TOWARD A VOCATIONAL BALANCED SCORECARD

"A GROUNDED MODEL BASED ON MULTIPLE CASE STUDIES OF REGISTERED TRAINING ORGANIZATIONS IN AUSTRALIA"

A Dissertation Submitted in Partial Fulfilment of the Requirements for The Degree of the Doctor of Philosophy in Management

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DEDICATIONS

To my parents, Mr Shamsuddin Quazi and Fatema Akter, who have moved on to the from this world; they had been my greatest support, my beacons of hope and my guide into the vast world. They raised me with strong values and instilled their virtues within me, making me to the person I am today. I pray for their eternal peace in the afterlife.

To my family; my wife Hossna and my sons Shubash and Shourov, who have been there for me through thick and thin, in all my endeavors to develop myself and to give back to my family and my community. They have provided me with constant moral support and have been my inspiration to push myself further to make a better life for us all. At the end of the day, it is their love and compassion that makes it all worth it.

ACKNOWLEDGEMENTS

It has been a lifelong goal for me to attain a doctoral degree and now that I am finally completing this dissertation, I cannot fully express how overwhelmed I am with joy. The journey has been long with many ups and downs along the way and I cannot be grateful enough to all those who have been there for me and have helped me get here today. I thank my supervisor Professor Masud Behnia of Macquarie University, Professor Rhonda Craven, Western Sydney University, Associate Professor Narottam Bhindi, Professor Ian Brown, and Dr Meeta Chatterjee of University of Wollongong for their unwavering support and unparalleled contributions in aiding me to progress through my doctorate journey. I also extend my heartiest thanks to Dr Arash Najmaei for his support and guidance. Their influences have further deepened my insights into the world of research, allowing me to achieve a much clearer perspective of VET sector in Australia particularly in measuring the performance of Registered Training through Balance Score Card. Truly, they are the people I will always claim to be fortunate to have met and been guided by in my life.

It also goes without saying how thankful I am to my family for being by my side throughout this entire journey. My wife Hossna and my sons Shubash and Shourov have constantly supported and encouraged me to go on with my research. The hours were long and the pressure of working and researching at the same time was incredibly stressful. However, thanks to these wonderful people in my life, I could always look past the hardships and into the positivity ahead, knowing that my family is always looking out for me and cheering me on.

DECLARATION

"I, Zahurul Quazi, declare that the PhD thesis entitled "Vocational balanced scorecard: A grounded model based on multiple case studies of registered training organizations in Australia" contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work".

Signature:

Date: 10/10/2018

ABSTRACT

The Balanced Scorecard (BSC) is a widely used management tool to map organizational goals towards execution of strategies in line with the organization's vision. Prior research has either used the concept to develop goals or key performance indicators (KPIs) for different divisions, such as marketing and HR, or focused on the varying levels of successful adoption of BSC in ad hoc case studies. But little has been done to explore if BSC can be applied to a key economic sector where different organizations offer unique services. While BSC has been investigated across industries, from hospitality to education, there are no studies on the application of BSC at vocational training institutions.

The objective of this thesis is to explore the application of BSC for strategic performance in registered training organizations (RTOs), which are the equivalent of vocational training institutions (VTIs) in Australia. Using a sample of 15 RTOs and 30 in-depth interviews with managers, a grounded model for the application of BSC at VTIs called the vocational balanced scorecard (VBSC) was developed.

The findings indicate that, as the primary strategic goal of RTOs is to offer higher education courses compatible with universities, the VBSC can significantly help achieve this goal. The VBSC helps set key objectives across course development, staff training, financial management, students' compliancy and support as well as with the process of continuous improvement and quality control.

The model developed shows how the selected areas map, according to BSC, and enables RTO managers to adjust and communicate their strategy and rectify procedural deficiencies in their operations.

PUBLICATIONS BASED ON THIS RESEARCH

Quazi, Z., Najmaei, A., & Behnia, M. (2017). *Balancing Strategic Leadership: A Synthesis of Balanced Scorecard and Strategic Leadership Theories.* Paper presented at the 13th European Conference on Management, Leadership and Governance: ECMLG 2017.

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LIST OF ABBREVIATIONS

Acronym	Full Tile
AQF	**Australian Qualifications Framework**
UNESCO	**United Nations Educational, Scientific and Cultural Organization**
UNDP	**United Nations Development Program**
ETF	**European Training Foundation**
VET	**Vocational Education and Training**
RTO	**Registered Training Organization**
BSC	**Balanced Scorecard**
KPI	**Key Performance Indicator**
PM	**Performance Measurement**
PMM	**Performance Measurement and Management**
PMMS	**Performance Management and Measurement System**
VTI	**Vocational Training Institutes**
DnB	**Dun and Bradstreet**

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CHAPTER ONE

INTRODUCTION

1.1 Introduction to Chapter One

Performance of an organization is the most important indicator of its survival, competitiveness and growth (March & Sutton, 1997; Malagueño, Lopez-Valeiras, & Gomez-Conde 2018). Educational organizations that provide various vocational and non-vocational services shape economies and contribute increasingly to national and international economies. Registered training organizations (RTOs) are a specific type of such organizations. RTOs provide vocational education and training in Australia. These organizations constitute a significant sector of the Australia's educational infrastructure and play a significant role in the country's overall economic wellbeing (Dempsey, 2013). As a result, understanding different facets of their performance has important implications for higher-education theory, practice and policymaking. This point has been explicitly echoed by Broadbent (2007), when he argued that we cannot manage an educational institution when we can't measure its performance.

Despite the significance of RTOs' performance, a review of literature on the performance of educational institutions shows that the performance of RTOs has been overshadowed by an overemphasis on universities (Beard & Humphrey, 2014; Chen, Yang, & Shiau, 2006; Guthrie & Neumann, 2007; Wu, Lin, & Chang, 2011). In particular, the strategic ways in which RTOs can meet their performance objectives remains an unexplored, yet significant, topic of interest (Gao 2019).

The salience of this gap is heightened by the fact that RTOs in Australia are both growing in numbers and expanding the types and range of courses offered. According to training.gov.au/Reports/RtoCount, in 2019, there are 6995 RTOs in Australia offering educational services to around 2 million people.

Guthrie and Neumann (2007) and more recently Lokuwaduge and Armstrong (2015) argue that a key to successful governance of an educational organisation is to develop performance-driven systems. Mehta, Diwakar, and Arya, (2019) also highlight the significance of internal benchmarking for performance evaluations of educational institutions. Adding to this point, de Haan (2015) suggests that the competitive advantage of higher-educations organizations, such as RTOs, is a function of the multiple dimensions of their performance such as staff training, student satisfaction, budgeting and educational leadership. In view of these studies, it can be argued that, mapping and measuring performance dimensions of RTOs is essential to a better understanding of the growth and future of these neglected organizations, in the growing sector of the Australian higher education system.

1.2 Background and Knowledge Gap

Balanced Scorecard (BSC) (Kaplan & Norton, 1992; Ruben, 1999; Zolfani & Ghadikolaei, 2013; Alani *et al*. 2018) is a widely used strategic tool, in the hands of managers, for assessing how different aspects of performance are aligned with the organization's goals to achieve performance excellence. A brief explanation of what BSC is provided in the next section below; although BSC was initially developed for business enterprises, since 1992 it has spread into various sectors including public and not-for-profit organizations (Goh, Elliott, & Richards, 2015). In fact, numerous universities, worldwide, are using it to measure their performance and benchmark their strategic milestones (Lawrence & Sharma, 2002; Sayed, 2013; Taylor & Baines, 2012). Surprisingly, despite its widespread application, BSC has not been used in the RTO sector.

RTOs differ from universities in two fundamental ways: 1) they are considerably smaller, with less financial and technical resources; and 2) their offerings are mostly vocational. Therefore, even though both universities and RTOs offer educational services and are widely thought of as key educational organizations, their operation, type and nature of students and staff and performance dimensions differ substantially. These differences and a lack of understanding of the theoretical and

practical aspects of the performance dimension of RTOs, make them a unique context for studying how BSC can be used to better understand and strategize performance.

1.3 Research Objective

Given the above, the main objective of this research is: to explore whether and / or how Balance Scorecard can be used as a performance measurement tool in RTOs in Australia. Considering this main objective, this study also seeks to:

1. Understand what Key Performance Indicators RTOs use to measure their performance.
2. Explore how RTOs align their Key Performance Indicators with their strategy and vision and
3. Explore what challenges RTOs in Australia face when they map their strategy according to the Balanced Scorecard methodology

Balanced Scorecard has been used before to measure different aspects of the performance of universities in other countries. For example, Taylor and Baines (2012) showed that, BSC, if properly adjusted, could effectively map the performance dimensions of universities in the UK. Similarly, Wu *et al*. (2011) found that staff training and appraisal in educational institutes in the US could be improved by a BSC approach. In addition, Zolfani and Ghadikolaei (2013) studied private universities in Iran and found that policymakers could use BSC to evaluate and measure performance for better capital allocation and budgeting. Alani *et al*. (2018) studied BSC at the Sohar university in Oman and found that the university's strategic roadmap is aligned with BSC.

Given the lack of empirical work in Australia and absence of systematic research on RTO performance in Australia, the goal in this study is to extend the emerging line of research on the application of RTOs for educational and training organizations, by developing a theoretically-sound and empirically-grounded model of the performance of RTOs. Such a model is expected to help scholars in the higher-education leadership sector, practitioners and policy makers understand how

performance, based on an adjusted BSC, can be adapted by RTOs to help them grow and thrive in today's competitive environment.

Given the absence of a theoretical framework for mapping the performance dimensions of RTOs, together with an explanation of the theoretical and practical implications of such a framework, the detailed methodological objective of this study is: to empirically, via an exploratory inductive method through multiple case studies, explore, explain and apply a BSC theoretical framework for performance of RTOs. As noted previously, the Balanced Scorecard (BSC) has been widely used for such purposes in other sectors, but only partially used in educational settings.

BSC translates an organization's mission and strategy into a set of performance measures (Kaplan & Norton, 1996) in the following categories: 1. Financial 2. Customer 3. Internal business process and 4. Learning and Growth dimensions. In the context of RTOs, these can be conceptualized as:

1. Financial - the balances of financial and non-financial performance indicators, such as data collection of the operation versus profit from productivity /revenue growth; for example, compare with targeted rate of student enrolment, % of fee collections, student retentions etc. with the actual income streams of selected RTOs). As well as comparing and analysing those data and setting a model of profitability for the RTO strategy.
2. Customers - the indicators that are used to measure customer satisfaction; for example, enrolments, perceptions of learning, teaching atmosphere and educational settings, as well as their expectations both latent and expressed.
3. Internal business processes - refer to the administrative and core operative systems, commonly used in RTOs for creating and delivering their services. These may include course and curriculum development, marketing and advertising, student consultation and

grievance mechanisms; as well as techno-structural processes that involves adoption, upgrading and use of teaching or learning technologies (i.e. student management system).

4. Learning and Growth measures - refer to the scale and scope of the focus on training, continuous improvement, creativity and innovation in the educational and administrative cores of the RTO.

This study explores these areas and maps, lists and analyses their relative relevance to the BSC methodology to develop a tailored system for RTOs. Therefore, in summary the main objective of this study is to develop a model for the application of balanced scorecard in the registered training organizations. The model can be then used by RTOs to develop and assess their performance indicators against their strategic goals.

1.4 Research Questions

Since the inception of BSC, many scholars have tried to use it to identify and measure key performance indicators for various organizations across industries. For instance, Malagueño, *et al*. (2018) used BSC to identify KPIs for SMEs. Similarly, Robinson *et al*. (2005) and Jin *et al.* (2013) applied BSC to formulate KPIs for construction engineering organizations and Gao *et al*. (2018) and Kocakülâh, *et al.* (2007) proposed a set of KPIs for hospitals based on the BSC model. Despite these efforts, there is very little knowledge available about the KPIs for Registered Training Organizations (RTOs) in Australia. Therefore, our first research question is:

RQ 1: What are the key performance indicators of RTOs in Australia?

Knowing key performance indicators for an organization is a necessary but not sufficient condition for measuring and managing performance. According to the Balanced Scorecard theory, managers should be able to map their KPIs against business strategic priorities to be able to align and manage strategic goals (Kaplan & Norton, 1992; Malagueño, *et al*. 2018). Given this, the second question that is addressed by this research is:

RQ 2: How can RTOs' KPIs be mapped according to the BSC framework?

Balanced Scorecard is a methodology, a model and a philosophy (Alani *et al.* 2018; Kiri, 2019). Therefore, every organization may adopt or develop a different approach to use BSC in order to map its performance indicators and align its measures with their vision and strategy (Niven, 2002). Prior research suggests that, for instance, Gao (2018) found that Chiense country hospitals adopt a method rooted in Chinese philosophies to use BSC. Similarly, Simon *et al*. (2019) identified that vision and strategy statements of higher education institutes vary in terms of wordiness and structure from other organizations and this variation affects how these organizations practice BSC. Motivated by these facts, the third research question of this thesis is:

RQ 3: How do Australian RTOs align these measures with their vision and strategy?

Norton and Kaplan (1992,1996) expressed several general challenges managers may face when adopting BSC. They listed alignment between activities at different levels, resistance to change, financial justifications and changes to corporate vision and strategy as general obstacles against successful adoption of BSC. Few other scholars have delved into other specific challenges that different organizations with varying size and structure across industries may face when implementing BSC. For instance, Modell, (2012) discusses political issues that managers should deal with as an importance challenge in adoption of BSC. Chavan (2009) and Wisniewski and Ólafsson, (2004) highlight structural and techno-cultural issues as key challenges faced by managers when implementing BSC and Niven (2002) and Simon *et al.* (2019) point to communication and development of compelling change plans and vision statements as key challenges in adoption of BSC. Against this backdrop, since very little is known about adoption of BSC is the VET sector and particularly RTOs, this thesis seeks to also address the below question:

RQ 4: What are the challenges faced by Australian RTOs in applying a BSC approach?

1.5 Significance of the Research

The significance of this investigation is that BSC offers a solid performance-driven systematic approach to measure where and how a key aspect of performance is falling behind. As pointed out by Bourne *et al.,* (2018), since the rise of modern organization theory, performance measurement and management has been used to help organizations at different sizes, sectors and shapes achieve their goals and deliver their mission. In the late 1980s and early 1990s, dissatisfaction with purely accounting-based measures of performance led to the development of a series of multi-dimensional frameworks like performance prism but the most widely used framework has been the Balanced Scorecard (Kaplan and Norton 1996) due to its capacity to connect strategic objectives with performance measures and action plans and to link financial and non-financial indicators.(Okwir, *et al.* 2018; Bourne *et al.* 2018).

The original BSC was developed for corporate and business organizations, not for universities or other educational and training institutions. However, by late 1990s and early 2000s perhaps motivated by the rise of BSC in the corporate world, several universities began to adopt and implement BSC (Karathanos, & Karathanos, 2005). Recognizing this trend, Sayed (2013) argued that educational researchers should explore and understand which aspects of BSC should be ratified, rejected or revised to make the model of BSC more accurate and precisely applicable to educational settings. Similarly, Kiriri (2019) suggests that the demand for higher education has increased tremendously in recent years internationally. The demand has also been met with an increasing requirement of quality delivery of education and learning outcomes therefore, educational institutions require a systematic way to assess their strategic goals and performance. This is particularly important as RTOs because not only RTOs offer thousands of courses through the Vocational Education and Training (VET) sector whose quality and progress are critical to a wide range of stakeholders because qualifications gained through the VET system can lead to a variety of diverse and exciting careers. But also, RTOs have different structures, goals and scopes of operation when compared to universities; this is simply because the

theory core role differs from the training core role (Commission, 2012; Smith, Grollman, Snell, & Hart, 2007). These peculiarities should be reflected in performance measures and BSC is a key theoretical framework that has the conceptual momentum to map different goals and activities across four universal performance dimensions (i.e. financial, internal development, creativity, learning and customer satisfaction) (Taylor & Baines, 2012). Given that

BSC can be used as a tool for coordinating the activities of the academic and non-academic departments of any educational organization (Fijałkowska, & Oliveira, 2018) and the mechanisms of budgeting and target agreements can be tailored to organizational needs (Norton & Kaplan, 1992;1996), extending BSC to RTOs not only contributes to the general understanding of performance management of RTOs, as key components of the higher-education system, but also extends the empirical and theoretical boundaries of BSC.

1.6 Overview of Research Methods and Design

1.6.1 Choice of the Method

The choice of research method is guided by the state of theory development in the field (Edmondson & Mcmanus, 2007). When the theoretical foundation in a field is in its infancy, with little available empirical research, the most fitting method is qualitative or exploratory inductive research (Edmondson & Mcmanus, 2007). This approach is an interpretive paradigm used in qualitative research and designs, such as case studies and grounded theory, where one moves from data to theories via inductive reasoning. Performance of RTOs, especially from a theoretical standpoint of BSC, represents such a state; so, a qualitative multiple case study survey is adopted here.

1.6.2 Data

In this study qualitative data are primarily from transcribed interviews; these semi-structured interviews were conducted with managers of a sample of RTOs. These managers (male and female, aged over 30 and residing in Australia) were chosen because they are the most knowledgeable about

performance of RTOs and implement policies and strategies that affect the performance of RTOs. According to qualitative scholars (Eisenhardt & Graebner, 2007; Yin, 2015) optimal numbers of interviews and their length cannot be determined in advance; however, usually a few (5-7) sample cases and 10-20 interviews will provide enough data on which to base a robust grounded-model. For this study, to ensure the robustness of findings, 15 organizations are studied and 30 in-depth semi-structured interviews were undertaken. It should be noted that as collection dates and data are very significant in this qualitative exploratory research, where RTOs may have differing visions and strategic objectives, a pilot study (on data collection and RTO selection) was carried out prior to the main study.

Sample RTOs are primarily offering BSB/ FNS courses in CBD Sydney, NSW with a limit of a minimum of 300 students and currently in operation as a registered training organisation; 3 -5 RTOs were selected from the above category for pilot study data collection.

In qualitative research, the sampling method must be theoretical or purposeful (Yin 2015). After the pilot study additional RTOs with vision, strategy and an ongoing record of performance were found. Access to these institutions was managed via government databases on higher education institutes, ABS and industry databases such as Dun and Bradstreet (DnB).

1.6.3 Analytic Approach

As qualitative exploratory research, this study uses an inductive model-developing approach based on multiple case studies (Eisenhardt, 1989; Eisenhardt & Graebner, 2007). This approach is an extension of the grounded theory (Corbin & Strauss, 1990). Eisenhardt (1989) argues that multiple case studies are: “particularly well suited to new research areas or research areas for which existing theory seems inadequate. This type of work is highly complementary to incremental theory building from normal scientific research. The former is useful in early stages of research on a topic or when a fresh perspective is needed, whilst the latter is useful in later stages of knowledge” (pp.548-549).

Multiple case study research has been widely used in higher-education research (Bassey, 1999; Merriam, 1988) and has been considered as an appropriate research technique to explore context-specific issues in the training and education sector, such as policy development and strategy formulation (Laru, Näykki, & Järvelä, 2012).

In addition, case study method is an important and established research design in education research (McKenney & Reeves 2018). So, this technique is methodologically suitable for this study and the approach is guided by the following framework. To perform multiple case study methods, data collected form interviews are coded and common themes within and between cases are inductively explored and classified. Then themes are linked to create empirically grounded theoretical models or frameworks. The process of coding and analysis will be explained in more details in Chapter four.

1.6.4 Conceptual Framework

The Balanced Scorecard is a theory of strategic performance (Kaplan & Norton, 1993). More specifically, it is a performance management and measurement tool that links areas of performance to strategic priorities and vision of an organization in order to help managers understand how each area of activity can contribute to strategic goal achievement and competitive advantage. Balanced scorecard is therefore a tool to map strategy and systematically assess how vision and mission statements are realized. That is, a theory to map and measure respective contributions of strategic factors to the overall performance of an entity.

Accordingly, it is premised on the principle that strategies are aligned with the vision of an enterprise (Kaplan & Norton, 1993). So, its conceptual foundation rests on the following logic:

1. Any enterprise (here an RTO) has, implicitly or explicitly, a vision or desired position in the industry to be achieved in the next 5-10 years;

2. Strategies are based on this vision and define sets of actions that enable the firm to achieve the vision;
3. Four areas of strategic action must be balanced, actively measured and monitored to ensure the planned achievement.

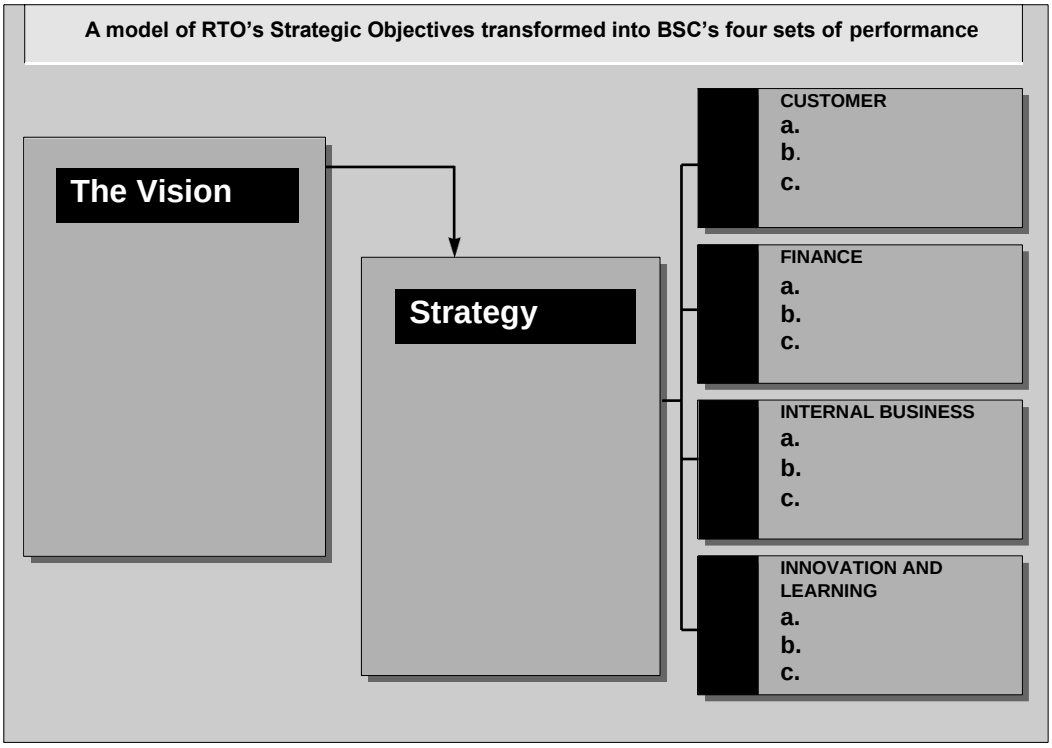

Figure 1-1:Balanced Scorecard (Source: Kaplan and Norton, 1993)

This framework (Figure 1-1) is the preliminary theoretical foundation of this study. Using this framework this research aims to develop and empirically validate the first RTO-specific BSC approach in Australia. To this end, first a comprehensive review of BSC within the education sector will be done. Findings will be distilled into key areas of focus in terms of:

1. vision statements
2. general strategies of educational institutions
3. customer-centred measures
4. investment in designing internal processes
5. investment in innovation and learning

6. scope and variety of financial measures

Then a sample of RTOs will be chosen as case studies representing the empirical context of the study. It is emphasised that multiple case study investigations do not aim to generalize, but rather to develop context-specific rich accounts for applications of a theory, tool or method in a new context (Yin, 2015). Finally, selected cases will be studied based on the grounded theory methods for theory-development case study (Yin 2015) in order to: 1) explore and explain how a BSC-based model is relevant and important for mapping performance dimensions of RTOs; and 2) identify what such a model should contain, in comparison with the general BSC (Figure 1-2) and existing models for higher-education and universities. Synthesizing these findings, a grounded model will be developed that shows how RTOs can implement a specific BSC model, to map and measure their performance, and use it as a strategic tool for systematic performance-driven planning and development.

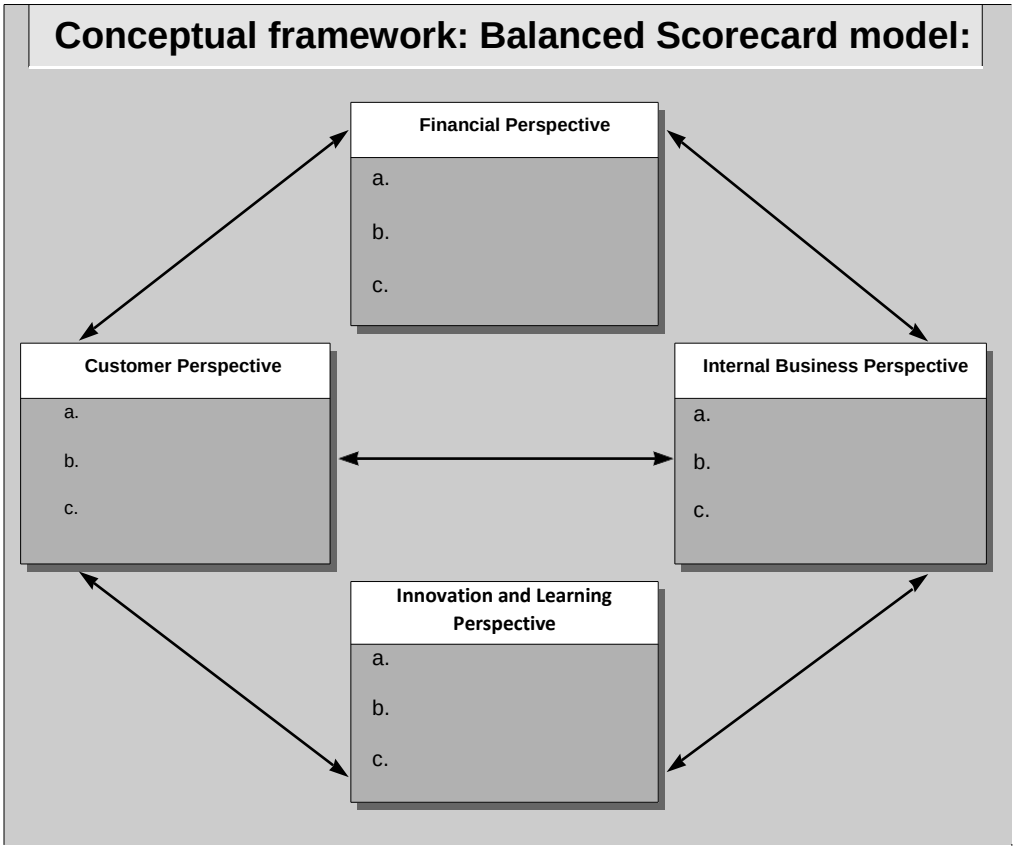

Figure 1-2: Conceptual Guide for this Study

1.6.5 Delimitations of the Research

According to Simon and Goes (2011), delimitations of a research are those characteristics that limit the scope and define the boundaries of your study. Delimiting factors include the choice of objectives, the research questions, variables of interest, theoretical perspectives and the population chosen to investigate. This research is delimited to an essential objective which is to explore how RTOs can adopt balanced scorecard. Therefore, four fundamental questions stem from this objective which further clarify the scope of this research as explained in section 1.4. These questions enable the readers of this thesis to gain a complete understanding of how and why a vocational balanced scorecard differs from those developed for universities. Moreover, the research focuses on Australia because the VET sector is one of the largest service sectors and a significant contributor to the economy. Finally, the balanced scorecard was selected as the sole theoretical framework of the research, because in the performance management and measurement literature, balanced scorecard is the most important and commonly used strategic framework and perhaps the only strategic tool that links performance indicators to an organization's vision and strategy (Kiri, 2019;Kaplan & Norton, 1996; Gao *et al*. 2018, Simon, *et al.* 2019).

1.7 Structure of the Thesis

This thesis is organized into seven chapters. This first introductory chapter covers the background of the research, research objectives, research questions and offers an overview of the research design, empirical methods and significance of the research. This general background serves as an introduction to Chapter 2.

The second chapter provides a detailed review of the relevant literature. It begins with discussion of performance management papers and continues with the history, evolution and applications of Balanced Scorecard as a performance management tool. Next, it illustrates the application of BSC in the higher education and vocational education sectors. Finally, it discusses the

past literature on the adoption and challenges involved in the use of Balance Scorecard and a strategic framework. This theoretical baseline logically leads on to methodological issues, discussed in the next chapter.

Chapter three relates to the research design and methods used and outlines the philosophical foundations of the research. It also describes the research paradigm and elaborates on the suitability of methods used in the investigation, together with their validity, reliability and rigor. This summary of methodology is an essential forerunner to presentation of study results in the next chapter.

Chapter four is about the results and illustrates the findings of the research. In accordance with the logic elaborated in chapter 3, it offers a within-case analysis of sample firms and then presents a comparative or cross case analysis. These two analyses jointly offer a comprehensive grounded view of how Balanced Scorecard can be used in the RTO context. Presentation of the findings naturally leads on to the discussion synthesis in the next chapter.

Chapter five is concerned with the conclusions from the findings, their relevance and implications for the existing research and prior reports. Accordingly, it synthesizes the findings, discusses their significance and originality and explains their implications for theory, practice and management in education and training sectors. This discussion forms the basis for the final chapter.

Chapter six offers an overview of the research findings and sheds light on how the research addresses research questions. Finally, chapter seven illuminates the limitations of the study and proposes some directions for future research.

1.8 Summary of Chapter One

This chapter served as an introductory section for the thesis. It identified and briefly discussed key gaps that motivate this research. Offered some background knowledge of the topic of registered training organizations and the VET sector as well the conceptual foundation and relevance of BSC to

study, map and measure performance dimensions of RTOa in Australia. The chapter also offered a succinct overview of the research design and methods and outlines the structure of the thesis. Next chapter will offer a more detailed review of the literature on the notion of performance and the concept and methodology of balanced scorecard.

CHAPTER TWO

ORGANIZATIONAL PERFORMANCE AND BALANCED SCORECARD

2.1 Introduction to Chapter Two

This chapter offers a review and assessment of the literature on the notion of organizational performance and its differences and similarities with effectiveness and efficiency. It shows that performance is a complex and multifaceted concept which requires systematic and methodical ways to measure. This chapter also provides a background to the literature on balanced scorecard, its origin, foundation and evolution. It will be shown that balanced scorecard has evolved into a strategic tool for mapping dimensions of organizational performance across industries and sector and almost all organizations can use balanced scorecard to map and measure their performance goals and activities.

2.2 Organizational Performance

2.2.1 Motivations to Study Performance of an Organization

Performance of the firm or alternatively organizational performance has been the most common concept in the empirical research in business and management literature (Bititci, Garengo, Dörfler, & Nudurupati, 2012; Hamann, Schiemann, Bellora, & Guenther, 2013; Lacerda, Ensslin, & Ensslin, 2011; Miller, Washburn, & Glick, 2012; Richard, Devinney, Yip, & Johnson, 2009). This significance can be attributed to two facts about the notion of performance. First, performance denotes success and success of a firm is a central concept in all aspects of business literature (Bititci *et al*., 2012). Therefore, by addressing firm performance scholars can identify successful and unsuccessful firms (Miller *et al*., 2012). Second, performance is a dependent variable; therefore exploring the reasons for, and mechanism involved in, variations of performance of a firm has been a key means to advance management and organizational science (March & Sutton, 1997). For instance, in the entrepreneurship literature Murphy, Trailer, and Hill (1996, p. 15) argue "Without adequate means of measuring performance, theory development is impeded, and it becomes difficult to develop useful

prescriptions for entrepreneurs". Similarly, in the strategic management field, Chakravarthy (1986) argued that understanding performance is fundamental to strategic research.

Analogously, marketing scholars have also paid considerable attention to the performance of the firm, as a means to understand the role of different marketing activities (Adidam, Banerjee, & Shukla, 2012; Chari, Katsikeas, Balabanis, & Robson, 2012; Joshi & Sharma, 2004; Olson, Slater, & Hult, 2005; Vorhies, Morgan, & Autry, 2009).

With regard to the second point, literature has also indicated that performance can be an independent variable; where high or low performance causes variations in a number of dependent variables such as quality of investments, reputation or longevity of the firm (March & Sutton, 1997). However, as scholars (Chakravarthy, 1986; Hansen & Wernerfelt, 1989; March & Sutton, 1997; Miller *et al.*, 2012; Murphy *et al.*, 1996; Richard *et al.*, 2009) have frequently argued, research in management and organization science has, to a great extent, considered performance as a dependent variable. Following this logic, this study also places the firm performance as a dependent variable. This view seeks to examine what factors cause variations in firm performance and what implications these relationships have for the theory and practice of management (Miller *et al.*, 2012). The view of performance as a dependent variable enables researchers to distinguish 'good strategy' or 'proper behaviour' from bad strategy and improper behaviour (March & Sutton, 1997).

This section addresses the concept of firm performance and reviews its key aspects; however, it should be noted that following the convention in business literature (Rumelt, Schendel, & Teece, 1991), the terms ' firm' , 'enterprise' and 'organization' are used interchangeably here. Accordingly, the notions of 'firm performance', enterprise performance and 'organizational performance' are synonymous and refer to the performance of a business entity performing in a market economy; the next section reviews the definitions of firm performance.

2.2.2 Defining Performance

Although the notion of firm performance is pervasive and its use abounds in the literature (Hamann *et al.*, 2013; Miller *et al.*, 2012), it seems that scholars have taken the definition of firm performance for granted without formulating a complete description of the concept. This deficiency has been previously highlighted by a number of scholars (Miller *et al.*, 2012; Shenhav, Alon, & Shrum, 1994), who have argued that it impedes understanding and measurement of firm performance (Hamann *et al.*, 2013). Acknowledging this Richard et al. (2009, p. 719) argue that, "performance is so common in management research that its definition is rarely explicitly justified".

The assumption that dominates the literature and can be used to define it is, that performance is about organizational outcomes and high performance is a synonym for goodness or excellence (Shenhav *et al.*, 1994). Yet a universally accepted category of outcomes has remained underdeveloped and exiting descriptions are obscured, causing difficulties in studying both antecedents and consequences of firm performance and its prediction (Bititci *et al.*, 2012; Hamann *et al.*, 2013; Hax, 2003; Henri, 2004; Lacerda *et al.*, 2011; Murphy *et al.*, 1996; Richard *et al.*, 2009). For instance, Richard *et al*. (2009) argue that performance "encompasses three specific areas of firm outcomes: (1) financial performance (profits, return on assets, return on investment, etc.); (2) market performance (sales, market share, etc.); and (3) shareholder return (total shareholder return, economic value added, etc.)". Therefore, definitions of performance ought to address how well a given firm obtains outcomes in these three different areas. But the reviewed literature reveals that scholars have failed to fully capture the essence of firm performance according to these criteria (Hamann *et al*., 2013; Henri, 2004; Kirby, 2005; Richard *et al.*, 2009).

To further demonstrate this deficiency, Miller *et al*. (2012) found that less than 10 per cent(%) of studies published in leading journals between 2001-2005 offered a definition for firm performance. Although they did summarize a few commonly used definitions, such as: "Maximizing profits, or

more accurately, present value" (Jensen & Meckling 1976 , p. 307), "high returns over longer periods of time" (Wernerfelt 1984, p. 172), "rate of return on assets" (Rumelt 1991, p. 167), "fulfilment of the economic goals of the firm" (Venkatraman & Ramanujam 1986, p. 803) and "the value that an organization creates using its productive assets -in comparison-with the value that owners of these assets expect to obtain" (Barney 2001, p. 26). A more recent definition was also presented by Moullin (2003:3), as: "the value the organization delivers for customers and other stakeholders" . Finally, Combs, Crook, and Shook (2005, p. 261) define performance as "the economic outcomes resulting from the interplay among an organization's attributes, actions, and environment".

These definitions show that firm performance means different things to different researchers and that varying theoretical approaches view performance differently; however, in all the notions of organizational value creation, either financial (i.e. return on investment/asset, etc.) or non-financial considerations are at the heart of existing definitions of firm performance. Given this, an explanation for the diversity of definitions has been put forth by March and Sutton (1997); according to these researchers diversity in the definition of firm performance can be attributed to the diversity in the scope of operations of the firm and theoretical views that explain them. They further argue that as organizations are generally defined as instruments of purpose or goals, and because they have different goals, their performance can be defined in different ways. For example, business firms are compared in terms of profits, sales, market share, productivity, debt ratios, and stock prices. Hospitals use cost recovery, mortality and morbidity rates, board certification of physicians, and occupancy rates. Universities use research productivity and prestige of faculties, test scores of students, rankings by popular magazines, and win/loss records of football teams.

Given the above, for the purposes of this study, a multi outcome description of firm performance is adopted in which a firm's performance is assessed through both financial and non-financial outcomes. According to this view, performance can be defined on how well a firm archives

both financial and non-financial goals relative to its competitors (Tang & Liou, 2010). This composite view has been argued to provide a more complete picture of what performance means and why it matters in study of the firm (Dimitratos, Lioukas, Ibeh, & Wheeler, 2009). In addition, this broader definition has been recently adopted by scholars (De Clercq, Dimov, & Thongpapanl, 2010) studying the performance of small businesses.

Having summarized the varied definitions and potential confusion, the other question that has dominated performance literature is, why some firms outperform others? Or why there are variations in performance amongst firms in an industry (Eccles, 1991; Fitzgerald & Storbeck, 2003; Hambrick & Quigley, 2013; Kirby, 2005; Richard *et al.*, 2009; Rumelt, 1991).

2.2.3 Explaining Performance Variations

Variations in Performance of a firm is the most important dependent variable in the business literature (March & Sutton, 1997) and have been studied from two major perspectives. The first perspective is known as the outside-in view and suggests that performance is determined by the industrial (i.e. environmental) conditions under which a firm operates (Porter, 1980, 1981, 1983, 1985). According to this view, all firms compete for factor inputs (resources, capital, etc.), customers and for the revenue to cover costs and survive (Rumelt *et al.*, 1991). These environmental factors determine how firms perform relative to each other (Porter, 1985). This perspective is rooted in the industrial economics and organizational ecology in which industries, instead of firms, are the main focus of attention (Hannan & Freeman, 1977). According to this view industrial or market competition directs firms towards different uses of resources or market behaviours that eventually lead to unequal performance outcomes (Rumelt, 1991). Therefore, collective circumstances account for performance variations between individual firms (Porter, 1985).

The second perspective suggests a contrary view, which is an inside-out logic. It is primarily based on the behavioural and sociological fields and accordingly suggests that organizational factors

such as strategy, structure and employees knowledge, skills and abilities determine performance of the firm (Floyd & Wooldridge, 1990; Hansen & Wernerfelt, 1989; Lewin & Minton, 1986; Salge & Vera, 2011; Yeung, Selen, Sum, & Huo, 2006). According to this view variations in performance can be best explained by exploring how and why some firms use their resources and develop strategies in more competitive ways, leading to better performance outcomes (Hansen & Wernerfelt, 1989). In other words, performance variations arise primarily from the unique endowments and actions of individual firms rather than collective circumstances (Rumelt, 1991).

2.2.4 Performance versus Effectiveness and Efficiency

Despite the existing dispute about definitions of firm performance (Miller *et al.*, 2012), the literature holds that performance is rooted in the more abstract concepts of organizational efficiency and effectiveness(Hamann *et al.*, 2013; Richard *et al.*, 2009) . In this regard, efficiency is concerned with internal functioning of the firm and is best described by the ratio of the amount of output to the amount of input (Davis & Pett, 2002). Put simply, an efficient firm produces more output with less input. Hence, for a business firm performing in a market economy, efficiency can be assessed in terms of firm productivity (Shenhav *et al.*, 1994). Efficiency has also been argued to show how well an organization uses its resources in the short term (March & Sutton, 1997); so efficiency is generally regarded as the indicator of short-term performance and profitability (Davis & Pett, 2002).

Organizational effectiveness is , on the other hand, concerned with the long-term behaviour of the firm (Davis & Pett, 2002). It goes beyond the internal functioning of the firm by capturing how well an organization relates to its environment, becoming able to buffer environmental disturbances(Beal, 2000; Connolly, Conlon, & Deutsch, 1980; Davis & Pett, 2002; Friedlander & Pickle, 1968; Georgopoulos & Tannenbaum, 1957; Henri, 2004; Ostroff & Schmitt, 1993).

Therefore, effectiveness is broader than efficiency. It entails factors such as stakeholders, reputation and customer relationships - in addition to the traditional financial and operational

valuations (Richard *et al.*, 2009). Consequently, organizational effectiveness has been argued to be synonymous with overall organizational 'success' or 'worth' (Georgopoulos & Tannenbaum, 1957) and can be representative of business excellence (Rosenzweig, 2007). Some authors (e.g. March & Sutton, 1997; Ramanujam & Venkatraman, 1988) have even equated effectiveness with overall performance of the firm.

In addition, implicit in this literature is the notion that effectiveness is more important than efficiency. Shenhav *et al.* (1994) also found that effectiveness and performance have been more frequently used, than productivity and efficiency, to show organizational success or goodness. It can be argued that performance literature incorporates the assumption that, an effective firm is efficient as well, but efficient firms are not necessarily always effective. Corroborating this point and highlighting the importance of effectiveness Hitt (1988, p. 29) asserted that, "Theory regarding management and organizations cannot be advanced far without using appropriate measures of organizational effectiveness". So, scholars assume that the best performing organizations are both efficient (short-term performance) and effective (long-term performance) (Ostroff & Schmitt, 1993), and this can be examined by studying factors that explain how a firm becomes and stays effective (Kirby, 2005).

Having explained the difference between efficiency and effectiveness and the fact that effectiveness can also represent efficiency, four perspectives have evolved and informed the ways by which organizational effectiveness can be assessed. The first approach is known as the 'goal attainment' view and denotes that effectiveness is assessed through the achievement of goals and particularly financial goals (Georgopoulos & Tannenbaum, 1957). Due to complexities surrounding the organizational goals, as well as setting and planning to achieve them, this view was deemed unsatisfactory which then led to the system view (Rojas, 2000). According to the system approach

effectiveness is assessed using a group of variables (i.e. resources) and associated processes to rate achievement of different goals (Rojas, 2000).

This system approach focuses on external factors (i.e. organizations as open systems) and suggests that effectiveness is achieved through flexibility and external support (Davis & Pett, 2002; Ostroff & Schmitt, 1993). An effective organization is able to obtain scarce and valuable resources from the environment by performing transactions better than its competitors (Yuchtman & Seashore, 1967).

The system view has also been argued to be complex and problematic, in terms of understanding why and how a firm becomes effective (Henri, 2004). According to Zammuto (1984), "If systems theory is to be taken seriously in that everything is connected to everything else, then theoretically everyone is a constituent of all organizations. This broad claim may be true in principle, but it is useless in practice" (page, 610). This criticism of practical relevance led to the formulation of a third view, known as the powerful constituencies or multiple constituencies view of effectiveness. According to this view a firm has different constituencies, whose influences vary according to their role, and an effective organization is able to meet preferences of different constituencies by the distribution of the outcomes of its performance (Zammuto, 1984). This model too was deemed defective and impractical because it leads to divergent performance criteria and perplexing issues such as whose preferences should be met first and why (Shenhav *et al.*, 1994).

Therefore, a fourth view, known as the competing value model (Quinn & Rohrbaugh, 1981), was proposed to address this problem and combine the first three models in a more practical fashion. According to this view, there are no 'best criteria' for effectiveness, rather a contingency view of different values at different times must be considered. According to this view effectiveness criteria shift over time as different values gain supremacy over others (Quinn & Cameron, 1982).

This proposed variation with time in underlying factors of firm performance has led some researchers to argue that performance measures can be infinite, and that it is almost impossible to develop a universal view of effectiveness and similarly performance (Weiner & Mahoney, 1981). The core of this rationale is that, understanding firm' performance through its effectiveness "involves extraordinary problems arising from the uniqueness of the concept in different organizations and the idiosyncrasies of the measurement operation" (Shenhav *et al.,* 1994). In a more detailed criticism of the firm performance (effectiveness) literature March and Sutton (1997) acknowledged this view and added that performance literature through the lens of effectiveness is limited by three major problems:

1. First performance of a firm is unstable overtime, because firms compete in markets and their effective response to market changes must be addressed in different time scales.
2. Second causal relationships involved in and surrounding effectiveness, as the indicator of performance, add additional complications to the understanding and measurement of firm performance and
3. Third, obtaining and using data to assess different aspects of effectiveness, to infer firm performance, is a difficult and challenging task with different biases and limitations.

As a result of these criticisms, different scholars have adopted different measures to operationalize effectiveness of the firm for examining its performance. This diversity of methods has created complications impeding advancement of theory and research (Hamann *et al.,* 2013; Miller *et al.,* 2012; Richard *et al.,* 2009). In the next section a review of different operationalization methods will be presented.

2.2.5 Measuring and Managing Firm Performance

Given the previous debate about effectiveness and efficiency, numerous authors (Hamann *et al.,* 2013; Miller *et al.,* 2012) have argued that performance should be measured and ultimately managed using both financial and non-financial (i.e. operational) measures.

One of the key approaches used by scholars in this regard is the balanced score card (Kaplan & Norton, 1996). The details of the method used to formulate BSC are beyond the scope of this study; but it can be summed up as a mixed marketing and financial methods. BSC users a mix of financial performance, internal business processes, customer perspectives and innovation and learning to help companies create and use a comprehensive performance management and measurement system aligned with their strategic objectives (Richard *et al.*, 2009). Although this method has been widely accepted, numerous researchers have used, and continue to use, some other combination of accounting returns or growth or stock market performance to assess overall performance of the firm; examples are liquidity, profitability, growth (market share and sales growth) and stock market performance.

There is a myriad of measures for these three areas of performance. Recent studies of Hamann *et al.* (2013) and Richard *et al.* (2009) offer a detailed description of different metrics in these three domains. However, amongst widely used financial measures have been: return on asset (ROI) (Jacobson, 1987), Tobin's Q (i.e. the ratio of the market value of the firm's assets to their replacement cost)(Acquaah, 2003), Return On Assets (ROA), Return On Equity (ROE), Return On Total Assets and sale growth (Richard *et al.*, 2009). Some studies (De Clercq *et al.*, 2010; Lechner & Gudmundsson, 2012) have also added operational efficiency (production efficiency) to these measures. Finally, due to the importance of using multiple measures to capture the performance of the firm, scholars (Hamann *et al*., 2013; Miller *et al.*, 2012; Richard *et al.*, 2009) have argued that firm performance is a multidimensional construct and performance, as a dependent variable, can be reflected in different ways.

2.2.6 Organization Theory: The Foundation of Firm Performance

The purpose of this study is to explore, explain and discuss how RTOs can map and measure their performance from an organizational view. The notion of performance is mostly studied in management and business research for private and public firms, so to better understand how RTOs

can adopt managerial views it is necessary to clarify the two concepts of 'firm' and 'organization'. These two terms may seem synonymous however in this study I want to talk about a specific type of educational institutes known as RTOs not 'firms'.

The organization theory (Demsetz, 1988; Selznick, 1948) is a sound and robust theoretical basis on which this distinction can be built. Selznick, (1948) conceptualized organization from two analytically distinct, but empirically united perspectives: 1) any organization system is an economy and at the same time it is an 2) adaptive social structure. As an economy, an organization is "a system of relationships which define the availability of scarce resources and which may be manipulated in terms of efficiency and effectiveness" (Selznick, 1948, p. 26) and as an adaptive social structure an organization is a system that works through delegation and control among individuals who interact as a whole. So, this structure changes over time in response to the changes in the basic needs and personalities of these individuals. The following paragraphs show that both views are closely related and have received remarkable attention.

In keeping with the recognition of organization as an adaptive social system, Nooteboom, (2009, p. 27) defines an organization as "myopically goal-directed, socially constructed, more or less focused systems of coordinated activities". Myopic goal direction refers to the limited ability to achieve goals caused by the restrained capacity of individuals to understand their surrounding environments, such as markets and technologies. The environment is constructed in the minds of individuals in the organization, which allows them to form relationships and interact with it. This refers to the social construction part of the definition. The focused system of coordinated activities also refers to a certain amount of focus or commitment that brings markets, technologies and capabilities of the system together, to achieve its goals (Nooteboom, 2009). Finally, the notion of system refers to the coherence and complementarity between activities (Teece, 1996).

The definition of organization as discussed above indicates that an organization can be comprised of a single person, an owner-/ manager-organization like a 'shoe repair shop' or a 'supermarket' (Nooteboom, 2009); However, management literature tends to use a different view of organization in the form of a 'firm' or 'business organization'.

The concept of a firm is broader than organization, as defined above, and in fact firms are complicated organizations (Demsetz, 1988). A firm is a unit of production in which value is created by transforming input into outputs (Teece, 1996). This transformation is based on organizational activities that use productive resources and capabilities (Nooteboom, 2009); so firms are organizations whose goal is to produce goods and services. If we define RTOs in terms of their produced educational services, then an RTO can be a firm. Consistent with this line of thinking, an RTO is as a constellation of productive resources, which are employed in producing market offerings (i.e. products and services) (Ey, 2018; Korbel & Osborne, 2019).

This conceptualization acknowledges both economic and social sides of an organization and shows that RTOs are important players in markets whose performance is a function of its productive economic activities, such as teaching and training, which are all dependent on and also influence market dynamics.

As Penrose (1959, p. 2) states "the essential difference between economic activity inside the firm and economic activity in the market is that the former is carried on within an administrative organization, while the latter is not". Given this, the next section explains the notion of RTO performance in terms of its administrative organization. Performance of an organization is an indicator of the effectiveness of its operation (Venkatraman, and Ramanujan, 1986). Effectiveness means how a firm operates effectively in the present while preparing for the future, in order to maintain its fitness in a changing environment (Hitt, 1988). We further elaborate this link in the following paragraph.

Organizational effectiveness is a function of goal-attainment (Georgopoulos, and Tannenbaum, 1957). Goal-attainment leads to the fulfilment of needs and demands of stakeholders (i.e. employees, owners and members of general society with whom organization transacts) and is the result of performance (Friedlander, & Pickle, 1968). Therefore, organizational effectiveness leads to continued performance.

In industrial organizations, goal attainment is measured in terms of productivity and profitability (Georgopoulos, & Tannenbaum, 1957). Therefore, if RTOs are to be seen as industrial organizations, whose main function is to produce educational services, they have to link their productivity to their profitability. Productivity and profitability are two closely related components of performance, known as non-financial (operational) and financial performance respectively (Venkatraman, & Ramanujan, 1986).

Performance is a goal, but for an organization it is a better market and sustained performance that is the desired goal (March & Sutton 1997). This occurs when a firm converts its financial and operational performance into increased size, in terms of both financial and non-financial (operational) areas such as market share, product portfolio, assets, or employment (Penrose, 1959). Therefore, performance can become superior to competitors and the organization becomes able to sustain its superiority.

Financial superiority refers to the increase in particular financial indicators of the firm such as sales, returns on assets, market share, etc., whereas expansion or growth in size refers to increased employment (i.e. number of employees in the firm).

This indicates that superior sustained performance should be the goal of any administrative system running any form of organization. In addition, this superiority must be distinguished from its simple effectiveness. Effectiveness points to short-term success, but superior sustained performance indicates an ability to achieve long-term survival. So, an organization that achieves sustained

performance superiority is presumably effective and able to survive in the long run, by staying fit; but an effective firm is not always a high performing one. To untangle this debate, we need to understand the different aspects of performance (Kaplan & Norton 1992), especially its relative and endogenous facets.

It needs to be remembered that performance of an organization can be seen both as an absolute concept and as a relative one (Hitt, 1988); this conceptual distinction makes a difference when measuring performance. When productivity is measured as a number, between two observations, the result is absolute - which may be deemed good or bad, but does not indicate how an organization is performing relative to industrial rivals under the current environmental conditions. This shortcoming denies researchers a better understanding and prevents administrators from benchmarking their practices and evaluating their productivity. On the other hand, when the rate of change in performance is calculated relative to other similar organizations, the result becomes performance rate or relative performance (March & Sutton 1997).

Accordingly, "using absolute growth, a large firm would be likely to realize greater growth, in terms of size, compared to a small firm (e.g., a firm with $2 billion in sales is more likely to increase sales by $100 million in a given time period than a firm with $200 million in sales). Conversely, using growth rates, a small firm would be likely to realize greater growth, in terms of percentage changes, compared to a large firm (e.g., a $100 million increase in sales represents 5% growth for the $2 billion firm, but 50% growth for the $200 million firm). Therefore, depending on the formula used to measure growth, organizational size would have a positive impact on absolute growth and a negative impact on growth rate" (Weinzimmer, *et al.* 1998, p. 240). Hence for small organizations, such as RTOs, relative performance seems to be more appropriate and a preferred lens.

This relative view is especially important when considering competition. It refers to the performance of the organization compared to, or relative to, its main competitors in an industry or

market (Achtenhagen, *et al.* 2010). This view has received much attention in the performance mapping and analysis literature, due to the idea that mapping drivers of performance concerns the competitive advantage of an organization (Hoque 2014). Furthermore, this comparison could be used to assess how executives perceive their industry and competitive landscape (Hoque 2014), and act to put their organizations ahead of the competition.

Another question pertinent to this view is whether factors that drive performance are endogenous or exogenous to the firm? The literature related to performance of the organization points to two theoretical perspectives about the impetus for performance: Exogenous and Endogenous. Exogenous performance is rooted in the neo-classical explanations of productivity and superior performance of an organization in economics and organizational ecology (Hannan, & Freeman, 1977). It assumes that performance is a function of factors that impinge from outside. These factors may include supply of land, changes in governmental rules and regulations (such as taxation or incentives), as well as salary and wage standards which may create opportunities for high performance, or limit performance of the firm (Romer, 1987).

These external economic factors can be divided into two groups. First, from the industrial organization theory (IO), attributes of the industry such as barriers to entry, bargaining power of customers and suppliers and numbers as well as concentration of firms have all been argued to determine growth of a firm (Porter, 1980). Second, from the organizational ecology view, characteristics of the environment such as resource munificence, complexity and uncertainty also impact the dynamism of performance in a population of firms (Hannan, & Freeman, 1977). Taken together, the exogenous view suggests that key drivers of performance are beyond the control of individuals in an organization; thus performance is exogenously controlled and ultimately limited by the environment. So, organizations are swept along by events in their external environment (Knockaert, *et al.* 2011).

On the contrary, the endogenous view suggests that performance is mainly driven by human actions inside the organization, through accumulation and utilization of knowledge (Bharadwaj, *et al.* 2005). This view gives prominence to the decisions or choices (i.e. actions) of executives and acquisition of knowledge in firms as core factors of growth (Bharadwaj, *et al.* 2005). Consequently, since knowledge is a limitless and non-depleting resource and in practice increases by use, the endogenous view implies that superior performance can be also limitless (Bharadwaj, *et al.* 2005).

So, unlike the former view, this view assumes that a managerial role is necessary and, indeed, superior sustainable performance is not a non-random phenomenon; it can be predicted, based on the abilities of executives or top managers of the organization (Hambrick & Mason, 1984). Accordingly, this school associates performance of the organization with strategic choice and discretion of key people in charge of the organization. Therefore, performance is not entirely constrained by environmental determinism, rather it can be contained within an action deterministic view of managerial behaviour. However, in reality both exogenous and endogenous factors impact the performance of an organization (Hambrick & Mason, 1984).

On one hand external factors, such as legal (i.e. regulatory) and socio-cultural aspects, may limit abilities of firms to acquire and use resources including knowledge; on the other hand, managers may create new values and generate new possibilities, for aping and directing the sources and drivers of superior performance. This is the conventional view in the contemporary literature on organization theory and, over the years, various performance management systems have been proposed to reduce complexity surrounding the concept of organizational performance.

2.3 The Paradox of Performance and the Need for Measurement Systems

Having reviewed different facets of performance, its definition and its importance in the organization theory, it seems logical to discuss the concept of performance management systems; this raises a key theoretical issue at the heart of firm performance known as the performance paradox. This

discussion lays the foundation of the key tenet of this thesis which is the need to develop a balanced scorecard as a strategic performance measurement system for RTOs.

This section of the literature review is structured as follows. First, an overview of the performance paradox is given. Then the arguments in favour of performance management systems, as ways to deal with performance the paradox, are considered. Next, the literature on key performance management systems and their evolution, with specific attention to the BSC as a universally applicable performance management system, is reviewed. This includes discussion of how it has evolved to become a strategic mapping and performance management tool for public and private firms across manufacturing and service sectors, including education.

2.3.1 The Performance Paradox

In light of the multifaceted nature of firm performance, Meyer and Gupta, (1994) pointed to a paradox, called the performance paradox, which posits that organizations are able to maintain control while not knowing exactly what performance is. This situation is based on several facts of performance, namely that the number and type of performance measurements are increasing at a rapid rate, and that these new metrics tend to be weakly correlated with old ones. As a result, many managers have emphasized the value of using different performance measurement systems based on either financial and operational measures of performance. However, according to Cohen (1998, p. 30), there is another paradox associated with the notion of firm performance. Cohen also calls this paradox, a performance paradox as well and argues that:

> *"Many management teams may know what they should do to improve their performance dramatically—not five or ten percent but twenty-five, fifty or one hundred percent. However, like many individuals who know they should stop smoking, see a physician, start exercising, or begin dieting, the management team ignores, avoids, delays or simply acts contrary to what they already know they should do".*

Supporting these views, Van Thiel, and Leeuw, (2002) add that, performance paradox would lead to some unintended consequences such as a ‘tunnel vision’ and ‘analysis paralysis’ , which could diversely reduce firm performance. These authors argue that a performance measurement system should therefore take the special characteristics of the different organizational settings, to develop systems that can handle contested and multiple performance indicators; in this way striking a balance in the degree of "measure pressure" and minimizing dysfunctional effects. As discussed below, performance measurement systems (PMS) serve this purpose.

2.4 Performance Measurement Systems

According to Neely, Gregory, and Platts, (1995), performance measurement is a topic which is often discussed but rarely defined. Literally it is the process of quantifying action, where measurement is the process of quantification and action leads to performance.

Performance measurement is an essential component of any organization. Kaplan and Norton (1992) define performance measurement as the process of quantifying an organization’s history, determining the organization’s current position within society, and creating strategies and overall vision for the future. Because of the important role that performance measurement plays within an organization, it is not surprising that accurate performance measurement is key for achieving managerial success and continuous improvement for an organization (Achterbergh, Beeres, & Vreiens, 2003; Andrews, 1996; Frigo, 2002). In fact, Eccless (1991) argued that organization and management science need a performance measurement and management manifesto, because all companies need to redefine how performance is measured to reflect changes taking place in the business world (Landy, et al. 2017). A performance measurement system is expected to perform this function (Bititci *et al.* 2018).

However, the importance of developing and applying an accurate performance measurement system to an organization is emphasised by the many performance measurement theories and

conceptual frameworks that have emerged (Fitzgerald, Johnston, Brignall, Silvestro, & Voss, 1991; Shenhar & Dvir, 1996; Sherman, 1984). This is of concern because these theories are somewhat inadequate, because they do not fully maximize an organization's success.

According to Neely *et al.* (1995), performance measurement is the process of quantifying action, where measurement is the process of quantification, and action correlates with performance. They further proposed that performance should be defined as the efficiency and effectiveness of action. From this, it can be inferred that a performance measure could be classed as a rubric, used to quantify the effectiveness or efficiency of an action; a performance measurement system is a set of metrics used to quantify the effectiveness or efficiency of an action or set of actions. Performance measurement is an activity that managers perform in order to reach predefined goals, which are derived from the firm's strategic objectives (Bititci *et al.* 2018; Bourne *et al.* 2018).

Management information which is fundamental for the controlling of organisational operations is usually derived from some function of performance measurement. According to Lohman et al. (2004), performance measurement creates focus, triggers corrective action, is the basis for evaluating performance and may help to challenge and improve strategic choices.

In the literature there is much attention paid to the art of updating performance measures once they have been implemented (van Fenema, & Keers, 2018); however, there is far less done on understanding how the process of developing a performance measurement system is impacted by existing measures, at various levels, both within and outside the operations function. That is why performance measurement and performance management are combined to create a unified control mechanism called the performance management and measurement system (PMMS) (van Fenema, & Keers, 2018). It is widely accepted by academics that performance measurement and management has evolved in two phases (Ghalayini & Noble, 1996).

The first phase started in the 1880s, whilst the second phase emerged in the late 1980s. The first phase was geared at helping managers in evaluating the relevant costs of operating their firms; hence it was highly biased towards cost accounting (Franco-Santos, & Otley, 2018). This approach was later modified to incorporate some financial measures, such as profit and return on investments. Nevertheless, even with these modifications much criticism was levelled at this approach. Many critics argued, probably with some justification, that focusing solely on financial measures when measuring performance encourages short-term thinking (Banks & Wheelwright, 1979; Hayes & Garvin, 1982; Kaplan, 1983). This argument was further reinforced on the grounds that traditional financially-based performance measurement systems failed to measure and integrate all the factors critical to business success (Kaplan, 1983,1984).

The second phase is associated with the growth of global business activities and changes brought about by such growth (Kaplan 2010). The final nail in the coffin, which precipitated the end of the first phase, was probably the publication of "Relevance Lost: The Rise and Fall of Management Accounting", by Johnson and Kaplan (1987). These authors contended that for the most part, traditional accounting and financial measurement systems were irrelevant because they ignored clients (customers and broader stakeholders) and their needs. The questions therefore that required to be answered were (Kaplan, 2010):

1. Who are our clients?
2. How is performance aligned with what they need?

In many large organisations and even small or medium sized ones, clients or customers are key stakeholders, usually with a big say in what direction a company normally takes (Kaplan, 2010; van Fenema, & Keers, 2018). Traditionally shareholders have a financial interest in companies, they expect a return on their investment, usually in the form of dividends. Hence many companies are

blinkered towards delivering on financial returns, at the expense of other stakeholders or qualitative variables, to satisfy the wishes of the key shareholders and maintain some form of financial stability.

Following Johnson and Kaplan (1987), Santori and Anderson (1987) , stress the importance of non-financial measures in motivating and monitoring the progress of the human factor of the organization, whilst also outlining the key attributes that need to be considered when developing measures of performance for an organization. On similar' grounds, McNair and Mosconi (1987) called for the development of better integrated performance measurement systems. Against this backdrop, the late 1980s saw some frameworks emerging which attempted to present a broader view of performance measurement, with an attempt to partially address balance (Cross & Lynch, 1988, 1989; Khadem, 1988).

Recent research (van Fenema, & Keers, 2018) seems to indicate that many traditional performance measurement systems in operation today tend to over-emphasize the need to reduce direct costs through low material costs, high capacity utilization, and high direct labour efficiency. Modem manufacturing systems and service operations, however, need to also have clear measures on quality, throughput times and flexibility, (Berhner & Brimson, 1988; Fitzgerald & Moon, 1996; Hall & Johnson, 1990; Kaplan, 1992; Masked, 1991).

It is evident that the measurement of performance and productivity has garnered significant interest recently among both academics and practitioners. Much progress has been made in developing integrated performance measurement systems, which aim to balance the more traditional single-minded focus on profitability with other important elements of a business; however, some of these are difficult to quantify, for example customer service, quality improvements, and employee morale. Bitichi (1994) suggest that a major objective of such performance measurement and management systems is to encourage proactive rather than reactive management.

More recent work on PMMs (Tangen 2003; van Fenema, & Keers, 2018; Franco-Santos, & Otley, 2018), and review of the empirical findings in the field, shows that despite the remarkable progress made over the years in performance measurement, many companies are still primarily relying on traditional financial measures like ROI and ROA. This suggests that many performance measurement problems have yet to be addressed. For example, the traditional measure of profitability is clearly flawed, since many business strategies, tactics and actions in complex environments are aimed at capturing long-term opportunities; this inevitably involves sacrificing current profits for longer-term gains (Ross *et al.,* 1993), which are considered or approved when evaluated against financial performance measures in traditional performance management systems such as financial planning and control budgeting (Franco-Santos, & Otley, 2018).

Arguably, the relationship between performance measurement and managerial behaviour is not studied much; however, there is now growing interest in this area, probably due to the promotion of fairness in work organizations (Lau & Sholihin, 2005). These researchers have also investigated the area of interpersonal trust.

Trust is deemed an important feature of the performance evaluation process, because increased interpersonal trust between subordinates and the managers is deemed likely to improve communication and openness among organizational members. Research undertaken by other scholars appears to support this view (Read, 1962; Hopwood, 1972; Otley, 1978; Ross, 1994, and Lau & Buckland, 2001).

Similarly, as far back as the 1970s, there was evidence to suggest that relationships between performance measurements and employee behaviours are complex and possibly indirect through intervening variables. For instance, Hopwood (1972), found that it was how measures were used that affected behaviour. Otley (1978) similarly found that it was the extent to which employees agreed or disagreed with the performance measure that affected their behaviour. Both Hopwood (1972) and

Otley (1978) found that evaluative styles and the type of performance measure used not only affected attitudes, such as satisfaction, but could also affect employees' interpersonal trust and the justness of the evaluation. These results suggest that the effects of performance evaluation measures on employees' behaviour may be indirect, through the employees' perception of fairness of the performance measure used, and the extent of interpersonal trust such measures promote. These points suggest that, PMMs need to take employees' needs, wants and development into account.

Furthermore, recent research in the legal, political, organisational and accounting fields seems to support Hopwood and Otley's earlier findings (Alexander & Ruderman, 1987; MacFarlin & Sweeney, 1992; Lindquist, 1995). It is argued that if managers can apply rules without personal bias, then employees will have a positive perception of the procedural justice which, in turn, may lead to higher satisfaction, commitment and involvement (Tang, Sarfield- & Baldwin, 1996).

The reverse is also true. The work of Hopwood (1972) suggested that the performance evaluation process viewed by its employees as unjust would be a source of conflict, tension and anxiety. Kaplan and Atkinson (1998) noted that there are important behavioural considerations that the performance measurement system must reflect; however, the most important thing is that the individual must believe the system is fair and equitable, in order for it to be effective.

In summary, PMMs have evolved into a set of complex interrelated metrics that combine behavioural and financial aspects of firm performance, in order to create a more accurate model for achieving goals.

2.5 Methods of Performance Measurement

According to Behn (2003) managers usually have eight purposes for the adoption of a performance measurement and management system. These eight purposes can be studied to inform setting the right performance measures for an organization and include:

1. Evaluate – focuses on outcomes
2. Control – doing the right thing
3. Budget – measure of efficiency and spending
4. Motivate – doing things to improve performance
5. Promote – doing a good job
6. Celebrate – recognizes accomplishments of performance measures
7. Learn – detect the unexpected, anticipate a variety of events or behaviours
8. Improve – identify what to do differently

Selecting the right performance measures should be completed in a systematic way. Different design choices in the controls used to manage performance often lead to a range of unintended consequences, which have profound effects on individuals and organizations (Franco-Santos, & Otley, 2018). The measures should not be selected based on a list of existing measures, or data that is already collected or can be easily collected. It is possible that new data collection processes are needed to inform the desired performance measures. The following three-step process is suggested by Coffey (2005):

1. identify the critical success factors (based on objectives),
2. develop a potential list of measures and after analysis,
3. select measures from the potential list.

In the third step, the goal of the analysis is to identify and select the measures that primarily influence the objective or outcome. A constant and consistent theme of the literature is the need to focus on a small, select set of performance measures (Kaplan 2010). The goal is not to end up with a long list of measures. Lawson, Hatch and Desroches (2008) recommend starting with fewer measures to keep the system simple and understandable. Additional measures can then be easily added with time and experience. The key is to pick performance measures that are meaningful and manageable.

Since the focus of this study is on registered training organizations (RTOs), we continue with an emphasis on PMMS in educational institutions.

2.6 Performance Measurement of Educational Institutions

2.6.1 What is an RTO?

Vocational education and training (VET) institutes are a fundamental driver of a skilled Australian workforce. VET includes courses which lead to formal qualifications in a wide range of trade and professional fields, as well as course components aimed at developing or refining specific work-related skills or workplace practices. Most VET courses which lead to a formal qualification are delivered at the Certificate I-IV or Diploma/Advanced diploma levels.

Public training providers - are any government training organizations, including technical and further education (TAFE) colleges and institutes, universities, agricultural colleges, and government departments.

Private training providers - can be defined as any non-government organizations that deliver VET programs. It includes both training providers that are registered and non- Registered training providers (RTOs) (Ey, 2018; Korbel & Osborne, 2019).

A registered training organisation (RTO), in Australia, is an organization providing Vocational Education and Training (VET) to students, resulting in qualifications or statements of attainment that are recognized and accepted by industry and other educational institutions throughout Australia. RTOs provide Education and training which aims to equip people with knowledge, know-how, skills and/or competences required occupations or more broadly in the labour market.

There are almost 5000 RTOs in Australia, providing training across a wide range of subject areas including traditional trades, advanced technical training, para-professional and professional studies, as well as pre-employment and basic skills programs. Technical education, as vocational

education and training was originally called in Australia, was among the first forms of education established in European settlements. An apprenticeship system, modelled on the British system, was introduced in the early 1800s. By the 1870s all Australian colonies had established technical education institutions to train people for broad occupations, as defined by the relevant industries. These technical institutions served both young and older workers. They were the main means of post-primary education: at the time of Federation in 1901, there were only three state high schools in Australia, all in New South Wales, compared with over 30 technical colleges in that state alone (Pickersgill, 2007).

2.6.2 What is known about performance of RTOs

Very little research has been done on the performance of vocational training institutions. As discussed in chapter one, this gap is a primary motivation of this research. The main stream of research on the performance of RTOs or in case of European institutions, vocational training institutions (VTIs) is about the competence of learners. Heijke, Meng, and Ris, (2003) argue that proving leaners with vocational competence should be the primary performance indicator of VITs. Similarly Hager, (2004) states that competence in full alignment with job market is the foundation of performance in vocational education and training. More recently, Brockmann, Clarke, and Winch, (2008) argue that variations in the level of skills and competency developed by different VITs in the key source of divergence in performance of VITs.

In summary, prior research has solely focused on the competence of learners as the primary indicator of performance of RTOs (VITs). This emphasizes lack of more comprehensive and balanced approach to assess performance of RTOS and its underlying indicators. Balanced scorecard offers such a capability (Niven, 2008).

2.7 From Performance Measurement Systems to the Balanced Scorecard Theory

As previously noted, performance of an organization is the most important indicator of its survival, competitiveness and growth (March & Sutton, 1997). BSC is a universal theoretical

framework for mapping and measuring performance of any type of organization (Niven, 2008). The framework is based on the theory of organizational effectiveness, which advocates multidimensionality of performance and highlights a more complete approach performance, compared to the traditional efficiency-oriented one (Cameron, 1981; Mendelow, 1983).

According to BSC (Kaplan & Norton, 1992, 1993), the overall performance of any organization is the function of an alignment among four dimensions of its operation. These include: 1) customers or clients' perspectives and satisfaction, 2) financial measures such as ROI, 3) interval capacity building and development and 4) learning with innovation. These four must be systematically linked to enable an organization to survive, grow and compete effectively.

The point here is that even though BSC is a universal framework, it must be adapted for each type of organization to become a useful theoretical framework for mapping and measuring different aspects of performance. Norreklit (2000, p. 1044) states that BSC is superior to other performance models in that "it is more than an ad hoc collection of financial and non-financial measures. It contains outcome measures and the performance drivers of outcomes, linked together in cause-and-effect relationships, and thus aims to be a feed-forward control system."

2.8 Balanced Scorecard Theory

2.8.1 What is Balanced Scorecard?

Balanced scorecard (BSC) (Kaplan & Norton, 1992; Ruben, 1999; Zolfani & Ghadikolaei, 2013) is a widely used management strategy of managers, to assess different aspects of performance that are aligned with the organization's goals to achieve performance excellence. More specifically, Kaplan and Norton (1995, p.10), explain, "The Balanced Scorecard should translate a business unit's mission and strategy into tangible objectives and measures. The measures represent a balance between external measures for shareholders and customers, and internal measure of critical business process, innovation and learning and growth. The measures are balance between outcomes measures the results

of past efforts and the measures –that drive future performance. and the scorecard is balanced between objective, easily quantified outcome measures and subjective, somewhat judgmental, performance….". The BSC framework is based on the theory of organizational effectiveness, which advocates multidimensionality of performance and highlights a more complete approach performance compared to the traditional competence-based one (Cameron, 1981; Mendelow, 1983).

According to Kaplan and Norton (1995, p 19), organizations that adopt BSC approach are able to use the following: a) clarity and gaining consensus in terms of vision and strategic direction; b) communicating strategic objectives and measures all through the organization; c) planning, setting targets and aligning the strategic initiatives; d) conducting periodic and methodical strategic reviews; e) obtaining feedback to learn and improve strategy. Kaplan and Norton (1992, p. 72) concluded that four basic questions provide all the information an organization requires for managing its organization.

Answers to the four basic questions are beneficial to the organization as follows: "How do customers see us"? This question requires organizations to articulate their goals towards customer satisfaction. Usually, these goals deal with issues such as time, quality performance and service. Once the goals are finalized, they must be translated into definite measures; for example, issuing surveys to an organization's customers to determine the level of performance they perceive. Question 2 asks, "What must we excel at?" This question gives the opportunity to focus on their internal process(es) that is having the greatest impact on customer satisfaction. For example, internal process(es) they could focus on include: cycle time, quality, employee skills, and productivity. Question 3 asks, "Can we continue to improve and create value?" (Kaplan & Norton, 1992). This question scrutinises the organization's ability to be innovative. It also focuses on the organization's ability to improve and learn. For example, the relevant measures are the continuing review of processes, and how employees in the organizations feel about such processes.

Question four asks, "How do we look to shareholders?" This fourth question examines whether the organization's implementation and execution of strategy are supporting the bottom line. This is where the measure of financial issues is found in the Balanced Scorecard, in the form of profit and loss statements (Kaplan & Norton, 1992).

Kaplan and Norton (1996. p. 83) viewed the BSC as a strategy that "influences managers to concentrate on improving or reengineering the processes most critical to the organisation's strategic success". BSC, currently utilized in many industries including education, healthcare, business and non-profit organizations, can also be used to reengineer the organization's process to determine strategic success. Aligning the management process within an organization, the authors viewed this strategy as supporting the organization to apply a long-term strategy and vision. They also considered that BSC does not replace traditional financial measures, rather it is a strategy that complements the financial measures an organization in currently using. BSC means different things to different organization and serves different roles (Kaplan & Norton, 1996, 2007; Rohm, 2008).

Zelman, Rink, and Matthias (2003) acknowledge that, within the healthcare industry, they faced some unique challenges in adapting and tailoring BSC. Those challenges included: medical staff dealings and quality of care; as well as physicians' professional autonomy within the hospital setting. However, they were able to overcome such challenges though personalization. It is equally important to modify and customize BSC for the organization's exclusive needs, in non-profit organizations. According to Kaplan (2001, p. 354), performance management is crucial in non-profit organizations, specifically citing the scarcity of funding, the terms of donor, foundations, and government support. This author further stated that although "The initial focus and application of Balanced Scorecard was in the for-profit [private] sector, the opportunity for the scorecard to improve the management of non-profits should be even greater".

At the beginning of its development, the BSC chose a very simple way: Balanced Scored was initially described as a simple "4box" approach to performance measurement (Kaplan & Norton, 1992). Goals and limited measures are only components of each perspective. In the early 1990s, BSC was proposed as a framework to provide structure for related sets of organization performance measures (Kaplan & Norton, 1996). Based on this basic feature, BSC design has evolved through three distinct generations.

In the first generation, the four perspectives are related with simple "causality" but not used for specific purpose. Kaplan and Norton's original version of BSC has no specific observations concerning how the Balanced Scorecard might improve the performance of organizations. Therefore, the market had some practical experience problems which focused primarily on the architecture of the BSC design (Butler, Letza & Leale, 1997) less link with the organisation's experiences (AHN, 2001) and often more partisan (Lingle & Schiemam, 1996). Most companies just saw the BSC as a famous and fashionable measurement tool, so they just copied it from other companies without assessing it it suited their own experience.

The move to the second generation involved two significant areas: filtering (the process of choosing specific measure to report), and clustering (deciding how to group measures into 'perspectives). Another significant development compared with the first generation was the causality. Only simple casualty was developed in the first generation, just among the perspectives; but the second generation BSC attempts to establish linkages between the measures themselves. When the measures have the linkages, then the causality becomes richer than before. The consequences of this change emphasised on the organization's strategy goals. Another key consequence was that it increased strategic alignment between management units (Olve *et. al,* 1999).

Although the 2nd generation model is more advanced, it still has some problems that are hard to deal in some real companies. The collective vision and strategic goals are different; some cases

show that the vision and plans are often either poorly defined, lacking continuity or something that the management team didn't fully agree on. Thus, the management team thinks that it is necessary to select priority elements within their collective vision and strategic goals, which is difficult. Then the problem of priority objective selection arises. This strategic linkage model has proven less helpful when used for complex strategies of large companies (Cobbold & Lawrie, 2002).

Faced with these real problems, the third generation BSC arose. The 3rd generation Balanced Scorecard model is a refinement of 2nd generation design characteristics and mechanisms, to give better functionality and more strategic relevance. Key components of the 3rd generation of BSC include a destination statement; this means that at the end of the process they will check the objectives, measures and targets chosen. This destination statement includes an estimate of the consequences of implementing the strategic objectives previously selected for the strategic linkage model. Based on this destination statement, the manager can check how many key things have been achieved. With the development of the company, they will have more and more measures and multiple Balanced Scorecards. The value of the destination statement will help the company toward the same strategic goals and achievement of strategic alignment. According to Guidoum (2000, p. 15):

> *"The creation of a destination statement describing what the organisation is likely to look like at an agreed future date ensures that a shared view of the strategic plan and its intended consequences is agreed prior to making decisions about the organisational activity and setting targets for those activities."*

2.8.2 Origin and Evolution of Balanced Scorecard Theory

The Balanced Scorecard is a performance measurement and management system tool that has gained exemplary popularity since its introduction. The American Balanced Scorecard is derived from the French Tableau de Bord, which was developed as a dashboard of performance measures in the 1950's (Pezet, 2009; Sharma, 2009). The French Tableau de Bord is generally considered a

supplement to accounting and business measurements, that gathers data in the form of quantitative and qualitative data as well as financial data (Pezet, 2009). The Tableau de Bord combines seeing with doing, allowing the manager in a far distant place to see the results and make decisions based on these results (Daum, 2005).

The Tableau de Bord traditionally contained physical measures, mainly concerning production statistics such as output and consumption (Bourguignon *et al*.,2004; Pezet, 2009). This French management method is adapted and modified by departments, where each department in an organization has its own separate Tableau de Bord (Daum, 2005). The Tableau de Bord is a tool for the top management of the firm to obtain a global and quick view of its operations, and of the state of its environment (Bourguignon *et al.,* 2004). Each department manager is responsible for the choice the definition of his or her own performance objectives; whereas the American management system creates one Balanced Scorecard around the four categories of financial, customer related, internal business processes, and organizational learning and growth activities (Kaplan & Wisner, 2009; Sharma, 2009). The Balanced Scorecard is based on assumptions about openness, clarity, and hierarchy which are not assumed in the Tableau de Bord (Likierman, 2006). The Tableau de Bord is used by top management to obtain a quick overview of operations, compare the operational results to the goals that have been set, and take corrective action if needed (Bourguignon *et al.,* 2004; Epstein & Manzoni, 1997).

There is no dependence on hierarchy and greater ambiguity in relationships, which allows managers to operate with fewer formal rules and greater autonomy (Likierman, 2006). There is another major difference between the Balanced Scorecard and the Tableau de Bord. The Balanced Scorecard consists of one document designed to take the entire organization, whereas an organization's overall Tableau de Bord consists of a series of documents made up of one Tableau de Bord from each

subunit (Epstein & Manzoni, 1997). The evolution of BSC, discussed above, is summarized in Figure 2-1 below.

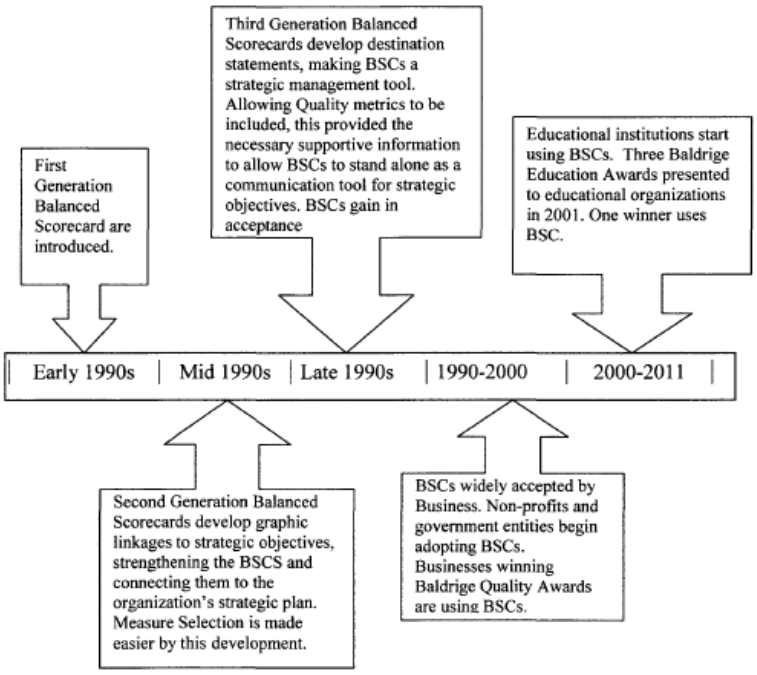

Figure 2-1: Evolution of BSC (Adopted form the website of The Balanced Scorecard Institute, www.balancedcroecard.org accessed on 21 March 2018)

2.8.3 History of BSC

In 1990, the Nolan Norton Institute, the research arm of KPMG, sponsored a one-year multi-company study on the future of performance measurement. David Norton, CEO of Nolan Norton, was the study leader and Robert Kaplan served as an academic consultant. The dozen companies that formed the original study group believed that the exclusive reliance on financial performance metrics alone was causing their companies to do the wrong things.

The study explored new methods of performance measurement. Kaplan, Norton and company representatives met, bimonthly throughout 1990, to develop a new performance measurement model. They began by analysing case studies involving innovative performance measurement systems. The ideas investigated included: shareholder value, productivity and quality measurements, new

compensation plans and a "Corporate Scorecard" that was presented in an Analog Devices case study (Kaplan & Norton, 1996). The group settled on the scorecard as the most promising system - and began to refine the concept into the Balanced Scorecard. It was made up of four perspectives - financial, customer, internal, and innovation and learning. The performance measurement Scorecard struck a balance between leading and lagging indicators, short- and long-term objectives, and between external and internal performance perspectives.

Several companies-built prototype Balanced Scorecards at pilot sites in their organizations and reported their findings back to the group. In December of 1990 at the conclusion of the study, the group documented the feasibility of the new performance measurement system. Kaplan and Norton went on to summarize the results in their 1992 Harvard Business Review (HBR) article.

This article generated a considerable amount of excitement and a new generation of performance measurement was born. The Balanced Scorecard has been so enthusiastically received and effectively used that, in 1997, the Harvard Business Review labelled it one of the 75 most influential ideas of the twentieth century (Niven, 2002). Following the proposal of the BSC in the first article, the concept was revised and improved by Kaplan and Norton as they obtained more experience with it. The evolution, from strictly a performance measurement tool to a strategic performance management system, can be followed through their next three HBR articles and their first book on the subject. The graduation to a strategic performance management system, was facilitated by the placement of strategy at the heart of the performance measurement process.

The enthusiastic embrace that the first BSC article received led to several organizations becoming early-adopters of the Balanced Scorecard and the concept was further refined. The new measurement system was used to communicate and change organizational strategies away from the historic, short-term financial focus to a value-added, customer intensive strategy. The first connection between performance metrics and strategy was forged in this phase. Kaplan and Norton's (1993)

second article, stressed the importance of this connection and the move to a strategic performance management system continued with Kaplan and Norton's (1996) third article,

Further work with senior executives of several organizations led to experiences with the BSC, that demonstrated that metrics spread across the four perspectives could effectively drive a single strategy. The researchers and practitioners believed attention to all perspectives would lead to improved future financial performance.

The Scorecard began to be used as a central framework for core managerial processes, such as resource allocation, budgeting and planning, goal setting and employee learning. The use of BSC in these processes clearly indicates the evolution of the Scorecard away from a simple performance measurement tool. The use of the Balanced Scorecard, as a strategic performance measurement system, was summarized in Kaplan and Norton's book in 1996. This book sold over 250,000 copies and was translated into 12 languages (The Strategy-Focused Organisation. 2002); it summarized the learning achieved on the concept to date and included instructions on how it should be implemented.

The BSC continued to gain prominence in organizations around the world. Richard E Cavanaugh, President of The Conference Board and co-author of *The Winning Performance* applauded the book (Kaplan & Norton, 1996), "Kaplan and Norton's pioneering Balanced Scorecard is required reading for those who seek to measure and manage successful business strategy'. A landmark in the art of management. " It was in this book that the BSC creators elaborated on their popular jet cockpit instrument gauge metaphor - running an organization with only financial metrics alone is like flying an airplane with only one instrument. During the industrial age, companies competed through economies of scale and product scope. Those that were successful, effectively used technology to transform physical assets into products. However, today is the information age and companies can no longer expect to be successful solely by being able to use technology effectively or by skilfully managing financial assets and liabilities.

To be successful in the information age, organizations are required to be able to exploit their intangible assets even more than their physical assets. Customer loyalty and relationships, niche marketing ability, innovative and customized products and services, efficient operating processes, motivated and skilful employees, customized databases and information technology are all examples of these intangible assets. Kaplan and Norton contend that traditional financial performance measurements are not adequate to evaluate today's companies. These intangible assets are more critical to success than traditional physical and tangible assets and, as such, Kaplan and Norton offer the Balanced Scorecard as a means to ensure success. Financial measures are lagging indicators that provide information on past performance and give little insight into long-term success. These measures are not adequate guides for information age companies that create future value through unique customer relationships and efficient internal processes; through the learning and growth of the organization The Balanced Scorecard combines financial measures of past performance with drivers of future performance.

Leading indicators provide necessary information concerning the organization's current performance on key aspects that are likely to drive future performance. For instance, if product quality is a key indicator of sales and revenue, then ensuring continuous improvement in product quality is likely to drive sales and performance. Only with a balanced set of measures encompassing financial, customer, internal and learning and growth perspectives, like the entire set of gauges in a cockpit, can management properly lead an information age company. Kaplan and Norton describe how choosing the correct metrics, that are tied to an organization's strategy can lead to the effective use of the BSC as a strategic performance measurement system.

In 2000, Kaplan and Norton wrote their fourth HBR article, which specifically chronicled how strategy can be explicitly linked to the perspectives of the Balanced Scorecard. During their studies of the early adopter Balanced Scorecard companies, Kaplan and Norton realized that the Balanced

Scorecard was much more than a stand-alone performance measurement tool. It was a complete framework for implementing and executing strategy.

In order to effectively implement strategy throughout an organization, the process must be dissected down to the set of performance metrics that drive performance. These drivers of performance are the metrics that make up the BSC from each of the customer, internal and learning and growth perspectives. In order to determine which metrics ultimately drive strategy, a series of cause-and-effect relationships must first be developed from strategic objectives

The illustration of all these relationships and linkages are what Kaplan and Norton call Strategy Maps. In their article, Kaplan and Norton walk the reader through a case study, of Mobil North American Marketing and Refining, that explains how their cause-and-effect relationships developed into their strategy map. Targeting consumers who were willing to pay price premiums for gas if the stations were fast, friendly and had outstanding convenience stores was a large part of their strategy This strategic objective was broken down into a series of performance metrics, from the financial perspective through to the learning and growth perspective, all of which had a cause-and-effect relationship with one another. It was postulated that successful achievement of the strategic objective would be driven by the achievement of the financial metrics which would, in turn, be driven by the achievement of the customer performance measures, internal process performance metrics as well as the learning and growth measures.

The development of the Balanced Scorecard and its evolution from a stand-alone performance measurement tool to a strategic performance management system (SPMS) has now created a strategic version of traditional performance management and measurement systems.

Kaplan and Norton's second book in 2001 discussed the final stage in the BSC evolution - the move to an all-encompassing strategic management and control system. After almost ten years since its unveiling, Kaplan and Norton had studied and researched more than 200 companies that had

implemented the Balanced Scorecard and the authors summarized their findings in their BSC sequel. The Balanced Scorecard has been successfully adopted in all types of organizations including both large and small manufacturing and service, public and private, growth and mature, and profit and non-profit organizations.

This has spurred a significant cottage industry devoted to development of Scorecards and Kaplan and Norton contend that successful execution of strategy is a rarity in today's organizations. An early 1980's survey of management consultants reported that over 90% of effectively formulated strategies were poorly executed (Kiechel, 1982). A 1999 Fortune article concluded that even with good strategies, an estimated 70% of companies fail due to bad execution (Charan & Colvin, 1999).

Kaplan and Norton (2001) report that 70-90% of strategies fail, not because they are poor strategies, but because they were poorly executed. In their analysis of the early adopters of BSC, they realized these companies were using the card to align their business and service units, teams and individuals around strategic goals. These goals were more effective at implementing new strategies and achieved positive returns within one to two years. In other words, these pioneering companies were using the Balanced Scorecard as the focal point for all key management processes, from planning and budgeting to reporting and resource allocation.

The authors admit that what began as a theory, that exclusive reliance on financial measures in a management system was not a proper guidance system, had turned into something much more While the Balanced Scorecard is still a performance measurement system, they concluded that the measurement system had to not only include the correct type of metrics, but also had to be used to measure the right things. The right things, they contend, are measures that are derived from the organization's vision and strategy. The BSC is not simply a performance measurement tool but a guiding influence on managing strategy.

The selected measures on the BSC are used by organizational leaders to communicate information about the performance drivers that will enable the organization to achieve its strategic goals. The organization's strategy can easily be understood by looking at the measures used on the Scorecard as well as the cause-and-effect linkages that tie those measures back to the strategy.

Figure 2-2 is an illustration of the four perspectives and how cause-and-effect linkages can be created to align the organization to strategy. In this way, the drivers of strategic performance can be identified and focused on by the organization. The original BSC perspective framework depicted vision and strategy in the middle of the four perspectives. This situation highlights the importance Kaplan and Norton place on the links and relationships between the individual metrics and individual perspectives. These authors insist that all measures on the Scorecard should have a strong cause-and-effect relationship that clearly defines the organizational strategy. In the customer perspective, the chosen measures should define the offering by explaining who the target customers are and what the value proposition is in serving them. For example, is the organization competing based on product attributes (quality or price), innovation (technical leadership) or customer relationship (customized service)? The customer proposition should become obvious by the perspective metrics being used. Some of these metrics include: customer satisfaction, customer loyalty, market share, customer acquisition rates, and annual sales per customer.

Each customer value proposition will require the efficient operation of different internal processes. The internal process perspective should include measures that track the progress of processes that are essential to achieving strategic objectives. In many cases, measures here will be lead indicators for the customer perspective measures. By focusing on internal measures based on strategy, instead of minor improvements in existing activities, entirely new processes might be identified and measured. Supply chain measurements, product development, manufacturing efficiencies or product delivery measurements could all be performance drivers in this perspective.

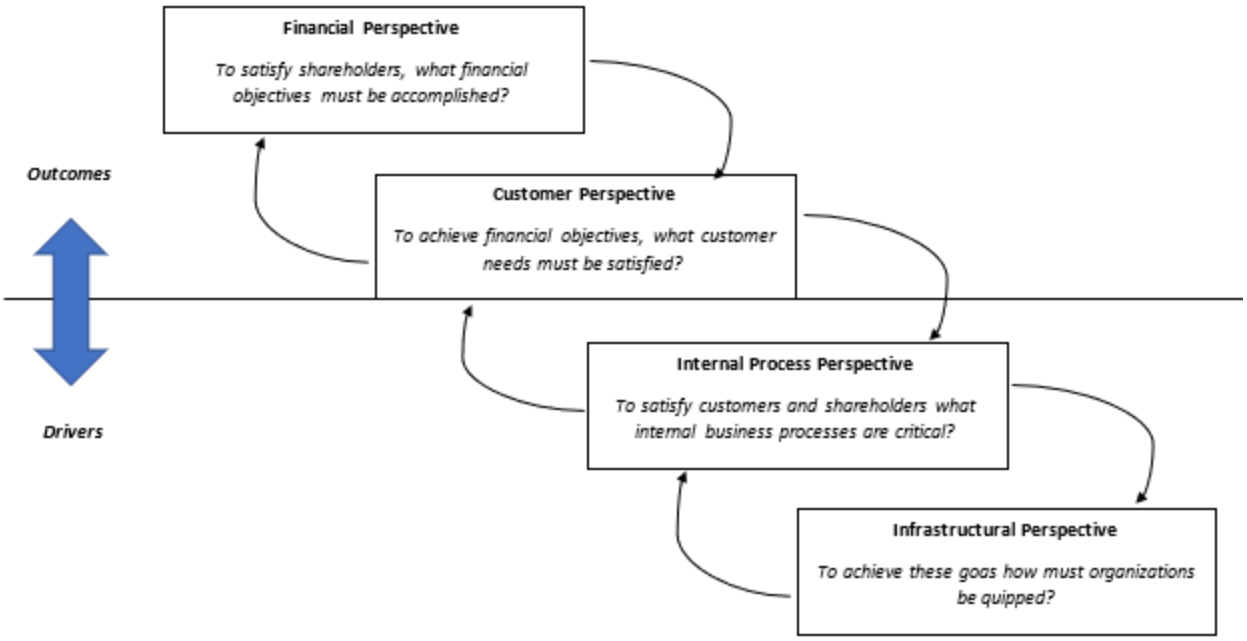

Figure 2-2: Cause and effect relationships in strategy according to BSC

The 'learning and growth perspective' is the foundation of employee skills and information systems that drive improvements and successes in the other perspectives. Measures in this perspective are often the most difficult to develop as they encompass an area that is perhaps the most intangible - intellectual ability, and it has often been ignored or left to the Human Resources department to manage. Kaplan and Norton (1996) suggest that learning and growth are just as important, or perhaps more important, for strategic success than the other perspectives. Learning and growth performance measurements can include training hours, leadership development, employee satisfaction, lost time to accidents and employee productivity.

Financial measures are an integral part of the Balanced Scorecard. The metrics chosen for this perspective are typically lagging indicators that report on past performance, and it is acknowledged that some indication of past performance is necessary to help guide the future execution of strategy. The measures in this perspective are the counterweight to the non-financial performance drivers', including traditional financial measures linked to the organization's strategy. Net income, revenue,

return on net assets, return on equity, share price and cash flow are all examples of these financial measures. The Balanced Scorecard, through its use of balanced performance measurements and cause-and-effect linkages to strategy, is used as a strategic management system. The Scorecard, through the process of its development and implementation, effectively ensures a shared understanding of the organization's strategy; it does this by breaking the high-level vision and mission into objectives, measures, targets and initiatives in each of the four perspectives that are actionable by all employees in the organization.

The BSC is cascaded through the organization until each employee has implicit knowledge of how his/her performance affects the individual Scorecard measures. This ultimately can drive the achievement of strategic objectives, and assuming the strategy was chosen well, organizational success. Kaplan and Norton called it a strategic mapping tool and proposed a schematic way to codify it (Figure 2-3).

Figure 2-3: From BSC to strategy map

2.8.4 From the First to the Third Generation of BSC

As previously noted, BSC provides a framework for a company to pinpoint its strategic objectives and measure performance by way of four perspectives (Aydin, Tiizunturk & Eryilmaz,

2008; Tuan, 2010). However, the way it aligns and links them has evolved through three generations of BSC.

Lawrie, and Cobbold (2004) were among the first scholars (aside from Kaplan and Norton) to discuss the evolution of BSC. According to them in the first edition, the challenge was ambiguity of measures and allocations to a key strategic pillar. "From the outset it was clear that the methods used to select measures to be included in the balanced scorecard would be critical to its subsequent success, both in terms of filtering (organisations typically had access to many more measures than were needed to populate the balanced scorecard) and clustering (deciding which measures should appear in which perspectives)." (Lawrie & Cobbold 2004, p.613).

The practical difficulties associated with the design of first-generation BSCs are significant, in part, because the definition of a balanced scorecard was initially vague. But the difficulties also stemmed from the issues raised by the design questions posed by first-generation balanced scorecard – in particular, the need to filter (i.e. choose a few specific measures to report), and cluster (i.e. decide how to group measures into "perspectives").

In addition to the conceptual ambiguity, causal ambiguity was also a major drawback in this first generation of BSC. Early attempts to define causality were weak and, in the period between 1992 and 1996, work focused on finding ways to show causality between measures (e.g. Newing, 1995). Measure-based linkages provided a richer model of causality than before, but presented conceptual problems; for example, encouraging the use of various forms of analysis, to validate measure selection based on numerical correlations between measures (e.g. Brewer, 2002; Clinton *et al.*, 2002). Such methods may be efficient at selecting measures, but are difficult to integrate with the need for the balanced scorecard design to reflect the consensus views of the potential users of the device as a key characteristic of any PMMS.

Lawrie and Cobbold (2004), further add that, the third-generation BSC model is based on a refinement of second-generation design, with new features intended to give better functionality and more strategic relevance. The origin of the developments stem from the issues relating to the validation of strategic objective selection and target setting. These triggered the development, in the late 1990s, of a further design element – the "destination statement". Destination statements were initially created towards the end of the design process, by challenging managers involved to imagine the impact on the organization of the achievement of the strategic objectives chosen earlier in the design process. This integrative process helped identify inconsistencies in the profile of objectives, and the final document was found to be useful in validating the targets chosen for some measures.

At a practical level, research on firms that had adopted this change showed that management teams were able to discuss, create, and relate to the "destination statement" easily and without reference to the selected objectives. Consequently, the design process was "reversed", with the creation of the "destination statement" being the first design activity, rather than a final one (Lawrie & Cobbold 2004). This innovation led to the formation of what is known as the third generation of BSC. This model has specifically gained popularity in the public sector and educational organizations, where design complexities make path-goal actions imperative for the success of the organization and satisfaction of all stakeholders (Farag et al. 2017). Finally, recent research (e.g. Mehralian *et al.* 2017; Soysa et al. 2017) suggests that the primary enhancements of the third generation of BSC over the previous generation are:

1. It has a clear destination statement. A description, ideally including quantitative detail, of what the organisation (or part of organisation managed by the balanced scorecard users) is likely to look like at an agreed future date. Typically, the destination statement is sub-divided into descriptive categories that serve a similar purpose (but may have

different labels) to the “perspectives” in first- and second-generation balanced scorecards.

2. It contains a causal strategic linkage model with “activity” and “outcome” perspectives. A simplification of a second-generation balanced scorecard strategic linkage model – with a single “outcome” perspective replacing the financial and customer perspectives, and a single “activity” perspective replacing the learning and growth and internal business process perspectives.

2.8.5 Implementation of Balanced Scorecard

Implementation of BSC is a daunting challenge for at least two reasons. First, many organizations have adopted primarily financial goals and traditional PMMSs, which are not compatible with BSC and have to undergo structural and managerial change to BSC. Second, BSC is a complex system of causal organization-wide linkages which are difficult to implement even in small organizations with relatively simple structures (Akkermans, & Van Oorschot 2018; Soysa *et al.* 2017). Sharma (2009) discusses nine steps that are required for the successful implementation of the Balanced Scorecard. These steps are:

1. Assessment of the organization's mission and vision challenges and values.
2. Elements of the organization's strategy, including strategic results, strategic themes and perspectives, are developed to focus attention on customer needs and the organization's value proposition.
3. The strategic elements developed in steps one and two are converted into strategic objectives.
4. The cause and effect linkages between the enterprise-wide strategic objectives are formalized in an enterprise-wide strategy map.
5. Performance measures are developed for each of the enterprise-wide strategic objectives.

6. Strategic initiatives are developed that support the strategic objectives.
7. The implementation process begins by applying performance measurement software to get the right performance information to the right people at the right time.
8. The enterprise-level scorecard is cascaded down into business and support unit scorecards, meaning the organizational level scorecard (the first tier) is translated into business unit or support unit scorecards (the second tier) and then later to team and individual scorecards (the third tier).
9. An evaluation of the completed scorecard is done by senior managers

It should be emphasized that, implementing the Balanced Scorecard can prove to be disastrous if an organization does not understand how this management tool can work within it (Chandrasekhar, Anand, Pradhan, & Crisnna, 2011; Akkermans, & Van Oorschot 2018). Issues can arise from implementing the BSC without the correct tools. Despite using the Scorecard to link its vision and strategy with individual performance, the company studied by Chandrasekhar *et al.* (2011) did not have adequate buy-in from employees; nor did the company do adequate groundwork before implementing and using the Balanced Scorecard.

By aligning the strategy and vision to the Balanced Scorecard, the organization can focus on the most important items that are necessary to achieve its vision and satisfy customers, stakeholders, and employees - thus adding value to the organization (Sharma, 2009). Involvement by managers is also important in BSC implementation, because individuals who are involved in development and implementation of the Balanced Scorecard have a greater chance of successfully implementing it than others (Tayler, 2010).

There are also problems associated with strategy implementation. Major unidentified problems can surface that had not been anticipated. Time is also a major consideration, because organizations often underestimate the time needed for strategy implementation (Atkinson, 2006).

Uncontrollable factors can also arise in the external environment that have adverse impacts on BSC implementation. Identifying a clear fit between the strategy of an organization and how the Balanced Scorecard can mitigate problems is important for implementation (Atkinson, 2006).

As a result of these challenges, Kaplan and Wisner (2009) investigated whether a new component of Balanced Scorecard categories should be implemented in an organization, when the aspect does not fit the four traditional categories already provided in the BSC model. This new component involved enhancing management communications about specific objectives, which is aligned with a more direct and salient role of managers in BSC as prescribed in the third generation of the tool.

According to Kaplan and Wisner (2000, p. 37) the new or fifth category "resulted in greater emphasis on the relevant information about the specific non-traditional strategic objective", whereas using the traditional four categories did not improve communication. Kaplan and Wisner (2000) built upon the work of other authors (Aydin, Tuzunturk & Eryilmaz, 2008; Epstein & Wisner, 2001; Maltz, Shenhar, & Reilly, 2003) who had researched the role that a fifth category could have in implementing sustainability.

Since the Balanced Scorecard is organization specific, adding a fifth category could be used to highlight one or more strategic imperatives beyond the four categories already contained within the method. Kaplan and Wisner concluded that under certain circumstances, researchers discounted the value derived from implementing a fifth category. Woerley, (2009) adds to this argument and suggests some basic, yet key steps in the implementation of the BSC process; these are listed below:

1. Identify available data that is internal and external.
2. Consider an implementation approach. The options suggested are a phase-in approach, where measures are created for one or two processes in a program, or a “big-bang” approach, where a scorecard is created for an entire program or department.

3. Seek feedback. Feedback is important from both the data collectors and the audience of the scorecard. Feedback will help ensure stakeholder buy-in.
4. Seek automated data collection and reporting processes.
5. Follow good record keeping – retain data and source documents.
6. Evolve scorecard measures over time, with changes.
7. Scorecards should be simple and meaningful.
8. Data should only be collected for meaningful purposes.
9. The data should be used to identify areas for improvement.
10. Share the scorecard results widely and look for areas of opportunity.

In addition, Woerley, (2009) argues that supporting documentation should be developed for the scorecard and include the following elements: minimum standard, measurement method, data source, reporting device, frequency and distribution. As with any major organizational initiative, leadership support is also necessary (Najmaei *et al*. 2017); so when developing and implementing a scorecard – leadership must commit to the process and allocate necessary resources (Vonderheide-Liem & Pate, 2004). Another suggested BSC implementation process is to follow a broader, six-step process to build a balanced scorecard. This broader process supports the BSC methodology and ensures organizational alignment from the organization's beliefs and values down to specific initiatives that will advance components of the strategy.

The process includes the following steps or phases (Vonderheide-Liem & Pate, 2004):

1. Assessment – assess organization's beliefs, values, market opportunities, competition and financial position.
2. Strategy – developed and guides organization.
3. Objectives – setting objectives is the process of translating the strategy into operations and provides goals for achievement.

4. Strategic map – this map shows how each objective links to one of the four perspectives of the balanced scorecard.
5. Performance measures – the selected measures are based on the objectives to measure progress.
    - Selecting the right measures – high quality measures must be selected.
    - The selected measures should measure a specific issued accurately, consistently and readily.
6. Narrowing the focus – too many measures can be overwhelming.
7. Selecting the right number of measures is a continual process.
8. Initiatives – are selected to improve performance.

The format of a scorecard varies by organizational desire, specific needs and computing ability; some common formats include the use of grades, colours and graphs. The overall intent is to clearly communicate the measures and provide a uniform understanding of the information being presented (Vonderheide-Liem & Pate, 2004). Kaplan and Norton (1996) suggest a grid that details the objectives, measures, target and initiatives for each of the perspectives. Research conducted by a firm (Williams 2004) that specializes in benchmarking and best practices says that scorecards have six characteristics in common, these are:

1. Focus – guide actions
2. Balance – include a mix of leading and lagging indicators
3. Scope – limited, meaningful number of measures
4. Audience – adaptable to a variety of audiences
5. Technology – utilize for timeliness and analysis
6. Implementation – planned and staged

As indicated by the characteristics listed above, organizations should consider how technology will support and communicate the organization's performance measures. Balanced scorecard software

packages can often streamline the data collection and reporting process. By using a software application, data can be presented in real time, with views customized to targeted audiences – such as front-line workers, directors or executives (Lane & Rang, 2005). Any selected system must have flexibility (Lawson, Hatch, & Desroches, 2008). These researchers also highlight the importance of having a controlled process to accommodate changes to performance measures, objectives and accountability; historical data also need to be preserved as changes occur.

2.8.6 Application of Balanced Scorecard in the Education Sector

Having discussed the history, evolution and commercial implementation of BSC, we now briefly consider prior research on the application of BSC in the education sector. As noted in Chapter 1, the training and vocational education sector has not benefited from the BSC methodology, although the sector and specifically higher educational organizations have been the subject of a long and rich debate among scholars in the BSC community.

There are several factors affecting the quality of an education at an academic institution: faculty, facilities, equipment, and learning environment. They must be combined, with policies and procedures, to maximize the performance of an institution. In light of these factors and their interrelationships, the evolution of the Balanced Scorecard into a tool that can be used by higher education institutions will involve adaptation; in addition, development and implementation of a Balanced Scorecard within a higher education institution will require further modification and focus, depending on the individual institution's strategic plan.

Recent research (Franco-Santos, & Otley, 2018) shows that organizations of all types review their measurement systems and explains how they use the information; for higher education, it is not just the Balanced Scorecard concept but, more importantly, the active examination of the measurement process and how those measurements are used to achieve organizational excellence (Ruben, 1999).

The past two decades have challenged higher education institutions to become more accountable for their performance. They are required to provide empirical evidence of their value to the state, alumni, prospective students, parents, and other external stakeholders; this situation forces institutions either to develop performance measurements or have report cards developed for them by state commissions., Higher education, like business, has traditional measurement indicators related to excellence that are easily quantifiable: enrolment; grade point averages; scores on standardized tests; class rank; acceptance; retention; graduation rates; counts of faculty publication; grants; as well as statistics such as faculty-student ratios. While these measurements are important, they do not present a comprehensive picture of an institution's current status or reflect its mission, vision, or strategic decisions. These traditional measurements capture and measure the inputs of higher education, and the capabilities students bring with them; but they fail to measure the outputs and value added by the institutions through the educational process, or the benefits students obtain by attending the institution (Ruben, 1999). Despite the energy expended in the collection of all these data, no dramatic changes occur in the operational performance of most major Higher Education organizations - even with the emphasis on accountability and empirical evidence of value.

The lists of performance indicators presented in many studies make little or no reference to the intentions (goals) of the organization and virtually no reference to program quality, with respect to specific results of instruction and research. (Stewart, 2000). Various studies on educational assessment outcomes have increased knowledge and understanding of the teaching and learning processes, but the measurements have yet to be transformed into useful indicators for monitoring or comparing institutional excellence (Ruben, 1999).

Other variables not as easily quantified or less obviously connected to academics - such as relevance, need, accessibility, fulfillment of expectations, diversity, student satisfaction, and

motivation for life-long learning - receive less attention and have not been widely used as excellence indicators (Ruben, 1999).

The results of a study conducted by the Educational Commission of the United States, in 10 states, revealed the 8 most common indicators of excellence: enrolment/graduation rates by gender, ethnicity, and program; degree completion and time to degree; persistence/retention rates by grade, ethnicity, and program; remediation activities and indicators of their effectiveness; transfer rates to and from two- and four-year institutions; pass rates on professional exams; job placement data on graduates and graduate satisfaction with jobs; and faculty workload and productivity in the form of student/faculty ratios and instructional contact hours (Ruben, 1999).

One area requiring more attention is that of student and faculty satisfaction and expectations. It is apparent that in most higher education institutions, an insufficient amount of attention is applied to systematically measuring these areas, in spite of a widely shared view that attracting, retaining, and nurturing the best and brightest people is a critical success factor. As a result, higher education indicators are historically focused with limited predictive value, making them incapable of alerting the institution to changes with enough time to respond. These institutions have not provided adequate attention to measures that are harder to quantify but are more predictive indicators.

The result of the emphasis on 8 common easy-to-measure indicators is the current college ranking system, which frustrates educators today but is still the measure by which all are compared. This leads to the following questions. What should the measurement system for higher education look like? What should be measured? How should the information derived from the measurements be used? Today's organizations are expected to place an emphasis on information and measurement and to assess, track, and promote organizational excellence (Ruben, 1999).

The value of assessment and measurement of information derived from these activities is undisputed; the dispute is more often about what should be measured. The contemporary environment

in higher education focuses on measurement and assessment, as well as the use of the information in relation to performance and accountability of the education processes within a given institution. Given this environment, the question then becomes what should be measured to provide evidence of achieving the fundamental mission of advancing knowledge, in terms of teaching, scholarship/research, and public service and outreach? All of this requires a dedicated faculty and staff, technology, capable students as well as legislative and public support (Ruben, 1999).

Ruben and a team from Rutgers University, suggest a general framework that is applicable to other higher education by proposing the concept that "fulfillment of this mission requires the successful engagement with a number of constituency groups and for each desired and potentially measurable outcome can be identified" (Ruben, 1999). The twelve constituent groups as defined by Ruben (1999) are:

1. Prospective students who make a choice to apply based on information regarding the benefits and qualities realizable through attendance
2. Current students who are attending the university by choice, have well defined expectations, are highly satisfied with their experiences, and need to feel valued by the university with potential to succeed
3. Agencies, individuals, and organizations that seek solutions or new knowledge
4. Agencies, individuals, and organizations that seek the assistance of the university's scholars
5. Families supportive of their members who are attending the university and actively recommend it to others
6. Alumni who support the university's initiatives and programs
7. Colleagues at other universities that view the university as a desirable place to work and a source of intellectual and professional leadership

8. Governing boards supportive and enthusiastic about contributing personally and professionally to university advancement
9. Local community who views the organization as an asset and supports its development
10. Friends, donors, legislators, general public, and interested individuals who value the university resources and support efforts to further excellence
11. Faculty proud to serve at a leading, well-supported institution that yields them respect locally, nationally, and internationally
12. Staff who regard the university as a desired place to work, value innovation, continuous improvement and teamwork, and recommend it to others,

Using and expanding on this framework, the measurement array needs to be defined in cooperation with administrative and academic units - to ensure that it represents the institution's specific mission, vision, and goals. It then can be translated into a dashboard with five indicator clusters, each containing a number of measures (see Table 2-1). Some are traditional while others are more innovative: teaching/learning, scholarship/research, service/outreach, workplace satisfaction, and financial (Ruben, 1999).

Table 2-1:KPIs for higher educational BSC (Ruben 1999)

Education Perspectives	Education Indicators
Financial	Revenues / Expenditures
Workplace Satisfaction	Faculty /admin Staff
Teaching and Learning	Number and scope of Programs and Student Outcomes
Service/Outreach	University State Profession Student Families Employers

	Alumni
Scholarship/Research	Productivity Impact

The teaching/learning indicator consists of quality assessments in the areas of program, courses, and student outcomes. The model presented in Ruben's 1999 paper indicates the value of multiple dimensional measures, as well as perspectives to evaluate the quality of programs and student outcomes. This model allows for systematic input from peers or evaluators from a separate institution, current students, and graduate students to evaluate both teaching and an instructor's performance. Measurements for student outcomes, per Ruben's model, could include course preferences, fulfillment of expectations, and satisfaction in terms of retention in a program. Focus groups of alumni provide insight into the preparation for their chosen career and are a source of input for program improvements (Ruben, 1999).

Scholarship/research is a common indicator comprised of two equal parts: productivity and research. Most postsecondary education institutions measure productivity by the number of presentations, performances, articles, and paper submissions; whereas research is usually measured by publication rate, the types of journals or publishers, awards, and peer recognition.

Public service and outreach are another common indicator used by many secondary education institutions and measures how well the institution or program addresses the needs of external stakeholders. The list of stakeholders varies in size based on the programs of the institution, but always includes the community within which the institution exists and the extent to which the program or institution reflects the perspectives of external stakeholders.

Workplace satisfaction is an important indicator for both faculty and staff. This indicator determines the attractiveness of an institution as a workplace and is measured by turnover, compensation, and staff and faculty morale. Organizations need data from turnover, perceptual information from exit interviews, surveys, and focus groups to measure this indicator (Ruben, 1999).

The final indicator, as in for-profit organizations, is the financial indicator. It includes revenue sources, financial ratio measures of debts to assets, credit usage and limits, alumni support, and deferred maintenances and acquisitions. It is clear that the specifics of this indicator depend on the complexity of the program or institution involved (Ruben, 1999). According to Ruben, In 1997, 18 states were using performance-based assessments in funding, and at least 18 others had indicated that they will adopt these measures within the next 5 years." Ruben concludes, "that the Balanced Scorecard approach offers an institution the opportunity to formulate a cascade of measures to translate the mission of knowledge creation, sharing and utilization into a comprehensive coherent communicable and mobilizing framework - for external stakeholders and for one another (Ruben, 1999).

Based on available literature, the translation of a Balanced Scorecard into the world of academia is a challenge; it is met with scepticism, that a university's performance could be measured quantitatively, and distrust, by members of the academic communities. However, the benefits of implementing a Balanced Scorecard, with its emphasis on integrative analysis and trade-offs, provide the impetus to move discussions of performance management from an externally driven process to an internal concern for improved institutional effectiveness (Stewart, 2000).

The available literature, in general, has little discussion of utilizing a Balanced Scorecard in educational and training institutions; however, documented case studies do reveal successful implementation and adaptation of the concept to institutions of higher learning.

The literature also confirms that adaptation of the Balanced Scorecard concept is necessary for an educational application, so it is logical to view an educational example prior to further discussion. It is relevant at this point to emphasize that a Balanced Scorecard is specific to an organization's strategic plan in design and measurement indicators.

Example of a Higher Education Balanced Scorecard

Vision: A global leader in technical education		
Perspective	Strategic Objective	Performance Indicator
Stakeholder	Brand Favorability	Brand equity index Number of active international partners
	Cohort Capture	Student capture rate
	Organizational Excellence	Score from strategic quality assessment process
Customer	Program acceptance	Total student enrollment Total student recruitment
	Educational outcome	Graduate employment rate Employer satisfaction with graduate's training
	Student satisfaction	Student satisfaction index
Process	Training Success	Module success rate Program success rate
	Optimal Value addition	Change in economic value of graduates
Learning and Development	Favorable Organizational Climate	Staff satisfaction index
	High employee Involvement	Team project ratio Staff suggestion rate
	Learning Opportunities	Percentage of staff attaining 100 hours of continuing education Number of staff attaining advanced degree
Financial	Effective Resource management	Cost of training/ education per student
	Revenue/ expenditures Reserve fund balance	Budget to actual reports Annual Balance sheet report Current to previous year financial performance

Note: Material is adapted from Yek 2007.

Figure 2-4 An example of a higher Educational BSC (Yek 2007).

In support of the previous statements, Chen (2006) presents a case study of a Taiwanese educational institution, Chin-Min Institute of Technology (CMIT). It is a private university, fitting the description of a non-profit institution. As a result of external changes, the institution had 1.1 billion NT dollars in long- and short-term debt and an ineffectual board. For a period, salary payments were deferred and payment of annual bonuses required bank loans and batch payments; then, the Taiwan Ministry of Education took control of the school in 2001. The school struggled to survive the crisis, leading to its decision to introduce the Balanced Scorecard as a tool for reorganization.

CMIT designed its Balanced Scorecard on the information and theories supplied by Kaplan and Norton to ensure it had an appropriate mission and vision to promote the school's reputation. Under good financial conditions, this permits the provision of excellent facilities and staff resources in a smooth operational system that satisfies customers (Chen, 2006). Non-profits must be aware of their financial situation, including budgets and resources, while maintaining a focus on performance; for without financial resources attaining a mission, no matter how lofty, is impossible.

For its Balanced Scorecard, CMIT focused on the financial perspective, customer perspective, internal process perspective, and learning and growth perspective, coupled with a strategy map. In this case, the financial perspective needed to encompass a complete financial structure, spanning the aspects of increasing income, increasing asset usage rates, and reducing human capital costs. Financial considerations addressed student tuition, Ministry of Education funding, business donations, partnerships between business and education, and the promotion of educational implementations. Increasing asset usage included completing the library and magazine storage, classroom use rates, and teaching equipment.

The final financial component, decreasing human resource costs, included developing staff members with multiple skills and encouraging work on different units without increasing training costs, computerizing processes, reviewing unsatisfied staff members, and removing or retraining them. This complete understanding of the financial situation led to a reimbursement of debt and an improved financial situation that allowed a normal salary distribution and an improved investment strategy.

The customer perspective ensures that the customer is recognized. According to Chen (2006) an educational organization serves business, parents, government, and the general public, students and their parents as its customers. While naming students as customers raised some controversy (Chen, 2006), logically they are the largest internal customer of an educational institution. Students'

satisfaction determines tuition income and fees, the major source of income available to the institution; this makes customer satisfaction performance management indicators (PMIs) the second most important to measure. The customer perspective also relates to two strategic themes accord with customer expectations and promoting the school image (Chen, 2006).

To achieve accord with customer expectations, educational institutions must measure external and internal customer satisfaction levels, which, when met or exceeded, stimulate the customer to explore other financial avenues, causing an increase in the financial perspective. By becoming active in public charity and cultural events, a school promotes its image to external customers, who then view the school as an active, supportive community member. Satisfaction of internal and external customers stabilizes student retention rates, recruitment, and the customer perspective.

The internal process perspective drives the primary goal of meeting the current and future needs of customers; this requires an efficient method of measuring customer satisfaction and a robust corrective action-preventative action process to resolve and prevent problems. In the realm of education, these internal processes include administrative efficiency, promotion of quality, process management, real-time assessments, and reduced cycle times, with checkpoints incorporated to control the quality and characterized with innovation and continuous improvement. This approach provides the foundation for achieving what Chen calls an "excellent learning environment" (Chen, 2006). Through process improvement, internal perspective customer satisfaction increases and connects to the three previous perspectives.

The final perspective, learning and growth, is the heart of the Balanced Scorecard and the motivating factor for all other perspectives. Its function is to construct a set of core competencies and abilities that promote the previous perspectives (Chen, 2006). Assuming the need for staff to learn, grow, focus on occupational skills, and develop new skills, this perspective's two major themes of organizational learning and management promote information technology and establish performance-

leading cultures while increasing staff quality and abilities (Chen, 2006). This stimulates process creation, maintaining efficient activities and satisfying customers of the institution. The Balanced Scorecard requires a second tool to provide stability and progress in an educational institution due to the varied and numerous units that comprise the institution. The secondary tool is a strategy map, which provides cause and effect linkages as well as deployment strategies. These connect all four perspectives with measurable indicators for each perspective to the mission and vision.

A strategy story explains and ensures complete understanding of strategic details such as time sequences, as well as the cause-and-effect linkages. This tool also determines how the solutions to problems may affect the strategy and influences the appropriate revisions in measurement indicators.

Chen concludes that although BSC is rarely applied to higher education, it is a performance management system and strategic management tool which, when supported by senior management, results in a promising and successful outcome. He also concludes that by emphasizing mission and vision, and by paying attention to educational costs and benefits, educational quality increases and creates advantages in national competitiveness (Chen, 2006).

A similar case study by Yek (2007) outlines the implementation of a Balanced Scorecard for quality improvement and performance management in the Institute of Technical Education (ITE), a Singapore Vocational Educational and Training institution (VET). As illustrated in Figure 2-4, Yek analyzes the ideas of quality and performance in relation to VET and explains how to measure, manage, and report them using the Balanced Scorecard management system. Yek discovered that quality and performance have different meaning to individuals, based on the context; but that everyone has an intuitive understanding of these terms (Yek, 2007). So, it is not surprising that both Chen and Yek concluded that, in higher education, quality and performance is defined as the education and training received by the students; they are relevant to the related industries and result in competent graduates ready for employment. As a result, quality in higher education is measured by the graduate's

employability and the employer satisfaction and performance measures are the number of graduates taking employment in their associated training area and the number completing the training and achieving certification (Yek, 2007).

The resulting advantage for the institution whose graduates have good employment prospects is to be able to attract more students. While ITE is not a commercial entity, and the traditional Balanced Scorecard required modification to fit an educational institution, the BSC system was adopted in 2002 as the management system for quality and performance. ITE modified the scorecard areas to ensure reflection of the needs of the stakeholders, namely students, parents, employers, and community. The former ITE CEO supports this position: The institution has to be committed to the needs of its students, employers in industry who recruit the graduates, and the community it serves" while LTE's latest mission statement states, "to create opportunities for school leavers and adult learners to acquire skills, knowledge and values for lifelong learning in a global economy (Yek, 2007).

The adopted model includes stakeholder, customer, process, as well as learning and development perspectives covering 12 strategic objectives and 31 key performance indicators, similar to the Balanced Scorecard referenced in the Chen report. The financial perspective is represented by the stakeholder perspective in the ITE model; to achieve a financial security, ITE had to gain a favourable brand with prospective students and their parents through programs that equipped graduates to find rewarding employment. This action allowed FTE to secure a larger portion of the postsecondary cohort, thereby gaining financial security and fulfilling the primary public service. The customer perspective considers the students as customers and "seeks to build customer centric culture among the staff (Yek, 2007), by reaching out to current and potential students, FTE, and alumni". Customer satisfaction is determined via various surveys and studies. Faculty has difficulty seeing students as customers due to the commercial idea that customers are most important and always right;

this notion cannot be applied to students in an educational setting, although faculty realizes that without students there is no business.

The process perspective is included for two reasons: it measures business processes and ensures alignment to the Singapore Quality Award, thus aligning the Balanced Scorecard with a quality award external to the education institution and process. This ensures a quality process, in educational and business processes, that provides value to the customer and aligns with the strategic goals of optimal value addition, the provision of quality current educational experiences, and effective resource management.

The learning and development perspective stems from the innovation and learning perspective of the original Balanced Scorecard that asks the question ‘can we continue to improve and create value’? In an educational setting, improvement and value creation is accomplished through a "highly integrated approach and the provision of products and services that meet customer needs and operational requirements" (Yek, 2007). This approach aligns with the strategic goals of a favourable organizational climate, high employee involvement, and learning opportunities that allow the educational institution to attract and retain highly skilled and dedicated staff (Yek, 2007). After examining these four perspectives in conjunction with Chen's work, it is clear that the Balanced Scorecard can be successfully adapted for higher education institutions and has the potential to be a relevant and informative quality and performance management tool. The implementation of the Balanced Scorecard transformed FTE, creating a positive impact on the quality and performance of its core business (Yek, 2007).

Yek supported this conclusion with statements from a World Bank consultant who states, "ITE transformation and achievements have been outstandingly successful" and an editorial in The Straits Times, a reputable Singapore paper, that states, "ITE certificate graduates are having a good run in the job market .The acknowledgement is well-earned and the marketplace is the best judge of the

worth of FTE graduates" (Yek, 2007). Yek provides further factual evidence of the transformation: the brand equity index improvement of 40% to 60% over four years based on AC Nielsen market research; total student enrolment increased from 15,000 to 22,500 over six years; student satisfaction with an ITE education increased from 80% to 95% in four years; an overall student success rate increased from 69% to 78% over five years; and an employment rate of recent ITE graduates increased from 82% in 2002 to 91% in 2005. In addition, Yek cites five internal impacts, due to active communication: a deep, common understanding; professional development; great teamwork; organizational coherence; and clear priorities and performance targets (Yek, 2007).

The conclusion one draws from Yek's and Chen's papers is that there is no prescriptive formula for adopting and implementing a successful Balanced Scorecard in any organization. However, the use of the Balanced Scorecard does provide significant improvements in quality and performance of a higher educational institution, when it is adopted as an integral part of an existing planning process and presented in a consultative or engaging manner with strategic objectives, and where measures are the result of promoted teamwork and alignment (Yek, 2007).

Despite this evidence, there exists a train of thought that the application of a quality scorecard to education cannot be done; the usual resistant cry is that postsecondary institutions educate minds, not produce widgets. This statement merely indicates that the most important outcomes of the educational process are difficult, if not impossible, to measure; holding this position proves to be a myth, as all educators produce outcomes that can be measured (Ewy, 2009). "Even the most difficult-to-define goals or outcomes can be measured and more importantly, must be measured if education is to have any credibility at all with its stakeholders" (Ewy, 2009). The measurement of what stakeholders are interested in is essential. Since failing to measure something inhibits one's ability to show its value, manage it, or improve it; as parents and communities want postsecondary institutions to teach what they find valuable and want to see improvement in instructional methods, then

measurements are required. Educators are capable of accepting this challenge and do not allow the so called measurement myth to overshadow their efforts and judgment. Current Baldrige education award winners, and other high-performing primary and secondary school districts, are utilizing these types of measurement techniques to track improvements over time and focus their efforts on valued educational outputs (Ewy, 2009). Available literature also points to the Balanced Scorecard functioning as a tool used by high-performing primary and secondary school districts and Baldrige award winners.

One such school district is Atlanta Public Schools, which experienced low and declining student achievement, demoralized teachers, decaying buildings, and parents removing their children from the system 10 years ago. These conditions contributed to more than 700 teaching vacancies and a 60% rate of high school students missing school two weeks or more per year; the system was failing both students and stakeholders (Kaplan, 2010). Ten years later, the same school district has fourth grade reading and math scores virtually on a par with other Georgia districts and a drastic reduction in chronic absences. What accounts for this drastic transformation? It is not an infusion of new money, for the district still has limited resources; rather, the district placed strategy at the centre of leadership and management systems. It used a Balanced Scorecard, as did another large public-school system in a neighbouring county, and followed the two basic tenets of a Balanced Scorecard: if it cannot be measured, it cannot be managed or improved and measurement motivates. However, even with a Balanced Scorecard, a member of the school district reform team commented "it is not enough to focus on strategy development - you need to focus instead on strategy implementation" (Kaplan, 2010).

The reviewed literature shows that a Balanced Scorecard can be used and successfully implemented in education, and used as a strategic planning, resource allocation, and internal and external opinion tool. If accreditation agencies' missions are to ensure that quality educational

products are being provided to students and communities in as efficient and effective manner as possible, it opens the door for using BSC within the accreditation process.

According to Brown (2012), institutes of higher educations (HEIs) are increasingly under pressure to provide external stakeholders such as communities, alumni, and prospective students with performance indicators that reflect the overall value and excellence of the institution. Historically, however, higher education performance indicators have emphasized academic measures (Ruben 1999). Driven by external accountability and comparability issues, HEIs often focus on quantitative academic variables such as faculty demographics, enrolment, grade point average, retention rates, faculty-student ratios, standardized test scores, graduation rates, faculty teaching loads, and faculty scholarly activity (Ruben 1999).

HEIs often assume that measuring external accountability through one-dimensional parameters, such as college rankings or accrediting agency mandates, will influence internally driven parameters related to institutional effectiveness. But unless these indicators are meaningfully linked to the drivers of institutional effectiveness, desired improvements in service, productivity, and impact are unlikely to occur (Stewart & Carpenter-Hubin 2000–2001). Additionally, some of these academic variables do not reflect the value that HEIs add through the teaching and learning process; instead they reflect students' existing capabilities (Ruben 1999).

More recently, Romao (2016) argues that in Higher education, as in the corporate world, there are time honoured traditions related to the measurement of excellence. Instead of emphasizing primarily on financial measures, higher education has historically depended on academic measures, which fail to present a comprehensive image of the current status of a higher education institution (HEI). They do not reflect some of the key success factors of a HEI, nor are they capable of capturing many of the dimensions of a HEI's mission, vision, or strategic directions.

Balanced scorecard (BSC), as an information based strategic management tool, is capable of removing the limitations associated with traditional measures for evaluating the current status of a HEI. Rather than focusing on customers (and purchases), the BSC in higher education focuses on students and results pertaining to learning (Karathanos & Karathanos, 2005). Staff can also be a secondary focus of the BSC, with the aim of fostering well-trained teachers.

The BSC aims to increase participation from students, staff, and the community to foster ownership, but also takes into account fiscal accountability. Chosen indicators focus largely on school performance but often come from routinely collected data relating to academic and financial performance (Brown, 2008). In addition, BSC allows educational systems to measure their results, while allowing for constant feedback and improvement.

More recently Al-Hosaini and Sofian (2015) attempted to consolidate research on the application of BSC in HEIs. The result was a list of studies done, which are summarized in Table 2-2 below.

Table 2-2: Summary of the studies on BSC in the higher education sector

Study	**Abbreviated Title**	**Perspectives investigated**
Beard (2009)	Successful applications of balanced scorecard in higher education	Student learning results, Student-and Stakeholder –focused results, Budgetary, financial, and market results Faculty and staff results Organizational effectiveness Results, Governance and social Responsibility results
Ballentine and Eckles (2009)	Duelling scorecards :how two colleges utilize popular planning Method	Financial, Constituent Internal processes Human and organizational Development

Yu *et al.* (2009)	The e-balanced scorecard (e-BSC) for measuring academic staff performance excellence	Customer, Financial, Internal business processes, Learning and growth
Weisensee *et al.* (2009)	Integrating financial and non-financial information to enhance strategic decision making at McMaster University	Stakeholder, Financial, Internal Learning and Growth
Eltobgy and Radwan (2010)	Monitoring Egyptian Higher Education Institutions Performance Development, The BSC Approach	Educational and learning excellence, Scientific research excellence, Community Participation, environment development and stakeholders, Financial resources, Institutional capacity and quality management
Nistor (2010)	Empirical research about Balanced scorecard concept in public sector	Customer and stakeholders Financial, Internal business Learning and Growth
Wu *et al.* (2011)	Performance evaluation of extension education centers in universities based on BSC	Financial, Customer, Internal processes, Learning and growth
Negash (2011)	Resource allocation challenges in South African universities:	Customer and stakeholder, Financial, Internal, Business Process,

	management accounting perspective	Organizational learning and Development
Zangoueinezhad and Moshabaki (2011)	Measuring university performance using a knowledge-based BSC	Financial, Customer satisfaction, internal business processes, and the learning and grow ability
Philbin (2011)	Design and implementation of BSC at university institute	Financial, people development Institute capability, Research output
Al-Ashaab *et al.* (2011)	Balanced scorecard measuring impact of industry–university collaboration	Competitiveness, sustainable development, Innovation, strategic partnership, Human capital, Internal business processes
Li (2011)	Performance Evaluation for Private Colleges and Universities Based on Balanced Scorecard	Goals school, stakeholders satisfaction, Internal business processes, Organization developing ability
Rahman and Hassan, (2011)	Implementing BSC to Facilitate Strategic Management in Public University	Resource, Learning and growth, Internal processes, Customer and Stakeholders
Sayed (2012)	Ratify, reject or revise: balanced scorecard and universities	Stakeholders, Internal business processes, Learning and growth, Financial
Aljardali *et al.* (2012)	Implementation of BSC in Lebanese public higher	Customer, Internal processes, Innovation and Learning, Financial

	education institutions	
Al-Zwyalif (2012)	Possibility of Implementing BSC in Jordanian Private Universities	Financial , Customer, Internal business processes, Learning and growth
Taylor and Baines (2012)	Performance management in UK universities: implementing BSC	Financial , Customer, Internal processes, Organisational development
Schobel and Scholey (2012)	Balanced Scorecards in education: Focusing on financial strategies	Customer, Financial, Internal processes, Learning and growth
Chen *et al.* (2012)	Innovative Operation in a Private University of Technology - Application of Strategy Map on BSC	Customer, Internal procedure, Learning and Learning, Finance
Zolfani and Ghadikolaei (2013)	Performance evaluation of private universities based on BSC: empirical study in Iran	Financial, Customer, Internal process, Learning and growth
Franceschini and Turina (2013)	Quality improvement, redesign of Performance measurement systems: application to academic field	Financial ,Customer Internal process Innovation and Learning
Jairak and Praneetpolgrang	Applying IT governance BSC and importance-performance	Corporate contribution; Stakeholders;

(2013)	analysis for IT governance strategy in university	Operational excellence; Future orientation.
Atafar *et al.* (2013)	Evaluation of university performance using BSC and ANP	Financial , Customer, Process, Learning and growth
Weerasooriya (2013)	Adoption of Balanced Scorecard (BSC) Framework as Technique for Performance Evaluation in Sri Lankan Universities	Business processes, Learning and growth
Pineno (2013)	Sustainability reporting by universities and corporations: an integrated approach or separate category within BSC	Financial , Customer , processes, Internal Business, Innovation and Learning
Chalaris *et al.* (2014)	Holistic approach for quality assurance and advanced decision making for academic institutions using BSC technique	Financial, Internal business processes, Innovation and Learning, Customer
Libing *et al.* (2014)	Application of BSC In University Budget Management	financial enterprise, customer, internal business processes and learning and growth

Zhang *et al.* (2014).	Application research of BSC theory in salary design of teacher in college and university	Client, Teacher's Contribution, Teaching and research , Personal ascension
Beard and Humphrey (2014)	Alignment of University Information Technology Resources With Baldrige Results Criteria for Performance Excellence in Education: Balanced Scorecard Approach	Student learning and process results, Customer-focused results, Leadership and governance results , Budgetary, financial and market results

As Table 2-2 shows the application of BSC in the higher education sector is broad and diverse. Some countries like the UK, Australia and the US have a more systematic approach to the use of BSC in the sector than other countries. Recent studies show that BSC is being increasingly adopted by universities in developed economies.

A 2002 paper reported that there were 22 higher education institutions worldwide using the Balanced Scorecard: 17 in the United States, 2 in the United Kingdom, 2 in Australia, and 1 in Canada (Rompho, 2002). Of the HEIs cited in the report, 11 applied the BSC to business, administration, or auxiliary services; 8 applied it to the entire university; and 3 applied it to the library only. In the United Kingdom, a BSC was created to move past performance-related pay for teachers, which could be argued as a much too narrow focus. In the United States, the BSC was suggested to be used over high-stakes testing, again to provide a wider view of the performance of the educational system.

In Australia, Bond University initiated a BSC approach for performance improvement. The library unit at Bond University used the university's vision, mission, strategies, and performance goals

to develop and implement its own BSC. As part of the process, the library's senior and middle managers provided input on strategic objectives and proposed metrics. This process also included the linkage of measures through cause-and-effect relationships. An identified challenge involved narrowing the list of possible measures to the select few that would best capture the core of the desired strategy (Cribb & Hogan 2003).

The library's objective for each of its perspectives closely aligned with the university's objectives. For example, under the customer perspective, the university defined customer satisfaction as an objective. The library then identified its own objectives focused on the assurance of customer satisfaction through a variety of strategies, including an emphasis on available resources and services, as well as effective collaboration and communication with academic staff. In developing financial measures, Bond University initially decided to use library resources in relation to student numbers to measure the library's role in achieving cost-effectiveness.

However, since the university had lower student enrolment and smaller economies of scale in comparison to other universities in Australia, this financial measure did not adequately reflect the relationships among library expenditures, usage, student educational achievement, and customer satisfaction. Therefore, additional measures were identified to more accurately support both the library's and university's objectives. A key factor that contributed to the successful implementation of the BSC at Bond University was the involvement of staff in the process; staff involvement created an alignment between both the library's and university's strategic objectives (Cribb and Hogan 2003). This has, perhaps, been the only published work on the use of BSC in an education organization in Australia. This observation is consistent with the fact that BSC, in education, has been primarily studied in universities; with other types of educational organizations such as RTOs, ignored.

2.8.7 Challenges in BSC Implementation

Prior research has identified a number of challenges towards the implementation of Balanced Scorecard. The major challenges can be listed below:

2.8.7.1 Imitated Understanding of Balanced Scorecard

Othman (2009), suggests that very often organisations do not understand what exactly the Balanced Scorecard is and what its implementation involves, regardless of whether they implement the BSC themselves or hire a consultant from outside. Implementing Key Performance Indicators (KPIs) is not the same as implementing the Balanced Scorecard. Othman compares this with "calling a donkey a horse and expecting the donkey to win a horse race". Othman *et al.* (2006) agree that the difficulty in studying the BSC is that there is no consensus on what the BSC is all about. They explain that the BSC has had different meanings at different times: in the early 1990s, the focus was on developing financial and non-financial measures of performance; in the mid-1990s it moved to aligning the measures with strategy; in 2001 the BSC took its current shape as a strategy implementation tool. Some companies moved the focus of the BSC in the same way as it developed: they first implemented the BSC as a performance measurement system and later developed it as a strategy implementation system.

2.8.7.2 Lack of Executive Sponsorship

No initiative in an organisation, regardless of its potential, has any chance of success without a sponsor in top management (Niven, 2005). The same applies with the Balanced Scorecard. Niven (2005) stresses the importance of top management for the success of the Balanced Scorecard initiative. He argues that if top management does not support the BSC and, more importantly, does not appreciate its role in solving real-life problems then the BSC will yield mediocre results and will probably fail.

According to Olve *et al.* (2003), the absence of executive sponsorship will harm every BSC initiative. Top management should stand behind BSC as it is a tool for executing company strategy. Top management should explain to the other members of the firm why the BSC is so important and, for the BSC to gain credibility, top management must trust it and strongly believe that it will improve the company. If employees feel such faith in the BSC there is a chance of success. This is confirmed by Niven (2005), The leader's personal involvement, understanding, and commitment are necessary to overcome this passive (or in many cases active) resistance. She has not only to announce the initiative but to define it clearly and define its importance to the organisation.

2.8.7.3 Lack of Training or Knowledge of Balanced Scorecard

If a company wants to implement the Balanced Scorecard properly and reap all the benefits this concept may bring, employees and other stakeholders should first learn about it. Niven (2006) noted that organizations, after deciding to implement the Balanced Scorecard, often consider that it can be done without much learning. According to Niven, due to its seeming simplicity, people in charge very often conclude that thorough education and training are not required. Such a conclusion will permanently harm the BSC initiative and lead to failure. The Balanced Scorecard is often introduced because of its attractive design and popularity: put your strategy into four (or sometimes five) perspectives and results will very soon follow. However, BSC is something more and to find out what this "more" is all about, in-depth education and training are necessary.

2.8.7.4 Not including BSC in Organisation's Strategy Map

Strategy is the core of any management system. According to Niven (2006), the Scorecard has its roots in the organization's strategy and should align the organization from top to bottom as well as guide all action and decisions towards organizational aims. Theoretically be a Balanced Scorecard without a strategy but, in practice, this would not be implementing the real essence of the concept, which translates the strategy by stimulating communication through the measurement of performance,

initiating change and inspiring further initiatives. Niven (2006) emphasizes that BSC could perhaps be developed without the background of the strategy, but this would be perceived as another performance management system, and other benefits of the BSC would never be gained.

So, the main idea in the BSC is to understand the organization's strategy as a causal model of its performance goals. Othman (2009a) points out that to make the Balanced Scorecard work properly, managers must recognize that this is possible only if a well-thought-out strategy has been formulated. Use of a Balanced Scorecard must be preceded by the formulation of the strategy and BSC is the tool to implement the formulated strategy.

2.8.7.5 Not involving the Whole Organization

The BSC should improve communication within an organisation. Many initiatives have been unsuccessful because organizations have not recognized the need to apply BSC to all business issues including business log, ambitions, and achieved performance (Olve *et at.,* 2003). Davis (1996), examining the BSC initiative in the General Electric (GE) Lighting Business Group, confirmed the importance of the participation of lower levels in the BSC initiative. According to Davis, involving employees at all levels in the development of BSC measures is crucial for BSC success. This inspires ownership of the measures and commitment to achieve the targets. He stated, "By showing employees how their performance influences the bottom line, frontline employees are encouraged to act like owners and ensure the future of their jobs."

Niven (2006) emphasizes that any successful strategy implementation must be understood and acted on at every level of the firm. The Balanced Scorecard should strive to do the same. The term "cascading" is commonly used to denote driving the BSC concept down into the organization and giving all employees the opportunity to demonstrate how their daily activities contribute to the company strategy (Niven, 2006; Olve *et al.*, 2003).

2.8.8 Criticism of Balanced Scorecard

While the vast majority of feedback on BSC has been positive, some critics have argued that the four perspectives are limiting, that it is too inwardly focused and that there are too many measures for organizational leaders to effectively manage.

KPMG's performance measurement white paper, 'Achieving Measurable Performance Improvement in a Changing World (2001)', outlines several drawbacks to Kaplan and Norton's Balanced Scorecard which are still relevant today as they were in early 2000s. The first is the contention that the four perspectives - financial, internal process, customer, and learning and growth are too limiting. The criticism is that there is a lack of consideration in the existing perspectives for knowledge creation processes and intellectual capital. Some organizations that have adopted the BSC add a fifth, "human resource perspective" to help the company focus on the performance drivers that originate from human capital. However, the Kaplan and Norton model has the attractiveness of compactness and the advantage of focusing on a limited number of strategic issues.

Another strong criticism of the BSC (KPMG, 2001) is that other than the customer perspective, there is little focus on the external environment. Not keeping a close eye on market changes, competition and outside forces could result in the organization being unprepared to deal with unexpected environmental changes. The white paper goes on to state that the Balanced Scorecard can only be used for internal purposes, that external benchmarking is difficult and that results in limited attention being paid to the external environment.

Contrary to the criticisms describing a lack of perspectives, there are those who feel that the many measures that make up all four perspectives are too numerous for managers to handle. Michael Jensen (2001), vehemently argues this point, "Balanced Scorecard theory is flawed because it presents managers with a scorecard which gives no score—that is, no single-valued measure of how they have performed." The BSC strategic management system, through its use of multiple perspectives and

sometimes up to 25 metrics, forces managers to maximize performance in more than one competing dimension at a time with little guidance as to how to make trade-offs between measures.

Although widely accepted by academics and practitioners, several researchers have criticized the limitations of BSC, such as the large number of variables that create complex optimization problems (Fletcher & Smith, 2004; Rickards, 2007). Another area of concern is that BSC does not provide a common scale of measurement; it lacks a standardized baseline or benchmark to compare performance (Banker, Potter, & Srinivasan, 2000). Furthermore, BSC does not have a mathematical model or a weighting scheme (Rickards, 2007). Nor does it have a comprehensive index to recap the interaction between measures of performance (Banker *et al.*, 2004; Neves & Lourenco, 2008).

The BSC model has many advocates and also many critics (Murby & Gould, 2005). One of the negative critiques of the BSC has been that it does not measure competitor actions and activities or external factors; therefore, it can be considered a static measure. Murby and Gould (2005) contended that the BSC's effectiveness rests in the organization's ability to implement it completely and requires all of its stakeholders to embrace it. Ittner and Larcker (2003) found that setting the wrong performance targets significantly impacted financial results and, ultimately, impacted the effectiveness of the BSC. Antonsen (2014) revealed that while the results improved using a BSC in his subject company, the short-term focus prevented important feedback for front line managers - due to the limited time to engage in reflective work behaviours. To answer the challenges brought by the criticism, Kaplan and Norton continued their research and the BSC evolved (Madsen & Stenheim, 2015), by adding elements such as strategy maps (Kaplan & Norton, 2004), alignment (Kaplan & Norton, 2006) and a strategic focus – refer back to Figure 2-3 (Kaplan & Norton, 2000).

The continuous evolution, multiple generations, and changes in the BSC model over time have made it an on-going challenge for researchers to empirically determine success in implementation, to

benchmark similar studies, or to measure BSC execution in the workplace (Madsen & Stenheim, 2015).

Perkins, Grey, and Remmers (2014), developed a taxonomy for the different forms of BSC. Their study presented the large changes and small nuances that have occurred over its twenty-year evolution (Perkins, *et al.,* 2014). Madsen and Stenheim (2015) took it one step further with the introduction of five typologies of the BSC, which included a comparison of researchers over an 11-year period and their names for stages of BSC being studied (shown in Table 2-2). They argued that by knowing which version of BSC was used in the research, then there was a better chance of being able to benchmark and review other studies with that same version of BSC (Madsen & Stenheim, 2015).

2.9 Research Gap

As review of the literature on performance management and measurement shows, BSC is a tool that is being increasingly adopted internationally to help managers, scholars and policy makers gain a more accurate and comprehensive understanding of the how their organizations perform. This chapter shows that the basic premise of the BSC is that financial results alone cannot capture value-creating activities (Kaplan & Norton, 2001). In other words, financial measures are lagging indicators and, as such, are not effective in identifying the drivers or activities that affect financial results.

Kaplan and Norton (1992) suggested that organizations, while using financial measures, should develop a comprehensive set of additional measures to use as leading indicators, or predictors, of financial performance. They suggested that measures should be developed that address four perspectives: 1) The financial perspective. Measures in this perspective should answer the question, "How should we appear to our shareholders?" 2) The customer perspective. These measures should answer the question, "How should we appear to our customers?" 3) Internal business processes perspective. Measures in this perspective should answer the question, "What processes must we excel

at?" 4) Learning and growth perspective. These measures should answer the question, "How can we sustain our ability to change and improve?"

However, extant body of research is skewed toward academic higher degree providers such as universities and colleges (e.g. Karathanos, & Karathanos, 2005 & de Andrade, *et al.* 2018). Increasing importance of the Vocational Education and Training Sector (VET) internationally and in Australia (Atkinson, & Stanwick, 2016) calls for a more nuanced and complete understanding of how organizations that provide VET can adopt performance management and measurement tools such as balanced scorecard to manage their performance toward achieving their strategic visions and competitive goals. This is important because according to Atkinson, and Stanwick, (2016), the Australian VET system is characterized by two complementary approaches to skills training. The first is the broader VET system of institution-based education and training for young people, a significant part of which is the employment-linked apprenticeship and traineeship system. The second is the provision of skills for existing workers, offered on a full- and part-time basis. Therefore, performance of RTOs is a pivotal component of training future workforce and maintaining the workability and skilfulness of existing workforce. Absence of a systematic study on how RTOs pursue this goal is an important research gap which motivates this research.

2.10 Summary of Chapter Two

Measuring and managing performance of an organization has been and continues to be a key topic of discussion among business scholars and practitioners. Performance management and measurement tools and, especially the Balanced Scorecard, have enabled both researchers and managers to look at the strategic drivers of performance from non-financial viewpoints and gain more complete insights into activities which improve or hinder performance.

Although organizations in the education, particularly the higher education sector, have received a great deal of attention in this context, institutions that provide vocational training seem to

have been neglected. This chapter has offered an overview of background literature on this situation. The next chapter explains the methodology we adopt to address the identified gaps.

CHAPTER THREE

VOCATIONAL AND TRAINING SECTOR

3.1 Introduction to Chapter Three

This chapter constitutes the second part of the review of the literature for this thesis. It reviews and assesses the landscape of Vocational Education and Training (VET) internationally and narrows down to Australia as the context of this study. It then offers an overview of the Registered Training Organization in Australia.

3.2 Vocational Education and Training: An Overview of International Landscape

Postsecondary educational systems around the world are confronted with the transformation of social, economic, and political conditions, resulting reform processes (Power & Solga 2008). . Moreover, current shifts in economic structures require adaptation of education and vocational training systems that are responsible for conveying skills and for legitimately sorting individuals into disparate career pathways. Such phenomena as rising levels of educational attainment, female educational and labour force participation rates, and information technologies emphasize the concomitant transformation of education and society and create a dynamic global system for Vocational Education and Training (VET) (Power & Solga 2008).

Furthermore, internationally, increases in average skill requirements, coupled with the risk of skill polarization, suggest that educational processes and outputs need to be reformed. Shifts away from job-specific skills and toward broader, more analytic general skills, but also moves from technical, routine activities toward autonomous work in multiple social contexts as well as the rapid decline in production jobs toward services seem to demand responses from all organizations that train people (Power & Solga 2008). Therefore, VET has become an integral part of modern educational systems across both developed and developing economies (Ey, 2018).

Despite the importance of VET provision, very few systematic studies have addressed performance of VET organizations. Smit (1999) studies VET providers as key players in competency-based-training and reviews the performance of them in ten years prior to 1999. She concludes that the VET system in Australia follows the British model and has gone through some periods of poor implementation but now it has become a workable system that supports industries and labour market. Moldovan (2015) targets VET providers in US, US and Germany and argues that VET systems requires a sustainability framework otherwise performance dimensions and measurements may drift away from emerging sustainability priorities internationally. Moldovan, (2018) building on Moldonan (2015) develops a sustainability framework for VET providers based on the European Quality. Assurance standards. Baker, Drev, and Almeida, (2019) studies and compared VET providers in Brazil and the US in terms of courses offered and their ranges and innovativeness. They find that It has become common in developed economies for industrial concerns to maintain research and design expertise in centres of innovation and move actual production and manufacturing offshore to other countries. While there are certain efficiencies to this approach, it raises questions about what might be lost in the hollowing out of the production of goods that depend on advanced and specialized skills, as well as what efficiencies might be lost, especially in nascent complex product industries, due to a widening geographical gap between research, design, and manufacturing. Several occupations (i.e. "middle-skill") are increasingly requiring advanced skills that historically have been considered technical or vocational. These skills fall somewhat between those generally acquired in a higher educational setting and more traditional vocational training. It is not uncommon to frame labor force adaptive innovation as a consequence of top-down corporate innovation, but less recognized is bottom-up innovation, particularly in manufacturing settings, that comes from the characteristics and experience of the labour force with significant tacit knowledge of production processes, and which can influence industry sector innovation. We believe that this represents a relatively untapped source of innovation that can be developed.

Another aspect of the performance of VET providers has been student performance. Cid-Sillero, Santiago-Ramajo, and Martín-Lobo, (2018) studied the relationship between executive functions and empathy and their influence on academic performance in students of basic vocational training. They found that the level of executive functions explained 15% of the variability in academic performance, while empathy had no significant influence. Discussion and conclusions: This study demonstrates the importance of examining development of executive functions in adolescent BVT students and determining their influence on academic performance.

As these studies suggest the VET sector has been marginalized and overshadowed by the university sector. Studies on the performance of RTOs are very small, scattered and fragmented internationally and Australia is not an exception. Majority of what is available comes from government agencies and relate to policy making and institutional views. Therefore, a research on how RTOs can benefit from established performance management and measurement tools such as BSC is warranted and can generate new insights into the management of VET providers domestically and internationally.

3.3 Vocational Education and Training in Australia

According to Atkinson and Stanwich, (2016), the vocational education and training (VET) sector is the largest education sector in Australia. VET features strongly in the nation's history, with Australia showing an early commitment to vocational training through apprenticeships and institutional training as imported from Great Britain (Beddie 2010; Knight 2012). While vocational education has featured as a major mechanism for meeting the skills needs of Australia, there has always been a further dimension of VET's role in assisting in social inclusion. The aim is to support participation in training as a point of labour market entry or as a result of industry restructure. This is often targeted to the less advantaged population, particularly post-schooling age groups. Over the years, policymakers have aimed to strengthen the VET sector to ensure that it is responsive to the

labour market and meets the skills needs of individuals, employers and the wider economy (Atkinson & Stanwich, 2016).

3.3.1 Structure of VET in Australia

The Australian VET system is characterized by two complementary approaches to skills training. The first is the broader VET system of institution-based education and training for young people, a significant part of which is the employment-linked apprenticeship and traineeship system. The second is the provision of skills for existing workers, offered on a full- and part-time basis. According to Ey (2018), Accredited VET programs cover a wide range of activities, including part-day employer-specific training, general use courses such as first aid training, year-long employment-related certificates, apprenticeships, and postgraduate diplomas. Courses include those provided at Australian Qualifications Framework (AQF) levels 1 to 8, as well as non-award courses. in 2017, an estimated 4.2 million students were enrolled in VET with an Australian training provider, representing almost a quarter of the Australian population aged 15–64 years. In comparison, in the same year, there were 1.5 million higher education students enrolled with an Australian higher education provider, and 3.8 million school students enrolled in Australia (Ey, 2018). Of those VET students for whom the relevant information is recorded:

- 52.0% were male
- 3.8% identified as Indigenous
- 5.0% reported having a disability and
- 4.4% were international students.

For domestic students, 65.7% reside in major cities, 31.5% in regional areas, and 2.9% in remote areas. Australian Bureau of Statistics population figures for 2017 showed that 71.8% of the population lived in major cities, 26.2% in regional areas and 2.0% in remote locations (Ey, 2018).

3.4 Registered Training Organizations

Registered training organizations (RTOs), are the main provider of VET in Australia. According to Ey (2018), In 2017, VET courses were provided by:

- 3,156 private training providers (RTOs)
- 442 community education providers
- 398 schools
- 143 enterprise providers
- 41 TAFE institutes and
- 13 universities.

Furthermore, of the total 4,193 providers, 240 were not registered training organisations (RTOs). Providers must be registered in order to deliver nationally recognised courses and AQF-accredited VET qualifications, or to receive government funding for the provision of VET courses. Those providers who are not RTOs would typically be delivering non-award courses. Most students (60.2%) were enrolled with a private training provider only, while the next largest group were enrolled with a TAFE institution only (16.1%) (Ey, 2018).

Korbel and Osborne (2019) study small RTOs in Australia and argue that small providers play an important role in providing diversity in student choice. In every state and territory in 2017, all stable small providers combined delivered more national training package qualifications and nationally recognised accredited courses than any single stable large provider with a comparable number of enrolments. These RTOs tend to deliver higher-level and more specialised programs than stable medium and large providers. A higher proportion of enrolments at stable small providers in 2017 were in Australian Qualifications Framework (AQF) programs at certificate IV level and above. For example, in 2017, most enrolments in qualifications in the Funeral Services Training Package, the

Diploma of Aviation (Instrument Rating) and the Advanced Diploma of Dance (Elite Performance) were with stable small providers (Korbel & Osborne 2019).

Additionally, Small RTOs more often delivered highly specialised courses on a fee-for-service basis in areas where there is little or no government funding, such as the performing arts, theology, religious ministry and yoga. In many cases the providers themselves had applied to have them nationally recognised as accredited courses. for key equity groups. Students with a disability made up at least a quarter of students at one in 20 stable small providers (compared with one in 100 stable large providers). Similarly, Indigenous students made up at least a quarter of students at one in 20 stable small providers (compared with one in 100 stable large providers). Stable small providers are like stable medium and large providers in terms of their geographical reach, rates of graduate satisfaction, regulatory compliance, and the issues faced in reporting training data to the National VET Provider Collection.

3.4.1 Performance Indicators of RTOs in Australia

As pointed by Karmel *et al.* (2013) and further supported by Ey (2019) and Korbel and Osborne (2019), In recent years, an interest in indicators at the provider — registered training organisation (RTO) — level has emerged. This interest has come on several fronts. First, RTO level data has been a valuable tool for regulators — and government agencies have done considerable work in this area for the Australian Skills Quality Agency. Second, training markets have become of increasing importance and one of the pre-requisites for effective markets is good information. The third motivation for indicators comes from governments in the administration of their programs. RTO level information is seen as critical to accountability, and there is thought to funding by outcomes (which of course implies RTO performance indicators).

According to Karmel *et al.* (2013), there is no single way of categorizing RTO indicators, and a review of practice elsewhere gives a variety of approaches. Some of the approaches to indicators

have a stronger focus on system accountability and may not necessarily translate well to the RTO level. For example, the International Labour Organization (ILO), United Nations Educational, Scientific and Cultural Organization (UNESCO) and the European Training Foundation (ETF) (2012) have recently developed an indicator framework for VET providers in Europe, with the categories being finance, access and participation, quality and innovation, and relevance to the labour market. Another system level framework is the 3Es model — economy, efficiency and effectiveness — provided by the Report on Government Services (see Productivity Commission 2010). United Nations Development Program (UNDP) is also concerned with system accountability and have established indicators around four key objectives of VET: participation (considered here as social partners and stakeholders participating in decision making); accountability (transparency and governance); de-centralisation (autonomy in decision making and innovation of training system); and effectiveness and efficiency (system outcomes as they apply to labour market needs). The Organization for Economic Co-operation and Development (OECD) (2012), as part of its Indicators of National Education Systems (INES) program, focuses on four key education and training objectives: output of educational institutions and the impact on learners; financial and human resources investment in education and training; access, participation and progression; and the learning environment. (Karmel *et al.* 2013).

There are also numerous examples of frameworks which focus directly on RTO performance. including: Phillips KPA (2006), the Skills Funding Agency (UK) indicators for its inspection of Further Education Colleges and the Illinois State Board of Higher Education (IBHE 2003). The Phillips KPA proposes the following indicators:

- An index of learner engagement
- An index of learners' and graduates' perception of quality of teaching
- Learners' and graduates' satisfaction of the vet experience

- Self-assessment of learning outcomes
- Student employment and further learning outcomes
- Staff engagement with the education and training process
- Employers' satisfaction with the quality of training
- Completion rates
- Outcomes of review of assessment instruments and processes (this is not really an indicator).

Further to Phillips KPA, the skills funding agency (UK) undertakes learning and inspection reports of further education colleges. They use the following broad indicators in their college assessments:

- Outcomes for learners
- Quality of teaching and learning and assessment
- Effectiveness of leadership and management.

The Illinois State Board of Higher Education (IBHE 2003) has developed a performance framework around five key objectives:

- Economic growth (employer/industry satisfaction with training, research expenditures)
- Partnerships
- Affordability (cost of tuition fees, income support etc.)
- Access and diversity (levels of access by disability status, ethnicity and gender)
- Quality (of teaching staff and course satisfaction).

The above three frameworks are from the point of view of central government agencies. By contrast the further education FE Choices website set up by the Skills Funding Agency (UK) presents indicators on:

- Success rates (the percentage of people who achieved the qualification they started)
- Learner destinations (the proportion of learners who progressed into or within further or higher education, found a job or improved their career prospects after completing their course)
- Learning rate (the percentage of learners who went into higher education)
- employment rate (the percentage of learners who found work, got a better job or improved their prospects)
- Learner satisfaction (how learners rated their training organisation)
- Employer satisfaction (how employers rated the training for a particular training organisation).

After reviewing and critically assessing these indicators, Karmel *et al.* (2013) propose the following indicators for evaluating performance of Australian RTOs:

- ***Student characteristics:*** Number of students, distribution of students by age and sex, proportion of students who are Indigenous, proportion of students who have a disability, proportion of students who completed school, proportion of students who are international, proportion of students from a non-English speaking background, proportion of students who have a previous non-school qualification, proportion of students who completed Year 12.
- ***Training characteristics***: Distribution of student by field of education, distribution of students by qualification level, full-year training equivalents, number of states in which training is delivered, number of sites of delivery, number of qualifications registered to deliver, fee levels, proportion of income from fee-for-service activity.
- ***Provider characteristics***: Number of staffs, number of staff by field of education, number of staff by age, length of operation.

- ***Amenities and services:*** Distance to public transport, the number of car parking spaces, extent of financial assistance to students (including extent of campus employment), size of library, access to internet, level of pastoral care (student support services per student).
- ***Registered training organization management***: Capital reserves, assets.
- ***Efficiency:*** Module pass rate, qualification completion rate, proportion of recognition of prior learning (RPL) granted, time taken to complete a course, cost per publicly funded full year training equivalent (FYTE), share of cost to employers providing apprenticeships and other types of training, private spending by the student on a VET course, administrative and support costs per student or FYTE, salaries and salary related costs, turnover, operating expenses, operating revenues.
- ***Quality of teaching and learning indicators:*** Student: teacher ratio, proportion of trainers with Certificate IV in Training and Assessment (TAE), proportion of trainers with degrees or diplomas in teaching/training, level of staff satisfaction and motivation levels, level of staff engagement in professional development, adequate facilities and equipment (measured by age of plant), number of complaints/black marks, innovation measure — share of information and communications technology (ICT) training activities, proportion of delivery subcontracted, occupational health and safety incidences, transition paths from VET in schools — proportion of VET in schools students who continue in VET post-school, policies or descriptive effective NCVER 11 practices on articulation with higher education, the proportion of students enrolled in higher education who receive credit for VET or who were admitted based on previous VET, the proportion of graduates enrolled in further study, proportion of VET by online delivery, proportion of delivery at the workplace, proportion of delivery in the classroom, proportion of graduates who report that training was relevant, extent of collaboration with industry, student attendance at institution, student participation in extracurricular activities, extent of practices to improve

program quality (for example, institution wide use of assessment results to improve program quality).

- ***Consumer satisfaction:*** Overall satisfaction with the course, satisfaction of graduates with teacher quality, satisfaction with learning outcomes, whether a student achieved main goal, whether a student would recommend the institution, satisfaction of employers with training, satisfaction of graduates with teaching facilities, satisfaction of graduates with assessment quality.
- ***Labour market effectiveness***: Employment rate of graduates, employment rate of graduates of those not employed before training, level of match between course and job after training, proportion of graduates reporting their training was relevant to their job, salary of full-time workers after training, literacy rate.

3.5 Summary of Chapter Three

This chapter briefly reviewed the VET sector internationally and in Australia with a focus on the sector in Australia, it also delved into performance indicators that various countries use to measure performance of RTOs (VET providers). It was shown that very few studies have assessed how performance indicators of RTOs can be assessed and strategically analysed. This chapter gives more credit to the knowledge gap that was spotted and discussed in chapter one and then reiterated in chapter three on the need to explore how balanced scorecard as a performance management and measurement tool can be applied in the VET sector to help RTOs map their strategic performance indicators and align it with their visions and strategy. Next chapter explains the research methods and designs used toward this goal.

CHAPTER FOUR

RESEARCH METHODS & DESIGN

4.1 Introduction to Chapter Four

Having considered the basic concepts underlying the initial Balanced Scorecard tool and its evolution, as well as its application and relevance in the Higher Education sector, it is time to focus on developing a BSC model for the Registered Training Organizations (RTOs) in Australia.

This chapter is aimed to explain the research design and methods of this research in the form of an integrated methodological discussion. As a study in organization and management science, this research must employ a set of scientific, philosophically sound and reliable methods (Easerby-Smith, Thorbe & Lowe,2002; Gil & Johnson,2002; Creswell 2007). These methods underpin design, conduct and applications of this research. Furthermore, as Pettigrew (1997, p. 342) notes, "the practice of research is best informed by a theory of method which clarifies and makes explicit the range of guiding assumptions shaping the conduct of that research/".

Following the argument of Morgan, and Smircich, (1980), about the criticality of understanding the philosophical settings of research, the methodology of this study begins with the philosophical foundations. Then, I explain the research design including data collection and analysis methods as well as approaches which are utilized and undertaken to create a scientifically rigorous and relevant body of knowledge.

It is argued that, this approach is most likely to yield a practically, as well as theoretically, robust set of findings (Easterby-Smith, Thorpe, & Lowe, 2002) that fulfils requirements of a strategic research study (Heil, & Whittaker, 2007) and makes a significant theoretical contribution (Morgan, and Smircich, 1980).

Accordingly, this chapter is disaggregated into four consecutive sections. The first section discusses the philosophical grounding, by succinctly explaining the epistemological and ontological orientations of the research and indicates a philosophically appropriate that directs the data collection and analysis strategies.

The second part elaborates the qualitative research strategy and its appropriateness, hence underscoring key assumptions, aspects and dimensions of qualitative technique - in this context. The third and fourth sections complete the methodology debate, by illustrating and articulating the techniques applied for data collection and analysis including: case selection, development of the interview protocol, review of multileveled research and narrative analysis as well as inductive reasoning and theory building. Overall, this chapter is designed to show how the research meets its objectives and answers the questions.

4.2 Philosophical Foundation of the Research

Philosophical issues in management and organization research have been always subject to controversial and paradoxical discussions amongst scholars (Godfrey & Hill,1995; Tranfiled & Starkey, 1998; Leitch , Hill, & Harrison, 2010). Perhaps this lengthy discourse is caused by the fact that management research has no single agreed ontological or epistemological paradigm, as it is a heterogeneous and fragmented field (Tranfield and Starkey, 1998).

However despite this situation debates regarding research in social sciences, as the parent discipline of management and organization theory, have always been explicitly, or implicitly, linked to assumptions about ontology, epistemology and human nature (Morgan & Smircich, 1989; 2007). Thus strategy research has not been excluded from this tenet and, in fact, has been frequently fed by diverse epistemic doctrines (Tranfiled & Starkey, 1998; Edwards, 2010;Schultz, 2010).

Acknowledging this notion and following the ongoing debate of philosophical grounding of strategy research, this part discusses the philosophical bases of this research and methods. by

explaining the nature and origin of knowledge embedded in processes and emancipated by methods in this research. This requires an intensive discussion of key philosophical assumptions of research; these assumptions are adopted from Creswell (2007, p. 17) and are summarized in Table 4-1.

Table 4-1: Philosophical assumptions with implications for practice (Adopted from Creswell, 2007, p. 17)

Assumption	***Underlying Question***	***Characteristics***	***Implications For Practice***
Ontological	What is the nature of reality?	Reality is subjective, and multiple as seen by participants in the study.	Researchers use quotes and themes in words of participants and provide evidence of different perspectives.
Epistemological	What is the relationship between the researcher and that being researched?	Researcher attempts to lessen distance between himself or herself and that being researched.	Researcher collaborates, spends time in the field (cases) and becomes an insider.
Methodological	What is the process of research?	Researcher uses inductive logic, studies the topic within its context and uses an emerging design.	Researcher works with details, describe the context of the study in detail and continually revise the questions from experiences in the field.
Axiological	What is the role of values?	Researcher acknowledges that research is value-laden and that biases are present.	Researcher openly discusses values that shape the narrative and includes his or her own interpretation in conjunction with the interpretations of participants.
Rhetorical	What is the language of the research?	Researcher writes in a literary style and using personal voices and uses qualitative terms with limited definitions.	Research uses an engaging style of narrative, may use first-person pronoun and employs the language of qualitative research

The subsequent epistemological and ontological discussion indicates the directions for acquiring and interpreting scientific knowledge in this research. Rhetorical as well as axiological issues are discussed thoroughly in data collection and ethical considerations of this chapter.

4.2.1 Epistemological and Ontological Orientation of This Research

As noted in Chapter 2, the social construction of organizational activities, which underpin strategic performance in the Balanced Scorecard, constitutes the research context of this study.

In other words, this study seeks to create a novel understanding of the relationships between a set of embedded and socially constructed factors including routines, operational and managerial capabilities, and knowledge strategies that come together in an organization balanced scorecard. This class of constructs is characterized with their knowledge-based origin and embedded structure (Barreto, 2010; Nelson & Winter,1982). As a result, the epistemology of this strand faces a challenging paradigm (Godfrey & Hill, 1995). In this context, on the one side, a positivist approach has been undertaken by some scholars in applying hypo-deductive logic (e. g, Drnevich & Kriauciunas,2010; Zhou, & Li, 2010; Sirmon & Hit, 2009); on the other side, the capability view can be seen as a non-positivist view (Godfrey & Hill, 1995; Powell, 2003). This paradoxical stand causes a pluralistic approach to the construct of social reality and epistemology in this field of research.

To clarify this issue and disentangle epistemological barriers, management research has mostly been viewed within 'positivism and the rest' spectrum (Burgoyne, 2008). As a matter of fact, epistemological pluralism is now a common term in management research methods (Tsui, 2007; Easterby-Smith, Golden-Biddle & Locke, 2008).

However, the key principle in distinguishing a specific epistemological direction, among a variety and plurality of paradigms, is the nature of the knowledge sought in the research as knowledge forms part of the circularity of epistemology (Johnson, & Dubereley, 2000). Relating to this tenet, positivism seeks objective knowledge of the world whereas postmodernism takes knowledge as an

uncertain entity residing in temporal incomplete realities and critical realism considers knowledge as a systematic set of realities (Fisher, 2007).

Management research, the nature of knowledge sought and methods to engender this knowledge fall along a continuum of the Orthodox-Gnostic view of human subjectivity - from positivism to non-positivism or hermeneutic (Fisher, 2007). In other words, research choices are formed based on the social standpoint of the researcher as either an insider, who conducts obtrusive investigation or an outsider who does unobtrusive investigation (Gill & Johnson, 2002).

This perspective implies an epistemological reflectivity on the basis of the circularity notion of Johnson and Dubereley (2000) and holds the assumption that, "researchers cannot hope to find the 'best' way of carrying out research in order to produce new knowledge; we can only produce this knowledge from a stated perspective (e.g. positivism and post-positivism).

However, we, and our readers (readings) must be clear about what this meta-theoretical perspective is (Anderson, 2008). Given this point, although the nature of the knowledge in management and strategy research has been discussed in a bewildering and lengthy course (Morgan & Smircich, 1980; Knight & Morgan, 1991; Deetz, 1996; Cunliffe, 2010) but the essence of capabilities (including BM) as embedded socially constructed constructs (regardless of their conceptual typology in terms of operational, explorative-exploitative, managerial and organizational or dynamic) and procedural type of this research (illuminated by its objectives and research questions) imply the utility of the classical view of Morgan and Smircich (1980) and its extension in the language of Cunliffe, (2010) for determining a sound epistemological-ontological base for the research.

This approach is undertaken for the following three reasons. First, it clearly determines the position of the research in the context of procedural, complicated and embedded socially constructed organizational constructs. Second it embraces the view of a case study as a realistic method, that is

able to explore procedural embedded phenomena; and third, it fits properly into the current prevailing philosophical doctrine of critical realism in strategy process research.

In chapter two it was noted that, organizations are essentially social systems (Klein et al., 2010) which perform a variety of knowledge activities through systematic interactions of individuals as their core social actors (Grant, 1996a,b;Spenser, 1996). These micro-level mechanisms form routines (Nelson and Winter, 1982; Salvato and Rerup, 2010) and enable RTOs to develop capabilities that underpin their strategic performance (Teece, 2007). Furthermore, it was clearly demonstrated that tacitness, embeddedness and social construction are idiosyncrasies of activity domains in the balanced scorecard theory.

This reveals the complementary relationships of two focal systems which represent the nature of this research; 1) Organizational knowledge activities and 2) social systems in an organization (Zollo and Winter, 2002). Hence, organizational capabilities are fruits of social knowledge (Kogut and Zander, 1992) and underly the overall ability of an organization to perform its tasks social system (Collis, 1994).

Having considered this succinct contour of theoretical nature and conceptual origin of organizational capabilities and the consequent social phenomena, the choice of methodology for studying models of performance management and measurement is justified. In order to incorporate this theoretical posture philosophically into the current dominant ontological and epistemological models of strategy research, I leverage the epistemological arguments of Godfrey and Hill, (1995) and ontological assumptions of objectivism-subjectivism dichotomy (Morgan & Smircich, 1980 and Cunliffe, 2010).

According to Morgan and Smircich ontology can be discussed in terms of objective or subjective knowledge for social reality. As explained above, scholars have believed in independent existence of organizational capabilities in organizational systems; capabilities, routines and value

systems do perform and act across organizational levels (Nelson & Winter, 1982; Salvato & Rerup, 2010) This ontological objectivism results in the view of social reality as a concrete process characterized by interacting, evolving, and contingent processes (Morgan & Smircich, 1980, Cunliffe, 2010). This concrete view of reality is opposite to the positivism view and hence takes a non-positivist position of realism (Godfrey & Hill, 1995).

This attribute leads to adoption of the epistemological assumption of systems, processes and change; the objectivism view of reality fits with the epistemological view of systematic processes, change and organism view of an organization (Morgan & Smircich, 1980, Cunliffe, 2010). This conception is particularly important in this research due to the specific attention to relationality (Cunliffe, 2010).

In this regard, Cunliffe extends the M&S ontological model and adds this note that, the procedural view of objective reality denotes "relationships between entities in a preexisting society, between network mechanisms and system/information processes, cognitive and behavioral elements, or relationships between discourses (when treated as objects)" (Cunliffe, 2010, p. 8).

This orientation leads to the critical realist view of epistemology and eventually constructs a philosophically sound and robust methodological base for the research as explained later. In addition, positioning the inquiry in this direction provides vigorous analytical justifications for theory-building exploratory qualitative research. To conclude the ontological debate, the following summary Table 4-2 lists key areas of this ontological standpoint derived from Cunliffe, (2010). These key notes are used in mapping the epistemological and methodological realms of the research described in the next parts of this chapter.

Table 4-2: Objectivism and associated ontological assumptions (Cunliffe, 2010)

Key Assumption	Description and/or Implication

Relationality — the nature of relationships.	Relationships between entities in a preexisting society, between network mechanisms & system/information processes, cognitive & behavioral elements. Or relationships between discourses (when treated as objects).
Meanings — what & where meaning is located.	Common meaning situated in words, structures, roles, words, behaviors. Transcend time & space. Language is literal.
Mediation — the place of the researcher in the research.	Single hermeneutic. Knowledge & researcher are separate from the world. Researcher observes, discovers facts & develops predictive theories. Experience of the world. Detached, sometimes critical researcher
Core ontological assumptions of research methodologies (The nature of social reality)	Reality as process: interrelated actions, elements, structures, and systems. Generalizable or context-dependent.
Type of research (as science or design)	Research as science
Assumptions about human nature (How we relate to our world)	Humans as an element in the process, adapting to & sometimes managing elements. Information processors & network coordinators.
Research Approaches (Philosophical/theoretical underpinnings)	Systems & process theories. Critical realism. Critical theory. Institutional theories,
Research Methods (Examples of methods used)	interviews, case studies, focus groups, grounded theory, action research.
Some linguistic features of research. (Typical words used in research accounts)	Categories, norms, roles, properties, processes, schema, rules, structures, causality, patterns, efficiency, 'the organization',

Epistemological critical realism is emancipated from this ontology. This epistemology holds key principles which philosophically adhere the theoretical origins of the research to its methodology. In critical realism, scholars argue that "there is a real world which cannot be generally understood nor fully grasped because it is perceived from partial and positioned perspectives" (Cunliffe,2010;9). This view is consistent with the research approach to capabilities and value systems as unobservable socially constructed, multi-faceted and embedded constructs (Godfrey & Hill, 1995).

In other words, critical realism as part of a growing scientific trend in management research (Contu, & Willmott, 2005; Fleetwood, 2005; Reed,2005; Easton, 2010), pays specific attention to exploratory aspects of the research under which the social reality requires empirical procedural investigation of mechanism, interrelated and intertwined factors (Madill, 2008).

Furthermore, critical realism endorses theorization and philosophically respects and encourages endeavours to explore new theoretical propositions, using qualitative methods (Clark, 2008). This can be associated with one of the core axioms of this epistemological school that "simultaneously recognizes the existence of knowledge independent of humans but also the socially embedded and fallible nature of scientific inquiry" (Clark, 2008, p. 167). These attributes stem from the structure of this philosophical dogma, which assumes reality (social reality as organizational mechanism and dynamism of capabilities) consists of three realms of actual, real and empirical (Archer *et al.* 1998). Clark (2008, p. 167) describes these three as:

> *"the actual domain refers to events and outcomes that occur in the world. The real domain refers to underlying relations, structures, and tendencies that have the power to cause changes in the actual realm. Most often these causal influences remain latent; however, under the right circumstances, factors in the real domain can act together to generate causal changes in the actual domain. These causal changes are neither uniform nor chaotic but are somewhat patterned. The empirical dimension refers to human perspectives on the world (i.e., of the actual and real domains)".*

This posture has made critical realism an increasingly important and relevant philosophical standpoint in contemporary organization and management research (Fleetwood, and Ackroyd, 2004;) as well as specifically in strategy research (Mir & Watson, 2001)).

Junor (2001) further associates this dramatic increase in the credibility of critical realism with providing exploratory and explanatory power and practical applications; he then highlights the potential of this philosophical tenet in addressing intermediate levels between individuals and society (multi-level theories and models). Probing more into the critical realism school shows that it advocates the use of interviews and narratives for discovering knowledge in organizational complex settings (Aastrup & Halldorsson, 2008); this can be attributed to its assumptions about the procedural and stratified structure of social reality (Eastern, 2002; Losch, 2009).

To conclude, critical realism is a philosophical regime which entails independence (pre-existentiality), objectivity of social reality and procedural nature of social knowledge. Hence it embodies processes, structures and contingent factors (Easton, 2002). Consequently, critical realist research endorses exploratory empirical investigations to discover knowledge (Theory-building endeavours) of embedded and socially constructed phenomena in an organizational context. It subscribes to interpretive qualitative inquiry and so permits employment of narrative analysis and interview. As a result, critical realism is perhaps a philosophy of science on its own (Losch, 2009; Clark, 2008), which provides plausible and compelling axioms for advancement of management research.

Given this conclusion, I explain the use of a case study to clarify how research paradigm and design elements of study are appropriately aligned and orchestrated under this philosophical doctrine, to explore how BSC can be adopted at RTOs.

4.2.2 Critical Realism and the Case Study

The characteristics and underlying assumptions of critical realist philosophy are methodologically substantiated in case study research (Easton, 2010). Case study research essentially follows a "scientific realist philosophy" (Dul & Hak, 2008, p.) and critical realism offers more advanced axiomatic explanations for adoption of case methods in exploratory investigations of a

variety of organizational fields, in particular, in strategy process and theory-building research (Mir &Watson, 2001; Easton, 2010).

Easton (2010) in his compelling discussion on the critical realist basis of case study research, refers to prior work by Sayer (2000) in which research methods are classified as either intensive or extensive; under this scenario a case study is argued to be an intensive method, due to its focus on agents using interview and qualitative methods to seek knowledge of how change is brought about (Easton, 2010, p. 124).

Furthermore, the critical realist view of case study research necessitates a specific type of research question in the form of "what caused the events associated with the phenomenon?", (Easton, 2010, p. 123). This structure is followed and respected in this study; Questions posited in chapter one is all designed to explore what processes and mechanisms create identifiable dynamism of value innovation and what types and form of dynamic capabilities underly this pipeline of innovation.

This 'what' form possesses many interrelated 'how' questions, which jointly shed light on the procedural type of inquiry and shape the exploratory nature of this research (Yin, 2003,2009). This argument makes more sense when the following note is added, "critical realist case approach is particularly well suited to relatively clearly bounded, but complex, phenomena such as organizations, inter-organizational relationships or nets of connected organizational systems". (Easton, 2010, p. 123).

As the research driver of case studies is the desire to explore and understand complex situations (Yin, 2003:2), the critical realism tenet provides a vigorous philosophical framework for case-based knowledge inquiry (Aastrup, & Halldorsson, 2008). This distinctive research desire and philosophical fitness allows researchers to generate well-situated and grounded context-dependent knowledge (Flyvbjerg 2006). As a result, critical realist philosophy embodied in a case study, engenders a systematic approach to knowledge acquisition in complex, embedded and socially constructed

phenomena in organizational and institutional contexts (Flyvbjerg 2006; Aastrup, & Halldorsson, 2008; Easton, 2010).

The above arguments suggest that case study research is philosophically appropriate for exploring strategic issues (Eisenhardt 1989b, Santos & Eisenahrdt, 2009). Therefore, a multiple case study is a methodologically appropriate and philosophically sound method of exploratory, inductive theory building for organizational systems.

Given this synthesis of methodology, ontology and epistemology, the paradigm of research and its building-blocks are elaborated in successive sections of this chapter. This approach is the most scientifically-driven way to design a rigorous study (Morgan & Smircich, 1980) and leads to robust and reflexive findings.

4.3 Paradigm of this Research:

Having acknowledged ontological objectivism and epistemological critical realism as two pillars of this research and the case study as a fitting methodology, it should be noted that these two dimensions converge into the research paradigm - clarifying the methodological orientation of the study in terms of data collection and analysis. This research paradigm, which encompasses key assumptions of ontology, epistemology and methodology in the form of a world view for the researcher (Guba and Lincoln, 1994, p. 107). Thus enhances the utilization of the research (Aken, 2004); it also clarifies the progress and deployment of schools of thought within a research field (McKinley, Mone & Moon, 1999).

Positioning in a paradigm also allows the researcher to manifest his understandings of different approaches to organizational analysis (Özkan, & Murphy, 2010). Having established the importance of a paradigm in research design, this research adopts the paradigmatic models of Higgs (1998) and Guba and Lincols (1994) as they synthetically provide understanding of organizations' processes through data analysis of case studies (Hatch, 1996; Pentland,1999). This paradigm choice

is made mainly because, despite a plethora of discussions about reducing paradigmatical confusion surrounding researallign (Meredith *et al.* 1989;Hassard, 1991; Schultz, & Hatch, 1996; Gephart, 1999; Van Aken, 2004; Diaz Andrade, 2009) the debate remains unsettled - as more complicated research areas and methodologies appear.

However, in this research, the interpretive paradigm of social science stems from the above mentioned and permits utilization of qualitative exploratory approaches, as well as acting as an overarching model for case study investigations to provide scientific knowledge through application of consistent and coherent techniques.

4.3.1 Interpretive Paradigm

An interpretive paradigm differs fundamentally from interpretivism philosophy (Higgs, 1998). This paradigm basically offers an approach to develop a deep insight into "the complex world of lived experience from the point of view of those who live it" (Schwandt, 1994, p. 118 cited in Diaz Andrade, 2009). So, although the interpretive research paradigm assumes that reality is socially constructed and the researcher is the vehicle by which this reality is revealed (Cavana, Delahaye, & Sekaran,2001; Walsham, 1995a, 1995b cited in Diaz Andrade, 2009), it does not necessarily hold interpretivism's notions of inter-dependency between the researcher and the knowable world (Corbetta, 2003, p. 14; Guba and Lincoln, 1994, p. 109).

The Interpretive Research Paradigm is incorporated in the form of an interpretive inquiry which focuses on understanding of meanings, purposes, intentions and processes (Smith, 1992; Smith, 2008). This research framework is based on the act of understanding complex multifaceted and socially embedded phenomena (Patton, 2002) such as organizational projects and their processes (Klein, 1994). This allows the researcher to explore the system of individuals and their social worlds (Patton, 2002); in this instance it becomes the process of adopting BSC in an RTO.

Interpretive research does not follow a set of predetermined design criteria (Klein, and Myers,1999) and hence provides flexibility in knowledge creation, based on the exploration and dissemination of new meanings and understandings through descriptions and explanations (Smith, 2008:459; Deetz 1996; Schatzki, 2005). These attributes have made the interpretive paradigm increasingly interesting for organization and management scholars, who seek to explore processes, adoption of tools and technologies as well as organizational change and transformations (Alvesson & Sköldberg, 1999; Sandberg, 2005).

As Deetz, (1996, p.387) argues, "from an interpretivist position, the organization is a social site, a special type of community which shares important characteristics". This author further states that, the focus of interpretive organizational research is on social rather than economic aspects of organizational activities. This underscores the core objective of how particular realities are socially produced and maintained (Hardy & Clegg 1997; Özkan, & Murphy, 2010). This quest has brought about the acceptance of social science research methods including ethnography, hermeneutics, phenomenology, and case studies in the management research discipline (Lee, 1991).

In addition, this methodological flexibility has enabled researchers to explore and answer previously unexplored areas using new forms of knowledge creation (Sandberg, 2005). It has also provided new insights into management and organization theory and consequently contributed to methodological and epistemological perplexities (Prasad & Prasad, 2002; Smith & Deemer, 2000; Sandberg, 2005).

Given these paradigmatic features, a summary of research dimensions in the interpretive model is compared with the other two classically competing views in Table 4-3 (positivism or empirico-analytic and critical) (Higgs, 1998) in order to show how interpretive framework fits into research.

Table 4-3: Research Dimensions and Paradigms in Qualitative Research (Higgs, 1998)

Context	Research paradigm	Research goals	Research approach	Research methods (data collection)	Research methods (data analysis)	Quality control /review
Research Question	Empirico-analytical paradigm	To measure, test hypothesize, discover, predict, explain, identify, case-effect relationships	Experimental methods, scientific methods	Controlled trials, interviews, questionnaires	Statistical analysis	Objectivity, validity, reliability
Theoretical framework	Interpretive paradigm	To understand, interpret, seek meaning, describe, explore, illuminate and theorize	Hermeneutics, phenomenology, narrative inquiry, naturalistic inquiry,	Interviews, case studies, storytelling, review of texts	Repeated returns to data, the process is circular, iterative, spiral, extraction of themes, theorization	Trustworthiness, authenticity, credibility, congruence
Domains of research	Critical paradigm	To improve, empower, change reality or circumstances	Action research Collaborative research, collaborative and planned action to achieve agreed goals, acting on existing conditions to change them	Interviews, case studies, storytelling, review of text, critical debate, review of espoused theory versus theory in action.	Critical debate, review of espoused theory versus theory in action. Sharing personal knowledge and experience	The change action, strategy is deemed to be successful by the actors. Existing knowledge is refined or elaborated

		amongst actors, refining and elaborating knowledge- reflecting upon and interpreting collected data

As Table 4-3 and earlier discussions show, the interpretive paradigm does not philosophically subscribe to the assumptions of the positivist view (Sandberg, 2005). Advocates of this paradigm have leveraged its ambitious features to expand the boundaries of organization knowledge as a socially complex system (Alvesson & Sköldberg, 1999; Prasad & Prasad, 2002). The interpretive paradigm therefore, endorses the post-positivist model of social inquiry (Sandberg,2005; Lincoln & Guba, 2003) which embraces ontological objectivism, and epistemological critical realism by use of qualitative methods, as shown in Table 4-4 (Guba & Lincoln, 1994) such as case studies (Lee, 1991).

Table 4-4: Interpretive Inquiry: Adopted from Guba and Lincoln (1994) and Higgs, (1998)

Item	***Post-Positivism***
Ontology	Objectivism
Epistemology	Critical Realism
Methodology	Modified Experiments, Qualitative Methods

This interpretive position offers a pervasive lens on qualitative research, which permits an interpretive stance on all dimensions of data collection, analysis and presentation (Creswell, 2007). This research adopts this direction and uses qualitative inquiry methods to pursue its objectives and explore scientifically reliable answers for its questions. The interpretive paradigm and qualitative inquiry create a methodologically as well as philosophically coherent framework (Patton, 2002; Bhattacharya, 2008) for exploration of organizationally complex and yet unchartered territories (Creswell, 2007; Higgs, 1998), such as adoption of BSC as a strategic PMMS.

4.3.2 Qualitative Research in Management

Having established the paradigm and philosophical setting of this research, in this section, an overview of qualitative research is provided, and aspects of the qualitative approach explained. This shows how the study is built along the bridge between ontology, epistemology and methodology which consequently ensures theoretical and practical rigor and relevant knowledge.

4.3.3 Characteristics of Qualitative research

There have been always discussions about qualitative versus quantitative methods and characteristics as well as advantages or disadvantages each one brings to research (Denzin and Lincoln, 1998). This debate has sometimes mistakenly been viewed as positivist versus non-positivist research (Creswell, 2007), so causing further disputation amongst social scientists (Guba & Lincoln, 2005; House, 2005; Denzin & Lincoln, 2005) and management scholars (Amis & Silk, 2008; Bluhm *et al.* 2010).

Nevertheless, the view of Miles and Huberman (1994) in which qualitative research is the systematic analysis of qualitative data, which are more in text form than numbers has been respected widely by scholars (e.g. Barratt, Choi & Li, 2010; Bluhm *et al.* 2010), to settle debates on positivism versus non-positivist models of qualitative organizational research (Beverland, Lindgreen, 2010; Aastrup, & Halldorsson, 2008).

In sum, the text-based nature of qualitative data and analytical methods as well as tools used to generate new knowledge from them, do not necessary indicate a specific philosophical doctrine but cover a whole array of philosophical schools (Denzin & Lincoln, 1998; Guba & Lincoln, 1994,2005). Furthermore, this essence of the data makes qualitative research fit appropriately into the interpretive paradigm (Lincoln & Denzin, 2003; Andrade, 2009; Lee, 1991). In addition, data sources such as interviews, observation as well as their transformation into rich text (Patton, 2002) results in sets of rich, context-embedded and well-grounded descriptions and explanations of processes (Miles & Huberman, 1994).

These peculiarities make interpretive qualitative research an advantageous mode in management and organization science, and justify its increasing significance in contemporary streams of organization research (Hannah, & Lautsch, 2010; Cunliffe, 2010; Bluhm, *et al*. 2010; Rynes, 2004; Pratt, 2009). Two issues warrant further comment here. First, qualitative inquiry and the interpretive paradigm match with process research as one of the chief aspects of investigation in this research (Langley, 2006); second, these factors are harmoniously orchestrated into the critical realist view of case study research. To conclusion, the key characteristics of qualitative inquiry under the interpretive paradigm and based on the model of Creswell (2007, p. 38) are summarized in Table 4-5.

Table 4-5: Characteristics and applicability of qualitative inquiry in this research (Creswell,2007)

Characteristic	***Applicability in this research***
Natural setting and naturalistic data	Self-reported data through interviews in the field and field non-participatory observations
Analysis of data inductively	Application of semi-grounded theory bundling method
Focus on participants perspective, meanings and subjective views	Conduct of semi-structured in-depth interviews

Framing of human organizations, behaviors, systems in a social context	Exploration of routines, capabilities and managerial decision making across organizational levels
Fundamentally interpretive inquiry	Interpretation of meanings, concepts and narratives
Holistic view of social phenomena	Development if a general theory consisting of all key factors across organizational levels

4.4 Research Design

As explained in Chapter 1, for exploring nascent fields and developing theoretical propositions for understanding interactions and relationships of embedded complex constructs, the most appropriate approach is qualitative research. This is perhaps a driver contributing to increasing attention to multiple-case studies in strategy process research, as briefly reviewed in two strands of dynamic capabilities and business models.

As dynamic capabilities and value constructs are multi-level unobservable entities embedded in sophisticated patterns and behaviours of organizational factors and prior research has paid little attention to multi-level theoretical dynamism, this research aims to create and explore a multi-level theory based on a rich knowledge base derived from multiple cases.

Hence, the design of this research synthesizes the two established and critical dimensions of contemporary strategy process research as multi-level theorization (Yammarino, & Dansereau, 2005; Mathieu, & Chen, 2010;Hitt, Beamish, Jackson, & Mathieu, 2007) and multiple-case study theory building (Eisenhardt & Graebner, 2007; Yin, 2009). This design is based on the assumptions of critical realism and fits within the selected research paradigm. It integrates key qualitative areas of prior studies with new methods, to meet the objectives of the research and provide reasonable and reliable answers for its questions.

In summary the design benefits from inductive theory building where data is analysed to develop a theory graduand in empirical evidence (Yin, 2009). The inductive nature of theory-building

research is different from deductive theory-testing in that no prior theory is examined or tested rather a new theoretical or conceptual model is developed by analysing data. The method is context-specific and the output is not as widely and broadly generalizable as the deductive method (Eisenhardt & Graebner, 2007).

4.4.1 Multilevel Research and Micro-Macro Analysis

As Hitt *et al.* (2007) state, most organizational constructs are multilevel but prior research has mainly focused on single-level analysis. This shortcoming also applies to dynamic capabilities, value innovation and ambidexterity; as the literature lacks an integrative approach to addressing these multi-level constructs from this neglected theoretical perspective.

In this context, Klein, Dansereau, and Hall, (1994) point out that, "By their very nature, organizations are multilevel. Individuals work in dyads, groups, and teams within organizations that interact with other organizations both inside and outside the industry. Accordingly, levels issues pervade organizational theory and research.

No construct is level free. Every construct is tied to one or more organizational levels or entities, that is, individuals, dyads, groups, organizations, industries, markets, and so on. So, a multi-level theory must clearly identify its target levels and take some theoretical assumptions into account in order to create a sound theoretical approach.

In the field of strategy process research, a primary step in a multi-level theory study is its clarification of multi-level theory development questions (Drnevich & Shanley, 2005) pertinent to the levels of targeted strategy theory. These relevant questions here can be stated as follows (Drnevich, & Shanley, 2005):

1. What is the vision structure of RTOs?
2. How is an RTO vision translated into key performance indicators?

3. How are these KPIs allocated to the four pillars of BSC?
4. How are the KPIs at each pillar linked to the performance of an RTO?

To address these questions in a theory-building process and align these aspects with the research questions, a set of assumptions for target levels of a multi-level theory building must be accepted (Hitt *et al.* 2007). These assumptions include the nature of the entities in the theory and their relationships (Klein, *et al.* 1994), theoretical flow of a multi-level approach (Hitt, *et al.* 2007) and cross-level links in a multi-level theory (Drnevich, & Shanley, 2005; Peteraf, 2005). For assumptions regarding the nature of entities this study adopts the model of Klein, *et al.* (1994). These authors offer three key assumptions for four levels of a theory in terms of homogeneity, heterogeneity and independence of entities over time in a multi-level system (organization); these assumptions are summarized in Table 4-6.

able 4-6: Assumptions of entities in a multi-level theory (Klein *et al*.1994)

Entity	***Homogeneity***	***Independence***	***Heterogeneity***
Individuals overtime	Observations of each individual are homogeneous over time (e.g., dispositional effect)	Observations of each individual are independent over time (e.g., situational effect)	Observations of each individual are heterogeneous over time (e.g., relative level of physical activity over time)
Individuals within group	Group members are homogenous within each group (e.g. stage of group development)	Group members are independent within each group (e.g. group member perceived work-family conflict)	Group members are heterogeneous within each group (e.g. relative power of each individual within each group)
Group within organization	Group are homogenous within each organization (e.g. group performance standards set by the organization)	Groups are independent of organizations (e.g. frequency with which group members socialize as a group outsize of the work	Group are heterogeneous within each organization (e.g. relative performance of each sale team within each organization)

Organization within industry	Organizations are homogenous within each industry (e.g. nature of organization's products)	organizations are independent of industries (e.g. organizational provision of family-oriented benefits such as parental leaves)	Organizations are heterogeneous with each industry (relative market share of each organization within an industry)

For the purposes of this study, adoption of BSC is driven by individuals' skills, knowledge and abilities as well as organizations systems, procedures and managerial actions. The following assumptions are accepted for the process of multi-level theorization:

1. Individuals are considered independent, as they possess different clusters of skills and knowledge as well as abilities.
2. Individuals in groups are observed heterotopous, as although groups follow strategies and standards of organization based on the decisions procedures made and designs by executives, the levels of learning and contribution to routines vary from one individual to another.
3. Groups in organizations are observed homogenously, as they are subject to the same value systems defined by the executive, who initiate and implement the BSC.
4. In essence organizations are considered heterogeneous in a given industry; as foundations and mechanism of performance drivers are firm-specific. But as RTOs operate in similar ways they are expected to adopt similar performance priorities across BSC pillars.

4.4.2 Level linkage approach

As discussed in Chapter 2, a BSC considers an organization as a multilevel entity with causal linkages between its various components. The second and subsequent generations of BSC consider these linkages pivotal elements of a strategic PMMS. Thus, a broader view of cross-level bridges is necessitated in this study. The transactional, managerial and atmosphere metaphors of cross-level

linkages, as conceptualized by Drnevich and Shanley, (2005), can be leveraged for the purpose of this research. It is argued that, for a multi-level theory in strategy research, entities in different levels (i.e. individuals, groups, divisions, and organization) can be linked through different bridges including transactional behavior and systems as exchange impacts, managerial decisions and actions as well as the atmosphere of the system (e.g. organizational culture). Table 4-7 below describes those bridges,

Table 4-7: Level linkages in a multi-level theory (Drnevich & Shanley, (2005)

linkage	*Description*
By Transactions/exchanges	Link via a common transaction or behaviour that all of the actors in a domain can, in principle, perform. Exchange or transaction here is general and can include informal social exchanges, market exchanges, long-term contracts, or mergers and strategic alliances.
By Managerial role	Link through the delineation of a general managerial role. Firms are called upon to make decisions in a variety of areas, from supply management and production, to sales and marketing, to research and development. These decisions span levels of analysis as well, from micro-level dealings between employees and customers, to group and organization decisions concerning operations, to strategies for interacting with other firms, government agencies, and media organizations. While these decisions can be looked at and analyzed in isolation, the ‘‘firm’’ must attend to them all together in real time to determine how to allocate its attention.
By atmosphere	Link through the effects of a shared context of interaction or atmosphere. The idea is that the more participants share such a background, the easier it will be to explain multi-level firm dynamics. In this sense, atmosphere constrains the strategic behaviour of managers and their firms. The importance of context has a long tradition in economic sociology, where context is seen as not just constraining on actors but also constitutive in that it helps to determine what is important for actors and how they should go about pursuing it and interacting with others this sometimes is seen as culture.

In the specific context of adopting a BSC, across levels including exploration and exploitation of competencies and processes which enable an RTO to compete successfully”. mapping its strategic priorities, two types of bridging mechanism are involved. These are:

1. Managerial role, which links processes and actors from performance assumptions to operation line activities; and

2. Atmosphere, in the form of a culture acting as a holistic system for employees to link their performance to KPIs and strategies of the RTO, based on BSC.

These bridges are utilized in this research and used in coding and analysis of data. The multi-level theory is hinged on the interplay and interactions of components, built on a platform consisting of the enterprises' atmosphere and managerial bonds. The next sections of this chapter explain the methods of case selection and multiple case theory-building approaches; these incorporate the assumptions of this section into a holistic method.

4.5 Case Study and Theory Building

To explore new meanings, understandings and explanations for complex, embedded and multilevel organizational activities a synthesized set of propositions is required, which will clarify these aspects. This involves theory-building to provide a systematic, purposeful set of interrelated explanations for underdeveloped and under-investigated organizational phenomena (Mintzberg, 2005; Whetten, 1989).

A theory can be constructed through different approaches like conceptual combination of prior observations (Eisenhardt 1989), a grounded approach (Glaser, & Strauss, 1967) or case studies (Yin, 2003; Eisenhardt 1989). Since 1990, theory-building by case studies has been increasingly receiving attention from management scholars (Yin, 2003). It creates salient theoretical insights into multi-faceted procedural areas of strategy. Case-driven theories are simpler than those built from grounded theory and they enable researchers to develop rigorous theoretical propositions, with significant managerial implications, from the case studies (Eisenhardt & Graebner, 2007; Ravenswood, 2010). The theories benefit from a rich organizational knowledge base and practical relevance, due mainly to the use of varied data from the organizational context (Dul & Halk, 2008; Ravenswood, 2010). To

adopt this approach, it seems logical to overview the concept of theory and dimensions of theory-building research and then discuss the design of theory-building used in this study.

4.5.1 Theory and Theory Developing Research

Review of the extensive organizational literature, demonstrates the magnitude and depth of attention paid by scholars to the terms 'theory and theorization' (Eisenhardt & Graebner, 2007). So, as this study is theory-building research, the concept of theory must be clearly explained. By doing this, the objectives and design of the research can be appropriately analyzed and confidently addressed.

To explain what theory is and what constitutes a theory in theory-building research, the well-known works of Whetten (1989) and Wacker (1998) are used and then the arguments of Zahra, and Newey (2009), Markóczy, and Deeds (2009) and McKinley, (2010) are applied, to reach a concrete analytical platform. This platform matches the notion of theory in case research and methodologically fits into the design of this study. A theory, as Wacker (1998, p. 363) argues, is a framework which consists of four interrelated components: 1) precise definitions of its terms, concepts, constructs or variables; 2) clear delineation of the domain where the theory applies; 3) sets of relationships between concepts and constructs or variables of the theory; and finally, 4) specific predictions and claims. In other words, a theory "carefully outlines the precise definitions in a specific domain to explain why and how the relationships are logically tied so that the theory gives specific predictions".

In addition, Whetten (1989) states that, in the theory development process the two criteria of comprehensiveness and parsimony demonstrate whether the right components (concepts and constructs) have been chosen. In this context, comprehensiveness represents the sufficiency and relevancy of factors included in the theory, whereas parsimony represses the need for deletion of factors which do not add value to the predictions or claims (Whetten, 1989). Furthermore, a theory is a set of assertions about how, what and why. Whetten argues: "What and How describe; only Why

explains. What and How provide a framework for interpreting patterns, or discrepancies, in our empirical observations. This is an important distinction because data, whether qualitative or quantitative, characterize; theory supplies the explanation for the characteristics".

The research questions and objective of this research (refer to Chapter 1) clearly show the why, how and what questions posed. A theory-building study seeks answers for describing, explaining and predicting relationships between theoretical factors. This notion applies in this study as it seeks knowledge of dynamism of performance in RTOs from the perspective of BSC; which is embedded in a multilevel system entailing routines, knowledge procedures, managerial capabilities and dynamic capabilities. The theoretical factors involved in this system, as well as their theoretical relationships according to existing knowledge were elaborated in Chapter 2. However, this body of knowledge does not offer a clear picture of the system; therefore, a good theory is required to fill the gaps and generate a mosaic view of the field.

The domain of the theory, as discussed in Chapters 2 and 3, is formation and utilization of dynamic value innovative capabilities in small to medium sized firms. These, types of organizations offer a fruitful area for investigation of both capability and business model theoretical strands; this allows the theory to become distinctive, in terms of its features, compared to current theoretical models of large firm contexts. Adoption of a detailed research method enables this theory to include the virtues of a good theory and becomes novel, testable and empirically valid (Eisenhardt, 1989). The synthesis and final discussion (chapter seven) shows uniqueness, fertility, generalizability, internal consistency, simplicity and abstraction (Wacker, 1998:365) of the theoretical propositions and model of the research which are key virtues of a good theoretical development. The inclusion of factors and their priori specifications (explained in Chapter 2) show that, the theoretical posture of this research benefits from a broader aspect of intersectional setting (Markóczy, & Deeds 2009). This theoretical structure gives this theory-building approach the momentum to expand its stakeholder

impact (Zahra & Newey, 2009) and, as explained in the last part of this chapter, the theory of the research and this constructing approach result in supported and defendable rigor and relevance. Given the above of methodology, it is argued that, research questions and objectives of this study can be properly addressed in a theoretical model which encompasses the four pillars and virtues of a theory of strategic performance mapping for RTOs, based on BSC.

The case study is a robust methodological tool for building such theories. It combines key elements of various theorizing methods and the resultant theory not only encapsulates the four components of a theory (Eisenhardt, 1989; Eisenhardt & Graebner, 2007) but also provides detailed answers to how, what and why questions (Andrade,2009). Hence, it fulfils the requirements of a good theoretical contribution to organization science (Gibbert, & Ruigrok 2010).

4.5.1.1 Case Study as A Theory-Construction Approach

Review of qualitative management literature shows that the approach provided by Eisenhardt in her seminal work in 1989 has been employed widely by scholars from different strands of management and organization science (Eisenhardt & Graebner, 2007; Ravenswood, 2010; Dul & Hak, 2008). The step-wise model of Eisenhardt (1989) is based on the grounded theory of Glaser and Strauss (1967) and the case study research design of Yin (2003). It has gained significant popularity amongst strategy researchers and, recently, been acknowledged as a key reliable approach for building organizational theories (Eisenhardt & Graebner, 2007). The approach (Eisenhardt, 1989,1991) and its activities, as employed in this study, are summarized in Table 4-8.

Table 4-8: Process of theory-building from cases (Eisenhardt, 1989)

Theorization step	*Activity*	*Adopted activity in this research*
Getting started	• Definition of research question • Possibly a priori constructs	• Determining gaps in literature and framing fitting questions accordingly

		• Reviewing and elaborating priori constructs
Selecting cases	• Neither theory nor hypotheses • Specified population • Theoretical, not random, sampling	• Purposive sampling, • Use of data from ABS, Dun&BradStreet databases, • Applying the strategic group notion for sampling • Conducting theoretical sampling of cases and snowball judgmental sampling of cross-level respondents within selected cases
Crafting instruments and protocols	• Multiple data collection methods • Qualitative and quantitative data combined • Multiple investigators	• Use of interview and field notes and document analysis • Utilization of narrative analysis in an interpretive paradigm • Single investigator
Entering the field	• Overlap data collection and analysis, including field notes • Flexible and opportunistic data collection methods	• Use of different semi-structured interview • Overlapping analysis with data collection by forming case databases and iterative running of coding methods after getting of data from each case
Analyzing data	• Within-case analysis • Cross-case pattern search using divergent techniques	• Use of techniques for within and cross case analysis including matrices and developing of tables for competing and matching themes • Individual and collective coding • Comparative analysis
Shaping hypotheses	• Iterative tabulation of evidence for each construct	• Iterative tabulation for all constructs within three clusters of capabilities, ambidexterity and business

	• Replication, not sampling, logic across cases. • Search evidence for "why" behind relationships	model and bonding of evidence to them. • Using logic and replicating models for all clusters of evidences • Search for why, how and what questions in themes and their relationships.
Enfolding literature	• Comparison with conflicting literature • Comparison with similar literature	• Conducting an intensive review of literature and developing comparative analyses of interpreted themes with different aspects of literature • Developing summary of juxtapositions • Developing analytical synthesis of theoretical and empirical findings
Reaching closure	• Theoretical saturation when possible	• Use of databases of cases, codes and summative models of analysis to establish body of evidence and identify attainment of theoretical saturation.

According to Hak and Dul, (2010), the process of building a theory through these steps can be seen from two perspectives:

1) The classical model of Eisenhardt (1989) based on the Yin case design, known as the Yin-Eisenhardt view; and
2) a revised model proposed by Dul and Hak (2008).

Both approaches are following the same logic and paradigmatic view. But Hak and Dul (2010) argue that their last step outperforms the Yin-Eisenhardt's replication process, by generating abstractions and theoretical propositions more effectively. The table below compares and contrasts

these two approaches, and, for the purposes of this study, the revised view is utilized to bring about better theoretical propositions (Hak & Dul, 2010).

Table 4-9:Comparative summary of two theory-building models

stages	*Yin-Eisenhardt Theory building Model*	*Hak-Dul Revised Theory building Model*
Stage1	***Within case analysis*** • *Write-ups of pure detailed descriptions* • *Detailed explanations of research context in cases*	***Within case analysis*** • *Collection of evidence from each case and formation of detailed data-bases* • *Transforming evidence into scores and tables to become comparable in data matrices* • *Data are either direct from interviews or indirect from interpretations or both*
Stage2	***Cross case analysis*** • *Selecting categories* • *Determining dimensions* • *Identifying similarities, commonalities and differences in pairs of cases* • *Developing tables for frequency and score of themes in pairs* • *Developing preliminary propositions based on the observations of these patterns*	***Cross case pattern search*** • *Discovering relationships by searching for sufficient conditions (automatic causes of some expected outcomes), necessary conditions (case that must be present for an outcome) and finally exploring between changes and differences (tabulating cases and outcomes as yes and no coding is a simplified way to explore these conditions)* • *Use of ascertaining technique to see whether a frequent theme or code occurs for a same outcome in data matrices of different cases* • *Determining associations for repetitious themes in cases for both sufficient and necessary conditions* • *Identifying themes that only occur for a specific outcome in cases for exploring necessary conditions* • *Combining necessary and sufficient conditions form new propositions* • *Comparing conditions and matrices reveal different relations that may be independent, interdependent or complementary*
Stage3	***Replication*** • *Test of fitness for emergent propositions in cases by logic of replication*	***Testing*** • *Applying prepositions from cross-case analysis to data of each case* • *Exploring the extent to which propositions fit into each case*

- *Treating each case as an experiment and test whether proposition applies*

To initiate these steps and illustrate the iterative systematic process of eliciting theoretical propositions from multiple-cases Dul and Hal, (2008) proposed a set of charts, by which the process of case study research is clarified. These charts show how a researcher can objectively orient a study towards a theory-building case design and then conduct this process effectively. It is assumed that, using these charts along with the process of theory-building discussed above (Eisenhardt, 1989, Ravenswood, 2010) will result in a clear and easy-to-understand approach to study design. Figure 4-1 adopted from Dul & Hak (2008), suggests a logical way to decide the type of theory-orientation in the case design (the colored path indicates the orientation of this research).

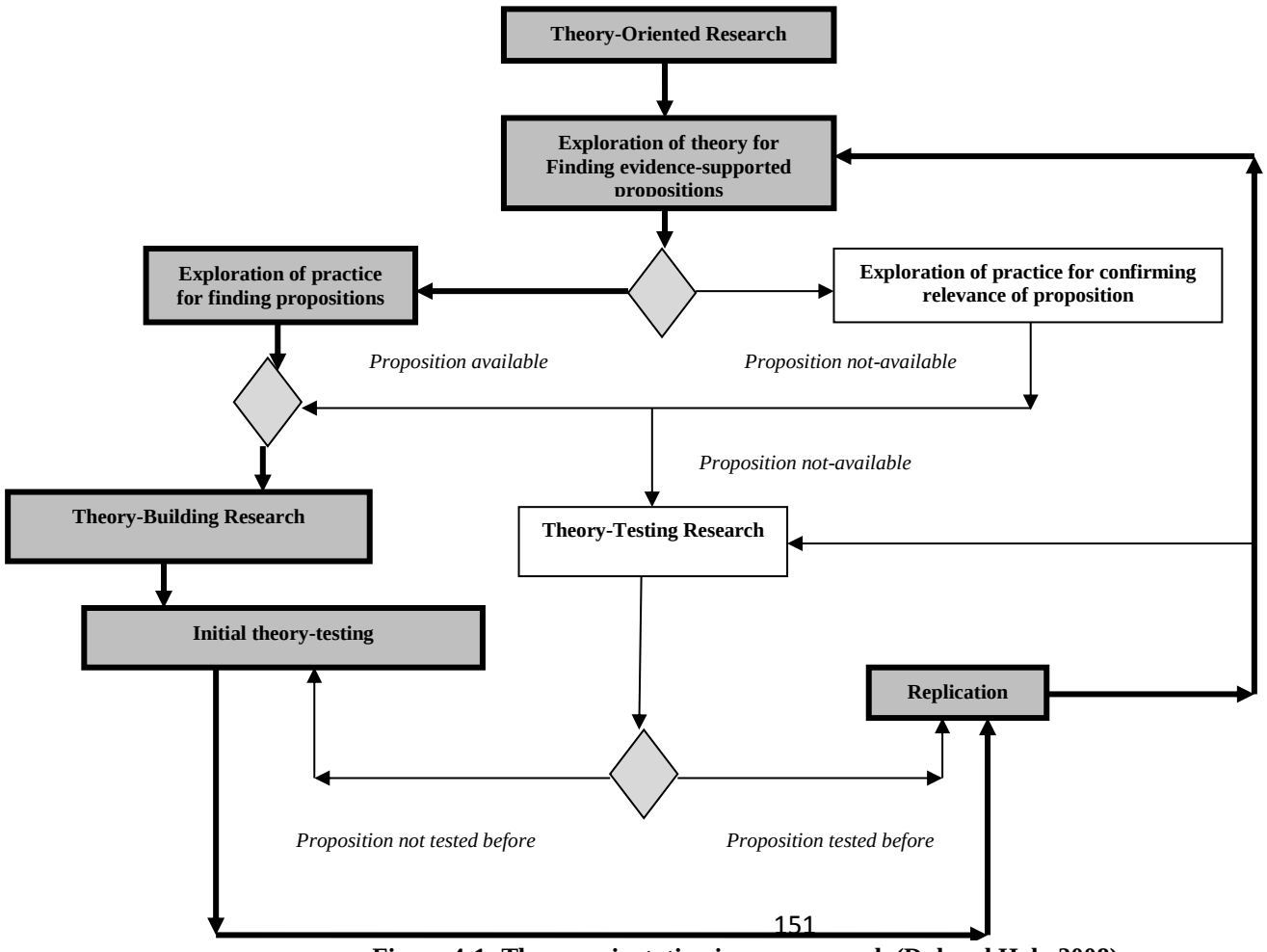

Figure 4-1: Theory orientation in case research (Dul and Hak, 2008)

According to this orientation, the theory-building approach was taken. This path completes the logical discussion of theorizing organizational complex phenomena by means of case study research (Yin, 2003). Having considered this direction, the process of theory-building can follow the direction of highlighted path (tick lines and colored path) in the below Figure 4-2 (Dul & Hak, 2008).

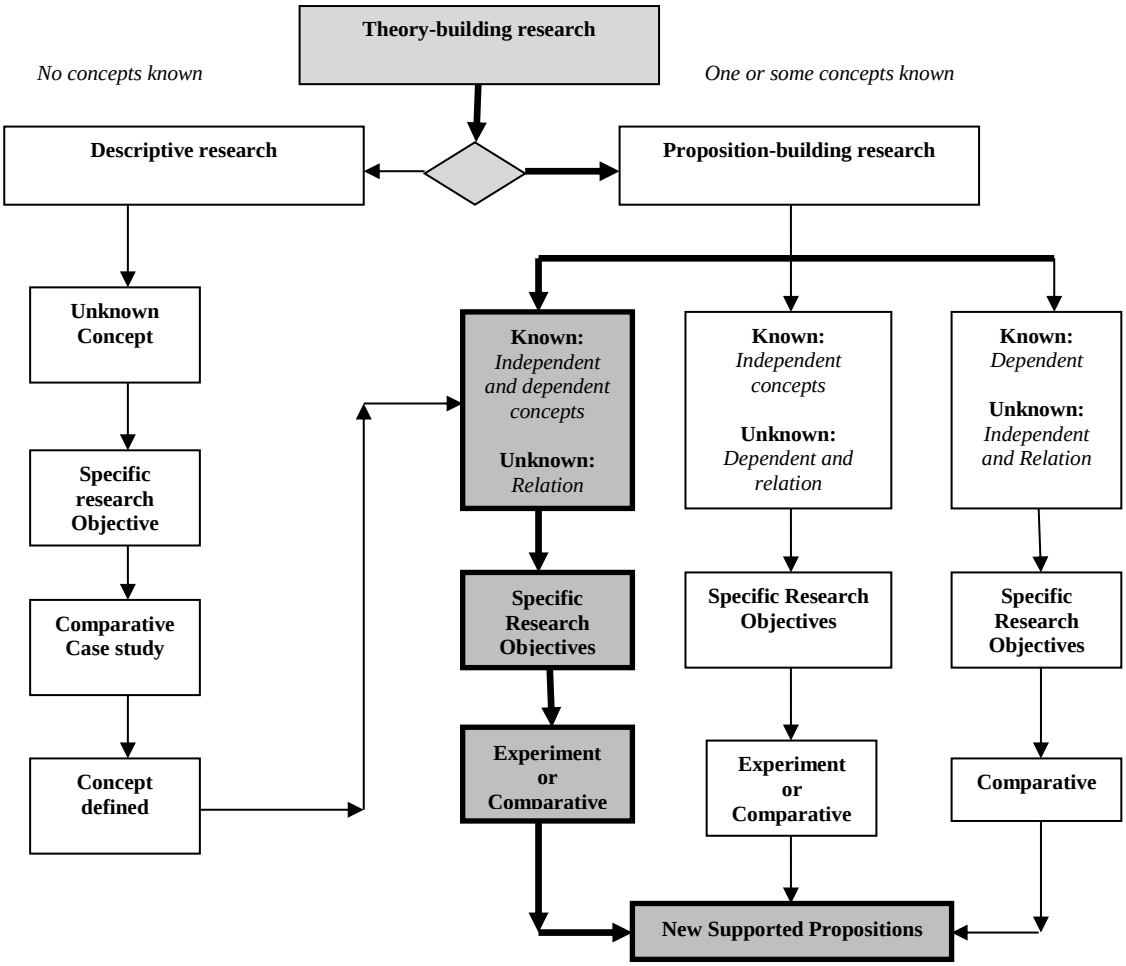

Figure 4-2: The process of theory-building from multiple-cases (Duk and Hak, 2008)

Figure 4-2 complements the theory-orientation chart and exhibits a consistent methodology of case-study research based on the research questions, objectives and review of literature. It also paves the way to articulate the methods and techniques utilized in design and conduct of this multiple-case study, as addressed in successive sections.

4.5.1.2 Embedded Multiple-case study research

Multiple cases are a powerful means to create theory because they permit replication and extension among individual cases (Eisenhardt, 1989). Replication simply means that individual cases can be used for independent corroboration of specific propositions (Eisenhardt, 1991). Furthermore, as Yin (2003) states, the logic underlying the multiple-case studies (MCS) is that, each case must be carefully selected to either predict similar results (a literal replication) or predict contrasting results, but for identifiable reasons (theoretical replication). Thus, for gaining theoretical and practical momentum in nascent contexts MCS is perhaps the best strategy MCS allows the researcher to run comparative analyses across cases, to juxtapose and contrast new themes with existing ones and also generate theoretical comparisons for exploring the evolution and paths of a concept with process, in a specific context (Dul & Hak, 2008).

In addition, this study focuses on multiple areas of analysis in cases across levels including RTOs and their KPIs based on the BSC (Yin, 2003). As Yin (2003) explains, the embedded multiple case (EMC) occurs when the researcher focuses on multiple-units of analysis in each individual case. As this study emphasizes multilevel processes of collective constructs (i.e. organization wide adoption of BSC and causal linkages it encompasses), it is essentially an embedded design. Operationalization of this design requires specific methods which are discussed below.

4.5.2 Operationalization of the Approach

4.5.2.1 Case Selection

Careful selection of potential representative cases is the first and most important phase of research design in case study research (Eisenhardt, 1989, Eisenhardt & Graebner, 2007; Dul & Kal, 2008). To do so, I followed the approaches of Eisenhardt (1989), which is based on the suggestions of Yin, (2003,2009), Miles and Huberman,(1994) and Lee, (1999). In this framework, sampling is purposeful (Dul & Hak, 2008), and the process of case selection is theoretical (Yin, 2003) and some

specific methodological considerations must be taken into account when selecting cases. The next section explains these steps.

4.5.2.2 Population of interest

To identify candidate cases, first and foremost, the unit of study (UOF) or in the language of qualitative theory-building research, the population of interest (POI) must be clarified. In this study the cluster of Australian RTOs is the population of interest.

To overview this POI, I used the business classificatory database of the Australia Bureau of Statistics (ABS), the Dun & Bradstreet industrial databases (DAB) and the website of the Department of Education and Training of the state of NSW (DET-NSW). These databases jointly provide a comprehensive view of Australian RTOs and their distribution across sectors.. After four months we identified 120 RTOs, their profiles were assessed by the principle supervisor and the researcher. A sub-sample of 35 RTOs were vetted and contacted for the research.

4.5.2.3 Theoretical Sampling and Cases Selection Process

The key principle of theory building case study research is its theoretical sampling (Eisenhardt 1989; Miles & Huberman, 1994). Theoretical sampling (TS) conveys two chief issues:

1. It seeks to find example of theoretical constructs and thereby examines and elaborates them and their inter-relations (Miles & Huberman, 1994:28).
2. It broadly processes samples in order to create, extend or refine a theory (Auerbach, & Silverstein, 2003:92).

Thus, TS is built upon the theoretical grounding of the research and purposefully seeks relevant cases, which have the potential to provide theory-driven salient insights and meanings in order to engender new theoretical propositions (Yin 2009; Eisenhardt, 1989). In adhering to the structure and essence of a theory building case study, theoretical sampling does not methodologically aim at

creating generalizability; in fact, its initial goal is to transfer constructs into a research frame by in-depth exploration of constructs in different contexts, which are theoretically similar (Auerbach, & Silverstein, 2003). Instead of being representative, it becomes explorative and therefore is assessed by theoretical saturation rather statistical power.

In addition, in theory building case studies, theoretical sampling provides safe ground for executing axial, open and selective coding for eliciting theoretically relevant grounded propositions (Hak & Dul, 2010). Eisenhardt and Graebner, (2007) highlight that, "theoretical sampling in multiple case research simply means that cases are selected because they are particularly suitable for illuminating and extending relationships and logic among constructs" (page, 27). We hence looked at RTOs which were likely to have a clear vision, and be large enough to be suitable for the adoption of BSC.

Using these criteria, we developed a list of RTOs, located in the state of New South Wales (NSW), which had the potential and opportunity to adopt balanced scorecard. Initially, this dataset provides a primary list of candidate cases. However, to select final cases, I administered some additional processes based on the requirements of the research and approaches of Bruni and Verona, (2009), Brown and Eisenhardt, (1997) and Andriopoulos, and Lewis, (2009). Finally, to narrow the lens of case selection towards cases for the adoption of balanced scorecard, I leveraged the notion of balanced scorecard as conceptualized by Kaplan et al (2000), in which the capacity to adopt a balanced scorecard as a universal strategic mapping tool is a function of a firm's commitment to realize its vision. RTOs with a clear vision and growth trajectory are assumed to fulfill this criterion. This process led to the selection of 20 RTOs from an initial consideration set of 35.

This phase led to a limited number of specific but highly theoretical relevant cases. In the studies of Eisenhardt, (1989), Yin, (2009), Eisenhardt and Graebner, (2007) and Bruni and Verona (2009) the number of cases in multiple case studies is small (between three and eight). The final

number comes from the process of theoretical sampling and state of theoretical saturation (Dul & Hak, 2008). In this study the final selection of cases is a set of 15 firms which meet all the theoretical criteria. The process of accessing them is also theoretical in parallel with data analysis, continuous and in persuasion of reaching theoretical saturation (Hak & Dul, 2010).

4.5.2.4 Judgmental Snowball Sampling for Respondents across Levels

After scheduling and planning theoretical sampling for selecting cases, the purposeful sampling for gaining access to individuals across levels continues, by utilizing a chain process of snowball sampling (Patton, 2002). Access to individuals in selected enterprises is enhanced by asking executives to identify other individuals, in their respective enterprise, who may have the most knowledge and ability to provide required information.

This process is carried out in the works of Bruni and Verona, (2009), Brown and Eisenhardt, (1997), Eisenhardt, (1989), Santos and Eisenhardt, (2009). In an embedded multiple case study this approach is the most appropriate way of collecting data from different levels; as in case research, information richness matters the most (Yin 2009). In addition, flexibility of methods in a case study design (Hartley, 2004), allows a pluralistic approach to sampling of individuals within cases and was utilized diversely in previous studies (Santos & Eisenhardt, 2009; Brown & Eisenhardt, 1997).

For individuals accessed in this way, a different interview protocol is used which emphasizes different theoretical scopes and contents. This is consistent with methods applied in the studies of Eisenhardt, (1989) and Santos and Eisenhardt, (2009). Given this purposeful sampling, the process of data collection follows the following method.

4.5.3 Data Collection

The process of data collection is carried carefully out in order to ensure that two interdependent critical pre-requisites of theory-building are met: first, collection of sufficient and second, accurate

data (Hak & Dul, 2010). In this section methods are elaborated for reaching these ends, by identifying types of data required and clarifying information sought in cases and explaining the process of data collection.

4.5.3.1 Type of Data and Collecting Principles

Yin (2009) categorizes and clarifies strengths and weaknesses of six different types of qualitative data in case-based research. Despite this list, he argues that a complete list of qualitative material may exceed these items. However, as case-research in business and strategy context, reviewing prior case studies (Matthyssens *et al.* 2006) unveils the applicability of interviews, direct observations and documents (e.g. notes and archival data). As a result, I narrow the list and am content to use these three sources.

Interview is the primary tool of data collection in case study research (Yin, 2003). It is one of the most common sources of data in qualitative research (Eisenahrdt, 1989). I use semi-structured in-depth interviews in this research. In addition, I have also sought field documents, including: letters, memoranda, announcements, administrative documents, memos of meeting, progress reports, charts, lists, and evaluation of the site (Yin, 2003). Finally, I have conducted direct observations and made observatory notes (Yin, 2003) by seeking permission of the interviewees. These sources of data must comply with three principles of data analysis:

1. Use of multiple sources of evidence for theory building (Yin, 2009; Eisenhardt & Graebner, 2007) which permits data triangulation (Miles & Huberman, 1994; Yin, 2003).
2. Creating a case data base (Yin, 2009). For this the data reaped from the processes of interview and observation as well as document collection are recorded in Nvivo files and shape databases for each case using the document system of Nvivo9. The database consists of two separate document systems: 1) evidentiary base which encompasses

original data and 2) report base that is the repository of investigator's report (Yin, 2003:101). These are discussed in chapter five during within case analysis and development of case descriptions.

3. Maintain a chain of evidence (Yin, 2003). This last principle underscores the criticality of reliability, by allowing an external reader to follow the derivation of evidence from questions to conclusions (Yin, 2003). This principle is methodologically significant as it enhances transparency, communicability and overall rigour and relevance of the research.

Having mentioned these issues, in the next section I briefly overview the information required and sought in this research. This information is acquired from the identified sources and then classified into case databases and analyzed along with other data in chapter four.

4.5.3.2 Overview of Information Needed

As theoretical sampling and assumptions of the research suggest, to create an intensive case data base, characteristics of firms are collected from the field either through interviews of executives or other databases. For this research, the overall profile of cases is summarized the Table 4-10, which lists key organizational aspects of the cases.

Table 4-10:Profile of case RTOs

Case	Year of operation	Number of students	Number of interviews	Location
1	14	192	2	Sydney CBD
2	7	112	2	Wollongong NSW
3	18	183	2	Sydney CBD
4	16	216	2	Sydney CBD
5	7	148	2	Sydney CBD
6	14	214	2	Sydney CBD
7	7	136	2	Wollongong NSW
8	14	111	2	Wollongong NSW
9	13	172	2	Sydney CBD
10	7	175	2	Wollongong NSW

11	13	112	2	Sydney CBD
12	14	168	2	Sydney CBD
13	9	220	2	Sydney CBD
14	14	210	2	Sydney CBD
15	14	121	2	Sydney CBD

In addition to this profile, the type information and the method of attaining the relevant data are summarized in Tables 4-11 and 4-11. These tables contribute to external validity, reliability and communicability of the research and buttress its rigour and methodological robustness.

Table 4-11: Type of data collected from case RTOs

Case	Interview	Field Note	Archival data
1	Y	N	N
2	Y	Y	Y
3	Y	Y	N
4	Y	N	y
5	Y	Y	Y
6	Y	N	N
7	Y	Y	Y
8	Y	Y	Y
9	Y	Y	Y
10	Y	y	N
11	Y	N	N
12	Y	Y	Y
13	Y	N	y
14	Y	y	N
15	Y	Y	Y

Furthermore, based on snowball sampling as implemented in prior case studies (Santos and Eisenhardt, 2009; Brown and Eisenhardt, 1997), the background information of the informants is demonstrated in Table 4-12 below.

Table 4-12:Summary of profiles of interviewees

Interviewee	Position	Age	Gender	Experience
1	Managing director	60	Male	12
2	CEO	48	Male	19
3	Operations manager	53	Male	26
4	Managing director	62	Male	26
5	CEO	51	Male	25
6	Operations manager	53	Male	11
7	Dean of education	49	Male	27
8	Operations manager	56	Male	11
9	Dean of education	51	Male	27
10	Managing director	51	Male	20
11	CEO	49	Male	18
12	Operations manager	57	Male	22
13	Managing director	57	Male	17
14	CEO	53	Male	19
15	Operations manager	54	Male	17
16	Managing director	48	Male	15
17	CEO	48	Male	23
18	Operations manager	53	Male	22
19	Managing director	60	Male	19
20	CEO	53	Male	20
21	Operations manager	48	Male	13
22	Dean of education	62	Male	20
23	Managing director	48	Male	21

24	CEO	62	Male	16
25	Operations manager	58	Male	16
26	Managing director	56	Male	20
27	CEO	56	Male	12
28	Operations manager	55	Male	23
29	Dean of education	54	Male	12
30	Operations manager	63	Male	14

These tables provide a holistic view of the datasets and create the bed-rock of case data bases, which are elaborated and articulated in next chapter. At this point it is relevant to note that, adoption of case methods and utilization of interviews and field observations are a naturalistic view of data.

4.5.3.3 Natural Setting

A distinctive attribute of a qualitative research is its natural setting. This means that in a qualitative study the researcher tends to collect data in the field instead of brings informants into a lab or typically sending instrument to them and asking them to complete them (Cresswell, 2007). This setting brings about an exclusively structured type of data called naturalistic data (ND) and as explained later constitutes a central part of the methodological rigor and fitness of a qualitative research.

4.5.3.4 Naturalistic Data

In a natural setting, the data collected can be defined as data that make up records of human activities that are neither elicited by nor affected by the actions of social researchers (Potter, 2008). In exploratory qualitative research naturalistic data (ND) offers a set of advantageous issues including the following:

1. It does not leave the researcher to make a range of potentially problematic inferences from the data;
2. It can open the researcher to novel issues and concerns that were not predicted at the start of the research; and finally
3. It is a rich record of data (Potter, 2008). As a result, the natural settings and naturalistic data collection applied, in this research, provide a safe ground for data analysis in compliance with the research objectives, questions and study design.

4.5.3.5 Data Collection Process

Drawing upon the purposeful selection of cases and snowball sampling of individuals, the data collection in this research follows a systematic model of multiple-case study research (Yin, 2003). Sources of data are three-fold; interview, documentation and direct non-participatory observation. First of all, an introductory letter was e-mailed to executives of selected enterprises (listed in Appendices). This introductory letter indicated objectives and significance of the research and provided a brief introduction to the research process. In the second phase, a consent form indicating the anonymity of respondents, ethical considerations and codes of confidentiality was sent to the executives who have responded. Then they were contacted, and interview times were set. A timetable for cases was formed in order to organize a process of multiple interviews across cases.

In the final stage, after each interview with the firm executive, he or she was asked to first identify another manager for the next round of interviews, second for permission for an observatory field view, to collect data about individual interactions, capabilities and routine processes and third, provide copies of archival documents that show how knowledge is created and disseminated, strategic decisions and processes are planned and executed.

These documents included memos of meetings, archival records, announcements of training and evaluator sheets. Analysis of data and contacting the next case are carried out simultaneously.

Therefore, the process of collecting data from cases and forming case databases, while analyzing and coding data are performed in parallel in a systematic process (Eisenhardt, 1989; Santos & Eisenahrdt, 2009). Given this mechanism, the next parts of this chapter elaborate the interview protocol, the techniques employed to generate an effective interviewing system and methods of data analysis.

4.5.3.6 Ethical Considerations

Performance and strategy alignment are sensitive topics, about which many managers feel uncomfortable talking. Ethical principles were addressed by the researcher in the study by documenting in a research diary the access routes encountered, the decisions that were made throughout the research process, and the decisions that were made around gaining, negotiating, and renegotiating consent (Schram, 2006).

The participants were informed by the researcher of the nature and purpose of the research and were given the opportunity to decline if desired. So, participation in the research was a voluntary choice made with the participant's consent documented using a research diary and or a personal consent form signed by the participant. Disclosing to the participants precisely why the researcher was performing the study aided in building trust between them. Participants were also given the opportunity to skip any questions that they did not want to answer at any time.

Privacy was maintained for participants and any personal information obtained by the researcher was not shared. The privacy of those participants who consented to further participation and provided his or her contact information was granted. The researcher did contact the participants for further clarification of questions answered. Ethics committee's approval was obtained before any data collection was conducted. Finally, in compliance with research ethics guideline the data was stored security in digital form and will be discarded after five years.

4.5.3.7 Interview Protocol Design

As stated by Rowley (2012), the questions in the interviews are designed to generate data that is intended to answer the research questions. On the other hand, the questions posed to interviewees may not exactly match the research questions – they need to be adapted for intended participants and to encourage interviewees to talk around a topic. So, in some senses, the origin of the research questions influences the choice of interview questions. To design the interview, I followed the suggestions of Bloomberg and Volpe (2008). I developed two tables, which show internal consistency of interview protocol by relating key interview questions to research questions and content validity of the interviews by illustrating the conceptual and theoretical basis of interview questions. These two, called the research question-interview question matrix and theoretical architecture of interviews respectively are shown in Tables 4-13 and 4-14.

Table 4-13: The research question-interview question matrix

	RQ1	RQ2	RQ3	RQ4
What is the vision of your RTO?				
How would you describe your current strategy?				
How would you measure the performance of your current strategy?				
What sort of customer experience is the goal of your strategy?				
How does your strategy take creation of this experience into account?				
How do you invest in continuous learning?				

What sort of training do you use for your staffs?	
How do you think your management style contribute to achievement of the vision?	
What are the key organizational procedures that you developed to help you achieve your vision?	
How do you align your policies with your vision?	
What difficulties have you faced in aligning your operational activities with your strategy?	

These relationships provide a clear rationale behind design of the interview protocols. However, to flesh out the theoretical structure and root of questions in each section the next table illustrates theoretical scope and areas of emphasis in each section.

Table 4-14:Theoretical Basis of the Interview Protocol

Question	Source
What is the vision of your RTO?	Kaplan and Norton (1992); Ruben (1999)
How would you describe your current strategy?	Kaplan and Norton (1992, 1993)
How would you measure the performance of your current strategy?	Kaplan and Norton (1992)

What sort of customer experience is the goal of your strategy?	Hoque (2014); Ruben (1999)
How does your strategy take creation of this experience into account?	Kaplan and Norton (1993); Niven (2014)
How do you invest in continuous learning?	Kaplan and Norton (1992)
What sort of training do you use for your staffs?	Ismail and Al-Thaoiehie (2013); Lin (2015)
How do you think your management style contribute to achievement of the vision?	Hoque (2014); Olson and Slater (2002)
What are the key organizational procedures that you developed to help you achieve your vision?	Niven (2014); Ruben (1999)
How do you align your policies with your vision?	Chen, Yang, and Shiau (2006); Kaplan and Norton (1992)
What difficulties have you faced in aligning your operational activities with your strategy?	Chen, Yang, and Shiau (2006); Kaplan and Norton (1992)

This study adopted two additional tests, an expert judgment test (EJT) and interview piloting (IP).

4.5.3.8 Expert Judgment Test

In order to make sure that the interview protocol and structure of in-depth interviews fit the research and provided expected grounding of data extraction, I asked a panel of five academics

specializing in balanced scorecard and performance management in the education and training sector, to check the interview questions and architecture of the interview protocol. These panel experts were asked to assess the content and scope of the questions, order and organization of the protocol, as well as the type and loading of questions in terms of meaningfulness, easiness and grammatical soundness. The comments and amending suggestions were incorporated in the protocols and re-written for pilot interviewing. Both preliminary protocols and the revised version are included in Appendix B and Table 4-15 shows the key areas of modification raised by experts in the field, through this judgmental pre-test.

Table 4-15:Calibrating interview protocol by expert testing

Expert	Key areas of amendment	Overall fitness of the protocol
Expert1	No amendments	Satisfactory
Expert2	Questions on vision and strategy	Satisfactory after amendments
Expert3	Questions on KPIs was reworded	Satisfactory after amendments
Expert4	Order of questions was modified	Satisfactory after amendments
Expert 5	No amendments	Satisfactory

4.5.3.9 Piloting the Interview

According to Siedman (2006) piloting an interview, enables the researcher to assess the design and structure of the interview and its ability to collect desirable data. Piloting is an important tool to ensure validity and reliability of data in interview-based research. The interview protocol of this study was pilot-tested in meetings with 10 former practitioners who have been managers, director managers, CEOs and heads of training at various RTOs. These individuals were deemed to be experts in performance management and strategy mapping for VET. To pilot-test the IP, I contacted these experts and explained briefly the principles and aspects of the research to them. Then I asked them to

read the interview protocol and allow me to interview them briefly and take notes from their answers. I subsequently asked them to openly discuss the key aspects of the interview which they thought required amendments. Participants in this pilot study and the issues they raised are summarized in Table 4-16.

Table 4-16: Calibrating the interview protocol via pilot testing

Participant	*Position*	*Key Issues*
Practitioner 1	Former managing director (MD) of an RTO	Length of some questions was shortened
Practitioner 2	Former CEO of several RTOs	Wording of some questions was modified
Practitioner 3	Current head of training of an RTO	No specific issue was raised
Practitioner 4	Current MD of an RTO	Order of questions was streamlined
Practitioner 5	Current CEO of an RTO	Intro and ice breaker were discussed
Practitioner 6	Current head of training of an RTO	No specific issue was raised
Practitioner 7	Current MD of an RTO	Questions on BSC were clarified
Practitioner 8	Current CEO of an RTO	No specific issue was raised
Practitioner 9	Former managing director (MD) of an RTO	Order of questions was discussed
Practitioner 10	Former CEO of an RTO	No specific issue was raised

4.5.3.10 Interviewing Process

After considering suggestions and applying amendments from piloting and expert testing, the final version of interviews were organized and written for field interviews. The participants in the case study RTOs were contacted, with an introductory letter as well as a consent form (refer to Appendix X). The purpose, scope and content of the research were briefly explained and issues of anonymity and confidentiality were agreed. Ethical issues and data security were resolved and interview times arranged. The interviews were done in the field in order to enhance and facilitate multilevel data

collection. Thirty interviews at 15 RTOs were undertaken; all were at the RTO's office and conducted face to face (F2F). Table 4-17 illustrates a summary of data collection phase. Interviews were recorded and key notes were taken simultaneously in order to enrich data quality and avoid omissions of key themes.

Table 4-17: Summary of data collection

RTO Code	Location	Interviewees	Performed	Mode	Place
1	Sydney CBS	1.One head of school 2.Director of studies	June - July	F2F	RTO's office
2	Sydney CBS	1.Director of Studies 2. Student services Manager	June - July	F2F	RTO's office
3	Wollongong	1.General Manager 2.Student services Manager	June - July	F2F	RTO's office
4	Banks town/ Sydney CBD	1.CEO 2.Principal administrator	June - July	F2F	RTO's office
5	Lakemba	1.CEO 2.Principal	June - July	F2F	RTO's office
6	Sydney CBS	1.Director of Studies 2. Student services Manager	June - July	F2F	RTO's office
7	Lakemba	1.Director 2.Principal	June - July	F2F	RTO's office
8	Sydney CBS	1.CEO 2.Principal	June - July	F2F	RTO's office
9	Arncliffe	1.CEO 2.Principal	June - July	F2F	RTO's office
10	Sydney CBS	1. Principal 2. Student services Manager	June - July	F2F	RTO's office
11	Sydney CBS	1.Director of Studies 2. General Manager	July - August	F2F	RTO's office
12	Dawes Point	1. Principal 2. Student services Manager	July - August	F2F	RTO's office
13	Sydney CBS	1. Principal 2. Student services Manager	July - August	F2F	RTO's office
14	Sydney CBS	1.CEO 2.Principal	July - August	F2F	RTO's office
15	Sydney CBS	1.CEO 2.Principal	July - August	F2F	RTO's office

4.5.3.11 Methods Employed to Improve Informants' Responsiveness

To improve the process of data collection, participants' responsiveness and create an environment of effective engagement, I undertook three additional steps:

1. An introductory draft of my research was submitted to executives of case RTOs, to help them understand the research and why their information was needed and demonstrate how the research might improve their strategic knowledge and decision making.
2. I called participants and chatted with them before the conduct of main interviews; having read the introductory draft, these friendly conversations allowed them to feel closer to the researcher, and engage in the research as a mutual project. I believe that this method created an environment of encouragement and trust, enabling researchers as well as informants to share their thoughts on a higher level of collaboration and engagement.
3. Finally, an undertaking was given to participants that, after the interview, they would be informed about progress, findings and any further requirements. As a part of this process of continued involvement a summary of data analysis and research findings, with respect to anonymity and privacy of data, was sent to each participant.

By means of these simple methods, the quality of data collection was improved and its duration shortened, while increasing its effectiveness.

4.5.4 Data analysis

As a qualitative study aiming at developing a multi-level theory, based on multiple-cases, this study deploys a systematic process of analysis which synthesizes key strategies of rigorous qualitative research. In this section key qualitative approaches, including narratives and grounded theory

building, are explained; their coding analysis and applicability of coding within (single) and cross (comparative) case analyses are briefly explained

4.5.4.1 Process Research Strategies

The research process deals with the 'how' instead of 'what' of organizational strategic behavior and, an exploratory case study, offers a methodologically suitable means for addressing 'how' and factors underpinning it (Narayannan, *et al.* 2009). Design of this method necessitates adoption of an idiosyncratic approach, which encompasses components of a specific exploration and creation of a meaningful model of the process (Van De Ven & Pool, 1995).

Process research must explain context, content, focal actors, their surroundings and a narrative voice of the systems (Pentland, 1999). This is attained by a model that parsimoniously identifies clusters of factors, variables and concepts and logically explains relationships, patterns and mechanism (Van De Ven, 2007). These features can be properly integrated in a bifocal design entailing the formulation of the process (es) and analysis of data explaining them (Langley, 1999; Van De Ven, 2007).

Research questions and objectives show the area of focus in this process research, they target the processes involved in the adoption of a PMMS known as the BSC. The quest of developing a model for this process can be fulfilled by seeking detailed, exhaustive interpretations of embedded qualitative data (Langley, 2006). Langley adds that this set of data must be tested for accuracy, parsimony and applicability, which are dealt with and treated through a careful design and conduct of data collection and analysis. In addition, Langley (1999) points out a set of qualitative research strategies for analysis of process data and development of a compelling process theory (Langley, 1999, 2006). The 4-18 summarizes this discussion, which is also endorsed by Van De Ven (2007). The Table 4-18 shows how grounded theory and narrative strategy in a multiple-case research jointly construe a research approach for a strategy process (Langley, 2006).

Table 4-18: Qualitative strategies for building process theory

Strategy	***Fit with process data complexity***	***Specific data needs***	***Grounded theory dimensions***	***Form of sense making***
Narrative strategy	*Fits with ambitious boundaries, temporal embeddedness and eclecticism*	*One or few rich cases helped by comparison*	*High on accuracy and low on simplicity and generality*	*Meaning, mechanism*
Grounded-theory strategy	*Adapt well to elective data and ambiguity but may miss high-level and broad patterns*	*Needs details on many similar cases but could be different processes, individual levels*	*High on accuracy, moderate on simplicity but could be difficult to go from substantive theory to a more general level*	*Meanings, patterns*

Therefore, deployment of a narrative and grounded strategy in multiple-case studies offers a methodologically robust approach to explore meaning, patterns and mechanism for a process theory, such as applicability and adoption of BSC in RTOs.

4.5.4.2 Narrative, Phenomenological and Grounded Theory Perspectives

An organization theory developed from interpretation of data embedded in organizational systems is a complex framework (Foss *et al.* 2010). This complexity calls for a careful assessment of interpretive standpoints, as propositions are basically embedded in a rich interpretive context (Strauss, 2003). Because an interpretive qualitative analysis may stem from a variety of perspectives (Denzin & Lincoln, 2005), knowing attributes of different perspectives, facilitates choice of the correct interpretive perspective for a study. Based on the analysis and synthesis of Creswell (2007),

summarized Table 4-19, it is argued that analyses of cases in this study should incorporate three streams of interpretations as narrative, phenomenological and grounded.

This standpoint is in accord with the interpretive view of case studies as a method (Andrade, 2009) and a multi-paradigmatic approach to organizational analysis as well (Hassard, 1991). It also simplifies the understanding of complex systems in a case-based study (Dubois & Gibbert, 2010). A grounded perspective is taken for creation of prepositions for processes, interactions and dynamism of systems which include individuals and teams. The system of coding follows a grounded approach which include open and axial coding strategies (Strauss, 2003).

Table 4-19: Interpretive perspective in qualitative data analysis

Dimension of applicability	***Narrative perspective***	***Phenomenological perceptive***	***Grounded theory***
Unit of analysis	*Individuals*	*Individuals*	*Processes, Actions, interactions in a system*
focus	*Exploration*	*Understanding of the essence*	*Developing a grounded theory*
Data collection form	*Primary interviews documents*	*Primary Interviews Documents' Observations*	*Interview*
Data analysis form	*Developing themes and categories for stories in a chronological form*	*Developing meanings for structures, descriptions of the essence of a phenomenon*	*Open coding, axial coding and selective coding for generating theoretical stands*
Format of the written report of analysis	*Development of a narration of the events*	*Developing a detailed view of the essence*	*Generating theoretical propositions and a theory illustrated in a model or figure*

4.5.4.3 Coding strategies

Codes in qualitative research are concepts and their identification, through explicit criteria, may be developed either through review of literature prior to data collection or inductively during data analysis (Benaquisto, 2008). Coding is the process of developing codes. In a multiple case study different types of coding are used to develop meanings and new understandings of the social phenomenon under investigation (Dul & Hak ,2008). Because case study theorization is basically based on the grounded theory approach it arguably employs the same logics and methods for coding and extraction of meanings (Dul & Hak, 2008). As a result, Table 4-20 offers an overview of coding strategies deployed in case-based theory building research.

Table 4-20: Coding Strategies

Coding strategy	***Brief description of coding method***	***Function***	***Grounded theory-building***	***Case-study theory building***	***Difference in application between grounded and case***	***Sources of discussion***
Axial	*Central part of an interpretive exploratory theory building research which identifies casual and contextual relations by recognizing conditions and interactions*	*Relating categories to their sub-categories. Determining properties and dimensions of categories based on classes emerged from open coding Understanding and describing relationships*	*Essential component of grounded theory building, utilized after open coding*	*Used to develop theory grounded in case data mainly multiple-cases*	*Cross-case comparison and matrices perform the same functions. So it may be directly applied in case research or indirectly and prior studies are not clear in this subject*	*Developed by Glaser, & Strauss, 1967 for grounded theory and then extended by Strauss and Corbin (1998), used in case research by Eisenhardt , 1989,a,b,*

						, but modified by Dul and Hak, 2008, Wicks, 2010
Open	*interplay of interpretive and intuitive process between the researcher and data which breaks down, analyzes and classifies raw data for their potential, relevance into distinctive groups*	*Systematic interpretive analysis and categorizatio n of raw material Stimulating generative and comparative questions*	*A first and initial step for developing theory*	*An integral and initial part for each case*	*Used quite similarly in both within and cross case analyses but it is not exactly the same process in case as in grounded theorizatio n*	*Developed by Glaser, & Strauss, 1967 for grounded theory and then adopted for case research by Eisenhardt , 1989a,b, Eisenhardt and Graebner, 2007, however Mattew and Price, 2010, and Dul and Hak ,2008 argue for superficial differences .*
Selectiv e	*Final stage of theorization , it refines and synthesizes categories to generate abstract view of empirically grounded theory*	*It is final stage which creates abstractions and forms the picture of final theory. Develops further arguments, refines and synthesizes*	*In grounded theory it is seen as either a crucial separate process or an automatic process which occurs spontaneousl y from thematic*	*In case research it is the final stage of exploration which brings about theoretical explanations It articulates theory emerged*	*Replication logic embraces creates the same outcome but the notions of selection and abstraction apply implicitly*	There are different view of this coding in grounded theory literature (*Glaser, & Strauss, 1967 ; Strauss and*

	prior categories Acts as substantive and integrative coding Generate grounded explanations and theoretical propositions	*analysis of axial coding*	*from comparator y analysis of cases*	*in case research*	*Corbin 1998) and in case study research it is implicitly addressed in the models of Dul and Hak ,2008,2010 , Mattew and Price, 2010*

In this research the same techniques and coding procedures of Eisenhardt, (1989), Danneels, (2002), and Narayannan, *et al.* (2009) are followed. In addition, to effectively execute the coding processes, I adopted the instructions of creating memos, nodes and developing clusters of codes from the grounded qualitative data analysis of Strauss (2003).

Finally, it must be pointed out that coding and theory development in multiple-case research, constructs a systematic process of individual and collective case analysis. The numbers of open and axial codes, which occur during within or cross analysis of cases and pre-determined from the literature, are altered and tailored in selective coding processes and re-organized using comparative tables and matrices (Patton, 2002; Yin, 2003; Creswell,2007). These processes are iterative, analytical and interpretive (Eisenhardt, 1989) and require special filtrations and extra analysis (Langley, 1999). To attain this level of confidence I hold some assumptions and subsequently organized analysis in separate chapters.

4.5.4.4 Within case analysis

Within case analysis (WCA) refers to the in-depth analysis of individual cases in order to extract key themes, procedures and contextual conditions (Yin, 2003; Eisenhardt, 1989); this consequently forms the setting of the replication process and theory development (Yin, 2003). In the multiple-case theory building approach, WCA is the starting point of analysis (Yin, 2003;Eisenhardt, 1989) and is carried out by creation of a case data base and development of a repository of key notes and themes from each case (Hak & Dul, 2010). The data base in WCA features three key functions (Ravenswood, 2010):

1. Provision of a detailed and broad description of each case including its organizational and contextual settings as well as key aspects that pertain to the adoption of BSC.
2. Provision of organizational, structural and institutional view of the systems that are under investigation and exploration including KPIs, strategy maps, and challenges in aligning strategies with KPIs.
3. Development of a coherent and consistent analysis of patterns and processes in each RTI in order to enhance and simplify the test of theoretical propositions, tracking of theoretical relationships and formation of final logic for cross-case replications

4.5.4.5 Cross and Comparatory Case analysis

Cross-case analysis or collective case analysis (CCA) is carried out based on the themes and patterns which have emanated from within case analysis (Eisenhardt, 1989; Dul & Hak, 2008). It thus uses the testing process (Hak & Dul, 2010), or replication logic (Yin, 2003; Ravenswood, 2010) through selective coding strategy (Hak & Dul, 2010), or comparative matrices and illustrations (Miles & Huberman, 1994) to engender theoretical propositions grounded in cases. Cross case analysis is the culmination of the theory development process in a multiple-case study, enabling the researcher to carve out key necessary, sufficient and relational conditions for a novel, well-grounded theory. In

an interpretive qualitative research study, the internal consistency and coherency of these analyses are contingent upon a set of assumptions held by the researcher, based on understanding of previous research (Sandberg, 2005; Andrade, 2009).

4.5.4.6 Researcher's Assumptions

The design and conduct of this research are based on the following assumptions. First, Australian RTOs have recorded a commitment to their strategic performance and have developed and utilized a set of initiatives toward this goal. I developed this assumption through review of current literature and then framed my gap and research questions accordingly. Furthermore, from an ontological perspective, adoption of balanced scorecard as a strategic move is inherently related to knowledge capabilities and as a response to environmental changes in a competitive education sector. Second, it is assumed that in the sampled RTOs, KPIs and strategies are identifiable patterns of actions across organizational levels. In fact, this attribute of traceability makes these constructs researchable. Third, based on the review of the methods in the existing body of strategy process research and following the discussion in philosophical settings of the field, I assume that multiple-case study research as an embedded approach offers an appropriate and effective means to explore the organizations and subsequently find proper answers for research questions and fulfill the research objectives. The next chapter will discuss how these assumptions are used in the analysis of the data and generation of empirical insights.

4.6 Analysis: Computer-Assisted Qualitative Data Analysis (CAQDA)

Use of computer software packages in analysis of qualitative material is increasing, as this software offers great advantages including: data-basing and warehousing, coding, retrieving and transforming of record and analysis of qualitative data (Maietta, 2008). This research benefits significantly from Nvivo 9 as the most commonly used qualitative package.

As Maietta (2008) argues these computerized systems can be categorized as document systems, memo systems and category systems; all of these three have been utilized in this research. Data collected from cases are all stored in a document system which, in turn, forms case databases. The interviews are recorded and then transcribed using Nvivo 9 to create a document set of narratives; observatory notes and case archival documents are added to this document set. In addition, memos are created and notes are taken from case databases and interviews and form additional document systems. This step utilizes both memo systems and document sets and not only facilitates coding, but also enhances evaluation of material thus improving integrity, efficiency and effectiveness of data and analysis.

Comparative matrices for CCA and axial and selective coding are further enhanced by using visualizing models and software tools. Creating tables, models of nodes, tree nodes and free nodes and word frequency and content analyzing features of the software, provide a handful of tools for analyzing data from a 360-degree perspective and create a rich set of analyzed data.

In sum, use of Nvivo 9 allows the research process to meet the criteria of soundness and rigour and plays a key role in creation of a novel and robust theory grounded in multiple-cases. Copies of some computer-assisted analyses, including models and matrices, are included in Appendices.

4.7 Methodological Soundness

A key aspect of embedded multiple-case case study research is to ensure that methods, including data collection and analysis, fulfill the requirements of reliability, construct validity, as well as external and internal validity (Yin 2009). Reliability and validity are essentially from positivist philosophy; however, realist researchers also apply these factors. To address these requirements I applied the methods suggested by Yin (2003) and previous research (Bourgeois & Eisenhardt 1988; Andriopoulos, & Lewis, 2009).

4.7.1 Validity

Validity in qualitative research is generally referred to as the instrument which ensures that the research accurately investigates what it is intended to investigate (Patton, 2002) or provides goodness of results (Miller, 2008). However, in qualitative research this factor hinges on the credibility and skills of the researcher. To attain this end, some traditional quantitative factors can be used, as they are not mutually exclusive between qualitative and quantitative approaches (Patton, 2002:14). The foundationalism mindset of scientific research holds the importance of classical constructs, both internal and external, for a case study (Easterby-Smith, Golden-Biddle, & Locke, 2008).

4.7.1.1 Construct Validity

In a case study research construct validity must cover two issues: 1) selecting the specific types of change in the social context and relating them to the research objectives; and 2) demonstrating that the research reflects those specific types of change (Yin, 2003). In addition to these techniques as Eisenhardt (1989) suggests, developing a detailed interview protocol also brings about construct validity. These techniques are all employed in this research and are elaborated during data analysis.

4.7.1.2 Internal Validity

Internal validity refers to whether an instrument used in a study actually measures what it purports to measure (Donmoyer, 2008) and is mainly considered for causal or explanatory case studies (Yin, 2003; Seale, 2002); however, for exploratory case study research, this test can be applied to improve the rigour and trustworthiness of the study by enriching the integrity and rigour of theoretical interpretations (Blatter, 2008). A multiple case study (MCS) investigation can improve its internal validity by encouraging methodological awareness and setting up internal dialogue that ensures findings are presented to the stakeholders (Seale, 2002). It also can use a careful method of pattern-matching for data analysis, explanation building, addressing rival explanations and using logic models

(Yin, 2003), as well as developing matrices for individual and collective analyses of data across and within cases (Miles & Huberman 1994).

This research adopts these approaches and establishes systematic dissemination of results amongst participants. It accordingly conducted expert and pilot tests for the interview protocol and develops data matrices based on the guidelines of Miles and Humenrman (1994). In addition, pattern-matching coding and thematic analysis of codes, tables of matching and competing explanations and illustrative logic models of themes and codes (Yin, 2003) were also deployed to reach internal validity. These techniques are further discussed in later chapters, after collection of primary data and conduct of qualitative data analysis.

4.7.1.3 External Validity

Since the key concern of external validity is its immediate generalizability, in case study research it initially looks problematic (Donmoyer, 2008). In the context of MCS it is methodologically treated differently, for instance, by applying comparative analyses to perform the logic of replication amongst cases (Yin, 2003). Seale (2002) argues that, in case study research external validity can be replaced with transferability and is fulfilled by developing detailed and rich descriptions of settings. In this way the reader is given enough information to judge the applicability of findings to other settings. In the case of theory building multiple case research these approaches to attain external validity are analogous with the analytical generalization discussed later in this chapter (Healy and Perry, 2000;Yin, 2003). This issue follows the logic of post-positivism (including constructivism and realism) which deals with external validity in terms of trustworthiness and authenticity of qualitative analysis and interpretation (Denzin, & Lincoln, 1998).

In a multiple case study research , testing key processes, constructs, and explanations in several different configurations (i.e. cross-case analysis) extends external validity (Denzin, and Lincoln, 1998). Validity is addressed in this research by incorporating multiple cases and selecting

relatively similar firms, in terms of industrial and marketing conditions, and size; then administering comparative coding and analysis as part of multiple level theory building. So, in a nutshell, external validity is tested in this research by addressing trustworthiness, authenticity and analytic generalizability criteria, through careful design and interpretation of evidence in a multiple case setting.

4.7.2 Reliability

In theory-building qualitative research reliability is synonymous with dependability (Riege, 2003). It reflects the stability of methods and findings and is an indicator of accuracy (Denzin, & Lincoln, 1998). Thus, providing a full description of methods, data and ideas, assuring the congruence between research issues and features of design as well as recording data and developing case databases are key techniques for acquiring reliability (Yin, 2003). This notion of reliability as a part of overall validity of qualitative research is thus fulfilled by meeting requirements of validity (Koro-Ljungberg, 2010).

Yin (2003) specifically suggests use of case protocols, where all firms and informants are subjected to a same sequence and conditions of entry-exit and interview and construction of similar data bases for each case as two means of reliability (page, 34). Adhering to these suggestions, this research adopts the data-basing feature of Nvivo 9.0 to create case protocols and case data bases; peer review and examination of design and instruments (Riege, 2003) are used to engender a high degree of reliability. This approach addresses reliability and meets the alternative criteria of rigorous qualitative inquiry including dependability, repeatability and consistency; it also enables the interpretations to cope with the effect of several pluralistic views of paradigms and methods (Miller, 2008).

Finally, as explained later, the dimensions of sound research are demonstrated in methodological rigour and practical relevance. Both positivism and post-positivism (critical realism)

landscapes take validity and reliability as critical tests of methodological soundness and this study follows the same logic. The Table 4-21 shows a summary of these techniques, with some alternative criteria also discussed to broaden the assessment base.

Table 4-21: Criteria of validity and reliability in this research

Test	Approach	Phase in Research Conduct	Source
Construct validity	Use of interview and field notes as well as observatory data	Data collection	Yin (2003)
	Establishing chain of evidence	Data collection	Yin (2003)
	Having key informants review the case reports	Dissemination/final report	Yin (2003)
	Development of detailed interview protocol	Research design	Eisenhardt (1989)
Internal validity	Pattern-matching	Data analysis	Yin (2003)
	Summary of explanations	Data analysis	Yin (2003)
	Summary of competing explanations	Data analysis	Yin (2003)
	Logic models		
	Case analysis matrices	Data analysis	Yin (2003)
		Data analysis	Miles and Huberman (1994)
	Expert and pilot testing	Pre data collection	Seale (2002)
External validity	Replication logic (Comparatory analysis)	Research design	Yin (2003)
	Detailed description of settings	Data analysis	Seale (2002)
	Cross-case matrices	Data analysis	Miles and Huberman (1994)
	Analytic generalizability (supporting and grounding propositions in prior research	Research Design	Yin (2003), Eisenhardt (1989)
Reliability	Full description of methods	Research design	Yin, (2003), Riege, (2003)
	Record of data	Data collection	Yin (2003)
	Case databases	Data collection	Yin (2003), Riege, (2003)
	Case protocols	Research design	Yin (2003), Eisenhardt (1989)

As explanations of traditional tests reveals, the contemporary design of case study research looks at some other alternative tests for addressing the robustness of theory-building research. These divergences are basically attributed to the interpretive paradigm (Angen, 2000) or philosophical tension, between qualitative versus quantities and positivism versus non-positivism views (Creswell, 2007; Patton, 2002). Considering the plurality of criteria and terminological confusion I only briefly discuss some key alternative issues which are relevant to this research.

4.7.3 Alternative Evaluative Criteria

Although traditional criteria of validity and reliability have been well defined and employed in multiple-case study research (Yin, 2003:Miles & Huberman, 1994), scholars in qualitative management research (Easterby-Smith *et al*. 2008; Leitch *et al*. 2010) have extended the boundaries of methodological soundness by incorporating a number of complementary evaluative criteria which, in addition to validity and reliability, are mainly rooted in positivism philosophy and provide sound ground for assessing qualitative research from other philosophical standpoints.

In the next sub-sections I address these factors and briefly discuss how they apply in this research, in order to demonstrate the methodological soundless of this study from a holistic view and contribute to the rigour and relevance of this research.

4.7.3.1 Authenticity and Credibility

As Guba and Lincoln (2005) state, authenticity in qualitative research shows its genuineness and credibility. These two attributes are methodologically intertwined. Authenticity generally involves in shifting away from concerns about the reliability and validity of research to concerns about research that is worthwhile and its impact on the community (James, 2008). It is congruent with the epistemological paradigm of critical realism in case of this research. In this context, qualitative research must be fair and provide equal access to participants to avoid bias (Guba & Lincoln 2005).

This fairness is attained in this study by providing a symmetrical cluster of open and strong relationships with all interviewees and making them sure that they can get a summary of results.

Other aspects of authenticity in qualitative research are its ontological and educative dimensions (Guba & Lincoln 2005). Authentic research must provide grounding for a better understanding of social context, as well as appreciation of other's viewpoints (James, 2008). This research creates this atmosphere by adopting a two-way communicative channel with participants and embracing an open dialogue approach before, during and after interviews - as well as sharing of the findings and research analyses.

As noted earlier in qualitative research authenticity is linked to credibility. Credibility results from a high level of consistency. For example, readers and research participants should see why a research model was used and why the participants were selected for the study. It should also be clear what linkages between components of the research are created by data analysis (Jensen, 2008). Such credibility can be described by methodological procedures and sources including: instrument and data analysis, as well as collection techniques used to establish a high level of harmony, between the participants' expressions and the researcher's interpretations (Jensen, 2008). Consistent with this view of credibility, this research meets the criteria of credible qualitative research by assuring its methodological fitness and soundness and well as rigour and communicability. The techniques of piloting and expert testing illustrate these approaches.

4.7.3.2 Trustworthiness, and Communicability

In qualitative research, trustworthiness has gained remarkable importance as it allows researchers to describe the virtues of qualitative terms outside the parameters typically applied in quantitative research (Given & Saumure, 2008). Trustworthiness extends validity and reliability and is mirrored in perceived methodological rigour (Patton, 2002). Trustworthiness depends undeniably on competencies of the researcher in collecting and analyzing data; it can be tested by verification and

validation procedures of research from design to conduct (Patton, 2002). This indicates that, trustworthiness is always open-ended and negotiable, in particular, in theory-building studies (Seale, 1999).

Given the overarching nature of trustworthiness, it is most likely to be properly attained by assuring transferability, credibility, dependability, and confirm-ability (Given & Saumure, 2008). Amis, and Silk, (2008) endorse this approach. Trustworthiness in research can be demonstrated in a set of actions including: member checking and prolonged field engagement (credibility); provision of detailed descriptions of findings to allow creation and dissemination of various insights (transferability); documenting of detailed explanations of methods and tools (dependability); and finally provision of a reflexive self-critical account to expose inherent biases (confirm-ability) (Amis, & Silk, 2008). These four criteria of trustworthiness are key factors in interpretive research (Lincoln & Guba 1985).

4.7.3.3 Transferability and Accuracy

As qualitative research essentially does not deal with large samples and instead provides detailed descriptions of the phenomena, the notion of transferability contributes to the picture, in terms of careful connections from the revealed data to both local and entire community-level behaviour and practice (Jensen, 2008). In respect of this criterion, the transferability notion, assumes that: 1) all research findings are merely working hypotheses about what is likely to happen when similar things are done in even apparently similar contexts; and 2) that only the consumers of research can determine whether a finding is likely to be transferable to their situations.(Donmoyer, 2008).

To attain transferability, two approaches can be undertaken; the first is through thick description in which the researcher provides a full and purposeful account of the context, participants, and research design. So that the reader can make their own determinations about transferability. Thick basically refers to richness and this thick description is generally the richness of interpretations

achieved by recording the circumstances, meanings, intentions, strategies, motivations, and so on that characterize a particular episode of a social phenomenon (Maxwell & Mittapalli, 2008).The second approach is called purposeful sampling through which research participants are selected because they most represent the research design, limitations, and delimitations (Jensen, 2008).

Purposive sampling was carefully performed in this research in theoretical selection of cases and use of judgmental sampling within cases for penetrating into the informants of lower levels in targeted enterprises. This complicated sampling process is elaborated in the sampling section. For the sake of thick descriptions, this chapter not only provides broad and deep explanations of all methods and approaches applied in the design and conduct of the study, but also enhances development of full, detailed description of cases and data analysis as addressed later.

The techniques discussed in the validity and reliability sections are deployed to enrich the quality of analyses, develop a proper rich descriptive analysis and strengthen understandability and transferability of interpretations. This improves the accuracy of research, which is particularly important in process research (Langley, 1999).

In qualitative process research, accuracy shows the integrity and reliability of the research's claims and theoretical grounding (Patton, 2002). However, as Langley (1999) argues, in more technical terms accuracy is achieved by choosing close data fitting for the range of situations in which the theory is applicable and consequently it may act against generalizability.

This status of accuracy in qualitative process research may be positioned along a continuum of empirical accuracy and theoretical parsimony, in which high accuracy is attained by careful analysis of rich qualitative data very close to the theoretical basis (Langley, 1999). In other words, accurate process research must be built upon strongly grounded theoretical propositions and their connections with high caliber quality data describing the situation and its surrounding circumstances (Langley,

1999). Using narratives and grounded-theory approaches as the coding strategies can explain the increased likelihood of accuracy (Langley, 1999).

In addition to procedural and methodological accuracy, data management is a way to gain general accuracy (Corti, 2008). So, formation of case data bases and recording of interviews as well as creation of case note databases as previously discussed, illuminate how data management techniques applied here contribute to increased accuracy.

4.7.3.4 Transparency and Comparativeness

Researchers are required to provide their audience with a thorough description of the steps taken in conducting their research; technically transparency accomplishes two main things. First, if others want to replicate the research to see whether they achieve similar results, they can. Second, it enables readers to assess whether the method chosen was the most appropriate for answering the chosen research question (Saumure & Given, 2008). So, in a qualitative study, transparency provides a benchmark and is facilitated by computerized tools such as Nvivo (Bringer, Johnston, & Brackenridge, 2004). This study used classificatory and illustrative tools of Nvivo 9 to create a rigid formulation of the data analysis.

In addition to transparency, comparativeness is another important feature of high-caliber qualitative research as it describes the comparability of different cases through an integrative method (Yin, 2009). Through comparativeness the research can build a theory that represents all of the voices present in the findings; it also brings additional value, to compare findings with those of other research to assess what has been added to a broader research context (Saumure & Given, 2008).Comparativeness is embedded in the analytical approaches of this study and reflected in cross-case analyses and synthesis. The cross-case coding, matrices and comparative tables provided are specifically designed to generate comparability and provide meaningful comparisons amongst findings of different cases.

4.7.3.5 Reflexivity

In this study reflexivity broadly referred to the epistemological reflexivity, in which the researchers are required to ask questions of their methodological decision making and encouraged to think about epistemological decisions regarding the research and its findings (Dowling, 2008). The significance of this reflexivity is mainly related to the inductive reasoning (grounded-theory method) and realism paradigm of the research; as the notion of social reality is complex and knowledge-creation methods are sophisticated.

To do so, the underlying assumptions of realism and its methodological framework are maintained consistently throughout data collection and analysis processes, to avoid epistemological deviation. Adoption of this method was enhanced by keeping a journal to assist understanding of prior assumptions, beliefs, and attitudes.

It should be noted that achieving reflexivity is not straightforward. as it requires consistent examination of procedures at each stage of the research process (Dowling, 2006; Mauthner, & Doucet, 2003; Dowling, 2008).To assure reflexivity, a summary of research methods in prior studies, under critical realism and a case-study paradigm, was framed and constant checks of all data collection and analysis processes were run. In addition to the journal of assumptions, a framework for maximizing research reflexivity was provided and is evident in later chapters.

4.7.3.6 Analytic Generalizability

This refers to the generalizability of propositions and differs theoretically from statistical generalizability of the positivist approach (Healy & Perry, 2000; Yin, 2009). It applies in theory-building qualitative research and can be achieved through justification of proposition through review of prior studies, grounding propositions in existing theoretical studies and attainment of methodological fitness (Yin, 2003). It thus must provide a clear explanation of what is done and how,

rather than the counts or quantifications (Gummesson, 2008). In this research this criterion is met through construct validity, specification of theoretical relationships and achievement of theoretical and methodological rigour (Miles & Huberman, 1994; Healy & Perry, 2000).

Analytic generalizability may resemble the thick description technique as well as validity, transferability and accuracy; these are all addressed by provision of a clear, detailed and comprehensive methodological trail and intensive data analysis which encompasses full description of settings, procedures and circumstances of the social phenomenon.

In summary, qualitative issues in case-based research cover a wide spectrum of criteria and concepts which are mostly overlapping and cross-pollinating. Research studies mainly incorporate validity and reliability into their design, and then address rigour or relevance and fitness attributes.

4.8 Methodological Fitness

As stated by Edmondson, and Mcmanus, (2007) methodological fit in a study refers to internal consistency among elements of a research project—research question, prior work, research design, and theoretical contribution (Table 4-22).

Table 4-22: Three Archetypes of Methodological Fit in Field Research adopted from (Edmondson, and Mcmanus, 2007, p.1160)

State of Prior Theory and Research	***Nascent***	***Intermediate***	***Mature***
Research Questions	Open-ended inquiry about a phenomenon of interest	Proposed relationships between new and established constructs	Focused questions and/or hypotheses relating existing constructs
Type of data collected	Qualitative, initially open-ended data that need to be interpreted for meaning	Hybrid (both qualitative and quantitative)	Quantitative data; focused measures where extent or amount is meaningful
Illustrative methods for	Interviews; observations;	Interviews; observations;	Surveys; interviews or

collecting data	obtaining documents or other material from field sites relevant to the phenomena of interest	surveys; obtaining material from field sites relevant to the phenomena of interest	observations designed to be systematically coded and quantified; obtaining data from field sites that measure the extent or amount of salient constructs
Constructs and measures	Typically new constructs, few formal measures	Typically one or more new constructs and/or new measures	Typically relying heavily on existing constructs and measures
Goals of data analysis	Pattern identification	Preliminary or exploratory testing of new propositions and/or new constructs	Formal hypothesis testing
Data analysis methods	Thematic content analysis coding for evidence of constructs	Content analysis, exploratory statistics, and preliminary tests	Statistical inference, standard statistical analyses
Theoretical contribution	A suggestive theory, often an invitation for further work on the issue or set of issues opened up by the study	A provisional theory, often one that integrates previously separate bodies of work	A supported theory that may add specificity, new mechanisms, or new boundaries to existing theories

The challenging nature of adopting balanced scorecard, as well as its informative stage of usage in RTOs, supports the need for more theory building work. It suffices to say that, literature shows the infancy of knowledge in the contexts of dynamism and mechanism of value innovation, as well as the theory of dynamic capabilities. The capability of ambidextrous innovation management requires further exploratory investigations in order to provide empirically supported models for this growing area of inquiry. This research achieves an internal methodological fit by incorporating open-ended phenomenological questions into a qualitative theory-building approach as the above table

shows. Aligning the key components of this research into this archetype is mostly likely to attain rigour and relevance in this study.

4.9 Rigour and Relevance

Gulati (2007) argues that rigour refers to methodological soundness of research, whereas relevance is the applicability of the research for managers, these two components go beyond simple methodological structure and practical application (Palmer, Dick & Freiburger, 2009). I address these two aspects further below.

4.9.1 Discussion on Achieving 'Rigour'

In qualitative research, rigour generally refers to the quality of the research process and directly shows the trustworthiness of the research (Saumure & Given, 2008). As Palmer *et al.* (2009) assert, rigour must be basically seen from two vantage points: methodological and theoretical. Methodological rigour refers to the systematic collection and analysis of data, whereas theoretical rigour is about development and/or evaluation of new theoretical ideas (Hambrick, 2007). Both of these types contribute to relevance, as they are based on systematic collection and analysis of empirical data (Palmer *et al.* 2009).

Furthermore, as Saumure and Given, (2008) assert, there are a number of features which show the rigor of qualitative research including: transparency, validity or credibility, reliability or dependability, comparativeness, and reflexivity. As previously discussed, this research applies a set of systematic techniques to meet these criteria; however, this section sheds further light on techniques in the context of theory-building case study research.

First, following the guidelines of Eisenhardt (1991) rigour in multiple-case research is attained satisfactorily by identifying proper research questions, organization and well-designed instruments such as interview schedules for addressing those questions, considering both theoretical sampling and controls.

Using summary tables of patterns and distinctive factors in cases, as well as developing a set of selective story description in texts and tables of key quotations, this research increases in rigour (Eisenhardt & Graebner, 2007). This study has achieved high levels of methodological and theoretical rigour based on its validity and reliability attributes and other proxy alternatives.

4.9.2 Discussion on Attaining 'Relevance'

Rigorous research brings about relevant findings, which relate to what people actually do in the real situation (Brodsky & Welsh, 2008). High levels of relevancy can further promote the dissemination of successful practices (Lee, 1999). In addition, as case study research epistemologically follows the realist doctrine and assumes that reality does exist, the relevance of a case study must be clearly shown. So, on one hand, relevant research must show how it has used differentiable theories (methodological and theoretical relevance) (Brodsky &Welsh, 2008) and, on the other hand, how it bridges the gap between the theory and stakeholders in a specific context (Starkey & Madan, 2001).

However, the latter type of relevance can be achieved through a set of techniques including: 1) fine tuning reciprocal expectations (Visconti, 2010), in which participants (executives and employees) are promised a summary of research findings and asked to provide feedback or suggestions on the research; 2) provision of intensive and easy-to-understand presentation in order to narrow the theory-practice complexity gap in further studies; and finally, 3) presentation of findings and analysis in regional as well as international conferences to panels of practitioners and academicians. These last techniques have been adopted, based on the note that "relative irrelevance stems from the failure to generate useful research and the failure to effectively transmit useful research to the field's constituencies" (Palmer, Dick & Freiburger, 2009).

It should also be pointed out that, due to the naturalistic setting of data in this multiple case study, it is assumed that this qualitative research is able to synthesize rigour and relevance issues to provide a satisfactory level of managerial relevance for further implementation (Vermeulen, 2005).

4.10 The Research Process Roadmap

From the discussions so far, the research roadmap of this study can be schematically illustrated in Figure 4-3. This roadmap delineates the internal coherency and structure of the research methods from philosophical assumptions and underlying metaphors to relevance and rigor of the findings. The roadmap is aimed to enhance replication of research in future studies and increase the utility of the research for its stakeholders. In addition, it shows how research design and its method engender internal bridges between theory and practice in order to highlight the key contributions and significance of this study.

This schematic model consists of four phases in accordance with the organization and arrangement of the research methods and demonstrates inter-relationships between research components and a set of different evaluative criteria previously discussed. It also exhibits the internal consistency and coherence of knowledge flows from theoretical chapters to methodological and empirical chapter, as this dissertation integrates and shows. Having illustrated this roadmap, the next chapter addresses the within and cross case processes and explains a set of empirically-driven and context-embedded theoretical propositions, which demonstrate how RTOs can adopt BSC to map their strategies.

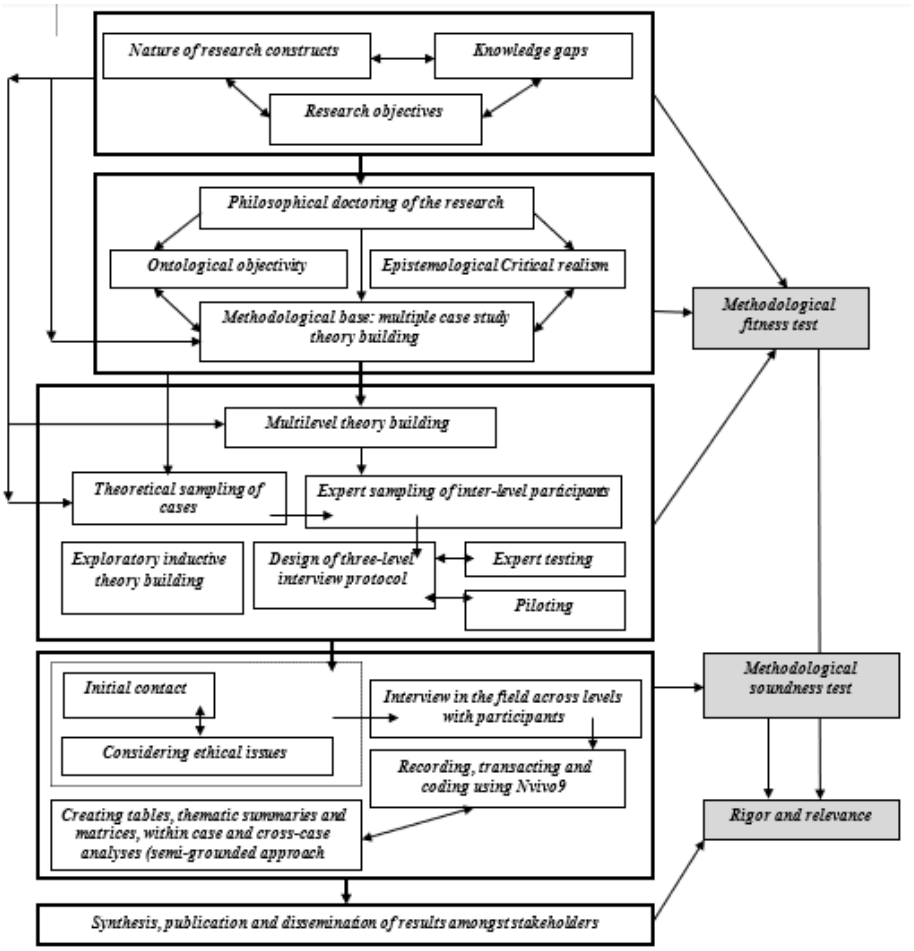

Figure 4-3:Research Process Roadmap (Developed by the author)

4.11 Summary of Chapter Four

This chapter illustrated the methodology and research design for this thesis. It explained the rationale behind the choice of qualitative theory-building multiple case study approach and critically assessed different case study techniques. Then it reviewed and discussed philosophical assumptions that underpin this research and illuminated the role of the researcher in collecting, classifying, analysing, interpreting and reporting data in the form of a roadmap used to develop theories or frameworks grounded in empirical data. Next chapter will discuss findings of this research based on this roadmap.

CHAPTER FIVE

ANALYSIS AND RESULTS

5.1 Introduction to Chapter Five

In chapter four a roadmap was proposed to develop or inductively create frameworks or models grounded in qualitative data. This chapter illustrates findings of this research based on the analysis that followed the roadmap. First, it offers a description of qualitative data collected and used in this thesis. Then, it explains the coding procedure and resultant coded data that shapes the foundation of empirically grounded framework proposed by this thesis and offers some supportive quotes as evidence used to empirically substantiate the findings. Finally, this chapter ends with a quantitative visualization of empirical evidence across case studies in order to highlight the robustness and reliability of the findings and their methodological rigor.

5.2 Descriptions of Data

We conducted 30 interviews in 15 case RTOs. Key information about primary interview data sources is summarized in Table 5-1.

Table 5-1:Summary of data collection

No	Case	Position of the interview	Length of the interview	Page of Transcript	Interview mode	Date of the interview
1	C1	Managing Director	38min	9	Face to Face	23/10/2017
2	C1	CEO	45min	12	Face to Face	23/10/2017
3	C2	CEO	33min	10	Face to Face	23/10/2017
4	C2	DOS	29min	8	Face to Face	24/10/2017
5	C3	CEO	50min	14	Face to Face	24/10/2017
6	C3	DOS	30min	9	Face to Face	24/10/2017

7	C4	CEO	40min	10	Face to Face	25/10/2017
8	C4	DOS	31min	9	Face to Face	25/10/2017
9	C5	CEO	45min	11	Face to Face	25/10/2017
10	C5	Managing Director	30min	10	Face to Face	26/10/2017
11	C6	CEO/Principal	40min	12	Face to Face	26/10/2017
12	C6	Managing Director	33min	8	Face to Face	26/10/2017
13	C7	CEO	40min	13	Face to Face	27/10/2017
14	C7	Managing Director	32min	9	Face to Face	27/10/2017
15	C8	CEO	33min	9	Face to Face	27/10/2017
16	C8	Managing Director	37min	11	Over phone	30/10/2017
17	C9	CEO	41min	15	Face to Face	30/10/2017
18	C9	Managing Director	31min	10	Face to Face	30/10/2017
19	C10	CEO	55m	12	Face to Face	31/10/2017
20	C10	DOS	40min	10	Face to Face	31/10/2017
21	C11	CEO	28m	6	Face to Face	31/10/2017
22	C11	DOS	33min	7	Face to Face	1/11/2017
23	C12	CEO	50min	13	Face to Face	1/11/2017
24	C12	Managing Director	46min	10	Face to Face	1/11/2017
25	C13	CEO	32min	9	Face to Face	2/11/2017
26	C13	DOS	33min	9	Face to Face	2/11/2017
27	C14	DOS	51min	11	Face to Face	3/11/2017
28	C14	Managing Director	27min	6	Face to Face	3/11/2017
29	C15	Managing Director	34min	5	Face to Face	3/11/2017
30	C15	Managing Director	38min	7	Face to Face	4/11/2017

5.3 Coding Data

To code the interviews, we first transcribed them using a professional transcription service. This transcription generated the primary qualitative data used for analysis. Then a codebook was developed as a guide for the coding phase. Using this codebook, the primary researcher began the process of coding interviews individually. To ensure the validity and robustness of the procedure and minimize the adverse effects of ratter bias and subjectivity the Weber protocol was followed. Both the codebook and protocol are explained below.

5.3.1 Codebook

A codebook consists of a set of meaningful units of information called codes (Vermeulen, 2005) that are either known before the data analysis starts. These codes are called pre-specified codes or are emergent as the researcher discovers them through the processes of data analysis as interviews are read, classified and categorized. Since Balanced Scorecard in general and performance of educational intuitions are extensive fields of research and practice, we develop and used a set of pre-specified codes (Table 5-2).

Table 5-2:Codebook

Code	Description	Type
Performance	How an RTO attains its goals	Pre-specified
Vision	Long term goal of an RTO	Pre-specified
Strategy	Action plan to realize the vision	Pre-specified
Profit	Revenue minus costs	Pre-specified
Revenue	Total income from services provided	Pre-specified
Staff training	Total investment in training of current full time and part time staff	Pre-specified
Staff Development	All activities associated with development of the organization human capital in terms of improvements in their skills; knowledge and abilities	Pre-specified

Human Capital	Total skills, knowledge and abilities of employees of an organization	Pre-specified
Students Enrolment	Total number of students to be enrolled in an educational institution	Pre-specified
Student Numbers	Total number of students already enrolled in an educational institution	Pre-specified
Student Registration	Total number of students already enrolled and to be enrolled din an educational institution	Pre-specified
Student Drop Out	Total number of students who withdraw from an educational institution	Pre-specified
Student Compliance	Students adherence to teaching and learning rules and regulations	Pre-specified
Student Happiness	Overall satisfaction of students with their teaching and learning systems, tools and methods	Pre-specified
Student Complaints	Total number of complaints lodged by students to student services	Pre-specified
Course Creativity	Level of novelty, creativity and innovativeness of a course offered by an institution.	Pre-specified
Number of Courses	Total number of educational courses offered by an institution.	Pre-specified
Variety of Courses	Total number of fields in which an institution offers educational courses	Pre-specified
Competition	Level of rivalry between institutions offering similar et of courses	Pre-specified
Continuous improvement	The process of continuously improving the range and quality of offerings	Pre-specified
Teaching methods	Total range of different techniques used in delivering courses such as in-class, online, mixed, flipped, intensive, etc.	Pre-specified
Teaching technologies	Total set of technologies, tools and equipment used by teaching staff to deliver courses	Pre-specified
Integration	How different tools and technologies are integrated into a whole in an organization	Pre-specified
Alignment	How different tools and technologies are aligned with the strategy and vision of an organization	Pre-specified

Recruitment	All activities involved in targeting and enrolling new students	Pre-specified
Strategy Map	A schematic outline of business activities are linked together	Pre-specified
KPI	Key performance indicators (not necessary always quantitative) for each dimension of BSC	Pre-specified
Causal links	Organizational causal links between vision, strategy and KPIs at four dimensions of BSC	Pre-specified

These codes must be systematically applied to interviews to create structured data which can be used to extract themes in an inductive manner. To do so, we used weber protocol.

5.3.2 Weber protocol

Weber protocol outlined in Table 5-3 is a guideline on how to use codes defined in the codebook to codify and structure qualitative data.

Table 5-3:Weber protocol

Step	Description	Application
1	Definition of the recording units (e. g., word, phrase, sentence, paragraph)	Tape recorded Interviews with executives of RTOs
2	Definition of the coding categories.	Two categories of codes were used: prespecified codes that identified during the literature review and emergent codes that were added to the codebook after the pilot interviews.
3	Test of coding on a sample of text.	Two coders coded two interviews separately using the same codebook. The inter rater reliability was assessed using the Kappa coefficient.

4	Assessment of the accuracy and reliability of the sample coding.	Expert judgment and Kappa coefficient tests were used to assess reliability in terms of intercoder agreement and accuracy of codes.
5	Revision of the coding rules.	The original codebook was slightly modified to accommodate more accurate codes.
6	Return to Step three until sufficient reliability is achieved.	After two rounds of cross validating codes, an acceptable codebook with reliable codes was developed.
7	Coding of all the text.	The final codebook was loaded to Nvivo and used by the researcher to code the entire set of transcripts.
8	Assess the achieved reliability or accuracy	Second round of expert judgment test and recalculation of Kappa coefficient showed acceptable level of accuracy and reliability of codes.

5.3.3 Intercoder Agreement and Reliability

To assess ratter reliability, we used Kappa coefficient. The value of Kappa approaches one when coding is perfectly reliable and goes to zero when there is no agreement other than what would be expected by chance (Stemler 2001). Kappa is computed as:

$$K = \frac{Pa - Pc}{1 - Pc}$$

where:

PA = proportion of units on which the ratters agree

PC = the proportion of units for which agreement is expected by chance.

Proportions are calculated based on the number of codes in the library of coded texts in the Nvivo software. Nvivo has also a systematic approach in which two coders separately code the qualitative data and the software calculates the levels of inter-coder agreement. The results of comparing codes from two coders (the author and his principal supervisor or the chief investigator) resulted in 80% similarity and Kappa coefficient of 0.77 which is deemed appropriate and places more credibility on the results (Stemler 2001).

5.4 Findings

In this and following sections of this chapter I will explain the results of the study. The first key finding is a summary of the dimensions of a vocational balanced scorecard based on the summary of case studies. This BSC highlights KPIs that are commonly used by RTOS across four pillars of BSC.

5.4.1 Exploring key dimensions of a BSC for an RTO

Our case studies reveal some key themes and factors shared by all RTOs which can be summarized and grouped into four pillars of BSC. Table 5-4 shows a summary of these factors.

Table 5-4:Dimensions of a BSC for An Australian RTO

BSC for An Australian RTO		
Vision: grow to offer higher education services independently or in partnership with universities		
Students	**Quality of customers**	Background of students, their HSC score and IELTS.
	Customer Satisfaction	Improving students Satisfaction
	WOM and Branding	Encourage students to distribute positive WOM

		Through public relations and advertising strengthens the brand of the RTO
	Employability	Improve employability of students through developing industry connections
Learning & Growth	**Service innovation**	Creating new methods to facilitate admission, support, teaching and compliancy procedures.
	Sales procedures	Developing a wider range of recruiters to penetrate new markets internally and internationally.
	Technology leadership	Constantly and consistently adopting new teaching and learning technologies.
	Cost leadership	Constantly using methods to bring the cost of operation down to keep tuition and admission fees competitive.
Internal	**Quality assurance**	Meeting service standards, response time to customer; service facilities to staff.
	Service optimization	exit exam or student competency evaluation. Attendance,
	Cost management improvement	Casual staffing, Faculty-to-student ratio, educational expenses per Student, cost of facilities such as library, photo copying and café per students.
	specialized curriculum	Number of faculty in specialized areas, ratio of full time to part time staff.
Financial	**Increasing revenue sources**	Increase share in key markets such as India
	Expanding revenue sources	Develop partnership with agencies in new markets such as Malaysia, Thailand, African and middle eastern countries
	Reduce cost of recruiting agents	More efficient recruitment network across countries
	Optimize asset utilization	More efficient and effective use of facilities, space, services, systems and resources measured by return on assets and investments

The most striking finding of this study is perhaps the consistency in the vision of RTO. In all cases, the interviewees stressed the goal to offer higher education as the vision of their relevant

institutes. RTOs have two paths toward this goal: 1) to gain the ability and accreditation to grow to become an independent provider of higher education 2) to partner up and develop agreements with universities to offer their course as a licensee.

> ***"our goal is to become a provider of undergraduate degrees. We are pursuing multiple ways toward this goal the easiest one is to find a university that can let us offer their courses in our campus" (RTO2)***

> ***"we always wanted to offer our own higher education digress. We are pursuing multiple avenues to do this. Currently working on partnership with some universities is the best option (RTO7)***

> ***" we are working on meeting regulatory requirements to offer our own bachelor and higher education diplomas in the next few years" (TRO12)***

The following quotes substantiate findings summarized in Table 28. Due to space restrictions and data privacy requirements we cannot provide full account of interview quotes that generated these findings. However, consistent with suggestions from Yin (2003) we offer a series of support and power quotes for each finding. A power quote is a quote that directly and explicitly offer empirical support for the finding. A support quote is a quote that further substantiates and validates the finding. On quality of students to be taken, manager of RTO2 states that:

> ***"Having smart and dedicated students not only improves our brand but also increases their employability and is truly a key goal for our new establishment"***

Similarly directing manager of RTO 9 mentioned that:

> ***We initially did not consider background of applicants as a key factor in our intake process but soon realized that applicants with relevant and strong background would succeed faster in a vocational environment***

On improving satisfaction of students, we have the following power quotes:

> ***"Vocational training is very competitive. There are so many small and big providers, not to mention TAFE, having happy and satisfied students is a primary source of success for small providers like us (RTO 3)"***

> ***"Our goal is to be able to jump from a vocational education to providers of higher education. To achieve this goal, we have to graduate students who leave us with great memories and are willing to come back to us to do higher education (RTO 8)"***

Furthermore, the following support quotes place more emphasis on the importance of this measure in the customer dimension of a vocational balanced scorecard:

> ***"Students who are happy with our service and facilities will have more motivation seek for jobs and this have a great impact on our institute (RTO 4)"***

> ***"We created a specific role for student satisfaction agent in our organization a year and half a go and since then we can see how students' compliances and completion rates have improved (RTO 11)"***

Regarding word of mouth (WOM) and branding, almost all interviewees were consistent in stressing the importance of understanding, improving and eventually quantifying in a simple way, how students talk about their institutes:

> ***"Our small organization needs students who talk positively about our service, facilities to their friends and relatives here and overseas. (RTO 13)"***

> ***"Perhaps out most important marketing goal is to ensure that students spread good words about our services (RTO9)"***

"We don't have substantial marketing budget so out students our key ambassadors. we need them to increase our market share" (RTO10)

"Unlike universities and TAFE, we don't have massive marketing budget. We rely on our students to brand our institute" (RTO11)

Another important measure unearthed in our interviews was employability of students. All RTOs have a clear goal to graduate students who are highly qualified and ready got job markets. The following quotes exemplify this factor:

"we are a vocational training institute; our key aspiration is to have students who go to job market happily and succeed in today/s competitive industries" (RTO 7)

"all our students want is to find themselves qualified and ready for job market" (RTO1)

"Australian job market is maybe one of the most competitive ones in the word. We succeed only when our students are industry-ready" (RTO15)

Some support quotes for this factor include:

"The essence of a vocational centre is to train students to succeed in job market" (RTO7)

"We take pride in our ability to train market-ready graduates. This has been the core of our business mode land will remain our key competency" (RTO9)

The second dimension of BSC is learning and growth which is pertinent to the areas in which an organization can innovate and create new sources of organic growth. Our case studies reveal that RTOs in Australia have similar areas of focus when it comes to nurturing internal growth and

creativity. The main measures that emerged in this domain are service innovation, sales procedures technology leadership and cost leadership.

On service innovation, interviews were consistently conscious of the importance of constantly creating or adopting new methods to facilitate various parts of their service. RTOs seem to have a clear business model that is composed of five major services orchestrated in an operation plan. These five are recruitment, admission, teaching and learning, compliancy and graduation. All these five were subject to continuous revision, improvement and creativity as exhibited in the following quotes:

> ***"we know that our recruitment procedures are not best in the industry we constantly collect feedback from our agents and work hard to streamline our student acquisition" (RTO1)***
>
> ***"we acquire students via a network on agents. Managing these agents in different markets is a challenge but we have overcome many markets along the way and work hard to further improve our way in this regard (RTO7)***
>
> ***"our industry in competitive, we need to watch our potential markets and also agents to make sure that we capture applicants. This is a continuous work in progress to learn the best method and approach" (RTO12)***

Some support quotes for service innovation include:

> ***"We have regular meetings with our staff and agents about how to improve our student acquisition capabilities" (RTO8)***
>
> ***"We not only seek students' feedback but also contact their parents, and families to find out if they are happy with our agents and try to come up with better ways to liaise with them (RTO4)"***

On graduation services we have the following quotes that demonstrate how important is to improve they was RTOs organize and carry out their graduation ceremonies.

> ***"we have spent a lot of effort to make our graduation ceremonies memorable and unique. We have industry guest speakers and industry recruiters attending our ceremonies" (RTO5)***
>
> ***"Many of our students did not t want to attend graduation ceremonies, but we make our graduation more streamlined and our ceremonies more fun through a series of innovative changes such as issuing tickers online and proving foods, snacks and photo booths. this now has become an integral part of our overall service offering (RTO13)"***
>
> ***"Our students can quickly plan their graduation date and choose their ceremony date via our system through student services. This is our new function that would create a unique experience for our students (RTO8)"***
>
> ***"many of our students would leave the country after completing their diplomas. We enabled them to attend their ceremony and receive certificate of completion and official graduation letter via video conference (RTO5)"***

On sales procedures, interviewees highlighted the centrality of the mechanisms through which agents are found, contracted and vetted. In the vocational industry agents play a much more important role than in higher education sector.

> ***"In our industry student agents are very powerful, one of our key challenges is to find ways to better manage their expectations and requirements (RTO15)"***

"we need to expand our range of agents and also find better agents in our key markers. This is a fundamental part of our business model because student agents charge us great deal and have control lover where students go to" (RTO7)

"over the last year we have come up with a system to develop our own group of agents rather than working with independent ones. In this way we get more control over our markets "(RTO3)

"we are a small organization. We can't have our own team of overseas recruiters, but we are trying to find ways to better manage our current and increase the number of our recruiters without bearing a lot of additional costs" (RTO10)"

On technology leadership, interviewees point to new teaching and learning technologies and the power of new internet-based and social media tools that can be leveraged to improve both staffs' engagement and customers experience.

"we deliver courses in accounting, marketing and IT. It is essential to ensure latest technologies such as internet classroom and case simulations to deliver these courses because our students need to be trained with technologies not lag behind" (RTO4)

"Although we are a small company with limited technological resources, we are committed to utilize new teaching and learning technologies in our courses" (RTO6)

Some support quotes on this measure:

"online classes, new assessment tools and new state-of-the-art computers make our organization a desirable learning environment for our new students (RTO9)"

"We encourage our teaching staff to use case studies, examples and assessments that relate to new technological advances. We also try to keep our technologies tools and equipment up-to-date although it is very challenging for us due to our size and limited budget (RTO11)"

The last aspect of learning and growth is about procedures and processes that help RTOs bring tuition feeds down and present themselves as cost leaders without compromising the quality of their service offerings. This is important to RTOs because as small organizations operating in an increasingly competitive market for international students, costs of operations are extremely important which directly affect tuition fees and survival and growth of the business.

"We are a private and small organization, we keep working on ways to reduce our cost of operation mainly on agents, admission and rents we pay for our campuses. We want to offer best services at the lowest possible costs" (RTO1)

"International students want to go to colleges which are cheap and reputable. Our goal is to meet this demand" (RTO4)

"our range of diplomas is not unique, but we try to differentiate ourselves by offerings same courses at lower costs specially for students who come from low-income countries" (RTO12)

"our major costs is the rent for our premises. We are negotiating with realtors to find cheaper places, so we can keep the quality of our offerings and bring our fees down to capture more students. I don't think we can stay competitive at current rate based on what I see happening in the industry" (RTO7)

Some support quotes for cost leadership:

"If we offer cheaper courses we steal market share of our main competitors. It is not easy to further reduce our costs of operations, but we may be able to sacrifice our margin strategically to gain more market share (RTO3)

"In our industry competition is based on costs. We have no choice but to learn how to compete on prices and then gear all operational goals from our campus services to staffing toward this goal" (RTO8)

The third dimension of BSC for RTOs is the internal procedures which can be improved, changed and created to convert the vision of the RTO into market reality. The first factor in this dimension is quality assurance.

Quality assurance refers to all internal procedures that an organization performs to consistently deliver quality offerings. RTOs have a set of stranded procedures that include industry working procedures set by the government (Authorises), student response times (compliances, grievances, complaint), duration of sources, time tables, admission times, and quality of teaching and training staff.

"Our courses are accredited by the Australian Skills Quality Authority (ASQA). We have to constancy monitor our deliveries to ensure that we stick to regulatory requirements set by ASQA" (RTO1)"

"We regulate our operation based on standards formulated by ASQA" (RTO3)

Our business model was approved by an agent who were familiar with requirements of ASQA. We always abide by these requirements and comply with their updates and changes" (RTO9)

On student response time:

"In our business model we tend to address student requests from admission, to immigration and visa preparation to enrolment in less than a month. This is not best in the industry but given our capacity it is best for us even though we are trying to shorten this to become more competitive" (RTO14)

"Our services are usually very fast. The only area that is out of our control truly is immigration and visa approval. We are working hard with the department of immigration to see if we can improve it" (RTO7)

"Over the years we have improved our student response time significantly. I remember two years ago student complaints and appeals would take 4-5 days to be addressed. Now we finalize them in two working days" (RTO11)

Some support quotes:

"students want to apply and start they courses fast. We understand this need and coordinate our staff to make it a reality for every student" (RTO10"

"we established a new student service officer whose primary job is to address students' requirements from application to graduation in a timely manner" (RTO5)

"I believe our services are faster than other organizations. I mean in terms of getting them start the course, enrol, study and graduate" (RTO7)

"we changed our time table to speed up classes, shorten courses and increase the velocity of our operation. In was a struggle but we did it eventually after few rounds of frustrating attempts" (RTO8).

Service optimization is another aspect of internal procedures that a BSC for RTOs will capitalize on. This aspect is closely related to quality assurance because several quality improvement

procedures are intertwined with services that need to be optimized. The following quotes demonstrate these interdependencies.

> ***"we keep on improving our services. Our entry and exist exams, for instance have gone through a lot of change to better assess our freshmen and graduating students" (RTO1)***
>
> ***"we now pay more attention to how our services are carried out. Take for example, we now automated attendance checks and student's compliances" (RTO14)***
>
> ***"we never assessed competencies of students before graduation from an industrial or work-based perspective. We now developed a series of steps to do just that" (RTO3)***

On costs management, we found that RTOs use different techniques to manage costs as an internal procedure. The most common techniques were to use casual staffing, manage the ratio of teaching staff to students and limited use of specialized staff in curriculums.

> ***"We use sessional and casual staffing method to save money on salaries as students inflow varies from semester to semester" (RTO7)***
>
> ***"Our organization is small, so we can't afford full time teaching staff. We use sessional staff to accommodate our student teaching needs" (RTO5)***
>
> ***"All our teaching staff are caudal because we don't know how our classes are going to be offered next terms, so we have to look into temporary and flexible options to keep costs down" (RTO13)***
>
> ***"One of the best techniques to keep the tuition fees down is to have large classes run by single lecturers" (RTO7)***

We don't have large classroom in our campus, but we split large classes into multiple sessions and allocate them to lectures who are willing to take mirrored classes. This keeps costs down ad repeat classes are paid at lower hourly rate" (RTO12)

"we hire staff who can deliver multiple courses with the same quality and rate. Highly specialized teachers won't come here and if they do they need university rates that we can't afford" (RTO15)

"Our courses have capstone and generic units which do not need highly specialized teachers. We look at the experience and qualifications of teaching stand and use those who are competent in multiple areas just enough to deliver quality lectures but not expensive. This is how we stay alive" (RTO9)

The last pillar of a BSC is its financial measures. Our case studied point to several commonly used and agreed upon measures that RTOs use to align their financial goals with other strategic dimensions outlined by BSC. The first measure is of course to increase revenue. RTOs have two ways to achieve this goal.

The first one is to increase market share in existing markets and the second one is to penetrate new markets. As RTOs use student recruitment agents, these expansions mean, effectively, increasing their recruiters in existing markets and developing contracts or partnership agreements with new recruiters for new markets.

"to grow we need to bring new students from our core market India" (RTO1)

"we are working on a plan to get new recruiters on board in order to enrol more students from china, Indonesia and India" (RTO3)

"time has come for us to focus on new countries. We are thinking about middle east, turkey, or perhaps north Africa. We are negotiating with agencies to find suitable recruiters" (RTO7)

"we regularly fly overseas to assess new markets for our college, Australian is a great destination for international vocational student, given the dynamic job market here we have to utilize this advantage" (RTO8)

Some support quotes:

"We constantly need students, but the hassle is to deal with greedy student recruiters and find new ones who you can trust for long term" (RTO5)

"sometimes I think we need to have our own international recruitment debarment but sadly we can't afford it. This is a key barrier against our growth and profitability" (RTO11)

"I constantly try to find agents who can bring us sizable number of students form new countries like Korea or even Malaysia where we don't have any market presence" (RTO15)

Having demonstrated key measures that RTO use across four pillars of BSC, we also explored common strategy maps among case studied. Next section explains this finding.

5.4.2 Explored common strategy maps for a VBSC at Australian RTOs

Our analysis of how different parts of an RTO's business model link to pillars and aspects of BSC revealed four commonly shared strategy maps. The first map illustrated in Figure 5-1 represents strategic activities of 6 RTOs namely case number 1,4,7,8,9,10.

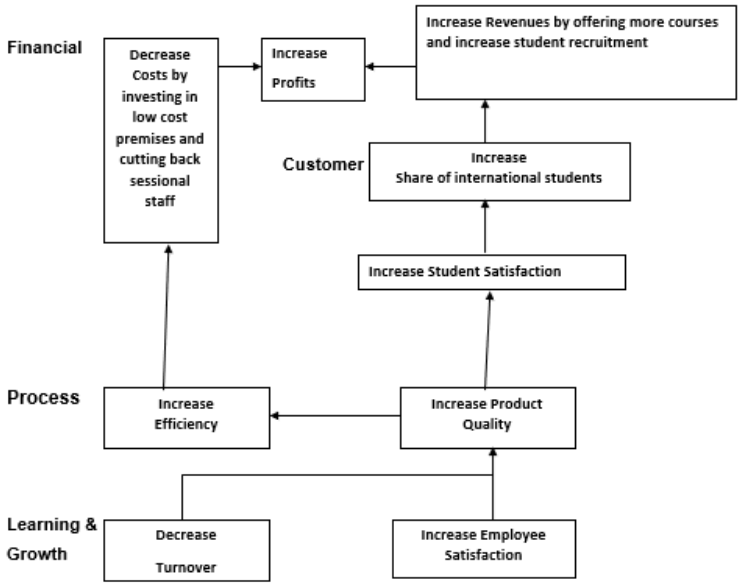

Figure 5-1: Strategy Map 1

According to balanced scorecard, causal links are firm-specific associations between measures of performance that are defined by the business model of the firm. We derived these causal links from interviews through subjective associations stated by interviewees. The following quotes illustrate how Figure 5-1 was conceptualized.

> ***"our staff are our key assets. Keeping them happy and committed is a goal that enable us to improve our efficiency and service quality" (RTO7)***
>
> ***"the only way to grow is to secure our profit goals. We need to develop more courses and cut unnecessary costs by focusing on what matters in vocational training" (RTO 1)***
>
> ***"Our students become happy when our courses and facilities and delivery methods meet their changing expectations" (RTO 10)***
>
> ***"Majority of our students are international. …. meeting their expectations boost our popularity overseas and help us recruit more students from our core and new markets" (RTO4)***

"We offer a wide range of quality diplomas for vocational students. Having committed and devoted staff ensures that we maintain consistency in our service delivery" (RTO 9)

The second strategy map shown in Figure 5-2 is attributable to RTOs 2,3 and 12

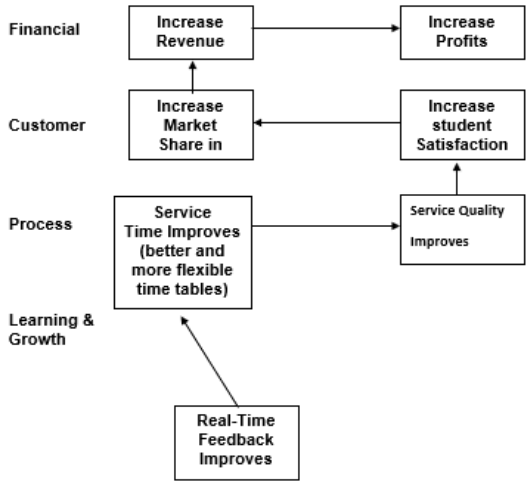

Figure 5-2: Strategy Map 2

The following quotes show how this map was developed.

"one of our key challenges and source of student dissatisfaction was our time table. Sometimes classes would clash and students couldn't get what they want. We have started to collect feedback from students to improve our system and increase our student satisfaction "(RTO 12)

We aim to increase our student's satisfaction and leverage them to gain more market share in our target markets mainly India and Nepal" (RTO3)

The third strategy map (Figure 5-3) represents business model of relatively larger and older RTOs (5,6 and 11).

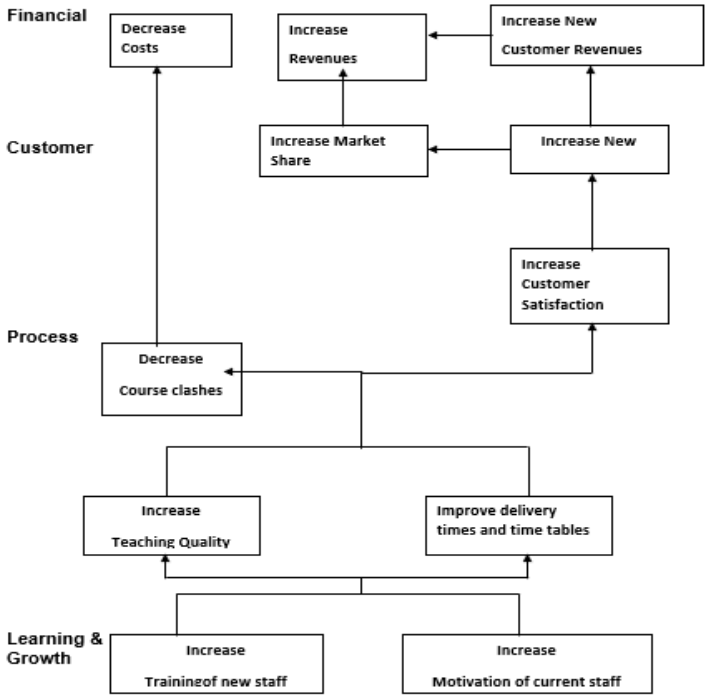

Figure 5-3:Strategy Map 3

we have invested heavily in training of our teaching staff and on several thing to keep our staff happy. After all, when they are happy students are happy, they offer great service and we thrive on that" (RTO 11)

"we realized that keeping our current teaching staff is as important as training ne ones. If they don't get trained they fall behind or would leave us and that damages our service delivery" (RTO 6)

"To provide our students with flexibility, we improved our time tabling and reduced clashes in time tables. This has immediate impact on our students' happiness" (RTO6)

"By streamlining time tables, we freed up time and staff allocations got easier and we used this to keep our costs down as other colleges increased theirs" (RTO 5)

"We are proud of the quality and range of our diplomas and short courses. This has been a driving force for us to take advantage of interest in Australia by international students. We increase our revenue then get new international students" (RTO5)

Finally, Figure 5-4 represents strategy maps of RTOs 13, 14 and 15.

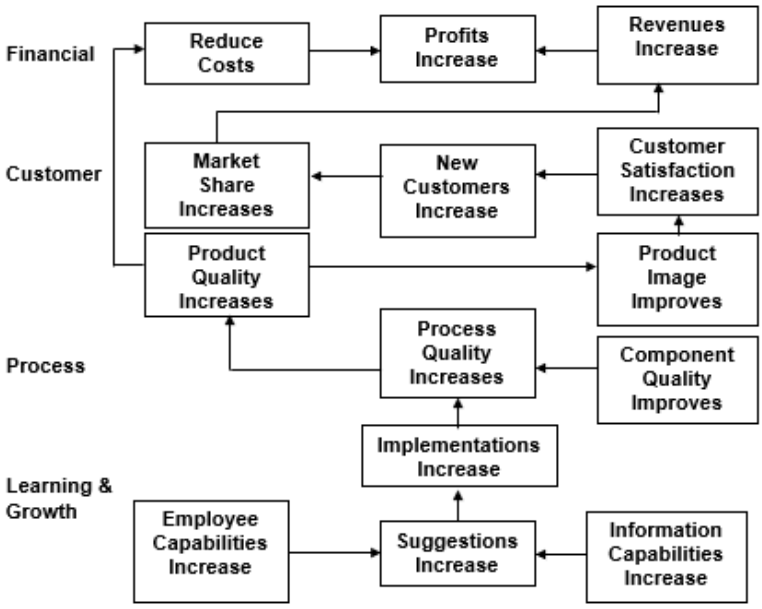

Figure 5-4:Strategy Map 4

Based on the data and analyses previously described, the following sections summarize recommendations for establishing BSC in an RTO. These are not findings from cases but rather a complementary section that shows how a vocational balanced scorecard can be set up, implemented and managed.

5.4.3 A Schematic Guideline for Setting Up a Vocational Balanced Scorecard

To set up a balanced scorecard an enterprise should follow the steps below:

1. Agree vision for the company.

2. Develop the company's values and goals for each area of the triple bottom line as outlined above.
3. Agree at board level targets for the year and communicate these to all.
4. Develop and document the actions that need to be taken to ensure the targets are met (including who will lead on each and target achievement dates).
5. Develop a matrix to manage and measure the achievement of the organization against the agreed targets.
6. Develop and implement a process to measure the results at least quarterly against the targets and completion of the actions. This reporting system will be based on traffic light reporting. Red – target not being met, Amber – targets for the year are under pressure or looking doubtful based on current achievement/known factors and Green all targets being met and no issues for future months foreseen. If a red or amber light is given then a full discussion should be held at board/committee level to identify the root cause of the problem and the actions that need to be taken to get the light back on track. All discussions that are held and any actions agreed need to be checked across the scorecard to understand the impact on all other targets.
7. In a larger organization it may be appropriate to have an organizational level scorecard and then scorecards in teams at lower level. If this is necessary, there should always be a clear line of sight to the targets and scorecard at business level.

5.4.4 Successful Implementation of a VBSC

Ruben concludes that the Balanced Scorecard can be adapted for postsecondary institutions with some modification from the original system presented by Kaplan. He also concludes that even if the institution does not implement the scorecard, the communication and discussion activities associated with its development provide benefits to the institution in the form of improved

understanding among faculty, administration, and staff. This improved communication and understanding results in a focused workforce striving to achieve the institution's strategic plan and mission.

Yek concludes that there is no prescriptive formula for adopting and implementing a successful Balanced Scorecard in any organization; however, the use of the Balanced Scorecard does provide significant improvements in quality and performance of a higher education institution when it is adopted as an integral part of an existing planning process, presented in a consultative and engaging manner with strategic objectives, and measures being the result of the promoted teamwork and alignment (Yek, 2007).

In addition, Yek cites five internal impacts due to active communication: a deep, common understanding; professional development; great teamwork; organizational coherence; and clear priorities and performance targets (Yek, 2007). Successful implementation of a Balanced Scorecard requires:

- Obtaining executive sponsorship and commitment
- Involving a broad base of leaders, managers, and employees in scorecard development
- Agreeing on terminology
- Choosing an effective and committed Balanced Scorecard program champion
- Establishing interactive two-way communication first
- Working through the mission, vision, strategic results, and strategy mapping to eliminate rushing judgment on measures (Adapted with permission from the Balanced Scorecard Institute)

Applying these factors increases the probability of successfully implementing a Balanced Scorecard, although not all Balanced Scorecard attempts are successful.

5.4.5 Robustness Check

The last section of this chapter relates to a series of quantifications we performed to further establish the robustness of our findings. We first, as shown in Table 5-5, counted the number of occasions each interview mentioned a key theme of the research. We then visualized this table in figure 14.

Table 5-5: Quantifying robustness of findings across cases

	Relevance	Vision	Alignment Challenge	CSF: Customer	CSF: Process	CSF: Internal	CSF: Finance
RTO1	5	4	2	3	2	3	3
RTO2	4	2	3	4	3	3	3
RTO3	5	4	2	2	2	4	3
RTO4	4	3	4	3	3	4	3
RTO5	6	2	4	2	3	2	2
RTO6	5	3	3	3	4	3	4
RTO7	4	3	3	4	3	3	4
RTO8	4	3	4	2	3	4	2
RTO9	4	3	4	2	4	4	3
RTO10	5	3	4	3	4	2	2
RTO11	5	3	3	2	4	3	3
RTO12	4	2	4	3	2	4	4
RTO13	5	3	4	3	3	2	2
RTO14	6	3	2	3	3	4	4
RTO15	6	3	2	3	2	3	3

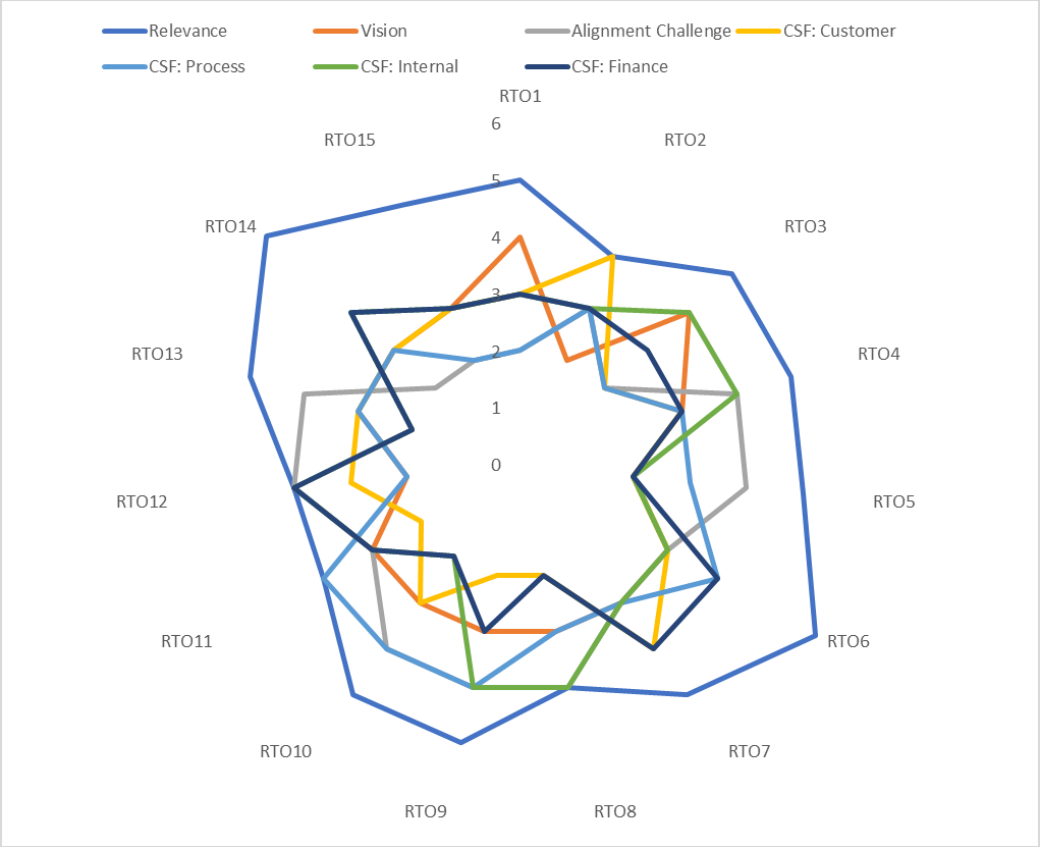

Figure 5-5: Radar Graph of number of times each finding has been supported by participating RTOs

Similarly, we tabulated and visualized (Figures 5-5,5-6 & Table 5-6) how much each interview contributed to the cross-validation and development of each themes.

Table 5-6:Quantifying robustness of findings across interviews

		Relevance	Vision	Alignment Challenge	CSF: Customer	CSF: Process	CSF: Internal	CSF: Finance
	Interviewee 1	2	2	1	1	1	2	1
RTO1	Interviewee 2	3	2	1	2	1	1	2
	Interviewee 3	2	1	2	2	2	2	1
RTO2	Interviewee 4	2	1	1	2	1	1	2
	Interviewee 5	2	2	1	1	1	2	2
RTO3	Interviewee 6	3	2	1	1	1	2	1
	Interviewee 7	2	2	2	2	2	2	1
RTO4	Interviewee 8	2	1	2	1	1	2	2
	Interviewee 9	3	1	2	1	1	1	1
RTO5	Interviewee 10	3	1	2	1	2	1	1
	Interviewee 11	3	1	2	2	2	2	2
RTO6	Interviewee 12	2	2	1	1	2	1	2
	Interviewee 13	2	1	2	2	2	2	2
RTO7	Interviewee 14	2	2	1	2	1	1	2
	Interviewee 15	2	2	2	1	1	2	1
RTO8	Interviewee 16	2	1	2	1	2	2	1
	Interviewee 17	2	2	2	1	2	2	2
RTO9	Interviewee 18	2	1	2	1	2	2	1
	Interviewee 19	2	2	2	1	2	1	1
RTO10	Interviewee 20	3	1	2	2	2	1	1
	Interviewee 21	3	2	1	1	2	2	2
RTO11	Interviewee 22	2	1	2	1	2	1	1
	Interviewee 23	2	1	2	2	1	2	2
RTO12	Interviewee 24	2	1	2	1	1	2	2
	Interviewee 25	3	1	2	2	2	1	1
RTO13	Interviewee 26	2	2	2	1	1	1	1
	Interviewee 27	3	1	1	1	1	2	2
RTO14	Interviewee 28	3	2	1	2	2	2	2
	Interviewee 29	3	2	1	2	1	2	2
RTO15	Interviewee 30	3	1	1	1	1	1	1

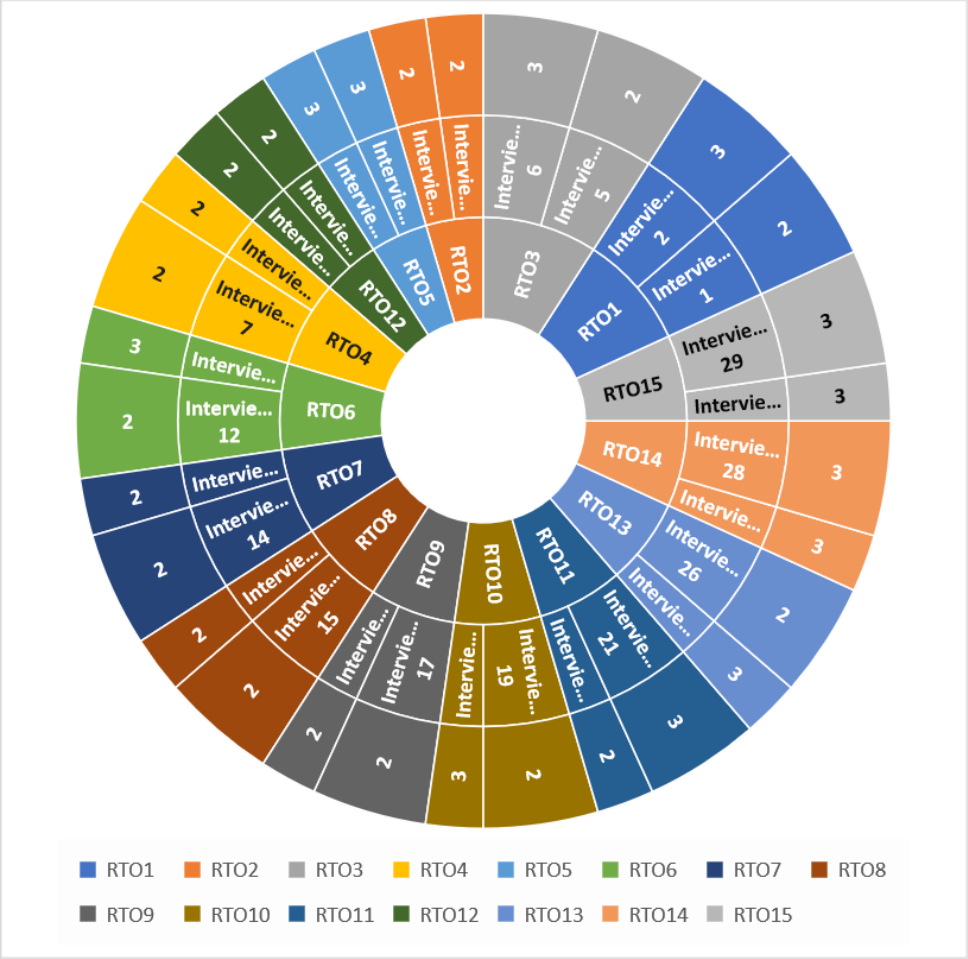

Figure 5-6: Visualization of findings across interviews

In summary, the BSC developed for Australian RTOs has received strong support from multiple cases and was grounded on substantial qualitative evidence that we collected and presented in this chapter. Next chapter offers a brief discussion of these findings and link them to the final chapter where implications will be discussed and directions for future research will be illuminated.

5.5 Summary of Chapter Five

This chapter explained findings of the study. It first offered a descriptive view of the data collected for the analysis, then illustrates themes and grounded models long with power and supportive quotes from different interviewees and then concluded with an overview of the robustness of the findings. Next chapter will discuss the theoretical; and practical implications of the findings.

CHAPTER SIX

DISCUSSION AND IMPLICATIONS

6.1 Introduction to Chapter Six

Findings of this study will have significant implications for the theory off performance management of educational institutions and the broad applicability and relevance of the balanced scorecard methodology. In addition to these theoretical implications, findings of this study will help managers of higher educational institutions in general and RTOs in particular make more educated and informed decisions about their key performance indicators and the way their operational activities should be evaluated and aligned with their strategic goals, vision and strategy. First, an overview of key findings will be offered. Then their implications will be illuminated.

6.2 Key findings of the Study

The VBSC developed in this research is consistent with the third generation or fifth level of BSC, in that it encompasses the four pillars of BSC as well as the managerial actions which enact them and causal links that relate them to the performance of RTOs. The key findings suggest that RTOs are different from higher education institutions. Although they almost identically follow the same vision, to become an institution of higher education to be able to offer undergraduate and postgraduate courses, they have a traditional core role of vocational training.

This similarity in the core vision would result in relatively similar strategic maps for RTOs and subsequently create similar trajectories to evolve and balance performance indicators. This research suggests that misunderstanding this narrow-scope is perhaps the most important source of performance mismanagement in RTOs. As Norton and Kaplan (2006) mentioned, BSC can help a company implement a new strategy without disrupting the existing one. We found that RTO managers who have a clear understanding of their current strategy and their KPIs in four areas (customer care,

internal learning and development, finance and growth opportunities) are more confident in talking about achieving their vision, modifying their strategy, developing new disruptive courses and recruiting more students from wider cohorts of candidates.

6.3 Implications for Theory

As pointed by Kaplan and Norton (2002), BSC is not just a measurement system. It is a management theory which advocates system thinking and encourages a new management philosophy. As such, exploring applications of BSC in new contexts and organizations can have far-reaching theoretical implications. The main theoretical implication is the evidence gathered for a boundary-spanning view of BSC. RTOs can also have BSCs and their BSC is indeed different from those developed and used in higher education institutes, for at least two reasons:

1. RTOs' vision is transformative and transcendental because RTOs's primary objective is to become higher education provider. This change requires these organizations to transform their core product and strategy, and results in them, from one sector to another entirely.
2. RTOs' KPIs and strategy maps are limited in scope which makes differentiation, strategic performance assessment and alignment difficult.

6.4 Implications for the VET Sector

Finally, the use of the BSC methodology in RTOs will help tackle some of the major challenges faced by VET providers in Australia and around the world. Tertiary education, in particular vocational educational training, is one of the primary concerns for employers and tradies whose goals are to develop skills sets required for boosting a nation's productivity and economic output. The BSC methodology can provide a succinct and improved way of monitoring and evaluating provision of such services, in a limited amount of time and with limited resources, in a broader manner consistent with stakeholder theory.

Information is gathered about the quality of services provided through the observation of staff, trainers and of course pupils. Then it is presented in a systematic way that addresses needs of students, staff, shareholders as well as future generations, in line with the industry's general goal and a country' vocational need and changing demand trajectories.

It is demonstrated that BSC knowledge can inform providers about gaps in services and about how to improve the quality of services in specific areas of teaching, staff training and learning. This instrument is further specific to RTOs, which is novel in the field of tertiary education and different from previously developed models for universities or other higher education organizations.

Although the model was created specifically for Australian RTOs, it can certainly be used by other training services in similar settings, providing limitations be taken into account. Furthermore, tools can be adapted, based on organizational or environmental considerations, that can further assess quality of training provided in these settings. Every RTO has a unique vision and performs a specific set of activities to align four dimensions of its operation with its vision. So, managers of RTOs can use this model as a general guideline or an organizing framework to develop their own firm-specific version and rendition of RTO BSC.

Along with providing information about overall growth of the VET sector and government vision for the VET, the model may be adapted and used in a variety of settings, it is not limited to the execution of current strategy and vision. We showed that BSC helps any company become more strategy-focused and systematic in pursuing goals and aspiring new ones. This focus on quality, alignment and harmonization of activities in four primary areas of BSC would strengthen and inform both public and private training services.

Guidelines can further be created, based on best practice observed in private RTOs for public ones. The ultimate goal is that knowledge from the balanced scorecard can lead to the design and

implementation of more effective programs, which can lead to overall success and growth of VET at national and international levels.

6.5 Implications for Management Education and Training

Kaplan's model of the Balanced Scorecard presents an internal perspective that examines what a company must excel at to achieve its objectives and meet customer expectations. The degree of customer service depends on the processes, decisions, and actions of staff throughout the company. This requires the company to look at the processes and systems in use in an effort to maximize their efficiency (Kaplan, 1992).

The Rutgers team proposes a general framework for a Balanced Scorecard that is applicable to other universities and presents the concept that fulfillment of this mission requires the successful engagement with a number of constituency groups and for each, desired and potentially measurable outcomes can be identified (Ruben, 1999). Yek supports this evidence: educational setting improvement and value creation is accomplished through a highly integrated approach the provision of products and services that meet customer needs and operational requirements (Yek, 2007).

To ensure that the customer is recognized, Chen proposed that customers of education include employees, students, parents, government, and business (Chen, 2006). The Balanced Scorecard system provides both data comparisons from different perspectives (customer satisfaction, financial, internal processes, and organizational improvement) as well as leading and lagging performance indicators (Karathanous, 2005).

The BSC perspectives and performance indicators correspond with the requirement of vocational training, that as part of an organization's self-assessment, developing and reporting a comprehensive set of measurements combining leading and lagging indicators of performance is necessary.

Table 6-1: Cross-functional application of BSC in an RTO

Cross Functional Development of the Balanced Scorecard		
Executive Level	**Middle Management**	**Lower Levels**
Sponsors the Balanced Scorecard, approves the final scorecard, and advocates the concept to other parts of the organization.	Manages the overall project, builds the scorecard, coordinates the process with other levels within the organization.	Delivers critical data used within the Balanced Scorecard, such as measurements.

This information supports the proposition that the Balanced Scorecard provides an effective and efficient process for accreditors to review program outcomes and improvement efforts in relation to the strategic plan, as the product and service results and organizational results cover internal business perspectives. The Balanced Scorecard requires cross functional development that is enabled by the cooperation and communication of all members of an organization, from employees in administrative roles to teaching staff, with the managers making decisions and overseeing the work being performed. Staff casualization poses a serious challenge in this regard (Table 6-1).

Increased knowledge and education concerning the Balanced Scorecard and how this method of management could be used by an organization would be an important first step in increasing the acceptance of this management method in France. The Balanced Scorecard is based on assumptions about openness, clarity, and hierarchy. By teaching about BSC and how it could be used by organizations, new managers finishing their university studies could bring this knowledge into the organizations where they begin their careers.

Opening the lines of communication between managers and employees would also be necessary and prudent if the organization wanted the Balanced Scorecard to succeed; the flexibility of this Balanced Scorecard allows for any given number of criteria, necessary to fulfil organizational

expectations on any given perspective area. From there, expected performance and element weightings can be determined.

The Balanced Scorecard, historically, has not defined relative importance of metrics for weightings and has not allowed dissimilar metrics to be combined for an overall performance assessment (Varma & Deshmukh, 2009). Therefore, one implication to consider is that weightings should be reasonably balanced and assigned to fit the specific phase of the project in which the scorecard is used

A second implication of this scorecard is that organizations should use a performance scoring methodology that can be used for scoring each performance criterion similarly by doing this, the scorecard is able to provide a report on overall project performance-based on criteria within the scorecard. Developing the Balanced Scorecard for a project environment in this manner assists project teams in understanding the real value a project has for an organization (Stewart, 2001). This Balanced Scorecard also allows for organizations to customize the content and process, to remain in compliance with unique factors inherent with different organizations.

Frigo (2012) found that the Balanced Scorecard must be flexible and innovative in order for organizations to consider the tool as a means for monitoring performance in a project environment. This is because each project and organization vary in some degree, and each organization needs to be able to use the Balanced Scorecard as a means to reinforce communication of its own objectives and allow for continuous improvement (Stewart, 2001).

Furthermore, project teams may find it necessary to provide measurement at different times, other than at the completion of defined phases. Even though the overall process is structured around measurements at the completion of each project phase, those measurements are the minimal requirements. Therefore, organizations can choose to conduct measurements and evaluations at more times within each phase - as long as the measurements are able to provide meaningful information to

project employees. More frequent measurements and feedback allow the Balanced Scorecard to be updated based on realized performance and be adjusted, so criteria can be modified to ensure that the project continues to meet organizational expectations.

6.6 Summary of Chapter Six

This chapter briefly reviewed key findings of the study and discussed implications of the study for theory and practice of managing educational organizations in the VET sector with an emphasis on Australian RTOs. Next chapter will show how these findings and their implications address research questions which were proposed in Chapter one. It will then shed light on the limitations of the study and propose several directions for future research in this stream.

CHAPTER SEVEN

CONLUSION, LIMITATIONS & DIRECTIONS FOR FUTURE RESEARCH

7.1 Introduction to Chapter Seven

This is the final chapter of this thesis. It will conclude the study by showing how findings which were discussed in the previous two chapters and their implications address research questions by addressing research questions, this thesis closes the research loop than open with a problem statement and closes with addressing research questions. However, in doing that, a researcher must also acknowledge the limitations of the research and illustrate how a research was limited by several factors which in turn can indicate opportunities from future research. Considering this logic, this chapter ends with several directions that can be taken by future scholars to further advance this line of query.

7.2 Addressing Research Questions

As pointed by Onwuegbuzie, and Leech, (2006) formulating the research question(s) is an extremely important step in any research process, because these questions narrow the research objective and purpose to specific questions. In this research we formulated five questions. To develop these questions, we used the gap-spotting approach proposed by Alvesson, and Sandberg (2011) and Sandberg and Alvesson (2011), to create innovative questions. We noticed that application of BSC in the vocational sector is a gap that needed to be bridged to help both managers and policy makers gain a deeper understanding of how vocational training organizations operate. We addressed the five questions as follows.

7.2.1 Addressing Research Question One

RQ1: How does a BSC approach to map and measure performance of RTOs differ from other established models of BSC?

This study revealed two fundamental differences between a vocational balanced scorecard and other BSCs developed for other educational organizations of business enterprises. The first difference was the simplicity of a VBSC. As it was reviewed in chapter two, BSCs for large organizaito9nal and similarly for universities can include a myriad of KPIs orchestrated in complex strategy maps. We found that, on the contrary, VBSCs tend to be simple with commonly shared KPIs that point to international students, commitment of casual staff and increasing source of revenue.

The second difference is about the vision of RTOS. Unlike other organizations which develop and pursue various strategic goals and visions, RTOs seem to be consistent in their vision. All want to be able to transit from a vocational education provider to a provider of higher educations. The reason behind this, as explored in our case studies, is the competitive nature of vocational training industry and the industry's dominant and incumbent design of the business models which limit flexibility and increases competition. Managers of RTOs interviewed, all agreed that profit margins are slim and business models are extremely similar which puts the focus on getting more overseas students for a limited set of vocational training. However, universities can develop new courses and benefit from demand in domestic market as we showed.

Findings of this study imply that RTOs may have a simpler route to a successful implementation of BSC due to their simpler, smaller and more flexible structure. So, managers of RTOs are recommended to consider BSC as a fundamental strategic tool. However, managers of RTOs are also recommended not to assume that BSC is synonymous with KPIs and note that universities have different KPIs from RTOs, they have more budget to implement it and may pursue more complex strategic maps. Therefore, managers of RTOs can not and should not use universities as guidelines for adopting BSC. Finally, strategic maps explored in this study are not exhaustive and by no means a complete list of strategic maps for RTOs. One of the key recommendations of this study is that managers of RTOs can learn from strategic maps outlined in this research to explore other

strategic maps that best fit their organizations. Every RTO is a unique entity on it own. Hence it requires a specific causal map between its vision and areas of strategic performance. What this study shows is that RTOs can develop their own KPIs and adopt their own strategic maps in a faster, simpler and more routinized manner than universities simply because of their clear strategic path toward higher education and simpler structure with less levels of bureaucracy and smaller set of strategic activities.

7.2.2 Addressing Research Question Two

RQ 2: How can these key performance indicators be mapped according to the BSC framework?

The second research question asked about if and how these key performance indicators can be mapped according to the BSC framework. As discussed in section 4.7.1, RTOs have their own KPIs which are different from those used in BSC for universities and other educational institutes. Furthermore, it was illustrated how these KPIs can be mapped according to four pillars of BSC. These shape the foundation of a specific BSC called vocational balanced scorecard (VBSC).

Four different strategic maps were explored and visualized (Figures 5-1 to 5-4). What is common among all strategic maps is that the Scorecard is inextricably linked to the strategy of an RTO, the first requirement therefore is to clearly define the strategy and ensure that managers, in particular, are familiar with the key issues. Before any other action can be planned, it is essential to have an understanding of the strategy and vision of the RTO, the strategy and the key objectives or goals required to realize the strategy as well as the three or four critical success factors (CSFs) or KPIs that are fundamental to the achievement of each major objective or goal. Starting with strategy and objectives is vital and will help RTOs to avoid doing the wrong things well. Managers need to be cognizant of the fact they every RTO is different, and they may have to devise a creative RTO-specific way to align their vision with their operational routines.

Having a visual strategic map will help managers of RTO better understand how their core and peripheral activities relate and contribute to their realization of vision as theorized by BSC. This research also shows that each RTO must determine its own strategic goals and the activities to be measured. Some RTOs have found that Kaplan and Norton's template fails to meet their needs and have either modified it or devised their own Scorecard. Universities, larger RTOs, young RTOs for example, may have different aims and objectives and may have to tailor the Scorecard to reflect this.

7.2.3 Addressing Research Questions Three

RQ3: How do Australian RTOs align these measures with their vision and strategy?

This third research question complements the first two, by seeking to understand if KPIs mapped according to BSC for RTOs can help managers develop a better alignment between their vision, strategy and goals. We addressed this question through exploring strategy maps in case RTOs. A strategy map as reviewed in chapter two is a visualization of how a strategy is mapped to realize vision of an organization using pillars of its BSC. In section 4.7.2 we explored and exhibited four common themes that RTOs use to link their BSC to profit.

It is to be noted that the vision of RTOs is to become institutes of higher education through either partnership with other universities or government accreditations. The path toward this goal is through financial growth by demonstrating a history of financial success. As a result, the goal of all RTOs is to have prolonged financial growth in order to qualify for negotiations with other universities for partnership agreements or apply for government accreditations.

This research also suggests that, an implementation plan should be produced and the whole project communicated to employees. Everyone should be informed at the beginning of the project and kept up to date on progress. It is vital to communicate clearly with employees. Explain the purpose and potential benefits of the system to them and make sure that everyone is aware that they have a role to play in achieving corporate goals. There should be a ‘golden thread’ linking personal objectives

to organisational goals. Ideally this will be achieved through an organisational performance management system which could be very simple yet extremely important in RTOs. The system for recording and monitoring the metrics should be in place and tested well before the start date, and, as far as possible, training in its use should be given to all users. The system should ideally automatically record all the data required, though some of the measurements may need to be input manually. Therefore, managers of RTOs are advised to invest in a strong and supportive IT and ERP systems before they start implementation of a BSC.

7.2.4 Addressing Research Question Four

RQ4: What are the challenges faced by Australian RTOs in applying a BSC approach?

The next research question sought to explore challenges and barriers faced by managers of RTOs, when adopting a BSC approach, to map their strategy and performance management systems. We found that liabilities of smallness, lack of technological, financial and organizational resources and last but not least lack of knowledge about the importance of BSC and how this tool can help any organization achieve its goals are the primary barriers against adoption of BSC by managers of RTOs. RTOs are small companies which offer standard diplomas and vocational courses mainly to international students. Simplicity of their business models, intensity of rivalry among competing organizations and price-based competition have made these firms narrow-minded and short-sighted causing them not to realize potential of BSC and not to invest systematically to map their strategy through a VBSC.

Furthermore, findings show that there are factors that could negatively affect the use of the balanced scorecard at RTOs. Employees' resistance to the use of balanced scorecard, time management, lack of full commitment by some of the managers in implementing the scorecard, high employee turnover and poor communication. There are employees at all levels who have tendency to resist the use of the balanced scorecard hence slowing down its implementation process. RTOs have

higher rate of staff turnover than universities and this makes adoption of BSC difficult because it requires stability. RTOs may have markedly different operational routines than universities because of the lack of regulations and their simpler structures. This poses another challenge to RTOs in their pursuit to implement BSC. BSC requires training of staff at multiple levels which could be hard for small organizations with limited resources like RTOs. This is a gap in terms of human resources who are to be relied on to implement the strategy. Time spent in recruiting new employees to fill the vacancies left thus dragging the strategy implementation process behind schedule.

RTOs face other challenges in implementing the balanced scorecard tool. Data shows that despite plans to train all employees, some of them may lack clear understanding of the balanced scorecard. Some of the processes may not be well defined posing a communication challenge. Employees therefore lose motivation in implementing the company's strategy using balanced scorecard because they will not see the benefits the initiative may bring them. On the other hand. there could be a delay in giving feedback to the employees and reviewing of the employees' performance using the balanced scorecard KPIs, despite performance reviews being scheduled to be done monthly and quarterly managers of RTOs may not know how to provider clear performance feedback to employees to steer them toward KPIs in line with the RTO's vision and strategy. Similarly, the balanced scorecard is a complex strategy implementation tool. For instance, some employees may not particularly clear on what fits into each perspective of the RTO from course design to student services to teaching and learning. In such a case, what is measured under each perspective might not necessarily be what is required to be measured.

Another challenge is lack of an effective reward policy framework. Although performance targets and evaluation of the same are based on the RTO's KPIs scorecards, employees may not be motivated to achieve the goals due to lack of apocopate reward and recognition due to limited capacity, resources and routines . Currently there is no clear reward policy based on individual performance in

RTOs studied. Results show that there are delays in conclusion of performance appraisals and subsequent rewards. Therefore while the managers are involved in strategy formulation and thus clearly understand it, the lower level employees may not have the same level of understanding since they are not involved in strategy formulation.

7.3 Strengths, Weaknesses and Limitations of the Study

To date, much of the work on the use and application of BSC in the educational sector has focused on universities both public and private. Various authors have pointed to a need to broaden the applicability of this tool in other sectors and at other organizations (Simon, *et al.* 2019; Kiriri 2019). Considering evolving circumstances (e.g. changing markets and strategies and increasing importance of registered training organizations) this research aimed at exploring the application of BSC in Australian RTOs. Even though this study is the first to investigate this situation, it is not without weaknesses, but it has also strengths that can be used as guidelines for future research in this context.

7.3.1 Strengths of the Study

Like any other research, this study has several strengths and limitations, which help readers better understand and interpret its findings. First, a strength of this study is that this provides a first glimpse at the use of the balanced scorecard methodology in the vocational training sector. Although the BSC has been used widely in the commercial and educational sectors, this would be a novel approach to using the methodology, as it spans traditional borders of the theory and adds to its broader applicability and usefulness. Additionally, the BSC would serve as a primary tool to strategies of RTOs, to help both executives and policy makers better align this sector with broader higher education and research industries.

The ability to use the instrument in Australian RTOs also provided direction about the implementation and adaptation of instruments across other sectors of tertiary education. An additional benefit is that the instrument can be used to compare the provision of training and vocational services

across facilities and across time in a developed economy; this can help explore its usefulness in vocational training providers in less developed and developing economies. This capacity would also give authorities and governing bodies the ability to detect successes and challenges in this sector. This is of particular use for the Australian government, because the varying implementing partners and differences in operating business models of RTOs make it difficult to determine which partners are performing optimally and how strategies of the system as a whole are aligned with the vision for the sector.

This VBSC tool will provide a standardized methodology to determine which organizations are performing well and which may need improvement. Attempts were made to include a diverse set of RTOs and these included those that were serving different target markets, courses, having different sizes of campuses, those that were considered to be in more emergent states and those that were more established, those whose implementing partners were government agencies and those whose implementing partners were non-governmental agencies, and those with facilities that were in permanent vs. semi-permanent structures.

Assessing the use of the balanced scorecard would allow for a wider and more comprehensive view of functioning in the vocational training system. With components focusing on the capacity for service provision, service provision itself, staff results, and students results, traditional evaluation models are broadened. Although simply looking at the growth or profit of an RTO are some measures of capacity for service provision, the other sections would be novel. BSC posits that these previously used tools were very long and impractical for assessment purposes in a fast growing and dynamic sector like VET.

The incorporation of both quantitative and qualitative elements further provides a more in-depth analysis of the RTO. Also, because the Balanced Scorecard uses a simple tabulation plan, results can be calculated immediately, and an immediate feedback mechanism can be put into place.

Currently, much of the data is kept internally and not properly or sufficiently channelled to the industry authorities; little feedback is received at the national level or feedback occurs in a very delayed fashion. The immediate feedback mechanism put forth by BSC would allow for changes to be made more quickly and would give local stakeholders a greater sense of ownership and empowerment over strategies and their implementation toward goals.

Finally, because data can be collected in a shorter period of time from various angles and in a regular systematic way, this monitoring can practically be conducted at a few intervals during the year, to ensure timely and continuous management of strategic performance measures.

The toolkit can also be used to monitor strengths and weaknesses of RTOs by managers, trainers and authorities as they see fit. All these strengths of the application of BSC in RTOs could ultimately lead to improving the quality of VET at regional, national and international levels.

7.4 Limitations & Weaknesses of the Study

Along with the strengths of this study, there were several limitations. The most important limitation of this study is the availability of, and access to, objective data of performance of RTOs. Being small and relatively less-structured and formal than universities, RTOs are less likely to provide access to substantial recent performance data; specially on multifaceted views such as investment in training, financial measures and indicators and competency development required for modelling a BSC. An awareness of this limitation resulted in several important measures to minimize the impact on the rigor of the research being taken. One measure to surmount this challenge was to use a network of RTOs using purposeful convenient sampling. As qualitative scholars (Eriksson & Kovalainen, 2015; Yin, 2015) have suggested, researchers can rely on their egocentric field networks to collect reliable data and then check data quality using inter-rater cross-checks. In this approach the researcher uses his/her connections to conveniently gain access to sample cases. The collected data will be then checked and cross-validated by a third-researcher to ensure its accuracy and reliability (Palinkas et

al., 2015). Next, the balanced scorecard tool and methodology does not account for differences in environment across organizations and industrial contexts. Because one standard instrument is used in order to compare results, details focusing on individual environmental conditions of each RTO are not recorded. For example, differences in campus size, number of staffs, background of managers, location of the campus, composition of students, industrial supports and partnerships safety, security, climate, and access to various local and regional amenities and facilities by each RTO are often unaccounted for and can arguably impact how BSC dimensions are used by and come to effect in RTOs. These factors may be directly related to performance, although they may not be able to be easily changed.

Also, indicators in this study were developed, not only based on priority, but also on ease of measurement in a restricted amount of time and with limited human resources in a limited context. The set of fifteen RTOS are all in New South Wales. Therefore, the tool, even though powerful and novel, is not by any means a complete and all-inclusive national model. Furthermore, like any other qualitative exploratory research, findings are subjective so not all indicators may be the best measures of RTO performance.

Additionally, only certain perspectives were included when originally creating the instruments; individuals from the pilot group and the expert team assumed that the tool based on the interview protocol would capture the key facets of BSC in the context of RTOs and would be useful to the VET sector. We attempted to address this limitation as much as possible by supplementing emerging codes and use of auxiliary data from RTOs' websites. Furthermore , during field testing, individual opinions from experts and other researchers were captured and used in data analysis where applicable. Limited feedback was also received from students and trainers related to the appropriateness of the items, which helped us better understand the essence of the data. However, it

is prudent to argue that further replicative research is required to validate, expand and calibrate the proposed model.

It is emphasized that the BSC for RTOs can only provide information about the performance of RTOs and cannot be generalized to other tertiary education providers - in the country, region, or population being served. In this study, because only RTOs in New South Wales were studied , there is only a limited amount that can be said about the effectiveness of the tool and the ability to use it in other institutes like TAFE, or similar organizations in other countries. This constraint is particularly true because all of the RTOs in Australia are governed by similar regulatory bodies. Other countries may have different characteristics, operating procedures, standards, and cultural norms which may affect the adoption and application of BSC. Because no pilot tests were conducted in other contexts, it is difficult to tell whether the Balanced Scorecard will be universally applicable. Further research in other countries is suggested to determine whether the instruments are applicable and appropriate.

Another limitation pertains to the sampling technique used. First, even though fifteen cases and thirty interviews seem enough, and we reached the point of theoretical saturation with this sample, to gain a deeper and richer understanding of the BSC we may need a wider and larger pool of RTOs. Though information from sample case information was extremely useful to explore what is going on in an RTO, from the strategic performance view through the lens of balanced scorecard, it cannot be used to generalize how well studied RTOs were performing across the country over time. To do this would require longitudinal case studies using a larger pool of firms, which was not possible given the score of the study.

Another limitation involved with the data collection is the Hawthorne effect. The Hawthorne effect is defined as the change in behaviour by the subjects of a study due to their awareness of being observed.

In the case of the Balanced Scorecard in the context of RTOs, this factor is of particular importance in the information provided by managers on the strategy, vision and performance measurement of their organization and factors they consider when assessing the alignment of their activities with the vision and mission of their organization.

It could be assumed that managers or informants in RTOs used in this study, may provide different information depicting better strategic postures for their organization than usual, or hide what they normally do, because of an outside observer being there observing and collecting information. Additionally, because managers were told to explain steps they were conducting during the implementation of their vision, this could affect the validity of their responses. Therefore, further replicative studies using data collected indirectly or via different tools would be useful to validate the model proposed in this study.

Additionally, a number of biases may also be present in this study design. The first is Interviewees' perception bias. Because interviewees' positions, experience and tenure were different at each study site, inconsistencies could be present in the way the BSC protocol is answered. In particular, interviewees who were familiar with the concept and application of BSC may have perceived, interpreted and responded to the questions related to the functioning of infrastructure differently.

Additionally, there may be a difference in the understanding of vision, mission and other strategic terms used in the model, making interviewees training a crucial part of the process. Also, note that interviewees may have been unconsciously biased in portraying the strategic posture and vision of their RTO.

Although, we took a few steps and measures to minimize the potential impacts of such biases (refer to chapter three), more research in this context is necessary to completely rule out the impact of such biases on the validity of our model.

Along with interviewee bias, recall bias may be present as well, which can be defined as a systematic error due to differences in accuracy or completeness of recall to memory of past events or experiences. This can be of concern in retrieving data related to measures and activities performed by RTOs, to address needs and demands of various stakeholders, at a certain period in the life of an RTO. We attempted to mitigate the impact of this bias by seeking corresponding and corroborating information and interviewing at least two managers from each RTO.

Selection bias may also be present in the data. Managers and RTOs which opted to participate in the study may have different characteristics than those who chose not to and may therefore provide information which is not accurate or completely representative of the research and population of interest. Although generalizability of data is not the case in qualitative exploratory research, it is important to ensure that cases selected are not systematically different.

To this end and in order to get a more complete picture, it would be important to get opinions from managers of RTOs who chose not to normally participate in this study. We did not have resources to do this, but future studies are recommended as an additional measure to develop robust and reliable grounded models.

Finally, in terms of long-term use of the instrument, the reported data may become less reliable given that managers are more focused on the scorecard's output (Chan, et. al., 2010). Managers will be aware of the questions and may focus their efforts to improve those specific factors and may overlook other important components of providing care. Also, if managers are aware of when data collection is taking place, they may temporarily address concerns of quality.

7.5 Directions for Future Research

Our research on the needs for and general layout of vocational BSCs reveals many interesting opportunities for future work. One promising area is more research on the adoption and diffusion of other performance management and strategy mapping tools. As discussed in chapter two, balanced

scorecard is one of key performance management systems. Other such as the performance prism (PP) provide complementary insights into the dynamics of operations and strategic performance of vocational training institutes. Therefore, similar studies on the adoption of PP and similarities, commonalities and differences between PP and BSC could offer more nuanced insights into the operation of RTOs. This line of research would also shed more light on factors which explain why the BSC seemingly has had a worldwide impact, an even stronger impact than most other performance management systems in the education sector and will open new directions for research on policy making and course development in line with stakeholder engagement and management. Furthermore, as argued by Nørreklit, (2003) rhetorical reasons or visual presentation (Free & Qu, 2011; Nørreklit *et al.* 2012) of BSC may have contributed to its popularity and spread across sectors and disciplines. Therefore, more research on other performance management systems can help us better understand how and if one single or a combination of systems can explain strategic performance of RTOs.

On the contrary, in this research we sought to explore how a vocational balanced scorecard can be developed and used. One of course can argue that, there are RTOs who had adopted, used but eventually abandoned and deinstitutionalized BSC as a strategy mapping tool. Even though this is a likely occurrence we did not explore this side of story. This possibility begs the questions, why, when and if adoption of BSC can have any detrimental effects on the strategy mapping, execution and performance management of training organizations. Future research could address these questions in relation to the vocational balanced scorecard.

In addition, as mentioned in the section on strengths and limitations of this research, there are methodological and contextual grounds to argue that replicative studies are needed to ensure the validity , replicability and reliability of the findings reported in this study. More specifically, as argued by Ethiraj *et al.* (2016), "replications need not develop new theory, test theory, or be of studies that test hypotheses. However, replication studies should explain how they contribute to building a

cumulative body of knowledge." (p. 2191). In this regard, quasi-replications, "which assess the generalizability of the results of prior studies to new contexts or the robustness of prior studies to different empirical approaches, methods, measures, and models" (Ethiraj *et al.* 2016, p. 2191) seem to be a very fruitful direction for future research. From this perspective, quasi-replications on a larger pool of RTOs in Australia and at an international level represent an interesting avenue to take.

Finally, contextual factors such as the age, size and history of the organization and its structure, have always been associated with the adoption of BSC and its contribution toward achievement of organizational goals, but we did not delve into the role played by these factors in RTOs. Future studies should assess how these factors can alter, extend or even invalidate our model.

7.6 Summary of Chapter Seven

While the Balanced Scorecard does not provide a direct measurement system, it does present a system to compare measurements and data points within a systematic framework that aligns to an institution's strategic plan and communication process that supports the mission. A surprising discovery of this research, since the Balanced Scorecard has achieved such wide acceptance and use within the private sector and has made significant inroads in the non-profit sector, is a lack of higher education institutional data on implementation of the Balanced Scorecard. There appears to be significant resistance within higher education to accept the Balanced Scorecard as a strategic management tool.

The conclusion of this research is that the evidence and historical information presented supports the hypothesis that the Balanced Scorecard can be a useful tool to provide information supporting the requirements of accreditation and quality standards. The goal of the Balanced Scorecard is to align efforts to achieve a single purpose – the institutional mission - and supply data to the management team and others so that course adjustments are made with adequate, relevant, and useful information. The Balanced Scorecard should not be viewed as a single, definitive tool but one

of many that can be used in the accreditation process. Strong strategic planning through a cooperative process involving all stakeholders with adequate communication with goal measurement aligned to the strategic plan, are all required for successful accreditation. Carefully defined measurement and measurement tool selection provides the basis for scorecard development.

As with all research, additional questions require further examination: are these theories correct; what the impact to institutions is when the Balanced Scorecard is implemented; how the Balanced Scorecard assists institutions in the accreditation process; and what is the impact on faculty, administration, and staff of an institution using the Balanced Scorecard. The logical extension of this work would be to conduct a study of institutions in various stages of the accreditation process and monitor how the implementation of a Balanced Scorecard affects their accreditation process, as well as their financial status, performance in meeting mission goals, student and faculty satisfaction, and customer perspectives.

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APPENDICES

Informed Consent Form

Macquarie Graduate School of Management
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MACQUARIE UNIVERSITY NSW 2109
Phone: +61 (0)x xxxx xxxx
Fax: +61 (0)x xxxx xxxx
Email: xxxx@ mq.edu.au

Chief Investigator's / Supervisor's Name & Title: Professor Masud Behnia

Participant Information and Consent Form

Name of Project:

Exploring the application of Balance Score Card (BSC) to map and measure the performance of Registered Training Organizations (RTOs) in Australia

You are invited to participate in a study of the factors that help RTOs realize their strategies in Australia . The purpose of the study is to explore how four pillars of customer service quality ,staff training, internal development and innovation can be balanced and align in RTOs to help them achieve their performance goals.

The study is being conducted by *professor Mr Zahurul Quazi under the supervision of professor Mahud Behnia* of the Macquarie Graduate School of Management, faculty of business and economics, Macquaire university,

If you decide to participate, you will be asked to *partake in an interview of about 30-45 mons. The interview will be tape recorded* and transcribed for analysis. The structure of the interview has been approved by the ethics committee of the Macquarie university.

Any information or personal details gathered in the course of the study are confidential, and will be stored safely and securely by the researcher. No individual will be identified in any publication of the results. *Only the researcher and chief investigator have access to this data* A summary of the results of the data can be made available to you on request (*please contact after the study is complete).*

Participation in this study is entirely voluntary: you are not obliged to participate and if you decide to participate, you are free to withdraw at any time without having to give a reason and without consequence.

I, *(participant's name*) have read *(or, where appropriate, have had read to me)* and understand the information above and any questions I have asked have been answered to my satisfaction. I agree to participate in this research, knowing that I can withdraw from further participation in the research at any time without consequence. I have been given a copy of this form to keep.

Participant's Name: ZAHURUL QUAZI
(Block letters)

Participant's Signature:_____ Date:_____

Investigator's Name: PROF. MASUD BEHNIA
(Block letters)

Investigator's Signature: _____ __ Date:_____

The ethical aspects of this study have been approved by the Macquarie University Human Research Ethics Committee. If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Committee through the Director, Research Ethics & Integrity (telephone (02) 9850 7854; email ethics@mq.edu.au). Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

(INVESTIGATOR'S [OR PARTICIPANT'S] COPY)

Content Validity of Interview protocol

Interview Protocol: Content validity

Question	Source
What is the vision of your RTO?	Kaplan and Norton (1992); Ruben (1999)
How would you describe your current strategy?	Kaplan and Norton (1992, 1993)
What sort of customer experience is the goal of your strategy?	Hoque (2014); Ruben (1999)
How does your strategy take creation of this experience into account?	Kaplan and Norton (1993); Niven (2014)
How do you invest in continues learning?	Kaplan and Norton (1992)
What sort of training do you use for your staffs?	Ismail and Al-Thaoiehie (2013); Lin (2015)
How do you think your management style contribute to achievement of the vision?	Hoque (2014); Olson and Slater (2002)
What are the key organizational procedures that you developed to help you achieve your vision?	Niven (2014); Ruben (1999)
How do you align your financial policies with your vision?	Chen, Yang, and Shiau (2006); Kaplan and Norton (1992)

Interview Protocol

- **Investigator: Zahurul Quazi**
- **Date: ----------**
- **Time: ----------**
- **Venue: ----------**
- **Mode:**
- **Case number: ----------**

Introductory section

- A brief description of the research and explanation of its rationale and conduct.
- Asking participants to give a brief introduction of themselves and their ROT

Section 1: Vision and the strategy of the ROT

1. What is the vision of your RTO?

   Probes

   a. Where do you see your RTO to be in the next 5 years?
   b. How far have you come since you started this intuition?
2. How would you describe your current strategy?

   Probes

a. What sort of activities have you conducted to realize your vision?
b. How have you utilized your resources to realize your vision?

Section 2: Balanced scorecard

- *Customer experience*

3. What sort of customer experience is the goal of your strategy?
4. How does your strategy take creation of this experience into account?

Probes

a. How do you define student experience at your RTO?
b. What sort of tools do you use to understand the heart and mind of your customers (students)?
c. What sort of tools do you use to measure the level of your customer satisfaction?
d. What sort of specific tools do you use to recruit new customers?
e. What sort of specific tools do you use to collect feedback from your students?
f. What sort of specific tools do you use to respond to complaints of your students?
g. What sort of specific tools do you use to promote world of mouth among your students
h. What other aspects of students' experience do you consider important
i. What sort of specific tools do you use to measure your performance along these aspects?

- *Learning and innovation*

5. How do you invest in continues learning?
6. What sort of training do you use for your staffs?

Probes

a. What are your learning KPIs?
b. Do you use any industry specific benchmark for learning and innovation?
c. How do you engage with industry players in training and education?
d. How do you promote creativity among your staff?
e. How do you keep abreast of technological innovations in training sector?

- *Internal processes*

7. How do you think your management style contribute to achievement of the vision?
8. What are the key organizational procedures that you developed to help you achieve your vision?

Probes

a. What sorts of KPIs do you use?
b. What sorts of reports do you usually use to make your decisions?
c. What is the culture of your organization in supporting of your vision?
    i. Values
    ii. Norms

iii. Operating rules /hours

d. How about its structure?
e. Communication
f. Team development
g. Divisionalizaiton and departmentalization
h. How about HR and staffing?

- *Finance*

Probes

9. How do you align your financial policies with your vision?
    a. Do you use any sort of flexible policies for tuition fees?
    b. Do you offer any full or partial scholarships?
    c. Do you provide any financial incentives for your high performing staffs?
    d. How do your financial policies align with the VET requirements?
        i. i.e. refund arrangement
        ii. cooling off period?
        iii. Rebates
        iv. HECS

Closing section

Thanks for your participation. If there is any question please feel free to ask. It will be much appreciated, if you provide me with your comments and suggestions about this research in general and the interview in particular

End of the Interview

MQ University's Ethics Approval Letter

RE: Ethics Application Ref: 201700929 - Final Approval

Dear Professor Behnia,

RE: 'Exploring the application of Balance Score Card (BSC) to map and measure the performance of Registered Training Organizations (RTOs) in Australia ' (Ref: 5201700929)

The above application was reviewed by the MGSM Ethics Sub-Committee. The MGSM Ethics Sub-Committee wishes to thank you for your well-written application. Approval of this application has been granted, effective "date of approval". This approval constitutes ethical approval only.

This research meets the requirements of the National Statement on Ethical Conduct in Human Research (2007). The National Statement is available at the following web site:

https://www.nhmrc.gov.au/guidelines-publications/e72

The following personnel are authorised to conduct this research:

Chief Investigator: Prof Masud Behnia

Other Personnel: Mr Zahurul Quazi

NB. STUDENTS: IT IS YOUR RESPONSIBILITY TO KEEP A COPY OF THIS APPROVAL EMAIL TO SUBMIT WITH YOUR THESIS.

Please note the following standard requirements of approval:

1. The approval of this project is conditional upon your continuing compliance with the National Statement on Ethical Conduct in Human Research (2007).

2. Approval will be for a period of five (5) years subject to the provision of annual reports.

Progress Report 1 Due: 19th October 2018

Progress Report 2 Due: 19th October 2019

Progress Report 3 Due: 19th October 2020

Progress Report 4 Due: 19th October 2021

Final Report Due: 19th October 2022

NB. If you complete the work earlier than you had planned you must submit a Final Report as soon as the work is completed. If the project has been discontinued or not commenced for any reason, you are also required to submit a Final Report for the project.

Progress reports and Final Reports are available at the following website:

https://staff.mq.edu.au/research/integrity-ethics-and-approvals/human-ethics/resources-research-office

3. If the project has run for more than five (5) years you cannot renew approval for the project. You will need to complete and submit a Final Report and submit a new application for the project. (The five year limit on renewal of approvals allows the Committee to fully re-review research in an environment where legislation, guidelines and requirements are

continually changing, for example, new child protection and privacy laws).

4. All amendments to the project must be reviewed and approved by the Committee before implementation. Please complete and submit a Request for Amendment Form available at the following website: https://staff.mq.edu.au/research/integrity-ethics-and-approvals/human-ethics/resources-research-office

5. Please notify the Committee immediately in the event of any adverse effects on participants or of any unforeseen events that affect the continued ethical acceptability of the project.

6. At all times you are responsible for the ethical conduct of your research in accordance with the guidelines established by the University. This information is available at the following websites: https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central https://staff.mq.edu.au/research/integrity-ethics-and-approvals/human-ethics/resources-research-office

If you will be applying for or have applied for internal or external funding for the above project it is your responsibility to provide the Macquarie University's Research Grants Management Assistant with a copy of this email as soon as possible. Internal and External funding agencies will not be informed that you have final approval for your project and funds will not be released until the Research Grants Management Assistant has received a copy of this email.

If you need to provide a hard copy letter of Final Approval to an external organisation as evidence that you have Final Approval, please do not hesitate to contact the MGSM Ethics at the address below.

Please retain a copy of this email as this is your official notification of

final ethics approval.

Yours sincerely,

Chair

MGSM Ethics Sub-Committee

Email: ethics@mgsm.edu.au

Web: http://www.research.mq.edu.au/

Templates of Balanced Scorecard

Exhibit 17: Balanced Scorecard Example – Electronics Company

Electronics Company		
Customer	Quality	Number of Defects
	Price	Competitive Comparison
	Delivery	Number of On time Deliveries
	Shipments	Sales Growth
	New Products	Number of new products to support
	Support	Customer Satisfaction Survey
Internal	Efficiency in manufacturing	Cycle Time
	New product introductions	Rate of new introductions
	New product success	Number of orders
	Sales penetration	Actual vs. Plan
	New businesses	Number of new businesses each year
Inno-vation	Technology leadership	Product performance benchmarking
	Cost leadership	Quarterly Manufacturing Overhead
	Market leadership	Market share (all markets)
	Research & Development	Number of new products
F i	Sales	Annual growth rate

	Cost of Sales	Annual trend line
	Profitability	Return on capital employed
	Prosperity	Cash flows
Employee	Competitive Salaries	Local area comparisons
	Opportunity	Satisfaction rating
	Citizenship	Contributions to community

Source: Applying the Balanced Scorecard to Small Companies by Chee W. Chow, Kamal M. Haddad, and James E. Williamson - Management Accounting, August 1997

Exhibit 18: Balanced Scorecard Example – Food Ingredients Company

Food Ingredients Company		
Financial	Capture additional industry growth	Comparison to industry growth
	Maintain base business / continue to be preferred supplier to customer	Volume trend line / gross margin
	Expand into global markets	Ratio of domestic to international sales
	Commercialize new ingredients and services that are profitable	Percent of sales from launched products / gross profit from new products
Customer	Lowest cost supplier	Total cost relative to competition
	Products and services customized to meet local needs	% of products in R & D in test phase
	Customer satisfaction	Customer surveys
Internal	Maintain low cost base	Total cost relative to competition
	Maintain consistent production	First pass success rate
	Continue to improve distribution efficiency	Percent of perfect orders
	Build capability to screen profitable products and services	Change in economic value
	Integrate acquisitions	Revenues per salary dollar
Learning	Link strategy to reward system	Net income per dollar of variable pay
	Foster culture that supports innovation and growth	Annual assessments / Quarterly reviews
	Develop competencies critical to overall gaps that must be filled	Percentage of competency deployment filled on tracking matrix

Source: Applying the Balanced Scorecard to Small Companies by Chee W. Chow, Kamal M. Haddad, and James E. Williamson - Management Accounting, August 1997

Notice that some companies prefer to re-arrange their perspectives in order of what they consider most important to least important.

Exhibit 19: Balanced Scorecard Example – Commercial Bank

Commercial Bank		
Shareholder	Achieve returns of 1% on assets and 15% on equity	Net interest margin / non-interest expense
	Achieve efficiency ratio of 68%	Overhead expenses
	Achieve asset growth of 15%	Asset growth rate
	Loan loss rate of .5% or less	Number of problem loans

	Loan delinquencies of 2% or less	Number of bad loans made
Customer	High personal quality service	Number of complaints / customer satisfaction rating
	Competitive product offerings	Number of product offerings per year / Sales volumes
	Competitive pricing	Cost of doing business / competitive price comparisons
	Customer satisfaction	Customer surveys
Employee	Competitive compensation	Annual market review
	Participation in organization	Bonus pay per personal performance
	Enhance job skills	Training completed
	Quality evaluation of performance	Comparison to best standards
	Increased upward career movement	Number of internal promotions
Com-Munity	Provide community support activities	Extent of employee participation
	Act as a good corporate citizen	Extent employees vote / extent employees support outside activities

Source: Applying the Balanced Scorecard to Small Companies by Chee W. Chow, Kamal M. Haddad, and James E. Williamson - Management Accounting, August 1997

Exhibit 20: Balanced Scorecard Example – Biotechnology Company

Biotechnology Company		
Customer	New products	Percent of sales from new products
	Early purchase of seasonal products	Percent of sales by early purchase date
	Accuracy in invoicing	Percent error free invoices
	Early payment	Percent of customers who pay early
	Product quality	Product performance vs. standards
	Customer satisfaction	Customer satisfaction surveys
Inter-Nal	Low cost producer	Unit cost vs. competition
	Reductions in inventory	Inventory as % of sales
	New products	Number of introductions vs. target
Inno-Vation	New active ingredients	Number of new ingredients identified through discovery program
	Proprietary position	Number of patents that create exclusive marketing rights
Finan-cial	Growth	Percent increase in top line revenues
	Profitability	Return on Equity / Earnings per share
	Industry leadership	Market share

Source: Applying the Balanced Scorecard to Small Companies by Chee W. Chow, Kamal M. Haddad, and James E. Williamson - Management Accounting, August 1997