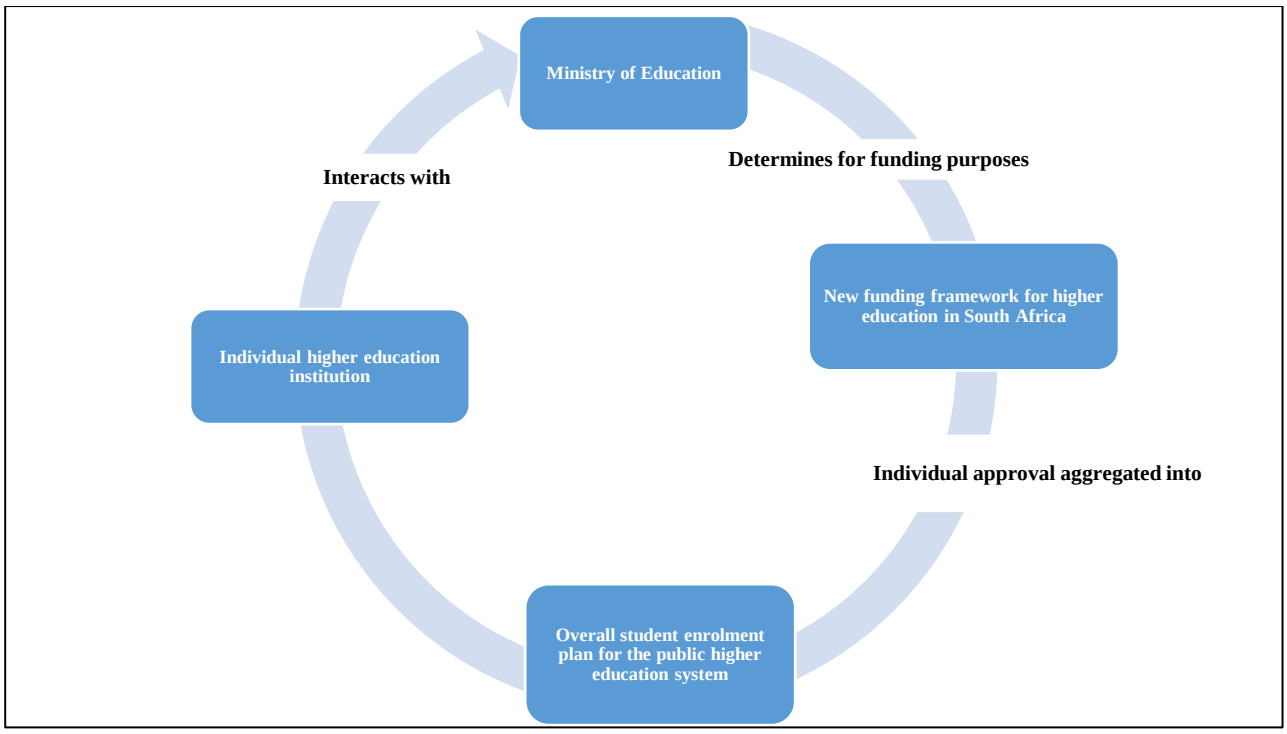


Figure 2.5: The planning aspects of the 2004 funding framework
Source: Ministry of Education (2004:3)

The amounts available for student financial aid are allocated to institutions by the NSFAS board. The 2004 funding framework was goal-oriented and performance-based, which supported the distribution of government grants to institutions in line with national goals and priorities and approved institutional plans. This left HEIs with the overwhelming assignment of diversifying the HEIs' income more through additional and alternative sources of income, such as contract research, donor funding and collaborative agreements, often at the expense of teaching, research and community service (Steyn & De Villiers, 2007:30).

Some scholars maintain that despite the availability of NSFAS through this model (2004), there is continued racial disparity in the student population. Akojee and Nkomo (2007:386) concur with Tjønneland (2017:1) that currently, the majority of black university students, who were mostly excluded from HE, are the ones affected. Almost 70 % of university students are Africans who have challenges relating to finances and mostly depend on (NSFAS) grants.

PricewaterhouseCoopers (PwC) (2019:1) declares that the cost of delivering university education in South Africa amounts to close to R50 billion annually. South Africa subscribes to a funding framework in which costs are shared among the beneficiaries of university education (mainly government and

students). State contributions to university education declined from 49% at the beginning of the century to 40% by 2012, while the burden on students increased from 24% to 31% during the same period.

As much as Badat and Sayed (2014:127) claim that developing from the hopefulness and expectations from the new government of national unity with Nelson Mandela as the head of state, there has been a sharp rise in student numbers that 'probably' indicates a major improvement in access to higher education. In contrast, a major improvement concerning access to higher education does not necessarily mean or suggest success or any positive achievement by the DHET.

Commenting on the increased learners' access to higher education, two years later, Tjønneland (2017:2) argued that the major challenge facing South Africa's higher education is, however, not funding as many might think, but the continued poor access and an extremely high drop-out rate. Consequently, Moodley and Singh (2015:91) observe that the passion of a South African university acceptance is short-lived for many students, as the challenges faced are often awesome, resulting in many dropping out in their first year of study. This has negatively influenced the desired national norm of an 80% success rate targeted by the DHET. The continually increasing number of students who drop out of university remains a major area of concern among higher education administrators and the government because this increases the youth unemployment rate that would ultimately be the state's burden.

This inflexible challenge has been the focus of many scholars globally. The government and various private funders are trying to fund students; therefore, there is a serious need for a more strategic and innovative approach to address the problem of drop-out, especially among previously disadvantaged groups. The current funding model of 2004 seems to be inconsistent in terms of its distribution of funds. This funding model locates doctoral enrolments and graduates into diverse funding groupings. Consequently, doctoral enrolments and graduates are highly funded in the current funding framework (Cloete, Mouton & Sheppard, 2015:47).

2.7.8 Withdrawal and dropout rates

The dropout problem is a very challenging one as it manifests itself in various ways. In their study, Pillay and Ngcobo (2010:234) confirm that factors such as accommodation and financial difficulties and academic demands make it difficult for students to advance through to the next year. Their study further exposed that one in eight students assumed they had not made the right choice of study. This was because of very limited information availed at the point of their career choice. The medium of instruction would always be an issue for learners from previously disadvantaged schools instead of Model C schools and

other preserved and privileged white schools. In view of this argument, Du Plessis and Gerber (2012:84) rightly confirm that the proficiency of the medium of instruction, which in many cases is English, which students from rural or previously disadvantaged could not cope with, has an influence on their reading and processing skills (Beukes, 2009:35; Posel & Casale, 2011:9).

Throughput, withdrawal, dropout, undergraduate success and graduation rates are all indications that a considerable improvement in equity of opportunity and outcomes for black students remains to be achieved. This is reflected in that, given a national target norm of 80%, the white student success rate in 2010 was 82% at the undergraduate level; that of African students was 71%. Internationally, the graduation rate norm for a three-year degree programme is 25% (DHET, 2013:32).

In 2010, the graduation rate of African students was 16%, and that of white students was 22%, with an average of 17% (HESA, 2014:2). As far as throughput and dropout rates for a three-year degree at contact institutions are concerned, 16% of the 2005 cohort (African students) graduated in a prescribed year period, 41% graduated after six years (this figure does not include the students who might have withdrawn between 2004 and 2005 and decided to come back after a few years to complete their studies), and 59% had withdrawn and dropped out. The 59% figure is also not conclusive as the researchers could not be certain that all these students dropped out; there might have been some who withdrew due to various reasons and came back later to finish their studies.

In the case of white students, the comparative figures were 44% of students who graduated in the minimum three years, 65% graduated after six years, and 35% had withdrawn or dropped out (MacGregor, 2014:1). The figures for three-year diplomas at contact institutions were awful: after six years, 63% of African students had withdrawn and dropped out and 45% of white students (CHE, 2012:50). According to the CHE (2013:15), “only about one in four students in contact institutions graduate in regulation time; only 35% of the total intake and 48% of contact students graduate within five years”, and that “it is estimated that some 55% of the intake will never graduate”. This scenario suggests that great inequality still exists between the products of the historically black disadvantaged schools and the products of historically white advantaged schools. Amid all the challenges faced by black students, what seems to be discernible is the medium of instruction, which is English in most HEIs in South Africa.

The Department of Higher Education and Training discloses that South Africa still has a post-school education and training system that does not offer enough places to the many youth and adults seeking education and training despite very substantial growth. Development is desirable, both in terms of

numbers of available places and the types of education and training available. Therefore, there should be greater differentiation and diversity among HEI institutions to provide for the wide variety of need of both students and employers.

2.7.9 Low graduation rates

Various scholars have been vocal about the increased student access to higher education in South Africa. Although one of the key objectives of the Higher Education Act 101 of 1997 was to increase access to higher education, Ramrathan (2016:3) underscores that the increased access to HEIs within South Africa has not been met with the anticipated improved success and graduation rates and potentially works against the transformation agenda with enormous cost implications. It is generally acknowledged that progression and retention rates at South African universities rank among the lowest in the world, with graduation rates for white students being more than double that of black students (Letseka & Maile, 2008:1). This is despite the country apportioning the largest slice of its national budget to education. According to a report by the Human Science Research Council (HSRC), as many as 40% of students drop out of university in their first year of study. As a result, the graduation rate ranges in the region of only 15% (Ramrathan, 2016:3).

In this way, the increased access with low graduation rates suggests that the equity of access has not transformed into noticeable equity of results and sustained over a long period. This is an obvious indication that there is a dire need to re-think and expand the discourses and debates on higher education efficiency for student enrolment, throughput and graduation. Apart from the challenges caused by lack of funding, accommodation and others may not necessarily justify this low graduation rate.

2.7.10 Student debt

Between 2010 and 2012, PwC stresses that tuition fees at the 23 public universities in South Africa increased from R12.2 billion to R15.5 billion, while students' enrolments only increased by 7% during this period. During that period, student debt rose from R2.6 billion to R3.4 billion, increasing 31% over two years. Therefore, universities are mostly dependent on tuition fees as a source of revenue; the scrapping or capping of tuition fees would leave universities with a major revenue shortfall.

Given this, it could be deduced that over and above the encounters of insufficient funds for tuition, maintenance and accommodation, the viewpoint of huge debts, high dropout rates, poor throughput rates, and inadequate facilities, HEIs are faced with the serious challenge of unpaid tuition and accommodation

fees. The announcement of free education is silent on historical debt, which means affected students have to pay, but they do not pay.

2.7.11 #FeesMustFall and free education in higher education in South Africa

The South African government has concentrated on transforming higher education without considering other related issues. As Badat (2010:7) argues, an exclusive concentration on social equity and redress without adequate public funding and academic development initiatives to support under-prepared students negatively impacts students' performance. The issue of higher education funding has been a burning issue for many decades in South Africa. As a result of the non-ending discussions and counter-debates between the government student leaders, the South African government eventually fell into the trap of student protests over funding (Butelli & Le Bruyns, 2017:1).

The student protests demanding free higher education that took place at most South African universities at the end of 2015 were mainly seen as a response to an announcement by the Department of Higher Education and Training in the statement on transformation in higher education issued on 17 October 2015, which prominently referred to issues related to student funding and debt, fee structures, and the National Student Financial Aid Scheme (NSFAS) (Cloete, 2015:1; Davids, 2016:2)

These student protests for free education, as Dandara, Chimusa and Wonkam (2017:723) declare, six to 18 months later that some academic effects of the 2015-2016 protests were already showing. Some students could not cope and/or complete their studies as was supposed to be, and some could not be admitted to the subsequent levels, diplomas, posts or further studies due to unsatisfactory performance. In many HEIs, for students to proceed to post-graduate degrees such as master's or PhDs, they need to meet certain requirements, including entry or admission percentages; and a number of them failed these criteria.

Developing from the above scenario, these indicate that the transformation agenda in higher education exemplifies inconsistencies that essentially raise social and political problems and generate the types of responses characterised through the #FeesMustFall campaigns. In a nutshell, in 2015, higher education in South Africa has come to resemble precisely the misrepresentation, confusion and disintegration that marked the sector at the start of the 1990s under colonialism (Jansen, 2004:293). Basic to these mayhems, according to DHET (2010:73), was the inability of the state loan and bursary agency NSFAS to meet its commitments.

2.7.12 The curriculum in South African higher education post-1994

The South African curriculum undeniably remains mostly Eurocentric inclined and continues to perpetuate the minority white with Western dominance and privileges while being full of stereotypes, biases, and patronising interpretations about Africa and its people (Heleta, 2016:2). This assertion emphasises that South Africa must completely rethink, reframe and reconstruct the Eurocentric and colonial curriculum and teaching methods that preserve white and Eurocentric ideologies and supremacy at universities. The current HEIs in SA require a major refurbishment of the completely epistemological model underlying the current educational system (Letsekha, 2013:9; Lange, 2017:32).

Considering Letsekha (2013:9) and Heleta's (2016:2) arguments, they are not in isolation. Other scholars have voiced their concerns prior to and post their sentiments, whose opinions are that the colonial and apartheid curriculum in South Africa has supported white supremacy and dominance and stereotyping of Africa. The present higher education curriculum in South Africa still essentially reflects the colonial and apartheid worldviews (Ramoupi, 2014:271) and is detached from African values and realities, including the lived experiences of the majority of black South Africans.

Most universities still follow the hegemonic Eurocentric epistemic canon that qualifies truth only to the Western way of knowledge production (Mbembe, 2016:32). Therefore, such a curriculum does not advance students' critical and analytical skills to understand and transform the African continent. As Gqola (2008:222) pronounces, since the inception of the new democratic government in 1994, South African universities have done little to advance African child knowledge about Africa itself.

One of the key factors that aided the maintenance of the apartheid curriculum is the failure of the state post-1994 to increase the number of adequately qualified and experienced black academics in South African higher education institutions. This left the colonial curriculum that favoured the [previously] white institutions unchallenged (Menon & Catrillon, 2019:29). As a result, this curriculum continues to strengthen the bias that there is little that students can learn from Africa, developing countries, and the third world; therefore, the collective knowledge rests in the Western world (Pillay, 2016:21).

2.7.13 Leadership and governance in higher education in South Africa

Leadership and governance are some of the challenges facing South African higher education. However, a huge number of HEIs in South Africa have and still are in a crisis due to the perceived ineffectiveness of leadership as well as poor governance. Various researchers have written quite extensively on leadership effectiveness; as such, some argue that it is known that effective leadership is an essential

element of positive transformation in any organisation. This also suggests that no society can continue to grow and prosper without having any effective leadership; the same goes for HEIs in general (Nguyen & Mohamed, 2011:208).

The unique history of transformation in higher education in South Africa was an endeavour by the state to redress the apartheid problems (Du Preez, Verhoef & Simmonds, 2016:3). Due to these problems, there had been numerous demands seeking internal change in South African higher education leadership before 1994, mainly by student organisations such as the South African Students Congress (SASCO), the Pan-African Students' Organisation (PASO) and from staff associations such as the Union of Democratic University Staff Association (UDUSA) (Fourie, 1999:278).

Due to the democratisation of higher education, leadership positions were open to everybody else who qualifies, irrespective of race, gender, creed and religion. Despite this paradigm shift, some scholars opine that higher education in South Africa is still confronted with various challenges, the key one being to transform and liberate Africans from the shackles of colonial and apartheid mentality, which needs redressing to necessitate effective leadership (Hargreaves & Fink, 2003:2; Hargreaves, 2007:221; Van Ameijde, Nelson, Billsberry & Meurs, 2009:775).

In confirmation, Herbst and Conradie (2011:2) contend that this extensive approval of the need for effective leadership in shaping institutional transformation in higher education in South Africa has led to an extensive rethinking of leadership practices in higher education. In view of these affirmations, it is crucial for HEIs in South Africa to rethink leadership and governance practices because many of them have failed to deliver in accordance with the stipulations laid by higher education (Act 101 of 1997, as amended).

As such, most of the South African HEIs, particularly historically black universities (HBUs), have experienced a series of leadership challenges over the past decades. Poignant from this is that a substantial number of HEIs have been placed under administration due to poor leadership and governance. As confirmed by the parliamentary monitoring group (2019) since 2000, 11 independent assessors were appointed to assess several universities in terms of the Higher Education Act because of poor institutional governance and management. Some of these institutions have been under investigation more than once. This Higher Education Act No. 101 of 1997 (as amended) allows the minister to intervene in case of any maladministration in any university.

Various universities were investigated by various independent assessors, which led to six of them being placed under administration for two years. However, of the six placed under administration, the Central University of Technology opted to challenge the minister's decision from the court of law when the Department lost the case, and the court ordered the administrator to be removed. From the initial seven having been investigated, the Mangosuthu University of Technology was not put under administration, and the minister worked with the university to deal with its challenges. The Department of Higher Education and Training underscored the following factors, among others, as contributing to poor governance (DHET, 2019).

- the inability of councils, and in some cases the chairperson, to provide strategic leadership and direction to the executive management;
- role confusion between governance and management;
- troubled council-vice-chancellor relationships, structure and composition, and size;
- failure by members to differentiate between the interests of the institution and the interests of the constituencies that elected or nominated them;
- deliberate non-adherence to governance procedures; and
- brazen corruption.

The following is the minister of Higher Education and Training (DHET) on different occasions who has put a list of universities under administration:

- Central University of Technology (CUT)
- The University of Fort Hare (UFH). *
- Tshwane University of Technology
- University of Zululand (UniZulu).
- Vaal University of Technology *.
- Walter Sisulu University (WSU).

*It must be noted that these two institutions were still under administration when this chapter was written.

The study by Moodly and Toni (2017:151) asserts that among other reasons for ineffective leadership identified is the push-and-pull factors in terms of women's experiences in progression to leadership; and that negative gender stereotypes may obstruct their progression as well as the development of education (Nguyen, 2013:124). Accordingly, this requires an appraisal and a termination of customs, resolutions, and organisational forms that HEIs have inherited from the colonial regime, including a re-imagining of

leadership in higher education. Most leaders are transferred from being lecturers to assume the responsibilities of leadership and governance without any requisite expertise thereof.

2.7.14 Staffing in higher education

Higher Education South Africa (MacGregor, 2011:1) presents that South African HEIs face a multi-dimensional crisis in attracting, appointing and retaining academic staff. Academia is not one of the most attractive career options in the public sector due to low salaries, mounting student numbers and consequent workloads, various institutional culture issues, lack of funding, strict government measures on expenditure, grievances relating to autonomy and academic freedom, among others. Although there have been some changes, the existing academic staff remains unrepresentative of the South African population. It is still predominantly white and male-dominated, and quite a number of staff members are ageing. About one-fifth of academics are due to retire in less than a decade, including nearly half of the professors. Consequently, this raises serious concerns, and the major question is: are there sufficient numbers in the existing academic and postgraduate pipelines to replace them?

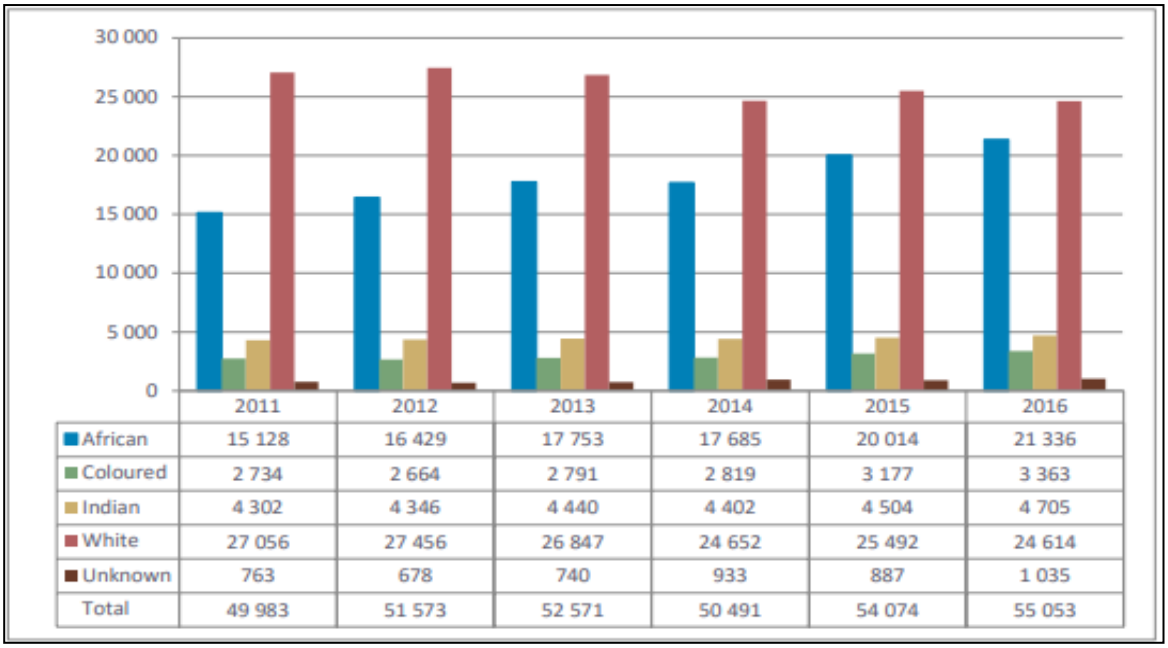
In relation to this, the Ministry of Education (DHET, 2016:7) is committed to ensuring that universities receive all the necessary support to recruit, develop and retain academic staff. Studies indicate that the academic skills shortage in South Africa remains a major problem. In recent years, higher education institutions have lost highly qualified academic staff, especially during the often-violent Fees Must Fall protests, which prompted some academics to search for greener pastures in the private sector or abroad (Selesho & Naile, 2014:295).

The departure of academics from the HEIs has left vacancies in some crucial departments, such as health sciences, engineering, and information systems, which offer key degrees, and the need to address the skills deficit is often seen as the biggest constraint to business growth (Samuel & Chipuza, 2009:411). However, the DHET posits that most universities have a normal retirement age of 65. Most institutions allow post-retirement employment for a further three years (some on contract and some as deferred retirement) in selected cases where expertise is required and under specific conditions. This post-retirement employment is specifically allowed to enable the retention of scarce and critical skills. However, retaining critical and scarce skills after retirement age is not a long-term, sustainable solution, and efforts have to be made to strengthen the academic staff pipeline to ensure that some academics can competently replace those who retire (Bushe, 2012:279; Bushe, Chiwira & Chawawa, 2012:84).

With the high unemployment rate in the country, HEIs are likely to recruit from this cohort, which is understandable. Considering that they might be lacking in terms of experience, it might also pose a challenge to appoint them without having mentors. With minimal funding from the DHET, it might be challenging to have a mentor and mentee with the same payroll simultaneously. However, the release of a seasoned researcher without a capable replacement would mean a loss of funding to the institution. This becomes a catch 22 situation, with consideration on the other hand that the president of the country is advocating for youth employment, but on the other hand, the youth do not possess the requisite experience and expertise in certain areas of leadership and governance (Daniels, 2007:1).

Despite numerous attempts by the government to transform higher education through various policy developments, among other things, the Higher Education Act 101 of 1997 (amended) (DoE, 1997) since 1994, the staff complement in HEIs in South Africa remained skewed. The 2012 statistics report exposed that in spite of whites constituting only around 8% of the population, white academics constituted 53% of full-time permanent staff, of which 55% were male (HESA, 2014:1). Even though there is some shifting, the insufficient representation of black academics in higher education is exacerbated by the lacking cohort of PhD graduates.

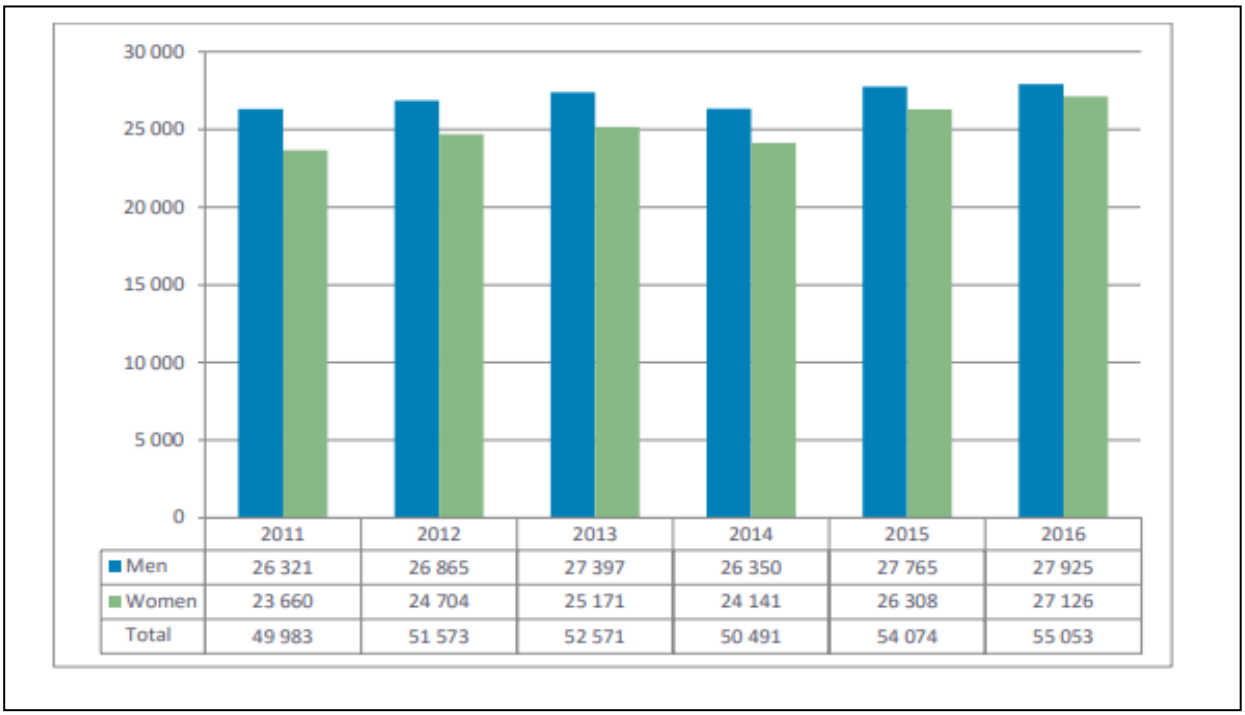
Since 1994, research outputs, enrolments and graduations had all increased, but remained low in relation to national needs. Only 34% of academics had doctoral degrees. Studies show that South African universities generate very low numbers of doctoral graduates. Higher Education South Africa (HESA, 2014:5) affirms that in 2010, the whole country produced a disgraceful 1 423 doctorates, outclassed by the University of Sao Paulo in Brazil with 2 244 PhDs. The preceding discussions are exemplified through Figures 2.6 to 2.8.



	2011	2012	2013	2014	2015	2016
African	15 128	16 429	17 753	17 685	20 014	21 336
Coloured	2 734	2 664	2 791	2 819	3 177	3 363
Indian	4 302	4 346	4 440	4 402	4 504	4 705
White	27 056	27 456	26 847	24 652	25 492	24 614
Unknown	763	678	740	933	887	1 035
Total	49 983	51 573	52 571	50 491	54 074	55 053

Figure 2.6: Headcount academic staff members by race from 2011 to 2016

Source: VitalStats: Public Higher Education (2015:47)

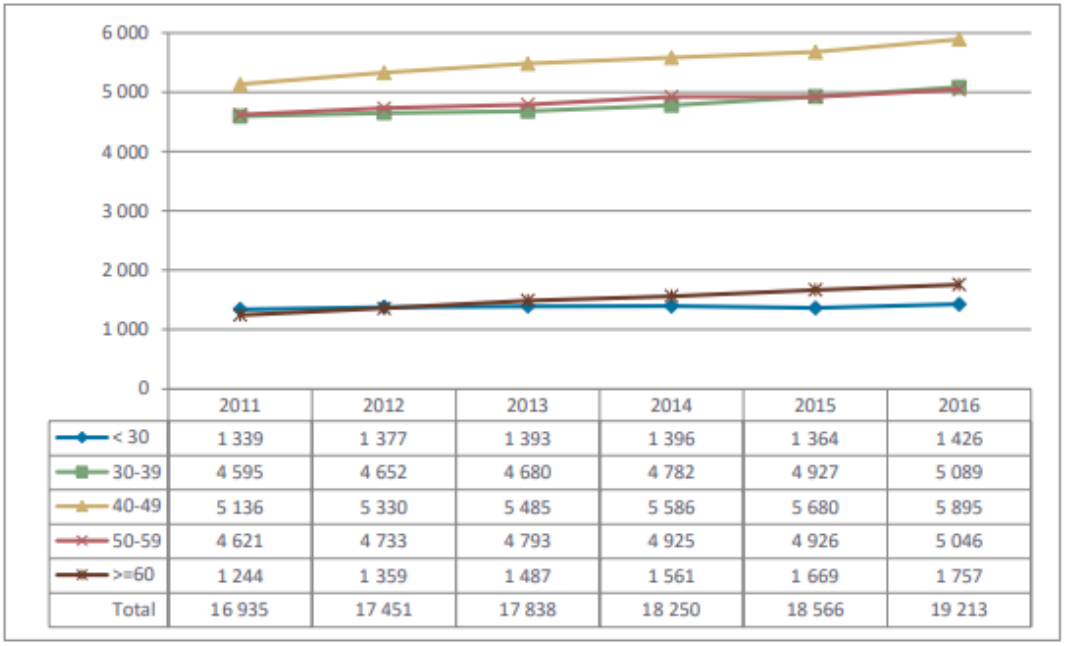


	2011	2012	2013	2014	2015	2016
Men	26 321	26 865	27 397	26 350	27 765	27 925
Women	23 660	24 704	25 171	24 141	26 308	27 126
Total	49 983	51 573	52 571	50 491	54 074	55 053

Figure 2.7: Headcount of academic staff members by gender from 2011 to 2016

Source: VitalStats: Public Higher Education (2015:48)

The headcount for academic staff members by age grouping is presented in Figure 2.8.



	2011	2012	2013	2014	2015	2016
< 30	1 339	1 377	1 393	1 396	1 364	1 426
30-39	4 595	4 652	4 680	4 782	4 927	5 089
40-49	5 136	5 330	5 485	5 586	5 680	5 895
50-59	4 621	4 733	4 793	4 925	4 926	5 046
>=60	1 244	1 359	1 487	1 561	1 669	1 757
Total	16 935	17 451	17 838	18 250	18 566	19 213

Figure 2.8: Headcount permanent academic staff members by age grouping from 2011 to 2016
Source: VitalStats. Public Higher Education (2015:51)

The preceding figures are in support of the higher education and training department, which submits that racism and patriarchy that were key features of colonialism and apartheid in South Africa shaped all areas of social life, including higher education. In academic staff, the significance was racialisation and gendering, which left South Africa with a predominantly white and male academic workforce (Badat & Sayed, 2014:128).

After many decades into democracy, South African academics are still predominantly male and white. As reported, in 1994, with the assumption of a democratic dispensation, the academic workforce at South African HEIs was overwhelmingly white (83%) and male (69%) (CHE, 2004:62). Although black South Africans (African, coloured and Indian) constituted some 89% of the academic population, they comprised only 17% of academics at South African HEIs. Looking at the larger population being marginalised and being so poorly underrepresented, it was expressly severe for the African black majority; although comprising almost 80% of the population, they constituted only 10% of the academic workforce. This anomaly was perhaps due to the number and size of historically white universities; universities such as University of Orange Free State, Witwatersrand University, Rand Afrikaans Universiteit, Potchefstroom University, University of Cape Town, University of Western Cape, Rhodes University, Universiteit van Pretoria; all these were massive and pure white HEIs. It is, therefore, not

surprising that South African academics are predominantly white. This does not include former all-white technikons that were also larger than some of the black universities. Considering the CHE report (2004:62), there was a huge gender imbalance because women, who made up over 50% of the population, comprised only 31% of the academic workforce of HEIs.

It is prudent to highlight that gender equity in relation to the representation of women forms part of the policy within the South African government and also as part of a democratic society in line with the higher education transformation agenda (Act 101 of 1997). Despite the gender equity policy, leadership within higher education is still male-dominated. Additionally, Akala (2018:227) argues that sexism, economic circumstances, social class, and cultural influences maintain gender inequalities in relation to the above. This is true, especially with black women not succeeding in post-1994 higher education. In terms of gender, women constitute 44.6% of the staff in universities, significantly less than their proportion (51%) in the population. The most noticeable concern is the underrepresentation of women in senior academic ranks, where they constitute less than a third (29.5%) (DHET, 2015:7).

Arising from this, HESA (2014) statistics posit that South African universities are threatened with two major challenges. The first pertains to the production and retention of the next generation of academics. Evolving from the two major challenges mentioned above, one; it is quite disturbing that in the public sector, staff are required to retire at the age of 65 irrespective of their agility, skills, knowledge, and contribution to their institutions and the society. As a result of this current retirement age of 65, the great likelihood is that over 4 000 or some 27% of academics will retire in the next decade, which requires the young generation to take over.

It is a concern that most highly qualified and experienced academics, professors and associate professors are expected to be more hands-on in creating new knowledge. Almost 50% of them are due to retire. These groups are also the most productive researchers. More generally, academics over the age of 50 have increasingly come to bear the responsibility of publishing (Moloi *et al*., 2014:474; CHE, 2016:297). Therefore, this suggests that the new generation of academics will also need to be equipped to discharge the responsibility of conducting research and publishing so that the knowledge needs of South Africa are effectively met. There are also several other challenges:

Apart from retirees needing to be replaced, it is also necessary to take into account the additional academics that will be required if the university system expands, as envisaged by the NPHE (2001), from the existing gross contribution rate of 16% to that of 20% by 2011 or 2016. Additionally, the present production of master's and doctoral graduates also limits the transformation of the social composition of

the new generation of academics. The qualifications and expertise of academics make them relatively mobile, and a certain proportion might certainly be constantly lost to the public and private sectors and to emigration (CHE, 2016:297).

As indicated, the second challenge narrates transforming the social structure of the academic workforce through measures that would advance social equity and redress black people and women. Therefore, the problem of unequal representation within higher education institutions in South Africa should not be dealt with in isolation. Rather, it should be addressed concurrently with the issues of racism and patriarchy that were key features of colonialism and apartheid that shaped all areas of social life, including the higher education sector. For academic staff, the consequence was racialisation and gendering, which left South Africa with a largely white and male academic workforce (CHE, 2004:62).

The under-representation of Africans, in general, was especially severe; although embracing almost 80% of the population, they constituted only 10% of the academic workforce. Equally, whereas women made up just over 50% of the population, they comprised only 31% of the academic workforce of South African universities (CHE, 2016:297). This presentation indicates that despite all efforts made by the government to redress the apartheid imbalances when looking at the staffing statistics, it suggests that the apartheid legacy is seen in many parts of contemporary South African higher education. As such, it looks like it might take some decades to redress it, considering that there is poor production of black PhD students in South Africa, particularly in HBUs. Because of the challenges in South African higher education, it is necessary to adhere to the White Paper of 1997: a programme for the transformation of higher education, in order to realise the set goals, principles and values.

The White Paper (1997) correctly advises that higher education's role should assist in redressing the inherited socially structural inequities and afford opportunities for social advancement through equity of access and opportunity. These might be achieved through extensive research, teaching, learning, community outreach programmes, creation of knowledge and person-power for national reform, and economic and social development to enable South Africa to engage proactively and participate in a highly competitive global economy. As a result, considering the apartheid legacy and social and developmental challenges, the higher education transformation agenda has to be radical and all-inclusive.

2.8 INSTITUTIONAL TYPES IN HIGHER EDUCATION IN SOUTH AFRICA POST-1994

The Ministry of Education (MoE) appointed a national working group (NWG) in March 2001 to advise on the restructuring of the institutional landscape of the higher education system (Government Gazette

No. 23549, 21 June 2002:8). The NWG was tasked, among others, to investigate and advise the minister on appropriate arrangements for amalgamating the provision of higher education on a regional basis by establishing new institutional and organisational forms, including the feasibility of reducing the number of higher education institutions (DoE, 2001:56).

This arrangement was due to the advice from the CHE in its report of June 2000, which advised that the sustainability of the higher education system, including the effective and efficient use of resources, required a reduction in the number of HEIs through combining institutions, as the then landscape and institutional configuration of higher education were founded on the apartheid past and were inadequate to meet socio-economic needs and were no longer sustainable. Subsequently, NPHE (2001) submitted that the number of public higher education institutions in South Africa must be reduced (NPHE, 2001:86). The NWG then proposed consolidating the number of higher education institutions from 36 to 21. Emanating from this proposal, after the mergers and acquisitions, the South African Minister of Education (2002) approved the higher education policy framework for the three institutional types in South Africa, namely:

2.8.1 *Universities (traditional)*

This type offers basic formative degrees such as Bachelor of Arts (BA) and Bachelor of Science (BSc), and professional undergraduate degrees such as Bachelor of Science in Engineering (BSc Eng), Bachelor of Medicine and Bachelor of Surgery (MBChB); at the postgraduate level, they offer honours and a range of master's and doctoral degrees.

2.8.2 *Universities of technology*

This type of university was initially intended to offer mainly vocational or career-focused undergraduate diplomas and BTech, which serve as capping qualifications for diploma graduates. The UoT initially offered a limited number of master's and doctoral programmes. However, this has changed, and UoTs are currently operating as fully accredited universities that offer a broad spectrum of academic programmes similar to other university types.

2.8.3 *Comprehensive universities*

This type offers programmes typical of the university as well as programmes typical of the university of technology (Bunting & Cloete, 2010:2).

2.9 THE ORIGIN OF UNIVERSITIES OF TECHNOLOGY IN SOUTH AFRICA

Research (DoE, 2001:77; Du Pre', 2010:1) indicates that UoTs came into being as part of the major reconfiguration of South Africa's higher education background, which took place from 2004 onwards (Du Pre', 2010:1). As suggested, the dualistic split that has been in existence for some decades in South African higher education did not align with global developments. Du Pre' (2010:v) asserts that one of the major fundamentals of reformation of South African higher education during the past decade was the transformation in the description of those institutions known as technikons to UoTs.

In line with this assertion, Jansen (2004:294) and DHET (1996:23) pronounce that the founding policy document on higher education after apartheid is the report of the National Commission on Higher Education (NCHE), a framework for transformation created by 13 commissioners whose terms of reference comprised advising the minister on the shape and size of the higher education system (NCHE, 1996:266). Following the advice from the commissioners, in 1999, the reduction of HEIs in South Africa was announced (DoE, 2001:87). Subsequently, in 2001, a report titled *Restructuring of the higher education system in South Africa and reducing HEIs* was adopted. This adoption accommodated the document titled *The incorporation of colleges of education (CEs) into the higher education sector: A framework for implementation*, which was delivered in 1997 (MoE, 2002:1). This initiative was intended to unfold through the specific mechanism of mergers, listing the specific institutions in various provinces to be targeted for merging.

Through a process of mergers and re-designations, South Africa's 36 HEIs, 21 traditional universities (TUs) and 15 Technikons were trimmed down to 23, comprising 11 TUs (some of which were merged with others), six comprehensive universities (CUs) (arising from mergers between a traditional university and a technikon), and six universities of technology (UoTs) created from 11 merged and unmerged technikons. Although technikons had in effect become technical universities by virtue of this change, they retained the name technikons (Tjønneland, 2017:1).

However, in 2003, the Ministry of Education announced that technikons would be known as technology universities. The re-naming formed part of the reconfiguration of the higher education landscape, which at the same time provided for the merger of universities with universities and universities with technikons (DHET, 2018: 3). Some technikons were to be merged with other technikons (Du Pre', 2010:1).

This developed from the announcement made by the then Ministry of Higher Education in South Africa in 2003 and suggested that some of the technikons would be re-designated UoTs. Also, through the

amalgamation of other higher education institutions (HEIs), the new set was established and named the comprehensive universities (CUs). As a result of this new arrangement, higher education in South Africa was introduced to two (2) new classifications on institutions to be added to the then already composite education landscape (CHE, 2004:42; Du Pre', 2006:1).

In his study (2006:1), Du Pre' declares that although the conception of a UoT was then not familiar in South Africa, the Committee of Technikon Principals (CTP) discussed this as far back as the late 1990s, precisely in 1997. Evolving from these discussions, a position paper was drafted on UoTs in South Africa, and subsequently to design criteria for classification/categories of such universities in light of the opportunities afforded by the CHE (2000:56) plus, among others, philosophy, ethos, research focus, the adult market and centres of excellence. This document intended to petition the Department of Education (DoE) to contemplate changing the name technikon to that of the university of technology.

2.9.1 The concept and description of the university of technology

As Du Pre' (2006:5) indicates, a UoT as a concept is not new. Institutions of this calibre have been in existence in various countries for quite a while. Examples are the technical universities and universities of applied sciences (UoAScs) [Fachhochschulen] in Germany; universities of applied technology (UoATs) in certain European countries; universities of technology (UoTs) in Australia and Hungary; universities of applied science and technology (UoAScaTs) in Iran, as well as the institutes of technology (IoTs) in the United States. These types of institutions' emphasis is aligned to their distinctive environment and response to indigenous and global demands.

Accordingly, Du Pre' (2006:5) argues that as a UoT is fundamentally a new institutional theory in the minds of most South Africans, precise definitions and principles would not only manage the process or redefine technikons as UoTs, or the amalgamation of technikons with universities to propose CUs, but would also afford sincerity and reception of the terminology. In his further study, Du Pre' (2010:10) declares that the concept 'technology', as applied in HE in South Africa, is an alien terminology originating from the Greek expression, *thechne*, which means 'skill' or 'proficiency', and is similarly associated to the term *episteme*, meaning 'understanding and skills'. Comprehending this, technology, therefore, includes two issues: the ability to construct things and manage made-up products.

2.9.2 The distinctive difference between a university of technology and other higher education institutions

What brands UoTs different from any other HEI is not the application of the concept technology, which categorises it as an institution of technology, but rather the intertwining, focus and interrelation between

technology and the nature of an institution, which institutes a university of technology (Du Pre', 2010:9). At a university of technology, the key emphasis is fundamentally on the study of technology from the perspective of numerous fields of study, rather than a specific field of study (Mentz, Kotzé & Van der Merwe, 2008:21; Du Pre', 2010:9).

Typically, UoTs have as their foundation the former technikons, which built a solid reputation in providing career-oriented programmes that prepared graduates for the world of work. Their research was of an applied nature, and their links with industry ensured that technikon programmes remained relevant, up-to-date and that their graduates were familiar, through work-integrated learning, with the way industry functioned. These institutions offer work-integrated learning (WIL) as one of their key strengths; they are experts in providing a continuous upgrading of knowledge (Bohloko, 2012:270; Reinhard, Pogrzeba, Townsend & Pop, 2016:251).

Unlike traditional universities, these technology-oriented universities have an obligation and commitment of service to and of enriching of the community. This includes effective teaching, quality research with greater outputs and development undertaken, and improving the transfer of skills to the community, which are significant. As the literature indicates, in the world of perpetual transformation, career education cannot provide adequate knowledge to become a specialist in 'just-in-time' education experts to provide an unceasing upgrading of knowledge and skills (Du Pre', 2006:4).

2.10 CHAPTER CONCLUSION

This chapter has painted the scenario of the South African higher education system pre-1994 to date, and the issues addressed relate to the ills of apartheid. The literature showed that researchers have written and defined higher education from various perspectives. However, the chapter has adopted the definition that higher education is a strategic segment for the development of knowledge-based economies that are emerging worldwide. It revealed that numerous social inequalities existed during the apartheid era in the South African higher education system. This subsequently attracted various transformation and policy initiatives after the assumption of power by the African National Congress in 1994.

The chapter also contrasts the pre-and post-1994 South African higher education landscape. Secondly, it reflected on South African higher education's critical developments and achievements since 1994. Such achievements include extending access to previously marginalised groups to become both students and academics, setting up various functional bodies that regulate higher education, reconfiguration of higher education and the developing of a funding formula. The chapter further revealed that despite these

achievements, various challenges remain. These include dealing with the increased demand for enrolment space, mismanagement in many institutions, and the #Fees Must Fall campaign, among others. The final sections of the chapter dwelt on the nature of UoTs and their operations. The next chapter is a literature review of the research constructs.

CHAPTER 3: A LITERATURE REVIEW ON TRANSFORMATIONAL AND TRANSACTIONAL LEADERSHIP AND ORGANISATIONAL INNOVATION

3.1 INTRODUCTION

Leadership is one of the world's oldest and most interesting subjects. It is an area that has long captivated scholars and laypersons alike. Since orthodox times, theorists have attempted to conceptualise, comprehend, and even reproduce styles that are thought to make a great leader. There is currently a great deal of interest in the development of leadership theories that can provide a quantifiable understanding of the qualities that describe a successful leader (Walker, 2009:1).

This chapter addresses the literature on transformational and transactional leadership relevant to this thesis. The first part of the chapter considers the leadership literature. It provides an overview of the field of leadership literature and presents an in-depth analysis of the transactional and transformational leadership theories.

The full-range leadership model has been utilised to analyse transactional and transformational leadership styles, largely in the private and other public sector institutions, but scarcely in the higher education sector. More recent studies have focused on a full range of leadership styles such as transformational, transactional, with passive/avoidant leadership styles. As mentioned, numerous researchers have studied leadership styles in different cultures, occupations and organisational settings. However, it was seldom studied in HEIs, particularly universities of technology. Yet, it plays a big role in influencing the employees' performance in HEIs.

Secondly, the chapter expounds on the conceptualisation of both leadership styles with the inclusion of associated sub-sections. It further explores previous studies on transactional and transformational leadership conducted in South Africa. These previous studies are explored in relation to the gist of this chapter, which seeks to evaluate the number of studies conducted on transformational and transactional leadership with a key focus on organisational innovation, a BSC perspective as a strategic management performance metric used to identify and improve various internal business processes and their resulting external outcomes at the universities of technology in South Africa. Finally, the chapter proposes a transactional leadership model as pioneered by Dartey-Baah (2015).

3.2 THE CONCEPT OF LEADERSHIP

It is argued that although the serious study of leadership is only about a hundred years old, interest in leaders and leadership dates back thousands of years (Van Wart & Suino, 2017:3). In accordance with Van Seters and Field (1990:29), leadership is one of the most complex and multifaceted phenomena to which organisational and psychological research has been applied. These scholars further assert that while the theory 'leadership' was noted as early as the 1300s and conceptualised even prior to the Biblical era, the term leadership began to be given considerable attention only in the late 1700s. Even then, scientific research on this topic did not begin until the 20th century.

Since then, however, there has been rigorous research on the topic, addressing leadership from an array of viewpoints. Expanding on this claim, Van Wart and Suino (2017:4) conceptualised leadership as a broadly used concept and as such it can be ambiguous if not defined more narrowly. One way to define types of leadership is by the kind of followers being led, and another is by the nature of the work that is the primary focus of the leader. While Van Wart and Suino (2017:4) emphasise that leaders are there because of followers, Crawford (2012:610), on the other hand, suggests that leadership has often been conceptualised as a solo activity, with a strong focus on the individual leaders such as the heads or principals, and those in senior leadership positions. On this, Horner (1997:270) slightly supports Crawford (2012:610) by suggesting that most theories and research on leadership focus on a person to gain understanding.

This might overlook other issues such as the situation in which the leadership process is taking place, organisational culture as well as the nature of the followers. However, House and Mitchell (1975), cited in Horner (1997:271), elucidate that leadership is seen as an interaction between the goals of the led and the leader. Other scholars, such as Bass and Stogdill (1990:19), argue that leadership is a collaboration between two or more members of a group that often involves a structuring or restructuring of the situation and the perceptions and expectations of followers. Furthermore, leadership occurs when it is perceived as occurring when one group member transforms the motivation or competencies of others in the group. As such, any member of the group can display some amount of leadership.

3.2.1 Defining and understanding leadership

People's interest in leadership phenomena is centuries old and can be traced back to the philosophers of the Confucian school of thought (550 to 479 BC), the ancient Egyptians and the Greeks, for example, Plato, who all attempted to define the nature of leadership and study it in practice. However, by the middle of the 20th century, it can possibly be considered the beginning of what could be described as

contemporary leadership theory. Its development hastened with the advent of large corporations, ready to invest millions in order to improve the capacities of their workforce.

Leadership occurs throughout every level and sector of society. It is the influence that individuals exercise, consciously or unconsciously, in their daily lives. It can be democratic, grassroots and communitarian, or it can be top-down, coercive and hierarchical. Yet, whatever form it takes, leadership has always been evident in societies and organisations across the world and throughout history. A consequence of the continued interest in and variable nature of leadership is that there is no consistently accepted definition and no clear understanding of the boundaries of the constructed space (Dickson, Den Hartog & Mitchelson, 2003:731).

In the late 20th century, Rost (1993:112) identified over 100 definitions of the concept. Such definitional differences have contributed to the horde of viewpoints that have been created to answer the question of what makes good leadership. Leadership has been analysed as a trait or behaviour. It has been studied in terms of context or exchanges between leaders and followers and has been considered in terms of culture (Bass, 1997a:132; 1997b:7). Despite the contending frameworks, what can be agreed upon is that historical, economic and social forces influence the kind of leader that is produced in a nation (Bass, 1997b:9). As a result, a large number of diverse theoretical approaches, both descriptive and prescriptive, have appeared over the last century (Walker, 2009:7).

Ancient literature defines leadership as an act of influence on a matter of organisational relevance (Katz & Kahn,1966:334). Expanding on this assertion, Tannenbaum, Weschler and Massarik (2013:24) are more specific on the influence element by defining leadership as an interpersonal influence, exercised in situations and directed through the communication process towards the attainment of a specified goal or goals. Masood (2006:942) goes further to stress the goal characteristic of leadership by declaring or defining leadership as leaders persuading followers to act for certain goals that represent the values and the motivations, the wants and needs, the aspirations and expectations of both leaders and followers.

Additionally, of course, the genius of leadership lies in the way leaders perceive and act on their own and their followers' values and motivations. Leadership is therefore attached to followers' needs and goals. The belief of a leader-follower is the relationship of individuals with various levels of motivation and power potential, such as the skill in quest of a common or at least joint purpose (Masood, 2006:943). The process of leadership must be seen as forming part of the varying aspects of conflict and power; that leadership is nothing if associated with communal determination; that the effectiveness of leaders must be judged not by their press clippings but by actual followers' transformations measured by purpose and

the satisfaction of human needs as well as expectations (Burns, 1978:3; Foulkes-Bert, Volk, Garzon & Pride, 2019:21).

Deriving from the preceding paragraphs, this study concurs with Bass (1990:11) and Johns and Moser (2001:115), who pronounce that there are almost as many definitions of leadership as there are leadership theories and there are almost as many theories of leadership as there are psychologists working in the field (Stodgill, 1974:259; Givens, 2008:4). This pronouncement asserts that there have been many definitions without any possible agreement. As an abundance of definitions of leadership has been presented, Hesburgh (1971:764) argues that the charisma of leadership, be it educational, political, religious, commercial, or whatever, is next to impossible to define, but wherever it exists, self-esteem flourishes, individuals pull together toward mutual goals, spirits rise, the order is maintained, not as an end in itself, but as a means to move forward together (Maxwell, 1993:1).

In association with Stodgill (1974:259), Mendenhall, Reiche, Bird and Osland (2012:5) in recent studies, other scholars acknowledge that for many decades, leadership has been defined and outlined in many ways. Therefore, they declare that leadership continues to be a topic of interest, although there is no worldwide definition of leadership (Uzohue, Yaya & Akintayo, 2016:17). In concurrence with this proclamation, the concept of leadership, according to Batmanghlich (2014:5), seems to be sloppy as there is a range of diversity on what leadership is (Faehner, 2007:23; Bogenschneider, 2016:3). Similarly, Van Wart and Suino (2017:4) posit that leadership is such a complex phenomenon, although such a largely applied theory could be ambiguous and misconstrued if not defined more narrowly.

Furthermore, these scholars argue that one way of defining various types of leadership is by the type of followers being led or those they intend to lead. Another is by the variety and the nature of the project that has the leader's key attention. Subsequently, Boateng (2014:22), in agreement with Faehner (2007:23), Van Wart and Suino, (2017:4) as well as Bogenschneider (2016:3), assertively argues that there have been many attempts to define leadership (seemingly a complex phenomenon), which depend on the perception and experience of an individual.

Although leadership may be defined as a formal or informal contextually rooted and goal-influencing process that occurs between leaders and a follower, groups of followers, or institutions, these scholars still maintain that even in the absence of a collective agreement, broad definitions of leadership, the science of leadership is required before introducing the construct as a domain of scholarly inquiry (Hofmeyer, Sheingold, Klopper & Warland, 2015:182).

3.3 THE ORIGINS OF TRANSFORMATIONAL AND TRANSACTIONAL LEADERSHIP

As Walker (2009:10) points out, although Burns' (1978) theory is commonly referred to as transformational leadership, Burns (1978) essentially distinguishes two types of leadership, namely transactional and transformational. Transactional leadership has as its basis the assumption that people are motivated by rewards and penalties (Kuhnert & Lewis, 1987:649) and that interpersonal relations can be characterised as more or less coherent exchanges, with the leaders exercising power over their followers. In transactional leadership, the relationship between the leader and follower is a sort of bargaining process, for example votes in exchange for a promise not to impose any new taxes (within a political context) or promotion in exchange for loyalty (within the context of business).

Effective transactional leadership rotates around the formulation and maintenance of the contract, and therefore, according to Bass (1974:339), effective transactional leaders are capable of (1) clarifying what performance is expected from a perfect follower, (2) explaining how to meet such expectations, (3) spelling out the criteria of the evaluation of their performance, (4) providing feedback on whether the objective has been met, and (5) allocating rewards that are contingent to their meeting the objectives. In contrast to transactional leadership, transformational leadership is the process whereby the leader engages with others and creates an association that elevates the level of motivation and morality in both the leader and the follower (Northouse, 2004:176). While transactional leadership motivates followers by appealing to their self-interests, transformational leadership motivates subordinates through a collective vision and responsibility.

Likewise, Day and Antonakis (2012:263) summarised that Burns (1978) published his opus magnum on leadership in political settings. His work laid the foundations for Bass (1985), particularly with respect to the transformative effects of leaders on followers. Burns (1978:19) defined leadership as encouraging followers to act towards certain goals that represent the values and the motivations, the wants and needs, the aspirations and expectations of both leaders and followers. Although leaders are intricately tied in those goals with followers, they act as an independent force in navigating followers toward those goals. The leader-follower alliance that could occur was defined as either: (a) transactional leadership, which entailed a relationship based on the exchange of valued items, whether political, economic, or emotional; or (b) transforming leadership, where the motivation, morality, and ethical aspirations of both the leader and followers are raised.

According to Burns (1978:426), transforming leadership focuses on supreme and far-reaching goals and ideals; and has a greater effect on followers and collectives compared to transactional leadership, which

focuses on promoting self-interest and is therefore limited in scope and impact. Transforming leaders theoretically raise the awareness of followers for what is significant, especially with regard to moral and ethical implications, and make them exceed their self-interest for that of the greater good. Although both transactional and transforming leadership can contribute to human purpose, Burns saw them as opposing ends of a spectrum. As stated by Burns (1978:426), the main monitors of transactional leadership are modal values; that is, values of means. Transformational leadership is more concerned with end-values (Day & Antonakis, 2012:263).

Consequently, Burns saw these two leadership styles as a trade-off, a zero-sum game. Consequently, Bass (1985) basically built his model on Burns' (1978) model. Therefore, Bass (1985) extended Burns' model to include sub-dimensions of what he termed 'transformational' (instead of transforming) leadership. Also, although in Bass's (1985) original conceptualisation of transformational leadership, he was not concerned with moral and ethical implications and eventually came around to agreeing with Burns (1978) that the likes of Hitler were pseudo-transformational (Bass, 1999: 15) and that at the centre of authentic transformational leadership were 'good' values (Bass & Steidlmeier, 1999:4). Therefore, Bass' (1985) transformational-transactional theory includes both elements of the 'new leadership' (i.e. charisma, vision, and the like) and elements of the 'old leadership' (i.e. transactional leadership behaviour that focuses on role and task requirements).

3.3.1 What is transformational leadership?

Transformational leadership is that which facilitates a redefinition of a people's mission and vision, a revitalisation of their pledge and the restructuring of their systems for organisational goal achievement. It is a rapport of communal stimulation and advancement that converts followers into leaders and may convert leaders into moral agents (Putri, Mirzania & Hartanto, 2020:51). It is a situation where the leader moves the follower beyond immediate self-interests through idealised influence (charisma), inspiration, intellectual stimulation, or individualised consideration. It elevates the followers' level of maturity and principles as well as anxieties for accomplishment, self-actualisation, and the well-being of others, the organisation, and society (Erkutlu, 2008:709). The leaders delegate assignments as opportunities for growth (Bass, 1985a:26; Yammarino, Spangler & Bass, 1993:84).

Transformational leadership fosters capacity development and brings higher levels of personal commitment among followers to organisational objectives. According to Bass (1990:21), transformational leadership occurs when leaders broaden and elevate the interests of their employees, when they generate awareness and acceptance of the purposes and mission of the group, and when they

stir employees to look beyond their own self-interests for the good of the group. Together, intensified capacity and commitment lead to extra effort and greater throughput (Leithwood & Jantzi, 2000:5; Barbuto, 2005:28; Spreitzer, Perttula & Xin, 2005:18).

Transformational leaders uplift people from low levels of need, focusing on survival (following Maslow's hierarchy), to higher levels (Yukl, 1989:269). They may also inspire followers to surpass their own interests for some other collective purpose (Feinberg, Ostroff & Burke, 2005:471), but usually aid them to satisfy as many of their individual human needs as possible, appealing particularly to higher-order needs (e. g. to love, to learn, and to leave a legacy). Transformational leaders are said to engender trust, admiration, loyalty and respect amongst their followers (Barbuto, 2005:28). This form of leadership necessitates that leaders engage with followers as whole people, rather than purely as employees. In essence, transformational leaders underscore the actualisation of followers. Transformational leadership is also based on the leader and their followers' self-reflective changing of values and beliefs. From this emerges a key characteristic of transformational leadership.

It is said to involve leaders and followers and raise one another's achievements, morality and motivations to levels that might otherwise have been impossible (Chekwa, 2001:4; Barnett, 2005:27; Crawford, Gould & Scott, 2003:59). Therefore, Spector (2014:365) informs that transforming leadership is both more complex and more effective than transactional, or what Burns sometimes referred to as 'traditional' leadership, given its purpose of mutual stimulation and elevation that transform followers into leaders and may convert leaders into moral agents. To Burns (1978:20), the moral aspect of transforming leadership is supreme. It permits a separation between leadership and power, which he sometimes referred to as 'naked power'. Transforming leaders use power, to be sure. However, leaders do so in a manner that raises "the level of human conduct and ethical aspiration of both leader and led, and thus has a transforming effect on both".

According to Khan, Nawaz and Khan (2016:3), transformational leadership distinguishes itself from the rest of the past and contemporary theories on the basis of its alignment with a greater good as it contains involvement of the followers in processes or activities related to personal factors towards the organisation and a course that will produce certain greater social dividends. Transformational leaders increase both the follower and the leader (Parry & Proctor-Thomson, 2002:1). It is maintained that transformational leaders engage in interactions with followers based on shared values, beliefs and goals. This influences the performance, leading to accomplishing the set organisational goal. As per Bass (1990:21), a transformational leader attempts to induce followers to rearrange their needs by exceeding self-interests

and endeavours for higher-order needs. This theory imitates Maslow's (1954) higher-order needs theory. Transformational leadership is a course that changes and approaches targets on beliefs, values and attitudes that enlighten leaders' practices and the capacity to lead change.

The literature suggests that followers and leaders put aside personal interests and differences for the benefit of the group. The leader is then asked to focus on followers' needs and inputs in order to convert everyone into a leader by empowering and motivating them (House & Aditya, 1997:416). To further describe transformational leadership, Parry and Proctor-Thomson (2002:1) stress that, in 1978, Burns introduced the theory of transforming leadership.

Consequently, Burns (1978:20) acknowledged transforming leadership as a process where one or more individuals engage with others in such a way that leaders and followers raise one another to higher levels of motivation and morality. Therefore, as conceived of by Burns, transforming leadership is an ethical, moral enterprise through which the integrity of the organisation would be maintained and enhanced. Burns' theory has been further theorised and popularised through Bass' (1985) notion of transformational leadership. Fitting with Burns' theory, Bass identified transformational leadership as a process by which followers trust, admire and respect their leader and are consequently motivated to do more than they were originally expected to do.

However, Parry and Proctor-Thomson (2002:2) highlight that in contrast to transforming theory, transformational leadership as originally conceived by Bass (1985) may not necessarily raise followers to the higher moral ground, but rather, depending on the leader's vision and personal motivation, may lead followers in negative, unethical and immoral directions (Giampetro, Brown, Browne & Kubasek, 1998:1727; Northouse, 2001:147). Trusting, admiring and respecting a leader do not necessarily mean that followers will behave with integrity. In this way, transformational leadership maybe undesirable. On the other hand, Bass and Steidlmeier (1999:185) have rejected Bass' previous notion that transformational leadership may lead to unethical directions. Rather, these authors suggest the difference between authentic transformational leadership, which by definition is ethical, and pseudo-transformational leadership, which is unlikely to be ethical.

This addition of theory by Bass and Steidlmeier (1999:186) has cut directly to the issue at hand; specifically, the integrity of transformational leadership. The inconsistency between these notions of transformational leadership, ethical vs unethical, or conditionally ethical/unethical, is not purely academic. Consequently, Giampetro *et al*. (1998:1727) avow that if transformational leadership does not

essentially possess integrity nor uphold ethical behaviour, then the question must be raised as to the value of promoting, training and developing it.

Integrity in leadership is becoming increasingly concerned within business and organisations (Kanungo & Mendonca, 1996:3). Many organisational theorists and practitioners currently believe that leadership without integrity may ultimately place the organisation at risk (Posner & Schmidt, 1984:210; Parry, 1998:88). Moreover, both within research and leadership development, transformational leadership has been enthusiastically and rapidly embraced over the past decade. Consequently, consideration of the integrity of transformational leadership is of critical and immediate concern (Parry & Proctor-Thomson, 2002:2).

3.4 BASS' MODEL OF TRANSFORMATIONAL LEADERSHIP

Although Burns (1978) is highly associated with leadership, Bernard Bass is considered the chief advocate of transformational leadership. He (Bass) identified five components of transformational leadership: idealised influence (charisma); inspirational motivation (inspiring others through vision); intellectual stimulation (rethinking ideas and challenging pre-conceived assumptions); individualised consideration (treating others as individuals rather than members of a group); and idealised attributes (building trust, respect and faith) (Bass & Avolio, 1994:3). According to this model, transformational leaders inspire followers through charisma, meet their emotional needs through individual consideration and stimulate them intellectually by stirring their awareness of problems.

Elaborating on Burns' theory, Bass (1985:183) argued that transactional leadership and transformational leadership are not two opposite extremes of the same approach, but are two separate concepts. Bass finds the two approaches to be independent and corresponding (Alimo-Metcalf & Alban-Metcalf, 2001:2). Therefore, according to Bass (1985:183), the best leaders are actually both transformational and transactional. Bass also described three dimensions of transactional leadership. The first, namely the contingent reward, is the point to which the leader sets up constructive transactions or exchanges with followers by clarifying expectations and establishing the rewards when the followers meet these expectations. The other two dimensions of Bass' transactional leadership model are two types of so-called management-by-exception.

Management-by-exception occurs when the leader intervenes to make a correction when something goes wrong (Bass, 1985b:183) and can be active or passive. Active leaders monitor follower behaviour and take corrective actions before the followers' behaviour creates serious complications (Northouse,

2004:179). On the other hand, passive leaders do not take any action unless the behaviour of the followers has already created problems. The main difference between the two is that in the active form, the leader looks for abnormalities, whereas in the passive form, the leader waits for problems to arise (Hater & Bass, 1988:695). To summarise the main points of Bass' model, while transactional leaders predetermine what followers should do to realise the aim and motivate them through an exchange process, transformational leaders motivate and stimulate their followers to surpass their own self-interests and direct themselves to a higher level of motivation linked to the interests of the team, organisation or larger community as a whole (Walker, 2009:13).

3.4.1 Components of transformational leadership

Following Hay (2006:5), most authors (Bass & Avolio, 1994:408; Bycio, Hackett & Allen, 1995:470; Avolio, Bass & Jung, 1999: 441; Dionne, Yammarino, Atwater & Spangler, 2004:183) in the field propose that four factors make up transformational leadership, whereas Leithwood and Jantzi (1999:6) suggest six. These are set out in Table 3.1 below.

Table 3.1: Dimensions of Transformational Leadership

The four common I's	Leithwood's six
1. Idealised influence. Charismatic vision and behaviour that inspires others to follow. 2. Inspirational motivation. Capacity to motivate others to commit to the vision. 3. Intellectual stimulation. Encouraging innovation and creativity. 4. Individualised consideration. Coaching to the specific needs of followers.	1. Building vision and goals. 2. Providing intellectual stimulation. 3. Offering individualised support. 4. Symbolising professional practices and values. 5. Demonstrating high-performance expectations. 6. Developing structures to foster participation in decisions.

Source: Simic (1998:51); Leithwood and Jantzi (1999:6); Hall, Johnson, Wysocki and Kepner (2002:1); Kelly (2003:1); Judge and Piccolo, (2004:755) and Barbuto (2005:28)

Although the initiation of transformational leadership concept is apportioned to Downton in 1973 and Burns in 1978, according to Dionne *et al*. (2004:183), the basis of transformational leadership rests on what Bass and Avolio (1994:408) refer to as the four I's of transformational leadership, which comprise three factors (Bycio *et al*., 1995:470; Avolio *et al*., 1999:441), i.e. idealised influence/inspirational motivation, intellectual stimulation and individualised consideration.

According to Gomes (2014:13), Downton (1973) first discussed the concept of transformational leadership, and then political scientist James McGregor Burns (1978) introduced this concept in his Pulitzer-Prize-winning book on leadership. In it, Burns (1978) distinguished two types of leadership. The

first type is transactional leadership. In this style, there is an exchange between the leader and the followers (e. g. the follower receives wages or prestige for compliance with the leader's wishes). The leader acquires the cooperation of followers by offering something in exchange for their efforts; therefore, followers accept the leaders' authority because they have something to gain.

The second type is transformational leadership, which can be defined as the process of influencing major changes in the attitudes, beliefs and values of followers to a point where the goals of an organisation and the vision of the leader are internalised and followers achieve performances beyond expectations (Bass, 1985:26a; Yukl, 1999a:286; 1999b:36). In this process, leaders and followers raise one another's levels of morality and motivation (Carlson & Perrewe, 1995:832), and leaders achieve followers' best efforts by inspiring them to identify with a vision that exceeds their own instant self-interests. The transformational leader seeks to elevate the followers' higher-order needs, meaning that leaders and followers raise each other's motivations and a sense of purpose.

This implies that the aims and objectives of both parts gel into one, being established common goals in that they can identify themselves (Gomes, 2014:4). The distinction between transactional and transformational leadership was the basis for understanding the true nature of transformational leadership. According to Burns (2003:28), leaders cannot be both transactional and transformational because transactional leaders try to satisfy the followers' basic needs in exchange for achieving the leaders' objectives.

On the other hand, the transformational leadership style involves working on developing employees, supporting them, fostering motivation and moralities, and fulfilling their needs (Ismail, Halim, Munna, Abdullah, Shminan & Muda, 2009:3). Therefore, transformational leadership plays a role in bridging the gap between leaders and followers to develop a clear understanding of followers' interests, values and motivational levels. This helps leaders understand how their followers will be driven toward the organisational goal; it encourages the follower to be expressive and adaptive in the period of organisational changes and help them achieve organisational goals (Gomes, 2014:3).

Meanwhile, Tinkham (2015:13) declares that the transformational leadership style was originally invented by Burns in 1978, who felt its purpose was to create a reciprocal relationship between leaders and followers to help each advance to a higher level in leadership. As such, in basic terms, transformational leadership is defined as a leadership style through which leaders identify needed changes for performance improvement and create a vision to achieve them, using the inspiration of group followers to gain commitment. Meanwhile, Bass (1985:154), Yukl (1989:252), and Bass and Avolio

(1994:211) have identified transformational leadership as a leadership type in which leaders possess charisma, and provide intellectual stimulation, individualised consideration and inspirational motivation to followers (Bass & Avolio, 1993:112).

Likewise, factor studies from Bass (1985) to Howell and Avolio (1992), Bycio *et al*. (1995:468) and Avolio *et al*. (1999:441) all identified the components of transformational leadership. Leadership is charismatic such that the follower pursues to identify with leaders and imitates them. Their leadership stimulates the follower with challenges and encouragement, providing meaning and understanding. The leadership is intellectually stimulating and expands the follower's use of her/his abilities.

Finally, the leadership is individually considerate, providing the follower with support, mentoring and coaching. Each of these components can be measured with the Multifactor Leadership Questionnaire (MLQ) (Bass, 1998:5). Descriptions of these components are presented below in Figure 3.1.

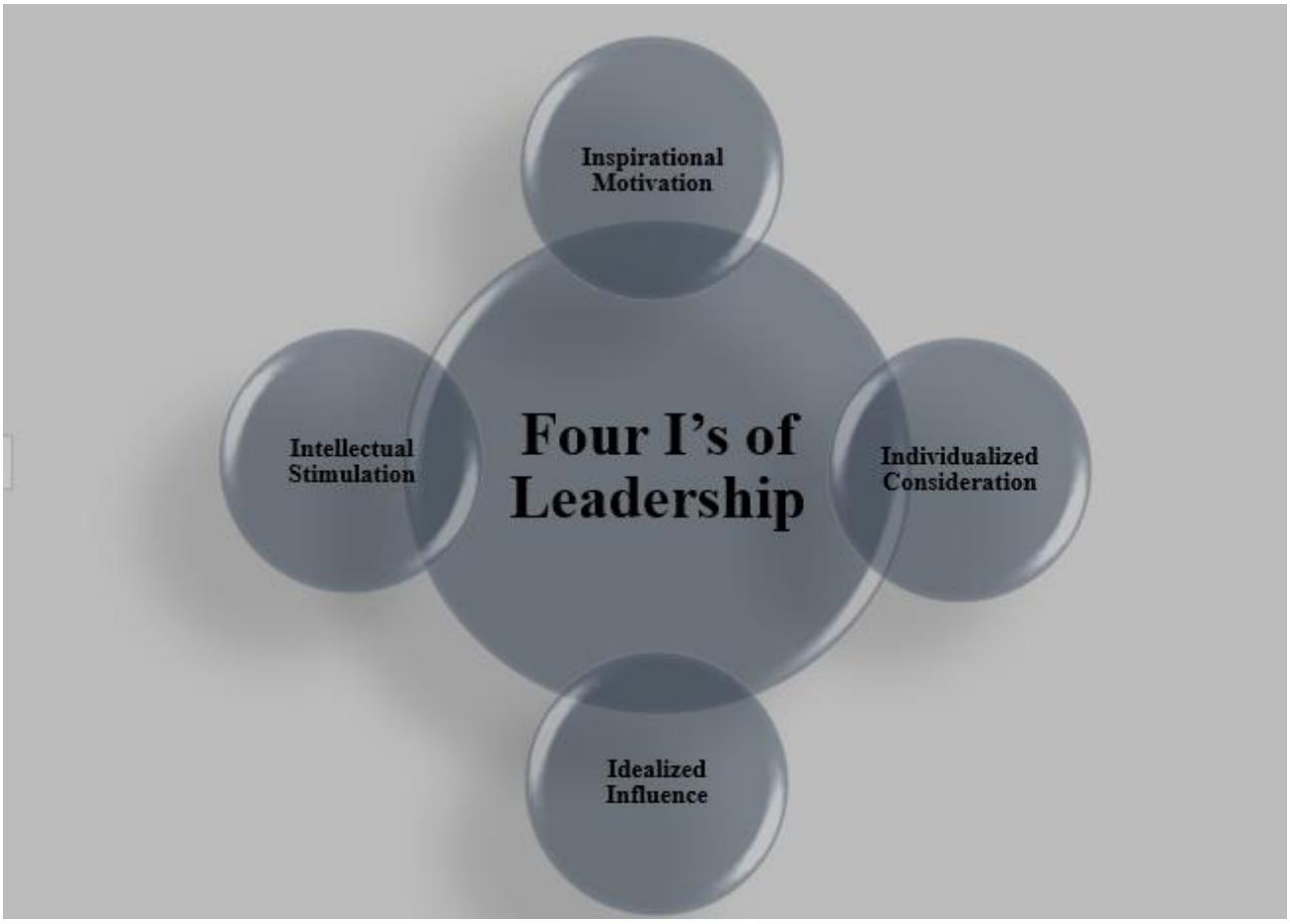


Figure 3.1: The four I's of transformational leadership

Source: Pennsylvania State University (n.d.)

3.4.2 Charismatic leadership (or idealised influence)

Idealised influence, or charisma, as Bass (1985:35) originally defined it, is the emotional component of leadership, which is used to describe leaders who, by the power of their personalities, have philosophical and extraordinary effects on their followers. Theoretically, these leaders are admired by followers who show loyalty and dedication to the leader's cause as they shed their self-interest. As noted by Bass (1998:41), transformational leaders shift goals (of followers) away from personal safety and security toward success, self-actualisation, and the greater good. Followers idealise these leaders, who are role models who provide them with a vision and purpose, seem powerful and confident, and consider their decisions' moral and ethical implications.

Following Day and Antonakis (2012:265) theoretically, these leaders focus followers on the mission of the group by developing their need for achievement, affiliation, or power motives. Charismatic leaders communicate metaphorically, use images, and are persuasive in communicating a vision that promises a better future. In this way, they create a powerfully emotional attachment with their followers. Initially, the idealised influence was named charisma. However, because charisma may imply admiration of the leader, a more neutral term was sought. Therefore, the factor was renamed idealised influence (i.e. connoting idealisation) in subsequent publications (Avolio, Waldman & Yammarino, 1991:12; Bass & Avolio, 1994:213).

With idealised influence, leaders afford a positive example to followers. The degree to which the leader behaves in admirable ways and displays convictions and takes stands cause followers to identify with the leader who has a clear set of values and acts as a role model for the followers (Odumeru & Ogbonna, 2013:356). According to Bass (1998:5), transformational leaders behave in ways that result in their being role models for their followers. The leaders are appreciated, respected and trusted. Followers identify with the leaders and want to emulate them; followers endow leaders as having extraordinary capabilities, persistence and determination.

The leaders are willing to take risks and are consistent rather than subjective. They can be counted on to do the right thing, demonstrating high ethical and moral conduct standards. He or she avoids using power for personal achievement and only when needed (Bass & Avolio, 1994:3). This is strong among leaders who have a vision and sense of mission, gain respect, trust, and confidence, and acquire strong individual identification from followers. Leaders who display idealised influence can obtain the essential extra effort from followers to achieve optimum development and performance levels (Bass & Avolio, 1990:22).

Furthermore, Agyemang, Boateng and Dzandu (2017:487) posit that the idealised influence dimension is subdivided into two approaches: idealised influence attributed, and idealised influence behaviour (Loon, Lim, Lee & Tam, 2012:3). Idealised influence is defined with respect to both the leader's behaviour and the followers' attributions about the leader (Bass & Avolio, 1994:3). Under idealised influence attributed, transformational leaders exhibit confidence and instil emotions (such as dignity, integrity and honour), a sense of selflessness, and respect in their followers (Loon *et al*., 2012:3). With this dimension, leaders are admired and trusted. Leaders have high standards for ethical and moral conducts.

This stimulates loyalty from followers. Attributes include inculcating pride in others for being associated with the leader, going beyond self-interest for the good of the group and displaying a sense of power and confidence (Fok-Yew, 2015:369). Under idealised influence behaviour, transformational leaders are goal-oriented and encourage the completion of work based on a collective sense of beliefs, values, purpose and mission (Loon *et al*., 2012:3). Emphasis is put on behaviours, including the leader talking about his other most important values and beliefs, specifying the importance of having a strong sense of purpose and considering the moral and ethical consequences of decisions. In short, fundamental pointers of idealised influence are role-modelling, articulation and value-creation, providing a sense of purpose, meaning, self-esteem, self-determination, emotional control and confidence in followers (Khan *et al*., 2016:4).

Remarkably, Bass and Avolio can be confusing. Their 1994 work coupled idealised influence with inspirational motivation as if it is one component. They argue that idealised influence/inspirational motivation is related to the formulation and articulation of vision and/or challenging goals. Behaviours related to idealised influence/inspirational motivation include embedding pride in others for being associated with the leader, influencing followers to go beyond self-interest for the good of the group, providing assurance that obstacles will be overcome, promotion of confidence in achievement and performance of goals and tasks, talking enthusiastically about the future, articulating a convincing vision for the future and providing an exciting image of organisational change (Bass & Avolio, 1994:3).

If the leadership is transformational, its personality or idealised influence is visualising, confident, and setting high imitation standards. The research underscores the spiritual dimensions of such influence (Kanungo & Mendonca, 1996:87) as well as the moral dimensions of the influence process itself (Kanungo & Mendonca, 1996:52). The main difference between authentic transformational leadership and pseudo-transformational leadership lies in the values for which they are idealised. For instance, the

authentic leader calls for universal brotherhood; the pseudo-transformational leader highlights fictitious ‘we-they’ differences in values and argues that ‘we’ have inherently good values and ‘they’ do not. (Burns, 2004:179).

Likewise, Bass (1985:182) summed up the importance of the values held by the transformational leader in determining his or her actions. The observed behaviour might seem the same, but according to Burns (1978:28) and Bass and Steidlmeier (1999:4), only if the underlying values were morally uplifting could the leader be considered transforming.

Bass (1985:4) originally argued that transformational leaders could be the black hats of villains or the white hats of heroes, depending on their values. Allegedly, Bass and Steidlmeier (1999:4) agree that this is mistaken; only those who wear white hats are seen as truly transformational. Those in black hats are now seen as pseudo-transformational. While they may be transformational, they are inauthentic as transformational leaders. They are the false messiahs and tyrants of history. Pseudo-transformational idealised leaders seek power and position even at the expense of their followers’ achievements. They indulge in fantasies of power and success. They may argue that they are doing so for the organisation’s good. Like charismatics in general, they feel that they honestly know the right answers to problems that need to be sold through effective impression management. Sometimes, they even deceive themselves about their competencies. They exhort their followers to “trust me!”, but they cannot be trusted (Burns, 2004:180).

Therefore, Christie, Barling and Turner (2011:2944) assert that Bass and Steidlmeier (1999:4) initially labelled the unethical charismatic leaders as pseudo-transformational leaders, distinguishing them from authentic transformational leaders. Bass and Steidlmeier (1999:184) defined pseudo-transformational leaders as failing to uphold the standard required for leadership to be transformational; that it must rest on a moral foundation of legitimate values. Like Bass and Steidlmeier (1999:184), Price (2003:67) took a behavioural approach to understand pseudo-transformational leadership, suggesting that leaders can be pseudo-transformational as a result of unethical values, unethical behaviours or both. Then Dasborough and Ashkanasy (2002:4) extended the conceptualisation of pseudo-transformational leadership by considering the leader-follower relationship more broadly. These authors focused attention on how the emotions and attributions that followers make about the motives of their leaders shape their evaluations and labelling of the leadership. The leader-follower relationship is projected to suffer when followers perceive their leaders as pseudo-transformational.

3.4.3 Inspirational motivation

This characteristic relates to the degree to which the leader enunciates a vision that appeals to and inspires the followers with confidence about future goals and offers meaning for the current tasks (Odumeru & Ogbonna, 2013:356). Transformational leaders behave in ways that motivate and stimulate those around them by providing meaning and a challenge to their followers' work. Team spirit is stimulated. Enthusiasm and optimism are displayed. Leaders get followers involved in foreseeing attractive future states; they create communicated expectations that shared vision. Charismatic leadership and inspirational motivation commonly form a combined single factor of charismatic-inspirational leadership (Bass & Avolio, 1994:3; Bass, 1998:5).

Inspirational motivation is leadership that inspires and motivates followers to reach ambitious goals that may have previously seemed unreachable (Cavazotte, Moreno & Bernardo, 2013:493). This element, dissimilar from the idealised charismatic effect, engages or adds non-intellectual, emotional qualities to the influence process. At this point, the leader raises followers' expectations and motivates action by drumming in confidence that they can accomplish these firm goals, described as the Pygmalion effect (Eden, 1988:646; Chang, 2011:198). By predicting that followers can reach ambitious goals and showing absolute confidence and resolve that this outcome will occur, followers are inspired to reach the requisite level of performance beyond normal expectations, and a self-fulfilling prophecy occurs (Yatvin, 2009:3).

In relation to Bass and Steidlmeier (1999:182), the inspirational motivation of transformational leadership affords followers with encounters and meaning for engaging in collective goals and undertakings. The inspirational appeals of the authentic transformational leader tend to focus on the best in people, on harmony, charity and good works. However, the inspirational appeals of the pseudo-transformational leader are inclined to concentrate on the worst in people — on demonic plots, collusions, unreal dangers, defences and anxieties. Therefore, Kanungo and Mendonca (1996:61) have linked the former to an empowerment process. For them, enablement is more than widening the scope of participation by followers. It is motivational and enabling, highlighting a new realisation and transformation of the person. Therefore, the latter suggests that the idealised, inspirational leaders, who are pseudo-transformational, may mislead, deceive and be evasive.

While idealised influence can be used to contrast transformational and pseudo-transformational leaders, the means of influence (i. e. inspirational motivation) are similar across the two types of leadership. The prevailing literature suggests that the behaviours of transformational and pseudo-transformational leaders can appear similar, predominantly to those socially distant from the leader, such that their influential

strategies may be blurry to some followers (e. g. Bass & Steidlmeier, 1999:182; Dasborough & Ashkanasy, 2002:4; Price, 2003:67). Therefore, Christie *et al*. (2011:2945) argue that pseudo-transformational leaders' inspirational motivation or charisma is a testimony to their ability to manipulate followers' perceptions.

As suggested by Barling *et al*. (2008:853), inspirational motivation, the second element of transformational leadership, reflects a leader's ability to raise followers' awareness of the collective mission or vision to which they are dedicated and to inspire them to chase their shared goals, while always determined to accomplish at higher levels. Transformational leaders attain this by zealously believing in and pronouncing a persuasive vision of the future, and energetically expressing their confidence in the group's ability to achieve the vision (Howell & Avolio, 1992:44). These leaders are especially expressive, using allegories to motivate, influence and inspire. Pseudo-transformational leaders are equally skilled at communicating their beliefs and promoting their missions using rhetoric and metaphor, but they motivate followers through deception and false promises, often substituting self-indulgent emotionality for logic (Bass & Steidlmeier, 1999:183). By doing so, pseudo-transformational leaders increase the extent to which their vision is seen as compelling and realistic (Conger & Kanungo, 1998:124).

Consequently, inspirational motivation is one of the elements of transformational leadership that helps pseudo-transformational leaders appear transformational and what inspires people to follow them. However, although both transformational and pseudo-transformational leaders have the ability to influence their followers to envision and work towards future goals, it is their idealised influence that differentiates them so sharply (Barling *et al*., 2008:853).

3.4.4 Intellectual stimulation

Leaders encourage creativity and independent thinking of followers. Transformational leaders stimulate their followers' efforts to be innovative and creative by questioning assumptions, reframing problems, and approaching ancient situations in novel ways. Creativity is encouraged. There is no public criticism of individual members' blunders. New ideas and inventive problem solutions are implored from followers who are included in the process of addressing problems and finding solutions. Followers are encouraged to try innovative approaches, and their ideas are not criticised because they vary from the leader's ideas (Bass & Avolio, 1994:3; Bass, 1998:5) to build relationships, manage firm politics and culture and communicate clearly to employees.

According to Huse (2003:12), intellectual stimulation calls upon leadership to challenge followers to embrace new ways of thinking and doing and reassess values and beliefs. Ogola, Sikalieh and Linge (2017b:90) assert that the leader implores new ideas from followers and shows tolerance for mistakes. Transformational leaders inspire their followers' efforts to be innovative and creative by questioning assumptions, reframing problems, and approaching old situations in new ways (Avolio & Bass, 2004:5). In this type of leadership, followers' mistakes are not publicly criticised, and creativity is openly encouraged. Transformational leaders implore their followers' ideas and creative solutions to problems, thereby including followers in problem-solving.

Consequently, the intellectually stimulating leader encourages followers to try new methodologies. Intellectual stimulation represents a significant component of transformational leadership. Through intellectual stimulation, transformational leaders encourage followers to question their own beliefs, assumptions and values. When appropriate, those of the leader may be outdated or inappropriate for solving contemporary problems (Bass & Avolio, 2004:5; Sundi, 2013:51). As Anjali and Anand (2015:29) assert, intellectual stimulation leads to the development of employee commitment to the organisation. This, in turn, has implications for the ability of the organisation to achieve goals based on the dedication and hard work of employees (Anjali & Anand, 2015:29). By constantly searching for new knowledge and intellectual stimulation, transformational leaders constantly teach, illustrate, but also promote and get new and creative ideas for solving problems from all organisational members (Bass & Avolio, 2004:94). Similarly, Bycio *et al*. (1995:469) found that the intellectual stimulation dimension of the transformational leadership measure had very strong positive relationships with the extra effort put in by subordinates.

urthermore, Avolio and Bass (2004:94) described an intellectually stimulating leader as one who can discern, comprehend, conceptualise and articulate to their associates the opportunities and threats facing their organisation as well as its strengths, weaknesses and comparative advantages. Furthermore, they opined that in allowing followers to seek intellectual ways to solve problems, analyse situations, critically question long-held beliefs, assumptions and values, transformational leaders are actually developing their followers to seek innovative and creative ways to solve outdated problems.

In line with Burns (1978:20), the intellectual stimulation of transformational leadership incorporates an open architecture dynamic into processes of situation evaluation, vision formulation and patterns of implementation. Such openness has a supreme and spiritual dimension and helps followers to question assumptions and generate more creative solutions to problems. It is especially suited to the normative

side of ethics, where human probing of the ground of being is both incomprehensible and endless (Birasnav, Rangnekar & Dalpati, 2010:113).

Bass and Steidlmeier (1999:184) point out that this dynamic breaks the bonds of organisational and leadership cultures that ignore fundamental questions such as altruism (Kanungo & Mendonca, 1996:79). The intellectual stimulation of pseudo-transformational leaders displays a logic containing false assumptions to slay the dragons of uncertainty. Pseudo-transformational leaders over-weigh authority and under-weigh reason. They take credit for others' ideas but make them culprits for failure. They substitute narratives for hard evidence. They feed on the ignorance of their followers so that their followers will accept more uncertainties and inconsistencies, opening the opportunities for the self-enhancement of charlatans (Bass, 1989:45; Thusini & Mingay, 2019:357).

3.4.5 Individualised consideration

Leaders serve as mentors for followers. Leaders concentrate on diagnosing the needs and capabilities of followers. They analyse followers' needs and attend to them individually. They also delegate, coach, advise, and provide feedback for use in the individual development of followers (Agyemang *et al*., 2017:487).

hey raise the needs and confidence levels of followers to take on greater levels of responsibility. The follower's responsibility does not simply cover his/her career requirements, nor is it geared exclusively to maximising performance. Dissimilarly, followers take greater responsibility for their personal development, including such activity as one's job challenges (Tajasoma, Hung, Nikbinb & Hyun, 2015:176). Transformational leaders pay communal attention to each follower's needs for achievement and growth by acting as a coach or mentor. Followers and colleagues are developed to consecutively higher levels of potential. Individualised consideration is practised when new learning opportunities are created along with a supportive climate. Individual variances in terms of needs and desires are recognised (Reza, 2019:121). The leader's behaviour demonstrates acceptance of individual differences (e.g. some employees receive more encouragement, some more autonomy, others stronger standards and still others more task structure). A two-way exchange in communication is encouraged, and "management by walking around" workspaces is practised (Bass, 1998:6).

Communications with followers are personalised (e. g. the leader remembers previous conversations, is aware of individual concerns, and sees the individual as a whole person rather than just an employee). The individually considerate leader listens efficiently. The leader delegates tasks as a means of

developing followers. Delegated tasks are supervised to see if the followers need additional direction or support and evaluate progress; ideally, followers do not feel they are being checked (Bass & Avolio, 1994:3; Bass, 1998:6). Individualised consideration is the most significant and often most hard to accomplish. Every leader should be assessing talent within his or her department to mentor and cultivate the organisation's next leaders. For an organisation to succeed, everyone must possess transformational leadership skills (Tinkham, 2015:13).

Dionne *et al*. (2004:183) expand their understanding of how specifically transformational leadership components can be linked to team performance through various teamwork processes can serve to advance a promising yet sparsely explored (Bass, Avolio, Jung & Berson, 2003:207) area within transformational leadership. Ogola, Sikalieh and Linge (2017a:167) maintain that a leader who practises individualised consideration looks at employees' individuality. Such leaders link the priorities of an individual employee with the development of the organisation. Through research, it was established that employees performed their duties effectively because the CEO mentored and coached them on how to perform their tasks (Ogola *et al*., 2017a:167).

According to Wright (1998:176), coaching empowers employees to go beyond their existing level of performance when the employee receives encouragement and help in finding skills. Coaching creates the ideal forum for exploring new solutions and developing action plans while providing incessant support and feedback. With individualised consideration, Huse (2003:13) posits that transformational leaders exhibiting this component often pay special attention to each individual subordinate's needs for achievement and growth by serving as a leader and as a coach and mentor. Additionally, possibly the most important characteristic of individualised consideration is that the truly transformational leader identifies the capabilities and limitations of subordinates and often assigns tasks on the basis of the assessment.

Leaders deal with their subordinates as individuals. They further consider their individual needs, abilities and aspirations, and often listen attentively. A leader possessing the full range of individualised consideration also furthers their subordinates' development, advises and often coaches (Hassan, 2019:53). Although Tinkham's (2015:13) emphasis is on individualised consideration, Bass's 1985 seminal work is considered the cornerstone of research on transformational leadership, particularly in the classroom, and highlights transformational leadership behaviours. These behaviours refer to particular behaviours/activities engaged in by leaders that improve overall organisation performance and outcomes (Waheed, 2017:118**).**

In his work, Bass (1985) also mentions the four I's of transformational leadership behaviours as equally important in their daily interactions with the staff or subordinates. With Ogola *et al*. (2017a:164), individualised consideration constitutes developing followers through coaching, mentoring, teaching and providing feedback in a manner consistent with each individual's needs (Sarros & Santora, 2001:385; Hoffman & Frost, 2006:38; Kirkbride, 2006:26). Individualised consideration is the first factor of transformational leadership style. The individualised consideration leader demonstrates deep concern for their followers, treats them as individuals, and gets to know them and listens to both their concerns and ideas (Sarros & Santora, 2001:385; Hoffman & Frost, 2006:38; Kirkbride, 2006:26). Individualised consideration deals with fundamental transformational leadership behaviours of treating individuals as important contributors to the organisation.

Leaders who use this leadership style give due consideration for their employees' needs and coach them to bring sustainable development (Sarros & Santora, 2001:385; Hoffman & Frost, 2006:38; Kirkbride, 2006:26). In sum, a leader who gives personal attention to subordinates reflects the behaviour of treating each employee as an individual and initiates an interest in the long-term development of each employee (Sarros & Santora, 2001:385; Hoffman & Frost, 2006:38; Kirkbride, 2006:26).

Bass (1985:83) stated that a leader using individualised consideration provides socio-emotional support to followers and is concerned with developing followers to their highest level of potential and empowering them. The leader in this instance gives "individualised attention and a developmental or mentoring orientation" toward followers. This outcome is achieved by coaching and counselling followers, maintaining frequent contact with them, and helping them to self-actualise.

The individualised consideration element of transformational leadership emphasises the necessity of selflessness if leadership is to be anything more than authoritarian control (Kanungo & Mendonca, 1996:85). The transformational leader treats each follower as an individual and provides coaching, mentoring and growth opportunities (Bass, 1985b:84). While true transformational leaders are concerned about developing their followers into leaders, pseudo-transformational leaders are more concerned about preserving the dependence of their followers. They abuse the feelings of their followers to maintain esteem from them. Pseudo-transformational leaders will welcome and expect unsighted obedience. They will attempt to augment their personal status by maintaining a personal distance between themselves and their followers. They encourage fantasy and magic in their vision of the attractive future while true transformational leaders endorse achievable shared goals (Sankowsky, 1995:63).

Selfish pseudo-transformational leaders control arguments about political choices with a twist that achieves the desired responses (Bass, 1989:45). Their style of individualised consideration stimulates favouritism and competition among followers on the pretext of being helpful. While the authentic, individually considerate leader is anxious about helping followers become more knowledgeable to provide a more successful succession, the inauthentic counterpart seeks to preserve a parent-child relationship. The difference between authentic and pseudo-transformational leadership is also seen in that authentic transformational leaders, who may have just as much need for power as pseudo-transformational leaders, channel the need in socially constructive ways into the service of others. Pseudo-transformational leaders use power primarily for self-promotion and are secretly disrespectful of those they are supposed to be serving as leaders (Howell & Avolio, 1992:44). The following table depicts the four I's as discussed in previous paragraphs. The four I's: Leaders who display transformational leadership embody some or many of the following behaviours and traits. These traits are presented in Table 3.2.

Table 3.2: Components of transformational leadership

Idealised influence	❖ Instils pride in followers (charismatic) ❖ Goes beyond their self-interest for the greater good of the organisation ❖ Displays a sense of power and confidence ❖ Talks about their most important values and beliefs ❖ Emphasises collective mission
Inspirational motivation	❖ Talks optimistically about future ❖ Articulates a compelling vision for the future ❖ Talks about what needs to be accomplished; expresses confidence that goals will be achieved ❖ Creates exciting image of what is essential to consider ❖ Encourages team spirit, general enthusiasm
Intellectual stimulation	❖ Seeks differing perspectives ❖ Gets others to look at problems from differing angles ❖ Encourages non-traditional thinking ❖ Suggests new ways of looking at completing assignments ❖ Re-examines critical assumptions
Individualised consideration	❖ Spends time coaching and teaching followers ❖ Promotes self-development ❖ Treats team members as individuals ❖ Identifies differing needs, abilities and aspirations for team members ❖ Listens to others' concerns ❖ Helps develop others' strengths

Source: Hughes (2014:10).

This table relates to the Multifactor Leadership Questionnaire (MLQ) developed by Bass and Avolio as a tool to have followers rate their leaders based on the four I's. The questions are extracted and integrated into the interviews with each recipient in order to effectively gauge their transformational leadership

style's indirect association to the four I's: idealised influence, inspirational motivation, individualised consideration, and intellectual stimulation (Hughes, 2014:10).

3.5 ORIGINS OF TRANSACTIONAL LEADERSHIP

Burns (1978) advanced two dichotomous types of leadership: transactional and transforming. Transactional leadership involved an exchange between leader and follower: jobs for votes and subsidies for campaign contributions were examples offered from the political realm (Spector, 2014:365). As a result of empirical findings (Rowold & Schlotz, 2009:36), the theory of transformational and transactional leadership has been expanded over the past two decades (Bass & Avolio, 1994; Bass, 1998:6). In its existing form, the full range leadership theory represents nine features that consist of five transformational leadership elements, three transactional leadership elements, and one non-leadership or laissez-faire leadership factor (Antonakis, Avolio & Sivasubramaniam, 2003:262). As indicated, the notion of transactional leadership grew out of the exchange-based theories of leadership that dominated the leadership literature until the 1980s (Hargis, Wyatt, & Piotrowski, 2001:54).

To this, Khan *et al*. (2016:3) inform that those leadership theories by the late 1970s and early 1980s started to diverge from the specific perspectives of the leader, leadership context and the follower, and toward practices that concentrated further on the exchanges between the followers and leaders. Transactional leadership was described as that in which leader-follower associations were grounded upon a series of agreements between followers and leaders (Rodrigues & Ferreira, 2015:495). The transactional theory was "based on reciprocity where leaders not only influence followers but are under their influence as well". Some studies revealed that transactional leadership shows a discrepancy in the level of leaders' action and the nature of the relations with the followers (Göbel, Vogel & Weber, 2013:37).

3.5.1 Definitions of transactional leadership

To Sithole and Sudha (2014:78), the transactional leadership style was first described by Max Weber in 1947 and again by Bernard M Bass in 1981. Transactional leadership is a style of leadership that focuses on the transactions between leaders and their followers (Bass, 1990:20). It is also known as a managerial leadership style. It follows leader-follower exchanges, and therefore it is defined as transactional leadership where leaders lead primarily by using social exchanges for transactions (Robbins, Judge & Sanghi, 2007:475). The leaders expect the subordinates to perform according to the instructions given

by the leader. The subordinates, in turn, will expect rewards for their performance from the leader. This also includes punishments and penalties in case the subordinates fail to perform.

Additionally, Hargis *et al*. (2011:54) narrate that the concept of transactional leadership grew out of the exchange-based theories of leadership that dominated the leadership literature until the 1980s. Bass (1985:88) defined transactional leaders as leaders who identify the needs of their followers and engage in exchange interactions with them based on objectives to be met. The higher-order factor of transactional leadership includes contingent reward; active management by exception; and passive management by exception.

In their study, Bass and Avolio (1994:4) observed transactional leadership as a type of contingent-reward leadership that had active and positive exchange between leaders and followers whereby followers were rewarded or recognised for accomplishing agreed-upon objectives. From the leader, these rewards might implicate gratitude for merit increases, bonuses and work achievement (Dlamini, 2017:14).

For good work, positive support could be exchanged, merit pay for promotions, increased performance and cooperation for collegiality. The leaders could instead focus on errors, avoid responses and delay decisions. This attitude is stated as management-by-exception and could be categorised as passive or active transactions. The difference between these two types of transactions is founded on the timing of the leader's participation. In the active form, the leader constantly observes performance and attempts to mediate proactively (Ali, Jan, Ali & Tariq, 2014:49). This leadership dimension emphasises close monitoring of followers for any deviances, mistakes, and errors to take corrective action as soon as possible (Groves & LaRocca, 2011:513). As such, transactional leadership focuses on the exchanges that occur between leaders and followers (Bass, 1985a:27; 1990:22; 2000:22).

These exchanges allow leaders to accomplish their performance objectives, complete required tasks, maintain the current organisational situation, motivate followers through contractual agreement, direct behaviour of followers toward the attainment of established goals, emphasise extrinsic rewards, avoid unnecessary risks, and focus on improving organisational efficiency (Burns, 1978:27).

Again, transactional leadership allows followers to fulfil their self-interest, minimise workplace anxiety, and focus on clear organisational objectives such as amplified quality, customer service, reduced costs, and increased production (Sadeghi & Pihie, 2012:188). Following McCleskey (2014:120), transactional leadership theory, as defined by Burns (1978:16), hypothesises the relationship between leaders and followers as a series of exchanges of indulgence designed to make the most of organisational and

individual gains. Transactional leadership evolved for the marketplace of fast, simple transactions among multiple leaders and followers, each moving from transaction to transaction in search of gratification.

The marketplace demands reciprocity, flexibility, adaptability, and real-time cost-benefit analysis (Burns, 1978:16). Empirical evidence supports the relationship between transactional leadership and effectiveness in some settings (Bass, 1985a:27; 2000:22; Bass *et al*., 2003:208; Zhu, Sosik, Riggio & Yang, 2012:192). Transactional leadership represents those exchanges in which both the superior and the subordinate influence one another reciprocally so that each derive something of value. Simply stated, transactional leaders give followers something they want in exchange for something the leaders want. Transactional leaders engage their followers in a relationship of mutual dependence in which the contributions of both sides are acknowledged and rewarded (Kuhnert & Lewis, 1987:649).

Summing up, transactional leadership involves a social exchange process where the leader clarifies what the followers need to do as their part of a transaction (successfully complete the task) to receive a reward or avoidance of punishment (satisfaction of the followers' needs) that is contingent on the fulfilment of the transaction (satisfying the leader's needs). In the case of active management by exception, the leader looks for mistakes, irregularities, exceptions, deviations from standards, complaints, infractions of rules and regulations, and failures, and he or she takes corrective action before or when these occur. Passive management by exception implies that the leader is reactive and waits to be informed about errors and deviances before taking action (Deichmann & Stam, 2015:210; Yahaya & Ebrahim, 2016:192). Transactional leadership is about the power to perform certain responsibilities and reward or punish according to employees' performance. If employees perform well, the leader will reward them, but if their performance is not as expected, they will be punished (Alkahtani, 2016:25).

3.5.2 Forms of transactional leadership

According to Bass' (1997a:133) reflection, transactional leadership uses rewards (positive) or punishments (negative), which include three components that are characteristically renowned as instrumental in a follower's objectives and achievement. Contingent reward is identified by Bass (1997a:134) as regarding leaders who connect on a productive path and sign a goal contract of reward for performance. They elucidate opportunities, exchange resources and assurance for support of the leaders. Transactional leaders organise mutually agreeable contracts with followers and make recommendations for positive productivity and successful performance. Active management by exception, as proclaimed by Bass (1997a:134), is about theory; leaders just observe followers and take action according to their respective performances. They implement policy to remedy the poor

performance and unwarranted errors by followers. Lastly, passive management by exception is about leaders who shy away from taking any remedial actions until the problem is critical. They just keep them aside and do not get involved in the situation until it has become severe. They do not interact until faults are brought to their attention (Bass, 1997a:134).

Subsequently, Bass (1998:6) asserts that transactional leadership occurs when the leader rewards or disciplines the follower depending on the follower's performance. Transactional leadership depends on contingent reinforcement, either positive contingent reward (CR), or the more negative active or passive forms of management-by-exception (MBE-A or MBE-P) (Bass & Avolio, 1994:4).

3.5.1 Contingent reward

This constructive transaction has been found to be reasonably effective, although not as much as any of the transformational components in motivating others to achieve higher levels of development and performance. With this method, the leader assigns or gets agreements on what needs to be done and promises rewards or actually rewards others in exchange for satisfactorily carrying out the assignment. Contingent reward leadership is characterised by the exchange of rewards from leaders to followers for accomplishing objectives (Bass & Avolio, 1993:116). With this style of leadership, the leader sets clear goals and objectives and clearly specifies what rewards (financial or non-financial) can be expected for achieving goals (Hargis *et al.*, 2011:54). Similarly, Khan *et al*. (2016:4) endorse that contingent reward leadership focuses on achieving results. As humans appreciate concrete, tangible, material rewards in exchange for their efforts, this behaviour therefore surfaced. Transformational leadership acknowledges individual talents and builds enthusiasm through emotional appeals, values, and belief systems; transactional leadership engenders compliance by appealing to the wants and needs of individuals (Nguyen, Kuntz, Näswall & Malinen, 2016:15). Manager-leaders who use contingent reward are expected to show direction to their employees so the job gets done. In a nutshell, key indicators of contingent reward encompass performance-based material rewards, direction-setting, reciprocity, and confidence-building in the team.

3.5.2 Management by exception (active and passive)

Developing from Bass and Avolio (1994:4) and Bass (1998:7), this corrective transaction tends to be more unproductive than contingent reward or the components of transformational leadership. The corrective transaction may be active (MBE-A) or passive (MBE-P). In inactive MBE-A, the leader arranges to monitor and take corrective action as necessary. MBE-P infers waiting for reactive action. Active MBE-P may be required and effective in some situations, such as when safety is supreme in

importance. Leaders sometimes must practise passive MBE-P when required to supervise a large number of subordinates who report directly to them.

In this element, Khan *et al*. (2016:4) assert that management-by-exception (active) is not the abandonment of leadership, characterised by a laissez-faire leadership. Leaders who follow management by exception (active) have an inherent trust in their workers to end the job to a satisfactory standard and avoid rocking the boat. "This type of leadership does not inspire workers to achieve beyond expected outcomes; however, if the target is achieved, that means the system has worked, everyone is satisfied, and the business continues as usual" (Bass & Avolio, 1993:116). There is a little sense of exploration or risk-taking, new perceptions, or white-water strategies in the case of management by exception leaders. It resembles need-driven change culture. To sum it up, management by exception (active) includes trust in workers, poor communication, maintenance of the status quo, and lack of confidence.

3.5.3 Management by exception (passive)

This is the style of transactional leadership in which the leaders avoid specifying agreement and fail to provide goals and standards to be achieved by staff. Sometimes, a leader waits for things to go wrong before taking action. In this leadership style, leaders use management-by-exception (passive), and only mediate when goals have not been met, or a problem arises. The management-by-exception leader with passive behaviour would not get involved until problems become serious. Leaders (passive) wait to take action until errors are brought to their attention (Northouse, 2015:171; Alkahtani, 2016:26).

3.5.4 Laissez-faire

This is the avoidance or absence of leadership and is, by definition, most inactive and most ineffective, according to almost all research on the style. As opposed to transactional leadership, laissez-faire represents a non-transaction. Necessary decisions are not made. Actions are delayed. Responsibilities of leadership are ignored. Authority remains unused (Bass & Avolio, 1994:4; Bass, 1998:7). Laissez-faire behaviours normally involve the postponement of decisions and submission of responsibility. Laissez-faire leaders offer no feedback or support to the follower. Laissez-faire leadership is a hands-off approach to leadership (Northouse, 2015:171).

On the whole, this style implies avoidance or absence of leadership. The leader leaves responsibility for the work to followers and avoids setting goals, clarifying expectations, organising priorities, becoming involved when important issues arise, taking a stand on issues, and making decisions. If this style is used

as a component of other leadership styles, it allows for the possibility of self-management (Van Eeden *et al*., 2008:255).

3.6 PREVIOUS STUDIES ON TRANSACTIONAL AND TRANSFORMATIONAL LEADERSHIP IN SOUTH AFRICA

Broad evidence exists, shown through a wide range of studies previously conducted on transactional and transformational leadership and various aspects pertaining to that in South Africa. Therefore, this section aims to provide a synopsis of the studies that examined these units of analysis and to propose a few research gaps that the researcher identifies. Table 3.3. presents a list of designated previous studies conducted on transactional and transformational leadership in South Africa from 2006 to 2020.

Table 3.3: Selected studies previously conducted on aspects related to transactional and transformational leadership in South Africa

Author/s	Year of publication	Topic	Research method used	Sample and Industry
Engelbrecht & Schlechter	**2006**	The relationship between transformational leadership, meaning and organisational citizenship behaviour	Quantitative research approach	Some employees from 76 media companies in South African (*N*= 496)
Nyengane	**2007**	The relationship between leadership style and employee commitment: an exploratory study in an electricity utility of South Africa	Mixed methods	35 managers 162 subordinates (*N*=197)
Van Eeden, Cilliers & Van Deventer	**2008**	Leadership styles and associated personality traits: Support for the conceptualisation of transactional and transformational leadership	Qualitative research approach	Managers (*N*=08)
Engelbrecht & Van Aswegen	**2009**	The relationship between Transformational and leadership, integrity and an ethical climate in organisations	Quantitative research approach	Employees from different organisations(*N* = 203)
Chipunza & Gwarinda	**2010**	Transformational leadership in merging higher education institutions: A case study	Qualitative research approach	Academics (*N*=210) and students (*N*=140)
Chipunza, Samuel & Mariri	**2011**	Leadership style, employee motivation and commitment: Empirical evidence from a consolidated retail bank operating in a depressed economy	Quantitative research approach	Retail bank employees (*N*=121); 17 managers and 104 non-managerial
Pieterse-Landman	**2012**	The relationship between transformational leadership, employee engagement, job characteristics and intention to quit	Quantitative research approach	Managers (*N*=185)

Author/s	Year of publication	Topic	Research method used	Sample and Industry
Garg & Ramjee	**2013**	The relationship between leadership styles and employee commitment at a parastatal company in South Africa	Quantitative research approach	Managers (*N*=58)
Pillay, Viviers, & Mayer	**2013**	The relationship between emotional intelligence and leadership styles in the South African petrochemical industry	Quantitative research approach	Leaders (*N*=161)
Wiza & Hlanganipai	**2014**	The impact of leadership styles on employee organisational commitment in higher learning institutions	Quantitative research approach	Academic staff (*N*=160)
Liphadzi, Aigbavboa & Thwala	**2015**	Relationship between leadership styles and project success in the South Africa construction industry	Quantitative research approach	Construction leaders (*N*=111)
Sechudi & Olivier	**2016**	The influence of transformational leadership on organisational citizenship behaviour in a South African combat military unit	Quantitative research approach	Military followers (*N*=300)
Herbst & Garg	**2017**	Transformational leadership potential at a university of technology	Quantitative research approach	Managers (*N*=124)
Makhathini & Van Dyk	**2018**	Organisational climate, job satisfaction, and leadership style influences on organisational commitment among South African soldiers	Quantitative research approach	Military personnel (*N*=150)
Engelbrecht & Samuel	**2019**	The effect of transformational leadership on intention to quit through perceived organisational support, organisational justice and trust	Quantitative research approach	Employees from organisations (*N* =207)
Parkinson	**2020**	Understanding Christian leadership	Qualitative	None (theoretical work).

Source: Compiled by the researcher

Table 3.3. provides evidence of studies conducted from 2006 until 2020 to explore previous studies on transactional and transformational leadership in South Africa from 2006 to 2020. Most of the studies were focused on determining the relationship between leadership style and various variables such as employee commitment, meaning and organisational citizenship behaviour, leadership behaviour, employee performance and organisational success. Therefore, few studies are linking transformational

and lead to innovation and performance among South African universities of technology, let alone the balanced scorecard perspective at the universities of technology in South Africa.

However, most studies within the South African context have focused mainly on the relationship perspective of the transformational and transactional leadership styles and the employee commitment, engagement, effectiveness and performance as key units of analysis (Engelbrecht & Schlechter, 2006; Van Eeden, Cilliers & Van Deventer, 2008; Chipunza, Samuel & Mariri, 2011; Pieterse-Landman, 2012; Makhathini & Van Dyk, 2018). This tends to show a significant inclination towards a comparable view. Little has been written on transformational and transactional leadership with key focus organisational innovation, a balanced scorecard (BSC) perspective as a strategic management performance metric used to identify and improve various internal business functions and their resulting external outcomes at the universities of technology in South Africa.

The question that begs for an answer is: "What causes most of the researchers to focus on a similar perspective and ignore key variables such as organisational innovation and BSC approach to performance evaluation in relation to transformational and transactional leadership in HEIs, particularly within [a] South African context as most HEIs in South Africa are opting for the performance management system (PMS)?" A performance management system, in this case, should not be confused as only focusing on employees, considering that HEIs are different from other public organisations due to the nature of their business. As such, in recent years HEIs have been under increasing pressure to change their instructional practices to meet the new requirements of students and the changing society as new competencies such as the ability of being a team player, problem-solving and using technologies have become fundamental for the young generations (Zhu, 2015:66).

3.7 THE CONCEPT OF INNOVATION

According to Abdullah, Omar and Panatik (2016:178), innovation is not new or full of complex history. It is as old as mankind. From the very first day of human evolution, mankind has started innovation by doing something new and unique with itself and its environment. On the other hand, Zawawi, Wahab, Al-Mamun, Yaacob, A/L Samy and Fazal (2016:88) state that innovation is frequently being confused with some concepts such as invention and change, among others. They further highlight that the concept 'innovation' originates from the Latin word 'innovare', which means to make something new. Similarly, Drucker (1985:17) defines innovation as the entrepreneurs' specific tool to exploit new ideas and methods for a diverse business or service. Furthermore, he insinuates that innovation can exist as a

discipline that can be learned and practised. As such, innovation is also seen as a perception, practice, or purpose that is alleged to be novel by an individual or other unit of adoption (Daugherty, Chen & Ferrin, 2011:26; Gąsowska, 2016:60). Meanwhile, Baregheh, Rowley and Sambrook (2009:1334) declare that innovation can be defined as the effective application of processes and products new to the organisation and designed to benefit it and its stakeholders. Similarly, Kimberly and Evanisko (1981:69), and Damanpour (1991:556) assume that innovation is the use of new technical and administrative knowledge to offer a new product or service to customers. Consequently, they conclude that innovation is any practice that is new to organisations, including equipments, products, services, processes, policies and projects. Emerging from the preceding definition of innovation, Baregheh *et al*.'s (2009:1334) definition captures the necessary points of the definition of innovation.

The following figure depicts their diagrammatic definition of innovation.

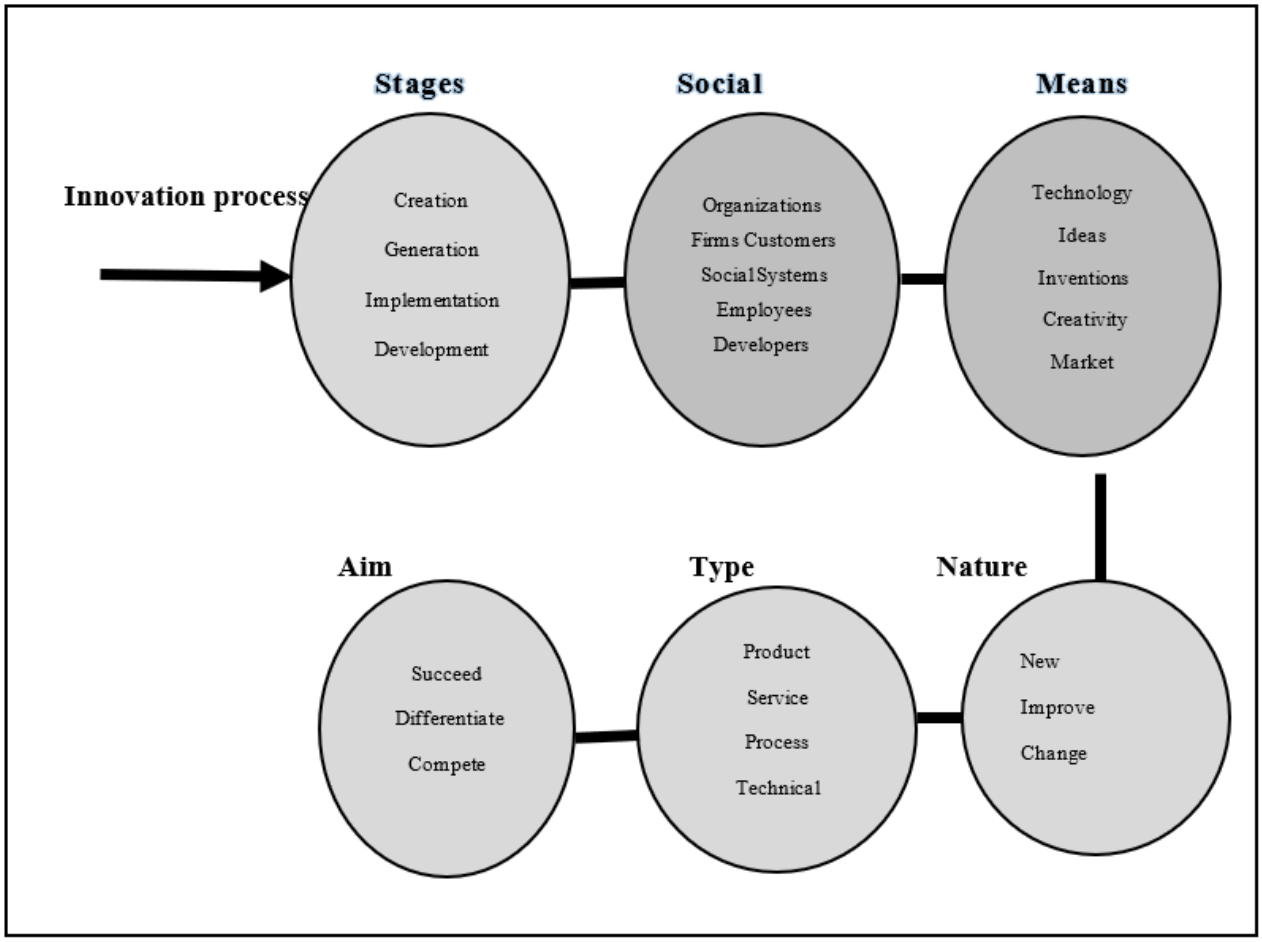


Figure 3.2: A diagrammatic definition of innovation

Source: Baregheh *et al*. (2009:1333)

Developing from Figure 3.2 and in line with Khazanchi, Lewis and Boyer (2007:871), Baregheh *et al*. (2009:1334) conclude that innovation is one of major relevance for organisations as it can be the source of additional revenues from new products or services and can also assist in saving costs or improving the quality of existing processes. However, the significance of innovation to competitiveness is acknowledged. On the other hand, understanding the meaning of innovation is a little more controversial, mainly in the academic sphere (Birkinshaw, Hamel & Mol, 2008:825), in which research is largely focused on technological innovation to the detriment of other types of innovation.

Consequently, Tierney and Lanford (2016:1) suggest that within academia, an authoritative explanation of innovation has proven elusive as individual disciplines conceptualise innovation in markedly dissimilar ways (Baregheh *et al*., 2009:1333). Sociologists, for example, might define innovation as "the process of introducing new elements into a culture through either discovery or imitation" (Schaefer, 2012:57). Contrary to the sociologists, other scholars such as Birkinshaw *et al*. (2008:825) from the field of business management may stress different aspects of innovation, asserting that it is the invention and implementation of management practice, process, structure or technique that is new to state of the art and is intended to further organisational goals.

As a result of the confusion relating to the definition of the concept, Tierney and Lanford (2016:2) insinuate that researchers, dedicated to innovation studies, an emerging field whose academic literature has grown enormously in recent years (Fagerberg & Verspagen, 2009:218), are currently comfortable with a broad definition of innovation, namely: "new combinations of existing knowledge and resources" that leaves room for customisation (Fagerberg, Fosaas & Sapprasert, 2012:1132). In the meantime, individuals representing a range of disciplinary and cultural backgrounds either dismiss innovation as dull jargon or warn that innovation is dangerously close to being stripped of meaning and utility due to ambiguous overuse (Feldman, 2002:49; Erwin & Kraksuer, 2004:111; Page, 2014:218).

Accordingly, Tierney and Lanford (2016:2) pronounce that some authors have bemoaned this absence of harmony concerning a single, unifying definition of innovation (Adams, Bessant & Phelps, 2006:21; Sarros & Cooper, 2008:145). Nonetheless, the current popularity of innovation may be attributable to its transferability and reconceptualisation across diverse disciplinary areas, time periods and cultures. Considerably, Godin (2014a:7; 2014b:5; 2014c:5) has convincingly argued that innovation, when observed as a phenomenon of intellectual history, should, in fact, be reflected as a 'concept' rather than as a static word with a fixed meaning in time.

3.7.1 Conceptual foundations of innovation

Following the confirmation by Century and Cassata (2015:81), measuring the extent and nature of innovation implementation and measuring the factors affecting the implementation process are critical steps for understanding how, why, and under what circumstances educational innovations work (Ruiz-Primo, 2005:3; O'Donnell, 2008:33; Hulleman & Cordray, 2009:89; Sanetti & Kratochwill, 2009:446). Before this can happen, however, the implementation research field needs to take some fundamental and essential steps (Century & Cassata, 2015:81).

In relation to the Oslo manual, the Organisation for Economic Co-operation and Development [OECD] **(**2018:45), the conceptual foundations for innovation measurement mainly result from the management and economics disciplines. Management views on innovation cover how innovation can change an organisation's position in the market and how to generate ideas for innovation. Additionally, the OECD (2018:146) posits that economic perspectives examine why organisations innovate, the forces that influence innovation, the factors that hinder it, and the macroeconomic effects of innovation on an organisation, business, or economy, which include the education sector.

Meanwhile, Century and Cassata (2014:81) agree with the OECD (2018:146) that measuring the extent and nature of innovation implementation and measuring the factors affecting the implementation process are critical steps for understanding how, why, and under what circumstances educational innovations work.

3.7.2 Definitions of organisational innovation

Evolving from Armbruster, Bikfalvi, Kinkel and Lay (2008:2), the current literature on organisational innovation is varied and scattered. There is no consensus on a definition of the term 'organisational innovation', which remains unclear (Lam, 2005:149). Different areas of research have advanced their own approaches to try and understand the complex phenomenon of organisational innovation. As Demircioglu (2016:1) suggests, organisational innovation is an idea, a new product, a new method, a new service, a new process, a new technology, or a new strategy adopted by an organisation. The introduction of something new to an organisation.

In agreement with Demircioglu (2016:2), Armbruster *et al*. (2008:2) indicate that there are various components of organisational innovation. A first literature component focuses on the identification of the structural characteristics of an innovative organisation and its effects on product and technical process innovations (Mintzberg, 1979:1; Teece, 1998:56).

A second literature element on organisational change and development theories accordingly aims to analyse and understand how organisations change. This field of research includes prototypes of how organisational change may occur (Hannan & Freeman, 1977:930; 1984:161) as well as classifications of different types of organisational changes from evolutionary to revolutionary (Levy & Merry, 1986:4). It aims at understanding the resistance to organisational change and how to overcome the inactivity of organisations and enable them to better adapt to changing environments and technologies.

The third component of literature focuses on how organisational innovations emerge, develop and grow at the micro-level within the organisation. This strand focuses on theories of organisational cognition and learning (Argyris & Schon, 1997:1) as well as on theories of organisational creativity (Amabile, 1988:125). Armbruster *et al*. (2008:2) uphold that all these research approaches understand organisational innovation either as an essential version to the introduction of new technologies or as a precondition for a successful product or technical process innovations. They try to comprehend how and under which circumstances organisations change. To do so, they analyse the causes, and the paths organisations take to attain a structure increasingly capable of continuous problem-solving and innovation.

However, these methodologies do not focus on the resulting status of the converted organisation or the concrete new elements of managerial and work practice, making it difficult to measure and compare the results of organisational innovations. Measuring and monitoring the adoption and performance impact of organisational innovations, it is essential to understand them on a theoretical level as the implementation of new and concrete organisational concepts (Armbruster *et al*., 2008:2). Therefore, they (Armbruster *et al*., 2008:2) define organisational innovation as the use of new managerial and working concepts and practices (Damanpour & Evan, 1984:398; Damanpour 1987:678). By applying this definition, it is possible to measure not only whether organisations have changed their organisation (structure and processes) within a defined time period, but also to provide an analysis of the adoption ratios of concrete organisational concepts in different organisations and organisation types (sector, firm size, etc.) and the extent of use within one company (Vom Brocke & Rosemann, 2015:110). Consequently, organisational innovation, defined as implementing new organisational concepts, serves as an indicator for the intra-firm diffusion of different organisational practices (Armbruster *et al*., 2008:3).

In agreement, Mokhber, bin Wan Ismail and Vakilbashi (2014:229) define organisational innovation as the tendency of the organisation to develop improved or new products and/or services and the successful bringing of those new products and/or services to the market. This is suggested as a specific and quantifiable definition as it combines common elements of many definitions and provides a market-orientation perspective that is an absent feature in most organisational innovation definitions (Gumusluoglu & Ilsev, 2009:467).

3.7.3 Types and sub-types of organisational innovation

According to Alves, Galina and Dobelin (2016:3), some scholars developed typologies for understanding organisational innovation; however, many overlapped. Therefore, Armbruster *et al*. (2008:646**)** mention two types of organisational innovation, namely structural innovation and procedural innovation. These two types are identical to workplace organisation and business practices mentioned in the OECD (2005). Alves *et al.* (2018:3), and Armbruster *et al.* (2008:646) presented the third type (external relations) as a different dimension where the company focus can be intra-organisational or inter-organisational.

This relates to a framework developed by Crossan and Apaydin (2010:1168) with determinants (leadership, managerial levers and business processes) and dimensions of innovation (innovation as both a process and an outcome). Likewise, this also relates to the wider aspect of business practices and workplace organisation. It is worth mentioning that recognising sub-types of organisational innovation helps achieve a better understanding of this concept, thereby avoiding misunderstandings in the innovation research area (Armbruster *et al*., 2008: 646). Nevertheless, Alves *et al.* (2016:3) insinuate that to develop an understanding of organisational innovation, it is still essential to expand the understanding of the theoretical and conceptual bases for the conceptualisation of this issue, which is missing in the literature.

3.7.4 The theoretical approaches and types of organisational innovation

Some researchers believe that its theoretical treatment is quite challenging, despite the exceptional importance of organisational innovations. As such, there is no dominant theory in this field. This suggests that the existing literature on organisational innovation is diverse and scattered (Hámori & Szabó, 2011:2). There is no undisputed agreement on a definition of the theory ‘organisational innovation’, which renders it confusing (Armbruster *et al*., 2008:645).

3.7.5 Factors influencing organisational innovation

In the higher education sector, HEIs are facing rapid social, technological and economic changes. Technology plays a central role in education's fundamental changes (Zhu, 2015:65). Similarly, developing from Shukla and Singh (2015:56), it is generally recognised that HEIs will have to innovate and transform their businesses to continue to keep pace with the ever-changing and developing business landscape in volatility, uncertainty, complexity and ambiguity (VUCA). Therefore, making a paradigm shift necessitates the organisations embracing new ideas, facilitating their realisation, and institutionalising creativity and entrepreneurial spirit. However, most organisations overlook significant dimensions that enforce innovation.

Innovation is no longer restricted to the process of creating something new from beginning to end, but includes the capacity to quickly adapt externally created innovations that may be of benefit to the organisation (Soltani & Hosseini, 2012:3554; Jantz, 2015:514; Shukla & Singh, 2015:56; Tuksinnimit, Durongwatana & Vadhanasindhu, 2015:569). Therefore, innovation is currently influenced by various factors, both internally and externally (Shukla & Singh, 2015:58). The following are some of these factors.

3.7.6 Organisational culture

In view of Zhu (2015:67), organisational culture is referred to as the workplace environment formulated from the interaction of people in the workplace. Organisational culture contains basic assumptions, values, shared philosophies, ideologies, beliefs, expectations, attitudes and norms in organisations (Lund, 2003: 221; Ahamed & Mahmood, 2015:161; Chipunza & Malo, 2017:149). Other scholars (Petty, Beadles, Chapman, Lowery & Connell, 1995:484) view culture as to how an organisation sets strategy, develops goals, measures progress, and defines products and markets. Culture is considered a mechanism for governing rational behaviour, a broad rule for appropriate action under specified contingencies.

Organisational culture starts with leadership and is reinforced with the accumulated learning of the organisational members (Rashid, Sambasivan & Johari, 2003:712). It can shape the behaviours of people in the organisation. Previous studies have suggested that supportive institutional environments can facilitate teachers' innovation and students' academic achievement (Hofman, Hofman & Guldemond, 2002:251).

3.7.7 Attitude to innovation

The most noticeable factor is the attitude to innovation with the cumulative variance of 10.814%. It shows that the attitude of management towards innovation plays a major role in creating an innovative culture in an organisation. It depends on the fact that whether the organisation or management is keen and makes unswerving efforts for innovation or whether it abandons activities midway and believes in pursuing tried and tested ideas (Casar, 2000:119).

3.7.8 Incremental innovation

The second is incremental innovation, with a snowballing variance of 19.552. It displays that in this organisation, product innovation means changing current products and ideas as non-conventional sources is holistically terminated. Often, most of the organisation's time is spent on resolving conflicts and deciding the value and contribution of employees involved in innovation. This suggests that there is a lack of information on customers/external data in the organisation (Sundström & Zika-Viktorsson, 2009:746; Sorokač & Mišota, 2017:1).

3.7.9 Flexibility and open communication

The next prominent factor is flexibility and open communication with a cumulative variance of 28.126, which depicts that the organisation has a flexible work environment; information flow is not hampered; there is a free flow of information. The organisation devotes more time/resources to innovation than any other activities (Martin & Rubin, 1994:171).

3.7.10 Employee adaptability

Employee adaptability is a significant factor, with 36.268 cumulative variance. It is perceived that when an organisation supports innovation activities, then the workforce actively participates in diverse activities organised by the organisation. The organisation provides extra incentives and benefits to employees engaged in innovation, and workers' contribution is strictly supervised and controlled for this purpose. This motivates employees to be part of an innovation agenda (Sony & Mekoth, 2016:21).

3.7.11 Idea generation

This factor, with 43.056 cumulative variance, shows that the organisation encourages employees for idea generation by conducting brainstorming sessions for new product ideas from time to time because they believe that product innovation enhances the image of the organisation (Girotra, Terwiesch, & Ulrich, 2010:4).

3.7.12 Traditional approach

The sixth factor, with 49.681 of cumulative variance, demonstrates that since the organisation believes in incremental innovation, totally new product ideas get diluted, and the organisation wants to take a calculative risk with tried and tested ideas (Lalima & Dangwal, 2017:129).

3.7.13 Results-oriented

The seventh factor, with 55.487 cumulative variance, depicts that the organisation encourages new ideas for product innovation and is result-oriented rather than technique-oriented (Sundström & Zika-Viktorsson, 2009:746).

3.7.14 Skill enhancement

This factor, with 61.143 cumulative variance, suggests that since innovation adds value to the work done by the employee, the organisation provides the necessary training to employees to upgrade their skill sets (Lima, Resende & Hasenclever, 2004:149).

3.7.15 Motivation to innovate

The ninth factor, with 66.208 cumulative variance, suggests that innovation is necessary to stay ahead of the competition, and if employees involved in innovation projects get recognition, they are motivated to perform (Anagha & Magesh, 2016:3).

3.7.16 Organisational support

The last factor, with 70.629 cumulative variance, depicts that the organisation encourages the employee for innovation, and availability of funds/budget is not a major constraint for them (Kraimer, Seibert, Wayne & Liden, 2011:485; Lancaster & Di Milia, 2014:642).

3.8 OUTCOMES OF ORGANISATIONAL INNOVATION

Organisational innovation is imperative because it can provide a sustainable competitive advantage (Weerawardena, O'Cass & Julian, 2006:38). Most organisations face ample competitive challenges in their environments due to rapid changes in the environment, especially technological changes. Equally, Farhang, Abkenari and Fadaee (2017:75) enunciate that innovation is measured as a critical factor for organisations to create value and sustainable competitive advantage in today's complex and changing environment. Organisations with added innovation, in response to the changing environments and creating development of new capabilities, will be more successful as it allows them to achieve better performance.

On the other hand, Osterloh, Frey and Frost (2001:4) consent that organisational innovation changes the hierarchies, routines and leadership of an organisation, which results in implementing new structural, managerial and working concepts and practices to improve coordination of work streams and employee motivation and performance. However, Armbruster *et al.* (2008:2) affirm that there have been few conceptual and methodological contributions to monitoring organisational innovations so far. Organisational innovations encompass changes in the structure and processes of an organisation due to implementing new managerial and working concepts and practices, such as the implementation of teamwork in production, supply chain management or quality management systems (Damanpour & Evan, 1984:396; Damanpour, 1987:678).

The importance of organisational innovation for competitiveness has been proven by numerous studies that analysed the impact of organisational innovations on business performance (Damanpour, Szabat & Evan, 1989:592; Caroli & Van Reenen, 2001:14; Damanpour, 2010:996; Hervas-Oliver, Sempere-Ripoll & Boronat-Moll, 2014:881). These studies point to two different results. Firstly, organisational innovations act as the prerequisites and facilitators of an efficient usage of technical product and process innovations as their success depends on the degree to which the organisational structures and processes respond to the use of these new technologies. Secondly, organisational innovations present an immediate source of competitive advantage since they themselves have a significant impact on business performance regarding productivity, lead times, quality and flexibility (Womack, Jones & Roos, 1990:3; Ali, Kan & Marko Sarstedt, 2016:5318*)*.

Although these studies have shown the importance of organisational innovations for business performance, defining and measuring organisational innovation still lag behind. There are different interpretations of the term 'organisational innovation', and the lack of a widely accepted definition causes difficulties in designing and implementing measures and indicators that sustain validity over a wide coverage (Lam, 2005:3; Cheng, Yang & Sheu, 2014:2).

Subsequently, de Oliveira and dos Santos (2019:4) advise that studies that address the consequences of adopting innovations are rare, with a preference for studies that address the positive aspects of these innovations, with some exceptions that focus only on the negative aspects (Abrahamson, 1991:593; Tarafdar, Gupta & Turel, 2015:1). In this regard, the understanding of the phenomenon in all its fullness can contribute to giving voice to minorities, forgotten or neglected groups, which is particularly important regarding the actual context where governments are trying to use public sector (HEIs)

innovation to solve complex problems (Kattel, Cepilovs, Drechsler, Kalvet, Lember & Piret Tõnurist, 2013:1; De Vries, Bekkers & Tummers, 2016:152; Karo & Kattel, 2016:7).

3.9 BARRIERS TO ORGANISATIONAL INNOVATION

Higher education is widely considered an essential commodity worldwide. In South Africa, over 200 public and private post-secondary institutions enrol above one million students per annum. Over the past few decades, higher education has expanded significantly, particularly after the introduction of the National Student Financial Aid Scheme (NSFAS) that provides educational opportunities for an increasingly diverse population and offers a plethora of courses of study from certificates to doctorates in hundreds of subjects (Brewer & Tierney, 2010:1). Higher education institutions continue to produce innovative scientific discoveries and inventions such that the research HEIs remain a central driver for creative vitality across urban and regional areas.

Furthermore, Brewer and Tierney (2010:1) assert that despite the higher education being widely considered as an essential commodity worldwide, there is a snowballing concern that HEIs are ill-equipped to adapt to a fast-changing environment and that traditional institutions are resistant to enabling new providers to enter the marketplace. Similarly, there exists a substantial number of barriers that hinder a culture of innovation, particularly in the public sector. Unsurprisingly, some bureaucracies rely on old organisational models with a one-way communication style, compliance, order, and control rather than on new and creative organisational models that foster commitment and enhance communication among all members of an organisation (Moussa, McMurray & Muenjohn, 2018:232).

Successful innovations do not flourish in the traditional and old bureaucratic model (Vigoda-Gadot, Shoham, Schwabsky & Ruvio, 2005:60). In other words, traditional public organisations are often ineffective and restrain endeavours that can promote innovation. Similarly, fostering innovation in the public sector requires different activities that defeat classic bureaucratic models (Vigoda-Gadot, Shoham, Schwabsky & Ruvio, 2008:308). It is significant also to highlight the barriers to innovation in the higher education sector, which have to be addressed to maintain successful and systemic innovation. Barriers to innovation are defined as obstructions that delay organisations to embrace or implement innovations successfully (Wipulanusat, Panuwatwanich, Stewart & Sunkpho, 2019:13,16). Most barriers appear within the context of organisational, political, economic and social aspects.

Similarly, Borins (2006:16) divided the barriers in public sectors into three groups: (1) political barriers arising in the political environment; (2) internal barriers arising within the organisation; and (3) external

barriers caused by the external environment. The internal barriers include insufficient human or financial resources, little management support, few incentives for staff, staff resistance, and a risk-averse culture. The external barriers include regulatory obligations and an ambiguous acceptance by clients. Based on the preceding paragraph, the following factors function as significant barriers to innovation in the higher education sectors, as depicted in Figure 3.3.

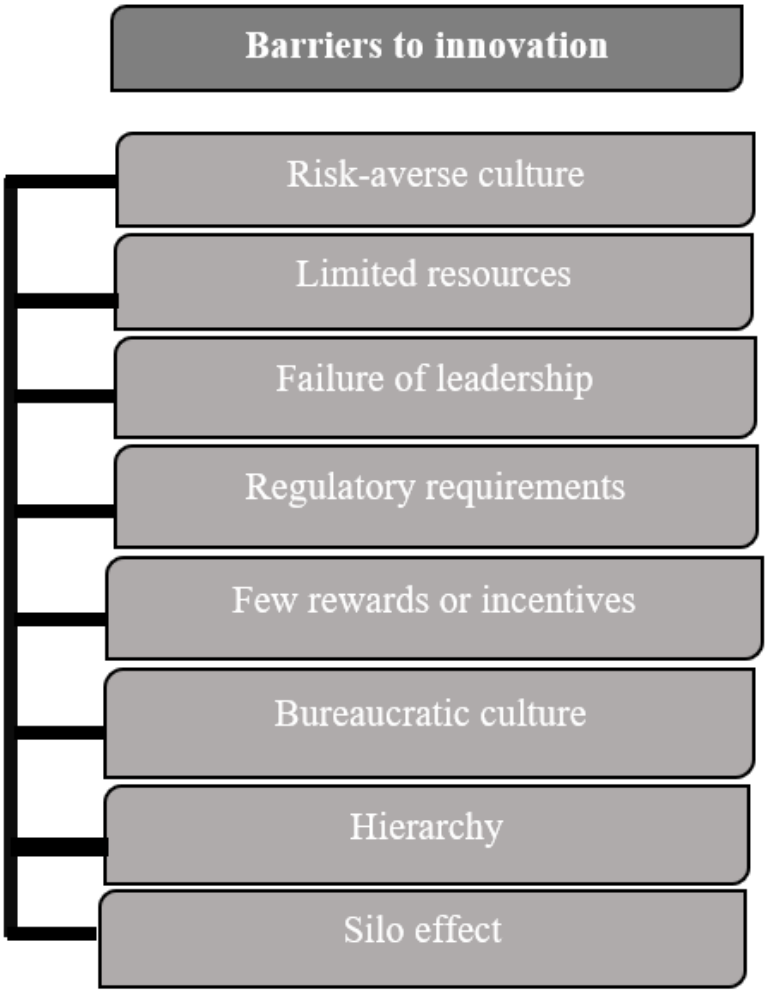


Figure 3.3: Barriers to innovation

Source: Adapted from Wipulanusat, Panuwatwanich, Stewart and Sunkpho (2019:13)

3.9.1 Risk-averse culture

The higher education sector is regarded as risk-averse (Koch & Hauknes, 2005:30). The duties to maintain continuity and provide acceptable standardised services and accountability to citizens are subject to the possibility of political and media criticism when policies or programmes seem unsuccessful. The negative consequences of risk-taking in the higher education sector can be drastic and

can include "political damage to the sector, public criticism, possible legal consequences, diminished career prospects, and damage to personal reputation." Therefore, these reasons often lead to a culture of risk aversion, which impedes innovation (Wipulanusat *et al*., 2019:16).

3.9.2 Limited resources

To drive a successful innovation implementation, organisations require human and financial resources. However, higher education is often confronted with skills shortages (Moloi, *et al*., 2014:472) in their workforce and budgetary constraints, as reflected in this comment: "The higher education sector faces discrete skills shortages; there is an ageing population and a fiercely competitive labour market. All of which are situated within a tight fiscal environment that continues to demand seamless service delivery" (Wipulanusat *et al*., 2019:17). The higher education sector also has a duty to utilise resources effectively.

Innovation is normally funded using budgetary cost savings brought about by enhanced efficiency. However, the obstacle with these budgets is that they are unpredictable (Borins, 2006:16). Moreover, innovation normally cannot break even within the short-term horizon. Consequently, public servants hesitate to integrate innovation initiatives into resource planning due to concerns that such cost will be considered too risky and funds should be allotted to other items (Wipulanusat *et al*., 2019:17).

In view of the above, this study, however, suggests that limited resources could have both positive and negative consequences for innovation. Resources themselves can also have a positive or negative effect. Resource slashes can in fact motivate innovation by requiring staff to rethink how they can accomplish the best result with fewer inputs.

3.9.3 Failure of leadership

In any organisation, leadership plays a significant role to enable innovation by creating an inviting or homely climate in which subordinates interact/split and operate as collective/division and family/enemies. Therefore, leadership is undoubtedly a key success or failure factor in organisational innovation. Executive management's commitment to the culture and attitudes toward innovation can be demonstrated by a willingness to accept the risk and encouraging and rewarding innovative behaviour (Wipulanusat *et al*., 2019:17). Leaders must find mechanisms to encourage the generation, adoption and implementation of innovations. Nevertheless, frequent changes in organisational leadership occurring from the exchange of executive office-bearers or the end of terms of office thereof are major barriers to innovation processes in higher education. This phenomenon is called the 'too many hats' syndrome

(Raipa & Giedraityte, 2017:60). Therefore, frequent leadership changes make it difficult to initiate innovative projects and drive change and innovation in higher education.

3.9.4 Regulatory requirements

Approval processes in the public sector are profoundly regulated by regulations and laws, which can be fixed and burdensome (Drees & Heugens, 2013:1674). Activities in such organisations are also administrated by common, abstract and clearly-defined regulations and policies, which exclude requirements for the continuance of specific mandates for each unique case (Borins, 2006: 17). In order to be successful, innovation processes need to acknowledge that rules are not sacrosanct; therefore, they require 'breaking the rules.' In addition, many HEIs are confronted with legal requirements. More regulations do not automatically assure better discipline. Therefore, the red tape of the past should have no place in the innovative organisation. Instead, organisations need to ensure that standards are up to date and provide appropriate regulations to enable ideas to be taken to citizens (Raipa & Giedraityte, 2014:12).

3.9.5 Few rewards or incentives

The higher education sector has generally had severe punishments for failed innovation rather than rewards for successful ones. Higher education staff may be scared of possible consequences and are not inclined to act innovatively. While HEI staff may attempt to be creative and innovative, there is scarce feedback on ideas. Innovative projects are rarely encouraged, and there is a lack of recognition of innovators. In some organisations, processes or attitudes tend to punish innovators by transferring the risk of failure onto them (Perry & Buckwalter, 2010: S242; Wipulanusat *et al*., 2019:16).

3.9.6 Bureaucratic culture

As suggested by Raipa and Giedraityte (2014:12), HEIs commonly have a bureaucratic organisational structure. Bureaucracy relates to the precise separation of unified activities regarded as responsibilities inherent in a particular department/faculty and hierarchical management based on supervisory relationships. Therefore, HEIs are also characterised by a bureaucratic culture based on standardisation and formalisation of work processes (Hamson, 2004:6).

3.9.7 Hierarchy

Highly hierarchical organisations thwart innovation in the public sector, and senior officers may hold the opinion that innovation can result in threats to existing hierarchies. There is a perception among many public servants that seniority or position generally has rules whose opinions are accepted or respected. A host of internal hierarchy horizontal constraints tend to inhibit the interaction necessary to generate novel

ideas, and vertical barriers can hamper novel ideas from bubbling up to be determined (Eggers & Singh, 2009:7). In hierarchical structures, novel ideas have to pass through many steps of approval processes. In view of this, the silos can be a significant barrier in terms of collaboration between each department or faculty. The major obstacles to innovation may not from result deficiencies of individual talent, but from deficiencies of collaboration (Eggers & Singh, 2009:9).

3.10 ORGANISATIONAL INNOVATION IN HIGHER EDUCATION

In his fundamental study, Damanpour (2017:2) argues that research on innovation extends over many fields of inquiry, including science and engineering, humanities and art, and social sciences (Demircioglu, 2017:1). In higher education, innovation has been researched at different levels of analysis: individual, group, organisation, industry and economy.

Meanwhile, Brennan, Broek, Durazzi, Kamphuis, Ranga and Ryan (2014:2) hypothesise that a higher education innovation system can be seen as a set of functions, components and relationships, which allow researchers to disaggregate the various levels of interactions among the elements of the system and analyse the unfolding of innovation in higher education, as summarised in Table 3.4. below.

Table 3.4: Higher education innovation system

Higher education innovation system		
Functions	**Components**	**Relationships**
▪ Education ▪ Research ▪ Engagement (third mission)	▪ Direct and indirect actors ▪ Institutional and individual actors	▪ Collaboration/conflict moderation ▪ Substitution ▪ Networking

Source: Adapted from Brennan *et al*. (2014:2)

The concept of organisational innovation is defined as the study of innovation in organisations, including both business and public organisations. As such, organisational innovation research examines what external and internal conditions encourage innovation, how organisations manage innovation processes, and in what ways innovation changes organisational conduct and outcome (Damanpour, 2017:2).

Similarly, Demircioglu (2017:1) regards organisational innovation as introducing something new (an idea, product, service, technology, process and strategy) to an organisation. Lam (2006:115) refers to organisational innovation as the "creation or adoption of an idea or behaviour new to the organisation." Likewise, Damanpour (1991:556) defines innovation as "adoption of an internally generated or purchased device, system, policy, program, process, product, or service that is new to the adopting

organisation." Although the aim of innovations is to make something better, not all innovations are successful. Consequently, sources of innovation in different organisations are hardly known (Coccia, 2017:1053). On the contrary, Demircioglu (2017:3) delineates that innovation, particularly in the public sector, may come from employees' workgroups, organisational leaders, the government, other public agencies (e.g. regulatory agencies), industry stakeholders, universities, and members of the public. Consequently, sources of innovation can be top-down (e.g. ideas coming from the organisational leaders and government), bottom-up (e.g. ideas coming from the employees' workgroup), or external (e.g. ideas coming from the universities and the industry stakeholders).

This contention augurs well with Aminbeidokhti, Jamshidi and Hoseini (2016:1153) when they posit that changes happen very quickly and from everywhere else in a contemporary business environment. Therefore, in the competitive world of the business environment, organisations need to respond efficiently to the incessant changes or go under the world of business changes from capital domination to knowledge priority. As a result, to perform better than others, an organisation should develop human resources and increase the amount of available knowledge and information (Wiśniewska & Wiśniewski, 2012:1620). In addition, Demircioglu and Audretsch (2017:1681) argue that even a small innovation in the public organisation may yield large outcomes or effects beyond the limits of the public sector itself.

The forgoing implication, in line with Aithal and Aithal (2019:18), implies that innovation is measured as the essence of HEIs and universities in particular to survive, sustain, differentiate, monopolise, and develop in their industry. These scholars, therefore, assume that the significant innovations of universities should be focused on five key areas to develop core resources, which include (1) physical infrastructure, (2) digital infrastructure, (3) innovative teaching-learning infrastructure, (4) intellectual property infrastructure, emotional infrastructure, and (5) network infrastructure (Aithal & Aithal, 2019:18).

Although Aithal and Aithal (2015:2464) define education as the most important thing for any country to develop and prosper, they further indicate that the higher education organisation is one of the highly unstable industries because the systems and the models are ever-changing due to changes in the environment, technologies, perception of stakeholders and consequently with time. These changes create a higher education system from teacher-driven to student-driven, from student-driven to organisation-driven, and from organisation-driven to technology-driven. In order to effect these changes, many countries have experimented with different prototypes of higher education in which the successful model found until now is a mixed model where both public universities and private universities are allowed to compete to enhance quality through innovations (Aithal & Aithal, 2019:18).

In line with Aithal and Aithal's studies (2019:18), the lifecycle model of an HEI based on its essential strategies is shown in Figure 3.5, which assumes that critical strategic stages in an HEI lifecycle are the survival stage, sustainability stage, differentiation stage, monopoly stage, and developed stage in their industry. Primarily, in the survival stage, HEIs have to survive many challenges using black ocean strategy (a kind of survival strategy to foresee the organisational challenges and resolve them effectively to continue in its business market by means of a kind of black magic that may be legal or illegal, ethical or unethical), including influence, lobbying, bribing, and corruption and identifying and encashing opportunities HEIs struggle for survival.

In the second stage, called the sustainability stage, HEIs establish themselves in terms of offering a variety of courses, making innovations in physical infrastructure facilities. In the third stage of their growth, HEIs follow a differentiation strategy from their competitors by giving importance to both the development and quality of services through innovations in teaching-learning methods. The fourth stage is establishing a monopoly by giving importance to digital infrastructure, intellectual property infrastructure, and emotional infrastructure. Finally, HEIs may reach their mature stage, called the developed stage, in which, apart from other five infrastructures, they establish an effective and pleasant relationship with other industries and offer industry-oriented programmes, industry integrated programmes (particularly universities of technology and technical and vocational education and training (TVET) colleges through work-integrated learning (WIL) programmes) for the benefit of growth and prosperity (Aithal & Aithal, 2019:18). The preceding discussions are illustrated in Figure 3.4.

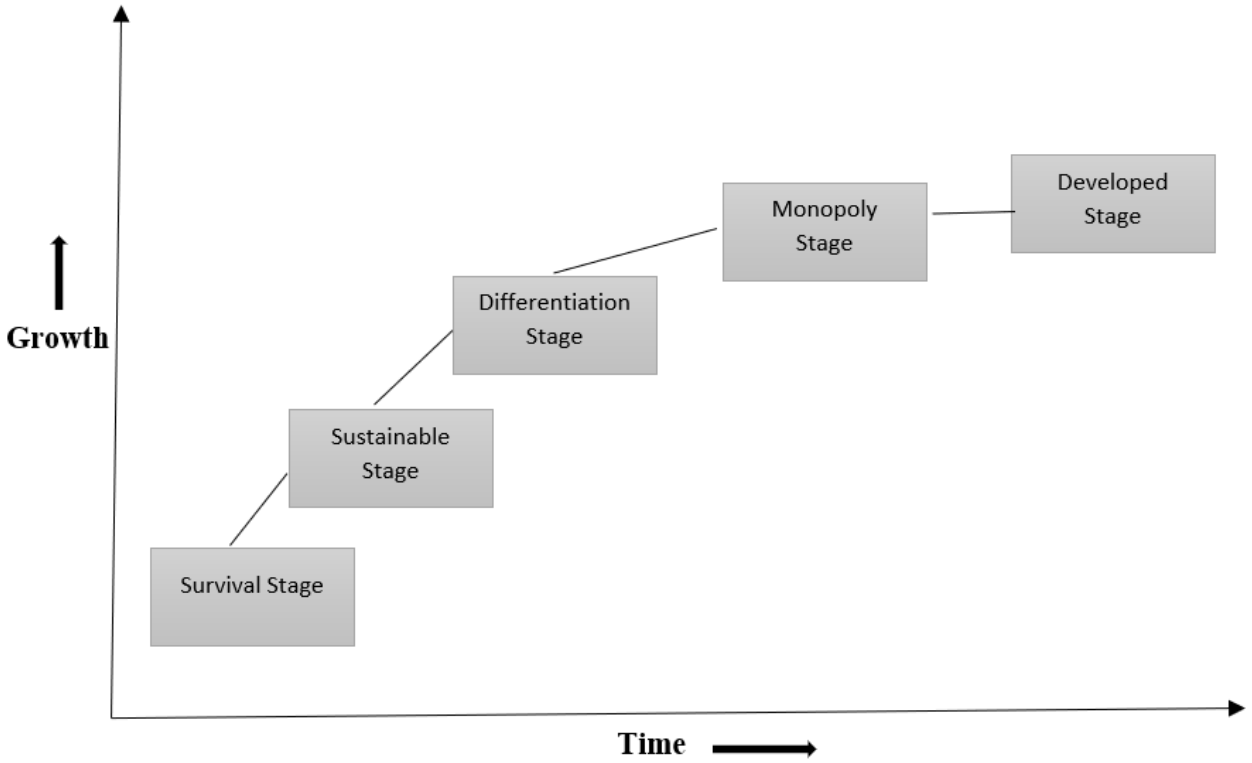


Figure 3.4: Growth stages of the lifecycle model of a university

Source: Adapted from Aithal and Aithal (2019:19)

Figure 3.5. displays that the major innovations of HEIs should be focused in five areas to develop core resources (core resource model for a university [HEI]) discussed earlier), which include (1) physical infrastructure, (2) digital infrastructure, (3) innovative teaching-learning infrastructure, intellectual property infrastructure, (4) emotional infrastructure, and (5) network infrastructure (Aithal & Aithal, 2019:19).

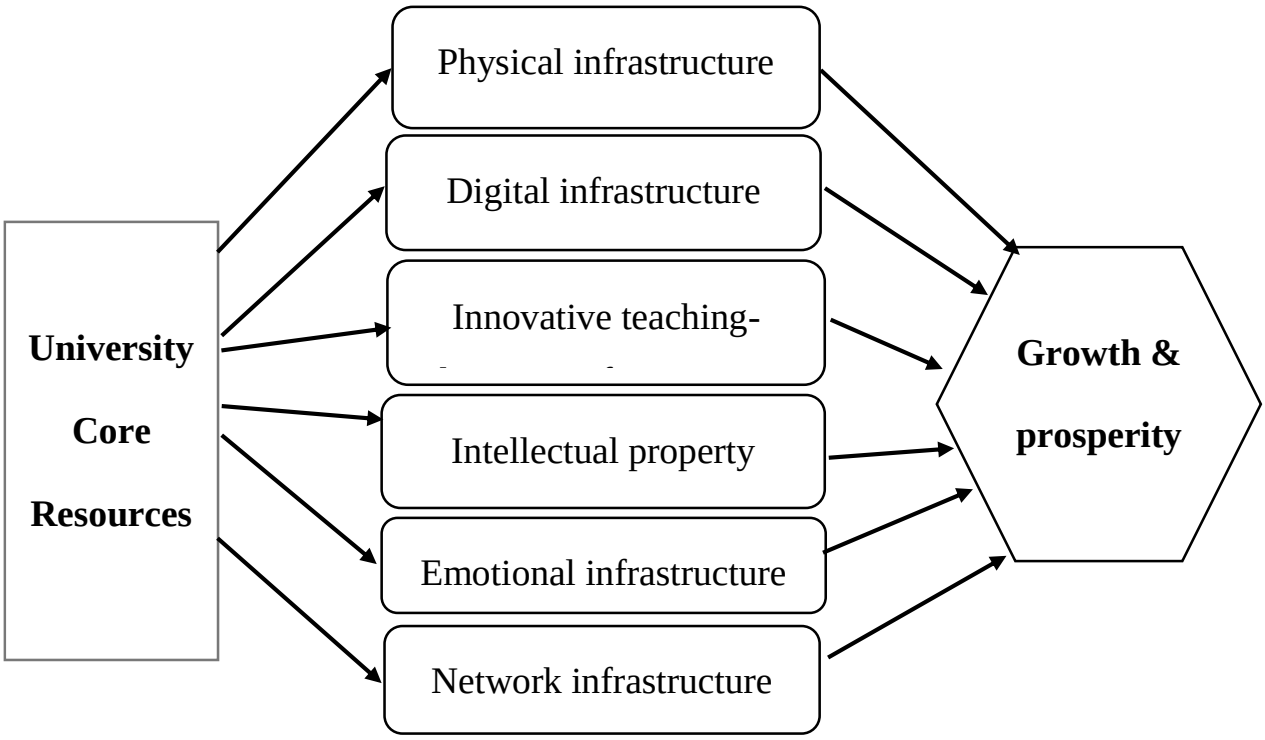


Figure 3.5: University core resources model for growth and prosperity

Source: Adapted from Aithal & Aithal (2019:19)

3.11 RESEARCH ON ORGANISATIONAL INNOVATION IN SOUTH AFRICA

Researchers (Sibanda, 2007:15; Pouris & Pouris, 2011:5; Armstrong, 2014:4) posit that there is a lack of an appropriate business model and foundations for producing innovation/inventions at HEIs in South Africa. In spite of possessing creative knowledge, skills and a desire to produce original ideas and initiatives, academics are constrained with work overload, insufficient modelling of innovative behaviour and inadequate funding support. The current programmes at HEIs should aim to develop academics' knowledge, skills and attitudes and other personality traits towards innovation. Table 3.5. presents several studies conducted on organisational innovation in South Africa.

Table 3.5: Selected studies previously conducted on innovation in the higher education sector in South Africa

Author/s	Year of publication	Topic	Research method used	Sector
Alessandrini, Klose, & Pepper,	**2013**	University entrepreneurship in South Africa: Developments in technology transfer practices, Innovation	Quantitative (survey questionnaire and structured face-to-face interviews)	Universities
Jakovljevic	**2014**	Empowering knowledge exchange and innovation through the communities of practice model (CoPM) in the ODL environment	Qualitative	Open distance learning higher education institutions
Mafenya	**2014**	Challenges faced by higher education institutions in research skills development: a South African open and distance learning case study	Case study	Universities
Barnard, & Van der Merwe	**2016**	Innovative management for organizational sustainability in higher education	Case study	University
Kruss & Visser	**2017**	Putting university-industry interaction into perspective: A differentiated view from inside South African universities	Mixed-methods comparative case study approach	Universities and industries
Jakovljevic	**2018**	A model for innovation in higher education	Qualitative	Higher education institutions
Jakovljevic	**2019**	Criteria for empowering innovation in higher education	Qualitative	
Marire	**2020**	Analysis of changes in total factor productivity for academic departments of historically privileged small university in South Africa.	Case study	Historically privileged small university
Chasi, & Rodny-Gumede	**2020**	Innovation in communication and media studies: reflections from South African academics	Qualitative	Higher education institutions
Urban & Gamata	**2020**	Academic entrepreneurship and organisational support factors	Quantitative survey	Higher education institutions

Source: Compiled by the researcher

The literature review shows that in an attempt to reinforce its position internationally, South Africa has encompassed the necessity for improving and exploiting the outputs of innovation by supporting processes to transform the country into a 'knowledge economy', where knowledge is the rudimentary system of capital and where economic growth is driven by innovation (Alessandrini, Klose & Pepper, 2013:1). Furthermore, studies emphasise that research is based on the recognition that national growth and competitiveness within the context of the emergence of a new knowledge society are dependent on incessant technological enhancement and innovation, driven by a well-organised, energetic research and development system that incorporates the research and training capacity of higher education with the needs of industry and of social reconstruction (Mafenya, 2014:438).

Researchers point out that there is a lack of an appropriate business model and foundations for producing innovation/inventions at institutions of higher education in South Africa. In spite of enjoying creative knowledge, skills and aspiration to produce innovative ideas and initiatives, academics are inhibited with the work overload, insufficient modelling of innovative behaviour, and inadequate funding support (Armstrong, 2014:1; Jakovljevic, 2018:1). Therefore, crucial elements are needed to fulfil innovation, such as an inherited drive for creativity and the availability of financial resources (Jakovljevic, 2018:3).

3.12 CHAPTER CONCLUSION

The purpose of this chapter was to discuss in detail the literature on TTL as well as organisational innovation. The chapter commenced by providing a generic overview of both leadership and innovation. The discussion on leadership involved key areas such as the concept of leadership, definitions and understanding of leadership and the origins of TTL. Individual TTL dimensions such as idealised influence, inspirational leadership, intellectual stimulation, and individualised consideration and contingent reward, management by exception (active and passive) and laissez-faire were each discussed. The chapter further outlines the theoretical approaches to organisational innovation, factors influencing it as well as the outcomes and barriers thereof. Lastly, the chapter provides a synopsis of organisational innovation in higher education and then provides the previous research conducted on organisational innovation in higher education in South Africa. The next chapter presents the discussion on the balanced score card (BSC) and the formulation of hypotheses.

CHAPTER 4: THE BALANCED SCORECARD PERFORMANCE AND HYPOTHESES FORMULATION

4.1 INTRODUCTION

This chapter aims to analyse literature on the BSC performance and to formulate the hypotheses of the study based on previous literature. Since the study at hand is basically about the BSC, it is acknowledged that an understanding of the BSC from the perspective of previous literature needs to be reviewed as part of the foundation of the overall study. It is, therefore, decided that an overview of the origins and foundations of the BSC is provided. The chapter uses a wide range of sources from local and international literature as it reflects on the various issues on the BSC as a performance measuring tool.

The chapter commences by analysing literature that focuses on understanding definitions and the nature of BSC as propounded by various scholars from varied viewpoints. Subsequently, the discussion focuses on the origins and conceptual foundations of the BSC. The discussion further provides an overview of the BSC for performance measurement. It is purported that the BSC recognises that financial metrics are the eventual outcome measures for organisation success. It, however, supplements these with metrics from three additional perspectives, i.e. customer, internal process, and learning and growth that are considered as the drivers for creating long-term shareholder value.

Additionally, the chapter brings to light the BSC as advocated to be balanced on numerous facades, such as short- and long-term objectives, financial and non-financial measures, lagging and leading indicators, and external and internal performance perspectives. The discussion on the BSC further includes its general application across the spectrum. Finally, the chapter emphasises previous local and international literature on the BSC in higher education. This is consequently designed to impart an understanding of the developments concerning the BSC in the higher education sector in South Africa and elsewhere around the world. The final sections of the chapter provide empirical literature, which is then used to formulate the hypotheses indicated in the conceptual framework.

4.2 DEFINITION OF THE BALANCED SCORECARD

The BSC is defined differently by different researchers. In considering it, two essential instants are acknowledged. In the first stage, the BSC is provided as a performance evaluation system (Kaplan & Norton, 1992:71; 1993:2; Kaplan 1994:15), which these authors defined as a performance management tool that enables a company to translate its vision and strategy into a tangible set of performance

measures. Furthermore, Abdullah, Umair, Rashid and Naeem (2013:134) define the BSC as a tool used by management to record the activities and actions of staff and control and monitor the results or consequences of the actions. By further expounding, Holmes, Amin Gutiérrez de Piñeres and Douglas Kiel (2006:3) define BSC as a comprehensive method of measuring organisational performance that is superior to traditional singular and efficiency-based measures of agency performance aimed at determining whether management is building the infrastructure necessary to sustain organisational and institutional resilience and accountability.

In the second stage, following the experience of implementing the BSC in numerous organisations, Kaplan and Norton (1996b:37) committed that managers were not using the BSC only as performance evaluation but also as a strategic management system. Consequently, in the second stage, Kaplan and Norton (1996b:39) argue that the BSC is more than an operational or tactical measurement system, but a management system (not only a measurement system) that enables organisations to explain their vision and strategy and transforms them into action (Benková, Gallo, Balogová & Nemec, 2020:17). Also, in line with Kaplan and Norton (1996b:37), the BSC is not a simple set of measures, but as per their definition, must follow two fundamental principles: all measures used must be based on the definition of objectives established by the company's mission and strategy, and a cause-and-effect relationship between the measures defined for the four perspectives must be ensured (Isoraite, 2008:20). Therefore, Tanyi (2011:5) defines the BSC as a tool that managers can employ to measure an organisation's operational success through direct causal-effect relations back into daily operations. Niven (2008:12) views the BSC as a wisely selected set of quantifiable measures derived from an organisation's strategy. The measures selected for the scorecard represent a tool for leaders to use in communicating to employees and external stakeholders the outcomes and performance drivers by which the organisation will achieve its mission and strategic objectives in the eyes of financial, customer, internal process and internal growth and development perspective.

4.3 THE ORIGINS AND CONCEPTUAL FOUNDATIONS OF THE BALANCED SCORECARD

The BSC was created in 1992 by two researchers of Harvard University, namely, RS Kaplan and DP Norton. It is a multi-dimensional system, the purpose of which is to describe, implement and manage the strategy of the company at all its levels (Kaplan, 2010:3). The BSC is a performance evaluation model that allows, by using the causal relationship concept, connecting performance indicators with receivable

benefits and ensuring the strategy's transformation to specific goals and actions (Gawankar, Kamble & Raut, 2015:9).

Many researchers assert that Kaplan and Norton developed the balanced score card in 1990 as a performance management device (Salem, Hasnan & Osman, 2012:2; Kommche, 2017:8; Utomo *et al.*, 2019:56; Nga & Trang, 2020:58). However, Kaplan (2010:2) disputes these assertions and confirms that he and Norton introduced the BSC in 1992. He declares that their study was based on a 1990 Nolan Norton multi-company research project that studied performance measurement in companies whose insubstantial assets played a central role in value creation. Their interest in measurement for driving performance improvements arose from a belief articulated more than a century earlier by a prominent British scientist, Lord Kelvin (1883), who said that:

> *When you can measure what you are speaking about and express it in numbers, you know something about it, but when you cannot measure it, when you cannot express it in numbers, your knowledge is a meagre and unsatisfactory kind. If you cannot measure it, you cannot improve it.*

As such, Kaplan and Norton (1992) believed that measurement was as important to managers as it was for scientists. If organisations were to improve the management of their immaterial assets, they had to integrate the measurement of intangible assets into their management systems. After the publication of the 1992 Harvard Business Review (HBR) article, several companies quickly adopted the BSC, giving Kaplan and Norton deeper and broader insights into its power and potential. During the subsequent 15 years, as it was embraced by numerous private, public, and non-profit enterprises around the world, Kaplan and Norton stretched and expanded the concept into a management tool for describing, communicating and implementing strategy (Kaplan 2010:2).

For them, Kaplan and Norton (1992:71), the BSC is like the dials in an airline cockpit. It gives managers complex information at a glance. Not only did the BSC move away from a narrow focus on traditional financial accounting measures of performance, but it also integrated the vision and strategy with the operations of the organisation in such a way that, in the words of Kaplan and Norton (1992:79) it "keeps companies looking – and moving – forward instead of backward." Kaplan and Norton (1992:72) suggested four different perspectives for managers to look at and evaluate the company, namely:

- the financial perspective;
- the customer perspective;
- the internal business process perspective; and

- the innovation and learning perspective.

In addition to financial measures that reflect what has happened in the past (lagging measures), operational measures affecting future financial performance (leading measures), and specifically customer satisfaction, internal processes and innovation and improvement were included in the balanced scorecard (De Wet & De Jager, 2007:99). In his 2010 study, Kaplan describes the roots and motivation for the original BSC article as well as the subsequent innovations that connected it to a larger management literature (Kaplan, 2010:3). This study uses the following structure for organising the origin and subsequent development of the BSC:

- BSC for performance measurement;
- strategic objectives and strategy maps;
- the strategy management system; and
- future opportunities.

4.4 BALANCED SCORECARD FOR PERFORMANCE MEASUREMENT

Figure 4.1 illustrates the original structure for the BSC. In this, the BSC preserves financial metrics as the eventual outcome measures for company success, but supplements these with metrics from three additional perspectives, i.e. customer, internal process, and learning and growth that are suggested as the drivers for creating long-term shareholder value (De Wet & De Jager, 2007:99; Kaplan, 2010:4).

According to Kaplan (2010:4), the BSC is considered as a performance measurement system that is grounded on four dissimilar but associated viewpoints (financial, customer, internal process, and learning and growth) that are derived from the organisation's vision, strategy and objectives (De Wet & De Jager, 2007:99). Subsequent to their initial study (1990), Kaplan and Norton followed up their work on the BSC with a number of books and articles, expanding their initial theories and integrating performance with strategy (Kaplan & Norton, 1996b:75; Kaplan, 1998:10; Kaplan, 2005:41).

As a result, from the initial introduction of the BSC archetype, numerous aspects relating to the weightings, the relationships between the drivers of performance, and the alignment of strategy, employees and performance measures have been expounded on by countless researchers, such as Ittner, Larcker and Meyer (2003:725), Banker, Chang and Pizzini (2004:22), Brewer (2004:59), Cokins (2004:67), and Dilla and Steinbart (2005:51).

The four perspectives of the balanced scored for translating vision and strategy are presented in the following figure (4.1.).

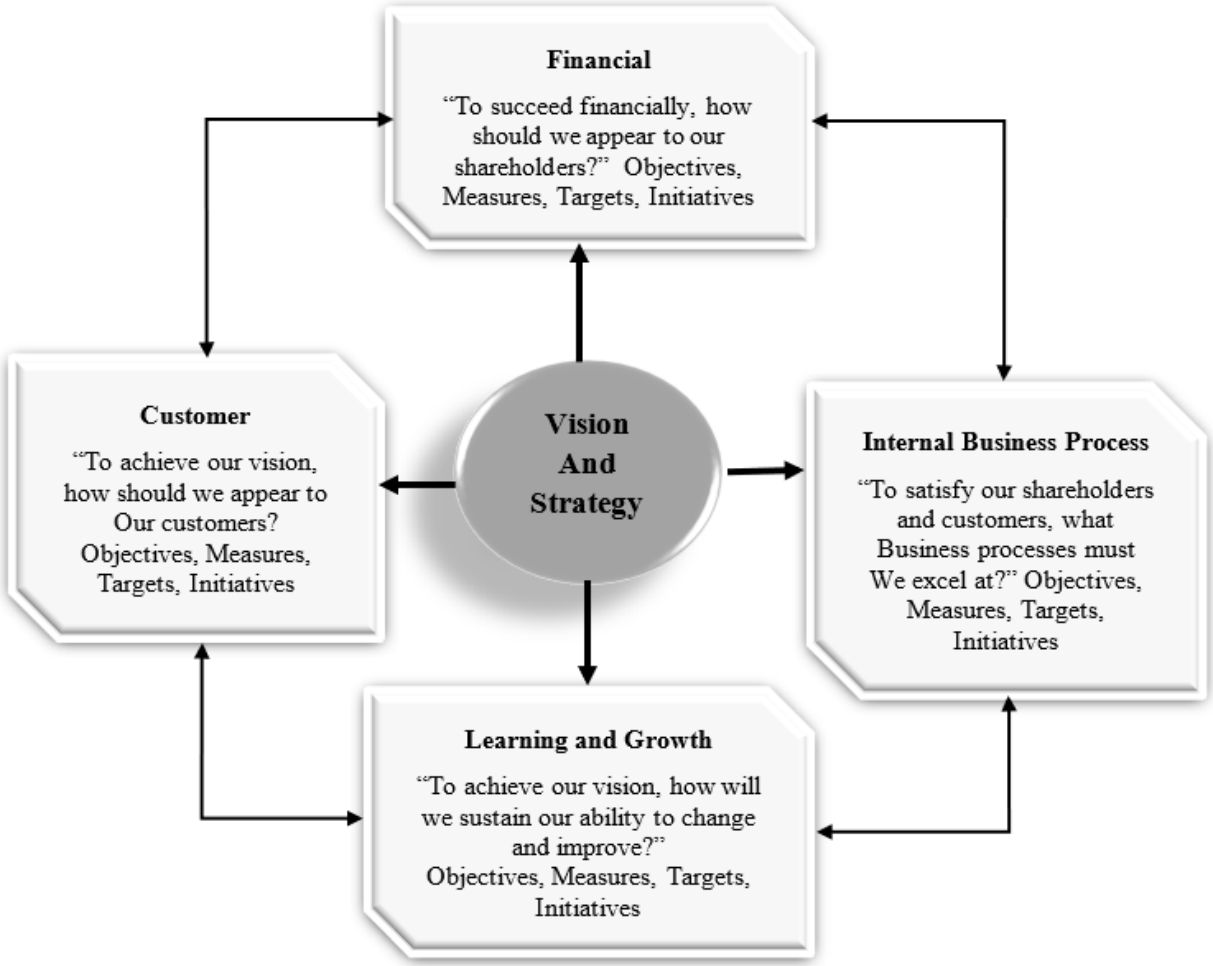


Figure 4.1: Translating vision and strategy: Four perspectives

Source: Adapted from Kaplan and Norton (1996c:54) and Kaplan (2010:4)

Some reviewers have recommended merging the BSC with other strategic management information not reflected in it. Among others, Bukh, Johansen and Mouritsen (2002:21) suggest combining the BSC with an intellectual capital statement, and on the other hand, Beasley, Chen, Nunez and Wright (2006:54) recommend combining the BSC with an enterprise risk management report. Amid all these suggestions, numerous writers, such as Atkinson and Epstein (2000:28), Davis and Albright (2004:150) as well as Drury (2004:999) have approved the importance and impact of the balanced financial scorecard in contemporary management.

However, despite extensive support for the BSC, some criticisms have been expressed, especially by Gering and Mntambo (2000:19), who believe that the BSC has failed to balance the interests of the

stakeholders, and by Angel and Rampersad (2005:33), who argue that there has been slight evidence indicating that the adoption of the BSC results in supplemented financial performance. Despite all these criticisms, other scholars believe that the impact of the BSC on contemporary management is indisputable (De Wet & De Jager, 2007:98; Rafiq, Zhang, Yuan, Naz & Maqbool, 2019:8). This is backed up by reports on the practical implementation of the BSC, which include remarks by Bean and Jarnagin (2002:55) who quote a survey finding that about 60% of Fortune 1 000 companies either use some kind of scorecard system or are experimenting with it. Evidence showcasing the effective implementation of the BSC approach by different organisations was published by Sim and Koh (2001:19) and Gumbus, Lyons and Bellhouse (2002:50).

Furthermore, Gumbus (2005:617) reports a survey finding that more than 50% of Fortune 500 companies used the balanced financial scorecard as a strategic management tool. From the reports of the widespread implementation of the BSC highlighted previously, as well as evidence of the sustained improvement of the BSC, it can be concluded that it cannot be regarded as a passing trend, but that it is indeed a valuable contribution towards strategic performance management (De Wet & De Jager, 2007:101). Therefore, Kazi, Radosav, Nikolic and Chotaliya (2011:51) confirm that one of the best approaches to identifying the appropriate performance metrics (i.e. key performance indicators [KPIs]) is through the use of a methodology known as the BSC. The balanced scorecard approach provides employers with an inclusive structure that translates a corporation's strategic objectives into a logical set of performance measures. It provides a framework that provides performance measurements and helps planners identify what should be done and measured. It enables executives to truly execute their strategies.

Additionally, other scholars add that the performance improvement process is regarded as a critical component of the strategic planning process (Pisel, 2008:1). The process is vital, and it has been practised by many companies worldwide for a long time. This process has been recently dubbed the BSC. The balanced scorecard combines financial and non-financial measures of performance in one single scorecard (Pandey, 2005:51; Cardinaels & Van Veen-Dirks, 2010:565). The BSC is a sophisticated tool for tying a compensation system to performance, which helps measure employees' success, including serving as a basis for awarding bonuses (Snapka & Copikova, 2011:42).

Performance measures are key components of an effective management control system. This system in any organisation involves gathering, summarising and analysing information to facilitate and organise planning, control and decision-making throughout the organisation and guide employee behaviour (Beuren & Teixeira, 2014:172). In essence, performance measurement is used mainly in making

decisions about employees' reward or compensation and/or rewards and sanctions (Jensen *et al*., 2019:7), future assignments and career advancement. While performance measurement enables organisations to turn assumptions into well-understood facts and shows the way to improve their business models, reward or compensation management tends to tie pay and other benefits to the attainment of objectives (Striteska & Jelinkova, 2015:290; Salah, 2016:2).

Performance management involves managing all elements of the organisational process, which impacts employee performance and encompasses goal setting (Choon & Patrick, 2016:83), worker selection and placement, performance appraisal/evaluation, compensation, training, development, and career management (Osemeke, 2012:83). Performance evaluation, which serves as an instrument for reporting on the success or failure of an operation, involves the periodic review of activities or operations of an individual, group or enterprise to ensure that its objectives are being met (Idowu, 2017:16). The BSC relies on four processes to bind short-term activities to long-term objectives: translating the vision, communicating and linking business planning and feedback and learning, and helping to communicate corporate objectives to people and teams performing the work. Because the BSC explicitly focuses on links among business decisions and outcomes, it is intended to guide strategy development, implementation and communication (Malina & Selto, 2001:4; Quesado, Aibar Guzmán & Rodrigues, 2018:186).

4.5 FINANCIAL PERFORMANCE

This section provides a comprehensive standpoint of financial performance in companies. It also presents an overview characterising the main features of financial performance. On discussing the financial performance, it also indicates the financial ratios and profitable ratios with examples of each type. This section is critical as it unfolds the nature of financial performance, which is one variable considered critical in the study. It further provides a theoretical discussion of the BSC application and compares it with other dissimilar measurement systems. In the final analysis, the section presents pertinent literature sources regarding the key focus areas of the BSC (i. e. the four perspectives), and more importantly, it will elaborate on the previous BSC studies conducted in relation to higher education globally.

Financial performance is an analysis conducted to see the extent to which a company has carried out its operational activities by using the rules of financial implementation properly and correctly; for example, by making a financial report that meets the standards and provisions in SAK (Financial Accounting Standards) or GAAP (General Accepted Accounting Principle). The success of a company in achieving

its goals and meeting the community's needs is very dependent on the company's performance and company managers in carrying out its responsibilities (Saputra, 2019:185).

Literature asserts that the financial performance of an organisation may be examined in various ways. Researchers have defined many sources to get information about a company. Therefore, financial reports have been prepared for many years in order to arrange a company's data in some specific format (Khan, Riaz & Iqbal, 2019:35).

According to Hasanaj and Kuqi (2019:17), there are numerous methods used by accountants, practitioners, and financial analysts to analyse the financial state of a company. As such, Andjelic and Vesic (2017:1) disclose that there are three groups of participants in the financial reporting process. These are a) users of financial statements, b) the accounting profession, and c) management of the reporting entity (legal entities). The users of financial statements are commonly thought to be external users, such as current and potential investors, lenders, business partners (suppliers and customers), employees and their trade unions, trade associations, government and other state institutions and the public at large.

It can be alleged that they have in common the expectation that they find the financial statements comprehensible, relevant, reliable, loyal, timely and with comparable information on profitability, solvency, liquidity and efficiency of the asset management of the reporting entity in order to predict its future, first of all, winning cash, but also the overall financial-structural performance, and decision-making, often through fateful decisions about their engagement (Andjelic & Vesic, 2017:1).

The analysis of the financial statements is a key method of comparing, judging or evaluating the situation of particular parts of a balance sheet on the basis of which important decisions are made. So, financial analysis is an analysis of balance sheets for the enterprise's past, present and future. From the previous studies of financial performance, it is unmistakable that financial statements have been used to determine the net worth and the financial position of an entity (Malichová & Ďurišová, 2015:238). Financial statements are considered as the condensed performance reports used in business; they have as their main objective to provide useful information about the performance, financial position and changes in the financial position of a certain company (to support and/or assist in the decision-making process of a large number of stakeholders) (Batchimeg, 2017:22; Dos Santos, Pires & Fernandes, 2018:9).

Consequently, Lau (2015:4) agrees that it is a requirement for organisations to produce general purpose statements that validate accountability to numerous groups of stakeholders of organisations, financial reports and their related performance measures such as profit, sales and costs as they have traditionally

focused on (1) what can be measured objectively, (2) what can be quantified in financial terms, and (3) financial outcomes.

Additionally, Lau (2015:4) cautions that with respect to time limits, because of the need to produce periodic financial reports (financial measures are generally short-term measures corresponding to monthly, quarterly or annual reporting periods), such preoccupations with objectivity, financial outcomes and short-term horizons could be at the expense of the accuracy and completeness of information measured, what needs to be measured and what is most useful to managers. Consequently, financial measures may generally be (1) too aggregate, (2) too narrow, and (3) too myopic to capture the company's performance comprehensively in broader and longer-term settings. Performance evaluations based on such criteria and decisions may be problematic.

As Alexander-Joseph (2017:14) advised, the decision-making process, therefore, is one of the most important steps within an organisation that creates the opportunity for decision-makers to take appropriate action for the sustained direction of the organisation. This process affects many managerial aspects of the business, including organisational behaviour, psychology, marketing, and the recent emphasis on entrepreneurship or entrepreneurial decision-making (Shepherd, Williams & Patzelt, 2015:13). People make different types of decisions on a regular basis that impact the directions of organisations. These decisions can have positive effects on entrepreneurs who seek progressive results. Otherwise, it could have negative consequences if not correctly applied and approached.

Financial performance is viewed as an increasing area of concern in business because of the important role it plays in determining the effectiveness and efficiency of all types of businesses. In this, Naz, Ijaz and Naqvi (2016:82) define financial performance as the extent to which a company's financial health is measured over a period of time. This means that it is a financial action used to generate higher sales, profitability, and worth of a business entity for its shareholders by managing its current and non-current assets, financing, equity, revenues and expenses. Therefore, its key determination is to provide complete to-the-point information to shareholders and stakeholders to encourage them in making decisions. It can be used to evaluate similar companies from the same industry or to compare industries in aggregation.

Consequently, Fatihudin, Jusni and Mochklas (2018:553) claim that financial performance is the company's financial condition over a certain period, including collecting and using funds measured by several indicators of capital adequacy ratio, liquidity, leverage, solvency and profitability. Financial performance is the company's ability to manage and control its resources. For Matar and Eneizan (2018:2), financial performance is the measure of the organisation's financial health and shows the

performance of the company's executive leadership. In other words, financial performance is a measure of its financial health and is used to determine the effectiveness and efficiency of the management.

Similarly, Ravinder and Anitha (2013:10) agree that financial performance refers to performing the financial activity. In a broader sense, financial performance refers to the degree to which financial objectives of an organisation are or have been accomplished. It is the process of measuring an organisation's policies and operations in monetary terms. It is used to measure a firm's overall financial health over a given period of time and can also be used to compare similar organisations across the same industry or to compare industries or sectors in aggregation. In addition, Fatihudin *et al*. (2018:554) state that financial performance is the achievement of the company's financial performance for a certain period covering the collection and allocation of finance measured by capital adequacy, liquidity, solvency, efficiency, leverage and profitability. Financial performance is the company's ability to manage and control its own resources. Cashflow, balance sheet, profit-loss, and capital change can be the basis of information for corporate managers to make decisions. It is important to understand fundamental analysis and technical analysis, and necessary to learn finance to understand the company's financial behaviour through economics, financial management and accounting.

4.6 MEASUREMENT OF FINANCIAL PERFORMANCE

Financial performance may be measured using ratio analysis. These ratios include profitability, liquidity, solvency, leverage, and activity ratios, among others. These ratios are discussed in this section.

4.6.1 Ratio analysis

According to Tugas (2012:174), before starting the analysis of any company's financial statements, it is essential to stipulate the objectives of the analysis. The objectives will differ depending on the standpoint of the financial statement user and the specific questions that are addressed by the analysis of the financial statement data. Among the several perspectives are that of the creditor, the investor, and management. Each of these stakeholders would have to have questions that need to be answered. For instance, a creditor is frequently anxious about the ability of the current or prospective borrower to make interest and principal payments on borrowed funds (Brigham & Houston, 2009:86).

For Nuhu (2014:105), the two primary objectives of every business are profitability and solvency. Profitability is the ability of a business to make a profit, while solvency is the ability of a business to pay debts as they come due. However, the achievement of these objectives requires efficient management of resources of the business through planning, budgeting, forecasting, control and decision-making. Also,

the business's strengths and weaknesses need to be identified and necessary corrective measures applied. Interestingly, accounting provides information that facilitates these functions (Baraja & Yosya, 2018:5).

According to the referred literature, it can be concluded that there is no shortage of business performance measurement methods. The performance measurement area has quickly changed and significantly improved in recent years. The beginning of the performance measurement can be put to the first accounting activities (Zsidó & Fenyves, 2015:52). Over the years, performance measurement has been equal to the accounting records. According to these accounting reports, profitability, efficiency and financial ratios can be calculated as a measure of the companies' performance (Fenyves & Tarnóczi, 2011:530).

Furthermore, Zsidó and Fenyves (2015:53) confirm that there are a number of good indicators to measure and make a complex analysis of the financial situation. They are the so-called 'traditional' performance measurement methods and indicators. These are calculated from the accounting records and reports. Therefore, the importance of ratio analysis lies in the fact that it presents data on a comparative basis and enables the drawing of inferences regarding the firm's performance. Ratio analysis helps in concluding the following aspects:

- Profitability ratios
- Solvency ratios
- Efficiency ratios
- Liquidity ratios
- Other ratios

Financial ratios have become one of the tools to analyse and also predict the company's change in earnings. Existing literature has proved that financial ratios have played a primal role in understanding the elementary characteristics of a company. Financial ratios have the ability to explain the rudiments of any type of organisation. The various dimensions of any entity, from profitability to long-term solvency, can be comprehended through the use of financial ratios (Nadar & Wadhwa, 2019:3). Financial ratios are used as a company's analytical instrument that intends to show changes in financial conditions or operating performance in the past and to help demonstrate the trend pattern of changes and then show the risks and opportunities inherent in the company concerned. The result is that financial ratio analysis can be used to assess management performance in achieving predetermined targets (earnings) and management capabilities in effectively empowering company resources (Baraja & Yosya, 2018:3).

The following table (4.1.) presents a summary of key financial ratios and how they are calculated as well as what they show.

Table 4.1: Financial ratios

Profitability Ratios	
1. Gross profit margin	$\frac{\text{Sales - Cost of goods sold}}{\text{Sales}}$
Sales an indication of the total margin available to cover operating expenses and yield a profit.	
2. Operating profit margin (or Return on Sales)	$\frac{\text{Profits before taxes and interest}}{\text{Sales}}$
Sales an indication of the firm's profitability from current operations without regard to the interest charges accruing from the capital structure.	
3. Net profit margin (or net Return on sales)	$\frac{\text{Profits after taxes}}{\text{Sales}}$
Shows after tax profits per dollar of sales. Subpar profit margins indicate that the firm's sales prices are relatively low or that costs are relatively high, or both.	
4. Return on total Assets	$\frac{\text{Profits after taxes}}{\text{Total assets}}$ or $\frac{\text{Profits after taxes + interest}}{\text{Total assets}}$
A measure of the return on total investment the enterprise. It is sometimes desirable to add interest to after tax profits to form the numerator of the ratio since total assets are financed by creditors as well as by stockholders; therefore, it is accurate to measure the productivity of assets by the returns provided to both classes of investors.	
5. Return on stockholder's equity (or return on net worth)	$\frac{\text{Profits after taxes}}{\text{Total stockholders' equity}}$
A measure of the rate of return on stockholders' investment in the enterprise.	
6. Return on common equity	$\frac{\text{(Profits after taxes - Preferred stock dividends)}}{\text{(Total stockholders' equity - Par value of preferred stock)}}$
A measure of the rate of return on the investment the owners of the common stock have made in the enterprise. More commonly referred to as 'return on equity' or ROE.	
7. Earnings per share	$\frac{\text{(Profits after taxes - Preferred stock dividends)}}{\text{Number of shares of common Stock outstanding}}$
Shows the earnings available to the owners of each share of common stock.	
8. Return on common equity	$\frac{\text{(Profits after taxes - Preferred stock dividends)}}{\text{(Total stockholders' equity - Par value of preferred stock)}}$
A measure of the rate of return on the investment the owners of the common stock have made in the enterprise. More commonly referred to as 'return on equity' or ROE.	
9. Earnings per share	$\frac{\text{(Profits after taxes - Preferred stock dividends)}}{\text{Number of shares of common stock outstanding}}$
Shows the earnings available to the owners of each share of common stock.	
Liquidity ratios	
1. Current ratio	$\frac{\text{Current assets}}{\text{Current liabilities}}$
Indicates the extent to which the claims of short-term creditors are covered by assets that are expected to be converted to cash in a period roughly corresponding to the maturity of liabilities.	
2. Quick ratio (or acid-test ratio)	$\frac{\text{(Current assets - Inventory)}}{\text{Current liabilities}}$
A measure of the firm's ability to pay off short-term obligations without relying on the sale of its inventories.	
3. Inventory to net working capital	$\frac{\text{Inventory}}{\text{(Current assets - Current liabilities)}}$
A measure of the extent to which the firm's working capital is tied up in inventory.	

Leverage (solvency) ratios
1. Debt-to-asset ratio $\frac{\textbf{Total debt}}{\textbf{Total assets}}$ Measures the extent to which borrowed funds have been used to finance the firm's operations.
2. Debt-to-equity ratio $\frac{\textbf{Total debt}}{\textbf{Total stockholders' equity}}$ Provides another measure of the fund provided by creditors versus the funds provided by owners.
3. Long-term debt-to equity ratio $\frac{\textbf{Long-term debt}}{\textbf{Total shareholders' equity}}$ A widely used measure of the balance between debt and equity in the firm's long-term capital structure.
4. Times-interest-earned (or coverage) ratio $\frac{\textbf{Profits before interest and taxes}}{\textbf{Total interest charges}}$ Measures the extent to which earnings can decline without the firm becoming unable to meet its annual interest costs.
5. Fixed-charge coverage $\frac{\textbf{(Profits before taxes and interest + Lease obligations)}}{\textbf{(Total interest charges + Lease obligations)}}$ A more inclusive indication of the firm's ability to meet all of its fixed-charge obligations.
Activity (Efficiency) Ratios
1. Inventory turnover $\frac{\textbf{Sales}}{\textbf{Inventory of finished goods}}$ When compared to industry averages, it provides an indication of whether a company has excessive or perhaps inadequate finished goods inventory.
2. Fixed assets turnover $\frac{\textbf{Sales}}{\textbf{Fixed assets}}$ A measure of the sales productivity and utilisation of plant and equipment.
3. Total assets turnover $\frac{\textbf{Sales}}{\textbf{Total assets}}$ A measure of the utilisation of all the firm's assets; a ratio below the industry average indicates the company is not generating a sufficient volume of business, given the size of its asset investment.
4. Accounts receivable turnover $\frac{\textbf{Annual credit sales}}{\textbf{Accounts receivable}}$ A measure of the average length of time it takes the firm to collect the sales made on credit
Activity (Efficiency) Ratios
1. Average collection period $\frac{\textbf{Accounts receivable}}{\textbf{(Total sales / 365)}}$ **or** $\frac{\textbf{Accounts receivable}}{\textbf{Average daily sales}}$ Indicates the average length of time the firm must wait after making a sale before it receives payment. This has implications for financial management and quality of customers (marketing).

Other ratios	
1. Dividend yield on common stock A measure of the return to owners received in the form of dividends.	**Annual dividends per share** **Current market price per share**
2. Price-earnings ratio Faster-growing or less-risky firms tend to have higher price-earnings ratios than slower growing or more risky firms.	**Current market price per share** **After tax earnings per share**
3. Dividend pay-out Indicates the percentage of profits paid out as dividends.	**Annual dividends per share** **After-tax earnings per share**
4. Cashflow per share A measure of the discretionary funds over and above expenses that are available for use by the firm.	**(After tax profits + Depreciation)** **Number of common shares outstanding**

Source: Adapted from Thompson and Strickland (1996:907)

Research confirms that financial performance primarily reflects business sector outcomes and results that show the sector's overall financial health over a specific period of time. It specifies how well an entity is utilising its resources to maximise the shareholders' wealth and profitability. Although a complete evaluation of a firm's financial performance takes into account many other different kinds of measures, the most common performance measurement used in the field of finance and statistical inference is financial ratios (Naz *et al.*, 2016:81).

Changes in incomes are an instrument to measure an organisation's business activity performance. The net income (profit) is often used as a performance measure or basis for other measures such as ROI or earnings per share (EPS). Changes in earnings or earnings growth, which is the percentage increase or decrease of net profit, reflect the organisation's performance. The higher the increase, the better performance of the company (Al-Matari, Al-Swidi & Fadzil, 2014:26).

The company's profits in the future cannot be ascertained (Mungal, 2014:12). Management is not able to state the exact amount of profit in the future, but it may forecast to predict how much profit is to be earned in the next period. Change in earnings is primarily used as a tool by investors to decide whether to buy, sell, or keep their shares' investment. Changes in earnings represent the company's performance. It may be predicted using financial ratios such as liquidity ratios, profitability and solvency. The degrees of these ratios have an impact on higher or lower changes in profit (Baraja & Yosya, 2018:2). Financial ratios show the company's financial situation, liquidity ratios, indebtedness level and networking capital ratio.

4.6.1.1 Profitability ratios

Profitability ratios measure a company's ability to generate earnings relative to sales, assets and equity. As suggested, profitability ratios are the predominant measures used to determine financial performance as they are used to determine the company's profitability (Katchova & Enlow, 2013:110). The best-known ratios are return of equity (ROE), return on assets (ROA), return on investment (ROI), return on capital employed (ROCE), gross profit margin, net profit margin and others (Sheela & Karthikeyan, 2012:85). All these ratios indicate how well a company is performing at generating profits or revenues relative to a certain metric (Baraja & Yosya, 2018:5).

The literature discloses that the ROA, ROE, operating profit margin, and net income are the most used profitability ratios in the process of determining the financial performance of businesses (Khaddafi & Heikal, 2014:219). The rate of ROA is utilised to quantify the return of a business, and higher value indicates that the business is profitable (Murniati, 2016:24). The rate of return on equity (ROE) measures the return of the business to the owner's equity. Literature endorses that there is no general agreement on the ratios that can be embraced to conclude the profitability in businesses. Financial statements carry a great deal of financial information that is hidden in the figures.

4.6.1.2 Liquidity ratio

Research confirms that liquidity is a complex concept. The most accepted definition of liquidity is the ability to convert stocks into cash and *vice versa* without affecting the price or with minimal impact on the price (Bogdan, Bareša & Ivanović, 2012:183). It is confirmed that liquidity is one of the important indicators that are often used by investors to assess the company's profitability before investing (Komala & Nugroho, 2013:1176). Liquidity ratio is a ratio that describes the company's ability to fulfil short-term obligations.

The function of the liquidity ratio is to demonstrate or measure the company's ability to meet obligations that are due, both to external and internal parties of the company. The liquidity ratio, or often called the working capital ratio, is a ratio to measure how 'liquid' a company is (Doorasamy, 2016:31). Therefore, effective liquidity management, other than securing their survival, supports companies to reach higher profitability by reducing their input needs. Furthermore, it grants strategic advantages in economically difficult time periods (Veronika, Tibor & Péter, 2014: 895).

4.6.1.3 Leverage ratio

Literature tells us that the leverage ratio is any one of several financial measurements that look at how much capital comes in the form of debt (loans) or assesses the ability of a company to meet its financial obligations (Brei & Gambacorta, 2014:2). The leverage ratio category is important because companies rely on a mixture of equity and debt to finance their operations, and knowing the amount of debt held by a company is useful in evaluating whether it can pay off its debts as they become due (Sturesson & Källum, 2017:13).

The leverage ratio is a measurement of debt that occurs when a company does the spending. With this analysis, the company can measure its ability to carry out its obligations, especially long-term ones, so that there is the possibility of uncollectible debt (Abrar, Ghazyla & Arisandi, 2017:5). Therefore, Gitman, Juchau and Flanagan (2015:508) leverage results from the use of fixed-cost assets or funds to increase returns to the company's owners.

4.6.1.4 Activity (efficiency) ratio

The activity ratio is the ratio used to measure the level of efficiency of the use of company resources (sales, inventory, debt collection and others) or the ratio to assess the company's ability to carry out daily activities. Activity ratios are financial ratios that measure the company's aptitude to convert diverse accounts in a statement of financial position into cash or sales. Activity ratios measure the overall effectiveness of a firm based on its utilisation of its assets, leverage, or other similar statements of financial position items and are important in determining whether management is doing well in generating revenues and cash from its resources (Baraja & Yosya, 2018:5).

Likewise, Monea, Monea and Orboi (2010:1) confirm that financial efficiency measures how well the company uses assets to generate revenues and how effective they are at cost control. Efficiency in working capital management is essential, especially for retail companies, as it accounts for more than half of its total assets. Working capital management likewise directly affects a company's liquidity as it relates to the management of current assets and liabilities, which are vital for idyllic business development (Boigues, 2016:36).

4.6.1.5 Other ratios

Other ratios (capital structure) show the company's financial situation. Financial ratios are liquidity ratios, indebtedness level, and networking capital ratio. The choice of capital structure is an important decision for a company because it affects the maximisation of profit and impacts its ability to successfully

operate in a competitive environment (Hanousek & Shamshur, 2011:1360). Capital structure decision involves the choice of diverse sources of finance in business companies.

A number of companies at start-up use owners' equity to finance their investments and operations, and as the companies grow, the use of both equity finance and debts increases (Kipesha & Moshi, 2014:169). According to Batchimeg (2017:23), capital structure is also an imperative aspect that defines a company's performance. Capital structure refers to the ratio of debt and equity financing (Mirza & Javed, 2013:45). Therefore, there should be a proper capital structure that generates the company's maximum profit, as too little equity financing increases the owners' control to a large extent (Abu-Tawahina, 2015:14).

4.7 SUBJECTIVE MEASURES OF FINANCIAL PERFORMANCE

Contemporary literature on performance measurement systems (Vij & Bedi, 2016:603) argues that a manager's actions and efforts are driven by the performance measurement system of an organisation. Performance measurement plays a vital role in translating an organisation's strategy into desired behaviours and results (Silvestro, 2014:270). It communicates expectations, monitors progress, provides feedback, and motivates employees through performance-based rewards (Mehrabad, Anvari & Saberi, 2011:47; Teeratansirikool, Siengthai, Badir & Charoenngam, 2013:169). Performance measurement is not an end in itself, but a tool for more effective management and has strategic implications regarding resource deployment and utilisation.

It is more important for top-level managers to realise that the international economy has observed incredible changes in almost all sectors of the business environment. In the current era, environmental forces demand greater responsiveness from a business and force companies to change their traditional management philosophy (Bhorat, Steenkamp, Rooney, Kachingwe & Lees, 2018:3; Patel & Bhutiani, 2018:146). In this situation, top-level managers have to realign their management as well as measurement practices to assess customer needs and preferences, track competitors' actions, evaluate the impact of technology development, bring necessary product and process innovation, incorporate cost-effectiveness and raise the level of organisational effectiveness (Vij & Bedi, 2016:603).

Relating to the measurement of business performance, the treatment of the performance construct is perhaps one of the thorniest issues challenging the contemporary academic researcher (Cardinaels & Veen-Dirks, 2010:566). Consequently, there is a variety of debates on this issue from both ancient and contemporary literature in the field of business management and organisational performance, among others, divulging that there is no agreement among the researchers regarding the measurement of

performance (March & Sutton, 1997:689; Richard, Devinney, Yip & Johnson, 2009:719; Vij & Bedi, 2012:22; Silvestro, 2014:269). Subjective as well as objective measures have been used by researchers to measure performance. However, both early and current literature asserts that a subjective measure of performance is more regularly used (Wall, Michie, Patterson, Wood, Sheehan, Clegg & West, 2004:97; Wiklund & Shepherd, 2005:73; Kraus, Rigtering, Hughes & Hosman, 2012:162; Santos & Brito, 2012:98).

Research reveals that subjective measures are largely relative, whereas objective measures are definite (Wall *et al*., 2004:97). The users of subjective measures of performance normally rely upon the positive relationships between subjective and objective measures of performance. Merely a few studies (i.e. Dess & Robinson, 1984:266; Venkatraman & Ramanujam, 1987:2; Dawes, 1999:3) have empirically examined the relationship between objective and subjective measures of performance (Vij & Bedi, 2016:603).

Literature suggests that the first phase of the conception of business performance centres on the use of simple outcome-based accounting indicators such as profitability and growth (Menicucci & Paolucci, 2017:42). These accounting-based financial measures started losing their significance because of blames that these measures are static, difficult, and complex to understand, too financial, present a short-term view, are mainly internal rather than externally focused, provide little indication of future performance, have little regard for competitors and customers, and are unclear as to the linkage between activity measures and strategic objectives of the enterprise (Zizlavsky, 2014:211; Vij & Bedi, 2016:604).

Both Barnabe (2011:446) and Mehrabad *et al*. (2011:48) explain how to effectively manage both strategy and operations by linking them tightly in a closed-loop management system. The purpose of performance measurement changed from the static assessment of the economic performance of a business to the dynamic and futuristic paradigm (Kaplan & Norton 2008:10). Other scholars (Singh, Darwish & Potocnik, 2016:217) uphold that although much less common, some researchers applied both objective and subjective performance measures in their studies. Their findings suggest that both are equally valid and reliable measures and further establish that there are only limited biases associated with self-reported company performance data (Zain, Muda & Rashid, 2018:1).

However, Zulkiffli and Perera (2011:3) avow that many studies show a preference for subjective measures during the assessment of business performance due to difficulties in obtaining objective financial data. Managers often refuse to provide accurate, objective performance data to researchers.

Even if objective data is made available, the data often does not fully represent the company's actual performance as managers may manipulate the data to avoid personal or corporate taxes.

Consequently, Zulkiffli and Perera (2011:3) opine that managers are frequently encouraged to evaluate business performance through general subjective measures that can reflect more specific objective measures. Subjective measures can be an effective way to examine business performance as they allow comparison across companies and contexts, such as industry type, time horizons, cultures or economic conditions. When subjective measures are applied, managers can use the comparative performance of their industry as a benchmark when providing a response (Santos & Brito, 2012:103).

Objective performance measures, in contrast, can differ based on industry and can obscure the relationship between independent variables and business performance (as a dependent variable). Moreover, the objective data available to the researcher may not be compatible with the intended level of analysis; in these cases, subjective data can be a good alternative if the measures focus on the company's current condition. Some researchers prefer subjective measures due to the difficulty in obtaining the objective data (Vij & Bedi, 2016:603). As such, many researchers describe objective data as sensitive, confidential and difficult to obtain from the respondents (Sundvik, 2017:1).

According to Rashid, Ismail, Rahman and Afthanorhan (2018:1407), the subjective measure has also been the choice when overcoming a problem that uses a sample containing a variety of industries. When looking at the performance of dissimilar companies, measuring based on the financial figures could be unfair since diverse companies face different costs and produce different profit margins. Rashid, Noor, Mastuki and Bardai (2015:109) concur that comparing the objective financial data obtained for the small business in different industries could be misleading. Therefore, for multi-industry comparison, subjective measures are more flexible and useful (Zhang, 2015:325).

4.8 BALANCED SCORECARD PERSPECTIVES

Literature affirms that in the early 1990s, Robert Kaplan and David Norton developed a new approach to strategic management. They named the system the balanced scorecard (BSC) (Salem *et al*., 2012:2; Gawankar *et al*., 2015:10). In dealing with some of the weaknesses and vagueness of previous management approaches, the BSC approach provides a clear definition of what business organisations should measure to balance the financial perspective (Benková *et al*., 2020:4).

The BSC can generate large-scale organisational change and improvement, but it does require a degree of expertise in its implementation (Afonso & Cabrita, 2015:274). The BSC is a system of performance

measurement, and a management system that enables organisations to clarify their vision and strategy and translate them into action. The scorecard measures organisational performance across four linked perspectives: financial, customer, internal business process, and learning and growth (Kairul, Wafula, Okaka, Odera & Akerele, 2013:81; Afonso & Cabrita, 2015:274).

4.8.1 Customer satisfaction

Customer satisfaction is a term frequently used in marketing. However, numerous studies define the concept of satisfaction differently. In the opinion of Elegba and Adah (2015:4), consumer satisfaction suggests congruence of subjective expectations of the consumer with the actual satisfaction he/she draws from the products or services. It is a measure of how products and services supplied by a company meet or surpass customer expectation. Further literature indicates that customer satisfaction plays an important role in business strategy and acts as a key factor in the sustainable development of companies (Rai & Srivastava, 2012:65).

For Nguyen, Nguyen, Nguyen and Phan (2018:3), customer satisfaction is the individual's perception of the product's performance or service in relation to his or her expectations. Therefore, the level of customer satisfaction is assessed by comparing the perception of a product or service in relation to the expectation of customers. Many studies have proven the relationship between service quality and customer satisfaction (Rai & Medha, 2013:143; Sarstedt, Wilczynski & Melewar, 2013:329). In addition, these studies have agreed that corporate image has a positive effect on perceived value and customer satisfaction. Likewise, Kim, Kim and Wachter (2013:363) suggest that perceived value positively influences customer satisfaction.

It is noted that customer satisfaction or consumer satisfaction is a buyer's emotional or cognitive response post-subjective assessment and comparison of pre-purchase expectations and actual performance subsequent to the consumption of the product or service, meanwhile assessing the costs incurred and benefits reaped in a specific purchase event, or over time in the course of transacting with an organisation. These benefits can be categorised as emotional and functional benefits, while the costs accrued are in terms of time costs, money costs, energy costs and psychic costs (Elegba & Adah, 2015:5).

According to Srivastava and Rai (2013:96), numerous studies suggest that customer satisfaction is dependent on the equivalence of expectations and performance of the product or service. It is assumed that the customer compares the product or service performance with what he/she was actually expecting, and if the performance matches the expectations, the customer is satisfied; if it falls short of expectations,

the customer is dissatisfied; and if it exceeds the expectations, the customer is delighted. Furthermore, Elegba and Adah (2015:5) disclose the ten quality values and 17 indicators developed by Brodeur Berry over a period of time. The quality, value, timeliness, efficiency, ease of access, environment, inter-departmental teamwork, front-line service behaviours, commitment to customer, and innovation are presented in Figure 4.2, as well as the sub-characteristics as discussed in the preceding discussion.

Table 4.2: Quality values and sub-characteristics

Quality values	Sub-characteristics
Quality	Best practices and high reputation of suppliers Workers' familiarity with organisational system Error-free processing
Value **Efficiency** **Timelines**	On-time delivery Using efficient, coordinated and fast-paced delivery systems that take limited time according to customers; The customer wants product or service delivery to take no less than all the time required. It is based on the nature or function of the process, not some arbitrary number dictated by management.
Access **Self-management**	Professional appearance Consistently positive interactions with no negativity or personal agendas Courtesy, friendliness, attentiveness and enthusiasm
Environment	Carry customer comfort in mind, make them feel welcome, be clean, safe, delivery and well organised Quality performance at the front line and throughout all levels of supplier's internal support for employees and systems. The customer expects current methodologies The worker at every level of product and service delivery must have the resource required to perform at optimum level
Team work **Commitment**	Form a relationship with a key person, who can be trusted and relied upon. Supplier that provides all information and constant solicitation of customer's need. Customer wants to know upfront about terms, conditions and anticipated or actual disappointments. The suppliers to take immediate responsibility and corrective action when the outcome is not achieved.
Innovation	

Source: Elegba & Adah (2015:6)

In view of the above, it can be concluded that satisfaction is a multidimensional construct that is conceptualised as a precondition for relationship building. It has been attributed with dimensions by Crosby and Stephens (1987) as:

- Satisfaction interaction with personnel
- Satisfaction with the core service
- Satisfaction with the organisation

Literature attests that the old assumptions about consumers' satisfaction no longer seem useful because people nowadays can choose between online and face-to-face purchasing for almost all goods and services (Khadka & Maharjan, 2017:5). This quick and continuous change in consuming inclinations

puts retailers under high pressure to satisfy their consumers (Palací, Salcedo & Topa, 2019:1). Therefore, attaining consumer satisfaction becomes a source of advantage and competitive differentiation that involves a series of beneficial results for organisations, such as word-of-mouth communication among potential clients, loyalty, and financial profitability.

Consequently, customer satisfaction is dynamic and relative. Only the idea of 'customer-centric' can help companies improve satisfaction and keep customers faithful, and conversely, if competitors improve customer satisfaction, then it may lose corporate customers (Isac, Rusu & Cureteanu, 2011:1). While improving customer satisfaction, customer expectations should be noticed. Service quality, product quality and value for money have a direct positive impact on customer satisfaction. Employee satisfaction is equally important before achieving customer satisfaction. If employees have a positive influence, then they can play a big role to increase customer satisfaction levels. Satisfaction is a dynamic, moving target that may evolve over time, influenced by a variety of factors (Khadka & Maharjan, 2017:6).

4.8.2 Internal business processes

So far, studies acknowledge that financial and customer perspectives aim to satisfy shareholder and customer, respectively. Therefore, the internal process satisfies both the internal and the external stakeholders (Al Thunaian, 2013:28). The internal processes perspective focuses on the internal business results that lead to financial success and satisfied customers; to meet the organisational objectives and customers' expectations, organisations must identify the key business processes at which they must excel. These key business processes are monitored to ensure that outcomes will always be satisfactory. The internal processes perspective reports on the efficiency of internal processes and procedures (Kairu *et al*., 2013:82). The premise behind this perceptive is that customer-based measures are important, but they must be translated into measures of what the organisation must do internally to meet its customers' expectations (Kaplan & Norton, 1992:74)

Both Al-Najjar and Kalaf (2012:46) are of the view that internal business processes afford the organisation with the means by which performance expectations may be accomplished. This perspective refers to the internal business processes of the organisation, and therefore managers are required to provide measures that answer the following question: "To satisfy our customers and shareholders, what business processes must we excel at?" The dominant theme of this perspective is the internal business processes that lead to financial success and satisfied customers. Characteristically, the measures of this perspective are based on producing goods and services with the most efficient and effective methods. Frequently applied measures for this perspective are cost of quality, cost of non-conformance, process

innovation, and time-saving. Studies have identified possible measures such as reducing quality control rejection rate, reduced production lead times, and increased production capacity utilisation (Malgwi & Dahiru, 2014:4). Equally, Etim and Agara (2011:67) identified the measures under this perspective to include defect rate, response to customers' complaints, quality of after-sales service, internal process bureaucracy, process completion time, quality and skill of the staff and their level of motivation. Consequently, managers are obliged to identify the critical internal processes in which the organisation must excel in implementing its strategies. Critical processes should be identified that are required to achieve the organisation's customer and financial objectives (Dechow, 2012:512).

According to Kaplan and Norton (2001:93), the internal business process perspective empowers managers to pinpoint the processes that are critical to attaining customer and stakeholders' objectives. They suggest that the internal process can help managers outline a completely internal process value chain that commences from the innovation process and carries through to the post-sale service. In their previous studies, Kaplan and Norton (1996:6) mentioned that the internal processes could be characterised as follows:

a) operations management, which can increase asset exploitation and supply chain management (SCM);
b) customer management, which checks the process of enhancing customer value and includes selection, acquisition, retention and growth; and
c) innovation processes, which show the process of supplying new products and services (Sofiyabadi & Nasab, 2012:1723).

In confirmation, Al Frijat (2018:69) asserts that this perspective is based on the application of the most effective methods of goods production, services delivery to customers, and attention to quality, cost and time saving concepts. Moreover, Malgwi and Dahiru (2014:4) emphasise that in planning any internal processes, it is good to look at the strengths and weaknesses of the organisation, which are internal and take advantage of opportunities and face the identified threats to overcome them. The success of an organisation will depend on its strengths, weaknesses, opportunities and threats facing its ability to organise itself at any time. The current literature failed to incorporate the SWOT analysis as a means of internal business processes that could lead to the success of every organisation.

Considerably, the internal business processes also include the research and development process, design and delivery, and launching of products. As the internal process perspective integrates the internal business activities, it is essential to ensure that the organisation's products and services meet the

requirements of stakeholders (Kaplan, 2010:5). Therefore, the task of an organisation's management is selecting a strategy and means of its execution so that they are appropriate for optimising the fulfilled needs, thereby allowing for the maximisation of the organisation's values. It is an extremely difficult task that firstly requires proper identification of all essential groups of stakeholders and their needs, selection of the methods of their fulfilment, and correct management of the relations with the interested parties (Hawrysz & Maj, 2017:3)

Farooq and Hussain (2011:756) point out that the main concern of the internal process is to improve order processing, delivery, manufacturing, and products, to satisfy the customer and increase financial returns. To do this, managers should carry out a continuous internal analysis to assess the organisation's internal processes and review innovation. This is particularly important since global competition has decreased the amount of time organisations have to bring their products to market successfully. Notably, Waruhiu (2014:122) argues that it is clear that to deliver on its value proposition, the organisation must develop sound organisational procedures, efficient production systems, and on-time delivery schedules. These are types of internal business processes that need to be understood by employees in order to provide high-quality goods and services. Different units within the same organisation tend to be involved in many different processes, understandably, because any organisation functions as a system comprising many processes. Different processes are inclined to have diverse measures, and the challenges of coming up with corporately agreed-upon internal business process measures becomes a lengthy debate.

4.8.3 Learning and growth

While the third perspective is about the concrete process side of things, this final perspective considers the more intangible drivers of performance. Because it covers such a broad spectrum, this perspective is often broken down into the following components (Jovanovic, Damnjavanovic & Dimitrijevic, 2016:237):

- Human capital refers to skills, talent and knowledge (skills, talent and knowledge (skills assessments, performance management scores, training effectiveness).
- Information capital involves databases, information systems, networks and technology infrastructure (such as safety systems, data protection systems, infrastructure investments).
- Organisational capital includes culture, leadership, employee alignment, teamwork and knowledge management (for example, staff engagement, employee net promoter score, corporate culture audits) (Kaplan & Norton, 1992:75).

According to Al Thunaian (2013:29), the learning and growth perspective is the fourth BSC perspective; it is generally a leading indicator enabling companies to create long-term growth and improvement. The learning and growth perspective (or innovation perspective) is a framework for quantitatively assessing employee satisfaction, productivity and retention. The main objectives of this perspective are employee goals, information systems, and organisational alignment (Kaplan, 2010:8). According to Farooq and Hussain (2011:756), this perspective is the foundation of the BSC strategy's success, since it involves employee skills and information systems. This perspective can include factors such as employee satisfaction, alignment of employee skills with jobs, the number of employee suggestions implemented, and hours of employee training (Kaplan & Norton 1996d:19).

Accordingly, the learning and growth perspective of the BSC is concerned with the enhancement of employees' skills by applying different techniques. As for Kaplan and Norton (1992:75), a company's innovative ability to learn and improve skills can improve the company's value and enable growth. The learning and growth perspective places emphasis on the competencies of people and managers held responsible for developing employee capabilities. Measures for evaluating managers' performance are employee satisfaction, employee retention and employee productivity. This can include relocating them to other departments, and implementing incentive programmes designed to motivate employees (Eshun & Duah, 2011:10).

Based on Jelenic's (2011:38) perception, the three BSC perspectives, i.e. financial perspective, customer perspective and the perspective of business processes, evidently identify a large gap between the abilities of people, processes and systems on the one hand, and the actions required to meet the targets on the other hand. To overcome this challenge, organisations began to invest in training staff, improving information and technology systems, and harmonising procedures through the BSC learning and growth (fourth) perspective. Within this perspective, the organisation treats the areas of importance to the organisation's ability to augment value by improving business processes and people.

Kaplan and Norton (1992:75) also suggest that companies have to invest in "re-skilling employees, enhancing information technology and systems, and aligning organisational procedures and routines." Improving the employees' skills may increase employee satisfaction and employee retention, which in turn creates a new competitive environment. This perspective identifies the dynamics necessary for current and future company performances, creating such an infrastructure in which the company will be capable of generating long-term value.

As suggested previously by Jovanovic *et al*. (2016:237), and Utomo *et al*. (2019:57), it reemphasises that human resources, information resources and organisation resources are three key aspects in the learning and growth perspective to gain long-term performance. Human resources influence organisations' goals by increasing employee capability, information system, motivation, empowerment and balance. Organisations' resources can be organisational culture, leadership style, teamwork, procedure and policy fixed by the organisation.

In their claim, Kaplan and Norton (2004:1) argue that the success of the BSC depends on the involvement of employees in the BSC learning process. They claim that the corporate cultural attitudes related to individual and corporate self-improvement are among the main determinants of the BSC success. They suggest that information technology is key and important for a company to produce a continuous learning process at all business levels. Metrics can be put into place to guide managers in focusing training funds where they can help the most. Learning and growth constitute the essential and strategic foundation for the success of any knowledge-worker organisation.

In the opinion of Al Frijat (2018:69), strategic objectives are selected from this perspective based on available capacity in the organisation for employees, knowledge, technology and organisational culture. From this perspective, intangible assets affecting strategic success can be diagnosed. Strategic goals of this aspect are selected, considering human capital, staff abilities, knowledge, technology and organisational culture. Equally, Fooladvand, Yarmohammadian and Shahtalebi (2015:952) affirm that among very significant points for designing the BSC is an agreement on the same definitions of its elements. These include the components and objectives of organisation strategy, measures, quantitative targets and strategic actions.

Contrarily, Waruhiu's (2014:120) opinion and Marr and Adams (2004:18) have criticised Kaplan and Norton's inclusion of intangible assets as an attempt to capitalise on the emerging popularity of these assets in contemporary management theory. The literature contends that if Kaplan and Norton were to change their BSC framework to accommodate all intangible assets, the entire causal logic of the BSC would be questionable (Sulanjaku, 2014:113). Overlooking some important aspects of intangible assets such as customer loyalty, structural capital, and quality that can later be transformed in valuable brand names leaves unresolved gaps in the explanation of the learning and growth perspective of the balanced scorecard (Pietrzak, Paliszkiewicz & Klepacki, 2015:152).

From previous studies on this debate, Jelenic (2011:37) indicated that most of the market value is intangible values (people, brands, processes, etc.) in modern companies. Reducing the importance of

tangible assets has caused a reduction in the importance of financial measures of the companies' quality. Specifically, the blended technical and financial indicators do not include an investment of 'intangible' assets, and have no role in direct allocation to profitable areas. This causes the need to develop systems measurements that will identify and evaluate other companies' indicators such as customer relations and business process efficiency, among others.

4.9 APPLICATION OF BALANCED SCORECARD

Literature informs us that there is growing interest in health system performance. The World Health Organisation (WHO) launched a report on health systems' strengthening, emphasising the need for close monitoring using systems-wide approaches (WHO, 2007; 2009). This has been driven by the demand for performance improvement based on the efficient use of limited resources in the presence of overwhelming health needs (Mutale, Godfrey-Fausset, Mwanamwenge, Kasese, Chintu, Balabanova, Spicer & Ayles, 2013:1). Diverse approaches and methods have been utilised to measure health system performance, especially in high-income countries (Adhikari, Sapkota & Supakankunti, 2015:143).

The WHO and the Organisation for Economic Co-operation and Development (OECD), for example, have compared and ranked health systems across a range of functions and performance indicators. These exercises have sometimes been controversial, but also difficult to achieve because of the complexity of comparing different health systems (Gauld, Al-wahaibi, Chisholm, Crabbe, Kwon, Oh, Palepu, Rawcliffe & Sohn, 2011:200). Health service planners and managers are faced with copious challenges, not least having limited resources with which to provide services at an acceptable level of quality that is equitable and accessible to all (Sharma, Prinja & Aggarwal, 2017:175). According to Mutale *et al.* (2013:2), in order to monitor the performance of interventions, various attempts have been made, and one fairly recent method is the application of the BSC system. The BSC is derived from the private business 'balanced scorecard' approach, a strategic management tool that was first suggested by Robert Kaplan and David Norton in 1992 (Khaled & Bani-Ahmad, 2018:19).

The idea is that a scorecard provides information on areas of strategic importance to guide future planning and serves as a snapshot of how well an organisation or system is performing (Gauld *et al.*, 2011:200). The BSC is made up of domains and indicators derived from the strategic vision of an organisation aimed at measuring its performance (Edward, Kumar, Kakar, Salehi, Burnham & Peters, 2011:2). The design and implementation of the BSC process can be separated into four stages: (1) translating the vision and gaining consensus; (2) communicating the objectives, setting the goals, and linking strategies; (3) setting

targets, allocating resources, and establishing milestones; (4) and feedback and learning (Lupi, Verzola, Carandina, Salani, Antonioli & Gregorio 2011:1).

Some researchers argue that the original BSC approach was based on four different perspectives of equal weight: learning and growth, internal processes, customer satisfaction, and financial performance (Kaplan, 2009:1254; Amado, Santos & Marques, 2012:3; Coe & Letza, 2014:64). However, when applied to the healthcare sector, the four traditional perspectives needed further modification to better reflect the particular functions of the public health sector (El Turabi, Hallsworth, Ling & Grant, 2011:1). The BSC has been used in healthcare monitoring and evaluation at patient facilities at the district and national levels but mostly in high-income countries (Tashobya, Da Silveira, Ssengooba, Nabyonga-Orem, Macq & Criel, 2014:2). The WHO has endorsed the BSC approach in evaluating health system strengthening interventions in low-income countries (Mutale, Balabanova, Chintu, Mwanamwenge & Ayles, 2016:113).

One study conducted in Afghanistan used the BSC approach to evaluate the health system's performance based on selected indicators over a period of five years. In this work, Edward *et al*. (2011:2) made important modifications to the traditional BSC. They included domains such as patient and community, human resources, service provision and health system preparedness indicators for equipment, essential commodities and infrastructure (Lupi *et al*., 2011:1). Therefore, Mutale *et al*. (2013:2), in their study, [Measuring health system strengthening: application of the balanced scorecard approach to rank the baseline performance of three rural districts in Zambia] adapted and applied the BSC approach within the context of the Zambian healthcare system.

Furthermore, in their study, Khaled and Bani-Ahmad (2018:18) identified numerous scenarios where diverse practitioners applied the BSC in dissimilar settings. Therefore, Gawankar *et al*. (2015:13) pronounce that the application of the BSC and its approach has been extensively used since its introduction and in its numerous reformed formats. Although the balance issue in the BSC approach and its weightage for various components have been dissimilar in all spectrums of industrial applications, it is clearly evident that BSC approaches are relevant from small trading companies to large companies and even the areas of application have been basic cost-cutting exercises to electronic procurement practices.

Table 4.3. offers summarised approaches of the BSC and its application within various sector/ contexts of the industry for various goals and objectives.

Table 4.3: Selected approaches of BSC and its application

Author	Year of publication	Sector/area/application	Application of balanced scorecard
Memari, Momeni and Ghasemi.	**2014**	Application of synthetic technique	Some indexes are necessary for performance evaluation of a management system. Balanced scorecard (BSC) is used in order to extract these indexes for evaluating the necessary performances in the evaluation process. Utilisation of BSC prevents increasing information and data. Furthermore, all of the important indexes are considered in evaluation performance. Data envelopment analysis (DEA) is applied for evaluating the system performance. It is a non-parametric method based on linear programing. This method uses multiple inputs and outputs indexes. Synthetic application of BSC-DEA causes the weakpoints of each method to be enveloped using strong points of another one. On the other hand, a systematic relation between the methods can be created. In this paper, the BSC-DEA techniques are considered in order to improve the system's performance; synthetic applications of BSC and DEA are considered and reviewed.
Valmohammadi and Ahmadi.	**2015**	Petrochemical company	This paper presents a holistic approach regarding the evaluation of knowledge management (KM) practices on organisational performance. The effects of seven critical success factors (CSFs), namely leadership role, organisational culture, KM strategy, processes and activities, training and education, information technology, and motivation and rewarding system, on organisational performance in the framework of four perspectives of balance scored card (BSC) approach were surveyed.
Saad and Daraghma.	**2016**	Listed corporations in the Palestine Exchange (PEX)	This manuscript is aimed at testing the extent to which the listed Palestinian corporations in the Palestine Exchange (PEX) are using the four perspectives of the balanced scorecard (BSC) in evaluating performance.
Hasan and Chyi.	**2017**	Industry	This paper provides a taxonomy for the different versions of the BSC, through a process of identifying and analysing the practicability of BSC in different industries. It provides a systemic view of the strategy to most of the organisations.
Ayoup.	**2018**	Public company	This paper aims to demonstrate the utilisation of the strategy map in a Malaysian company that adopted the BSC as its performance management system, its implication and challenges.
Al-Kaabi, Chehab and Selim.	**2019**	Medical commission department	In this paper, the balanced scorecard (BSC) system provides the basis for developing and executing a good strategy and successfully managing change at the medical commission department (MCD) in Qatar.
Benková, Gallo, Balogová and Nemec.	**2020**	Engineering sector	The primary objective of the research was to verify the importance of using non-financial factors in managing businesses in connection to the use of the balanced scorecard methodology and to verify the dependence between the use of the given methodology and the lack of human and financial resources for its usage

Source: Compiled by the researcher

4.10 PREVIOUS STUDIES ON THE BALANCED SCOREDCARD IN HIGHER EDUCATION

In the modern world of global competition, providing quality service is significant for success, and probably the most powerful competitive trend currently shaping marketing and business strategy is service quality (Khadka & Maharjan, 2017:5). Higher education (HEIs) also focuses on rendering high-quality education to their students and having better performance. Higher education institutions are facing new challenges in order to improve the quality of education. There is pressure for restructuring and reforming higher education in order to provide quality education and bring up graduates who would become fruitful members of their societies. Therefore, these HEIs are trying to recognise the dimensions of quality education and define strategies to reach their pre-defined standards and goals.

This section examines previous studies conducted on the application of the BSC in HEIs over the past 10 years that are similar to this study. Numerous scholars undertook research on the BSC in relation to higher education. However, these studies dealt with various aspects of the BSC in HE that are not related to this study: "Modelling transformational and transactional leadership, innovation and performance among the South African universities of technology: a balanced scorecard perspective at the universities of technology in South Africa".

Among the scholars who conducted research on the BSC, vis-à-vis higher education, is Beard (2009), whose study focused on successful applications of the BSC in higher education. The key objective was to establish whether any management tools used in business may be useful in higher education. It was then established that one of these tools is the BSC. Later, another study was conducted by Schultz (2010), whose emphasis was on the BSC approach to performance measurement and BSC was introduced as a method of evaluating organisational performance from its four perspectives.

In 2011, Abdullah and Rahman conducted research on strategy-making at a Malaysian higher education institution. This study intended to review the elements of strategic planning in a higher education institution to facilitate them to strive and deliver in responding to those emerging demands. It also demonstrated how the BSC framework could potentially help structure a more comprehensive thought-through process in shaping strategies. On the other hand, in 2012, Sudirman conducted a case study on implementing BSC in higher education management at the Hasanuddin University of Indonesia. This study aimed at demonstrating how the BSC can be well implemented in Hasanuddin University. Some adaptations of the original BSC were explored to the specificities of the university.

Another case study was conducted by Shetty (2013) within the Faculty of Engineering at the Durban University of Technology. This study was on the feasibility of implementing the BSC in a higher education institution. The aim of this research was to investigate the current management performance systems in the Faculty of Engineering at the Durban University of Technology (DUT) and to propose a framework for a performance management system based on the BSC. Subsequently, Senarath and Patabendige (2014) developed a case study on the University of Kelaniya, Sri Lanka, looking at translating a corporate plan into action using the BSC. Therefore, the main aim of this study was to suggest the BSC techniques to support the corporate plan's preparation and implementation process in Sri Lankan universities.

Scholars Al-Hosaini and Sofian (2015:26) argued that many studies had been conducted to investigate the effectiveness of the BSC in organisations. It is observed that many organisations adopt different perspectives suitable for their functions in line with their vision, mission and strategic themes. Some researchers have highlighted its relevance to HEIs. However, previous studies have not defined which perspectives are most relevant for public HEIs, which are not for profit by nature. These authors review recent studies in top journals using the BSC framework in HEIs. Their study identifies the relevant perspectives for HEIs and presents its contextual analysis.

Recently, Wahba (2016) came up with another case study on the BSC in higher education. It aimed to apply the BSC approach in educational institutions by reproducing the strategic plan of the private university case study (Arab Academy for Science, Technology and Maritime Transfer) for years (2016-2021) in order to enhance its implementation through presenting the concept, a strategic map for four perspectives.

In 2017, Reda conducted research titled "Balanced scorecard in higher education institutions: congruence and roles to quality assurance practices, quality assurance in education". Its objective was dual. Firstly, it highlighted the congruence and roles of the BSC to the quality assurance practices in HEIs. In so doing, it has examined the four perspectives of the BSC in relation to the system model quality assurance practices and, therefore, attempted to relate the input, process and output dimensions of quality assurance practices with the four perspectives of the BSC: learning and growth, internal business processes, finance and the customer. Secondly, beyond highlighting the congruence and roles, it proposed the BSC model that integrates the basic functions of HEIs (teaching and learning, research and community engagement) and their quality assurance dimensions (input, process and output).

Considering the lack of research that focuses on the use of the BSC as a performance evaluation tool in Emirati HEIs, Lassoued (2018) conducted a study in which the main purpose was to present a basis for a more general BSC model and help higher education managers in a UAE environment for evaluating and managing the performance of their institutions. Most recently, McLaren and Struwig (2019) presented research on financial ratios as indicators of financial sustainability at a South African university. In this study, they argue that managing limited financial resources is an ongoing challenge for financial managers at South African universities, especially with the call to the government for free education.

Literature proclaims that the higher education sector is decisive to produce quality graduates, research, and service in fostering economic and human capital development. However, currently, HEIs face new challenges to improve the superiority of their educational services. Pressure from an internal and external environment for academic restructuring requires proper strategy and direction (Ahmad & Soon, 2015:65). Therefore, in order to translate the strategy into action, the BSC concept is relevant to be applied by the HEIs in this inspiring era. The developing anxieties regarding performance management systems (PMS) in today's competitive business create numerous methods, models and frameworks for evaluating the business performance (Ahmad & Soon, 2015:89).

Traditional methods that emphasise financial and operational outcomes have been replaced with more comprehensive assessments, which integrate the performance with the organisation's overall strategy. Moreover, Al-Zwyalif (2012:114) contends that the swift changing of the global environment and technology makes educational institutions focus on organisational performance. This declaration is further supported by Binden, Mziu and Suhaimi (2014:39). Overall, the BSC approach has become generally used as one of the adequate business tools obtainable in the era of business organisations.

Many academic institutions have successfully adopted the BSC throughout the four perspectives aligned with a university's missions, policies and goals, which pointed out that the application of PMS becomes a trend in HEIs (Binden *et al*., 2014:43).

4.11 CONCEPTUAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

In this section, a conceptual framework for the research study is developed, based on the literature reviewed in the preceding chapters (1, 2, 3 and 4). Therefore, an analysis of the hypothesised relationship between the research variables is defined in detail in the units to follow. The significance of each relationship is supported by confirmation from previous studies.

4.12 BACKGROUND OF THE CONCEPTUAL FRAMEWORK

In his studies, Golla (2012:4) uncovered a positive relationship between transactional leadership (TSL) and incremental or enhanced innovation in which novel invention strategy dictated the exploitation of existing technologies and customers. Those findings suggest the need for leaders at organisations to match leadership styles to their innovation needs to enhance the possibility of major success. Therefore, the research framework for this study suggests that elements within TSL are likely to have effects on organisational innovation, which would ultimately influence (Chaudhry & Javed, 2012:259; Odumeru & Ogbonna, 2013:358; Kesting, Ulhøi, Song & Niu, 2015:30) organisational performance, as shown in Figure 4.2. This section provides the conceptual framework of the study. The predictor constructs are contingent reward, management by exception, and laissez-faire. These influence organisational innovation, which is the mediator variable and the BSC performance, which is the outcome variable.

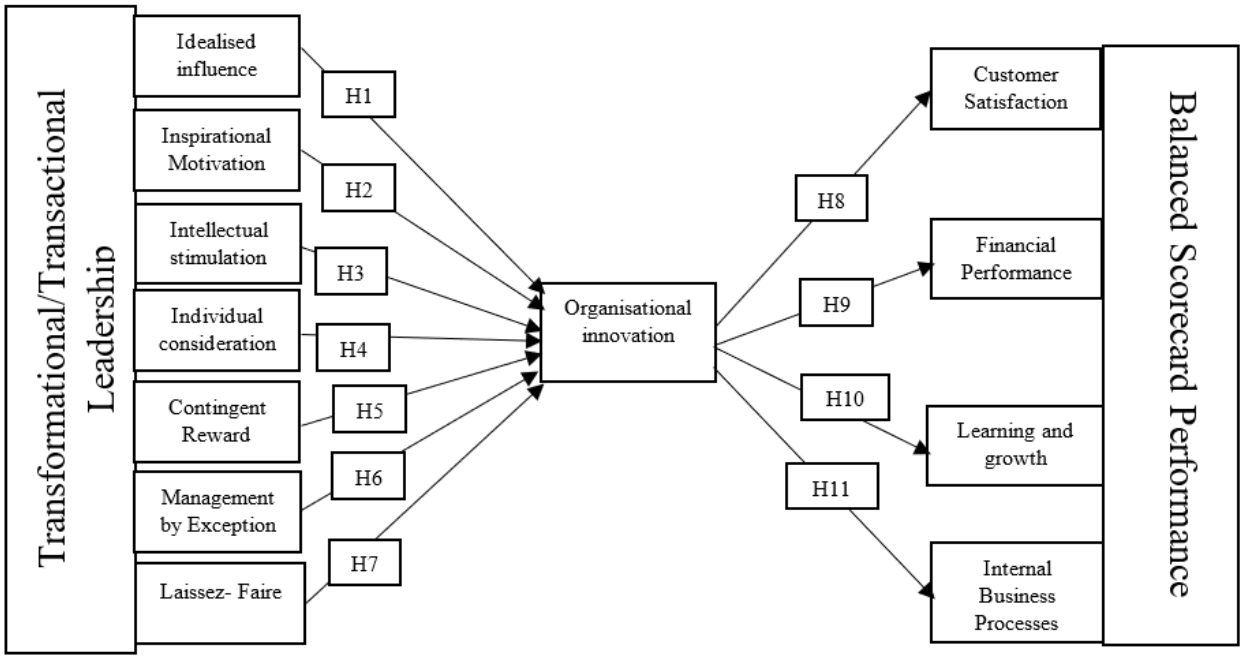


Figure 4.2: A conceptual framework of the study

Source: Compiled by the researcher

This study hypothesises that all predictor variables might have a direct and/or indirect and positive and/or negative influence on organisational innovation. Equally, it is proposed that organisational innovation might have a direct relationship with the BSC performance.

4.13 HYPOTHESES DEVELOPMENT

As previously confirmed in this study, the conceptual framework is grounded on a wide-ranging literature review in the preceding chapters. This section outlines the significance of each hypothesised relationship and the empirical evidence that supports the hypotheses.

4.14 TRANSFORMATIONAL LEADERSHIP AND ORGANISATIONAL INNOVATION

Since the 1980s, studies have been conducted to identify how organisations adopt innovations and examine the relationship between specific organisational variables and organisational innovativeness (Woodman, Sawyer & Griffin, 1993:294; Jung, Wu & Chow, 2008:583; Tsuja & Mariño, 2013:583; Mendoza, 2015:109). Various researchers explored the significance of transformational leadership in relation to organisational innovation and identified related factors such as leaders' behaviours or characteristics that significantly affect organisational innovation (Makri & Scandura, 2010:77; Mokhber *et al.*, 2015:222; Harb & Sidani, 2019:206). Previous studies revealed that leadership is one of the key factors that affect organisational innovation (Sethibe & Steyn, 2015:325). Theoretical and empirical studies have found that transformational leaders are more capable of supporting the values and norms of followers and fostering organisational and personal changes (Imran & Anis-ul-Haque, 2011:184; Li, Sajjad, Wang, Ali, Khaqan & Amina, 2019:2). As a key driver of innovation at the organisational level, transformational leadership's effects have mostly been studied at the level of individual employees or organisational sub-units.

Researchers (Afriyie, Du & Musah, 2019:9) conducted their study intending to draw on the resource-based view (RBV) to examine the effect of transformational leadership on innovation and marketing performance in small and medium-sized enterprises (SMEs) service firms. The study was limited to the Greater Accra (Accra) and Ashanti (Kumasi) regions of Ghana, with the highest concentration of SMEs. To measure transformational leadership styles, they used the Multifactor Leadership Questionnaire (MLQ-5x) (Alsayed, Motaghi & Osman, 2012:2) developed by Avolio and Bass (1995). From this perspective, transformational leadership measures five dimensions describing leadership characteristics, namely idealised influence behaviour, inspired motivation, intellectual stimulation and individualised consideration.

More specifically, the study aimed at answering the following questions: to examine how innovation affects the marketing performance of SMEs, and to examine the moderating role of transformational leadership in the relationship between innovation and marketing performance of SMEs (Tajasoma *et al*.,

2015:176; Adom, 2017:70). The innovation construct as an independent variable during this investigation was classified into product innovation, process innovation, marketing innovation and organisational innovation. This part includes 20 items divided into four subcategories; each one was measured by a Likert-type scale of seven (7) levels (ranging from "1 strongly disagree" to "7 strongly agree". The study findings point to transformational leadership as resource capabilities, which play a vital role between innovation and marketing performance (Samad, 2012:489).

4.14.1 Idealised influence and organisational innovation

Idealised influence incorporates behaviours that implant pride in followers for being associated with the leader often signified or are synonymous with charisma. A transformational leader with idealised qualities presents a sense of power and self-confidence and is able to assure others that they can overcome difficulties (Hughes, 2014:8). Transformational leadership style has been recognised as one of the most important factors influencing innovation. The research argues that this style plays an essential role in developing the process, structure and climate for organisations to become innovative. Within developing countries like Lebanon, the banking sector is facing fast changing challenges that require innovation. It is confirmed that the banking sector is the core of the Lebanese economy, and banks represent a very active segment, approximately 6.2% compared to other sectors (Sujud & Hashem, 2017:37).

Prior to the civil war, the Lebanese banking sector was the most advanced banking sector in the Middle East, but it has been seriously affected by the war, as were all other sectors. This implies that banks thereafter needed to influence innovation as a driving tool to survive and succeed in highly competitive environments (Ramadan, 2016:334). In order to accomplish the foreseen results, transformational leadership was underscored as one of the most important strategic tools that enable innovation. On this, other research has recently recognised the relationship between transformational leadership and innovation (Akbari, Younesi & Zohoori, 2017:194). Following the crisis in the Lebanese banking sector, Ahmad, Easa and Mostapha (2019:216) volunteered to conduct the study on leadership and the revival of banks in Lebanon. Several leadership styles have been studied, although the best-known leadership style and the most widely used in leadership literature that linked to innovation is transformational leadership (Alnesr & Ramzani, 2019:76).

Another study was conducted by Zhang, Zheng and Darko (2018:1), which confirms that innovation plays a critical role in the sustainable development of the construction industry. Their research aimed to examine transformational leadership style's role in shaping employees' innovative behaviour by analysing the mediating effect of innovation climate and the cross-level moderating effect of

innovativeness as a project requirement in the construction industry in China. Previous research has also found empirical evidence of transformational leadership style's positive relationship with a creative organisational climate at firm level (Quang, Khuong & Le, 2015:747; Ebrahimi, Rezvani Chamanzamin, Roohbakhsh & Shaygan, 2016:140; Graham, Nikolova & Sankaran, 2020:6). Further studies by Dickson and Kising'u (2019:1166) established a positive relationship between idealised influence leadership with change management. The study concluded that idealised influence significantly affected change management in Kenya Ports Authority. This is because an effective and knowledgeable idealised leader is able to encourage the participation of employees in a decision-making process, henceforth achieving organisational goals. Therefore, the following hypothesis is proposed:

H_1: There is a significant positive relationship between idealised influence and organisational innovation in South African UoTs.

4.14.2 Inspirational motivation and organisational innovation

A leader with inspirational motivation talks optimistically about the future and expresses confidence about achieving group goals, discusses enthusiastically what needs to be accomplished, and pronounces a clear vision for the future to motivate and inspire followers to achieve goals. According to Hughes (2014:9), even in the absence of a leader, inspirational motivation often produces individuals' effort and performance beyond normal expectations, thereby nurturing followers who can independently address challenges on their own (Steinmann, Klug & Maier, 2018:2). In this incessant changing and competitive global market, human resources can become the organisation's competitive advantage if managed effectively. This is evident from the literature that leaders significantly influence subordinates (Molero, Moriano & Shaver, 2013:2). Following this evidence, Asrar-ul-Haq and Kuchinke (2016:54) conducted the study and declared that the significance of leadership style increases in the services sector in Pakistan as it has a direct impact on economic development.

Consequently, the development and growth in the services sector ensure the national economy's overall growth, especially in a developing country. The banking sector of Pakistan is growing and that has given rise to intense competition among banks. Therefore, in order to stay ahead of competitors, banks can manage their human resources effectively by employing different leadership styles in this regard. Extant and current research announces that the use of transformational leadership can boost employees' morale and result in job satisfaction leading to high innovation, and thereby the importance of effective leadership is increased (Amabile, 1998:78; Jung Chow & Wu, 2003:526; Saari & Judge, 2004:398; Mokhber *et al.,* 2015:224; Zhang *et al.,* 2018:4).

Another study, conducted by Akbari *et al*. (2017:194), focused on transformational leadership and innovation in government organisations of Iran, located in four of the largest cities of Iran. Therefore, it is important to highlight that transformational leaders use inspirational motivation and intellectual stimulation for innovation in organisations (Shao, Feng & Liu, 2012:2402; Manafi & Subramaniam, 2015:361). Such a type of leadership suggests a vision that can inspire employees, increase their desire to perform outstanding activities, and encourage them to use innovative techniques in their own job functions. The result of such high-level motivation then improves organisational innovation (Chhotray, Sivertsson & Tell, 2018:44). These insights led to the following hypothesis:

H_2: There is a significant positive relationship between inspirational motivation and organisational innovation in South African UoTs.

4.14.3 Intellectual stimulation and organisational innovation

Intellectual stimulation is the third set of behaviours and attributes, which infers that a transformational leader seeks divergent perspectives when solving problems and gets others to look at those problems from a different angle. Those who employ intellectual stimulation also encourage non-traditional thinking and propose novel ways of looking at how to complete projects (Hughes 2014:9). For Tajasoma *et al.* (2015:176), a leader with intellectual stimulation lets followers question the status quo as well as the tried and tested ways of problem-solving and inspired them to address impediments from diverse perspectives. Employing intellectual stimulation, transformational leaders attract their followers' attention by promoting creativity and innovative thinking. Therefore, followers are encouraged to look at situations or problems from new perspectives to discover different methods of doing things or finding new solutions to problems.

In their study, conducted on the mergers of higher education institutions (HEIs) in South Africa, Chipunza and Gwarinda (2010:2) argue that evidence has shown that there is no difference in transformational leadership, whether it is applied within an educational or a business environment, especially considering the current day tendency of running educational institutions as businesses. This is true, considering the fact that today, educational institutions are run along with business practices. Studies on amalgamations and absorptions in educational settings have shown that transformational leadership is a central factor in the success of the merger. The authors confirm that this study has shown that transformational leaders in institutions played key roles such as shared vision, teamwork, and the creation of an enabling environment (Savović, 2017:99).

A significant point that has stemmed from this study is the evidence that a lack of strategic direction and empowering of followers and capacitating them leads to dissatisfaction with the whole process, despite the transformation process being declared a success (Chipunza & Gwarinda, 2010:9). One study was conducted by Abdullah, Shamsuddin and Wahab (2012:492) from small business owners operating at Pasir Gudang Industrial Park in Malaysia. This study provides evidence that intellectual stimulation significantly affects organisational innovation. Furthermore, Dickson and Kising'u (2019:1160) investigated the influence of intellectual stimulation on change management in Kenya Ports Authority. The study found that intellectual stimulation leadership plays a significant role in organisational innovation (Dickson & Kising'u, 2019:1166). The following hypothesis is therefore put forward:

H_3: There is a significant positive relationship between intellectual stimulation and organisational innovation in South African UoTs.

4.14.4 Individual consideration and organisational innovation

Individualised consideration is the fourth and final factor of transformational leadership. Those transformational leaders who exhibit individualised consideration spend time coaching and teaching their followers, and in doing so, promote self-development. They treat them as individuals rather than simply group members and detect the opposing needs, aptitudes and ambitions for each (Hughes 2014:9). Within the bank context of Pakistan, Qabool and Jalees (2017:25) established that assisting individual employees to advance their skills may enhance their creativity, particularly in thinking of new ways to do things and using their creative abilities when faced with challenges. Such leaders are also likely to display innovative work behaviour such as idea generation, idea promotion and idea realisation, both for self-enhancement and for developing the potential of their individual subordinates.

Likewise, Majumdar and Ray (2011:140) assert that the leadership styles displayed by branch managers of the public and private sector banks of Kolkata are positively associated with organisational innovation. In one of their study's findings, Tsheola and Nembambula (2015:37) show that there is justification for assuming that transformational leadership characteristics, principles and roles are pertinent to managing change for historically disadvantaged universities (HDUs). Additionally, another study was conducted by Herbst (2017:750) at a university of technology in South Africa. In this, she confirms that the review of the literature highlighted the fact that the highly politicised and structured HEIs in South Africa are faced with major transformation challenges that require exceptional leadership (Mouton, Louw & Strydom, 2013:289). It is declared that transformational leadership becomes essential for the development of higher education (Ngcamu & Teferra, 2015:209).

Finally, leaders can significantly influence employees' perception of their jobs and job performances. In the private sector, transformational leaders have proven their capability to influence their followers by reinforcing the perception, meaning, and worth of their jobs through their words and actions. Studies show that when transformational leaders' influence emphasises a project's significance, it leads to stronger job engagement, which improves innovative job behaviour (Vila-Vázquez, Castro-Casal, Álvarez-Pérez & Río-Araújo, 2018:4). Various literature studies reviewed designate that for a leader to be considered transformational, there are four central qualities that he or she must have, as suggested by Bass (1999:11), Alkhaja and Miniano (2019:134) as well as Al-Mansoori and Koç (2019:4). These traits of transformational leaders are: 1) idealised influence; 2) inspirational motivation; 3) intellectual stimulation, and 4) individualised consideration. Therefore, inferring from the reviewed literature and the empirical evidence acknowledged above, the study puts forward the following four hypotheses:

H_4: There is a significant positive relationship between individualise consideration and organisational innovation in South African UoTs.

4.15 TRANSACTIONAL LEADERSHIP AND ORGANISATIONAL INNOVATION

Following Nanjundeswaraswamy and Swamy (2014:58), transactional leadership (TSL) relies more upon 'bartering' between the leader and follower by which subordinates are compensated for meeting specific goals or performance criteria (Levin & Lundquist, 2016:18). The transactional leader will first authenticate the relationship between performance and reward and then exchange it for an applicable response that encourages subordinates to improve performance. The relationship is expressed with social transactions that have an instrumental value (Keskes, 2014:30) as, for example, salary, bonuses and other specific rewards that have a monetary value. In order to achieve its determination of creating common satisfaction among both parts, the relationship must find equilibrium within the restricted economic context it interacts and exists in (Bass & Avolio, 1994:13).

The TSL is based on contingent reinforcement and includes three dimensions: contingent reward, management-by-exception and laissez-faire, or non-leadership behaviour (Sadeghi & Pihie, 2012:188; Keskes, 2014:31). Though some scholars divide management-by-exception (MBE), they assert it is composed of four behavioural factors: contingent reward, active management by exception (MBEA), passive management by exception (MBEP) and laissez-faire leadership (Bass & Avolio 1994:4). Transactional leadership depends on contingent reinforcement, either positive contingent reward or the more negative active or passive forms of management-by-exception. The transactional leader is never

around in the organisational environment when required, continuously postpones difficulties and avoids making decisions (Öncer, 2013:154; Nanjundeswaraswamy & Swamy, 2014:58).

Studies advocate that TSL can only be exercised when the leader has the power to reward and to punish, which is currently lacking in most public sector organisations (Sirin, *et al*., 2018:2010). Contrarily, Sundi (2013:52) opines that transactional leadership behaviour provides followers with confidence and motivation to accomplish desired performance. Abundant researchers have studied the effects and relationships of leadership style with employee performance (Islam, Aamir & Ahmed, 2012:238; Paracha, Qamar, Mirza, Hassan & Waqas, 2012:55; Kalsoom, Khan & Zubair, 2018:23). Previous studies revealed that leadership is one of the key factors that affect organisational innovation (Sethibe & Steyn, 2015:325; Tabassi, Roufechaei, Ramli, Bakar, Ismail & Pakir, 2016:343). According to Faraz, Yanxia, Ahmed, Estifo and Raza (2018:52), in its comparison with transformational leadership (TFL), transactional leadership (TSL) received the least attention of researchers and researchers.

Repeatedly, TSL was investigated in its comparison with TFL regarding employee or organisational outcomes. Surprisingly, authors remained unable even to find a single study solely investigating the influence of TSL on the innovative work behaviour (IWB) of employees. Even the available findings in the extant literature are highly contradictory. Some were found to be positive (Khan, Aslam & Riaz, 2012:20), while others have proved negative (Khaola & Sephelane, 2013:50), apart from those that did not even find any relationship at all (Turunc, Celik, Tabak & Kabak, 2010:77). Therefore, these inconsistencies of results lead to the anticipation that additional factors influence the relationship of TSL with IWB. The findings of the study reveal that TSL has a direct positive relationship with IWB. In addition, intrinsic motivation partially mediates the positive relationship of TSL with IWB.

Research reveals that Sang (2017:747) conducted a study to determine the effect of TFL and TSL on SME innovation performance in Kenya. In conclusion, it was found that both leadership styles make it possible for SMEs to be highly innovative, and firms with high levels of TSL display superior innovation. Also, in their surveyed small-scale enterprises in Nigeria, Obiwuru, Okwu, Akpa and Nwankere (2011:101) evidenced that the transactional leadership style positively impacted employee performance. Above all, there is consensus among numerous scholars that TSL styles are significantly and positively associated with innovative behaviour (Abbas & Asghar, 2010:2; Chaudhry & Javed, 2012:258; Khan *et al.*, 2012:18; Yıldız, Baştürkb & Boz, 2014:786; de Oliveira & de Lacerda, 2015:5).

However, transactional leadership can be argued to be negatively related to innovative behaviour because it is focused more on in-role performance and less on the inspiration of novel activities (which may be

particularly detrimental for jobs where innovation is not an obvious part of the job description). Research indicates that the transactional behaviour leadership style is largely ignored for innovation and creativity, but the meta-analyses have strongly predicted the TSL for employees' motivation, leader effectiveness and satisfaction (Anderson, Potočnik & Zhou, 2014:2). According to Sang (2017:752), there is a direct negative relation between TSL and innovativeness. In a team under the charge of a transactional leader, subordinates' freedoms are constrained so that there is little opportunity for self-determination or creativity (Wei, Yuan & Di, 2010:34).

However, Zheng, Wu and Xie (2017:18), in their study titled: The impacts of leadership on project-based organisational innovation performance: the mediator of knowledge sharing and moderator of social capital, intended to investigate various effects of different types of leadership on innovation performance in a construction project-based organisation in China. The results show that TSL has some positively significant effects on knowledge sharing and innovation performance.

4.15.1 Contingent reward

In agreement with most researchers, Ali (2019:29) stresses that transaction means 'exchange', which is why TSL is the bargaining or exchange between leader and followers (Rezvani, Khosravi, & Ahmad, 2012:3). In their opinion, Odumeru and Ogbonna (2013:358) advise that contingent reward can be branded into two categories: contingent positive reinforcement and contingent negative reinforcement. Consequently, contingent positive reinforcement is given when the set goals are attained on time or before time. This positive reinforcement is given in the form of praise or rewards. Transactional leaders distinguish followers' successful performance and reward them for positive productivity. On the other hand, contingent negative reinforcement is given when the set goals are not met, tasks are not accomplished, and performance falls below standard (Al-Malki & Juan, 2018:52; Rehman, Bhatti & Chaudhry, 2019:5).

In line with this opinion, research was conducted within public organisations in Greece by Xenikou (2017:10) to test the effect of TSL and transactional contingent reward as harmonising, but with distinct, forms of leadership on aspects of organisational identification via the perception of innovation and goal organisational values. From this, the transactional contingent reward was found to be positively related to affective identification beyond any effect of TFL. This finding is in line with the results of Schriesheim, Castro, Zhou and DeChurch (2006:32) and Vecchio, Justin and Pearce (2008:72) that transactional contingent reward was significantly related to individual follower performance after controlling for transformational leadership. Likewise, Wang, Oh, Courtright and Colbert (2011:234)

gave evidence that transactional contingent reward projected individual task performance beyond the effect of TFL.

Research advises that incentives might drive behaviour for two distinct reasons: firstly, they upsurge expected reward; secondly, they increase the difference in subjective value between successful and unsuccessful performance, which upturns contingency, and the degree to which action determines the outcome (Manohar, Finzi, Drew & Husain, 2017:1016). Therefore, research cautions that TSL contingent rewards have a destructive influence on creative performance (Amabile, Hennessey & Grossman, 1986:14; Eisenberger & Shanock, 2003:122). Furthermore, Alia, Jangga, Ismail, Kamal and Ali (2015:163) accepted that TSL seeks to sustain stability rather than encourage innovation in an organisation.

As such, numerous scholars announce that TSL may have negative effects on employees' creative behaviour because it concentrates more on advancing employee performance and less on encouraging innovation (Pieterse, Van Knippenberg, Schippers & Stam, 2010:611; Asrar-ul-Haq & Kuchinke, 2016:56). For Faraz, Yanxia, Ahmed, Estifo and Raza (2018:52), employee motivation is the constituting component of inventiveness and innovation. Literature has divided the theory of motivation into two types, known as intrinsic motivation and extrinsic motivation. Where intrinsic motivation results from the work itself, extrinsic motivation is based on the objective to attain positive consequences. Consequently, *prima facie* intrinsic motivation seems more positively related to innovative work behaviour than extrinsic motivation.

Nonetheless, studies considered both intrinsic motivation and external rewards that relate positively to innovative work behaviour (Chen, Wu & Chen, 2010:199). Lately, Malik, Butt and Choi (2015:60) have argued that an increase in the creativity of employees in the presence of rewards, to some extent, can be attributed to increased intrinsic motivation for creativity.

The above insights lead to the following hypothesis:

H_5: There is a significant positive relationship between contingent rewards and organisational innovation in South African UoTs.

4.15.2 Management by exception (active)

In management by exception, Hasija *et al*. (2019:152) insinuate that a leader keeps checking on the performance of his staff and directs them as and when needed. The leader guarantees task success with full efficiency and effectiveness (Mosson, Schwarz, Hasson, Lundmark & Richter, 2018:2). A leader

also aids the employee to focus on deviations and faults, if any, in their work. A leader who manages by exception-active is the one who not only focuses on mistakes, but helps employees deal with such errors, complaints or failures. He/she keeps reminding them of their let-downs to enhance them to accomplish a set standard. Such leaders also adapt their actions to the situation, thereby taking corrective actions that occasionally prove negative, but the approach is effective in the long run (Kolzow, 2014:42).

In their study, Li, Bhutto, Nasiri, Shaikh and Samo (2015:33) wanted to approach the issue of how organisational innovation can be accelerated with the support of leadership structures and an organisational climate, specifically taking into account the top innovative universities of the world, which has not been found in previous empirical studies. Their questionnaire comprised indicators such as contingent rewards and MBEA. Their results suggested that TSL can directly impact organisational innovation. This is in line with Vargas's (2015:48) findings that TSL style is more appropriate during periods of stability when the organisational learning process objective is mainly to revive, strengthen and upgrade current knowledge.

Furthermore, she avows that both the leadership styles, TSL or TFL, and even a blend of both leaders, can highly influence creativity and innovation, whereas TSL style from a theoretical and empirical perspective promotes an organisational learning process, innovation, high performance and competitiveness (Judge & Piccolo, 2004:755; Derue, Nahrgang, Wellman & Humphrey, 2011:16; Breevaart, Bakker, Hetland, Demerouti, Olsen & Espevik, 2014:44; Kwapisz, Brown, Bryant, Chupka & Profota, 2019:44). As such, in their study, Hasija *et al*.'s (2019:152) results on variance in between different leadership styles of school leaders in India indicate that if a leader follows MBEA in a constructive way, staff motivation becomes high and contributes more to organisational productivity and innovation.

4.15.3 Management by exception (passive)

As suggested (Rehman *et al*., 2019:6), MBEP is the opposite of MBEA because, in this type of leadership, leaders get involved after a certain problem arises or when subordinates do not achieve the standard products. Leaders practising MBEP often pass some unbecoming remarks such as denigration, punishment and do not give rewards, which reduces individual self-esteem, morale and performance. Accordingly, MBEP refers to a type of leadership where leaders correct the problem when it becomes severe (Bass, 1990:22). It refers to contingent punishment (rectifying the negative reinforcement). As opined by Hasija *et al*. (2019:151), leaders wait for mistakes to happen and then take action in this approach of leading. The approach is also called a reactive approach.

With Adeel, Khan, Zafar and Rizvi (2018:214), passive leadership is the sum of two constructs from the full range model of leadership: MBEP and laissez-faire. Passive leadership is an ineffective type of leadership. Therefore, PBMP has negative impacts on the performance of employees and the laissez-faire approach of leadership and is the least effective style of leadership (Bass *et al.*, 1994:13; Barlinga & Frone, 2017:2). Above all, Odumeru and Ogbonna (2013:359) reinforce that TSL is primarily passive. The behaviours most associated with this type of leadership are to establish the criteria for rewarding followers accordingly, maintaining the status quo (Bass & Avolio, 1993:116; Rodrigues & Ferreira, 2015:499).

In their study, Voon, Lo, Ngui and Ayob's (2011:29) objective was to test the theory that leaders can affect employee job satisfaction, commitment and productivity by adopting suitable leadership styles. Generally, the determination of this study was to determine the aspects of transactional and transformational leadership that affect employees' job satisfaction in the public sector in Malaysia. The results showed that transactional leadership style negatively relates to job satisfaction in government organisations. The finding shows that only a contingent reward dimension of transactional leadership has a significant relationship with two dimensions of job satisfaction (working condition and work assignment).

Overall, MBE is more ineffective compared to contingent reward. Management-by-exception (active) is about the anticipation of mistakes and the enforcement of rules that may prevent mistakes from happening. In contrast, MBE passive refers to confronting followers with their mistakes and expressing disapproval about the mistakes that have been made. As MBE passive is most likely to occur when leaders have a large span of control, it is often considered to be a passive-avoidant leadership behaviour (Breevaart *et al*., 2014:139).

The following hypothesis is suggested:

H_6: There is a significant positive relationship between management by exception and organisational innovation in South African UoTs.

4.15.4 Laissez-faire leadership style and organisational innovation

The laissez-faire style abdicates responsibilities and avoids making decisions. Similarly, laissez-faire is uninvolved in the work of the unit (Ali, 2019:28). It is difficult to defend this leadership style unless the leaders' subordinates are experts and well-motivated specialists, such as scientists. Leaders let group members make all decisions (Chaudhry & Javed, 2012:259). In leadership literature, laissez-faire refers

to a hands-off, let things ride approach (Amin, Tatlah & Islam, 2018:165) to influence individuals in the workplace. Laissez-faire leadership is described as the absence of leadership and the avoidance of intervention. Laissez-faire leaders are inclined to behave as if they are renounced from the responsibilities and duties dispensed to him/her (Tosunoglu & Ekmekci, 2016:90).

Leadership is a key factor in determining an organisation's success or failure (Malki & Juan, 2018:30). As a result, a number of organisations underperform and fail to achieve their objectives due to leadership difficulties (Tosunoglu & Ekmekci, 2016 :89). Therefore, Haile (2017:51) saw it fit to conduct a study to explore leadership styles and address accompanying problems to enhance organisational success. This study was conducted in Haramaya University to determine the impact of selective leadership style on corporate success. Known as the absence of leadership, laissez-faire leadership is an ineffective and destructive leadership style, which is presumed to erode the trust both in supervisors and organisations (Schyns & Schilling, 2013:139; Eresia-Eke & Mabasa, 2018:6; Ali, 2019:28).

Erstwhile research conducted by Skogstad, Einarsen, Torsheim, Aasland and Hetland (2007:80) intended to test the theory that laissez-faire leadership behaviour is not a type of zero-leadership, but a type of destructive leadership behaviour that shows systematic relationships with workplace stressors, bullying at work, and psychological distress among Norwegian employees. In their findings, laissez-faire leadership was positively associated with role conflict, role ambiguity, and conflicts with co-workers. The results support the hypothesis that the laissez-faire leadership style is destructive leadership behaviour. Therefore, laissez-faire leadership is often referred to as the least active and least effective leadership style (Washington, Sutton & Sauser, Jr., 2014:14; Liphadzia, Aigbavboa & Thwala, 2015:289).

Finally, on the grounds of the above theoretical analysis, the following hypotheses were expressed:

H_7: There is a significant positive relationship between laissez-faire leadership and organisational innovation in South African UoTs.

4.16 ORGANISATIONAL INNOVATION AND ORGANISATIONAL PERFORMANCE

According to Ganzer, Chais and Olea (2017:322), in 1912, a development of the conceptual approach to innovation ensued, which was extended due to Schumpeter's (1934) work. Innovation was then defined as innovating and creating processes that promote the disruption of the economic system while allowing the emergence of novelties. Research indicates that innovation is one of the most used buzzwords in today's society (Grisolia & Ferragina, 2015:1; Demircioglu, 2016:1). Various organisations review

innovation and consider that it is essential for individuals and organisations' performance. The role of innovation to enhance organisational productivity and effectiveness is increasingly important amid the pressures of growing global competition and economic uncertainty and widely acknowledged (Crespi & Zuniga, 2012:2; Standing, Jackson, Larsen, Suseno, Fulford & Gengatharen, 2016:45).

In the current globalised competitive environment, innovation has become the strategic measure by which it can be measured how good an organisation is and how good it is likely to be in the future (Dziallas & Blind, 2018:4). A great deal of literature has emerged, particularly in recent years, on various aspects of innovation. Many academic disciplines, including sociology, psychology, social psychology, economics, anthropology, political science, information and communication technology, communication studies, health studies, and organisation and management studies, contribute to the study of innovation (Demircioglu, 2016:1; Kogabayev & Maziliauskas, 2017:62; Li, Yue & Wu, 2017:3). Organisational innovation can be defined as the introduction of something new (an idea, product, service, technology, process, and strategy) to an organisation.

Both current and ancient literature defines organisational innovation (Razavi & Attarnezhad, 2013:227) as creating or adopting an idea or behaviour new to the organisation (Hage, 1999:599). Additionally, research declares that the implementation of innovation is perceived to encompass the creation, development, and implementation of novel ideas or behaviours. Innovation can be a new product or service, a new production process technology, a new structure or administrative system, or a new plan or programme pertaining to organisational members (Zaied, Louati & Affes, 2015:54).

Consequently, innovation is defined as an assumption of an internally generated or purchased device, system, policy, programme, process, product, or service that is new to the organisation. Therefore, this description is adequately broad to embrace different types of innovation pertaining to all parts of organisations and all aspects of their operations (Damanpour, 1991:556; Baregheh *et al*., 2009:1324; Baer, 2012:102). Therefore, the implementation of innovation is largely proposed to contribute to the performance or effectiveness of the organisation. Innovation plays a significant role individually and organisationally in the changing business environment. Innovation is acknowledged as value-added to organisational performance and activities (Alharbi, Jamil, Mahmood & Shaharoun, 2019:1). According to Pastuszak, Shyu, Lee, Anussornnitisarn and Kaewchur (2012:5), to diagnose an organisation's ability, organisational performance should be identified and measured in order for the organisation to know its existing situation (Haddadi & Yaghoobi, 2014:2021). Numerous scholars have pointed out that innovation is an essential aspect contributing to better organisational performance. Accordingly, with

innovation, an in-depth and effective survey and discovery of new manners substituting existing ones are frequently encouraged. Innovation can produce some competitive ways and accomplish ideal performance levels regardless of whether it is a result of a response to adaption to changes in the environment, or as a pre-emptive grit to affect the environment (Han, Kim & Srivastava, 1998:35; Werlang & Rossetto, 2019:3).

The literature argues that businesses must incessantly learn and innovate to survive in the market with an extremely competitive environment. Therefore, failure to innovate may result in deteriorating organisational performance (Huang, Radzi, Jenatabadi, Kasimn & Son, 2013:962). According to Karim, Solangi, Larik, Lakh and Tagar (2017:295), organisational performance includes real productivity or outcome of a business that is calculated instead of its planned productivity or targets and aims. Organisational performance has been defined as a firm's capability to accomplish its goals and objectives with the help of talented administration, good governance, and a constant rededication to accomplish business objectives.

n their study, Huang *et al*. (2013:966) tested the impact of organisational learning and organisational innovation on organisational performance in Asian manufacturing food industries. It is alleged that, even though the literature review reveals the presence of a positive relationship among organisational learning and organisational innovation on organisational performance (Jiménez-Jiménez & Sanz-Valle, 2011:409; Pastuszak *et al*., 2012:5), there have been very few studies focusing specifically and empirically on these relationships in a model (Sok, O'Cass, & Sok, 2013:161).

Therefore, Huang *et al*. (2013:966) affirm that one of the significances of their study is the investigation of such relationships in the manufacturing food industry. The findings from this research provide further evidence that the effect of organisational innovation on organisational performance is positive.

4.16.1 Organisational innovation and customer satisfaction

Many organisations on the market are conditioned with several satisfied customers. Customers are the key factor of the existence and company development on the market. It is obvious then that organisations that want to face competition need to provide valuable and unique terms to their customers that will satisfy their needs (Ilieska, 2013:327). The BSC demands that managers translate their general mission statement on customer service into specific measures that reflect the aspects that really matter to customers. Customers' concerns tend to fall into four categories: time, quality, performance and service,

and cost (Kaplan & Norton, 2005:73). Among these organisations are the higher education institutions (HEIs) that need service quality for customers.

Therefore, Jan and De Jager (2015:91) assert that HEIs, like most other organisations, have appreciated the consequence of a customer-centred approach to surviving among competitors. HEIs are influenced by the internal and external environment and inputs, processes and outputs/products; they get inputs from students, faculty and staff, and funds from the external environment. Research confirms the value of providing adequate services to students in order to maintain the stature and academic reputation of an institution (Jarvinen & Suomi, 2011:412; Jan & De Jager, 2015:91). In their study, Jain, Sinha and Sahney (2011:299) advise academic HEIs in the same way as the corporate need to innovate, diversify their structures and find new ways of delivering their services effectively to customers.

Research reveals that Green (2014:131) conducted a study to measure expectations and perceptions of students and staff to determine their satisfaction of service quality provided at the Durban University of Technology (DUT) in South Africa. Consequently, this study measured the anticipations and views of students and staff in order to gauge the service quality in a higher education institution (HEI). All five dimensions – physical and academic services, commitment to serve, human factors, visual factors, and general attitude – discovered that both students and staff are dissatisfied with the service quality received at the DUT. Consequently, there is no customer satisfaction despite the fact that DUT is a university of technology (UoT) and its core service is innovation (technology) (Green (2014:141). Furthermore, Green and Adekanmbi (2014:948) suggest that the relationship between customer service, service quality, and aims to enter into business dealings by means of an expectancy model of behaviour is where service performance forms the basis of sustained business intentions of customers towards a specific enterprise. The insinuation of this is that a satisfied customer is the source of all profits. Within the context of an HEI, a satisfied student becomes active in the so-called word-of-mouth promotions of the institution, which prove to be valuable assets to the institution.

Arising from the preceding discussion, the following hypotheses are advanced:

H_8: Organisational innovation significantly and positively influences customer satisfaction in South African UoTs.

4.16.2 Organisational innovation and financial performance

Research indicates that financial performance is an organisation's financial condition over a specific period that includes collecting and using funds measured by several indicators of capital adequacy ratio,

liquidity, leverage, solvency, and profitability. It is the ability to manage and control resources (Fatihudin *et al*., 2018:554). Also, financial performance mostly reveals business sector outcomes and results that display the overall financial health of the organisation over a specific period of time (Omondi & Muturi, 2013:99; Naz *et al*., 2016:81; Matar & Eneizan, 2018:2).

Notably, Martín, Potočnik and Fras (2017:2) maintain that innovation in the workplace has gained recognition as a key performance output over the last decades, although it is important to highlight that innovation may not necessarily constantly be positive and can occasionally even be counterproductive to other aspects of performance in the workplace. Moreover, creativity and innovation are complex, multi-level, and developing phenomena that pan out over time and that necessitate expert leadership in order to maximise the benefits of novel and enhanced ways of working (Anderson *et al*., 2014:3; Martín *et al*., 2017:4). Although innovation may not necessarily lead to positive outputs, research has suggested that it leads to a wide range of benefits, including improved psychological well-being. For instance, several studies have documented that individuals could introduce new ways of doing things to cope with job demands and reduce stress (Hernández, Salanova & Peiró, 2007:621; De Spiegelaere, Van Gyes, Vandekerckhove & Hootegem, 2012:5).

The literature shows that policy in South Africa expects HEIs to emphasise cross-sectoral coordination with industry and knowledge networks interventions within a national system of innovation. Many government organisations focus on innovation developments in higher education, e.g. Science, Engineering and Technology Institutions (SETIs), the National Advisory Council on Innovation (NACI), the South African Department of Science and Technology (SADST), the Department of Trade and Industry (DTI), which support joint industry-academic research initiatives and knowledge economy (Jakovljevic, 2018:116).

However, academics carry out numerous varied chores that conflict with innovation tasks that characterise the inevitability for stability, reflections, flexibility, and a block of time during innovation activities. Any interruption during this internal process causes a delay and a restart of the process, and possible loss of vision and intuition. Ultimately, this may influence an institution's financial performance either way (Jakovljevic, 2018:116).

This discussion leads to the following hypothesis:

H_9: Organisational innovation significantly and positively influences financial performance in South African UoTs.

4.16.2.1 Organisational innovation and learning and growth

According to Utomo *et al*. (2019:57), human resources, information resources and organisation resources are three main aspects in learning and growth perspectives to gain long-term performance. Human resources influence the gaining of organisational goals through employee capability increasing, information system, motivation, empowerment and balance. Organisational resources can be organisational culture, leadership style, teamwork, procedure, and policy fixed by the organisation. However, this description excludes the individual aspect of human resources. As for Hasanefendic, Birkholz, Horta and Van der Sijde (2017:102), this neglect of individuals as innovators within higher education contexts stems from the idea that institutional innovation as an actor-driven activity is dubious in highly institutionalised settings such as higher education (Meyer, Ramirez, Frank & Schofer, 2007:28), specifically because of controls imposed by the institution on relevant or significant individual innovation.

Constraints posed by institutional factors such as power structures, values, norms, taken-for-granted attitudes, behaviours and routines can restrict the level of success for innovation in higher education (these institutional factors seem to be most influential at the departmental level (Campbell & O'Meara, 2014:13; Hasanefendic *et al*., 2017:102). Nevertheless, individuals can still learn and grow through undertaking strategic action and instigate innovation in their institutions in the form of disruptive changes even if the external environment and/or institutional culture and structure are not as forthcoming as desired (Flavin, 2012:103; Zentner, 2012:1).

The technological changes that hurt proven organisations are typically not very new or difficult from a technological point of view. They do, however, have two vital features: Firstly, they usually present a diverse package of performance attributes – ones that, at least at the onset, are not appreciated by present customers. Secondly, the performance attributes that existing customers make value advances at such a fast rate that the new technology can later invade those established markets (Yadav, 2019:50).

Studies affirm that a learning and growth perspective is the backbone of a successful scorecard because it involves employee skills and information systems. Learning and growth can embrace employee satisfaction, alignment of employee skills with jobs, number of employee proposals executed, and hours of employee training. Dependent on the actual employee skills and anticipated employee skills, some organisations change job descriptions, reposition employees to an additional unit, and/or implement motivation programmes planned to inspire employees to propose ideas, receive learning or preparation, and/or gain tenure through continued employment (Khatoon & Farooq, 2014:107; Ilyasin, 2017:228).

Learning has become a significant concept in the minds of organisations and management. Some authorities believe that creativity should also have value and can lead to a new product or process innovation. Innovation means the conception of novel ideas and the transformation of those ideas into beneficial applications; therefore, the amalgamation of creativity and contribution as operational values promotes innovation. An artistic environment is fuelled by the values of integrity, empathy, transparency, collaboration, learning, and contribution that foster trust and a spirit of collaborative success (Avedisian & Bennet, 2010:3; Bennet, Bennet & Lewis, 2015:20). Accordingly, Jakovljevic (2018:110) aspires to endorse innovative behaviour, the knowledge and awareness of construct and its potential for an application in creative activities can unavoidably contribute to empowering innovative activities at HEIs. Therefore, nurturing the innovative abilities of employees is vital in any organisation. A review of literature provides considerable information on the positive relationship between knowledge management and organisational innovation; however, few of them can empirically demonstrate evidence between those two crucial factors within a specific context (Ngoc-Tan & Gregar, 2018:306).

The preceding discussion leads to the following hypothesis:

H_{10}: Organisational innovation significantly and positively influences learning and growth in South African UoTs.

4.16.2.2 Organisational innovation and internal business processes

In line with Ilyasin's (2017:228) opinion, the process of innovation steered by the needs of customers captures four key processes: identification of the opportunities for new products and services, managing the research and development portfolio, designing and developing new production and service, and bringing novel products and services to the market. Therefore, the internal process can be referred to as a supply chain that develops services to customers. Furthermore, Sammut-Bonnici and Paroutis (2013:3) pronounce that 1) innovation can be forced by changes in markets and industries, 2) innovation can be generated independently by the firm's internal initiatives, 3) the process of innovation is influenced by the decision makers' interpretation of their environment and their choice of strategic actions. The fourth principle is that innovation requires internal and external social networks in order to tap into new ideas and resources.

Empirical research has proven that higher education systems are under pressure because there is a gap between skills demanded by the labour markets and skills acquired by graduates from the HEIs (Al-Hosaini & Sofian, 2015:26). The unemployment rate among HEI graduates in many countries has

become continuously higher during the past decade (Issa & Siddiek, 2012:149). The recent financial crisis has made this problem even more serious.

According to Al-Hosaini and Sofian (2015:27), it is vital for HEIs' administrators to adopt a different approach in focusing on their missions and to relay their strategy across organisational processes. Such efforts should include laying down accountability measures, relating strategic objectives to the vision and mission of the institution, re-aligning annual budgets, and more importantly, gauging and monitoring outcomes in both the short- and long term. Practitioners and scholars recommend that through the BSC, balancing the four perspectives of an institution's performance can be accomplished. The conceptualisation of the BSC was done with a fundamental goal of connecting business activities with the strategy directed towards realising the ultimate result, which is organisational performance (Dkhili & Noubbigh, 2013:87).

For Khatoon and Farooq (2014:107), the central point of this perspective is related to the customer perspective because to keep customers satisfied, an organisation would need to focus on the components of the organisation important to them. If targeted customers are dissatisfied when delivery is overdue, the organisation must target the internal process of developing a more efficient delivery system or refining the system currently used. To accomplish this, managers are undertaking a rigorous internal analysis of not only assessing the internal processes of the organisation, but revising innovation since global competition has decreased the amount of time (time compression; time to market) organisations can bring their products to market to be successful (Bontis, Bart, Bose & Thomas, 2007:661).

This discussion leads to the following hypothesis:

H_{11}: Organisational innovation significantly and positively influences internal business processes in South African UoTs.

4.17 CHAPTER CONCLUSION

This chapter painted the scenario on the balanced scorecard and its perspectives, and the issues addressed relate to financial performance measurement. The literature showed that researchers have written and defined the BSC from various perspectives. However, in considering the BSC concept, two essential insights emerge as dominant. In the first stage, the BSC provides a performance evaluation system (Kaplan & Norton, 1992:71; Kaplan, 1994:15). Kaplan and Norton defined the BSC as a performance management tool that enables a company to translate its vision and strategy into a tangible set of performance measures. Furthermore, Abdullah *et al*. (2013:134) define the BSC as a tool used by

management to record the activities and actions of staff and control and monitor the results or consequences of their actions.

The chapter revealed that the BSC preserves financial metrics as the eventual outcome measures for company success, but supplements these with metrics from three additional perspectives, i.e. customer satisfaction, internal processes, and learning and growth that are suggested as the drivers for creating long-term shareholder value. This chapter provided a comprehensive standpoint of financial performance in companies. It also presented an overview characterising the main features of the financial performance, also indicating the financial ratios and profitability ratios.

The chapter further provided a brief outline of the application of the BSC. The literature reviewed also indicated that despite the achievements reported on the application of the BSC and its dominance, various challenges remain and most are attributed to varying nature, sizes and strategic objectives of each organisation. The final sections of the chapter dwelt on an overview of previous studies on the BSC in higher education. It argued that many studies have been conducted to investigate the effectiveness of the BSC in this sector and that many organisations adopt different perspectives suitable for their functions in line with their vision, mission and strategic themes. Some researchers have highlighted its relevance to HEIs; however, previous studies have not defined which perspectives are most relevant for public HEIs, which are not for profit by nature. These authors reviewed recent studies in top journals using the BSC framework in HEIs. Their study identified the relevant perspectives for HEIs and presented its contextual analysis.

In its final sections, this chapter developed the hypotheses and conceptual model in line with the review of literature. This conceptual modelwas applicable for testing the relationship between TTL perspectives, organisational innovation and performance within UoTs in South Africa. The next chapter presents the research methodology.

CHAPTER 5: RESEARCH METHODOLOGY

5.1 INTRODUCTION

This chapter presents an in-depth view of the aspects of research methodology that were applied in this study. The chapter commences by providing an overview of facets such as research reasoning and paradigms, and outlines the line of thinking and the philosophy applied in this study. Research methods, design, and strategy are examined. Then, the literature review and the empirical sections follow when the sampling strategy is identified in line with the set target population, sampling frame, sample size details, as well as the approach and techniques employed to select the respondents from both the selected universities of technology (UoTs) in South Africa.

The chapter concludes by providing information on other significant elements such as the data collection tools and techniques, data analysis, and ethical considerations when collating data, and motivations are provided throughout, explaining why certain choices were made.

5.2 RESEARCH REASONING

Scientific reasoning (also termed research reasoning*)* is an imperative piece under the cognitive strand of 21st-century skills and is extremely underscored in the new science education standards (Zhou, Han, Koenig, Raplinger, Pi, Li, Xiao, Fu & Bao, 2016:175). Research reasoning is defined as scientific thinking that includes the set of reasoning processes that penetrate the field of science, induction, deduction, experimental design, causal reasoning, concept formation, and hypothesis testing, among others (Kuhn, 2012:327). It is a mental action by which researchers produce knowledge not available prior to the act of generation. (Bibel & Kreitz, 2015:933).

Additionally, research reasoning is divided into three mutually exclusive categories: deductive reasoning, inductive reasoning, and abductive reasoning. The deductive approach provides that something must be, while induction shows that something is operative, and abduction merely suggests that something may be (Walton, 2014:8; Igwenagu, 2016:4). Deductive reasoning is the process of drawing a conclusion that is necessarily true if the premises are true. It is linked with the hypothesis-testing approach research. With deductive reasoning, the approach moves from general principles to instances (Williamson & Johanson, 2017:6). Deductive research is more generally associated with positivist and quantitative research. It involves the development of an idea, or hypothesis, from existing theory, which can then be tested through the collection of data. (Gratton & Jones, 2014:36).

On the other hand, inductive reasoning is the form of reasoning in which the premises offer good reasons but not decisive reasons to accept the conclusion. Inductive reasoning is drawing a conclusion that it is 'probably' true (Johnson & Christensen, 2014:1). In an inductive approach, researchers develop concepts, insights and understanding from patterns in data rather than collecting data to assess preconceived models, hypotheses or theories (Taylor, Bogdan & De Vault, 2015:8).

Inductive reasoning commences with particular cases and concludes with general declarations or principles. Inductive reasoning is linked with the development of hypotheses and a theory of a more intricate nature, as happens in grounded theory. (Williamson & Johanson, 2017:6). Therefore, inductive reasoning (or bottom-up process) starts from specific observations and moves towards a general conclusion or theory (Khaldi, 2017:16). Inductive research is more often associated with interpretative, qualitative studies. Here, the pattern is to collect data and analyse that data to develop a theory, model, or explanation (Gratton & Jones, 2014:36)

Abductive reasoning, generally termed inference to the best explanation, is reasoning from specified data to a hypothesis that explains the data. Abductive reasoning has most often been an important kind of reasoning used at the discovery stage of scientific hypothesis development and testing (Walton, 2014:8). Abduction, as described, is how the scientist formulates the hypothesis that is subsequently verified, applying deductive or inductive reasoning. This version makes abduction seem essentially important in scientific methodology. It infers that abduction is a combination of both deductive and inductive reasoning (mixed methods). Abductive reasoning is seen as exceptionally appreciated in the process of scientific discovery. Every element of scientific theory that stands established currently has been due to abduction reasoning. Therefore, abduction reasoning is different from deductive and inductive forms, but closely tied to both as mixed methods in the process of scientific discovery (Walton, 2014:8;16).

Likewise, Mitchell (2018:105) suggests that abductive reasoning, also referred to as the 'abductive approach', is set to address weaknesses linked with both deductive and inductive approaches. Abductive reasoning follows a pragmatist perspective, taking incomplete (or 'messy') comments from experience and reality that may then lead to an unsurpassed prediction of the truth and possibly even to a novel theory. As such, it must be clarified that abductive reasoning is related to deductive and inductive approaches in so far as it is used to make rational insinuations and build theories. Pragmatism supports the application of a mix of different research methods as well as various approaches of analysis combined with a continuous cycle of abductive reasoning.

As Williamson and Johanson (2017:6) indicate, deductive research is more generally associated with positivist and quantitative research. Therefore, the current study is grounded on deductive reasoning. The role of the deductive reasoning approach is to guide the researcher to specify how data can be collected in relation to the concepts that make up the hypothesis (Bryman, 2016:21). Quantitative research transforms data, including conversations, actions, media stories, facial twitches, or any other social or physical activity – into numbers. Deductive reasoning was used to test the hypothesised relationships in this study by either proving or disproving the probable relationships between the variables the study intends to test. This reasoning approach was useful in searching for evidence to either accept or reject the research hypotheses.

5.3 RESEARCH PARADIGMS/PHILOSOPHY

A research paradigm is a set of interconnected assumptions about the social world, which offers a philosophical and conceptual framework for the methodical study of that world (Williamson & Johanson, 2017:5). It essentially reflects the researcher's beliefs about the world that he/she lives in and wants to live in. It constitutes the theoretical beliefs and values that shape how a researcher sees the world and how he/she interprets and acts within that world. It is the abstract lens through which the researcher surveys the methodological facets of their research project to define the research methods that will be applied and how the data will be analysed (Kivunja & Kuyini, 2017:26).

The role of a paradigm in research is to assist in choosing the methodology that guides the research venture. It constitutes the abstract beliefs and principles that shape how a researcher sees the world and how s/he interprets and acts within that world. A paradigm consequently bears significant consequences for every decision made in the research process (Antwi & Hamza, 2015:217; Kivunja & Kuyini, 2017:26). A range of paradigms have been suggested; however, they have been reduced just to positivism, post-positivism, phenomenology and pragmatism; the reason being to create a user-friendly set of paradigms that relate to current research traditions and that are practical and manageable while still being scholarly (Baronov, 2015:6; Blaikie & Priest, 2017:1).

5.3.1 Positivism

Positivism refers to the school of thought that the only 'true' or valid form of knowledge is that which is 'scientific', that is where the values and methods of the natural sciences are applied to study human behaviour, which in itself is objective and tangible in nature (Gratton & Jones, 2014:24). The importance and role of positivism in research are to provide solutions to problems in practice (Jonker & Pennink,

2010:29). Positivism relates to the philosophical stance of the natural scientist and involves working with a noticeable social reality to produce law-like generalisations. Therefore, positivists obey the natural sciences' doctrines and view behaviour as directly measurable and explainable through laws (Punch, 2013:17; Saunders, Lewis & Thornhill, 2019:144).

With a positivist approach, the emphasis is on quantitative data, deductive reasoning and generalisability or the degree to which the findings and conclusions of one particular study can be applied to other similar settings, situations or population at large (Williamson & Johanson, 2017:7). However, Neuman (2014:97) views a positivist approach as nomothetic, which means explanations make use of law or law-like principles. As such, positivists may use inductive and deductive inquiry, but the epitome is to develop a general causal law or principle then use logical deduction to specify how it functions in concrete circumstances. It is also confirmed that the positivist approach combines deductive reasoning with precise empirical observation on individual behaviour in order to determine and confirm a set of probabilistic causal laws that can be used to predict general patterns of human activity (Neuman, 2014:42). Therefore, this study applied the quantitative form of positivism.

5.3.2 Post-positivism

Post-positivism is defined as a narrowly associated with, and usually not considered discrete from positivism. Common views of post-positivism are that it is not possible to gain a truly objective understanding through measurement and observation and that there are intrinsic limitations within such an approach, which need to be acknowledged. The importance and role of post-positivist approaches are openness to diverse methodological methods in research and will often include qualitative as well as quantitative methods with a larger emphasis upon the practice of mixed methods to look at a single phenomenon employing diverse means (Grattan & Jones, 2014:26).

5.3.3 Phenomenology

Phenomenology is one of the main intellectual traditions that has been responsible for the anti-positivist position. The phenomenological researcher focuses on how an individual's behaviour is moulded by the association he or she has with the physical environment, objects, people and situations (Zikmund, Babin, Carr & Griffin, 2013:137). This philosophical approach is concerned with the question of how individuals make sense of the world around them and how philosophers should '*bracket'* their own preconceptions in their grasp of those worlds. The role and significance of phenomenologists in research are that they cannot ignore or delete their preconceived ideas, but they can put them into brackets, as it were, to remain conscious of them and do their best not to let their own preconceptions influence their

research (Bryman & Bell, 2014). This philosophy is usually linked with qualitative and mixed methods (MMR) types of research. Therefore, Mayoh and Onwuegbuzie (2015:2) assert that phenomenological research methods work tremendously well as an element of MMR approaches. In this study, this philosophical approach adopted a qualitative design. This is because it is concerned with human behaviour and how they understand the world they are living in.

5.3.4 Pragmatism

Pragmatisms assert that concepts are only pertinent where they support action. Pragmatism strives to merge both objectivism and subjectivism, facts and values, accurate and demanding knowledge and diverse contextualised experiences. Reality matters to pragmatists as practical effects of ideas and knowledge are appreciated for allowing actions to be carried out effectively. The importance of pragmatists in research is that their research begins by identifying a problem and embarks on contributing with practical solutions that inform future practice in research. Pragmatists recognise that there are numerous diverse ways of interpreting the world and commissioning research, that no single point of opinion can ever give the complete picture and that there may be several realities (Saunders *et al*., 2019:151).

Research asserts that pragmatism as a research paradigm in the example of crime scenes, criminal data, and interpretation in court uses both quantitative and qualitative research methods and exploits the integral duality of the data analysed. Therefore, pragmatism supports the use of a mix of diverse research approaches as well as various means of analysis combined with an incessant cycle of abductive reasoning. The mixed-methods approach to research offers researchers the aptitude to design a solitary research study that answers questions regarding the nature of phenomenon from a participant's opinion and the association between measurable variables (Mitchell, 2018:103).

Finally, the preceding discussion leads to the conclusion that this study is founded on positivism because positivists undertake behaviours that can be observed and objectively measured and analysed. Such objective measures are common, although not always numerical in nature. The use of numerical measurement and analysis is referred to as a quantitative approach; that is, research that involves measurable 'quantities'. Quantitative data is therefore strictly allied to the positivist approach (Gratton & Jones, 2014:29). The present study collected numerical data from respondents using a survey questionnaire. This data was then captured and analysed to facilitate the drawing of findings and conclusions. Consequently, the present study is based on the positivist paradigm, which satisfies these procedures.

5.4 RESEARCH APPROACH

Developing from Creswell (2014:1), research approaches are plans and the procedures for research that span the steps from broad assumptions to detailed methods of data collection, analysis and interpretation. The key role of any type of research approach is finding out the reality and facts that are unknown and that have not been exposed. There are three basic forms of research approaches, namely qualitative, quantitative, and mixed-methods research [MMR] (Mishra & Alok, 2017:2;19).

5.4.1 Qualitative research

Qualitative research aims to capture meanings or qualities that are not measurable, such as feelings, thoughts, and experiences, among others, which are those observations related to interpretative approaches. Qualitative research is intended to tell the researcher how (process), and why (meaning) things happen as they do. Qualitative research employs non-numerical data, frequently collated over a prolonged period and analysed to describe and understand concepts (Zikmund *et al.*, 2013:133; Cooper, Pamela & Schindler, 2014:144). Such notions are testing to implicitly translate into numbers, and therefore it is data in the form of words that have to be interpreted by the researcher that is relevant. Qualitative research is most suitable when the major objective is to explore, describe or explain (Punch, 2013:3; Jason & Glenwick, 2016:14; Leavy, 2017:9).

5.4.2 Quantitative research

As defined and described, Suresh (2014:41) affirms that quantitative research is a formal, objective, and systematic process for producing data about the world. Quantitative research is conducted to describe new circumstances, occasions, or perceptions. In a quantitative research study, variables are preselected and defined by the researcher; the data is assembled, quantified and statistically analysed often with the view to test the causal-effect relationship among the variables. Essentially, quantitative research is empirical research where data are in the form of numbers. Quantitative research is characterised by deductive methods to prove, disprove, or provide credibility to current theories (Punch, 2013:3; Leavy, 2017:9).

5.4.3 Mixed methods

Research discloses that numerous and dissimilar expressions are used for the mixed-methods approach, such as integrating, synthesis, quantitative and qualitative methods, multimethod, and mixed methodology, but that current writings incline to use the concept of mixed methods (Creswell (2014:1). The importance of mixed-methods research (MMR) encompasses amassing and assimilating quantitative

and qualitative data in a solitary project and, therefore, may result in a more comprehensive understanding of the phenomenon under investigation.

The role of MMR approaches is to value and equally appreciate both quantitative and qualitative approaches to research. More importantly, MMR approaches rely on (1) merging deductive and inductive designs to generate both quantitative and qualitative data and (2) integrating the datasets in some way. Therefore, these methods are suitable when the researcher's purpose is to describe, explain or appraise, and are predominantly convenient for studying compound problems or issues (Leavy, 2017:164).

The current study is based on the quantitative approach. This is because the data was collected in numerical form and was statistically analysed. The intention of the analysis was to test the relationship between the variables with the purpose of generalising the research to other higher education contexts.

5.5 RESEARCH DESIGNS

Studies define research designs as types of inquiry within qualitative, quantitative and mixed-methods approaches that provide specific direction for procedures in a research study (Creswell, 2014:41). Research design can be described as the construction of research, the adhesive that holds all of the essentials in a research project together; in short, it is a plan of the proposed research work (Akhtar, 2016:68). Furthermore, a research design is delineated as the physical part of the research process (e.g. sampling, data collection and data analysis). Its role is to set the procedure on the required data, the methods to be applied to collect and analyse this data, and how all of this will answer the research objectives and obtain the answers to research questions or hypotheses (Edmonds & Kennedy, 2016:2; Boru, 2018:1).

In research, data can be assembled through numerous procedures such as experiment, ethnography observation, exploratory, survey and many more (Kabir, 2016a:202). Research hints that investigators identify a sample and generalise it to a population in an experiment. Experiments are usually associated with a hypothetico-deductive approach to research. This analysis of data is performed to check if the hypotheses made were supported. Therefore, experimental designs are less convenient or suitable for answering exploratory and descriptive research questions. The role of an experiment is to review causal relationships between variables. Another strategy is ethnography; that is, a research strategy that has its roots in anthropology. It is a strategy in which the researcher meticulously observes, records and engages in the daily life of another culture and then documents accounts of this culture, emphasising descriptive detail (Neuman, 2014:207; Tariq, 2015:229; Akhtar, 2016:73).

Participant observation is closely associated with ethnography; therefore, the role of ethnography to generate an understanding of the culture and behaviour of a social group from an insider's point of view (Creswell, 2014:201; Sekaran & Bougie, 2016:97). Exploratory research is conducted to make a problem suited to a more accurate investigation or frame a working hypothesis from an operational perspective. Exploratory studies aid in understanding and evaluating the crucial concerns of challenges. It is not employed in cases where a conclusive result is needed. Therefore, for its role, exploratory research can be applied to acquire essential information and to build a proper base for conducting comprehensive future research (Sreejesh, Mohapatra & Anusree, 2014a:31).

A survey is a system for assembling data from or about people to describe, compare or explain their knowledge, attitudes and behaviour. The survey design enables the researcher to collect quantitative and qualitative data on many types of research questions (Sekaran & Bougie, 2016:97). It allows for various methods to recruit participants, assemble data, and use several instrumentation methods. Survey research design is also described as a set of research procedures in which researchers manage a survey to a sample or to the entire population to describe the population's attitudes, opinions, beliefs, perceptions, behaviours or characteristics (Ponto, 2015:168; Creswell & Hirose, 2019:2). In order to achieve this, survey research can use quantitative research strategies (e.g. using questionnaires with numerically-rated items). Survey research naturally enables the compilation of data from large populations, making it easier to develop and administer the research questionnaire while generalising the research findings.

In this way, a survey enables the researchers to elicit information from a large sample of the population. Additionally, the survey enables the researcher to study certain characteristics of a population quantitatively. Like other approaches of data collection, the central role of conducting a survey is to draw reliable and valid data in a structured form that will be easy to analyse and report (Sutton & Austin, 2015:227). Hence, the role of survey design is to present a quantitative or numeric description of trends, attitudes, or opinions of a population by examining a sample of that population. From sample results, the researcher generalises or draws conclusions to the population (Creswell, 2014:201; Creswell & Creswell, 2017:31; Pattern & Newhart, 2018:22).

The current study followed a survey design because it can apply quantitative research strategies (e.g. using questionnaires with numerically-rated items). Furthermore, the prime purpose of this form of survey research was to gain data describing features of a large sample of individuals of interest relatively swiftly (Ponto, 2015:168). Research further suggests that a survey permits for assembly of a huge number of responses with relative ease and few limitations. It also allows for the collection of information on a

large number of variables, which was significant for this study. The specific method used was a questionnaire. This technique simplified data collection in a homogeneous and numerical form, which conforms to the methodology applied (De Vaus & De Vaus, 2013:3; Clinning, 2016:3). A descriptive correlational survey research design was applied to survey the relationships among the key study variables (Aquino, Lee, Spawn & Bishop-Royse, 2018:36).

5.6 RESEARCH STRATEGY

In order to conduct the research tasks appropriately, it is vital to acquire an understanding of different methods and techniques of research. It is possible to use different research strategies (e.g. case study, longitudinal, cross-sectional ex post facto and cross-sectional strategy, among others) linked to a philosophical paradigm (Kapur, 2018:16). Case study research scientifically examines a real-life phenomenon in depth and within its environmental context (Abma & Stake, 2014:150; Ridder, 2017:282). For example, one may study a single organisation or a single group of individuals as a special case. Case studies are mostly linked to interpretive research, but can also be found in critical and positivist research.

Longitudinal studies employ continuous or frequent methods to follow specific individuals over extended periods of time, often years or decades. This design allows the researcher to collect survey data over a designated period of time with the same or different samples within a population (Edmonds & Kennedy, 2017:135). It may follow several distinct forms, but may generally be experimental (Caruana, Roman, Hernández-Sánchez & Solli, 2015:537). An example occurs when one studies the trends in the job satisfaction of academic staff members in higher education over a period of five years, with the data being collected every year.

In ex-post facto research, the researcher explores a problem by reviewing the variables in retrospect. It is research in which the dependent variable is instantly observable, and the key concern is to find out the experiences that caused this consequence (Apuke, 2017:45). An example can be an investigation of UoT lecturers' job satisfaction immediately after a spike of student demonstrations, such as the Fees Must fall Campaign.

Cross-sectional studies are characterised by the gathering of appropriate data at a given point in time. There is no time measurement involved in cross-sectional studies, as all data is collected and mostly refers to the time at or around the time of the data collection (Kesmodel, 2018:388). Therefore, in a cross-sectional study, the researcher measures the relationship between two variables, the effect, and the

exposures in the study participants simultaneously by collecting data from the respondents in a single specific period of time. The cross-sectional design can also be employed for multi-variable analyses, such as binary logistic regression (Zangirolami-Raimundo, Echeimberg & Leone, 2018:359).

The participants in a cross-sectional study are just selected based on the inclusion and exclusion criteria set for the study. When the participants have been selected for the study, the researcher pursues it to evaluate the exposure and the outcomes. The researcher assesses the consequence and the exposure(s) in the population and may study their relationship. The role of cross-sectional strategy in research is to achieve trustworthy data that makes it possible to generate vigorous assumptions and generate new hypotheses that can be investigated with new research (Zangirolami *et al.,* 2018:356). Data collected through the cross-sectional strategy is analysed to define the relationships between the various variables (Sreejesh *et al.,* 2014a:61). For example, the state may use cross-sectional studies to assess the burden of COVD-19 or the population's health needs to establish some relationships between these features that deserve to be analysed. The results from the survey will inform the planning and allocation of health resources. Another example is where a cross-sectional strategy can be applied to assess the exposure to diverse stressors and the frequency of depression among medical students at dissimilar levels of education, taking gender differences into account.

The current quantitative study is founded on a cross-sectional strategy. The cross-sectional strategy is typically interactive because it is intended to systematically investigate relations between two or more research concepts. It tests the relationship (causal-effect relationship) between variables. Cross-sectional studies collect a large amount of data in a short time, without the need for follow-ups of the participants and to produce faster results. In view of this, the cross-sectional strategy was considered suitable for the present study because the relationship between several constructs (transformational and transactional leadership, innovation and performance among South African universities of technology and the balanced scorecard perspective) was under the spotlight (Kesmodel, 2018:390; Zangirolami-Raimundo *et al*., 2018:357).

5.7 LITERATURE REVIEW

A literature review can generally be described as a more or less methodical way of collecting and synthesising previous research. An effective and well-conducted review as a research method creates a stable groundwork for developing knowledge and facilitating theory development (Snyder, 2019:333). Therefore, a literature review is not in itself key research, but rather it reports on other prior findings. It

is an unbiased, comprehensive summary and critical analysis of the appropriate available research and non-research literature on the topic being studied (Ramdhani & Ramdhani, 2014:48)

As in any academic discipline, rigorous knowledge syntheses are becoming essential in keeping up with a rapidly growing literature to assist practitioners, academics, and graduate students in finding, evaluating, and synthesising the contents of many empirical and conceptual articles. Among other methods, literature reviews are essential for (a) identifying what has been articulated on a subject or topic; (b) determining the extent to which a specific research area divulges any interpretable inclinations or patterns; (c) aggregating empirical findings related to a narrow research question to support evidence-based practise; (d) generating new frameworks and theories; and (e) identifying topics or questions necessitating more enquiry (Paré, Trudel, Jaana & Kitsiou, 2015:183; Paré & Kitsiou, 2017:157). Quantitative research includes an extensive amount of literature at the beginning of a study to provide direction for the research questions or hypotheses (Croswell, 2014:41; Johnson & Christensen, 2014:149; Arshed & Danson, 2015:31). As such, in the current study, a comprehensive review of the literature was performed and is reported in Chapters 2, 3 and 4. Chapter 2 focused on the theoretical background within higher education in South Africa. Some of the subjects discussed in this chapter include the conceptualisation of higher education; higher education in South Africa: pre- and post-1994; higher education in South Africa pre-1994: apartheid and segregated higher education; South African higher education landscape post-1994; developments and achievements in South African higher education post-1994; challenges in South African higher education post-1994; institutional types in higher education South Africa post-1994; and the origin of universities of technology in South Africa.

In Chapter 3, literature was reviewed on organisational innovation. In this literature review, the major concepts discussed include the concept of innovation, innovation theories, organisational innovation: conceptual background, factors influencing organisational innovation, higher education institutions as organisations, organisational innovation in higher education, the model of innovation in higher education: observation, revelation, exploration, design; barriers to organisational innovation, research on organisational innovation in South Africa, and the origins of the UoT in South Africa.

Chapter 4 reviewed literature on transformational and transactional leadership. The major topics discussed include the concept of leadership, the dilemma of leadership, the origins of transformational and transactional leadership, conceptualising transformational leadership, Bass's model of transformational leadership, conceptualising transactional leadership, origins of transactional leadership, and previous studies on transactional and transformational leadership in South Africa.

This study reviewed the empirical literature on transformational/transactional leadership, innovation, and performance among South African universities of technology in relation to the BSC perspective. The empirical data was used to create a framework for examining/testing the relationship between these variables. The literature review covers previous research results on the independent variables and dependent variables examined, the contexts of transformational/transactional leadership, innovation and performance, and types of study previously made on these variables in South Africa.

5.7.1 Data sources in the literature review

There are two main sources of reviewing information appropriate to any research topic. Academic books and journals are, in general, the ultimate valuable sources of information (Johnson & Christensen, 2014:151; Sekaran & Bougie, 2016:54). The literature reviewed in this study included a mixture of information sources such as scholarly articles and technical reports. Various internet-based databases such as EBSCO, Ebook Central, ProQuest, Wiley, E-journals, accredited journals, SABINET, Jstore, Emerald, Refworks, and SAGE online were used to access valuable information. Other sources of data that were consulted include scholarly journals, professional magazines, newspapers, reference books, including directories and encyclopaedias, as well as academic books. Additionally, research reports, dissertations and theses from other universities were consulted through the internet portals of those universities.

5.8 SAMPLING DESIGN

Sampling designs are strategies and approaches to be followed in selecting respondents from the target population and the estimation technique formula for calculating the sample statistics (Kabir 2016a:170). These statistics are the estimates employed to deduce the population parameters. The researcher selects a number of specific cases from a larger population through sampling, which process offers an estimation of the population parameter and to test the hypothesis (Leavy, 2017:76; Kabir, 2016a:170). In addition, sampling is often essential, as typically, it is not possible to directly perceive and quantify outcomes for the entire population of interest (Gertler, Martinez, Premand, Rawlings & Vermeersch (2016:261).

5.8.1 Population

A research population is the group of people, events, or things of interest for which the researcher wants to make inferences; therefore, it refers to each unit that shares those characteristics well-defined by the researcher as pertinent to the research study (Gratton & Jones, 2014:110; Sekaran & Bougie 2016: 237). Therefore, the word ‘population’ has a much wider meaning than the common application of the term,

whereby it tends to be related to a nation's entire population. The key role of the population in the research study is to generalise the study findings from the sample to the population of interest (Bryman & Bell, 2016:176; Majid, 2018:3). In this study, the population consisted of employees from selected UoTs in South Africa.

5.8.2 Target population

A target population refers to all the subjects identified and who meet the precise criterion specified for a research study conducted (Alvi, 2016:10). It is the study's population of interest that it proposes to study or treat. In this, like in the general population, the objective of the research study is to generalise the study findings from the sample to the target population. The main role of the target population is to assist the researcher in categorising and eradicating individuals of the general population who may not have the knowledge, experiences and thoughts of the researched subject in abundant clarity and depth (Asiamah *et al.*, 2017:1613).

The target population in the present study consisted of 500 academics and non-academic professional staff from the selected UoTs in South Africa. These individuals are suitable for this study because they are able to provide the information by virtue of knowledge or experience; and in addition to knowledge and experience, the importance of availability and willingness to participate, and the ability to communicate experiences and opinions in an articulate, expressive, and reflective manner studies.

5.8.3 Sampling frame

Simply put, a sampling frame is the list of all people or units in the population from which a sample can be chosen (Igwenagu, 2016:33; Greener & Martelli, 2018:71). For example, if a sample of students is chosen from a student register, the register is the sampling frame. Again, suppose the prime sampling unit for a composite population sample is the census block. In that case, the list of census blocks composes the sampling frame, in the form of a printed booklet or, better, some digital format permitting computer manipulation (Babbie, 2013:145). Likewise, Taherdoost, (2016a:20) states that a sampling frame is a list of all those units within a target population who can be sampled and may include individuals, households or institutions.

For quantitative researchers, the primary purpose for the sampling frame is to get a typical sample, a small number of units but representative of the larger population and producing precise generalisation about the population. Consequently, quantitative researchers are particularly concerned about using explicit techniques that will yield extremely representative samples, and they are inclined to employ a

type of sampling frame based on a theory of probability (Ishak, Bakar & Yazid, 2014: 29). As such, in this study, three UoTs within higher education in South Africa were chosen to serve as the mainframe of work for this research. However, there was no sampling frame since the lists of staff were not accessible from the Human Resource Department registers at the selected UoTs.

5.8.4 Sample size

Sample size refers to the number of objects or subjects to be chosen from the universe to represent a sample (Greener & Martelli, 2015:64). Furthermore, it is imperative for the researcher to ensure that the nominated sample is representative of the study and the target population with regard to the demographic and other relevant characteristics that may affect the outcome of the study. The sample size should neither be overly large nor too small (Greener & Martelli, 2015:64). A sample must be of the essential size to have the required degree of accuracy in the outcomes and be able to identify any considerable variance/relationship that may be present in the study population (Omair, 2014:143).

A common practice is selecting all the available cases (consecutive sampling) in a given period of time or choosing a sample size based on an earlier study (Kapur, 2018:41). Therefore, the key role of the sample size is to accomplish the requirements of efficiency, representativeness, reliability and flexibility. The sample size also serves to establishes the power and the impact of the study (Chander, 2017:217).

In the present study, the sample size was set at n=500 respondents. It is significant that the sample size should be carefully fixed so that it will be adequate to draw valid and generalised conclusions (Singh & Masuku, 2014:6). Too small a sample size will have insufficient power to statistically detect a true variance, so significant differences between study groups may be declared statistically insignificant. Too large a sample size may be considered unethical, wasteful of resources, and affect a study's feasibility. Additionally, funding agencies, ethics committees and journal editors increasingly expect sample size to be justified. Sample size is appropriate if it enables the researcher to make an unequivocal judgement that a statistical result is correct to a chosen degree of error ('type I error') and has sufficient power ('1-type II error') to detect a specified meaningful effect (Malone, Nicholl & Coyne, 2016:21).

Likewise, Vishwakarma (2017:235) affirms that studies with a small or big sample size are ethically, scientifically, and economically unjustified. Studies with a small sample size do not give correct results, and hence the researcher will be wasting resources (economic reason), unnecessarily exposing subjects to treatments (ethical reason) and producing insignificant interpretations (scientific reason) by conducting a study with a small sample size.

A study by Jensen *et al.* (2016:13) focuses on various aspects of transformational and transactional leadership. The sample was chosen from five different sectors in Denmark that are all high schools (only public organisations), all schools (public and private organisations), all day-care (public and private organisations), all tax offices (only public organisations), and all the banks (only private organisations). From these sectors, n=672 leaders participated in the experimental training programme and completed the pre-treatment survey (i.e. a response rate of 100%). In this study, a stratified random sampling method was used to assign the leaders to one of four groups (three treatment groups and a control group) due to sample size. Strata ensure an even distribution of leaders from the different types of organisations in treatment and control groups, and the random approach averts selection bias of participants on treatments (Jensen *et al*., 2016:15).

From the research study conducted by Andersen, Nielsen, Bøllingtoft, Ladenburg, Jacobsen, Nielsen, Eriksen, Holten, Jensen and Bro (2013:2), it is suggested that to improve the Danish public sector, it was necessary to research public sector leadership in Denmark, because the impact of leadership depends on contextual factors. They performed a field experiment and used objective performance data to assess the impact of various leadership strategies. Subsequently, on sample size, they stress that compared to existing studies conducted by Jung and Avolio (2000), and Dvir, Eden, Avolio and Shamir (2002), their treatments are stronger and include more leaders (n=720) and more employees (n=23.000) (Andersen *et al*., 2013:2). While testing the relevance of different types of innovation for firms' export performance, Azar and Ciabuschi (2016:16) used a moderate and reasonable sample size that consisted of n=573 from all Swedish companies in the forestry, fishing, food product, beverage, garment, and furniture industries that satisfied the following criteria: (1) they had exported products for three years; and (2) they had exported to at least two foreign markets.

In another study, Saridakis, Idris, Hansen and Dana (2019:254) examined theorised differential effects of innovation focus – goods, service, and process innovation in relation to their potential individual and combined effects on SMEs' propensity to export as a proxy for internationalisation. Out of approximately n=15 500 contacted, they obtained data on n=12 823 SMEs from the 2015 UK Longitudinal Small Business Survey's first wave (Department for Business, Innovation and Skills), the most recently available survey of small and medium enterprise (SME) owner-managers in the United Kingdom. They stress that the sample is adequately large to allow reporting on the findings with a high degree of statistical reliability. In the case of Taasoobshirazi and Wang (2016:33), when examining their four fit indexes and working with models with small degrees of freedom, also testing the performance of these

fit indexes and their rejection rates across various sample size and degrees of freedom combinations, they used sample sizes including n=50, n=100, n=200, n=400, n=600, and n=1 000. It is because of these historical samples that this study used a sample size of n=500 respondents.

Additionally, the sample size in the current study was determined using suggestions from various experts in quantitative research. For example, Pallant (2007:185) recommends a minimum sample size of 150 respondents, while Tabachnick and Fidell (2007:613) propose a sample size of at least 200 cases for multivariate analysis. As such, the sample size of n=500 set for the study is way higher than these guidelines.

5.8.5 Sampling approach

Generally speaking, a sampling approach is selecting units to take part in a research investigation because it provides information considered relevant to the research problem (Oppong, 2013:203). Actually, this depends on the choice of sampling technique. Most deliberations of sampling come from researchers who practise the quantitative style. A sample refers to a subset of a precise population. The key role of sampling is to get a representative sample, or a small collection of elements or cases from a broader collection or population, such that the researcher can study the smaller group and yield precise generalisations about the larger group (Gratton & Jones, 2014:110; Neuman, 2014:141; Taherdoost, 2016a:20).

Within social sciences, sampling approaches commonly fall into two wide categories: non-probability sampling and probability sampling (Jager, Putnick & Bornstein, 2017:2). Probability sampling means that each subject in the population has an equal chance of being included in the sample (Taherdoost, 2016a:20). Probability sampling is commonly accepted as the most suitable method for making the inference that can be generalised to a definitive population. Simply put, with a probability sample, every element in the population has a known, non-zero chance of being sampled, and in the design-based framework, these possibilities are the base for the inferences. This method is applicable when the entire population is reachable, and the researchers have a list of all subjects in the target population (Brick, 2014:1; Elfil & Negida, 2017:1). Examples of probability sampling techniques include simple random sampling, systematic random sampling, stratified random sampling, cluster sampling, multiphase sampling, and multistage sampling (Acharya, Prakash, Saxena & Nigam, 2013:330).

Non-probability sampling strategies are any methods of sampling that do not employ some form of random selection. It is a sampling method in which every object or experiment does not have an equal

chance or probability of being selected (Etikan & Babatope, 2019:52). A sample of subjects or cases does not need to be representative or random, but a clear validation is desirable for the inclusion of some cases or individuals rather than others. In this, Bryman and Bell (2016:176) declare that a non-probability sample is a sample that has not been selected using a random selection method. Essentially, this implies that some units in the population are more likely to be selected than others. Hence, the major role of non-probability sampling techniques is to help researchers to the subjectively select a unit that represents the population under study (Etikan, Alkassim & Abubakar, 2016:217).

The present research study used the non-probability approach. Non-probability sampling selects a group of respondents from a larger population, knowing full well that some members of the population have zero chance of being surveyed (Etikan & Bala, 2017:1). In this approach, not every element will be chosen. This study has a sampling frame composed of selected UoTs in South Africa. However, the list of respondents, namely employees who were intended to complete the questionnaires, was not available for this study. Therefore, only non-probability sampling was deemed applicable for this study.

5.9 SAMPLING TECHNIQUE

A sampling technique is a procedure or device used by a researcher to methodically select a moderately smaller number of representative items or individuals (a subset) from a predefined population to serve as subjects (data source) for observation or experimentation as per objectives of his or her study (Sharma, 2017:749). There are several techniques that fall within non-probability sampling. These include convenience, snowball, quota, and purposive sampling techniques. Convenience sampling is selecting respondents because they are voluntarily and easily available. It occurs when people are chosen because they are conveniently available (Scheyvens, 2014:45). The general role of convenience sampling is assisting when the researcher has scarce resources, time and personnel. It can also be applicable when the research does not intend to produce outcomes that will be used to generate generalisations pertaining to the whole population.

Snowball sampling is where one case spontaneously leads to another (Leavy, 2017:80). Participants may suggest others they think could provide important data for the project. This type of sampling is suitable where the sample is representative of marginalised or stigmatised individuals and to find and recruit ‘hidden populations’, where individuals are not easily accessible to researchers through other sampling strategies such as drug users, prostitutes, and HIV/AIDS sufferers (Lopez & Whitehead, 2013:125). Quota sampling is used when the population is heterogeneous; that is, every element of the population

does not match all the features of the predefined criteria (Alvi, 2016:31). In quota sampling, the sample selection is non-random (Singh & Masuku, 2014:4). Purposive or judgmental sampling occurs when the researcher makes judgements on whom to include in the sample. It necessitates a prior assessment of the typical characteristics of the target population. (Acharya, *et al*., 2013:330; Scheyvens, 2014:45; Elfil *et al.*, 2017:1). Its concentration is on people with particular characteristics who will be better able to assist with the relevant research.

The key role of purposive sampling is to focus on particular characteristics of a population that are of interest, which will incomparably enable the researcher to answer the research questions (Rai & Thapa, 2015:6; Etikan, Mussa & Elkassim, 2015:2). In the present study, respondents were selected using purposive sampling. In purposive sampling, the researcher has one or more specific predefined groups he/she is seeking (Etikan *et al.*, 2016:2). Therefore, in this study, only those employees who possessed the research area's knowledge under consideration in the study (leadership, innovation and organisational performance) were requested to participate in the study. To be included in the study, one had to be a professional employee (both academic or non-academic), possess at least two years' work experience in the higher education environment, and be a holder of at least a diploma qualification. It was expected that respondents with these attributes would be able to complete the questionnaire objectively.

5.10 PROCEDURES FOR DATA COLLECTION

Data collection is the process of gathering and measuring information on variables of interest in an established systematic fashion that enables the researcher to answer stated research questions, test hypotheses, and evaluate outcomes (Salhin, Kyiu, Taheri, Porter, Valantasis-Kanellos & König, 2016:171). Data collection is an integral part of the research process (Sani, 2013:40: Kabir, 2016b:202). It is an authoritative characteristic of the research study (Sileyew, 2019:5). Regardless of the field of study or preference for defining data (quantitative, qualitative), accurate data collection is essential to maintaining the integrity of research (Kabir, 2016b:202).

Quantitative research involves gathering data so that information can be quantified and subjected to statistical treatment to support or disprove alternative knowledge claims (Apuke, 2017:41). In survey research, quantitative data can be collected in numerous ways, including emails, postal, telephone, drop and collect, group-administered, and online questionnaires. Collecting quantitative data means being able to ask questions that can be answered in such a way that data can be presented as numbers. Inevitably,

this means that the researcher must define questions that reflect real issues and are meaningful to possible participants (Jensenius, 2014:402; Sreejesh *et al.*, 2014a:20; Male, 2016:2; Kapur, 2018:22).

In this research project, a survey questionnaire was used to collect primary quantitative data. A survey questionnaire enabled quantitative data to be collected in a consistent way so that the data is internally consistent and coherent for analysis. Questionnaires offer an objective means of collecting data about people's knowledge, beliefs, attitudes and behaviour. Additionally, a questionnaire was used to measure a given population's characteristics through the application of statistical methods (Govender, Mabuza, Ogunbanjo & Mash, 2014:1; Peersman, 2014:2).

Questionnaires are defined as any text-based instrument that gives survey respondents a sequence of questions to answer or statements to respond to either by indicating a response by marking a page, writing a number or checking a box on paper or online, for example (Young, 2016:4). A questionnaire is a research instrument consisting of a sequence of questions and other stimuli for the determination of gathering information from the research participants. (Kabir, 2016b:182). Therefore, it is merely a list of printed questions that are completed by respondents to provide their opinions on specific questions related to the research question.

Although most survey questions are closed, some open questions play prominent roles in survey research. Closed-ended questions (e.g. usability scale ratings) are classically combined with open-ended questions in user experience or usability surveys. Employing explanation-specific questions following a closed-ended rating, user experience researchers can recognise why respondents provided a higher or lower score. Commonly, a questionnaire might make use of one or several types of these question forms (Zhou, Wang, Zhang & Guo, 2017:1276).

In addition, if the researcher is looking to test and quantify hypotheses, and the data is to be analysed statistically, a formal standardised questionnaire is designed (Kabir, 2016b:186). On the basis of questionnaire formats, there are two types of questionnaires, i.e. open-ended (referential questions) – referential questions are sincerely information-seeking and are probable to be open. On the other hand, closed-ended (display questions) questions provoke answers already known by the researcher and are liable to be closed (Çakır & Cengiz, 2016:61).

In this regard, questionnaires can be divided into seven elementary question types: quantity or information, category, list or multiple choice, scale, ranking, complex grid or table, and open-ended. Commonly, a questionnaire might make use of one or several types of these question forms. This study

used the closed-ended questionnaire because it provided the inquirer with quantitative or numerical data (Zohrabi, 2013:254). Additionally, close-ended questions gave respondents a finite set of specified responses to choose from. Such questions were considered proper when the respondent has a specific answer to provide (for example, gender), as the researcher had a predefined set of responses in mind; detailed narrative information was not needed to answer a question (Sreejesh, Mohapatra & Anusree, 2014b:149).

Moreover, the role of closed-ended questionnaires in quantitative research is to enable the researcher to profile the sample in terms of numbers (e.g. the proportion of the sample in different age groups) or to be able to count the frequency of occurrence of opinions, attitudes, experiences, processes, behaviours, or predictions (Rowley, 2014:4).

There are various ways of collecting data from a survey questionnaire such as pencil-and-paper, sent via the post, by email or administered in person (Young, 2016:15). Additionally, a question can also be administered via an internet-based programme such as SurveyMonkey, or a combination of both, giving the participant the option to choose which method is preferred (Ponto, 2015:170). Administration in person can be done individually or to a group. The latter is usually a more efficient and effective means of getting a high number of responses if the researcher can access a large enough group, a class at a school or university, for example, if appropriate permissions have been given. Online (email) design, collection and analysis of questionnaire data are becoming increasingly cheap, sophisticated, and widespread. A combination of both pencil-and-paper and online also usually helps to increase the response rate (Young, 2016:16).

Other than the nature of this study, there are various reasons why the researcher used a survey questionnaire to collect data. Firstly, the purpose was to collect data from a relatively large number of people (between n=100 and n=500). Also, the respondents from whom responses were collected were a sample drawn from a broader population and were chosen to represent the wider population (Rowley, 2014:4). This closed-ended questionnaire provided the researcher with quantitative or numerical data (Zohrabi, 2013:254).

A survey questionnaire with closed-ended questions was used to enable the researcher to profile the sample in terms of numbers (e.g. the proportion of the sample in different age groups) or to be able to count the frequency of occurrence of opinions, attitudes, experiences, processes, behaviours, or predictions (Rowley, 2014:4). Furthermore, with a survey questionnaire with closed-ended questions, communication skills of respondent were less critical, they offered speedy responses, data quickly coded

and entered, and no interviews were needed (Hyman & Sierra, 2016:2). The researcher electronically distributed questionnaires to academics and non-academic professionals who are employed at the selected UoTs in South Africa.

The distribution of the questionnaire was conducted between September and December 2020, and respondents were given four weeks to complete the questionnaire. This study deployed two approaches to collect data: email and face-to-face/drop and collect. The resources used in the preparation, distribution and collection of questionnaires were both of the researcher (80%) and the academic administration at the seletcted UoTs (20%). Resultant from the pre-defined sample size, a total of 500 questionnaires were prepared and distributed to the respondents.

5.10.1 Questionnaire design

A questionnaire is a research instrument consisting of a series of questions and other prompts to gather information from respondents (Dev, Rajesh & Kumar, 2015:1214). Questionnaires are popular as methods of collecting large amounts of data quickly and efficiently. Standardisation is emphasised in questionnaire data collection to increase the reliability and validity of the results by controlling and reducing the error (Dev *et al*., 2015:1215).

The central purposes of designing questionnaires are typical to obtain precise and pertinent information and maximise the survey response rate (Youngshin, Youn-Jung & Doonam, 2015:324). Therefore, a questionnaire serves four essential purposes, 1) it enables data gathering from respondents, 2) it advances a structure to interviews, 3) it provides a standard means for writing down responses, and 4) helps in processing collected data. A questionnaire will only be useful if it is designed in a manner easily understood by both the interviewer and the interviewee (Sani, 2013:40; Sreejesh *et al*., 2014b:143).

Following the suggestions of the scholars in the preceding literature review on questionnaire construction, the length of the survey questionnaire used in the current study was reduced using a more streamlined set of questions that led to more reasonable data being acquired and to better explanations of the issues in question. It was a simple, straightforward, and reasonably designed questionnaire using statistical analysis to ensure high accuracy (Lin, Shen & Lee, 2015:15180). The subsequent segment deliberates on the structure questionnaire employed in the current study.

5.10.2 Questionnaire cover letter

As a standard norm, when employing survey questionnaires research, questionnaires are generally accompanied by a cover letter whose purpose, among others, is to introduce the researcher and his/her

organisation to the respondents. More importantly, it expands on what the research is all about, its objective, the importance of the respondent's assistance, and seeks informed consent from respondents. It can sometimes inform what a previous study revealed that the current study aims to prove or refute.

Over and above all, the cover letter explicitly informs respondents that while they will not experience any direct benefits from participation, information collected in this study may benefit the profession and UoTs in the future by better understanding the proposed model in the current study. The letter also specifies that participation is voluntary. It confirms that the study has been reviewed and received ethics clearances through the office of research ethics at the Vaal University of Technology. Therefore, it assures respondents that key ethical concerns such as maintaining honesty, anonymity, and maintenance of confidentiality are upheld. A template adapted from Central Michigan University (2019:1) was used as guidance on cover letter contents for this study. The cover letter was designed and attached to the research questionnaire (refer to Appendix 1).

The questionnaire in this study was divided into four parts, namely A, B, C and D. Part A of the questionnaire dwelled on the demographic profiles of the respondents, covering nine questions. This section requested information concerning the respondents' age group, racial group, highest qualification attained, number of months or years being employed in the institution, experience in the higher education sector, type of employment within the current institution, department/section where they are currently based as well as their positions in the university.

From part B through to part D, the questionnaire was constructed through the question items about the constructs under consideration in the current study; that is, part B, transformational/transactional leadership (TTL) that consisted of 21 measurement items, part C, organisational innovation consisted of six measurement items, and finally, part D, financial performance that had four sections, namely; 1) financial performance that consisted of seven measurement items; 2) customer satisfaction that consisted of eight measurement items; 3) internal processes that grounded on five-question items; and 4) learning and growth that was formulated on eleven measurement items.

5.10.3 Response options

The questionnaire developed was based on a five-item Likert scale, and the responses were summed up to produce a score for the measures (Sileyew, 2019:6). A Likert scale is defined as a psychometric scale with multiple categories from which respondents choose to specify their views, attitudes, or feelings about a specific issue (Nemoto & Beglar, 2014:2; Józsa & Morgan, 2017:8). It is applied as one of the

most fundamental and frequently used psychometric tools in educational and social sciences research (Joshi, Kale, Chandel & Pal, 2015:396). Likert scale facilitates the standardisation and comparability of questions among the respondents, and Likert-type questions are easy to code and analyse directly from the questionnaires. Likert scales consist of a series of related Likert-type items – statements concerning a specific referent, namely the focus of the attitude to be measured (Willits, Theodori & Luloff, 2016:127).

The reason for using the Likert scale in this study was its ability to use large sample sizes, which increases the validity of the findings (Hartley, 2013:84). Additionally, the significance of Likert-scale questionnaires is that (a) data can be collected quite swiftly from large numbers of respondents, (b) they can deliver highly consistent person ability estimates, and (c) the validity of the interpretations made from the data they offer can be established through a diversity of means (Nemoto & Beglar, 2014:2).

Measurement items in part B were offered and measured using a five-point Likert-type scale ranging from 1= never to five =always. Subsequently, responses in part C were given to each statement using a five-point Likert-type scale, for which 1 = strongly disagree to 5 = strongly agree. In part D, response options were presented and measured using the five-point Likert-type scale ranging from 1=far below standards to five far above standards.

5.10.4 Questionnaire adaptation

Although the questionnaire assumed for this study was designed in line with other devices (questions) amended from numerous former studies, not all the questions were considered and applied in their novel form. The other questions were altered to fit the framework of the current study without changing their worth and meaning. In this study, a questionnaire that comprises 67 questions was constructed, of which nine of these provoked demographic data of the subjects and their organisations. Therefore, the other 58 questions were modified from previous studies. The questionnaire contained four constructs, namely TTL (21 measurement items), organisational innovation (six measurement items), and financial performance (31 measurement items). The construct items, their sources, and reliability scales are presented with the application of Tables 5.9.1 to 5.9.3 below. Measurement scale items are presented in a questionnaire in Appendix A.

5.10.5 Section B construct items

Section B produced responses on transformational and transactional leadership (TTL) using 21 measurement items. These items were attained from a previous study conducted by Avolio and Bass

(2004:110). However, the same scale was used and validated in another study conducted by Hemsworth, Muterera and Baregheh (2013:856). Further details regarding this scale are provided in Table 5.1. The TTL scale used in this study attained a Cronbach alpha value of 0.94 in the study by Hemsworth *et al*. (2013:856). This confirmed that the scale was reliable and suitable for use in this study.

Table 5.1: Scale development and reliability for transformational/transactional leadership capacity

Item code	Item description	Author(s) and year	Industry and region where the scale was applied
TTL1	Our managers make others feel good to be around them	Avolio & Bass (2004:110)	Various organisations in the USA
TTL2	Our managers express with a few simple words that we could and should do		
TTL3	Our managers enable employees to think about old problems in new ways		
TTL4	Our managers help employees develop themselves		
TTL5	Our managers tell employees what to do if they want to be rewarded for their work		
TTL6	Our managers are satisfied when employees meet agreed-upon standards		
TTL7	Our managers are content to let employees continue working in the same way as always		
TTL8	Employees have complete faith in their managers		
TTL9	Our managers provide appealing images about what employees can do		
TTL10	Our managers provide employees with new ways of looking at puzzling things		
TTL11	Our managers provide recognition/rewards when others reach their goals		
TTL12	Our managers provide recognition/rewards when others reach their goals		
TTL13	As long as things are working, our managers do not try to change anything		
TTL14	Whatever employees want to do is OK with our managers		
TTL15	Employees are proud to be associated with our managers		
TTL16	Our managers help employees find meaning in their work		
TTL17	Our managers get employees to rethink ideas that they had never questioned before		
TTL18	Our managers give personal attention to employees who seem rejected		
TTL19	Our managers call attention to what employees can get for what they accomplish		
TTL20	Our managers tell employees the standards they have to know to carry out their work		
TTL21	Our managers ask no more of employees than what is absolutely essential		

Source: Adapted from Avolio and Bass (2004)

5.10.6 Section C construct items

Section C sought responses to organisational innovation using six measurement items. These items were first created by Chang, Bai and Li (2015:6), then adopted, developed and supported by Chen, Zheng, Yang and Bai (2016:849). This study utilised the measurement scale that was adopted and adjusted by Fan, Gao, Lei, Liu, Zhao, Mu, Li, Shi, Wang, Jia, Ha and Lou (2017:4).

Table 5.2: Scale development and reliability for organisational innovation

Item code	Item description	Author(s) and year	Industry and region where the scale was applied
OI 1	Our institution's management actively seeks innovative technologies, processes, techniques, and product ideas.	Janssen (2000:228); Markard & Truffer (2006:609); Perrin (2002:13); Muscio, Qualione & Vallanti (2013:63); Geuna & Nesta (2006:790).	The manufacturing sector in China Italian Ministry of University and Research
OI 2	Employees are accordingly rewarded and recognised for performance-enhancing innovative ideas, that are successfully implemented.		
OI 3	Innovation in our institution is perceived as too risky and an as such it is resisted by many stakeholders.		
OI 4	Our institution is known for innovativeness in our area.		
OI 5	Our institution investigates and secures funding required to conduct research and implement new ideas.		
OI 6	Our institution constantly experiments with new ideas.		

Source: Adapted from Fan *et al.* (2017)

As shown in the diagram above, Fan *et al*. (2017:4) achieved a Cronbach's alpha above the minimum threshold of 0.7, thereby authenticating the reliability of the scales used. Other previous sources such as Chang *et al*. (2015:6) and Chen *et al.* (2016:849) that used the measurement items adopted in this study also achieved Cronbach's alphas of acceptable proportions.

5.10.7 Section D construct items

Section D gathered information on financial performance using 28 measurement items adapted from Hashemian, Abbaspour, Zamaneh and Taheri (2014:44).

Table 5.3: Scale development and reliability for financial performance

Item code	Item description	Author(s) and year	Industry and region where the scale was applied
Financial performance		McDevitt *et al.*, (2008:32); Umashankar & Dutta (2007:54)	Higher education in the USA; Tertiary education in India
FP 1	Annual grants from industry		
FP 2	Amount of permanent endowment		
FP 3	Increase in student intake		
FP 4	More efficient and effective use of facilities		
Customer satisfaction		Cullen *et al*., (2003:127); Karathanos & Karathanos (2005: 222)	Departments within a telephone company and the accounting organisations in the USA; Chugach School District, Pearl River School District and University of Wisconsin-Stout in North America
CS 1	Student satisfaction survey		
CS 2	Knowledge and skill sharing across work functions, units and locations		
CS 3	Number of students hired		
CS 4	Number of students hired		
CS 5	Number of people benefiting from training programs conducted by the institution		
CS 6	Grants/endowments garnered from industry		
CS 7	Numbers of alumni in public service, community service, NGOs		
Internal processes		Olsen (2007:2)	Universities in Europe
IP 1	Number of new products and services introduced, i.e. new courses, syllabi, programs and curriculum changes		
IP 2	Distribution of grades awarded		
IP 3	Faculty-to-student ratio		
IP 4	Educational expenses per student		
IP 5	Number of faculty in the specialised area		
Learning and growth		Fandel & Gal (2001:111); Korhonen, Tainio & Wallenius (2001:121)	Universities in North Rhine-Westphalia, Germany
LG 1	Number of faculty presentations at conferences		
LG 2	Travel budget for conference attendance		
LG 3	Number of cross-trained or multi-skilled staff		
LG 4	Number of courses incorporating new technology		
LG 5	Number of teaching workshops attended by faculty		
LG 6	Number of joint activities with external stakeholders		
LG 7	Academic excellence		
LG 8	Increased research productivity		
LG 9	Increased outreach to community		
LG 10	Entrepreneurial initiatives		

Source: Adapted from Fandel and Gal (2001:111); Korhonen *et al*. (2001:121); Cullen, Parboteeah & Victor (2003:127); Karathanos & Karathanos (2005: 222); Olsen (2007:3); Umashankar & Dutta (2007:54); McDevitt *et al*. (2008:32) and Hashemian *et al*. (2014:44)

The measurement scales used in this study were not unique and have already been used before this study, and the previous studies' evidence is that the reliability of items is acceptable if the alpha is within .70

(Mohamad, Sulaiman, Sern & Salleh, 2015:165). Other previous studies have shown that the use of validated measurement instruments from past studies that also measure the same constructs allows for a more precise and adequate adaptation of the respective measurement instruments (Bajpai & Bajpai, 2014:112; Mohajan, 2017:14). Adapting validated instruments is vital in obtaining consistent results, as these items may produce precise assumptions and measure what they are supposed to measure (Boateng, Neilands, Frongillo, Melgar-Quiñonez & Young, 2018:1).

5.11 PROCEDURES FOR DATA ANALYSIS

Data analysis describes how patterns in the data were analysed in light of the research questions or hypotheses, methodological features of the study, and types of measurement, which provide a justification for the specific analyses chosen (Norris, *et al*., 2015:473). Subsequent to the data collection, the process of data preparation followed to ensure that they were ready for the definite analysis. After the completion of data preparation procedures, the data was then analysed. Quantitative analysis techniques assist in this process. They range from creating simple tables or diagrams that show the frequency of occurrence and using statistics such as indices to enable comparisons through establishing statistical relationships between variables to complex statistical modelling (Roberts & Cozzolino, 2016:3261).

This study employed descriptive statistics (including tests for normality of data), exploratory factor analysis (EFA), as well as correlation and regression analysis (Kaushik & Mathur, 2014:1188). The Statistical Packages for the Social Sciences (SPSS version 26.0) was used to perform all statistical analyses. In the analysis, relationships were tested between the three constructs, namely transformational/transactional leadership (TTL), organisational innovation and financial performance.

5.11.1 Data preparatrion

Data preparation is transforming data from its original form into a more appropriate representation for analysis (Konstantinou & Paton, 2020:1). Before data can be analysed, they must be organised into a suitable form. Therefore, preparation is the process of manipulating and organising data prior to analysis. Data preparation is typically an iterative process of manipulating raw data, which is often unstructured and messy, into a more structured and useful form that is ready for further analysis. The whole preparation process consists of a series of major activities (or tasks), including data profiling, cleansing, integration, and transformation (Abdallah, Du & Webb, 2017:1). After data has been collected, it is

normal practice to prepare it for analysis before it is subjected to analysis. Data preparation is the first step toward processing that data and using it for useful analytical purposes.

Data preparation is a significant requirement during data analysis because it guarantees that only accurate data is entered into the analysis system and that corrective action is taken to remedy any distortion of data resulting from the data collection process. This is done prior to the actual analysis. In this study, three data preparation techniques, namely data editing, coding and cleansing were employed.

5.11.2 Data editing

Quantitative (statistical) data editing incorporates all activities related to the detection and correction of inconsistencies in microdata, including the imputation of missing values (Pannekoek, Scholtus & Van der Loo, 2013:511). On receipt of the data in the survey organisation, the data will be captured and coded and then cleaned, usually done by editing and imputation. Editing is generally carried out first at the micro-level, as data is initially verified. At the macro-aggregate level, you get nearer to producing the final statistical outputs. Editing involves two key processes: (1) identification of errors; and (2) treatment (cleaning) of errors. When the editing has been completed, you will inevitably be left with some missing data; this is when imputation is carried out to replace missing values with imputed values. Despite survey design attempts to collect from respondents the right data the first time, errors will occur. These errors will be generated from a multitude of factors (Jones & Hidiroglou, 2013:483). Therefore, this process suggests that data editing is a quality control process in which the collected survey data in questionnaires is assessed to detect any existing anomalies. The typical anomalies that may arise include omissions, inconsistencies, incompleteness, illegibility, and any other identifiable errors.

In this study, each collected questionnaire was assessed to guarantee that it had been appropriately completed. Where discrepancies were noticed, appropriate corrective measures were applied by comparing the respondents' data with that of similar respondents; thereafter, suitable adjustments were made where necessary.

5.11.3 Data coding

Coding in its utmost elementary form is the simple operation of detecting pieces of meaning in the researcher's data and cataloguing them with a code, which can be defined as "a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data" (Linneberg & Korsgaard, 2019:206). Coding is thus a technique that enables the researcher to organise and group similar coded data into categories or 'families' because they

share some characteristics and have the beginning of a pattern (Elliott, 2018:2850). Other data is also easily quantified; transforming male and female into “1” and “2” is hardly difficult. Researchers can also easily assign numerical representations to such variables as religious affiliation, political party, and region of the country (Babbie, 2013:414).

In this study, the collected questionnaires were numbered and captured into an Excel (spreadsheet) document. For example, a total of 411 questionnaires were collected, and each questionnaire was assigned a specific and unique number ranging between 1 and 3. Furthermore, all answers to questions were allocated an explicit code. Consequently, two responses, namely ‘male’ and ‘female’ were entered under section A (Demographic details) for the categorical variable ‘gender’. In this, male was coded ‘1’ while female was coded ‘2’. This process served to confirm that only the codes 1 and 2 were captured in the excel document to simplify data analysis. The process of allocating codes was applied to all the measurement items in the questionnaire.

5.11.4 Data cleansing

In data cleansing, the primary tasks to develop are detection, correction and elimination of anomalies or outliers in the values of records and attributes (Perez, Iturbide, Olivares, Hidalgo, Martınez & Almanza, 2015:2). The significances of cleaning data for quality of final output are immense, particularly where data is attained from a survey based on probability sampling and references therein. Commonly, survey data, as well as data gained from other sources (administrative data, or just lately large data sources), must be expected from missing items, technical errors, and logical inconsistencies. To produce statistics based on such data, the researcher needs to decide how to either treat such cases or how to accurately ignore them for reliable statistical analysis to unfold (Van der Loo, 2015:141).

Data cleansing is a vital step in that it safeguards that the final dataset to be applied is adequately reliable and precise to facilitate its objective statistical analysis. A common example of such anomalies is missing entries resulting from human error when capturing data in the Excel document. One more discrepancy might be the entering of incorrect digits, for example entering a ‘7’ on a five-point Likert scale. To cross-check such errors, the columns and rows of the Excel spreadsheet where the entries of the collected data were made, were analysed several times. In the case where faults were recognised, adjustments were made by referring to the actual numbered questionnaire and then re-entering the missing/incorrect data using the correct code. This process was repeated until no missing and wrong entries were found on the dataset. This process sometimes may include steps referred to as data validation, error localisation and data amendment and amputation (Van der Loo, 2015:142).

5.11.5 Tests for normality of data

Various statistical methods used for data analysis make assumptions about normality, including correlation, regression, t-tests, and analysis of variance. The central limit theorem states that when a sample size has 100 or more observations, violation of the normality is not a major issue. Although for meaningful conclusions, assumption of the normality should be followed irrespective of the sample size (Mishra, Pandey, Singh, Gupta, Sahu & Keshri, 2019:69). In this study, normality tests were performed.

There are various methods available to test the normality of the continuous data; the most popular methods are Jarque-Bera test, Lilliefors corrected K-S test, Anscombe-Glynn kurtosis test, D'Agostino-Pearson omnibus test and the D'Agostino's K-squared test. In this study, the normality of data was tested using D'Argostino's K-squared test. The D'Argostino's K-squared test is a goodness of fit measure that seeks to determine if a sample is drawn from a normally distributed population (Rahman & Wu, 2013:1).

Because the choice of statistical methods depends on the distribution of data, the first step is to examine the skewness of data (Zhang, 20161:2). In this test, the sample skewness and kurtosis were computed. Skewness and kurtosis were used as rough indicators of the degree of normality of distributions or the lack thereof. Skewness is a rough index of the asymmetry of a distribution, where positive skewness in unimodal distributions suggests relatively plentiful and/or extreme positive values, and negative skewness suggests the same for negative values. Skewness is an estimate of the third standardised moment of the population distribution. Skewness can range from '- ∞ to + ∞ ', and symmetric distributions like the normal distribution have a skewness of 0 (Ho & Yu, 2015:370).

While various rules of thumb have been applied to measure skewness, this study adopted -2 to +2 as proposed by George and Mallery (2010) to be the acceptable range to prove the normal distribution of data. In their proposal, George and Mallery (2010) stipulate the following rules of thumb regarding levels of internal consistency: >0.9, excellent; >0.8, good; >0.7, acceptable; >0.6, questionable; >0.5, poor (Robida, 2013:471). Skewness and kurtosis are intuitive means to understand normality, and the expected kurtosis value for any univariate normal distribution is 3 (Cain, Zhang & Yuan, 2017:1717). Consequently, values closer to this threshold were adopted in this study. The D'Argostino's K-squared test was performed with the use of the SPSS software concurrently with the analysis of descriptive statistics. The results for the testing of data normality using skewness and kurtosis are presented in section 6.7.

5.11.6 Descriptive statistics

Data analysis may involve descriptive or inferential statistics (Ingham-Broomfield, 2014:35). Descriptive statistics describe and synthesise data and show patterns and trends, whereas inferential statistics permit the investigator to infer whether relationships noted in a sample might occur in a larger population. Descriptive data, also known as summary statistics, is information provided about the sample population. This data usually includes the sample size and demographic characteristics, which are either described by frequencies (the number of observations) for categorical variables, such as gender and ethnicity; or by the mean (average) number and standard deviation (a measure of variance) for continuous variables, such as age or years of education (Hoare & Hoe, 2013:2).

Descriptive statistics basically designate the distributions/patterns shown by the data. Therefore, the results of the descriptive statistics apply to the sample under consideration and cannot be inferred to the entire population from which the sample is drawn. The collections of descriptive statistics used in this study comprised measures of central tendency, known as the average, and identify how near to the usual response a particular variable lies. These averages are expressed as frequencies, mean scores, and standard deviations (Mishra *et al*., 2019:67).

5.11.7 Frequencies

The frequency statistics are a table of numbers that demonstrate how many of the data values are within each of a number of intervals (Bruce, Pope & Stanistree, 2018:42). Frequency statistics merely count the number of times each variable occurs, for example the number of males and females within the sample or population. Frequency analysis is an important area of statistics that deals with the number of occurrences (frequency) and percentage (Mishra *et al*., 2019:68). In this study, statistical frequencies were used in the analysis of the demographic profile of respondents. Therefore, the frequencies specified how many scores belonged to a specific demographic category. These frequencies were illustrated in a frequency table or specially designed graphs (for example, histograms) and charts (bar and pie charts) that displayed the variable, its categories/response options, the definite number/score occurring (n) and the percentage (%) of that score against the total sample. The results for the use of frequencies to show the demographic distributions are shown in section 6.4.

5.11.8 Mean scores

Mean (average) is defined as the most common measure of central tendency and refers to the average value of a group of numbers. Add up all the figures, divide by the number of values, and that is the

average or mean (Sykes, Gani & Vally, 2016:277). The arithmetic mean ($\overline{x}$) is the sum of all numbers divided by the number of numbers (Kmecova, 2018:48). The arithmetic mean is derived by summing up the values of all the components within a data stack and then dividing this total by the number of data inputs (Senocak & Vehid, 2018:66). This study first applied the mean to determine the most significant score among a set of measurement items in a particular construct. As an example, for a construct under consideration in this study, the measurement item with the highest mean was the most important. Additionally, the mean was employed to determine the most central construct when compared with the others under consideration in the study. Consequently, the construct that scored the highest mean was taken as the most dominant and important when compared to the others. The results for the application of mean scores in this study are reported in section 6.6.

5.11.9 Standard deviation

Standard deviation is the spread of data from a mean value (Ingham-Broomfield, 2014:36). The mean and standard deviation are two statistics that help determine differences and similarities in groups that are being researched. The standard deviation is a measure of how spread out the values are from their mean value (Mishra *et al.*, 2019:68). Conceptually, the standard deviation is more 'sensitive' than the arithmetic mean because it accounts for the data's specific location within the data stack (Senocak & Vehid, 2018:66). The standard deviation also describes variability and is defined as the square root of the variance. This allows for a description of the variability in the same units as the data. A low standard deviation will mean that the points of data are close to the mean, and a high standard deviation indicates that the data is spread over a wide range of values. The standard deviation is also used to describe the margin of error in the statistical analysis. This is usually twice the standard deviation, typically described by the 95% confidence level (Sykes *et al*., 2016:277). In this study, the standard deviation was applied further to confirm whether data was normally distributed. The normal distribution is a hypothetical symmetrical distribution used to compare scores or make other kinds of statistical decisions (Musselwhite & Wesolowski, 2018:2). The results for standard deviations are reported in section 6.6.

5.11.10 Exploratory factor analysis

Factor analysis is the notion that measurable and observable variables can be reduced to fewer latent variables that share a common variance and are unobservable, which is known as reducing dimensionality (Yong & Pearce, 2013:80). These unobservable factors are not directly measured but are essentially hypothetical constructs that are used to represent variables. EFA is used when a researcher wants to discover the number of factors influencing variables and to analyse which variables 'go together'. A

basic hypothesis of EFA is that there are *m* common 'latent' factors to be exposed in the dataset, and the objective is to discover the smallest number of common factors that will account for the relationships (Watkins, 2018:220).

Exploratory factor analysis (EFA) is a data-driven approach, such that no specifications are made in regard to the number of factors (initially) or the pattern of relationships between the common factors and the indicators (i.e. the factor loadings). Rather, the researcher employs EFA as an explanatory or descriptive technique to determine the appropriate number of common factors and to uncover which measured variables are reasonable indicators of the various latent dimensions (e.g. by the size and differential magnitude of factor loadings) (Brown, 2015:11). This study had several latent variables under consideration, namely transformational/transactional leadership, organisational innovation and financial control (BSC).

The anticipated factor structure of these variables was presented through the items under each section in the questionnaire, which were the observed variables. However, it was necessary to establish whether the collected data was consistent with the factor structure proposed in the research model and was achieved by applying EFA. For instance, as presented in the model, information sharing was one factor. Nonetheless, after applying EFA, it could be that the actual factor structure in this study applying the gathered data might have exposed more than one factor for transformational/transactional leadership variable. Consequently, it was necessary to conduct EFA before further analyses to determine the factor structure of the data collected for this research. Furthermore, EFA was essential since the items employed in the questionnaire were borrowed from several prior studies. This made it obligatory to perform EFA to establish the validity of the measurement scales being applied in the questionnaire within the present research context.

In determining the factor structure of the variables in this study, it was deemed essential first to check whether the data collected was factorable, as suggested by Field (2013:628). In order to check for the data's factorability, Bartlett's test of sphericity and a Kaiser-Meyer-Olkin (KMO) test of sampling adequacy were performed (Courtney & Gordon, 2013:2*)*. Bartlett's test established whether the correlation matrix was an identity matrix. In case the variables were unrelated, they would have been deemed unsuitable for EFA. A significant p-value less than 0.05 indicated that the variables in the correlation matrix were related, and hence factor analysis was convenient for this data. The KMO tests whether the sample was large enough, and this was indicated by a value greater than 0.5 (Field, 2013:628; Chan & Idris, 2017:403).

Three principles were employed in the EFA procedure. The first was that only items that have factor loadings greater than 0.5 would be retained in the study (Izquierdo, Olea & García, 2014:397; Howard, 2016:52). The second criterion was that only factors with eigenvalues greater than '1' would be retained as outlined through the Guttman-Kaiser rule (Warne & Larsen, 2014:106; Howard, 2016:53). Likewise, the Cartell's scree plot criteria were applied where all factors that were above the breaking point were retained (Ledesma, Valero-Mora & Macbeth, 2015:1; Courtney & Gordon, 2013:2). The EFA procedure was performed on SPSS using Varimax rotation, which was the most popular method of rotation (Weide & Beauducel, 2019:1). The results for the application of EFA in the study are presented in section 6.4.

5.11.11 Correlation analysis

Correlation analysis defines the strength of a relationship between two item sets, which can be a dependent and an independent variable or even two independent variables. In such a case, the strength can be identified based on direction, form, and dispersion strength (Kumar & Chong, 2018:5). In statistics, the correlation analysis quantifies the strength of the association between two quantitative variables. Likewise, Akoglu (2018:91) tells that a relationship (or the correlation) between the two variables is symbolised by the letter r and quantified with a number, which fluctuates between −1 and +1. Zero means there is no correlation, where 1 means a complete or perfect correlation. The sign 'r' demonstrates the direction of the correlation. A negative r means that the variables are inversely related. The strength of the correlation increases both from 0 to +1, and 0 to −1.

The purpose of conducting correlation analysis in this study was to determine the associative relationship between independent and dependent variables. Therefore, correlation was meant for exploring the degree of association between several constructs under consideration. In this research, several approaches were applied to translate the correlation coefficient into descriptors, such as 'weak', 'moderate', or 'strong' relationships. Weak or low correlations depicted little or no relation between variables, while high or strong correlation coefficients demonstrated a strong association between two or more variables.

Therefore, correlation analysis was presented as an absolute value score between 0 and 1. A correlation of -1.00 indicated a perfect negative correlation, 0 indicated no relationship at all and +1.00 indicated a perfect positive correlation. In this research, a positive correlation was when two variables X and Y moved in the same direction and when two variables X and Y moved in the opposite direction, the correlation was negative. Additionally, the correlation between two variables X and Y was zero when the variables moved in no connection with each other (Mukaka, 2012:69).

Thresholds for evaluating correlations coefficients are reflected on Table 6.10.

Table 5.4: Strength of relationship among variables

+1	Very strong positive relationship
+0.6 to +0.8	Strong positive relationship
+0.35 to +0.59	Moderate positive relationship
+0.20 to +0.34	Weak positive relationship
0	None (Perfect independence among the variables)
-0.2 to -0.35	Weak negative relationship
-0.36 to -0.6	Moderate negative relationship
-0.7 to -0.8	Strong negative relationship
-0.9 to -1	Very strong negative relationship

Source: Saunders *et al*. (2016:545)

There are two prominent types of correlation coefficients; that is, Pearson's product moment correlation coefficient and Spearman's rank correlation coefficient. The correct application of correlation coefficient type depends on the forms of variables being considered (Humphreys, Puth, Neuhäuser & Ruxton, 2019:1). The Pearson product-moment correlation coefficient is employed broadly in social science research as a correlational technique between two variables (X and Y) and also in concurrence with various univariate and multivariate methods to analyse the causal relationship between the variables of interest prior to or following the focal analysis. To be certain, there are other correlational methods that have been suggested to estimate the population correlation, ρ, but Pearson's r seems to be the most commonly applied statistic in this milieu (Padilla & Veprinsky, 2014:824).

Pearson's product moment correlation coefficient is symbolised as ϱ for a population parameter and as r for a sample statistic (Schober, Boer & Schwarte, 2018:1763). It is applied when both variables being studied are normally dispersed. This coefficient is affected by extreme values, which may exaggerate or dampen the strength of correlation, and is therefore unsuitable when either or both variables are not normally dispersed. Spearman's rank correlation coefficient is symbolised as ϱs for a population parameter and as rs for a sample statistic. It is suitable when one or both variables are skewed or ordinal and is robust when extreme values are present (Mukaka, 2012:69). Pearson's correlations coefficient (*r*) is applied for investigating relationships between interval/ratio variables and is by far the most frequently used. To understand the strength of the correlation, researchers use the rule of thumbs that correlations close to or beyond +0.70 or - 0.70 designate a strong relationship; correlations closer to +0.5 and -0.5 display a moderate relationship; and by inference correlations less than +0.5 and -0.5 a weak relationship (Murray, 2013:260).

This study employed the Pearson's correlation analysis, since the data captured was normally dispersed. The results are reported in section 6.8.

5.11.12 Regression analysis

Regression analysis is a method of determining the specific function relating to Y and X. There are several forms of regression analysis, depending on the complexity of the relationships being studied (Babbie & Mouton, 2012:464). Likewise, Sarstedt and Mooi (2014:194) assert that regression analysis allows researchers to investigate the relationships between one independent and one dependent variable. O'Brien and Scott (2012:3) suggest that regression is particularly useful to understand the predictive power of the independent variables on the dependent variable once a causal relationship has been confirmed. To be precise, regression helps a researcher understand the extent to which the change of the value of the dependent variable causes the change in the value of the independent variables, while other independent variables are held unchanged. A prediction can be made on variables through regression analysis based on their scores perceived on another or several other variables. Although correlations determine whether or not there is an association between two variables and establish the direction of this association, regression is better suited for analysing linear relationships given its predictive power. Therefore, regression analysis is a technique for analysing associate relationships between a metric-dependent variable and one or more independent variables (Malhotra, Nunan & Birks, 2017:641).

In this study, regression analysis was used to determine whether any predictive relationships exist between the dependent (organisational innovation) and independent variables (idealised influence; intellectual stimulation; contingent reward; inspirational leadership; laissez faire), which are the dimensions of transactional/transformational leadership. Regression analysis was applied in testing the hypothesised relationships between organisational leadership (dependant variable) and the BSC components, namely internal growth; financial control; internal processes; customer satisfaction; learning' and grants and income. Regression analysis results are presented in section 6.14.

5.11.13 Reliability

Reliability is the consistency of the analytical procedures or the degree to which a research instrument measures a given variable consistently every time it is applied under similar conditions with similar subjects (Noble & Smith, 2015:2). While it is not possible to provide a precise calculation of reliability, an estimate of reliability can be attained through diverse measures (Yilmaz, 2013:317; Heale & Twycross, 2015:66), namely homogeneity, Kuder Richardson coefficient and Cronbach's α. Homogeneity (internal consistency) is assessed using item-to-total correlation, split-half reliability,

Kuder Richardson coefficient and Cronbach's α (Heale & Twycross, 2015:66). In the current study, reliability was tested using the Cronbach alpha test and inter-item correlations.

5.11.14 Cronbach alpha

Cronbach's alpha is a statistic commonly cited to validate that tests and scales that have been constructed or adapted for research projects are fit for purpose (Taber, 2018:1273). Cronbach's alpha coefficient is conceivably the utmost common estimate of the internal consistency of items in a scale (Cronbach, 1951). Alpha measures the extent to which item responses (answers to survey questions) correlate. In other words, α estimates the proportion of variance that is systematic or consistent in a set of survey responses (Vaske, Beaman & Sponarski, 2017:164). Likewise, Cronbach's alpha is a measure of the internal consistency or reliability between several items, measurements or ratings. In other words, it estimates how reliable the responses of a questionnaire (or domain of a questionnaire), instrumentation or rating evaluated by subjects are, which will indicate the stability of the tools (Bujang, Omar & Baharum, 2018:85).

When the measurements characterise multiple questionnaire/test items, which is the most common application, Cronbach's alpha is referred to as a measure of 'internal consistency' reliability (Bonett & Wright, 2015:3). Cronbach alpha values of 0.7 or higher indicate acceptable internal consistency (Taber, 2018:1282). In applying the Cronbach alpha coefficient, the current study used the rules presented in Table 5.5 that are prescribed by Cronbach (1951).

Table 5.5: Rules of thumb for the Cronbach alpha

Cronbach alpha value	Internal consistency
$\alpha \geq 0.9$	Excellent
$0.8 < \alpha \leq 0.9$	Good
$0.7 < \alpha \leq 0.8$	Acceptable
$0.6 < \alpha \leq 0.7$	Questionable
$0.5 < \alpha \leq 0.6$	Poor
$\alpha < 0.5$	Unacceptable

Source: Cronbach (1951)

The current study applied the rule of thumb as specified in Table 5.5. The table discloses that the minimum acceptable alpha value was 0.7. It was expected, therefore, that the alpha values for all

measurement scales used in the study were above the 0.7 thresholds. The results for the testing of reliability using the Cronbach alpha coefficient are presented in section 6.14.

5.11.15 Item-total correlations

Item-total correlation and Cronbach's coefficient alpha are used to evaluate the internal consistency of the test items (Hong, Velozo, Li, Romero, Gruber-Baldini & Shulman, 2016:4). Therefore, item-total correlations are a psychometric measure used to judge the reliability and consistency of measurement scales. The measure is applied to test whether or not any item in a scale is consistent with the behaviour of the other items on the same scale. Any inconsistent items are considered to be garbage items that have to be discarded. Normally, the discarding of such inconsistent items leads to the improvement of reliability in a process called scale purification. This can be done in two ways: either reflective, where the direction of causality is from construct to measure (or item); or formative, where the direction is reversed. In the case of reflective measurement with multiple items, these items are expected to correlate, and, in order to improve psychometric measurement properties, the researcher may need to eliminate a number of them. This is done to improve the measurement properties of newly developed or existing reflective scales (Wieland, Durach, Kembro & Treiblmaier, 2017:2). To ensure the cut-off level of reliability, the study adopted Nunnally's (1978:279) recommendation is that each item's item-total correlation should be above 0.3. These results are presented in section 6.14.

5.11.16 Validity

Validity refers to the precision in which the findings accurately reflect the data (Noble & Smith, 2015:2). A researcher's data can be said to be valid if the results of the study measurement process are accurate; that is, a measurement instrument is valid to the degree that it measures what it is supposed to measure (Yilmaz, 2013:318). Therefore, validity is the relevance of the interpretations, inferences, and actions that the researcher makes based on test scores. Validating the inferences that researchers make requires collecting valid evidence. Validity evidence is the empirical evidence and theoretical foundations that support the interpretations and actions that the researcher takes on the basis of the score or scores obtained from an assessment procedure (Johnson & Christenssen, 2019:248). Although there are various types of validities, this study tested for four forms of validity major forms: face, content, construct and predictive validity.

5.11.16.1 Face validity

Face validity refers to the degree to which a test appears to measure what it claims to measure (Mohajan, 2017:16). It is a universal answer as a quick assessment of what the test is measuring. It is the simplest and least accurate technique of determining validity, which relies wholly on the expertise and familiarity of the assessor concerning the subject matter. It evaluates the appearance of the questionnaire in terms of feasibility, readability, consistency of style and formatting, and the clarity of the language used (Taherdoost, 2016b:29). It guarantees that the questionnaire contains a suitable set of items that tap the concept, and ensures that the measure appears to be assessing the intended construct under study. It is generally applied to describe the appearance of validity without empirical testing. So, it is typically considered to be the weakest form of validity (Mohajan, 2017:16).

There is no statistical test to determine whether a measure adequately covers a content area; content validity usually depends on the judgement of experts in the field. The unclear and obscure questions can be amended, and the ineffective and non-functioning questions can be discarded by the advice of the reviewers (Mohajan, 2017:15). As such, in the current study, face validity was established through a review of the questionnaire by two faculty members. One faculty member is the promoter of the study, whose research interests centre around organisational performance management. After reviewing the questionnaire, both reviewers provided feedback that was used to improve the questionnaire by implementing some changes regarding its structure, wording, and technical aspects.

5.11.16.2 Content validity

Content validity is the extent to which the questions on the instrument and the scores from these questions represent all probable questions that could be asked about the content or skill (Mohajan, 2017:15). It is a multi-method process that can be estimated qualitatively, quantitatively, or by using mixed methods to determine a degree of consent among experts about the instrument in question (Newman, Lim & Pineda, 2013:245). To determine content validity, a pilot study was conducted after implementing the suggestions from the expert review of the questionnaire.

Pilot testing assesses the flow and relevance of the entire questionnaire, as well as individual questions, to identify unusual, irrelevant, poorly worded or redundant questions and responses (Burns & Kho, 2015:200). A pilot study involving a convenience sample of 50 respondents who were academics and non-academic professionals at two selected UoTs based in Gauteng Province was conducted. The pilot study was critical in that it advanced the quality of the whole questionnaire by guaranteeing that the information requested in the survey was clearly presented and understood without any ambiguity by the

respondents. Again, the questionnaire was modified using the feedback obtained from the pilot sample. The results of the pilot study are reported in section 6.2.

5.11.16.3 Construct validity

Construct validity refers to the degree to which conclusions can be made from the operationalisation of the theoretical constructs on which the study is based. In other words, the treatment or the programme should reflect the construct on which they are based (Clark & Watson, 2019:1414). It indicates whether there is a relationship between the independent variable and the dependent variable or outcome (Yilmaz, 2013:318). To measure construct validity, the item (factor) loadings that were computed in the EFA were used. Construct validity was considered acceptable where each item loading was at least 0.5. Items with factor loadings < 0.5 were considered for removal because they were a threat to construct validity (Arifin & Yusoff, 2016:4). Additionally, construct validity was measured using the Pearson correlation values. Positive correlations below 1.0 between the constructs were taken as an indicator of adequate discriminant validity (Saccenti, Hendriks & Smilde, 2020:4). The results of the EFA are presented in section 6.4, while correlations are reported in section 6.8.

5.11.16.4 Predictive validity

Predictive validity is a test constructed and developed with the intention of predicting some form of behaviour. It indicates the ability of the measuring instrument to differentiate among individuals with reference to a future criterion. This is an examination of how one variable is able to predict an outcome based on the information that is provided by other variables (Mohajan, 2017:17). In the present study, predictive validity was measured using regression analysis, whereby positive beta values that account for the hypothesised relationships are said to be indicators of acceptable predictive validity. These results are indicated in section 6.14.

5.12 ETHICAL CONSIDERATIONS

Research ethics try to offer guidelines for the responsible conduct of research, typically focusing on research involving human subjects (Zimmer, 2018:2). Suppose research ethics are a guiding set of values advanced to support researchers in conducting ethical studies. In that case, it was imperative to identify the ethical issues that were of importance to researchers. Three areas of ethical concern for educational, social, and behavioural scientists identified were (1) the relationship between society and science, (2) professional issues, and (3) the treatment of research participants (Johnson & Christensen, 2019:194).

Therefore, the researcher was indebted to consider the implications of the proposed research for the participating subjects, their families and society. Within their practice, researchers have a moral and legal obligation to protect an individual's privacy. If one of the guidelines was violated by the researcher, participants were entitled to withdraw from the study at any point without penalty (Ingham-Broomfield, 2014:35; Wadhwa, 2019:6).

5.12.1 Informed consent and voluntary participation

One of the fundamentals of research ethics is the idea of informed consent (Zimmer, 2018:3). Simply put, informed consent means that participants voluntarily participate in the research with full knowledge of inherent risks and benefits. Offering informed consent typically includes the researcher proactively explaining the objective of the study, the methods to be used, the possible outcomes of the research, as well as associated risks or harms that the participants might face (ibid). Respondents have to understand the aims of the study and how the research will be conducted, which enables them to participate voluntarily and to sign consent forms (Dongre & Sankaran, 2016:1190).

In this study, efforts were made to provide all necessary information to all respondents to empower them to decide whether to participate or not. Furthermore, a cover letter clarifying the objectives of the study was attached to the survey questionnaire. Respondents were not obliged to sign a consent form to show that they participated in the research with full knowledge and voluntary participation. All respondents were informed that signing the form was voluntary. Respondents were also made aware that they were free to withdraw from the study at any time with no negative consequences.

5.12.2 Ensuring confidentiality and anonymity

Confidentiality commands that no particulars about the identity of human respondents should be revealed, which would result in disclosure of their identity (Dongre & Sankaran, 2016:192). In this study, the identities of respondents, such as their names and other personal details, were treated with stringent confidentiality. Respondents were requested to avoid writing their names anywhere on the questionnaires to ensure that their identities stay anonymous. Consequently, the study endorsed the respondents' right to privacy.

5.12.3 Protection from psychological abuse, stress, loss of self-esteem or vulnerability

The risk of physical harm is rare, but social researchers can place people in highly stressful, embarrassing, anxiety-producing, or unpleasant situations (Neuman, 2014:51). Researchers want to learn about people's responses in real-life, high-anxiety-producing situations, so they might place people in realistic

situations of psychological discomfort or stress. Therefore, it is significant to protect respondents from any form of harm or victimisation in any research. To ensure that this was achieved, completed questionnaires were kept in a safe place at all times.

The inclusion, exclusion, and protection of vulnerable populations in research are challenging issues (González-Duarte, Zambrano-González, Medina-Franco, Alberú-Gómez, Durand-Carbajal, Hinojosa, Aguilar-Salinas & Kaufer-Horwitz, 2019:217). Vulnerability in research occurs when the participant is incapable of protecting his or her interests and, therefore, has an increased probability of being intentionally or unintentionally harmed; this can be due either to an inability to give informed consent or to unequal power relationships that hinder basic rights. As a result, all respondents were informed upfront and assured that the research was conducted purely for academic purposes, and no form of compensation was to be expected. Details of respondents would not be disclosed or archived together with the completed questionnaires; the latter would be stored responsibly in a lockable vault.

5.12.4 Deception

A deceptive element usually refers to a potentially harmful element, namely false feedback, which is superficially derived from an evaluative task or test (Neuman, 2014:54). Some respondents may feel demeaned or have decreased self-esteem if they believe this feedback. Their sense of autonomy may also be damaged if they are not given the obligatory information to have made a truly informed decision about study participation in the first place. Therefore, deception contains elements that negatively affect a participant's emotional state and self-esteem. A person's right not to participate can be a critical issue whenever the researcher uses deception, disguises the research, or uses covert research methods (Boynton, Portnoy & Johnson, 2013:24). Therefore, this study isolated any form of deception by ensuring that all information presented to respondents was accurate and authentic.

5.12.5 Ensuring permission is obtained

Ethics clearance was obtained from the Central Research Ethics Committee at the Vaal University of Technology. The survey questionnaire was examined and then approved by this committee before it was dispersed to respondents. Permission to collect data was requested from the relevant authorities at the selected UoTs in South Africa before any data was collected.

5.13 CHAPTER CONCLUSION

The purpose of this chapter was to discuss in detail the research methodology that was applied in this study. It first examined the research reasoning and paradigms selected for this study. It emerged that the

study is based on deductive reasoning and the positivist paradigm. The chapter outlined the research approach, research designs and strategy. It further went on to expand on procedures for data collection. The discussion indicated that the study is based on a quantitative approach, used a descriptive design, and was based on a cross-sectional method and used a survey strategy. The chapter further discussed the literature review, sampling design, sampling technique and procedures for data collection. On sampling design, it was shown that the sample was composed of academics and non-academic professionals drawn from the selected UoTs in South Africa. A sample size of n=500 respondents was predetermined, and the samples were selected using the purposive sampling technique. The chapter further revealed that the measurement instrument was a survey questionnaire that was distributed using emails and the drop-and-collect method. The collected data was then analysed using a combination of descriptive and inferential statistics. The study also tested for reliability and four types of validities, namely face, content, constrict and predictive validities. Various ethical considerations were followed as the study sought to uphold the expected professional research standards. The next chapter presents the results of the study.

CHAPTER 6: PRESENTATION, ANALYSIS AND INTERPRETATION OF RESEARCH RESULTS

6.1 INTRODUCTION

The current chapter presents the results of the study. It commences by analysing the results of the pilot test before presenting the analysis and interpretation of the main survey results. The results of the main survey, as presented, include both descriptive and inferential statistics. These discussions are based on and derived from the data received in the various sections of the questionnaire. The statistics used in the chapter include frequencies, percentages, means tests for data normality, standard deviations, exploratory factor analysis (EFA) correlations and regression analysis. In the EFA, new factors were extracted, leading to the restructuring of the conceptual framework and the hypotheses. Further considerations included in this study entail the discussion of the correlation and regression analyses results, as linked to the literature. Another section of the chapter presents the link between the results of the study and the research theories considered in this study, namely transformation and transactional leadership, disruptive innovation, and the BSC theories. The chapter further discusses the validity and reliability of the measurement scales to determine the accuracy of the instruments used in the study. The final sections of the chapter are dedicated to explaining the measures adopted to control common method bias in the study.

6.2 RESULTS

A pilot study is the first step of the entire research procedure and is often a smaller-sized study for helping to plan and modify the main study (In, 2017:601). It is a small feasibility study intended to test numerous aspects of the methods planned for a larger, more rigorous, or confirmatory investigation (Lowe, 2019:117; Mora, Deakin & Reid, 2019:99). It is therefore conducted to prevent the occurrence of a fatal flaw in a study that is costly in time and money (Lowe, 2019:117). In line with the above, in the present study, prior to primary data collection, a pilot study was conducted by distributing the questionnaire to a small group of academics and non-academic professionals from the identified sample within one of the UoTs in South Africa. Purposive sampling was applied in identifying and selecting individuals or groups of individuals that are especially knowledgeable about or experienced with the objectives of the study (Palinkas *et al*., 2015:534). A total of 51 (n=51) respondents participated in the pilot study, and the results are reflected in Table 6.1**.**

Table 6.1: Results of the pilot test

Scale	Sample no.	Mean	Standard deviation	Average item-total correlation	Number of items	Number of items deleted	Cronbach alpha
TTL	51	2.481	0.845	**.625**	**21**	0	**0.935**
OI	51	2.739	0.741	**.477**	**6**	0	**0.731**
FP	51	2.322	0.699	**.589**	**7**	0	**0.835**
CS	51	2.465	0.759	**.642**	**7**	0	**0.866**
IP	51	2.624	0.705	**.699**	**5**	0	**0.871**
L&G	51	2.492	0.718	**.620**	**10**	0	**0.886**

TTL= Transformational/transactional leadership**; OI=**Organisational innovation**; FP= f**inancial performance**; CS=**Customer satisfaction**; IP=**Internal processes**; L&G=** Learning and Growth

Source: Compiled by the researcher

As shown in Table 6.1, all scales attained average item-total correlations above the recommended cut-off value of 0.3 (Tapsir, Pa, Azis & Zamri, 2018:40; Vaske *et al*., 2017:170). The item-total correlations ranged between .30 and .70, and can be considered acceptable. Moreover, all scales attained Cronbach alpha values above the minimum acceptable threshold value of 0.7, implying that the data was reliable (Taber, 2018:1293). By implication, the measurement scales were deemed internally consistent and suitable for use during data collection in the primary survey, as suggested by Casanoves, González, Salvadó, Haro and Novo (2015:2930). Consequently, all items and scales were retained in the main survey. The next section presents an analysis of the results of the main survey.

6.3 ANALYSIS OF THE MAIN SURVEY RESULTS

The results of the primary survey are presented in this section. These include the response rate, descriptive analysis such as the profiles of respondents, EFA, descriptive statistics of the constructs, analysis of the normality of data, and the testing of hypotheses through correlations and regression analysis.

6.3.1 Response rate

In a survey, the response rate is the number of people who fully completed the survey questionnaires divided by the number of people who make up the total sample group (Morton, Bandara, Robinson & Carr, 2012:106). The response rate is presented in Table 6.2.

Table 6.2: Response rate

Description	Frequency
Total number of questionnaires distributed	500
Total number of questionnaires returned	411
Total number of questionnaires not returned	89
Unusable responses discarded	24
Valid questionnaires retained	387
Response rate (percentage)	77.4

Source: Compiled by the researcher

Table 6.2 reveals the total number of questionnaires distributed, returned, discarded and retained during the survey and data capturing process. A total of 500 questionnaires were distributed to the targeted respondents in several UoTs in the various provinces of South Africa. Out of these, 411 questions were returned, and 89 were not returned. From those returned total, 24 unusable questionnaires were discarded. This culminated in 387 questionnaires that were used in the data analysis. The response rate for the study is 77.4%, which is acceptable based on the recommendation by Parashos, Morgan and Messer (2005:9) that a minimum of 70% is the most ideal in a survey.

The next section provides a discussion on the profile of the respondents.

6.3.2 Demographic profiles of respondents

This section presents the results drawn from the descriptive statistics of the first part of the analysis. The discussion is based on and derived from the data received in Section A of the questionnaire, which is aimed at establishing respondents' demographic profiles. The data on the demographic profiles of respondents was analysed using descriptive statistics, which focused on categories such as gender, age group, race, highest qualification, employment period, experience in higher education and type of employment.

The discussions of each specific demographic category are presented next.

6.3.3 Gender distribution of respondents

The gender distribution of respondents is presented in Figure 6.1.

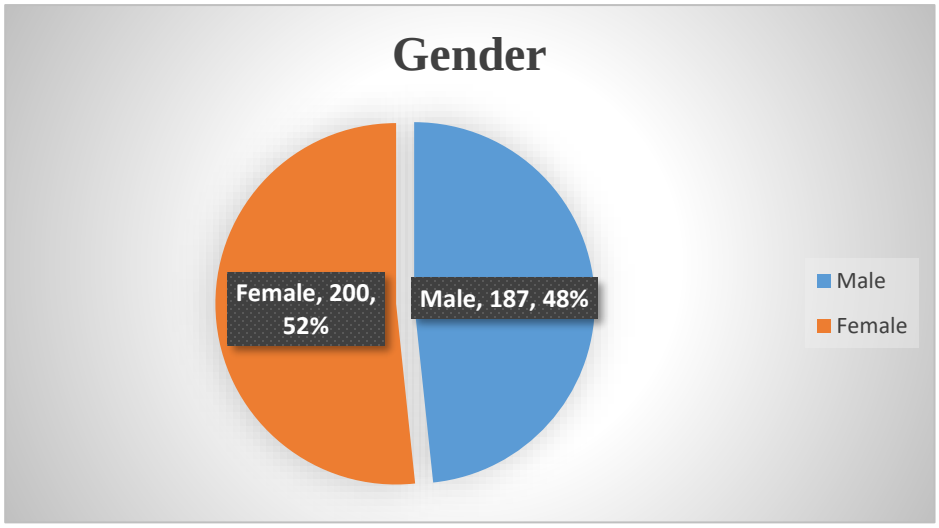


Figure 6.1: Gender distribution of respondents

Source: Compiled by the researcher

Figure 6.1 offers a graphical illustration of the gender structure of the surveyed respondents. It indicates that 48.3% (n=187) of the respondents were female, whereas 51.7% (n=200) were males.

6.3.4 Age distribution of the respondents

The age distribution of respondents is presented in Figure 6.2.

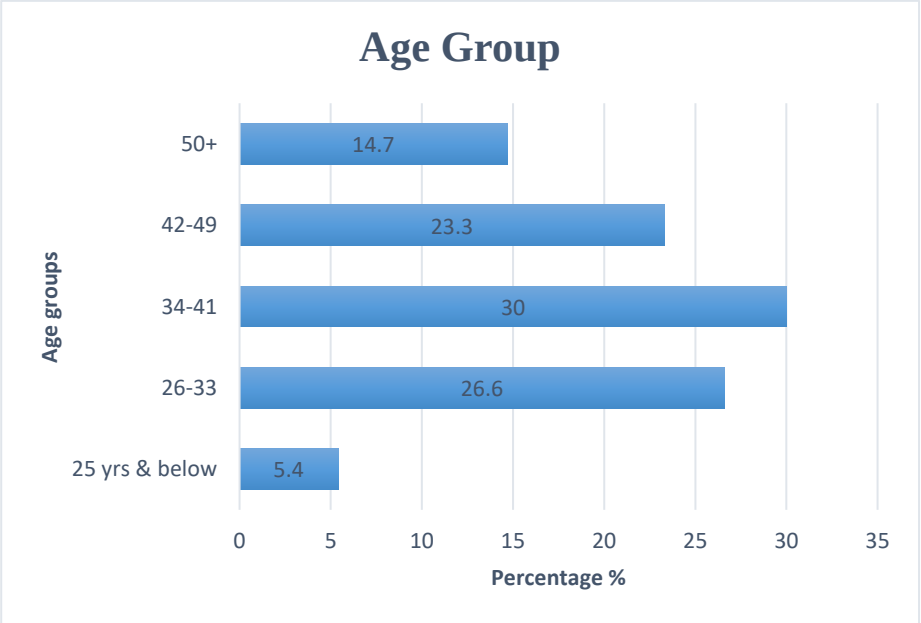


Figure 6.2: Age distribution of respondents
Source: Compiled by the researcher

In terms of the age distribution, the results show that the highest number of respondents were aged between 34 and 41 years (30%; n=116). This is followed by those aged between 26 and 33 (26.6%; n=103). A total of 90 respondents (23.3%) of the total sample were aged between 42 and 49 years. The study also revealed that a total of 57 respondents (14.7%) of the sample were aged 50 years and above, while 21 respondents (5.4%) were aged 25 years and below.

6.3.5 Race distribution

The discussed results regarding the racial distribution among respondents are reported in Figure 6.3.

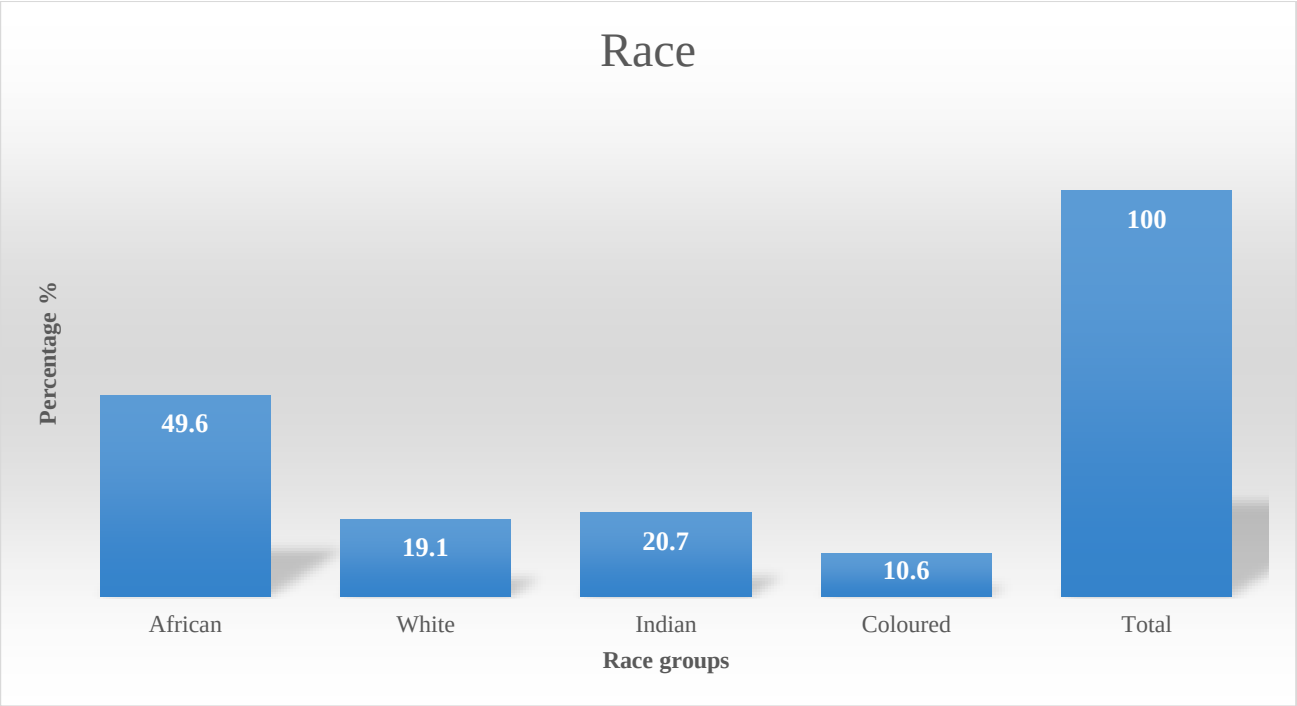


Figure 6.3: Racial distribution of the respondents

Source: Compiled by the researcher

Regarding the racial distribution of the respondents, the highest percentage of the responses in the study were black, which constituted 49.3 percent (n=192) of the total sample. The black race is followed by the Indian population, which accounts for 20.7 percent (n=80) of the 387 surveyed respondents. The white race comes third in terms of representation with 19.1 percent (n=74), followed by the coloured race, which was at 10.6 percent (n=41) of the respondents.

6.3.6 Highest qualification distribution of respondents

Information regarding the highest qualification distribution is presented in Figure 6.4.

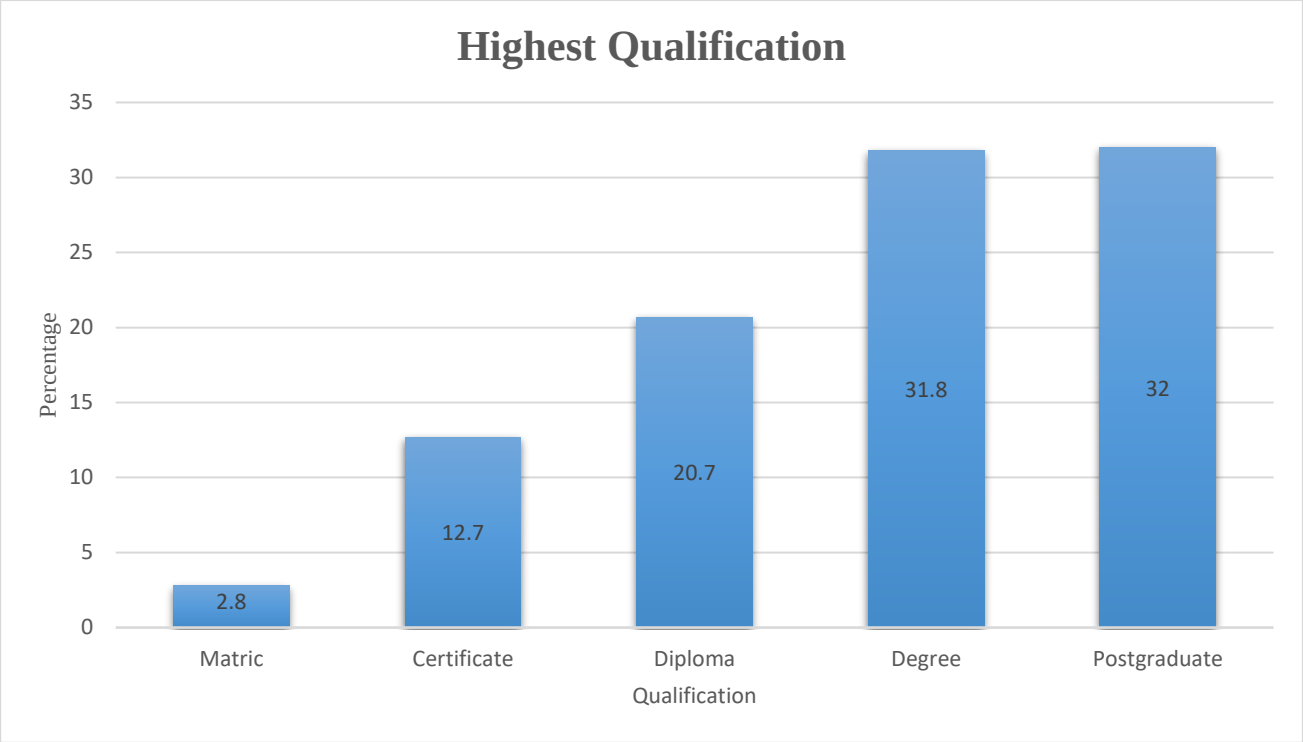


Figure 6.4: Highest qualification distribution

Source: Compiled by the researcher

Regarding the respondents' qualifications, the outcomes show that out of (n=387) respondents, 32.0 percent (n=124) were post-graduates, while 31.8 percent (n=123) were degree holders. The results also revealed that most of the respondents were diploma holders as they constituted 20.7 percent (n=80) of the surveyed respondents. Close to diploma holders are respondents who have a certificate as their highest qualifications and they constituted 12.7 percent (n=49) of the total sample. Only 2.8 percent (n=11) of the total sample were holders of matric as their highest qualifications. Consequently, most of the respondents in this study are post-graduates followed by degreed ones and respondents with diploma qualifications are third. Respondents with certificates are fourth, and respondents with a matric certificate are the least in terms of representation.

6.3.7 The employment period of respondents

The results regarding the employment periods of respondents are graphically shown in Figure 6.5.

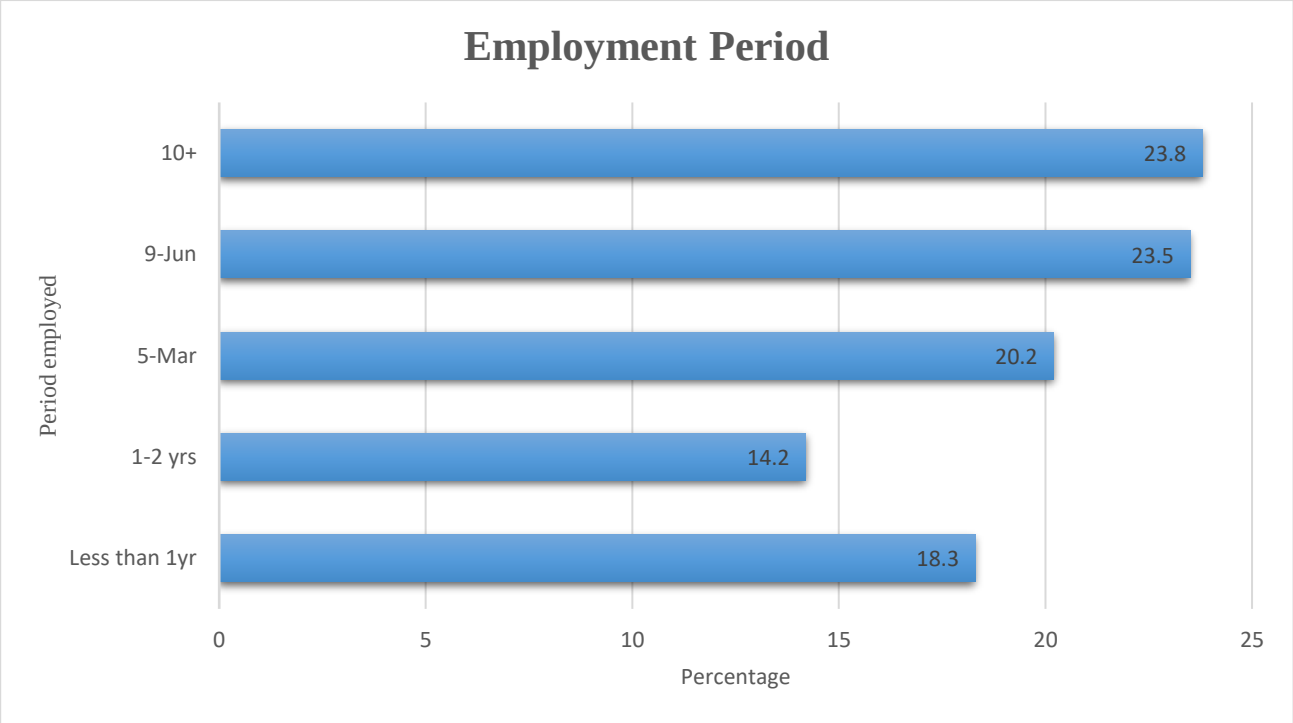


Figure 6.5: Employment period in the organisation

Source: Compiled by the researcher

From the results presented in Figure 6.5, 18.3 percent (n=71) of the surveyed respondents have been employed in their institutions for less than one year. It is also shown that 14.2 percent (n=55) of the surveyed individuals have been employed in their institutions for a period of one to two years. The results further show that 20.2 percent (n=78) have been employed in the institutions for between three and five years, whereas a total of 23.5 percent (n=91) have been employed for between six and nine years. The longest employed is 23.8 percent (n=92), employed for 10 years and above in their institutions.

6.3.8 Experience in higher education

The information on the experience of respondents is presented in Figure 6.6.

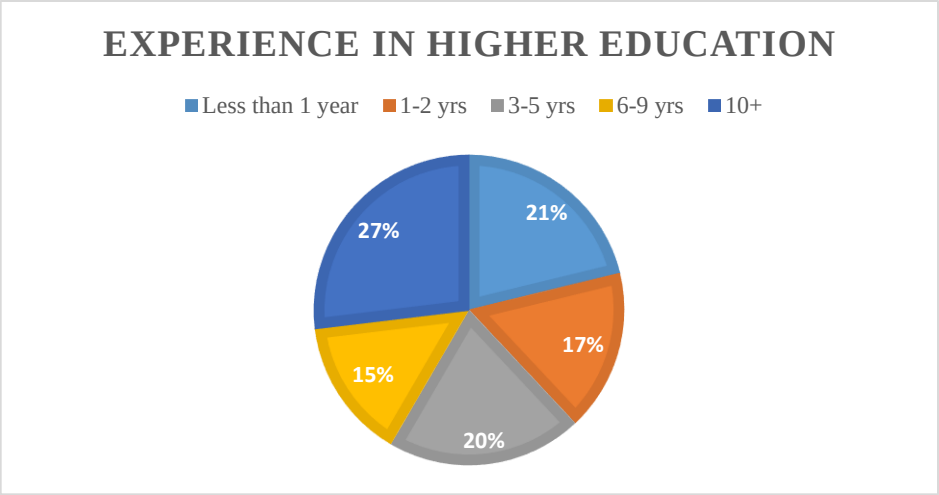


Figure 6.6: Experience in higher education
Source: Compiled by the researcher

As shown in Figure 6.6, 21.2 percent (n=82) have been employed in higher education for a period of less than one year. A total of 16.8 percent (n=65) in the sample possessed one to two years of experience in the higher education sector. There is also a total sample of 79 who possessed three to five years of experience as they accounted for 20.4 percent (n=79). Only 14.7 percent of the surveyed population had experience of six to nine years (n=57), and the highest number constituted 26.9 percent (n=104) of the population had experience of more than 10 years.

6.3.9 Type of employment

The results regarding the type of employment are shown in Figure 6.7.

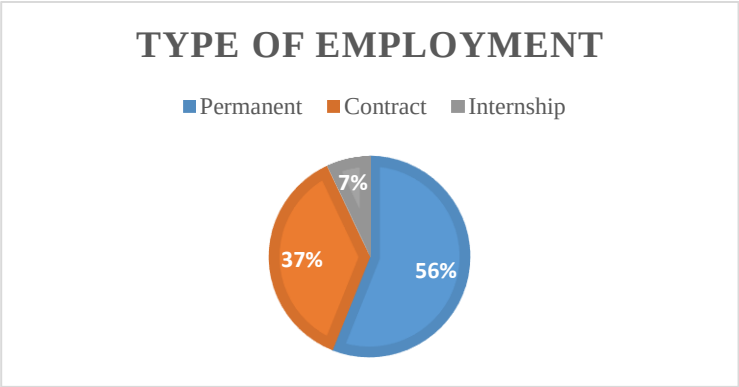


Figure 6.7: Type of employment
Source: Compiled by the researcher

The results presented in Figure 6.7 show that out of 387 surveyed respondents, 56.1 percent (n=217) are employed in their respective institutions on a permanent basis. The results also reveal that 37.0 percent (n=143) are employed on a contract and only 7.0 percent (n=27) are employed on internships.

6.4 EXPLORATORY FACTOR ANALYSIS

Scale purification was performed using the EFA procedure. As a first step, two key issues were considered in determining whether the specific sets of data were suitable for EFA. These are number of samples (sample size) and the strength of the relationship between indicators (variables). The suitability of sampling was tested through the Kaiser-Mayer-Olkin test of sampling adequacy (KMO [Kaiser 1970, 1974]), while the strength of the correlation between variables was measured through Bartlett's test of sphericity (Bartlett, 1954). A KMO test value of 0.5 is considered an indicator of adequate sample size. A significant Bartlett test (p=0.000) is also an indicator that the data is factorable as there will not be an identity matrix. Importantly, these indicators should be measured within interval levels (Hadi, Abdullah & Sentosa, 2016:216).

The results of the Bartlett's test and the KMO are indicated in Table 6.3.

Table 6.3: The KMO measure and the Bartlett's test results

Scale	KMO MEASURE	BARTLETT'S TEST		
		Approximate chi-square	Degrees of freedom	Significance level
TTL	0.822	5582.661	351	0.000
OI	0.884	1132.242	21	0.000
BSC	0.884	771.882	21	0.000
TTL= Transformational and Transactional; **OI**= Organisational Innovation; **BSC**= Balanced Scorecard				

Source: Compiled by the researcher

The results in Table 6.3 indicate that all KMO test results for the three data scales were higher than 0.5, which confirms that the samples were adequate. Additionally, Bartlett's test results for the three scales were significant, indicating that the data was not an identity matrix. Therefore, the data was deemed suitable for the EFA procedure. In performing the EFA, three criteria were considered. The first was to retain only those items with loadings equal to or higher than 0.5 (Maskey, Fei & Nguyen, 2018:94). The second criterion was to retain only those items with communalities equal to or higher than 0.3 (Fabrigar & Wegener, 2011:2; Samuels, 2017:2). The final criterion was to consider only those factors with eigenvalues greater than 1.0 (Qi, 2005:1302; Qi, Chen & Chen, 2018:4).

The next section presents the results of the EFA procedure performed on the transformational and transactional leadership scale.

6.4.1 Exploratory factor analysis for the transformational and transactional leadership scale

Two items were discarded from the entire set of items due to loadings lower than the 0.5 minimum threshold. The items discarded are as follows:

TTL8- "Employees have complete faith in their managers" and,
TTL 21- "Our managers ask no more of employees than what is absolutely essential".

The factor extraction procedure produced a five-factor structure, which is presented in Table 6.4.

Table 6.4: Five-factor structure for the transformational and transactional leadership scale

ITEM CODE	Description	Factors				
		1	2	3	4	5
TTL1	Our managers make others feel good to be around them	.120	.202	.036	**.866**	-.011
TTL2	Our managers express with a few simple words what we could and should do	.091	.140	.178	**.862**	.081
TTL3	Our managers enable employees to think about old problems in new ways	.182	.106	.485	**.600**	.060
TTL4	Our managers help employees develop themselves	.246	.057	**.684**	.448	.106
TTL5	Our managers tell employees what to do if they want to be rewarded for their work	.252	.165	**.743**	.071	.061
TTL6	Our managers are satisfied when employees meet agreed-upon standards	.244	.181	**.710**	.276	-.008
TTL7	Our managers are content to let employees continue working in the same ways always	-.135	.311	**.582**	-.163	.370
TTL9	Our managers provide appealing images about what employees can do	.282	**.633**	.380	.210	.069
TTL10	Our managers provide employees with new ways of looking at puzzling things	.372	**.716**	.223	.273	.063
TTL11	Our managers let employees know how they think they are doing.	.286	**.795**	.122	.173	.166
TTL12	Our managers provide recognition/rewards when others reach their goals	.347	**.657**	.121	.062	.340
TTL13	As long as things are working, our managers do not try to change anything	.062	.243	.094	.075	**.792**
TTL14	Whatever employees want to do is OK with our managers	.232	.034	.061	.013	**.816**
TTL15	Employees are proud to be associated with our managers	**.672**	.142	.191	.278	.431
TTL16	Our managers help employees find meaning in their work	**.779**	.144	.199	.201	.276
TTL17	Our managers get employees to rethink ideas that they had never questioned before	**.834**	.092	.190	.104	.154
TTL18	Our managers give personal attention to employees who seem rejected	**.810**	.295	.057	.058	.045
TTL19	Our managers call attention to what employees can get for what they accomplish	**.794**	.310	.098	.048	.024
TTL20	Our managers tell employees the standards they have to know to carry out their work	**.628**	.310	.207	.088	-.046
Eigenvalue		7.896	1.983	1.547	1.146	1.089
Total variance explained		41.560	10.438	8.141	6.031	5.731
Cumulative variance explained		41.560	51.998	60.139	66.170	71.901

Source: Compiled by the researcher

Table 6.4 reveals that five factors were extracted from the TTL scale. The factors accounted for 71.9% of the variance in transformational and transactional leadership. Factor 1 was labelled as ***idealised influence,*** consisted of six items, had an eigenvalue of 7.896 and contributed 41.6% of the variance. Factor 2 was labelled as ***intellectual stimulation***, was composed of four items, had an eigenvalue of 1.983 and accounted for 10.4% of the variance. Factor 3 was labelled as ***contingent reward,*** consisted of four items, had an eigenvalue of 1.547 and accounted for 8.1% of the variance. Factor 4 was labelled as ***inspirational leadership***, was composed of three items, had an eigenvalue of 1.146 and accounted for 6.0% of the variance. Factor 5 was labelled as ***laissez-faire***, consisted of two items, attained an eigenvalue of 1.089 and accounted for 5.7% of the variance. Overall, two of the original seven factors, namely ***individual consideration*** and ***management by exception***, were discarded from the final factor structure of the transformational and transactional leadership scale.

6.4.2 Exploratory factor analysis for the organisational innovations scale

The EFA procedure was also performed for the organisational innovation construct, and three scale items were discarded for cross-loadings. The discarded items are as follows;

- OI1- "Our institution's management actively seeks innovative technologies, processes, techniques, and product ideas";
- OI2- "Employees are accordingly rewarded and recognised for performance-enhancing innovative ideas that are successfully implemented."; and
- OI3- "Innovation in our institution is perceived as too risky, and as such it is resisted by many stakeholders".

The resultant unidimensional factor solution is presented in Table 6.5.

Table 6.5: Unidimensional factor structure for the organisational innovation scale

Item Code	Description	Factor
		1
OI4	Our institution is known for innovativeness in our area.	.892
OI5	Our institution investigates and secures the funding required to conduct research and implement new ideas	.919
OI6	Our institution constantly experiments with new ideas	.902
Eigenvalue		**2.456**
Total variance explained		**81.892**
Cumulative variance explained		**81.892**

Source: Compiled by the researcher

As indicated in Table 6.5, the final organisational innovation factor was composed of three items that explained 81.9% of the variance, with an eigenvalue of 2.456.

6.4.3 Exploratory factor analysis for the balanced scorecard performance scale

In the EFA procedure for the BSC performance scale, one item, i.e. CS1- "Student satisfaction", was discarded for attaining a low communality value below 0.3. The factor extraction procedure produced a six-factor structure, presented in Table 6.6.

Table 6.6: Six factor solution for the balanced scorecard performance scale

ITEM CODE	Description	Factor					
		1	2	3	4	5	6
FP1	Annual grants from industry	.137	.192	.149	.081	.120	**.861**
FP2	Amount of permanent endowment	.056	.249	.124	.243	.109	**.844**
FP3	Increase in student intake	.141	.489	.001	.230	.178	**.503**
FP4	More efficient and effective use of facilities	.189	**.750**	.120	.200	.135	.339
FP5	Reduction of expenses	.177	**.869**	.129	.120	.080	.119
FP6	Financial control procedures	.143	**.860**	.155	.200	.108	.096
FP7	Financial management practices	.168	**.816**	.250	.211	.064	.137
CS2	Knowledge and skill sharing across work functions, units and locations	.202	.457	.179	**.624**	.179	.170
CS3	Number of students hired	.214	.367	.118	**.725**	.201	.044
CS4	Average salaries offered	.052	.098	.168	**.783**	.283	.166
CS5	Number of people benefiting from training programs conducted by the institution	.141	.134	.334	**.751**	.174	.178
CS6	Grants/endowments gathered from industry	.233	.249	.471	**.629**	.093	.157
CS7	Numbers of alumni in public service, community service, NGOs	.304	.211	.443	**.598**	.030	.055
IP1	Number of new products and services introduced, i.e. new courses, syllabi, programs and curriculum changes	.167	.045	.595	.411	.221	.215
IP2	Distribution of grades awarded	.195	.132	**.774**	.316	.147	.128
IP3	Faculty-to-student ratio	.206	.169	**.786**	.189	.248	.084
IP4	Educational expenses per student	.226	.198	**.688**	.172	.337	-.017
IP5	Number of faculty in the specialised area	.246	.210	**.717**	.163	.329	.091
LG1	Number of faculty presentations at conferences	.187	.090	.355	.109	**.741**	.165
LG2	Travel budget for conference attendance	.135	.074	.209	.225	**.806**	.073
LG3	Number of cross-trained or multi-skilled staff	.303	.142	.270	.217	**.724**	.150
LG4	Number of courses incorporating new technology	.405	.216	.221	.236	**.610**	.057
LG6	Number of joint activities with external stakeholder organisations	**.622**	.128	.199	.175	.358	.156
LG7	Academic excellence	**.808**	.069	.164	.206	.159	.141
LG8	Level of research productivity	**.816**	.210	.168	.131	.169	.089
LG9	Outreach to community	**.845**	.186	.173	.105	.112	.032
LG10	Entrepreneurial initiatives	**.844**	.169	.204	.106	.147	.012
Eigenvalue		12.426	2.527	2.020	1.399	1.198	1.026
Total variance explained		46.023	9.360	7.480	5.180	4.437	3.799
Cumulative variance explained		46.023	55.383	62.863	68.043	72.480	76.279

Source: Compiled by the researcher

Table 6.6. indicates that the six factors extracted out of the BSC scale accounted for 76.279% of the variance. Factor 1 was labelled as ***internal growth.*** This factor consisted of five items, had an eigenvalue of 12.462 and accounted for 46% of the variance. Factor 2 was labelled as ***financial control,*** consisted of four items, had an eigenvalue of 2.527 and accounted for 9.4% of the variance. Factor 3 was labelled as ***internal processes***, was composed of four items, had an eigenvalue of 2.020 and explained 7.5% of the variance. Factor 4 was labelled as ***customer satisfaction,*** consisted of six items, had an eigenvalue of 1.399 and accounted for 5.2% of the variance. Factor 5 is a new factor, labelled as ***learning***, and was composed of four items, had an eigenvalue of 1.198 and contributed 4.4% of the variance. Factor 6 is a new factor labelled as ***grants and income***. It was composed of three items, had an eigenvalue of 1.026 and explained 3.8% of the variance.

6.5 RECONCEPTUAL FRAMEWORK AND HYPOTHESES

Based on the results of the EFA, the original conceptual framework that was presented in Figures 1.1 and 6.8 was revised since some constructs were discarded from the transformational and transactional leadership scale, and some new constructs were extracted in the BSC scale. In the TTL scale, two constructs, namely ***individual consideration*** and ***management by exception*** were discarded. Consquently, these two constructs do not appear in the revised conceptual framwork and were not used in further data analysis. Regarding the BSC scale, two new factors, namely ***learning*** *and* ***grants and income*** were extracted, and were consequently used in all subsquent data analyses performed in this study. The revised conceptual framework is presented in Figure 6.8.

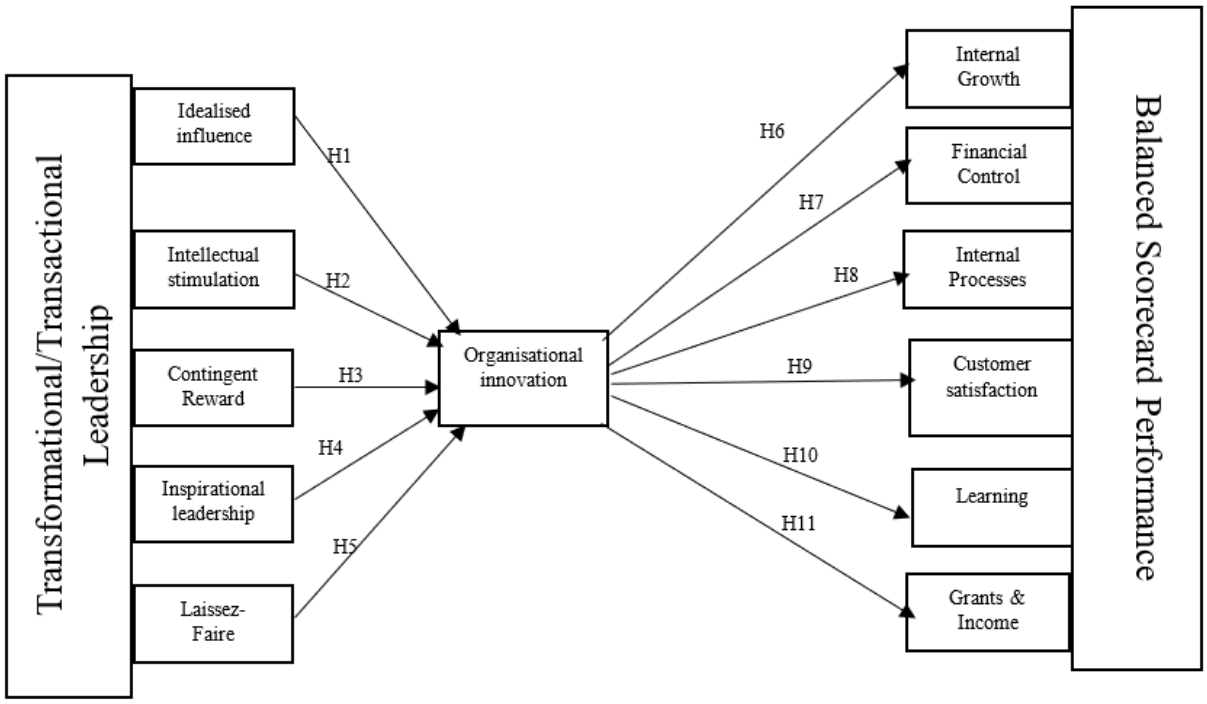


Figure 6.8: Revised conceptual framework for transformational/transactional leadership, innovation and the balanced scorecard performance in South African universities of technology

Source: Compiled by the researcher

As shown in Figure 6.8, the revision of the conceptual framework impacted the structure and naming of hypotheses. The revised hypotheses tested in this study are presented below.

H_1: There is a significant positive relationship between idealised influence and organisational innovation in South African UoTs.

H_2: There is a significant positive relationship between intellectual stimulation and organisational innovation in South African UoTs.

H_3: There is a significant positive relationship between contingent reward and organisational innovation in South African UoTs.

H_4: There is a significant positive relationship between inspirational leadership and organisational innovation in South African UoTs.

H_5: There is a significant positive relationship between laissez faire and organisational innovation in South African UoTs.

H_6: There is a significant positive relationship between organisational innovation and internal growth in South African UoTs.

H_7: There is a significant positive relationship between financial control and organisational innovation in South African UoTs.

H_8: There is a significant positive relationship between organisational innovation and internal processes in South African UoTs.

H_9: There is a significant positive relationship between organisational innovation and customer satisfaction in South African UoTs.

H_{10}: There is a significant positive relationship between organisational innovation and learning in South African UoTs.

H_{11}: There is a significant positive relationship between organisational innovation and grants and income in South African UoTs.

6.6 DESCRPTIVE STATISTICS FOR RESEARCH CONSTRUCTS

This section presents the descriptive statistics for the research constructs that were considered in the study. In line with section 5.11, the descriptive statistics applied include the mean score, standard deviation, the range (minimum and maximum), and the mean score rank. The results are presented in Table 6.7.

Table 6.7: Mean scores and standard deviations of research variables

Study constructs	Sample size (N)	No of items	Means	Minimum	Maximum	Standard deviation	x̄ rank
	Predictor variables						
II	387	6	3.09	1	5	1.107	2
IS	387	4	3.03	1	5	1.115	5
CR	387	4	3.39	1	5	1.031	1
IL	387	3	3.05	1	5	1.038	4
LF	387	2	3.08	1	5	1.099	3
Scale: 1= Never, 2=rarely, 3=sometimes, 4=often, 5=always							
Mediating variable							
OI	387	3	3.07	1	5	1.063	N/A
Scale: 1= Strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=Strongly agree							
Outcome variable							
IG	387	5	2.83	1	5	.948	6
FC	387	4	2.98	1	5	1.065	5
IP	387	5	3.02	1	5	0.891	2
CS	387	6	2.98	1	5	1.024	3
L	387	4	2.93	1	5	.964	4
GI	387	3	3.09	1	5	1.038	1
Scale: 1= Far below standard, 2=below standards, 3=meets standards, 4=above standards, 5=far above standards							
II=Idealised Influence**; IS=**Intellectual Stimulation**; CR=**Contingency Reward**; IL=**Inspirational Leadership**; LF=**Laissez-Faire**; OI=** Organisational Innovation**; FP=** Financial Control; **CS=** Customer Satisfaction; **IP=** Internal Processes; **L&G=** Internal Growth; **L**= Learning; **GI**= Grants and Income							

Source: Compiled by the researcher

The mean value for transformational/transactional leadership scales ranged between 3.03 and 3.39, which is close to the 'sometimes' point on the Likert scale. These results imply that the respondents felt that their leaders sometimes demonstrated each of the five transformational/transactional leadership traits that form the predictor constructs in this study. These are idealised influence, intellectual stimulation, contingent reward, inspiration leadership and laissez-faire. The fact that these traits were demonstrated occasionally suggests a need to improve the practice of transformational and transactional leadership within UoTs. Among the five dimensions emerging in the study, contingent reward scored the highest mean value of =3.39, implying that respondents felt that it is the leadership trait that is practised the most in their institutions.

Organisational innovation had a mean value of 3.07, which is close to the neutral point on the Likert scale. This result indicates that the respondents did not disclose the extent to which innovation is practised in their institutions. It could be that respondents do not perceive any creative changes taking place in their institutions or that innovation has not yet yielded any significant results in the UoTs. Therefore, respondents could not commit to any position, which calls for further studies to uncover the levels of innovation within UoTs in South Africa.

With respect to the performance of their institutions, the mean scores for the six BSC dimensions emerging in the study ranged between 2.83 and 3.09. These scores are close to the 'meets standards' position on the Likert scale. The results suggest that respondents felt that the performance of their institutions was satisfactory to the extent that it met the expected standards within higher education in South Africa. Grants and income scored the highest mean score of 3.09, demonstrating that respondents felt that institutional achievements in this area were more significant than in the other five areas of the BSC (financial control; customer satisfaction; internal processes; internal growth and learning).

6.7 TESTS FOR THE NORMALITY OF DATA

As indicated in section 5.11, normality of data in this study was tested using D Agostino's K-squared test. This test uses two statistics, namely skewness and kurtosis, to assess data distribution. According to Ho and Yu (2015:370), in order for the distribution levels for both skewness and kurtosis to be acceptable, the data should lie within ranges between -2 to +2 and -3 to +3, respectively. The results for the computation of skewness and Kurtosis are indicated in Table 6.8.

Table 6.8: Skewness and kurtosis values of study variables

			Skewness			Kurtosis		
Construct	**Valid cases**	**Missing cases**	**Sig.**	**Statistic**	**Std. error of skewness**	**Sig.**	**Statistic**	**Std. error of kurtosis**
II	**387**	0.000	0.000	-0.138	.124	0.000	-0.639	.247
IS	**387**	0.000	0.000	-0.080	.124	0.000	-0.370	.247
CR	**387**	0.000	0.000	-0.243	.124	0.000	-0.467	.247
IL	**387**	0.000	0.000	-0.107	.124	0.000	-0.544	.247
LF	**387**	0.000	0.000	-0.114	.124	0.000	-0.743	.247
OI	**387**	0.000	0.000	-0.028	.124	0.000	-0.587	.247
FC	**387**	0.000	0.000	-0.102	.124	0.000	-0.667	.247
CS	**387**	0.000	0.000	0.041	.124	0.000	-0.452	.247
IP	**387**	0.000	0.000	0.087	.124	0.000	0.150	.247
L&G	**387**	0.000	0.000	0.242	.124	0.000	0.513	.247
L	**327**	0.000	0.000	0.120	.124	0.000	-0.319	.247
GI	**327**	0.000	0.000	-0.253	.124	0.000	-0.478	.247
II=Idealised Influence**; IS=**Intellectual Stimulation**; CR=**Contingency Reward**; IL=**Inspirational Leadership**; LF=**Laissez-Faire**; OI**= Organisational Innovation; **FP**=Financial Control; **CS**= Customer Satisfaction; **IP**= Internal Processes; **L&G**= Learning and Growth; **L**=Learning; **GI**= Grants and Income								

Source: Compiled by the researcher

As shown in Table 6.8, the skewness statistics for all scales ranged from -0.253 to 0.120, and kurtosis values fell between -0.743 and 0.513. These values lie within the prescribed ranges of -2 to +2 for skewness and -3 to +3 for kurtosis, thereby confirming that the data captured for this study was normally distributed. The next section deals with the results of the correlation analysis.

6.8 CORRELATIONS BETWEEN CONSTRUCTS ANALYSIS

The results of the correlation analysis for the research constructs are presented in Table 6.9.

Table 6.9: Inter-construct correlations

Research construct	II	IS	CR	IL	LF	OI	IG	FC	IP	CS	L	GI
II	1.00											
IS	.631**	1.00										
CR	.485**	.564**	1.00									
IL	.381**	.423**	.475**	1.00								
LF	.382**	.385**	.304**	.166**	1.00							
OI	.318**	.332**	.267**	.279**	.159**	1.00						
IG	.314**	.292**	.283**	.205**	.141**	.370**	1.00					
FC	.391**	.322**	.321**	.179**	.130*	.469**	.441**	1.00				
IP	.298**	.275**	.300**	.148**	.178**	.376**	.561**	.439**	1.00			
CS	.361**	.338**	.313**	.101*	.289**	.446**	.493**	.565**	.665**	1.00		
L	.181**	.213**	.271**	.113*	.175**	.317**	.561**	.388**	.654**	.545**	1.00	
GI	.215**	.236**	.157**	.092	.141**	.361**	.324**	.538**	.368**	.470**	.366**	1.00

II =Idealised Influence; **IS** = Intellectual Stimulation; **CR** =Contingent Reward; **IL**= Inspirational Leadership; **LF** = Laissez Faire; **OI = Organisational Innovation; IG**=Internal Growth; **FC**=Financial Control; **IP**=Internal Processes; **CS**=Customer Satisfaction; **L**=Learning; **GI**=Grants and Income

**Correlation is significant at the 0.01 level (2-tailed)
*. Correlation is significant at the 0.05 level (2-tailed).

Source: Compiled by the researcher

The correlation matrix presented in Table 6.9 shows significant positive associations between the research constructs. The correlations were mostly weak to moderate, ranging from r= 0.092 to r=0.665. This outcome implies that an increase or improvement in one construct will lead to an increase or improvement in the other constructs, and *vice versa*.

6.8.1 Correlations: Five predictors and organisational innovation

Generally, significant but weak positive correlations were observed between the five leadership styles and organisational innovation. The results of the correlation analysis between idealised influence and organisational innovation (r= .318; p=0.00) suggests a significant yet weak positive association. This result suggests that an increase in idealised influence leads to a small increase in innovation within UoTs. Consistently, another study by Al-Mansoori and Koç (2019:26) conducted among US and other universities in the UK, confirms the association between the idealised influence dimension of leadership and organisational innovation. It established that top innovative universities commonly have a transformational leadership style that directly prompts innovation. Likewise, other studies within various higher education sectors like in Sana'a University in Yemen (for example Al-Amri, Hassan, Isaac &

Masoud, 2018:2) concur that idealised influence can play a critical role in resolving inconsistencies of innovation and it can boost it as well. Therefore, within the UoT context in South Africa, the idealised influence of leaders correlates to a low extent with the level of innovation.

Intellectual stimulation leadership shows a significant, however, weak positive association towards organisational innovation (r=.332; p=0.00). This result suggests that with a marginal increase in intellectual stimulation there is also a slight increase in organisational innovation within UoTs. Additionally, Gheorghe (2012:1) shows that intellectual stimulation leadership in Romanian universities may facilitate higher levels of creativity and innovation through emphasised knowledge integration mechanisms into the institution.

There is a significant but weak positive relationship between contingency reward and organisational innovation (r=.267; p=0.00). This outcome suggests that an increase in contingency reward will generate a slender improvement in organisational innovation within UoTs. Similarly, a study conducted in HEIs in Jordan by Elrehail, Emeagwali, Alsaad and Alzghoul, (2018:4) found that contingency reward-oriented leaders set objectives and incentives to drive their subordinates to higher performance levels while maintaining opportunities for professional and personal growth for each employee.

The results of the correlation analysis express a significant weak positive association between inspirational leadership and organisational innovation (r=.279; p=0.00). The increase in inspirational leadership generates a low increase in organisational innovation within UoTs. According Abdullatif and Jaleel (2021:481) developing countries higher education sector, like the one in Iraq is currently facing challenges calling for exceptional leadership. A report by Al-Husseini and Elbeltagi (2016:2) stresses the urgent need to regain the lost glory of educational institutions in Iraq, mentioning that through inspirational leadership, leaders attempt to stimulate organisational innovation also encouraging their members of staff by motivating them to get involved in a shared vision for the university.

Laissez-faire shows a significant positive but weak association towards organisational innovation (r=.159; p=0.002). This result demonstrates that the increase in laissez-faire leads to a small increase to organisational innovation within UoTs. Likewise, Khan, Ismail, Hussain and Alghazali (2020:2) reveal that the establishment of innovative work behaviour has been recognised globally in the education-related field, particularly with the introduction of information technology and e-practices. The introduction of these technologies implies that employees can become more autonomous in their work, leading to increased creativity among them.

6.8.2 Correlations: Organisational Innovation and University Performance

Correlations between organisational innovation and university performance as measured using the BSC generally ranged from weak to moderate. A significant weak positive association between organisational innovation and internal growth (r=.370; p=0.00) was observed, suggesting that these two factors increase and decrease in tandem with each other. This result is consistent with a study by Barnard and Van der Merwe (2016:221) in which the implementation of an innovative strategy set a comprehensive university in South Africa on a growth trajectory that leads to the realisation of many of its set objectives in a much shorter period than planned. The upward mobility of the institution has been recognised globally.

The association between organisational innovation and financial control (r=.469; p=0.00) is significant and moderate, demonstrating that a UoT's financial performance would be expected to increase when its innovation improves. Consistently, Koca and Sagsan (2020:1554) found that Turkish universities that emphasised innovation through publications and agreements consulting, making transfer of technology to private companies and creating an economical difference, were more stable in their financial resources and performance.

With respect to organisational innovation and internal processes (r=.376; p=0.00), a significant but weak correlation was realised, which implies that these two constructs improve and deteriorate together. In this way, higher innovation would stimulate improved internal processes in UoTs. Consistently, a study by Ashraf, Kadir, Pihie and Rashid (2014:144) shows that the performance of universities in Iran improved through an emphasis on two types of innovation, namely technical innovation and administrative innovation that are most widely used in conceptualising and operationalising innovation. Technical innovation relates to the implementation of a service, programme, or product that is new to the prevailing organisational practice, while administrative innovations pertain to changes in the organisation's structure and processes. Therefore, such innovations were taken to be important input factors towards the improvement of internal processes and systems in universities.

Another significant moderate positive association was observed between organisational innovation and customer satisfaction (r=.446; p=0.00). This result signifies that an increase in organisational innovation inspires a mild increase in the satisfaction of the customers/clients of a UoT. Likewise, a previous study by Naveed, Akhtar and Cheema (2012:63) investigated the relationship of innovation with customer satisfaction and brand loyalty within a specific segment of the students of a tertiary institution in Pakistan. The results concluded that institutional innovation leads to the satisfaction and loyalty of its stakeholders such as students, communities and industry.

Regarding the association between organisational innovation and learning, a weak positive, yet significant correlation (r=.317; p=0.00) was observed between the two constructs. By implication, innovation and learning within UoTs are bound to increase/decrease in the same direction. As discovered in some Taiwanese institutions by Chen, Hsiao, Chang, Shen and Chou (2010:44), more intense innovation may deliver better learning effectiveness for students and inspire them to acquire professional skills and creativity.

With respect to organisational innovation and grants and income, another significant, yet weak positive correlation was found (r=.361; p=0.00). This result indicates that an improvement in institutional innovation would result in an increased volume of grants and income in that institution. Research by Valavanidis and Vlachogianni (2016:12) proves that universities are major contributors to a nation's innovative outcomes, largely through their academic departments and research centers and institutes most of which are funded through grants. Therefore, universities derive greater revenues from many sources, including tuition and fees, state appropriations, state grants and contracts, and endowment earnings, leading to increased innovation (Leslie, Slaughter, Taylor & Zhang, 2012:615). The next section presents the results of regression analysis.

6.9 REGRESSION ANALYSIS

As indicated in section 5.11, prediction between the research constructs was measured using the regression analysis technique. A total of seven regression models were run, each specifying the predictive relationships between the dependant and independent variables.

6.9.1 Regression analysis six predictors and organizational innovation

The first regression model tested the relationships between the five predictor variables (leadership constructs) and organisational innovation. The five predictors were entered into the regression model as the independent variables, while organisational innovation was entered as the dependent variable. The results are presented in Table 6.10.

Table 6.10: Regression model 1: Five leadership predictors and organisational innovation

Independent variables: Five leadership constructs	Dependent variable: Organisational innovation					Tolerance	Variance inflation factor (VIF)
	Unstandardised coefficients		Standardised coefficients	T	Sig (p)		
	B	Standard error	Beta				
Constant	1.517	.233		6.511	.000		
Idealised influence	.130	.068	.124	1.911	.057	.534	1.874
Intellectual stimulation	.185	.070	.183	2.648	.008	.472	2.119
Contingent reward	.066	.076	.053	.866	.387	.589	1.697
Inspirational leadership	.120	.062	.110	1.936	.054	.695	1.440
Laissez faire	.002	.053	.002	.043	.966	.806	1.240
R=.382 R^2= .146 Adjusted R^2=.135 F=13.010 * sig at p<0.05							

Source: Compiled by the researcher

In testing the hypotheses, several multiple regression analyses were computed. In regression model 1, the five leadership constructs (adjusted R^2=0.135) explained approximately 13.5% of the variance by implication; the remaining 86.5% of the variance is explained by other factors that were not part of this study. The study also considered the possible impact of multicollinearity in this research study. Multicollinearity is a potential problem in all regression analyses (Thompson, Kim, Aloe & Becker, 2017:88). Multicollinearity refers to a scenario in which two or more independent variables are correlated, leading to inaccurate predictions between the independent and dependent variables. Tolerance and the variance inflation factor values were used to determine the effects of multicollinearity in this study. Tolerance values measure the strength of the relationship between one independent variable and the other independent variables and should be: T> 0.5 (O'Brien, 2007:673). VIF is a measure of the impact of collinearity amongst the variables under consideration in a regression model and should ideally be: VIF<10 (O'Brien, 2007:673). In the present study, tolerance and VIF values for all independent variables were within recommended limits and did not indicate any serious multicollinearity threat.

The results of the first multiple regression analysis show that only intellectual stimulation (β = .183) significantly predicted organisational innovation. The other four leadership styles did not significantly predict organisational performance: Idealised influence (β = .124, p = .057) contingent reward (β = .053, p = .387), inspirational leadership (β = .110, p = .054) and laissez faire (β = .002, p = .043).

6.9.2 Regression analysis: Organisational innovation and internal growth

Regression model 2 focused on the predictive relationship between organisational innovation and internal growth. The results are presented in Table 6.11.

Table 6.11: Regression model 2: Organisational innovation and internal growth

Independent variable: Organisational innovation	Dependent variable: Internal growth					Tolerance	Variance inflation factor (VIF)
	Unstandardised coefficients		Standardised coefficients	T	Sig (p)		
	B	Standard error	Beta				
Constant	1.857	.129		14.341	.000		
Organisational Innovation	.317	.040	.373	7.877	.000	1.000	1.000
R=.373 R^2= .139 Adjusted R^2=.137 F=62.049 * sig at p<0.05							

Source: Compiled by the researcher

As revealed in Table 6.11, organisational innovation exerted a positive and statistically significant influence on internal growth (β = .373; t=7.877; p = .000). Tolerance and VIF values fell within the recommended thresholds, indicating the absence of a significant threat from multicollinearity.

6.9.3 Regression analysis: Organisational innovation and financial control

The predictive relationship between organisational innovation and financial control was tested in regression model 3. The results are presented in Table 6.12.

Table 6.12: Regression model 3: Organisational innovation and financial control

Independent variable: Organisational innovation	Dependent variable: Financial control					Tolerance	Variance inflation factor (VIF)
	Unstandardised coefficients		Standardised coefficients	T	Sig (p)		
	B	Standard error	Beta				
Constant	1.533	.145		10.567	.000		
Organisational innovation	.469	.045	.469	10.415	.000	1.000	1.000
R=.469 R^2= .220 Adjusted R^2=.218 F=108.466 * sig at p<0.05							

Source: Compiled by the researcher

Table 6.12 indicates a significant positive relationship between organisational innovation and financial control (β = .469; t= 10.41; 5p = .000). Again, multicollinearity was controlled since the tolerance and VIF values also fell within the prescribed cut-off values.

6.9.4 Regression analysis: Organisational innovation and internal processes

The relationship between organisational innovation and internal processes was tested in regression model 4. The results are presented in Table 6.13.

Table 6.13: Regression model 4: Organisational innovation and internal processes

Independent variable: Organisational innovation	Dependent variable: Internal processes					Tolerance	Variance inflation factor (VIF)
	Unstandardised coefficients		Standardised coefficients	T	Sig (p)		
	B	Standard error	Beta				
Constant	2.052	.119		17.282	.000		
Organisational innovation	.310	.037	.394	8.404	.000	1.000	1.000
R=.384 R^2= .155 Adjusted R^2=.153 F=70.630 * sig at p<0.05							

Source: Compiled by the researcher

A significant positive predictive relationship existed between organisational innovation and internal processes (β = .394; 8.404; p = .000), as indicated in Table 6.12. Tolerance and VIF values for regression model 4 were within acceptable ranges.

6.9.5 Regression analysis: Organisational innovation and customer satisfaction

Regression model 5 tested the relationship between organisational innovation and customer satisfaction. The results are presented in Table 6.14.

Table 6.14: Regression model 5: Organisational innovation and customer satisfaction

Independent variable: Organisational innovation	Dependent variable: Customer satisfaction					Tolerance	Variance inflation factor (VIF)
	Unstandardised coefficients		Standardised coefficients	T	Sig (p)		
	B	Standard error	Beta				
Constant	1.747	.130		13.398	.000		
Organisational innovation	.401	.041	.450	9.887	.000	1.000	1.000
R=.450 R^2= .202 Adjusted R^2=.200 F=97.751 * sig at p<0.05							

Source: Compiled by the researcher

As indicated in Table 6.14, the relationship between organisational innovation and customer satisfaction was statistically significant (β = .450; t=9.887; p = .000), and multicollinearity was limited as shown by the tolerance and VIF values.

6.9.6 Regression analysis: Organisational innovation and learning

The relationship between organisational innovation and learning was tested in regression model 6, and the results are presented in Table 6.15.

Table 6.15: Regression model 6: Organisational innovation and learning

Independent variable: Organisational innovation	Dependent variable: Learning					Tolerance	Variance inflation factor (VIF)
	Unstandardised coefficients		Standardised coefficients	T	Sig (p)		
	B	Standard error	Beta				
Constant	2.091	.134		15.635	.000		
Organisational innovation	.273	.042	.317	6.568	.000	1.000	1.000
R=.317 R^2= .101 Adjusted R^2=.098 F=43.139 * sig at p<0.05							

Source: Compiled by the researcher

The results in Table 6.15 indicate a significant positive connection between organisational innovation and learning (β = .317; t=6.568; p = .000). Tolerance and VIF values were within the recommended limits, demonstrating a low risk of multicollinearity in this study.

6.9.7 Regression analysis: Organisational innovation and grants and income

The final relationship between organisational innovation and grants and income was tested in regression model 7, and the results are presented in Table 6.16.

Table 6.16: Regression model 7: Organisational innovation and grants and income

Independent variable: Organisational innovation	Dependent variable: Grants and income					Tolerance	Variance inflation factor (VIF)
	Unstandardised coefficients		Standardised coefficients	T	Sig (p)		
	B	Standard error	Beta				
Constant	2.042	.141		14.486	.000		
Organisational innovation	.342	.044	.370	7.815	.000	1.000	1.000
R=.370 R^2= .137 Adjusted R^2=.135 F=61.075 * sig at p<0.05							

Source: Compiled by the researcher

As indicated in regression model 7, organisational innovation exerted a significant positive influence on grants and income (β = .370; t=7.815; p = .000). Tolerance and VIF values were acceptable, indicating no serious threat of multicollinearity.

6.10 HYPOTHESES DECISIONS

Table 6.17 summarises the results from this study and states the decisions relating to the hypotheses made in this study.

Table 6.17: Hypotheses decisions

Hypothesis	Relationship	Beta coefficient	*t* Value	*p*-Value	Supported/not supported
H1	II –> OI	.124	1.911	.057	Supported and insignificant
H2	IS –>OI	.183	2.648	.008	Supported and significant
H3	CR–>OI	.053	.866	.387	Not supported and insignificant
H4	IL –> OI	.110	1.936	.054	Supported and insignificant
H5	LF –> OI	.002	.043	.966	Not supported and insignificant
H6	OI –> IG	.373	7.877	.000	Supported and significant
H7	OI –> FC	.469	10.415	.000	Supported and significant
H8	OI –> IP	.394	8.404	.000	Supported and significant
H9	OI–>CS	.450	9.887	.000	Supported and significant
H10	OI–>L	.317	6.568	.000	Supported and significant
H11	OI–>GI	.370	7.815	.000	Supported and significant

II=Idealised Influence; IS=Intellectual Stimulation; CR=Contingency Reward; IL=Inspirational Leadership; LF=Laissez-Faire; OI= Organisational Innovation; FP= Financial Control; CS= Customer Satisfaction; IP= Internal Processes; L&G= Internal Growth; L= Learning; GI= Grants and Income
**. Correlation is significant at the 0.01 level (2-tailed).

Source: Compiled by the researcher

Of the 11 hypotheses proposed in this study, four (H1, H3, H4 and H5) were insignificant because their p-value was greater than the acceptable level of .005, which is required in order to affirm statistical significance. All the other hypotheses were supported. For the other proposed hypotheses, H2, H6, H7, H8, H9, H10 and H11, the p-values ranged between 0.000 and 0.008, which were less than 0.05 and thus within the acceptable range. Furthermore, these hypotheses had positive values indicating support for the ropositions made in the hypotheses section.

6.11 DISCUSSION OF RESULTS

In this section, the research results are discussed comprehensively. The results pertain to the 11 hypotheses that were put forward in section 6.5, where a revised conceptual framework is provided. Hypotheses are discussed individually, inferences are made and the results are linked to relevant literature.

6.11.1 The relationship between idealised influence and organisational innovation

The first hypothesis of the study (H1) states that there is a significant positive relationship between idealised influence and organisational innovation in South African UoTs. Although the regression analysis results show that idealised influence exerts a positive influence on organisational innovation, the result is statistically insignificant (β=0.124; t=1.911, p=0.057). The beta (0.124) indicates some level of a positive connection between idealised influence and organisational innovation. However, the p value

(0.057) is higher than 0.05, indicating statistical insignificance. This result implies that although idealised influence predicts organisational innovation, one cannot be confident about the accuracy of that result. Therefore, the hypothesis (H1) is supported and is not significant.

The above results are consistent with a previous study conducted by Elrehail *et al*. (2018:4) in HEIs in Jordan, which indicates that idealised influence has the potential to promote organisational innovation. This is through its ability to motivate employees and foster a conducive atmosphere for the development of their creative and innovative skills, eventually leading to enhanced innovation capabilities and superior competitive advantages for the institution. Likewise, an earlier study by Al-Husseini and Elbeltagi (2016:159), conducted in public and private HEIs in Iraq, found that the idealised influence trait plays a fundamental role in enhancing innovation and that the style would be ideal within the Iraqi educational context as it would promote strategies for developing innovation in both sectors.

Based on the above result, it is suggested that idealised influence has the potential to promote innovation, motivate employees and foster an enabling environment. This implies that leaders who exercise idealised influence tend to possess astonishing competences, risk-taking, tenacity, and purpose that encourage creative ideas, thereby nurturing an innovative spirit within organisations (Gomes, 2014:17; Ngaithe, K'Aol, Lewa & Ndwiga, 2016:7). This study shows, UoTs within South Africa are no exception to this dynamic.

The results of the study also suggest that to promote innovation, leaders within UoTs in South Africa should demonstrate those traits linked with idealised influence. These traits include trust, confidence and being admired by employees. Once employees get exposed to these traits, their desire to be innovative will be enhanced, which benefits the UoT.

6.11.2 The relationship between intellectual stimulation and organisational innovation

The second hypothesis (H2) suggests that there is a significant positive relationship between intellectual stimulation and organisational innovation in South African UoTs. The regression analysis results indicate that such a relationship exists between intellectual stimulation and organisational innovation (β=0.183; t=2.648, p=0.08). The beta (0.183) indicates a positive connection between intellectual stimulation and organisational innovation, indicating predictive influence. Additionally, the p value (0.08) is lower than 0.05, indicating statistical significance. This result therefore validates the hypothesis (H2) that intellectual stimulation positively and significantly influences organisational in South African UoTs.

The above result is consistent with the conclusion by Rad, Shahi and Fazeli (2021:43) on a study conducted in an education department in Iran where it was found that leaders that demonstrate intellectual stimulation behaviours have a propensity to stimulate innovation. Such leaders encourage followers to view obstacles as opportunities and think of new, innovative ways of solving problems using logic and reasoning. The present study is further in harmony with a study by Alzawahreh (2011:130), who examined the intellectual stimulation leadership perspective of superiors (department chairs, vice deans, and deans) in a public HEI in Jordan and the level of faculty members' creativity. The results thereof showed that intellectual stimulation encourages creative ideas that promote innovation within the organisations. Therefore, literature confirms the results of the present study.

Overall, the result of this study suggests that engendering and applying intellectual stimulation can arouse innovation within UoTs. The traits associated with intellectual stimulation include challenging assumptions, taking risks, soliciting employees' ideas and recognising them through stimulations and creativity (Ogola *et al*., 2017b:9). Therefore, South African UoTs, employees, management and other relevant stakeholders may benefit through the ability of leaders to demonstrate intellectual stimulation traits as these tend to instil innovative and creative capabilities into followers as a way of building their critical thinking and problem-solving skills.

6.11.3 The relationship between contingent reward and organisational innovation

The third hypothesis of the study (H3) suggested that there is a significant positive relationship between contingent reward and organisational innovation in South African UoTs. However, the regression analysis results indicate that there is no relationship between contingent reward and organisational innovation (β=0.053; t=0.866, p=0.387). The beta value (0.053) is quite close to zero, indicating that the influence of contingent reward on organisational innovation is almost negligible. Additionally, the p value (0.387) is much higher than 0.05, indicating statistical insignificance. Consequently, hypothesis (H3) is not supported and is not significant

The results of this study contradict some previous studies. For instance, a study by Kwapisz *et al.* (2019:44), which surveyed both academic and practitioners' education contexts in the United States of America and other countries, found that leaders who spend more time displaying contingent reward leadership behaviours are generally associated with high levels of innovation and performance. Likewise, another study (Sadeghi & Pihie, 2012:188) conducted to examine heads of academic departments' leadership styles and its relationship with leadership effectiveness in research universities in Malaysia

found that contingency rewards that emphasise extrinsic rewards, such as monetary incentives and promotion, are linked to innovation.

The unusual results regarding the link between contingent reward and innovation in the current study could perhaps be attributed to a lack of these rewards in UoTs in South Africa. The respondents, who were academic and non-academic professionals in UoTs, are neither experiencing nor satisfied with these rewards in their institutions, which makes it logical that perceived that there is relationship between the two constructs. Even the descriptive statistics showed a neutral mean value of 3.39 (refer to Table 6.7), indicating that respondents could neither disprove nor confirm the levels of contingent reward in their institutions. As mentioned in a report by Mkhize (2021), employees in South African HEIs are generally dissatisfied with their remuneration and other working conditions. In the pre-COVID-19 era between 2018 and 2022, there were several reports of labour action by university employees who were demanding better pay and working conditions (Child, 2019; Duma, 2020 & Rafapa, 2022). These trends signify that contingent rewards are virtually limited in HEIs in South Africa. Therefore, no connection between contingent reward and innovation was established in the present study.

6.11.4 The relationship between inspirational leadership and organisational innovation

The fourth hypothesis of the study (H4) proposed that there is a significant positive relationship between inspirational leadership and organisational innovation in South African UoTs. The regression analysis results indicate that inspirational leadership exerts a weak positive but statistically insignificant relationship on organisational innovation (β=0.110; t=1.936, p=0.054). The beta value (0.110) indicates a low predictive level of inspirational leadership on organisational innovation. However, the p value (0.054) is higher than 0.05, indicating statistical insignificance. Therefore, although there is a predictive relationship between inspirational leadership and organisational innovation, this result is inconsistent with the hypothesis (H4) and infers that the accuracy of this result cannot be affirmed.

Previous studies support the influence of inspirational leadership on organisational innovation. For instance, a study by Dartey-Baah (2015:103) at a university in Ghana found that inspirational leaders articulate a vision that inspires and appeals to employees about future goals that give meaning to the current tasks. This, in turn, motivates employees to be more creative in their work. Consistently, Hsiao and Chang's (2011:622) study on 36 HEIs in Taiwan found that inspirational leaders empower and provide an innovative climate for their followers. As further shown by Jackson (2016:36), leaders with inspirational leadership traits (inspiration, motivation, harmony and charity) enhance followers' self-efficacy, motivation and innovation. Likewise, within the context of UoTs in South Africa, inspirational

leadership styles may enable inspiring employees toward achieving organisational goals through innovation.

6.11.5 The relationship between laissez-faire and organisational innovation

The fifth hypothesis of the study (H5) posited that there is a significant positive relationship between laissez-faire and organisational innovation in South African UoTs. The regression analysis results show that there is no relationship between the two constructs (β=0.002; t=0.043, p=0.966). The beta value (0.002) is practically a zero indicating that laissez-faire leadership exerts no influence on organisational innovation. Furthermore, the p value (0.966) is higher than 0.05, denoting statistical insignificance. Therefore, the hypothesis (H5) is not supported and the statistical accuracy of the result is also not confirmed.

The result of the current study is in line with mainstream literature. For example, a study by Khan *et al*. (2020:3), conducted in HEIs in Pakistan found that since actions are delayed, leaders neglect their responsibilities and decision-making, and power remains unaccounted for in laissez-fair leadership, such that innovation cannot be considered as a potential outcome at all. Likewise, a previous study by Sadeghi and Pihie (2012:188) involving academics at three Malaysian research universities(RUs) found that laissez-fair leaders display a passive indifference towards their followers, are indifferent to the needs of their followers and the institution, which stifles both innovation and productivity.

The results of this study infer that practicing laissez-faire leadership does not contribute to the innovation within UoTs. The laissez-fair leadership traits such as a hands-off, let things-ride approach, the absence of leadership and the avoidance of intervention may be destructive, leading to the undermining of organisational goals and/or subordinates' well-being (Tosunoglu & Ekmekci, 2016:90). Hence leaders in UoTs would be able to encourage innovation using other suitable leadership practices distinct from the laissez-fair approach.

6.11.6 The relationship between organisational innovation and internal growth

The sixth hypothesis of the study (H6) states that there is a significant positive relationship between organisational innovation and internal growth in South African UoTs. The regression analysis result confirms the existence of this relationship (β=0.373; t=7.877, p=0.000). The beta value of 0.373 indicates a moderate predictive influence of innovation on the internal growth of UoTs. The p value of 0.000 is way below 0.05, indicating a high level of statistical significance. As such hypothesis H6 is supported.

Previous studies show that there is a positive relationship between organisational innovation and internal growth. For example, Asiedu, Anyigba, Ofori, Ampong and Addae (2020:367) maintain that innovation drives the internal growth of HEIs in Ghana. Furthermore, they suggest that innovation yields beneficial results for HEIs, as it results in the development of knowledge capabilities, which signify learning and growth. Additionally, Gil, Rodrigo-Moya and Morcillo-Bellido (2018:649) linked innovation to the growth of schools in Valencia, Spain. Another study by Swanger (2016:47) found that innovation leads to internal growth in HEIs. Therefore, it could be argued that the innovative education systems tend to rethink the purpose of education by understanding the needs of the society at large, integrating the latest innovations in education (both instructional and technological), and actively working towards developing skills, knowledge and values necessary for the future (Kovacs, 2017:53).

The results of the study suggest that innovation is an essential input for UoTs to achieve their internal growth objectives. The growth may be development of competencies, resources, skills, expertise required to excel in their operations. Within the context of UoTs, internal growth may be manifested through activities such as academic excellence, level of research productivity, community engagement, joint ventures with external organisations and entrepreneurial initiatives, among others (Fandel & Gal, 2001:111; Korhonen *et al.*, 2001:121). Innovation at all levels is required to meet these objectives. This is particularly important since some UoTs are disadvantaged in terms of social and economic sustainability when compared to other types of institutions in South Africa (Mtshali & Sooryamoorthy, 2019:202; Winberg & Garraway, 2019:41). As such, innovation is important to ensure that UoTs are able to drive their internal growth and development.

6.11.7 The relationship between organisational innovation and financial control

The seventh hypothesis of the study (H7) suggests that there is a significant positive relationship between organisational innovation and financial control in South African UoTs. The regression analysis results support this relationship (β=0.469; t=10.415, p=0.000). A moderate predictive influence between innovation and financial control is indicated by a beta value of 0.469. The p value (0.000) is less than 0.05, depicting statistical insignificance. This result therefore concurs with the hypothesis H7.

Drawing from Chen *et al.* (2010:43) from a study conducted on technical universities and institutes in Taiwan, innovation improves the institution's financial control and performance as well as the development of the university features to achieve the goal of university education. Additionally, Aminbeidokhti *et al*. (2016:1156), in their study conducted on academics in Iran, found that innovation leads to better financial performance. Antunes, Mucharreira, Texeira Fernandes Justino and Texeira

Quirós (2018:9782) found that innovation approaches have a significant association with financial performance and the sustainability of HEIs. Additionally, Sciarelli, Gheith and Tani (2020:1354) found that innovation is needed to continuously improve HEIs' innovation and their financial performance.

The result of the study implies that South African UoTs require innovation in order to improve their financial performance. Additionally, the results suggest that UoTs that emphasise innovation stand a stronger chance of developing and maintaining better financial control systems, leading to better financial sustainability. Therefore, innovation has a significant impact on the financial performance of the UoT in such areas as the reduction of expenses, financial control procedures and practices, and the reduction of student debt (McDevitt *et al*., 2008:32; Umashankar & Dutta, 2007:54).

6.11.8 The relationship between organisational innovation and internal processes

The eighth hypothesis of the study (H8) proposes that there is a significant positive relationship between organisational innovation and internal processes in South African UoTs. As revealed by the regression analysis results, organisational innovation exerts a positive and statistically significant influence on internal processes (β=0.394; t=8.404, p=0.000). A beta value of 0.394 shows a moderate positive predictive connection between the two constructs and the p value of 0.000, which is less than 0.05, indicates statistical insignificance. Therefore, this result endorses hypothesis H8 of the study.

The results of the present study are supported by several previous studies. For example, Ngoc-Tan and Gregar's (2018:305) study on Vietnamese public universities concluded that innovation promotes activities that create or improve the institution's processes. Their study further found that innovation realigns internal administrative processes related to work activities of the organisation and its management; it fosters new management systems, and staff development programmes. A previous study by Damanpour, Walker and Avellaneda (2009:655) highlights that administrative innovations improve the organisation's structure and processes, administrative systems, knowledge used in performing the work of management, and managerial skills that enable an organisation to function and succeed by using its resources effectively. Furthermore, Iqbal, Latif, Marimon, Sahibzada and Hussain, (2019:2) found that HEIs or research universities can improve their processes and services such as teaching, learning, research, curriculum development, administration and strategic planning through effective innovation and knowledge management.

The results of the present study imply that innovation is instrumental in the improvement of internal processes in UoTs. Innovation can lead to improvements of internal processes in areas such as the

distribution of grades awarded, faculty-to-student ratios, educational expenses per student and the number of faculties in the specialised area (Olsen, 2007:3). With such strides, UoTs can then be able to survive in the competitiveness, uncertainty and volatility that characterise the South African higher education environment of today.

6.11.9 The relationship between organisational innovation and customer satisfaction

The ninth hypothesis of the study (H9) postulates that there is a significant positive relationship between organisational innovation and customer satisfaction in South African UoTs. The regression analysis results support this hypothesis (β=0.450; t=9.887, p=0.000). Innovation exerts a moderate influence on customer satisfaction, as indicated by the beta value of 0.450. The p value of 0.000 is much less than 0.05, denoting that the result is statistically significant. Therefore, the result is consistent with hypothesis H9.

A previous study by Danjum and Rasli (2012:347) found that innovation is an important tool for enhancing the customer satisfaction dimension of service quality. Likewise, Martin *et al*. (2017:14) found a connection between innovation and customer (students) satisfaction at a selected university in the UK. Moreover, Iqbal *et al.* (2019:2) concluded that innovation is significantly influential to improving performance in HEIs as it can lead to increased research productivity, student satisfaction, curriculum development and responsiveness to the environmental challenges. This, in turn, leads to positive word-of-mouth referrals to potential customers.

The results of this study point to the importance of UoT innovation as a tool to enhance the satisfaction of customers. While students may be identified as the primary customers of a university, other stakeholders such as alumni, communities, industries, communities of practice and employees may also be classified in the same category (Carvalho Pereira & Da Silva, 2003:2). Satisfaction of these customers depends, among other things, on innovative solutions. South African UoTs need to embrace innovative ideas as this drives further their capabilities in value creation and improvement on customer satisfaction. HEIs' capability to meaningfully impress on customers' quality of life can be facilitated through innovation (OECD, 2016:12). Therefore, innovation changes the way things are done, and it is facilitated by novel technology, and such changes are aimed at satisfying the growing section of the market (university students) who are currently either not satisfied with the existing offers or those who are currently not served.

6.11.10 The relationship between organisational innovation and learning

The tenth hypothesis of the study (H10) proposes that there is a significant positive relationship between organisational innovation and learning in South African UoTs. The regression analysis results show that this relationship is both positive and statistically significant (β=0.317; t=6.568, p=0.000). With a beta value of 0.317 and a p value of 0.000, hypothesis H10 is supported, confirming a predictive relationship between innovation and learning.

In a previous study conducted by Zhu (2015:66) on Chinese universities, it was observed that innovation influences learning in that new methods, processes and strategies adopted by individuals or units become new ideas and practices. A previous study by Hsiao, Chen, Chang, Chou and Shen (2009:73) found curriculum and instruction innovation to enhance institutional learning effectiveness in Taiwan. Sciarelli *et al*. (2020:1350) reiterate that innovation is also vital to HEIs because it can help in revising programmes, improving the institution's problem-solving ability and enhancing applied research. Fullwood and Rowley (2017:21) highlight that since HEIs are knowledge-driven organisations, they are mainly involved in learning and knowledge creation, developing, conserving and distribution through publications; therefore, they play a vital role in their economic growth and development by generating new and innovative ideas. Likewise, this study confirms that learning in UoTs is an outcome of innovation, and that institutions that are centers of the latter are likely to flourish.

6.11.11 The relationship between organisational innovation and grants and income

The final hypothesis of the study (H11) stated that there is a relationship between organisational innovation and grants and income in South African UoTs. The results of the regression analysis depict a positive and statistically significant relationship between the two constructs (β=0.370; t=7.815, p=0.000). As such, innovation predicts grants and income in UoTs.

Similarly, Ab Hamid, Abdullah, Mustafa and Ahmad (2015:2847) found that HEIs that internationally aggressively embarked on innovation for accomplishing excellence were able to increase the research grants secured, number of products produced to secure, and the volume of publications to increase income. Another study conducted by Elrehail *et al*. (2018:58) found that innovation is a key factor determining the financial well-being of the university. Furthermore, Ezzi and Jarboui (2016:22) found that innovation enables the HEIs to achieve not only financial income, but also social grants through increased and novel performance.

Innovative solutions are necessary for HEIs to maintain their compact with the government, align their programmes with public objectives (paying students), and find solutions to societal problems, thereby getting state grants (Panigrahi, 2018:65). Innovation outputs taken into account in this are knowledge and technology outputs (creation, impact, and diffusion of knowledge), and creative outputs (intangible assets, creative goods, and services, online creativity) (Franco & de Oliveira, 2017:80). Therefore, empirical evidence has suggested that research and development (R&D) expenditure and investment in the high technology sectors are positively related to HEIs' economic growth (Valavanidis & Vlachogianni, 2016:32). South African UoTs could then also benefit through the increased stressing of innovation as this is likely to result in higher grants and income from governments and other relevant organisations.

6.12 LINKING THE STUDY RESULTS TO THE RESEARCH THEORIES

This section discusses the link between the results of this study to the various research theories applied in the study, namely the transformational/transactional leadership theory, disruptive innovation theory and the BSC perspective. The relationships tested in this study are based on these three theories. These theories were discussed in detail in Chapters 1 and 3.

6.13 LINKING THE RESEARCH RESULTS TO THE TRANSFORMATIONAL/ TRANSACTIONAL LEADERSHIP THEORY

Previous studies indicate that the transformational/transactional leadership theory has numerous variants. However, in this study, only five core dynamics of the theory are discussed, namely idealised influence, intellectual stimulation, contingent rewards, inspirational leadership and laissez-faire. These were the factors identified in the factor analysis procedure. Therefore, the study confirms that application of the transformational and transactional leadership theory varies depending on the context. The results of the study are generally not consistent with the common findings regarding the relationship between the application of the transformational and transactional leadership theory to improve innovation in organisations.

In this study, only one (intellectual stimulation) out of the five leadership constructs considered were found to be statistically significant. This result is at variance with conventional research results (Leal Filho, Raath, Lazzarini, Vargas, de Souza, Anholon, Quelhas, Haddad, Klavins & Orlovic, 2018:287; Al-Mansoori & Koç, 2019:2) on idealised influence, contingent reward, inspirational leadership and laissez-faire. The regression analysis result implies that although idealised influence predicts

organisational innovation, one cannot be confident about the accuracy of that result, while the results of relationship tested between contingent reward and organisational innovation indicate that there is no relationship between these two constructs. The beta value (0.053) is quite close to zero, indicating that the influence of contingent reward on organisational innovation is almost negligible.

Furthermore, the regression analysis results indicate that inspirational leadership exerts a weak positive but statistically insignificant relationship on organisational innovation, and lastly, the regression analysis results show that there is no relationship between laissez-faire leadership and organisational innovation. The beta value (0.002) is practically a zero indicating that laissez faire leadership exerts no influence on organisational innovation. Therefore, this study produced somewhat mixed results regarding the influence of TTL leadership on innovation.

6.14 LINKING THE RESEARCH RESULTS TO THE DISRUPTIVE INNOVATION THEORY

The disruptive innovation theory postulates that innovation can change the performance metrics, or consumer expectations, of a market by providing radically new functionalities, dynamic technical standards, or new forms of ownership (Nagy *et al*., 2016:122). The results of the current study are consistent with this theory, since significant positive relationships were found between organisational innovation and the six BSC dimensions considered in this study. In other words, the current study confirms that innovation within a UoT can disrupt its performance within the six performance areas considered in this study, namely internal growth, financial control, internal processes, customer satisfaction, learning, and grants and income. In all these areas, organisational innovation was found to be influential (disruptive). Therefore, the results of the study align with the suggestions of the disruptive innovation theory.

6.15 LINKING THE RESEARCH RESULTS TO THE BALANCED SCORECARD PERSPECTIVE

Firstly, the present study confirms the applicability of the BSC as a universal performance measurement framework within diverse organisational contexts. The study successfully applied the BSC to measure the performance of UoTs in South Africa. This is consistent with the argument by Kaplan and Norton (1992:71) that this tool has a broad spectrum of applicability in diverse organisations. In this respect, the study aligns with this theory.

The original version of the BSC, which contains four metrics, was used to measure organisational performance (internal learning and growth, financial performance, customer satisfaction and internal

processes). In contrast, the present study, through its EFA procedure, identified six metrics. In essence, the learning and growth factor was split into two separate constructs, ***internal growth*** and ***learning***. The same was done to the financial performance, which split into ***financial control*** and ***grants and income***. The new factors proved to be effective in measuring the different aspects of university performance in South Africa, and provides new dimensions that could be used in future research.

The next section discusses the reliability and validity test results.

6.16 RELIABILITY

The scale reliability coefficients of the questionnaire items were assessed based on Cronbach's alpha criterion. The tests for scale reliability coefficients of items under each construct were conducted to assess the degree to which the questionnaire's survey items were exposed internal consistency. Cronbach's alpha coefficients were computed to assess the degree to which similar responses could be acquired from the respondents should these questions be directed to the same respondents under similar conditions. The coefficients of internal consistency items for each of the five dimensions are presented in Table 6.18.

Table 6.18: Scale reliability

Construct	Question items	No. of items	Cronbach's alpha
Idealised influence	• Employees are proud to be associated with our managers • Our managers help employees find meaning in their work • Our managers get employees to rethink ideas that they had never questioned before • Our managers give personal attention to employees who seem rejected • Our managers call attention to what employees can get for what they accomplish • Our managers tell employees the standards they have to know to carry out their work	6	0.908
Intellectual stimulation	• Our managers provide appealing images about what employees can do • Our managers provide employees with new ways of looking at puzzling things • Our managers let employees know how they think they are doing. • Our managers provide recognition/rewards when others reach their goals	4	0.872
Contingent reward	• Our managers help employees develop themselves • Our managers tell employees what to do if they want to be rewarded for their work • Our managers are satisfied when employees meet agreed-upon standards • Our managers are content to let employees continue working in the same ways always	4	0.754

Construct	Question items	No. of items	Cronbach's alpha
Inspirational leadership	• Our managers make others feel good to be around them • Our managers express with a few simple words what we could and should do • Our managers enable employees to think about old problems in new ways	3	0.807
Laissez-faire	• As long as things are working, our managers do not try to change anything • Whatever employees want to do is OK with our managers	2	0.658
Organisational innovation	• Our institution is known for innovativeness in our area • Our institution investigates and secures the funding required to conduct research and implement new ideas. • Our institution constantly experiments with new ideas	3	0.889
Learning and growth	• Number of joint activities with external stakeholder organisations • Academic excellence • Level of research productivity • Outreach to community • Entrepreneurial initiatives	5	0.914
Financial performance	• More efficient and effective use of facilities • Reduction of expenses • Financial control procedures • Financial management practices	4	0.926
Internal processes/ measures	• Distribution of grades awarded • Faculty-to-student ratio • Educational expenses per student • Number of faculty in the specialised area	4	0.903
Customer satisfaction	• Knowledge and skill sharing across work functions, units and locations • Number of students hired • Average salaries offered • Number of people benefiting from training programs conducted by the institution • Grants/endowments gathered from industry • Numbers of alumni in public service, community service, NGOs	6	0.913
Learning	• Number of faculty presentations at conferences • Travel budget for conference attendance • Number of cross-trained or multi-skilled staff • Number of courses incorporating new technology	4	0.880
Grants and income	• Annual grants from industry • Amount of permanent endowment • Increase in student intake	3	0.817

Source: Compiled by the researcher

The Cronbach's alpha coefficients for items under each of the five constructs of the transformational and transactional leadership, namely: ***idealised influence*** (α= 0.908), ***Intellectual stimulation*** (α =0.872), ***Contingent reward*** (α=0.754), ***Inspirational leadership*** (α=0.807) ***and Laissez-faire*** (α= 0.658) all exceeded the 0.7 minimum threshold. ***Organisational innovation*** *(α=0.889),* ***Learning and growth*** *(α=0.914),* ***Financial performance*** *(α=0.926),* ***Internal processes/measures*** *(α=0.903),* ***Customer satisfaction*** *(α=0.913),* ***Learning*** *(α= 0.880)* *and* ***Grants and income*** *(α=0.817).*

6.17 SCALE VALIDITY

This section discusses how four validities, namely face, content, construct and predictive were tested in this study.

6.17.1 Face validity

In this study, face validity was tested through an examination of the questionnaire items by the two promoters of this study. Through their input, some changes were made to the questionnaire in terms of questions construction, length of the questionnaire and other relevant technical aspects. Some of the primary objectives of the pre-test study were to assess the unambiguousness of the questionnaire and evaluate the feasibility concerns for the main study data collection. The maximum amount of time needed to complete the questionnaires by all the respondents was used as a measure of comprehensibility.

6.17.2 Content validity

To determine the content validity of the questionnaire, a pilot study was conducted after implementing the suggestions from the expert review of the questionnaire. This pilot study comprised a convenience sample of 50 respondents who were academics and non-academic professionals from one UoT in the Gauteng Province. Therefore, this pilot study was significant in that it advanced the quality of the whole questionnaire by guaranteeing that the information requested in the survey was clearly presented and understood without any ambiguity by the respondents. Additionally, the questionnaire was revised using the feedback obtained from the pilot sample. The results of the pilot study are reported in section 6.2. and showed acceptable reliability of all research constructs.

6.17.3 Construct validity

To measure construct validity, the item (factor) loadings that were computed in the EFA were used. Construct validity was considered acceptable where each item loading was at least 0.5. Factor analysis was run using principal component analysis according to the items in each domain. Items with factor

loadings < 0.5 were considered for removal because they were a threat to construct validity. Therefore, the cut-off value for the factor loadings was set at a minimum of >0.5 based on the recommendations from the literature (Blankson & Kalafatis, 2004:16; Kishada & Wahab, 2015:114). The results of the EFA are presented in section 6.4.

6.17.4 Predictive validity

Predictive validity was tested using regression analysis. The results of the regression analysis, as indicated in section 6.14, affirmed the positive predictive relationships between the dependent and independent variables, which confirms that predictive validity was satisfactory in this study. Therefore, in this section, the regression analysis was concerned with predicting the mean value of a dependent variable Y (organisational innovation) from known values of one or more independent variables, Xi (transactional and transformational leadership and the balanced scorecard performance).

The next section discusses the methods used to control for common methods bias in this study.

6.18 ADDRESSING COMMON METHOD BIAS

In order to minimise and test for common methods bias, this study adopted four methods as discussed below:

i. The measurement scales used in this study were obtained from different sources. The first section, that is, the predictor variable, produced responses on TTL using 21 measurement items. These items were attained from a previous study conducted by Avolio and Bass (2004:110). However, the same scale was used and validated in another study conducted by Hemsworth *et al*. (2013:856). In the next section, which is a mediating variable, six measurement items were used that sought responses to organisational innovation. These items were previously used by Chang *et al*. (2015:6) and Chen, Zheng, Yang and Bai (2016:849). This study utilised the same measurement scale, but as was adapted and adjusted by Fan *et al.* (2017:4). The last section, which is the outcome variable, gathered information on university performance using 28 measurement items adapted from scales developed by Fandel and Gal (2001:111), Korhonen *et al.* (2001:121), Cullen *et al.* (2003:127), Karathanos and Karathanos (2005: 222), Olsen (2007:3), Umashankar and Dutta (2007:54), McDevitt *et al*. (2008:32), and Hashemian *et al.* (2014:44).

ii. The other practical remedy was to protect the anonymity of the respondents in order to minimise the evaluation apprehension. This was done by requesting respondents not to disclose their names in an online questionnaire where there is no interaction between the researcher and the

respondents. Additionally, after the pilot study (through paper-based questionnaires) was performed, the questionnaire was reviewed and for the main study, some questions were omitted, which might have easily put anonymity at risk. These were the names of the institution and positions held by the respondents in their respective institutions (Tehseen, Ramayah & Sajilan, 2017:145).

iii. Because it is not always possible to keep the questionnaire short, and multi-item scale measurements can be alleged as repetitive, the questionnaire items were edited by the study promoters to reduce the probable common scale properties (Rodríguez-Ardura & Meseguer-Artola, 2020:2). This assisted to avoid respondents perceiving the similarity of the response formats and thereby using their responses to one question to answer succeeding questions. The wording of the questions was made clear, concise and accurate to define or illustrate unfamiliar or complex concepts. The scale items were made to adapt to the focal context of the study. This was done with the purpose of preventing respondents from misinterpreting scale items and reducing random responses.

iv. The other approach that was used is Harman's single-factor test, which is a prevalent procedure that was used to test for bias. This test was performed by using principal components analysis in SPSS. Consequently, in this method, all items from every construct were loaded into a factor analysis to check whether one single factor emerges or whether single general factor results to the majority of the covariance among the measures. There was no single factor that emerged and accounted for the majority of the covariance. Therefore, CMB was not a serious threat in the present study (Chang, van Witteloostuijn & Eden, 2010:179; Tehseen *et al.*, 2017:155).

6.19 CHAPTER CONCLUSION

This chapter presents a comprehensive report of the analysis of the quantitative data collect in the study as well as the information on hypotheses testing. The first part of the analysis provides the results of the pilot study as well as the response rate. Next, the chapter directed its attention to the descriptive statistics. These results were drawn from the data received in Section A of the questionnaire, which established respondents' demographic details. Exploratory factor analysis (EFA) was then applied to purify the scale and determine the dimensions of the scales used in this study. Five transformational and transactional leadership constructs, one organisational innovation and the six BSC factors were identified and used in the further analyses. Descriptive statistics were also analysed for the research constructs, showing the levels of implementation each of the them in UoTs. Pearson's correlation was applied to measure the

strength of hypothesised relationships, and regression analysis was used to test for prediction among them. The results show that nine of the 11 hypothesised relationships were supported. The chapter also presented sections where the results of the study were linked to the research theories. Furthermore, separate sections were presented that discussed the measurement of reliability, validity and how common methods bias was treated in this study. The next chapter presents the conclusions and recommendations.

CHAPTER 7: CONCLUSIONS, RECOMMENDATIONS, LIMITATIONS AND IMPLICATIONS FOR FURTHER RESEARCH

7.1 INTRODUCTION

This chapter discusses the theoretical and overall implications of the results of the current study. It undertakes several aspects. Firstly, it presents a review of the study, in which the thesis chapters and their contents are outlined. Secondly, the conclusions to each of the study objectives, both theoretical and empirical, are provided. Next, the model that is proposed for UoTs, based on this study, is presented and discussed. Thereafter, the recommendations regarding strategies and approaches that may be adopted and implemented to ensure that UoTs' performance is enhanced are discussed. The chapter further provides a discussion on the theoretical and practical implications of the study, followed by the limitations and suggestions for further research.

7.2 REVIEW OF THE STUDY

This study investigated the relationship between TTL, organisational innovation, and the BSC performance. It directed its focus to the antecedents of performance within UoTs, an important type of HEI in South Africa, and was divided into seven chapters.

Chapter 1: This chapter introduces the study and provides the background thereof. Also included in this chapter is an outline of the problem statement, the research objectives, the conceptual framework, the formulation of hypotheses, a brief review of literature, a summary of the research methodology, ethical considerations, and a brief outline of study chapters. A conceptual framework based on various models was presented in Figure 1.1 to conceptualise the relationship between TTL, organisational innovation, and financial performance based on the BSC. The predictor variable is TTL, with organisational innovation acting as the mediating variable, while the BSC performance is the outcome variable.

Chapter 2: This chapter provides an appraisal of the literature of the background of the higher education environment in South Africa. This review was undertaken in order to establish a theoretical understanding of higher education in South Africa: pre- and post-1994.

Chapter 3: This chapter is a literature review that provides a background on various aspects of TTL theories and styles, as well as their significance and role within South African HEIs. Furthermore, this chapter provides an overall literature review on organisational innovation in different settings. The chapter outlines the conceptual foundations of innovation that reflect on measuring the extent and nature

of innovation implementation and the factors affecting the implementation process as critical steps for understanding how, why, and under what circumstances educational innovations work. Lastly, the chapter suggests the adoption of an appropriate model to empower innovative outcomes.

Chapter 4: This chapter provides an overview of the BSC perspective and outlines aspects related to the performance measurement. It offers an overview of the central dimensions of the BSC framework of organisational performance, namely customer satisfaction, financial performance, learning and growth, and internal processes. Moreover, the chapter developed the hypotheses and conceptual model according to the empirical literature reviewed. The hypotheses developed focused on the relationship between TTL and organisational innovation, and the four dimensions of the BSC.

Chapter 5: This chapter discusses the research methodology followed in this study. It first examines the research reasoning and paradigms selected for this study. Deductive reasoning and the positivist paradigm were chosen for this quantitative research. Additionally, the chapter presents the research approach, research designs and strategy. The chapter further affirms that the study used a descriptive design, utilised a cross-sectional strategy, and employed a survey method. Also discussed in the chapter are topics such as the literature review, sampling design, and procedures for data collection. The chapter further specified the various tests employed to test for validity and reliability and ended with an appraisal of the ethical considerations made in the study.

Chapter 6: This chapter presents the analysis and interpretation of data, the and evaluation of the research results is presented. The results are based on the statistical analyses employed. Topics considered in this chapter include the results of the pilot study, the demographic profiles of the respondents, response rate, descriptive analysis of constructs and inferential statistics. A comprehensive discussion of each set of results is provided.

Chapter 7: This chapter presents the study's central conclusion, recommendations and implications. Additionally, the chapter discusses the limitations and implications for further research, as well as the theoretical and practical contributions of the study.

7.3 CONCLUSIONS BASED ON THE THEORETICAL OBJECTIVES

This section presents the conclusions drawn from the following theoretical objectives set for the study:

- to explore the literature on South African UoTs;
- to analyse literature on TTL;
- to review the literature on organisational innovation;

- to examine the literature on the BSC; and
- to analyse literature on the theory of disruptive innovation.

7.3.1 Conclusions based on exploring the literature on South African universities of technology

The first theoretical objective focused on conducting a literature review on South African UoTs. This objective was attained in the second chapter of the current study. The review acknowledges the important launch of UoTs in South Africa as an initiative intended to address the imbalances within the higher education system in South Africa that was founded on apartheid policies and based on race classification. Additionally, HEIs were classified according to ethnicity, locality as well as provinces. The central ideology in this divide was to preserve the cultural identity of the oppressive minority of the white Afrikaans-speaking society. The collapse of the apartheid system in 1994 was signalled as a victory for democracy and human rights in South Africa. In addition, the review sheds light on the transformation and transition made by the country after the inception of the democratic state. Considering that South African higher education pre-1994 was overcome with many challenges grounded on colonial and apartheid policies, there was a need for a change towards redressing the inequalities based on apartheid policies. Therefore, various policies intended to redress the imbalances were developed.

In this chapter, it emerged that HEIs were called upon to address and respond to the educational needs of all citizens living in South Africa and to the socio-economic development of the country. However, the shift from apartheid education to the current system has not been without challenges. Much as the government promulgated policies intended to drive the transformation, some policies did not provide the envisaged support. Despite this, the review acknowledges some notable successes since the adoption and implementation of democratic education in South Africa. Such successes include the re-configuration of higher education that resulted in the founding of UoTs. As it was essential to transform higher education in South Africa post-1994, this transformation could not be done without any guidelines. These key documents formed the basis of the guidelines such as the Green Paper on Higher Education Transformation (1996); Education White Paper 3: A Programme for the Transformation of Higher Education (1997); and the NPHE (2001). Consequently, six UoTs were founded in South Africa. The review shows that at UoTs, the key emphasis is deeply on the study of technology from the perspective of numerous disciplines. The review further noted that UoTs offer technologically-oriented skills and knowledge through WIL as one of their key strengths. It also emerged that UoTs are hindered from performing well by a myriad of challenges. These challenges include the lack of funding, transformation, ageing academics, and skills shortages, among others. The study acknowledges that the objectives of the

UoTs, which include effective teaching and learning, quality research, and improving the transfer skills to the community can be realised if the challenges such as mismanagements of funds and increased demand for enrolment space are addressed.

7.3.2 Conclusions based on analysing literature on transformational and transactional leadership

The second theoretical objective of this study focused on the literature analysis on TTL. This objective was addressed in the third chapter of the current thesis. The literature reviewed in this chapter suggests that several theories have and are being put forward to explain leadership effectiveness, with the TTL emerging as a dominant theme. The review acknowledges that the full-range leadership model has been used to evaluate TTL theories, mostly in the private and other public sector institutions, but scarcely in HEIs. It was shown that most theories and research on leadership focus on an individual to capture and understand the concept, overlooking other concerns such as the condition in which the leadership process occurs. This chapter further examines how TTL may be used to increase organisational performance. It emerged that transformational leadership is a process in which leaders and followers increase their motivation and morality while inspiring organisational change through awareness and vision. Transformational leadership gets characterised into four different dimensions: idealised influence, inspirational motivation, intellectual stimulation, and individualised consideration.

Transactional leadership theory is built upon four dimensions: contingent reward, active management by exception, passive management by exception, and laissez-faire. One of the most central features of transactional leadership is the pursuit to preserve the status quo; the approach does not promote organisational transformation that leads to more committed employees. As such, TTL can positively or negatively affect organisations' performance. In addition, the chapter affirms that since transformational leadership seeks to enhance vision and awareness, and transactional leadership aims to reward or punish based upon performance, it is acknowledged that both styles can be effective at increasing performance depending on the situation. Lastly, this study further asserts that, although each style is different and built upon different dimensions, they may be applied together to create employee motivation and increased job satisfaction, hence higher organisational performance.

7.3.3 Conclusions based on the literature review on organisational innovation

The third theoretical objective of this study focused on the literature review on organisational innovation. This objective was achieved in the third chapter of the current thesis. In a general sense, the term organisational innovation refers to the creation or adoption of an idea or behaviour new to the organisation. It is influenced by various factors, both internally and externally. Such factors include

internally and/or externally generated or procured devices, systems, policy, programmes, processes, products, or services that are new to the adopting organisation or employees' workgroups, organisational leaders, the government, other public agencies (e.g. regulatory agencies), industry stakeholders, universities, and members of the public. The literature review revealed that organisations with added innovation, in response to the changing environments and creating the development of new capabilities, may be more successful as it allows them to achieve better performance. Similarly, the literature review acknowledges the existence of barriers that hinder organisational innovation particularly in the public sector such as HEIs. These barriers may be divided into three groups: (1) political barriers arising in the political environment; (2) internal barriers arising within the organisation; and (3) external barriers caused by the external environment.

The current chapter indicates that despite the above barriers, there are positives stemming from organisational innovation. For example, organisational innovation changes the hierarchies, routines and leadership of an organisation, which results in implementing new structural, managerial and working concepts and practices that improve coordination of work streams and employee motivation and performance.

7.3.4 Conclusions based on the literature review on the balanced scorecard

The fourth theoretical objective of this study focused on reviewing the literature on the BSC performance. This objective was addressed in the fourth chapter of the current thesis. Literature acknowledges that the BSC is a very prominent performance management tool. In the literature review, it emerged that the BSC revealed the balance provided between short- and long-term objectives, between financial and non-financial measures, between lagging and leading indicators, and between external and internal performance perspectives. It is a collection of multiple financial and non-financial measures that are tied together in a sequence of causal-effect associations that navigate the organisation towards future competitive success. In measuring performance, the BSC acts as an early warning mechanism that can alert management about the need to revisit strategy in view of opportunities, threats, weaknesses or strengths (SWOT), which are evident in the measurement of strategic leading and lagging indicators. The measures cover four perspectives: financial control, customer satisfaction, internal-business processes, and learning and growth. Literature pointed out that each of these interrelated perspectives contains objectives and measures from a different perspective. The scope of these perspectives is designed to cover the whole of the organisation's activities both internally and externally, both current and for the future.

7.3.5 Conclusions based on the literature review on the theory of disruptive innovation

The fifth theoretical objective was intended to analyse literature on the theory of disruptive innovation. This objective was addressed in the first chapter of the current thesis. From the literature reviewed, disruptive innovations are those that disrupt reputable practices, frequently starting with a small number of users, but growing over time to the extent that they displace a formerly dominant, incumbent technology. Additionally, for a successful disruptive innovation, the first challenge is technological breakthrough in terms of the products it enables, and how they are shaping the social practices if they are having huge payoffs, both to the innovator and to society. Within the education sector, disruptive learning innovations are visible and dominant. The literature stressed that since disruptive innovation intends to disrupt higher learning, for HEIs to succeed, they must adopt and institutionalise certain best practices from the environment that surrounds them. Also, it was determined that disruptive innovations are basically transforming the education sector by replacing expensive, complicated and inaccessible products or services with much less expensive, simpler and more convenient alternatives. Consequently, HEIs are obliged to review their instructional, policy and technical frameworks to keep pace with these changes and to remain on par with global markets.

7.3.6 Conclusions based on empirical objectives

This section presents the conclusions that are based on the following empirical objectives:

1) To determine the perceptions of staff on the practice of transformational and transactional leadership within South African UoTs;
2) To determine the perceptions of staff on the levels of organisational innovation in South African UoTs;
3) To determine the perceptions of staff on the performance of South African UoTs, based on the BSC;
4) To examine the influence of transformational leadership on organisational innovation in UoTs in South Africa;
5) To determine the influence of organisational innovation on performance in UoTs in South Africa; and
6) To develop a model encompassing transformational/transactional leadership, innovation and the BSC-performance, which is applicable to South African UoTs.

7.3.7 Conclusions on the perceptions of staff on the practice of transformational and transactional leadership in South African universities of technology

In order to achieve the first empirical objective, descriptive statistics were computed to establish the respondents' perceptions towards the practice of TTL in South African UoTs. These results were discussed in section 6.4 of the thesis. Exploratory factor analysis (EFA) identified five TTL dimensions, namely idealised influence, intellectual stimulation, contingent reward, inspirational leadership and laissez-faire leadership. The mean scores for these five TTL dimensions ranged from 3.03 to 3.39, which depicts that respondents felt that TTL styles were sometimes practised in their institutions. The study therefore concludes that there is an occasional practice of transformation and transactional leadership within UoTs.

7.3.8 Conclusions on the perceptions of staff on the levels of organisational innovation in South African universities of technology

To achieve empirical objective 2, the descriptive statistics were computed to indicate respondents' perceptions towards the levels of organisational innovation within South African UoTs. The results of this objective were discussed in section 6.4 of the thesis. The mean value for organisational innovation (3.07) presented a neutral inclination towards employees' perceptions on the levels of organisational innovation in South African UoTs. This means that respondents did not want to commit to either positive or negative responses. Therefore, the study could not establish the degree of innovation among UoTs that participated in the study.

7.3.9 Conclusions on the perceptions of staff on the performance of South African universities of technology, based on the balanced scorecard

To achieve the third empirical objective, the descriptive statistics were run to measure respondents' perceptions towards the performance of South African UoTs, based on the BSC. These results were also discussed in section 6.4 of the thesis. Exploratory factor analysis identified six BSC dimensions, namely financial control, customer satisfaction, internal processes, learning, growth, and grants and income. Mean scores for these scales ranged between 2.83 and 3.09, implying that respondents agreed that the performance of their institutions in these six areas meets the expected standards. The study concludes that the performance of the UoTs that participated in the study is in line with higher education standards.

7.3.10 Conclusions on the influence of transformational and transactional leadership on organisational innovation in universities of technology in South Africa

To achieve empirical objective 4, inter-construct correlations were computed and a regression analysis was run to determine the influence of the five TTL dimensions (idealised influence, intellectual stimulation, contingent reward, inspirational leadership and laissez-faire) on organisational innovation. This was achieved in sections 6.7 and 6.8 of the thesis. The result of the correlation analysis between idealised influence and organisational innovation (r= .318; p=0.000) showed a weak positive association, suggesting that an increase in idealised influence leads to a minimal increase in innovation within the UoTs. The regression analysis results show that the relationship between idealised influence and organisational innovation is statistically insignificant (β=0.124; t=1.911, p=0.057). In conclusion, the study affirms that although these two constructs correlate positively, idealised influence does not predict organisational innovation in South African UoTs.

Furthermore, the result of correlational analysis on intellectual stimulation and organisational innovation exhibited a significant yet weak positive association towards organisational innovation (r=.332; p=0.00), while regression analysis results revealed that intellectual stimulation exerts a positive and statistically significant influence on organisational innovation (β=0.183; t=2.648, p=0.08). The study therefore concludes that intellectual stimulation and organisational innovation correlate positively. Additionally, intellectual stimulation predicts organisational innovation in South African UoTs.

Regarding the relationship between contingent reward and organisational innovation, there was a weak positive and significant association between these two constructs (r=.267; p=0.00). Regression analysis showed an insignificant relationship (β=0.053; t=0.866, p=0.387). The study therefore concludes that although contingent reward and organisational innovation correlate positively in South African UoTs, no predictive relationship was found between them.

With reference to the influence of inspirational leadership on organisational innovation, another weak, yet significant positive correlation emerged (r=.279; p=0.00). Regression analysis results showed an insignificant relationship (β=0.110; t=1.936, p=0.054). Therefore, the study concludes that within the context of South African UoTs, inspirational leadership and organisational innovation correlate positively. However, inspirational leadership does not predict organisational innovation.

On the influence of laissez-faire on organisational innovation, another weak positive correlation was observed (r=.159; p=0.002). Regression analysis results show that laissez-faire was statistically insignificant (β=0.002; t=0.043, p=0.966) in predicting organisational innovation. Therefore, the study

concludes that within South African UoTs, laissez-faire leadership and organisational innovation are positively associated. However, laissez-faire does not predict organisational innovation.

7.3.11 Conclusions on the influence of organisational innovation on performance in universities of technology in South Africa

To achieve the fifth empirical objective, inter-construct correlations were computed and a regression analysis was run to determine the influence of organisational innovation on the six BSC dimensions identified in the study (internal growth, financial control, internal processes, customer satisfaction, learning, and grants and income). This was achieved in sections 6.7 and 6.8 of the thesis. The results of the correlation analysis showed a significant but weak positive association between organisational innovation and internal growth (r=.370; p=0.00). However, the regression analysis result indicates that organisational innovation exerts a significant positive predictive influence on IG (β=0.373; t=7.877, p=0.000). Therefore, the study concludes that innovation in South African UoTs increases and decreases in parallel with internal growth. Additionally, it predicts the internal growth of these institutions.

Regarding the influence of organisational innovation on financial control, there was a significant positive correlation (r=.469; p=0.00) between the constructs. Furthermore, organisational innovation significantly predicted FC (β=0.469; t=10.415, p=0.000). Therefore, the study concludes that innovation in South African UoTs is correlated to financial performance. Likewise, it exerts a positive predictive influence on the financial performance of these institutions.

With reference to the relationship between organisational innovation and internal processes, a significant positive correlation was observed (r=.376; p=0.00). In the regression analysis, it was found that organisational innovation was statistically significant in predicting internal processes (β=0.394; t=8.404, p=0.000). The study therefore concludes that in South African UoTs, organisational innovation positively correlates with and predicts internal processes.

Further results showed a significant association between organisational innovation and customer satisfaction (r=.446; p=0.00). Furthermore, organisational innovation positively and significantly predicted customer satisfaction (β=0.450; t=9.887, p=0.000). In line with these results, it is concluded that innovative South African UoTs are able to satisfy the needs of their customers (clients). Similarly, innovation in these institutions determines the level of satisfaction of customers.

With regard to the relationship of organisational innovation on learning, correlation analysis shows a weak positive association between these two constructs (r=.317; p=0.00). Resulting from the regression

analysis, a positive and statistically significant relationship was observed (β=0.317; t=6.568, p=0.000). As such, it is concluded that innovation leads to and predicts learning in South African UoTs.

On the relationship between organisational innovation and grants and income, a significant but weak positive association (r=.361; p=0.00) emerged, followed by a significant predictive relationship in the regression analysis (β=0.370; t=7.815, p=0.000). Based on these results, the study concludes that innovation in South African UoTs leads to and stimulates grantsmanship and income.

7.4 PROPOSED MODEL FOR SOUTH AFRICAN UNIVERSITIES OF TECHNOLOGY

The sixth and last empirical objective of the study was the development of a model encompassing TTL, organisational innovation and the BSC performance, which is applicable to South African UoTs. The model in Figure 7.1 is presented, which encapsulates the integration of the various constructs considered in this study. On the model, only three input factors, i.e. idealised influence, intellectual stimulation, and inspirational leadership are included. The other two factors, contingent reward and laissez-faire were excluded since they did not exert an influence on organisational innovation.

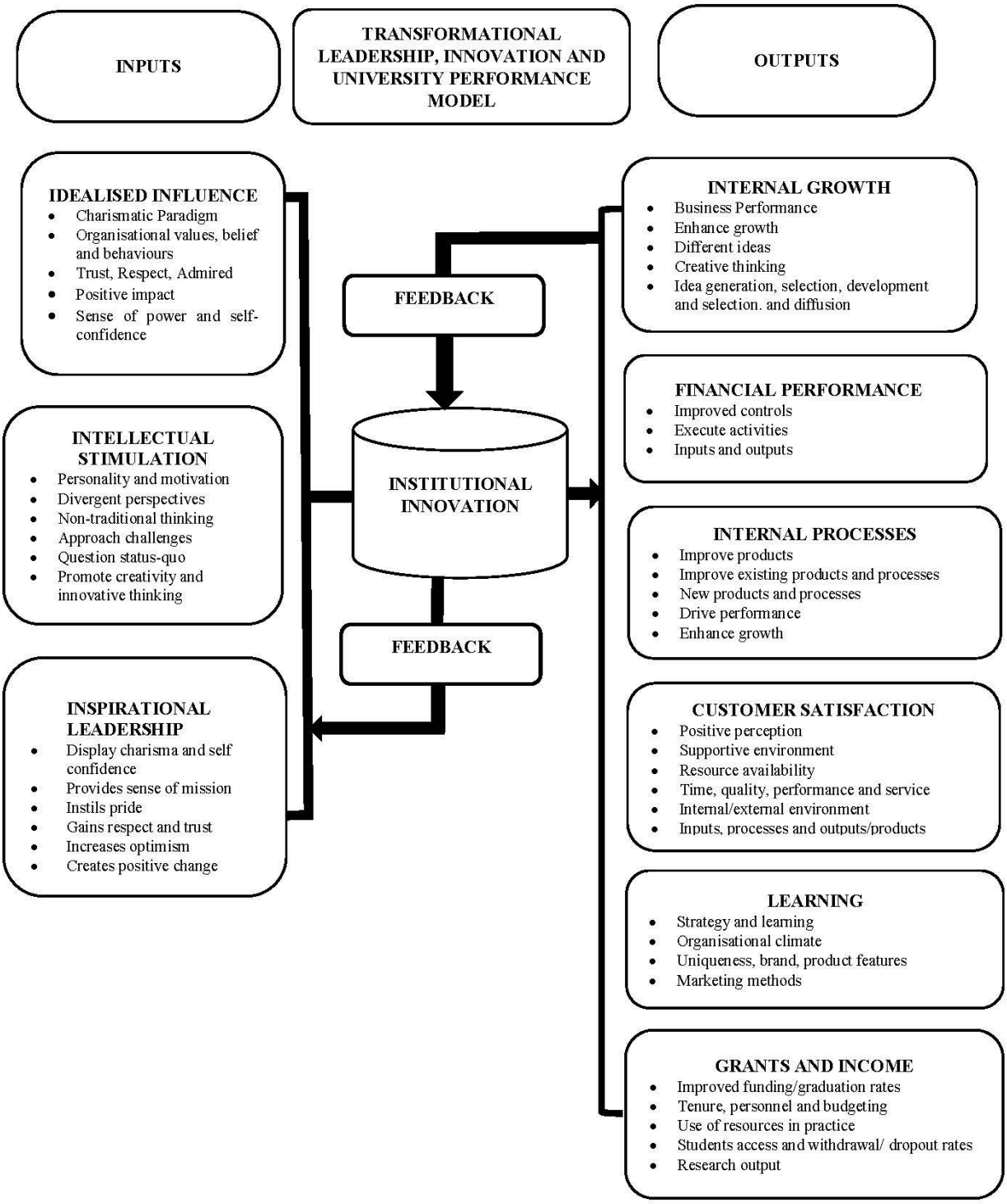


Figure 7.1: Transformational leadership, innovation and performance model for universities of technology

Source: Compiled by the researcher

All six outcome factors, representing the BSC, are included in the model, since they are all influenced by organisational innovation. The model presented in Figure 7.1 is intended to present the leadership factors important in improving innovation and performance of UoTs. The model places emphasis on transformational leadership as an important driver of innovation. However, contrary to the traditional transformational leadership perspective, the presented model is based on three factors, i.e. idealised influence, intellectual stimulation and inspirational leadership. Idealised influence as the first driver of innovation is composed of the charismatic paradigm, organisational values, belief and behaviours, trust, respect, admiration, positive impact and sense of power and self-confidence. Likewise, intellectual stimulation as the second driver of innovation is composed of personality and motivation, divergent perspectives, non-traditional thinking, approach to challenges, questioning of the status quo and promotion of creativity and innovative thinking. Lastly, inspirational leadership as the third driver of innovation is composed of charisma and self-confidence, provision of a sense of mission, instilling of pride, gaining of respect and trust, increasing of optimism and creating positive change. As such, leadership is an important input factor in increasing innovation in UoTs. The model also suggests that increased UoT performance is dependent on six factors, i.e. internal growth, financial control, internal processes, customer satisfaction, learning, and grants and income. Therefore, the model confirms that innovation is a critical input factor in the performance enhancement process in UoTs.

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increased UoT performance is dependent on six factors, i.e. internal growth, financial control, internal processes, customer satisfaction, learning, and grants and income. Therefore, the model confirms that innovation is a critical input factor in the performance enhancement process in UoTs.

7.5 RECOMMENDATIONS

This section presents the recommendations of the study, based on the research results. These recommendations are pragmatic approaches to the improvement of the factors that were considered in this study.

7.5.1 Recommendations on transformational leadership on organisational innovation in universities of technology in South Africa

Recommendations are put forward on how transformational leadership may be harnessed to improve innovation in UoTs. Only transformational leadership, represented by three factors, i.e. idealised influence, intellectual stimulation, and inspirational leadership, exerted an influence on organisational innovation, and was therefore considered in this section. The recommendations suggested in this section include executive coaching, action learning, three-hundred-sixty-degree feedback, networking, ACES-a model for holistic leadership development and practice), the integrated-solution approach, experience-based approach and performance management.

- **Executive coaching and training**

To improve transformational leadership among managers and staff in UoTs, it is recommended that UoTs place an increased emphasis on executive coaching and training. Executive coaching and training is a form of guidance designed to improve the expression of an individual's qualities, resources and competencies. Coaching will involve practical, goal-focused forms of one-on-one learning and ideally, behavioural change. Executive coaching and training allows for collaboration to assess and understand the developmental task to challenge current constraints while exploring new possibilities, and to ensure accountability and support for reaching goals and sustaining development. This strategy can be implemented as a tool for human resource development within UoTs to support change by improving individual performance with specific leadership competencies and specific problem-solving, and is a practical, goal-focused form of personal, one-on-one learning.

- **Action learning**

Action learning is an essential work-based problem-solving tool that has the ability to concurrently build effective leaders, teams and organisations. It is a process that involves a small group working on actual problems, taking action, and learning as individuals, as a team, and an organisation while doing so. If implemented by UoTs, action learning can support management and staff to deliver quantifiable organisational results, develop more common leadership skills and competences, and communicate learnings specific to particular contexts in daily tasks.

Action learning is recommended because it is associated with four key leadership competency types: firstly, cognitive skills and competencies, which include analytical skills, strategic thinking and creativity; secondly, execution of skills and competencies that include customer focus, planning, programme management, and focus on results; thirdly, relationship skills and competencies that include influencing, engaging and inspiring, managing talent, creating open communication, collaborating, and building relationships; and fourthly, self-management skills and competencies that include the ability to establish trust, adaptability, impulse control, and curiosity and love of learning. Therefore, the implementation of action learning strategies by UoTs can assist with improved strategic thinking ability, understanding group processes and organisational change, improved understanding between sections of the organisation, development of leadership skills, and more ideas for future projects.

- **Three-hundred-sixty-degree feedback**

Three-hundred-sixty-degree feedback is an influential multi-dimensional leadership development tool that draws upon the knowledge of people within a person's own circle of inspiration, namely supervisors, peers and direct reports. This multi-dimensional leadership development tool offers a clear picture of behaviour and performance. The collected information potentially provides both the individual and the organisation feedback about the ratee from direct reports, team members, supervisors, and, sometimes, external customer perspectives.

If implemented by UoTs, 360-degree feedback will assist management to identify new roles that require new skills or competencies, thereby developing strengths within and across work teams. In this, the UoTs will get results by involving people and ensuring that they are committed. Additionally, with this strategy, leaders will intuitively understand four fundamental dimensions of leadership: self, supervisor, peers, and direct reports, meaning that management and staff will understand that true leadership starts with

self: integrity, character, ethics, knowledge, wisdom, temperament, words and acts. These traits in themselves are drivers of innovation.

- **Networking**

Networking is a useful tool management and staff can use for tracking, building learning and leadership development groups and professional partnerships. The implementation of networking by UoTs can help management and staff to connect a diversity of perspectives and ideas and provide support for inventing and trying out new solutions, creativity and innovation. If implemented, networking strategies can inspire and support leaders and staff to take action and be accountable to others to achieve the desired results. Network-based strategy is recommended because through it, communities of learning and practice provide a strong base of moral support, peer assistance, practical tools, and collaborative problem-solving. This approach can be implemented as a tool within UoTs to assist staff develop more rapidly as leaders become more creative and curious when they meet others who are working on similar tasks within different contexts. Also, it can assist to identify career opportunities, build a successful team, anticipate organisational changes, and stay on top of industry trends.

- **ACES-a model for holistic leadership development and practice**

It is recommended that UoTs implement the ACES-a model for holistic leadership development and practice. the ACES leadership development tool is applied to explicitly address the analytical, conceptual, emotional and spiritual (ACES) domains of leadership practice and development. If implemented, ACES can help ensure that organisational leaders assume roles as agents of scarce organisational resources and engineers of business organisations that offer moral support to secure civil society. If implemented by UoTs, ACES can help leaders with the basics of planning and organising, problem-solving, monitoring performance and trends, and clarifying roles and objectives.

ACES is recommended in that with it, the development of visionary leadership capabilities can impress efforts designed to link conceptual/creative thinking, emotional appeal, and morality/spirituality. Therefore, the emotionally intelligent leader is able to stimulate emotional influence by maintaining balance and keeping themselves positive and motivated, thereby inspiring others around them to innovate.

- **The integrated-solution approach**

The integrated-solution is a comprehensive, rigorous and long-term approach to the future development of leaders. If implemented by UoTs, the integrated-solution approach can ensure that development

options are relevant, aligned to business needs and add value to leaders. The integrated-solution approach is recommended because it is effective and it connects leadership development to the organisation's new environmental challenges. Additionally, it focuses its efforts on helping leaders develop the capacity needed to lead effectively in future environments. It further represents a more strategic, synergistic and sustainable way for organisations to build the leadership capacity they require to gain competitive advantage. Furthermore, in the long-term, the integrated-solution approach delivers greater value to organisations and ensures that their investment in leadership development is optimised.

- **Experience-based approach**

The experience-based approach consists of three major processes – preparing, developing and preserving – that together produce skills needed by leaders at all levels as well as a concept of leadership practice that encourages lifelong learning. The experience-based leadership development strategy is recommended because it supports a more participative, learner-centred approach to leadership development, placing an emphasis on direct engagement, rich learning events and the construction of meaning by the leaders themselves.

UoTs can implement the experience-based leadership development approach because it uses a powerful, research-driven framework to link the leadership development activities an organisation already has in place – classroom training, assessment centers, career development, succession planning, performance management, and the like – with real work assignments and with innovative uses of information and communication technology. Consequently, it bridges the gap between practice and performance through creative uses of information and communication technology.

- **Performance management**

Performance management involves the evaluation of the outputs and productivity of employees to identify where gaps may be found and find ways to improve. Performance management is recommended because it can support pay decisions, promotion decisions, leaders and staff development and reductions in staff. It can also assist in defining the roles and timelines for both leaders and employees. Therefore, it can assist with the integration of processes, open communication, improved performance, staff training and development programmes, clarity of standards/requirements, placement of individuals, equitable remuneration, objective promotability, and structured career planning. Performance management in UoTs can assist leaders and staff in clarifying job responsibilities and expectations, as well as enhancing individual and group productivity. It can also assist leaders and staff in developing capabilities to their

highest extent through effective feedback and coaching. Moreover, they can aid in driving leaders and staff behaviour to align with the organisation's core values, goals and strategy; providing a basis to make operational human capital decisions, and in improving communication between employees and leaders.

7.5.2 Recommendations on organisational innovation

To improve innovation in UoTs, the following recommendations are put forward:

- **Provision of incentives and rewards and or recognition for innovation**

Reward management assists in developing and implementing strategies, approaches and systems, which would make provision of help and support to the human resources in the achievement of organisational goals by increasing motivation, inspiration and commitment. Provision of incentives and rewards and/or recognition is recommended because it can help the university to enhance job performance, retain prized personnel and lead to inclusive improvement of the organisation. If provision of incentives and rewards and/or recognition for innovation can be implemented by UoTs, they can motivate staff to innovate, as they perceive that their efforts are recognised.

- **Promotion of research and development**

Research and development (R&D) by scientific institutions (public research laboratories and universities) and private industrial enterprises comprise innovative work undertaken on a systematic basis in order to increase the stock of knowledge in several fields of science and technology and advance education, learning and expertise in the country's manpower. R&D is recommended because in it, leaders can control organisational factors, thereby influencing innovation in project groups. One way that this can occur is by creating a culture or climate conducive to innovation.

The study acknowledges that if R&D can be implemented by UoTs and executed jointly with other well-organised agencies such as industries, it encourages the innovative activities of the university's partners, which increases the probability of R&D success. The study infers that internalisation of innovative capabilities through R&D collaboration stimulates the innovation output of universities by enhancing the probability of R&D success. As a whole, UoTs play a significant role in the sharing of knowledge with innovative firms. As for industry-university partnerships, increasing the ratio of university participation in various R&D programmes is desirable from the viewpoint of innovation policy.

- **Nurture an innovation culture**

An innovation culture is a multi-dimensional context that contains the intent to be innovative, the infrastructure to support innovation, operational level behaviours required to stimulate a market and value orientation, and the environment to implement innovation. An innovation culture is recommended because it is the element that drives organisations and therefore develops an organisational culture that inspires innovation and creativity. Additionally, innovation culture can enlighten managers that the practice of innovation is not easy to adopt without having the culture that inspires the organisation to innovate. Consequently, universities have to encourage the culture of innovation in their daily business activities.

- **Development and implementation of an innovation policy**

Universities should develop innovation policies that provide guidance to all creative activities within the institution. Policy development can be driven by strategic choices the UoTs make and their 'visions' for the growth of society. If UoTs implement innovation policy, they can be able to integrate all organisational actions that influence or may influence innovation processes. This can assist to strengthen the competitiveness of an economy, or of selected sectors, in order to increase welfare through economic success.

- **Development and implementation of an innovation strategy**

It is recommended that the UoTs develop and implement an innovation strategy. Innovation strategy defines to what degree and in what way an organisation attempts to use innovation to execute its business strategy and improve its performance. Innovation strategy is developed as an integral part of an overall strategy that promotes innovation objectives. It is recommended because it is a decision framework guiding an organisation about when and how it should selectively abandon the past and/or change its corporate strategy and objectives in order to focus on the business of the future. If executed by the UoTs, innovation strategy can enable them to decide, in a collective and sustainable manner, about the type of innovation that best matches the organisation's objectives. It can direct choices on how resources are to be used to meet these objectives for enhanced innovation, and thereby deliver value and build competitive advantage.

- **Partnering with innovative organisations/collaborative innovation**

Collaborative innovation includes several stakeholders that collectively contribute towards generating new products with customers and suppliers. Collaboration can occur in all aspects of the business cycle,

depending on the context, including R&D of new products, services and technologies. Collaborative innovation's recommendation is justified because, due to the complexity of innovations, organisations usually do not carry out this activity alone, but cooperate with partners. Such activities also dominate university operations.

The simple reasoning behind this justification is that current public sector innovation would not produce the innovations required to confront today's radical challenges such as climate change, aging society, obesity and the financial crises, among others. Therefore, academics and professionals proposed a new form of innovation, which is called 'collaborative innovation', as the cure for the alleged innovation problem of the public sector. The implementation of collaborative innovation by the UoTs can on a broader scale stimulate a positive approach towards public sector innovation and risk taking in the socio-political environment.

- **Sourcing funds (grants) for innovation**

The UoTs generate or receive slightly more revenue from diverse non-grant sources such as student fees, donations, businesses, government, charities, interest, dividends, and loans from financial institutions, and some of these may be from both domestic and international sources. Improved financing is supposed to encourage innovation because the organisation can invest in innovative projects or directly acquire external innovation. Seeking and/or generating funds (grants) by UoTs is recommended because the stable R&D financing can influence organisational performance in terms of innovations. Similarly, financing influences innovation.

Not only does financing have an effect on innovation, but innovation in return gives feedback to external factors, such as resources, capital and environment. Subsequent to acquiring and/or generating funds (grants) by the UoTs, this can assist putting an organisation on a stable financial position. Because of the improvement in the financial environment, UoTs implementing strategies to source funds are likely to change their managerial characteristics, culture, key internal operations and processes, and strategic activities to adapt to their increased resources, better opportunities, and probable stricter oversight. With the enhancement of the finance-innovation loop, UoTs that excel at technology innovation, management innovation, cultural innovation, and business model innovation will strengthen competitive advantage in the end.

- **Innovation training**

It is recommended that UoTs engage their staff in a continuous innovation training processes. In this process of continuous development, organisations' human capital plays a fundamental role. Employees' knowledge, expertise and abilities used to be a key factor in the development of innovations. However, the turbulent and changing environment makes that relying exclusively on a current organisation's knowledge may produce a path dependence that generates inflexibilities within the organisation, thereby making product innovation difficult. Innovation training is recommended because as the lifecycle of employees' knowledge and skills is being shortened, organisations need to invest in the continuous development of their workers.

The implementation of innovation training by the UoTs can be a critical tool to develop human capital and enable such institutions to be innovative and respond to environmental changes. Through innovation training, organisations can leverage the knowledge base of their employees by allowing them to acquire new knowledge and skills, and consequently improved organisational innovation and performance.

- **Recruitment of innovative staff**

It is recommended that UoTs engage in an innovative talent recruitment approach. Innovative talents are proficient in one or several aspects of the knowledge; they prefer work with higher challenge and intensity. Challenging work itself can attract talents to join the organisation, which will lead to higher persistent commitment to innovation. Innovative talent recruitment is recommended because in this new competitive arena, one of the best ways for reaching an organisation's sustained competitive advantage position comes directly from continuous innovations and organisational learning. Therefore, if UoTs implement innovative talent recruitment, they can be able to make efforts to build effective, practical and holistic talent strategies that are not only able to attract talent, but also address employee engagement and the retention of key skills, thereby enhancing innovation, boosting productivity and organisational performance.

- **Adoption of state of the art technologies**

The UoTs are recommended to adopt state-of-the-art technologies in advancing and achieving their mandates as institutions of higher learning. Unlike other HEIs, UoTs' main focus is on science, technology, engineering, and mathematics (STEM). This focus specifically applies disruptive technologies that can be used to assist students in acquiring technical knowledge and developing competencies in engineering and science education. Though STEM is rapidly evolving, based on global

shifts, technological advances have many implications for the current and future state of education in these areas.

Adoption of state of the art technologies by UoTs is recommended because in education, technological advances allow increased collaboration among students and faculty, augment the exchange of content, help personalise learning, promote active learning, work well with the competency-based learning (CBL) model, increase feedback given to students, help students develop visual, spatial, and problem-solving and multi-tasking skills, and work to increase the motivation and commitment of students. Therefore, increased innovation promotes increased graduation rates; and therefore more grants and other funds are generated.

Through the implementation of state of the art technologies, UoTs can accelerate innovation through the use of virtual and augmented reality (VAR); 3D printing; drones; the internet of things (IoT); robots; artificial intelligence (AI); holograms; wearable devices; virtual laboratories and block chain. This can help them adapt their educational models to meet current and future global demands. Future labour forces need to acquire diverse competencies such as critical thinking, innovation, collaboration and creativity.

7.5.3 Recommendations on improving performance on the balanced scorecard areas

- **Learning culture**

Within the HEIs at all levels, bringing about improvements in learning is regarded as one of the major goals. Learning as the strategy to improve performance in UoTs is recommended because a unique characteristic of a learning organisation is its ability to continuously learn and transform. Therefore, creating a culture focused on learning would also affect performance outcomes. Through the implementation of learning as the strategy to improve performance, the UoTs can become organisations that cultivate a learning culture so that continuous learning occurs at individual, team, organisational and societal levels. As a result, the UoT can be able to transform itself in a timely manner. Likewise, to create high performance outcomes, UoTs can create a learning culture by generating continuous learning opportunities, promoting dialogue and inquiry, encouraging collaboration and team learning, creating systems to capture and share learning, empowering employees toward a collective vision, connecting the organisation to its environment and having leaders who support learning.

- **Focus on customer satisfaction**

It is recommended that UoTs develop strategies to enhance the satisfaction of their customers such as students, industry, communities of practice, communities and even staff. As strategies to enhance

performance on customer satisfaction, UoTs need to create an enabling environment and culture to find ways to serve customer needs and expectations. In this, organisations bring about many changes and innovations to attract customers and give them more satisfaction. As a strategy, innovation in organisations directly and positively affects customer satisfaction. Consequently, if implemented by UoTs, strategies to enhance performance on customer satisfaction can produce superior returns at a lower systematic risk through valuable customer behaviour, and an overall institutional performance. Therefore, the strategic dimension for an organisation can become more competitive through customer satisfaction, brand loyalty, service quality, university associations, relative cost, new services, and manager/employee capability and performance.

- **Internal processes**

It is recommended that UoTs develop strategies to enhance performance within their internal processes. As strategies to enhance performance in their internal processes, UoTs need to carefully define their business objectives, map their business processes in alignment with organisational strategy, and most importantly implement their business plans in a desired way. In this, they should focus on innovation and discard obsolete non-UoT-aligned business processes; improvement of quality and consistency of products and services; simplification and removal of risks from business processes; and maximisation of return on assets. Internal processes, if implemented by UoTs, can trim down operational costs, promote customer satisfaction by better satisfying customer needs, and improve employee satisfaction by harnessing the benefits available in organisational knowledge. This can have a better control of results, improved forecasting of goals, costs, and performance; greater effectiveness in reaching defined goals; and the improving ability of management to propose new and higher targets for performance. Implementing state-of-the-art internal processes as a technique of organising and operating in an organisation, UoTs can improve the internal organisation and break down the functional silos that exist in most organisations. Consequently, this increase in cooperation and decrease in conflict improve both short- and long-term performance.

- **Financial control**

UoTs should apply strategies that can enhance their financial performance. Financial controls provide a framework for managing cashflow, allocating resources via budgeting, and guarding against potential threats such as fraud and theft. This involves improvement on operational efficiency, improved cashflows, simplifying resource management, improving accountability and engagement at all levels, and streamlining the reporting and auditing processes.

- **Internal growth**

It is recommended that UoTs adopt strategies to enhance their internal growth. Management constructs this plan in response to market forces, customer demands, and organisational capabilities. An internal growth strategy allows an organisation to plan in order to achieve its objectives, which are to increase in size, volume and financial wealth, and this is classified into two categories. Internal growth strategies, also known as intensive growth strategies, include expansion strategy, diversification strategy and innovation. Therefore, by implementing and adopting strategies to enhance performance on internal growth, the UoTs can apply intensive growth strategies as a model to enhance performance, to develop diverse new and relevant courses based on the market needs, to expand innovation and productivity by integration, incorporations, procuring and to take over other projects as well as going into joint ventures with other HEIs and industries.

- **Grants and income**

UoTs should find strategies to enhance performance on grants and income acquisition. The current economic and financial crisis has exacerbated the HEIs financial difficulties, with growing stress on the sustainability of university funding regimes and mounting pressure to explore new sources of income. The efficiency of funding in terms of the capability to meet certain policy goals in a cost-effective way is therefore becoming increasingly important. In order to enhance performance on grants and income, UoTs can publish articles and books to keep assuring the external sources in the forms of research grants. Furthermore, incentives may be offered to the academics who had conducted income-generating activities by applying ideal 'tax' on the earning income. Also, UoTs can encourage non-academic professionals to conduct research and/or publish papers based on their respective fields of engagement. The UoTs can initiate and engage in businesses and industrial space to improve their staff's skill levels and facilitate knowledge transfer in exchange for funding. Additionally, UoTs can also generate funds through best performance on output such as the number of graduates or research contracts obtained.

7.6 THEORETICAL CONTRIBUTIONS OF THE STUDY

The present study contributes to theory in several ways. Firstly, it provides recent literature and contributed to the discussion about the relationship between TTL, organisational innovation and university performance. Secondly, the study provides an understanding of the role of TTL in promoting innovation within UoTs. It further applies the BSC as a performance measurement tool to the UoT environment. Still, the study provides more recent insights into the interplay between TTL, organisational

innovation and institutional performance (based on the BSC). In this sense, the study provides a platform for the theoretical model's applicability to the South African UoTs where no such study had been conducted before. The study also created awareness of how existing TTL, disruptive innovation and the BSC theories apply to the UoT context.

The research further identified six performance dimensions emanating from the BSC. In this way, the study was able to expand the scope of the BSC perspective by including two additional performance indicators. These two factors identified are grants and income, and learning, implying that the four traditional measures of the BSC (customer satisfaction, financial performance, internal processes, and learning and growth) fall short of providing a holistic measure of university performance. Therefore, it is necessary to add other measures such as grants and income and learning.

In addition, the study pinpoints the three transformational leadership factors that are relevant to the UoT environment. These are idealised influence, intellectual stimulation and inspirational leadership. Finally, the study introduced a new model for conceptualising the transformational leadership, organisational innovation and BSC performance relationship.

7.7 PRACTICAL CONTRIBUTIONS OF THE STUDY

The study provides practical solutions to UoTs in South Africa and other HEIs elsewhere on how they can improve their performance. This performance is based on the application of certain leadership styles (in this case TTL) and innovation. This study also affords management in UoTs several approaches to improve stakeholder welfare and competitive advantage, leading to improved performance. Firstly, the study is important to UoTs because it offers information on the leadership aspects that are significant in stimulating innovation. These are idealised influence, intellectual stimulation and inspirational leadership. Therefore, UoTs can place more emphasis on these leadership practices for improved innovation and overall performance.

Given that transformational leadership emerged as more important than transactional leadership (in the EFA), more emphasis should be placed on it if innovation is to be boosted. More specifically, greater attention should be directed to intellectual stimulation, which exerted more influence on innovation than the other leadership aspects.

Secondly, the study suggests the importance of innovation for enhancing performance in a UoT. The study shows that innovation is directly related with various aspects of performance in a UoT. These aspects include financial performance, customer satisfaction, internal growth, internal processes,

learning, and grants and income. As such, UoTs that intend to increase their performance in these areas should consider stimulating their innovation efforts. Additionally, innovation is an important consideration in performance-related diagnoses in UoTs. The study indicates that when attempting to address performance-related problems in UoTs, it is worthwhile to assess the level of innovation.

In terms of policy implications, the study can enable UoT regulatory authorities such as the CHE, DHET, and SAQA in terms of public policy formulation regarding innovation and performance. Commercialisation of university research and innovations is a central part of a knowledge-based institutions. However, at the same time, UoTs can also realise that commercialising an innovation is a very challenging process, especially for start-up innovating institutions that face several barriers in the financing, technological, managerial, regulatory, administrative and other spheres. The focal role of public policy in this regard is to ensure that a conducive environment prevails in UoTs to support innovation. The judicious application of suitable leadership styles forms a central part of this process, as shown by the current study.

Furthermore, the study offers information on some initiatives that may be adopted to improve leadership, innovation and overall performance. The climax of this is the introduction of a practical model (Figure 7.1) that demonstrates how transformational leadership may be harnessed for the improvement of both innovation and performance in UoTs. However, specific practical recommendations are also provided (section 7.4), which are applicable to the UoT environment. All of this information is available for use by these institutions.

7.8 LIMITATIONS OF THE STUDY

The present study provided important insights into the hypothesised relationships between TTL, organisational innovation and BSC (performance), in UoTs in South Africa. However, despite its contributions, the study has a few limitations that can be highlighted. The first limitation is that the study did not test the moderating effects of factors such as the positions of respondents in their respective UoTs, the departments they are based in and remuneration. It would have been more prudent to check how such factors impacted the hypothesised relationships, which could have provided further analyses and insights.

The scope of the study is limited to three selected UoTs in South Africa. Data could not be collected from the remaining three UoTs due to COVID-19 restrictions. It would be interesting to include all UoTs in South Africa as this is likely to yield more comprehensive results.

Another limitation of study relates to access to some UoTs and respondents, due to the national lockdowns and COVID-19 protocols. The larger part of data collection relied mainly on electronic survey questionnaires and secondary data. As such, data could not be collected from the respondents physically, with the exception of the few paper-based questionnaires that were used for the pilot study. Another limitation is that the study was purely quantitative, which limited the data collection to the use of survey questionnaires only, without room to use other data methods such as interviews and participant observation.

7.9 SUGGESTIONS FOR FUTURE RESEARCH

A few ideas and possible directions for further research can be provided. The scope of this research is limited to only three UoTs in South Africa, and therefore it does not provide comprehensive information on other higher education institutions. Consequently, future studies on this research could consider other HEIs other than the UoTs, such as traditional and comprehensive universities. In this, it could then provide a basis for holistic comparative studies between several types of HEIs in South Africa and elsewhere. The focus of this research is on both academics and non-academic professional staff combined; however, future research could split these two groups, which may provide further comparisons.

Since the current study utilised the quantitative methodology, a different view would be to perform similar research using a mixed-method approach, which combines both qualitative and quantitative approaches. The use of a mixed method would provide a more complete and comprehensive picture of the relationships under consideration in this study.

Future research could also consider other leadership practices such as distributed, participative, supportive, instrumental, autocratic, democratic and servant leadership styles, all of which were excluded from the present study. Additionally, similar studies could be conducted using other performance management frameworks, apart from the BSC. Examples of these frameworks include the results and determinant framework, measures for time-based competition framework, performance pyramid, economic value-added framework, EFQM – excellence model, input-process-output-outcome, integrated dynamic performance measurement system and the conventional and recent methods of the performance management system (PMS). It might also be worthy for future studies to test the moderating influence categorical factors such as gender, qualifications and work experience on the same relationships tested in the present study. Finally, the future study could apply a more rigorous data analysis technique such

as structural equation modelling (SEM) to test the relationships. Structural equation modelling helps when testing and estimating causal relations using a combination of statistical data and qualitative causal assumptions, which are typically based on a theory. This would provide a more accurate set of results.

7.10 CONCLUDING REMARKS

This chapter presented some aspects of this study that are essential to its finalisation. A brief review of the thesis chapters was presented, in which summaries of the major topics covered in each chapter were provided. The chapter also provided conclusions based on both theoretical and empirical objectives that were set at the inception of the study in Chapter 1. On the empirical conclusions, only three transformational leadership styles, i.e. idealised influence, intellectual stimulation and inspirational leadership exerted an influence of organisational innovation. Still, organisational innovation was directly and positively connected to the six UoT performance factors. A comprehensive and pragmatic model is provided, which showcases the interplay between transformational leadership, innovation and UoT performance. The study then provides recommendations for improving transformational leadership, innovation and UoT performance. Both theoretical and practical contributions of the study are presented, showing that the study contributed to the creation of knowledge and is useful to UoTs. Limitations of the study were also outlined and linked to the suggestions for future research. Overall, the study is ground-breaking as it tested relationships that have not been tested within the South African UoT context. UoTs and other HEIs in South Africa and elsewhere stand to benefit in improving their innovation and overall performance if the recommendations provided in this study are applied.

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Vaal University of Technology

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30 April 2020

APPENDIX A: ETHICAL CLEARANCE

Researcher: Mr G Mofokeng
Ethics Reference Number: FRECMS-18032020-029 219148627
Decision: APPROVED

PROJECT TITLE: MODELLING TRANSFORMATIONAL AND TRANSACTIONAL LEADERSHIP, INNOVATION AND PERFORMANCE AMONG SOUTH AFRICAN UNIVERSITIES OF TECHNOLOGY: A BALANCED SCORECARD PERSPECTIVE

Dear Mr G Mofokeng

Thank you for submitting the above-mentioned project for ethical consideration. The application was detailed and provided useful information. You may commence with your data collection. This clearance is valid for three years from the date of this letter.

Please also note the following:

The Ethics Reference number, as stated above, should be used in all correspondence regarding this research project.

As the primary researcher you undertake to:

- *Only follow the procedures for which approval has been given.*
- *Inform the Faculty Research Ethics Committee (FREC) of any significant deviations that may occur in the research project which directly influences what has been approved.*
- *Report any adverse events that might occur, within 14 days of the event, to the FREC. (Refer to the Ethical Guidelines as to what procedure you will need to follow in such an event).*
- *Submit annual progress reports to the FREC.*
- *Inform the FREC once the research project has reached completion and the findings have entered the public domain.*

The FREC would like to take this opportunity to wish you well with your research project. Kind Regards

Dr FE Mahomed

Faculty Research Ethics Committee Chair

Faculty of Management Sciences

Vaal University of Technology

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30 April 2020

APPENDIX B: CONSENT LETTER

Dear Sir/ Madam

Request for you to participate in a survey questionnaire

You are requested to participate in a doctoral research study that I am conducting at the Vaal University of Technology in the Department of Logistics and Supply Chain Management.

The title of the research is: **Modelling transformational and transactional leadership, innovation and performance among South African Universities of Technology: a balanced scorecard perspective.**

The primary objective of this Doctoral study is to investigate the effects of transformational and transactional leadership and organisational innovation on financial performance within the selected Universities of Technology in South Africa applying the balanced scorecard.

You are requested to participate in a survey questionnaire that I will be electronically (via emails) distributing. You have been chosen to participate in the study because of your vast knowledge, expertise in your respective areas of work and you are critically important to this study over and beyond your position in the university. The survey questionnaire will not take more than 20 of your valuable time. You are kindly requested to be open and frank completing the survey questionnaire.

Should you have any questions or require additional information, please feel free to contact Prof C Mafini at +27 (0)83 642 9215 (Promoter), Prof M. Dhurup +27 (0)16 950 6886 (Co-Promoter) or me (the researcher) at 078 804 1589.

Consent to participate in the study (Please place an X in the appropriate box only)

Thank you in advance for your co-operation in my research.

1) I understand that my participation in the study is entirely voluntary and that I am free to stop at any time.	
2) I understand that I cannot be identified by my answers and that my answers cannot be linked to me.	
3) I understand that I do not have to answer any question I do not wish to answer for any reason.	
4) I agree that the information I give may be used in research and that this research will not reveal my personal identity.	
5) I understand the information regarding my participation in the study and agree to participate.	

Yours sincerely

Mr. G.L. Mofokeng (Researcher)
Professor C. Mafini (Promoter)
Professor M. Dhurup (Co-Promoter)

APPENDIX C: RESEARCH QUESTIONNAIRE

MODELLING TRANSFORMATIONAL AND TRANSACTIONAL LEADERSHIP, INNOVATION AND PERFORMANCE AMONG SOUTH AFRICAN UNIVERSITIES OF TECHNOLOGY: A BALANCED SCORECARD PERSPECTIVE

SECTION A: DEMOGRAPHIC PROFILE

This section has questions that focus on your background information. Please indicate your answer by crossing (X) in the appropriate block or by filling in your answer.

A1	**Your gender**	Male	
		Female	

A2	**Your Age Group**	25 years and below	
		26-33 years	
		34-41 years	
		42-49 years	
		50 years and above	

A3	**Race**	Black	
		White	
		Indian	
		Mixed Race	
		Other: (Specify)	…….

A4	**Highest Qualification**	Matric	
		Certificate	
		Diploma	
		Degree	
		Postgraduate	
		Other: (Specify)	……..

A5	**Employment Period in organisation**	Less than I year	
		1-2 years	
		3-5 years	
		6-9 years	
		10 years and above	

A6	**Experience in higher education**	Less than 1 year	
		1-2 years	
		3-5 years	
		6-9 years	
		10 years and above	

A7	**Type of employment**	Permanent	
		Contract	
		Internship	

A8	**Department where you are based:**	Please indicate……

A9	**Your position in the university:**	Please indicate

SECTION B: TRANSFORMATIONAL/TRANSACTIONAL LEADERSHIP PRACTICES

I would like to find out a little more about your views regarding the transformational and transaction leadership practices in your **university of technology.** Please indicate the extent to which you agree or disagree by ticking the corresponding number between (1) Never and (5) Always.

TRANSFORMATIONAL/TRANSACTIONAL LEADERSHIP PRACTICES		**Never**	**Rarely**	**Sometimes**	**Often**	**Always**
TTL1	Our managers make others feel good to be around them	**1**	**2**	**3**	**4**	**5**
TTL 2	Our managers express with a few simple words that we could and should do	**1**	**2**	**3**	**4**	**5**
TTL 3	Our managers enable employees to think about old problems in new ways	**1**	**2**	**3**	**4**	**5**
TTL 4	Our managers help employees develop themselves	**1**	**2**	**3**	**4**	**5**
TTL 5	Our managers tell employees what to do if they want to be rewarded for their work	**1**	**2**	**3**	**4**	**5**
TTL 6	Our managers are satisfied when employees meet agreed-upon standards	**1**	**2**	**3**	**4**	**5**
TTL 7	Our managers are content to let employees continue working in the same ways always	**1**	**2**	**3**	**4**	**5**
TTL 8	Employees have complete faith in their managers	**1**	**2**	**3**	**4**	**5**
TTL 9	Our managers provide appealing images about what employees can do	**1**	**2**	**3**	**4**	**5**
TTL 10	Our managers provide employees with new ways of looking at puzzling things	**1**	**2**	**3**	**4**	**5**
TTL 11	Our managers provide recognition/rewards when others reach their goals	**1**	**2**	**3**	**4**	**5**
TTL 12	Our managers provide recognition/rewards when others reach their goals	**1**	**2**	**3**	**4**	**5**
TTL 13	As long as things are working, our managers do not try to change anything	**1**	**2**	**3**	**4**	**5**
TTL 14	Whatever employees want to do is OK with our managers	**1**	**2**	**3**	**4**	**5**
TTL 15	Employees are proud to be associated with our managers	**1**	**2**	**3**	**4**	**5**
TTL 16	Our managers help employees find meaning in their work	**1**	**2**	**3**	**4**	**5**
TTL 17	Our managers get employees to rethink ideas that they had never questioned before	**1**	**2**	**3**	**4**	**5**
TTL 18	Our managers give personal attention to employees who seem rejected	**1**	**2**	**3**	**4**	**5**
TTL 19	Our managers call attention to what employees can get for what they accomplish	**1**	**2**	**3**	**4**	**5**
TTL 20	Our managers tell employees the standards they have to know to carry out their work	**1**	**2**	**3**	**4**	**5**
TTL 21	Our managers ask no more of employees than what is absolutely essential	**1**	**2**	**3**	**4**	**5**

SECTION C: ORGANISATIONAL INNOVATION

I would like to find out a little more about your views regarding organisational innovation in your **university of technology**. Please indicate the extent to which you agree or disagree by ticking the corresponding number between 1 (Strongly disagree) and 7 (Strongly agree). A rating of (4) points towards a neutral view of the statement.

ORGANISATIONAL INNOVATION		**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
OI 1	Our institution's management actively seeks innovative technologies, processes, techniques, and product ideas.	**1**	**2**	**3**	**4**	**5**
OI 2	Employees are accordingly rewarded and recognised for performance-enhancing innovative ideas, that are successfully implemented	**1**	**2**	**3**	**4**	**5**
OI 3	Innovation in our institution is perceived as too risky and an as such it is resisted by many stakeholders	**1**	**2**	**3**	**4**	**5**
OI 4	Our institution is known for innovativeness in our area.	**1**	**2**	**3**	**4**	**5**
OI 5	Our institution investigates and secures funding required to conduct research and implement new ideas	**1**	**2**	**3**	**4**	**5**
OI 6	Our institution constantly experiments with new ideas	**1**	**2**	**3**	**4**	**5**

SECTION D: BALANCED SCORECARD PERFORMANCE

I would like to find out a little more about your views regarding the performance of your **university of technology** in the five areas of the balanced scorecard. Please indicate the extent to which you agree or disagree by ticking the corresponding number between 1 (Far below standards) and 5 (Far above standards).

Financial performance		**Far below Standards**	**Below standards**	**Meets Standards**	**Above standards**	**Far above standards**
FP 1	Annual grants from industry	**1**	**2**	**3**	**4**	**5**
FP 2	Amount of permanent endowment	**1**	**2**	**3**	**4**	**5**
FP 3	Increase in student intake	**1**	**2**	**3**	**4**	**5**
FP 4	More efficient and effective use of facilities	**1**	**2**	**3**	**4**	**5**

I would like to find out a little more about your views regarding the customer satisfaction in your **university of technology** in the five areas of the balanced scorecard. Please indicate the extent to which you agree or disagree by ticking the corresponding number between 1 (Far below standards) and 5 (Far above standards).

Customer satisfaction		**Far below Standards**	**Below standards**	**Meets Standards**	**Above standards**	**Far above standards**
CS 1	Out of applications	**1**	**2**	**3**	**4**	**5**
CS 2	Student satisfaction survey	**1**	**2**	**3**	**4**	**5**
CS 3	Knowledge and skill sharing across work functions, units and locations	**1**	**2**	**3**	**4**	**5**
CS 4	Number of students hired	**1**	**2**	**3**	**4**	**5**
CS 5	Number of students hired	**1**	**2**	**3**	**4**	**5**
CS 6	Number of people benefiting from training programs conducted by the institution	**1**	**2**	**3**	**4**	**5**
CS 7	Grants/endowments garnered from industry	**1**	**2**	**3**	**4**	**5**
CS 8	Numbers of alumni in public service, community service, NGOs	**1**	**2**	**3**	**4**	**5**

I would like to find out a little more about your views regarding the internal processes of your **university of technology** in the five areas of the balanced scorecard. Please indicate the extent to which you agree or disagree by ticking the corresponding number between 1 (Far below standards) and 5 (Far above standards).

Internal processes		**Far below Standards**	**Below standards**	**Meets Standards**	**Above standards**	**Far above standards**
IP 1	Number of new products and services introduced, i.e. new courses, syllabi, programs and curriculum changes	**1**	**2**	**3**	**4**	**5**
IP 2	Distribution of grades awarded	**1**	**2**	**3**	**4**	**5**
IP 3	Faculty-to-student ratio	**1**	**2**	**3**	**4**	**5**
IP 4	Educational expenses per student	**1**	**2**	**3**	**4**	**5**
IP 5	Number of faculty in the specialised area	**1**	**2**	**3**	**4**	**5**

I would like to find out a little more about your views regarding the learning and growth staff of your **university of technology** in the five areas of the balanced scorecard. Please indicate the extent to which you agree or disagree by ticking the corresponding number between 1 (Far below standards) and 5 (Far above standards).

Learning and growth		**Far below Standards**	**Below standards**	**Meets Standards**	**Above standards**	**Far above standards**
LG 1	Number of faculty presentations at conferences	**1**	**2**	**3**	**4**	**5**
LG 2	Number of faculty presentations	**1**	**2**	**3**	**4**	**5**
LG 3	Travel budget for conference attendance	**1**	**2**	**3**	**4**	**5**
LG 4	Number of cross-trained or multi-skilled staff	**1**	**2**	**3**	**4**	**5**
LG 5	Number of courses incorporating new technology	**1**	**2**	**3**	**4**	**5**
LG 6	Number of teaching workshops attended by faculty	**1**	**2**	**3**	**4**	**5**
LG 7	Number of joint activities	**1**	**2**	**3**	**4**	**5**
LG 8	Academic excellence	**1**	**2**	**3**	**4**	**5**
LG 9	Increased research productivity	**1**	**2**	**3**	**4**	**5**
LG 10	Increased outreach to community	**1**	**2**	**3**	**4**	**5**
LG 11	Entrepreneurial initiatives	**1**	**2**	**3**	**4**	**5**

Thank you for taking time to complete this questionnaire. Your views are much appreciated.

APPENDIX D: DECLARATION BY LANGUAGE EDITOR

Cecile van Zyl
Language editing and translation
Cell: 072 389 3450
Email: Cecile.vanZyl@nwu.ac.za

22 April 2022

Dear Mr / Ms

To whom it may concern

Re: Language editing of thesis (Modelling transformational and transactional leadership, innovation and performance among South African universities of technology: A balanced scorecard perspective)

I hereby declare that I language edited the above-mentioned thesis by GL Mofokeng (student number: 219148627).

Please feel free to contact me should you have any enquiries.

Kind regards

Cecile van Zyl

Language practitioner

BA (PU for CHE); BA honours (NWU); MA (NWU)

SATI number: 1002391

APPENDIX E: TURNITIN REPORT

GEORGE
MOFOKENG PHD
THESIS TURNITIN

ORIGINALITY REPORT

9%	8%	3%	5%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

Submitted to Vaal University of Technology Student Paper	2%
repository.nwu.ac.za Internet Source	1%
scholar.sun.ac.za Internet Source	1%
web.ebscohost.com Internet Source	1%
tutkielmat.uta.fi Internet Source	1%
bradscholars.brad.ac.uk Internet Source	1%