THE RELATIONSHIP BETWEEN LEADERSHIP, COMMUNICATION, ENGAGEMENT AND EFFECTIVE PERFORMANCE IN SECONDARY SCHOOLS

By

MARILYN DAWN GIBBS

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Promoter/Supervisor: Prof. P. Poisat

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DEPARTMENT OF ACADEMIC ADMINISTRATION
EXAMINATION SECTION
SUMMERSTARND NORTH CAMPUS
PO Box 77000
Nelson Mandela Metropolitan University
Port Elizabeth
6013

Enquiries: Postgraduate Examination Officer

DECLARATION BY CANDIDATE

NAME: Marilyn Dawn Gibbs

STUDENT NUMBER: s185142270

QUALIFICATION: Doctorate in Business Administration

TITLE: THE RELATIONSHIP BETWEEN LEADERSHIP, COMMUNICATION, ENGAGEMENT AND EFFECTIVE PERFORMANCE IN SECONDARY SCHOOLS

DECLARATION:

In accordance with Rule G5.6.3, I hereby declare that the above-mentioned treatise/ dissertation/ thesis is my own work and that it has not previously been submitted for assessment to another University or for another qualification.

SIGNATURE: _____

DATE: _____

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ABSTRACT

The ineffective performance of school operational teams in secondary schools in South Africa reflects in many negative aspects, from team operations, disengaged educators, ineffective leadership and communication and low performance in the teaching and learning domains. The purpose of this study is not only to contribute to the body of knowledge in this educational management field, but by examining the enabling factors that drive the high performance level of these school teams, these could assist with operation that utilises more of their human capital potential. By examining these high performance factors utilising a diagnostic tool, gaps could also be identified. To achieve this purpose, the objective was to develop a theoretical conceptual model and a school analytical tool that could holistically analyse and identify the strengths and weaknesses within each school. The purpose was to identify the enabling factors that create and drive the high performance of school operational teams in secondary schools This fingerprinting or profiling of the school could thereby allow for more cost effective interventions to be implemented within each school context. The aligned diagnostic and interventions addressing the gap enabling factors, assists in the school improvement and strategic plan for the school. At present, many schools do not have the resources or skills to conduct reliable and valid self, team and needs-assessments, therefore school improvement plans and strategic plans are often not using site-based analytics. By conducting these, a more focused and scientifically based, as well as cost effective intervention, could be implemented resulting in a more effective result in best practice.

The three focus areas examined in the literature study in the field of educational management and school improvement, were leadership, engagement and communication. Initially the literature study indicated, thirteen independent and mediating variables around these key areas, which formed the foundations for the development of the design and development of the survey instrument. The thesis was based on a number of theoretical frameworks from which the conceptual model was devised. The dependent variables included literature based metrics for factors of Organisational Commitment and Employee Engagement, as well as the percentage Grade 12 pass rate obtained from the average performance over the last three years at the school. All the variables were hypothesised, defined and operationalised in the

design of the school analytical tool for assessing the effective performance of the school operational teams. Independent and mediating variables included: Educator Team Competencies, Perceptions of leadership, Culture Alignment, Innovation potential, Employee experience, Fairness, Hybrid leadership environment, Trust, Support, Communication as well as Infrastructure, Leader-Member Exchange and Perceptions of Learner engagement.

This predominantly quantitative research study examined the effective performance levels of school operational teams utilising an ecological systems theory approach. The School Analytical Tool comprised 71 items which were subjected to validity and reliability tests. Confirmatory Factor Analysis and Cronbach Alpha coefficients were conducted on the measuring instrument. Data was collected from school operational teams which included principals, educators and administrators from twenty-nine different secondary schools, in different contexts and across three regional areas in South Africa. A total of 413 respondents participated and a response rate of 40% was achieved. Ethical permission was obtained from all the relevant parties prior to commencement of the research study.

After the proposed conceptual model was devised, structured equation modelling (SEM) was used to test the hypothesised significance of the relationships between the variables in the integrated model. Two sub-models were identified: Human (Individual/Team) Sub-Model A and System (Organisation/School) Sub-Model B. These were measured by two indices, the Team Performance Index and the School High Performance Work Index respectively. These measures showed different linkages to the Educator Employee Engagement and Organisational Commitment metrics.

From the SEM, three models were tested for goodness of fit criteria with version 3 showing a reasonably good fit with a RMSEA (0.056 CI 95%: 0.054-0.058), with a CFI (0.86) and a normed Chi squared of 2.24.

The objectives of this thesis were therefore achieved in developing a statistically and theoretically validated conceptual model for enabling factors that drive effective school operational teams, as well as a school analytical tool (SAT) that could identify gap factors for school profiling. The practical application of school profiling utilising the SAT was also indicated by analysing a high and low performing school from different regions in South Africa, indicating the ability to identify weaknesses and strengths of the school operational teams within different contexts.

Keywords: School Operational Teams, High performance teams, Educational leadership, Educator engagement, School Analytical Tool, Best practice.

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OVERVIEW OF THE STUDY

1.1 INTRODUCTION

Many schools in South Africa are battling to perform at an effective level and few schools can be seen to be high performing schools. The management dilemma is that these schools are operating below their human capital potential. Even though they may have the capacity to transform themselves through effective leadership into supportive environments for teaching and learning, they may need specific site based interventions which are focused on their particular needs and school improvement plans. Within our ever changing environment the educational staff needs to learn to adapt and deal with many new challenges. The holistic analysis of school operational teams within their context is critical for better school improvements and performance and good diagnostic tools need to be developed to examine these school profiles. By identifying the strengths and weaknesses in each school, the area requiring improvement can be identified, thereby allowing for a more cost effective and context relevant intervention within the specific school to be implemented. Leaders of high performing organisations produce a shared organisational culture of caring, communication and collaboration (Ash and Hodge, 2016). To achieve higher performance levels of the school operational teams (SOT's) in secondary schools and good leadership practices, it is necessary to understand the shift from a hierarchical traditional learning environment to a more team distributed climate of teaching and learning.

By having analytics that can measure the effectiveness of these SOT's, it allows a diagnostic for identifying the gap in the enabling factors, which are required for higher performance. This leads to aligned interventions to address the gap enabling factors and assists in the design of a unique, relevant School Improvement Plan for the school. Most schools have few resources to self-assess and conduct needs assessments (Caputo and Rastelli, 2014). School Improvement plans are therefore not utilising site-based analytics or interventions based on scientifically based research, needs analysis and effective best practices.

In a study on high performing school systems by Curtis and City (2009), the researchers showed that there are three core competences: a deep knowledge of the core business of learning, a concrete aligned vision with effective resources and theory of action and strategies of self-assessment with professional development. Since negativity is prevalent in many of the under resourced and rural schools, it is critical that some strategies and heuristics are devised that can assist these schools to improve their organisational effectiveness. By providing research and informing practice within different contexts, it is hoped to develop a positive school high performance strategy (SHPS). This will focus on a positivistic approach to examine the “to do” rather than on the “do not do” (Caza and Caza, 2008).

1.2 MANAGEMENT PROBLEM

The practical problem is the lack of effective practices in educational organisations in the key performance areas of school management for effective teaching and learning. The effect of these factors results in the under-performance of teachers and learners in secondary schools and results in low organisational effectiveness. In many studies especially in the positive organisational scholarship domain (Cameron, 2012; Schneider, 2000), it is shown that positive attitudes in the educators encourage students to be life - long learners (Schneider, 2000) and hence this study aims to examine the positive organisational practices in an educational context, that lead to an exceptional, thriving and dynamically higher performing secondary school organisation.

This low performance could be caused by a number of factors but some of the main constructs that are examined in this study are: the high performance leadership and team enabling factors and practices, educator engagement, organisational commitment, communication connections and school climate. The linkages between these enabling factors and the effective performance outputs, which include the school high performance work index rating (Kenexa, 2010) and the percentages of the Grade 12 pass rate from the Department of Education (2014), are examined. It is seen in literature studies (Doud, 1995; Fernandez, 2011) that student performance improves when good leadership strategies address the needs of the students, the school

environment and milieu is positive and when there is parental involvement and high trust and support levels.

The above discussion shows evidence as to why the enabling factors of leadership skills, teamwork, communication and work engagement should be examined as, by maximising these constructs, this may drive higher performance in the teaching and learning of educators in secondary schools. This offers the basis for the investigation of the main problem of this research study.

The core problem of this study therefore leads to how these enabling factors (team leadership skills, communication and engagement) are related to create an efficient high performance team within a school context. By examining these relationships and the **significance of these relationships,** in relation to effective high performance outcomes, a conceptual model can be constructed.

1.3 PURPOSE AND BENEFITS OF THE STUDY

The purpose of this study is to examine the key trends in different school contexts or quintiles and to highlight the enabling factors of engagement of these school operational teams in the different secondary schools in three different regions in South Africa. The researcher proposes some integrated strategies and a diagnostic metric to assist educational leaders to focus on those critical issues in each school which will make the biggest difference in ensuring better performance.

The outcomes are, therefore, threefold. By analysis of the results of this research study the researcher aims to develop a valid and reliable School Analytical Tool (SAT) that analyses the enabling factors of School Operational Teams (SOT's) to thereby effectively profile secondary schools in different contexts. Secondly, from this profile, broad recommendations to provide specific targeted strategies that assist the "gap" enabling factors to achieve higher performance may be offered. Through this research study a holistic school improvement performance metric is developed that can analyse secondary schools across different contexts and assist in analysing focus areas that may improve school performance by the addition of more cost effective interventions.

The benefit of doing this study is that it is hoped that the analysis may yield clarity as to which constructs or sub-constructs are the key enablers in effecting organisational effectiveness and better outcomes. This research study adds to the body of academic knowledge in the conceptual understanding of the enabling factors that contribute towards the organisational effectiveness in schools. These may be identified as individual effectors or as clusters of positive performance factors that are significantly associated with effective organisational outcomes within the school unit. This leads to designing a basic positive practice metric and secondary school strategy that has a generic component for school units, but can be adapted for each unique, specific school in widely different contexts and communities.

The aim of the study was to examine the factors that have the greatest enabling effect on our educational organisations to unlock the human excellence in a positive and dynamic way, resulting in a positive change throughout all levels of the school organisation in the operational area which ultimately impacts on both the teaching and learning outcomes of the secondary school.

1.4 BACKGROUND OF THE STUDY

1.4.1 Need for the research

As schools are asked to be more results-orientated, improving organisational effectiveness can assist in being a key management strategy to assist with analysing, assessing, articulating and achieving goals. Schools can be seen holistically as organisations capable of responding to both internal and external motivations and learn new managerial and educational techniques (Kruse, 2001). By examining the unique blend of leadership approaches and positive enabling factors that contribute towards effective higher performance outcomes such as engagement, communication and team leadership, it is designed to assist schools to be profiled and identify their strong and weak performance areas. This analysis may allow the school management teams to devise cost effective school improvement strategies that are relevant to their culture, context, school needs and infrastructure.

1.4.2 Theoretical framework of the research study

As stated by Lysaght (2011, p.572), a theoretical framework "reflects important personal beliefs and understanding about the nature of knowledge" and is thus crucial in creating a foundation on which to build the research study. Both Eisenhart (1989) and Lovitts (2005) define the importance of selecting a formal theoretical structure that guides the research and has explicit underpinning theories that are appropriate, aligned and significant in the research dissertation.

Bronfenbrenner's ecological systems model (Figure 1.1) (Raymond and Pienaar, 2013) was adopted as the systemic theoretical framework for this study. It is a living systems holistic approach and, as such, is relevant and appropriate since it considers all aspects, including the socio-cultural environment, which have an influence on the school teaching and learning - both holistically and in context.

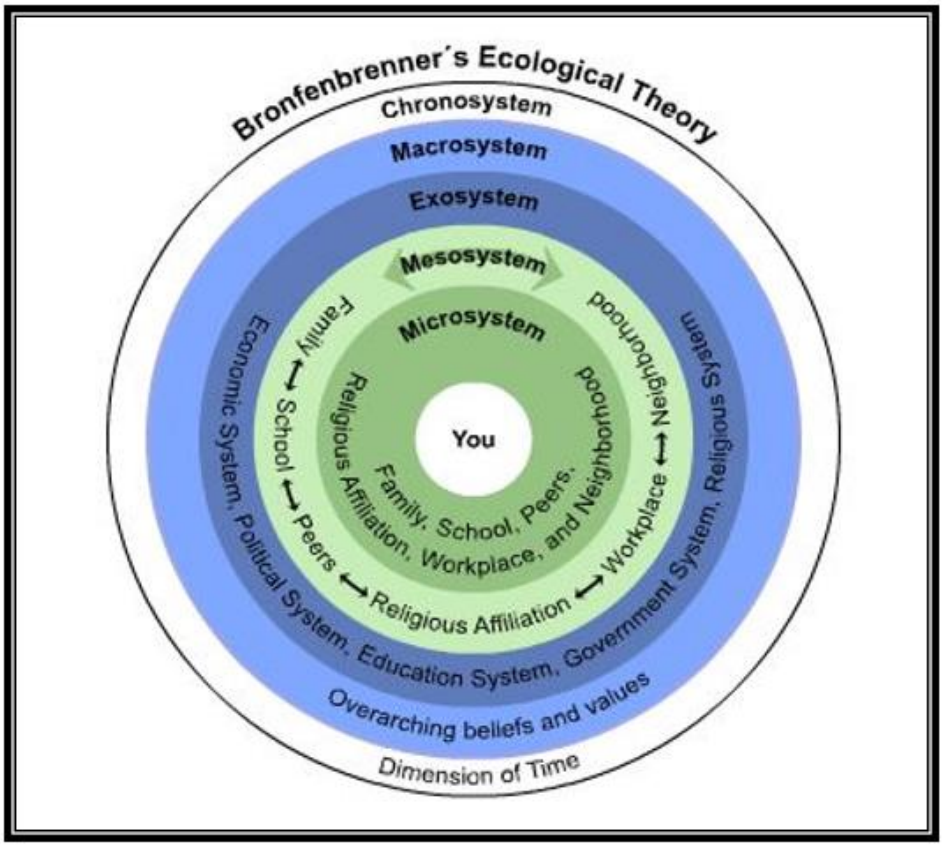


Figure 1.1: Bronfenbrenner's Ecological Systems Theory (Raymond and Pienaar, 2013; Bronfenbrenner, 1979).

According to Dreyer (2012), the school is therefore considered as a system and all factors that relate to it must be taken into consideration. Aligned with the viewpoints of Donald, Lazarus and Lolwana (2011), the school is viewed as a system interacting within a broad social context. It shows the interaction between the individual's development and socio-cultural environment (Mahlo, 2011). The direct and indirect influences occur on four levels: micro, meso-, exo- and macro system (Swart and Pettipher, 2005). The micro system being the immediate environments in which the individual develops and the interpersonal relationships. The meso-system involves the interaction and relationships between the homes, school and district level at a wider level. The exo-systems are those areas that influence the individual from the community and include economic, political, education, government and religious systems. Lastly, the macro system includes the culture and behaviour patterns of the people passed from generation to generation (Swart and Pettipher, 2005).

In this research study, the school is seen in the **micro system** with its individual educators and learners, as well as the team interrelationships. The **meso system** includes the organisational culture and school climate which can be seen to be affected by these system levels. On the **exo and macro** level, in this research study, the relationships, including trust and support, with the teams, community and government of these systems were considered. In this research study, the school systems could be outlined in terms of the Bronfenbrenner's System model (Figure1.2).

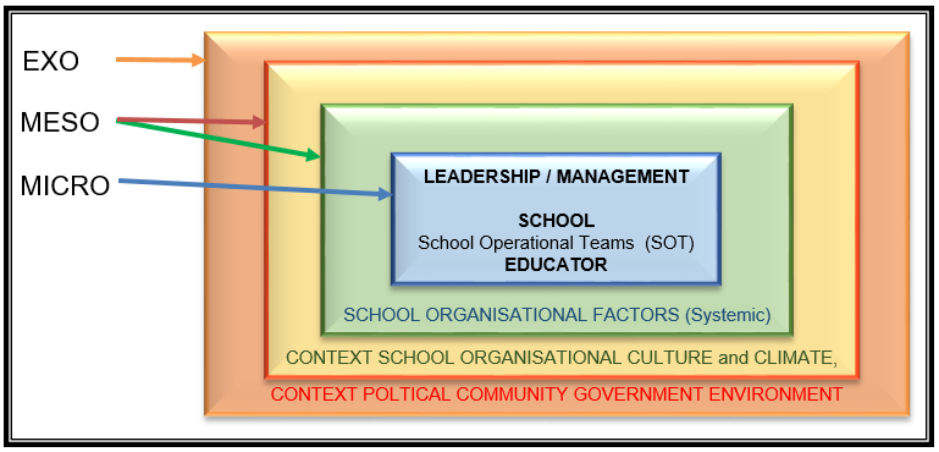


Figure 1.2: A SOT Systems Model based on the Bronfenbrenner's Ecological Systems Theory (Authors own construct adapted from Bronfenbrenner, 1979).

The focus in this study is on the organisational factors that are prevalent in each school team, within the context of the environment in which it operates.

1.5 RESEARCH STATEMENT AND PROBLEM STATEMENT

In many schools the school operational teams (SOT) do not function as effectively as they could and this affects the efficient performance of the school in both teaching and learning. By designing relevant analytics that examine the strengths and weaknesses within schools, school management teams may then devise cost effective school improvement strategies that are relevant to their culture, context, school needs and infrastructure.

The research statement for this study is based on the following:

The development of a heuristic metric to assess the significant relationships between the enabling factors in the school operational teams to examine the team performance levels in the schools, creating a framework that analyses the linkages between leadership approaches, communication and engagement within secondary schools. Utilising this School Analytical Tool (SAT), profiling could identify strengths and weaknesses in each school, identifying needs and allowing for more cost effective interventions which thereby lead to more effective teaching and learning in secondary schools in a South African context.

1.5.1 Problem statement

The problem statement can be stated as follows: Many secondary schools do not function as efficiently as they could and the human capital is not effectively utilised. School improvement strategies and interventions are not always designed for the unique leadership challenges, context, culture and school infrastructure that faces our diverse range of secondary schools within the South African context and culture. Educational leaders need to focus on the unique critical organisational issues in each school that will make the biggest difference in ensuring more effective organisations and better performance.

1.5.2 Research area and purpose

The **research area** can be stated as the field of organisational behaviour elements in the domain of educational leadership and management linked to improving school performance in teaching and learning.

The **purpose of this research** was to examine the primary organisational indicators that enable the secondary schools to operate effectively as a high performance team within the leadership, context, culture and unique school situation. A diagnostic metric was developed to assist analysis of school operational team performance and areas that require improvement. Weaker areas were able to be identified so that interventions and strategies for school improvements are aligned to that specific school's needs and leadership approach, thereby improving the schools' performance levels.

1.6 RESEARCH QUESTIONS

Based on the primary purpose, the main research question can be stated as follows:

What enabling team performance factors, indicators and strategies are required to optimise the performance of the secondary school operational teams with regard to high performance and the more effective outputs in teaching and learning?

The researcher has used the term "indicators" for dimensions, factors, components, or constructs because of its wider application across both quantitative and qualitative research (Punch, 2011).

***Primary research questions**:* The primary research questions can be framed as follows:

Primary research question 1 (RQ1)

RQ1: On which key factors should educational leaders of secondary schools focus their attention for cost effective interventions that will have the greatest probability of making a difference in outputs of performance in their school operational teams?

Primary research question 2 (RQ2)

RQ2: What are the significant functional relationships or linkages between the enabling indicators to improve the organisational effectiveness of secondary schools in the key performance areas of team leadership/management, communication and engagement?

Secondary research questions:

RQ3: Which leadership and team approaches and behaviours, in emerging educational leadership within the different cultures and contexts, enable effective organisational performance?

RQ4: Could a unique framework be developed allowing a metric to be constructed, which will assist a school in an integrated SWOT analysis applicable in different cultures and contexts?

RQ5: How can the proposed theoretically based framework be empirically validated in South African educational contexts?

RQ6: What integrated strategies, recommendations, interpretations and conclusions can be formulated from the empirical findings of this research study for enhancing school effectiveness?

1.7 RESEARCH OBJECTIVES

The primary objective of this study is therefore to **investigate the main enabling factors that have an effect on the organisational effectiveness in secondary school teams in the educational human resources leadership /management and teaching and learning domains within the South African context (RO1).**

The primary areas in this study relate to the effective impact of positive enabling factors on high performance secondary school teams. These may include the school organisational culture and climate, connection/communication, educator engagement, commitment and leadership. Since the three main areas of interest can be defined as:

- **A**. Organisational behaviour and Human Resource management.

- **B**. Secondary School operational teams and Educational leadership.
- **C**. Organisational effectiveness and high performance (Fig 1.3).

The research involves examining the relationship between these areas and creating effective organisational performance outcomes.

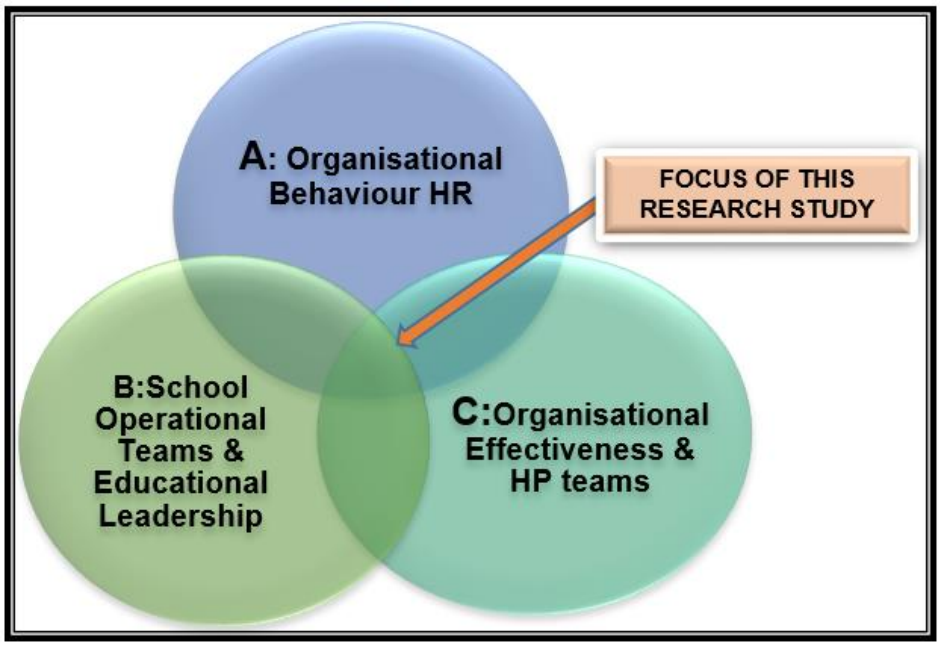


Figure 1.3: Overlapping focus areas of research (Authors own construct).

There is significant literature reviewed in all the main focus areas A, B and C and in the overlaps of A ∩ B, A ∩ C and B ∩ C. The middle area (overlap of all three areas A, B and C) is the area of research that this research study is focused on and is aimed to increase the body of knowledge in this particular field. This combination of fields is where a gap in the research literature exists, since the overlap of these particular interdisciplinary fields, is rare, especially within the South African school context.

From the literature review a conceptual theoretical model was proposed describing the relationships between the enabling factors influencing the effective and high performance of secondary school teams in a South African context. These linkages were tested empirically, using statistical structured equation modelling analysis techniques. A measuring instrument was designed and developed from the literature review and data collected and analysed to test the relationships outlined in the conceptual model. Recommendations and integrated strategies, as well as a possible

school improvement profile metric (SIPM) were proposed, based on results of the statistical analysis.

The secondary objectives are outlined as follows:

RO2: To conduct a comprehensive literature review on the South African educational leadership studies that include engagement, communication, motivation and organisational commitment and any other organisational factors identified, in secondary schools, which enable high performance.

RO3: To analyse the leadership approaches contributing to the high school team performance level within each school context, culture and situation in the South African educational context.

RO4: To utilise a sequential research design which leads onto the quantitative empirical study utilising structured equation modelling.

RO5: To establish a benchmarked framework of best practice related to the secondary school team high performance factors, by identifying which enabling factors (engagement, communication, leadership and organisational commitment) are significantly associated with efficient high performance outcomes.

RO6: To examine and analyse the linkages and functional relationships between the variables utilising multiple causation, structural equation modelling and multiple regression analysis to analyse functional relationships that improve school performance, within each school context, situation and culture.

RO7: To design a profile heuristic metric that enables schools to construct specific school improvement strategies that examine their own strengths and weaknesses in a sustainable and positive way.

RO8: To address the research problems by analysing the functional relationship between the independent variables and the dependent variables within each school context, culture and situation.

1.8 MAIN AIM OF THIS RESEARCH STUDY

The main aim of this study is to use a continuum of low to high performing secondary schools within different geographical locations and in three regional provinces. The research study examines the linkages between team leadership approaches in the South African school context, educator engagement, communication and effective school operational teams (SOT) with the aim of achieving more effective and higher performance in teaching and learning.

1.8.1 Outcomes of this research

The outcome of this research study are:

- A school improvement analysis within specific contexts, that examines the functional relationships of variables of leadership, communication and engagement (educators and perceptions of learner engagement) that may determine effective school performance in operational teams and in teaching and learning outputs.
- Secondary school profile/case studies describing leadership and intervention turnaround recommendations, for relevant interventions and school improvement strategies and plans (SIP).

1.8.2 Research gap

Another aim of this research is to address the research gap in this field of School Improvement Practices (SIP) conducted on the impact of enabling high performance factors on the organisational effectiveness and change within the educational context. Very little empirical evidence and research has been done within the educational field in the South African context, particularly examining the relationships between team enabling factors and organisational outcomes (Cameron, Mora, Leutshcher and Calarco, 2012). More empirical evidence is required in linking the positive practises in educational organisations that produce desirable changes in the organisational effectiveness in schools. According to Wright and Goodstein (2007), the connection between positive practices and organisational effectiveness still needs to be confirmed empirically.

In this study, the enabling factors investigated are in **four key domains**, namely - **school team performance, educational leadership and communication related to organisational engagement and commitment.**

For the effective organisational performance dependant variable, the organisation is the unit of analysis and not the individual respondent. The units would therefore be low to high performing schools in city and township schools as a comparative study, across different provincial regions in South Africa. This study allows for a continuum of school units to be examined, whereby a range of the effects of positive enabling factors are analysed. As a measure of this effective performance in secondary schools, the Grade 12 pass rate was used to group the secondary school into High, Medium or Low performing schools. However, in the statistical analysis the employee engagement (Poisat, 2006; Kenexa, 2012; Aon Hewitt, 2014) and organisational commitment metrics (Mowday, Steers and Porter, 1979) which are both literature standards, were utilised as indicators of high performance in school operational teams.

Since the type of leadership approach in each region is a unique blend of hybrid educational leadership styles and cultural dimensions that are required for effective schooling, it is important to examine some of the different leadership approaches within the different contexts (House, 2004).

1.9 RESEARCH PROCESS AND METHODOLOGY

As per the generic research process (Saunders, Lewis and Thornhill, 2009), the research philosophy is outlined, followed by the research approach and selection of the research strategies (Figure 1.4). The research methodology and design is then detailed and discussed. Lastly the time horizons and the data collection process and analysis are outlined.

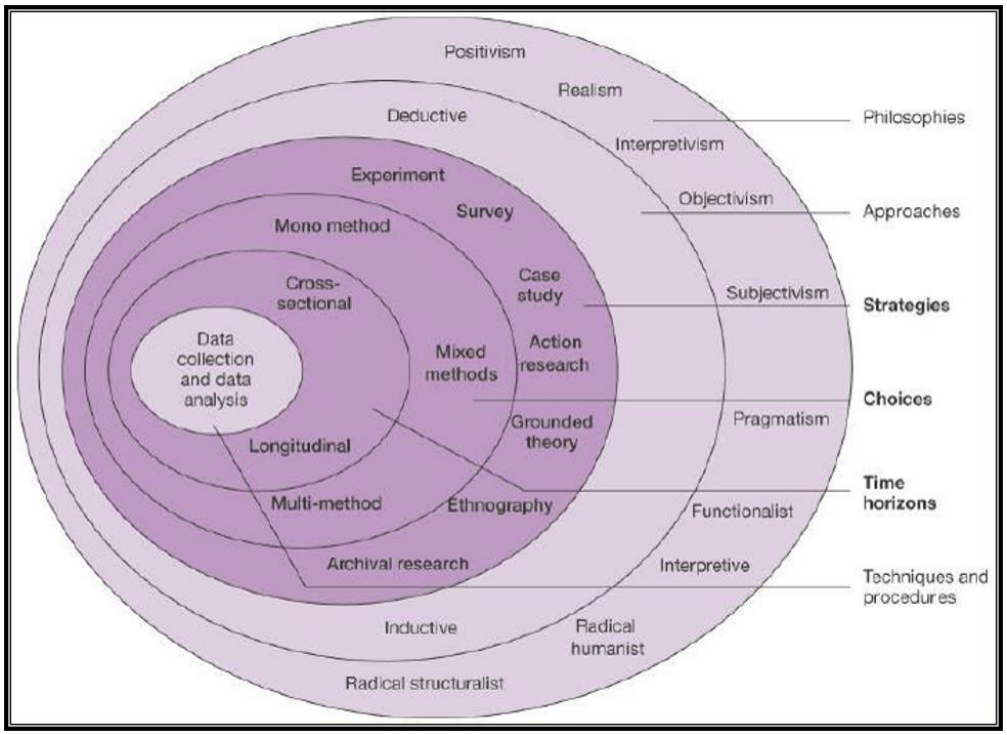


Figure 1.4: The research onion (Source: Saunders et al., 2009).

1.9.1 Research paradigm

The two main paradigms or philosophies are positivism and interpretivism, which exist at opposite ends of a continuum (Collis and Hussey, 2009). Positivism involves a deductive process whereby theories provide the basis of establishing relationships between variables. The ontological assumption is that reality is objective, singular and apart from the researcher. The epistemological assumption is that the only valid knowledge is the observable and measurable phenomena. Analysis is done by examining the functional relationship between the variables (Creswell, 1994). This approach is a quantitative, objective, scientific and traditionalist approach. Interpretivism involves participatory inquiry and has the ontological assumption that social reality is highly subjective. Theories may be developed for understanding through verification. This approach is a qualitative, subjective, humanist and phenomenological approach (Creswell, 1994).

The researcher feels that the choice of paradigm for this research study is from a multiple paradigm or worldview. The philosophical framework for this study is positivistic pragmatist. However, this is the paradigm for the quantitative analysis while

the paradigm for the qualitative analysis will be more the interpretivist humanist. Hence there is a multiple paradigm viewpoint and since the ontological elements of pragmatism are that there are singular and multiple realities, the researcher tests hypotheses, as well as adding multiple perspectives through qualitative results gathered through other researchers' perspectives in the literature review and other qualitative research case studies, as well as through the researchers own experiences.

1.9.2 Research approach

The research objective of this study was to investigate the influence of the independent selected variables (Team Enabling factors and School High Performance Index factors) on the dependent selected variables (Organisational effectiveness: Organisational Commitment and Employee Engagement). To quantify and framework the significant relationships between the variables requires a primarily quantitative approach.

This research study was predominantly quantitative, as the primary data collected was statistically analysed using Factor Analysis and Structured Equation Modelling (SEM). The six step model proposed by Hair, Black, Babin, Anderson and Tatham in 2006 was used, as outlined in Table 1.1 (Hair et al., 2006).

Table 1.1: Structural Equation Modelling steps (Hair et al., 2006, p. 734).

Steps	Description
1	Define individual categories or variables, developing a theoretical model (framework)
2	Develop and specify the measurement model constructing path diagrams of causal relationships
3	Design a study to produce empirical results, including the path diagram into a measurement model of structural equations
4	Assess the measurement model validity, choosing the correlation matrix or covariance matrix and estimating the proposed model
5	Specify the structural model assessing the identification of model equations
6	Assess the structural model validity evaluating the goodness-of-fit and making the indicated modifications if theoretically justified

1.9.3 Research strategies

The research strategy was a survey design research strategy. Case study strategies were also utilised in this study in the profiling of schools.

1.9.4 Research methodology

The methodology was a predominantly quantitative (QUAN) method. The literature review and the researcher's previous mixed method [(QUAL) and (QUAN)] study (Gibbs, 2013), were used in the final selection of the main important enabling factors selected and included in the survey design analysis (quantitative data collection). The preliminary drafted conceptual framework was constructed from the secondary data and previous research studies.

This study was a quantitative method approach and used a number of literature theoretical models as frameworks for each primary indicator or enabling factor. The research study utilised a dominant quantitative approach (SEM) for analysis and the survey of principals, educators and all school operational team members yielded the quantitative data (Creswell and Clark, 2011).

1.10 RESEARCH DESIGN

The exploratory sequential research design initially involved a pilot research survey of school operational staff in various regions, using a mixed method approach (Tashakkori and Teddlie, 2003). A case study methodology, with case studies within the different contexts, was conducted to isolate three factors: those common to all the cases, those factors common to specific groups or those factors that are unique (Boyd, 1981). This approach was used to explore phenomena within certain contexts to obtain in-depth qualitative knowledge, by utilising a previous research study (Gibbs and Poisat, 2015). This data was utilised to construct the survey instrument for further data collection from a wider range of schools. This built onto the initial conceptual framework and added to the development of the measurement and structural model for this quantitative research study.

A correlational survey methodology was used, utilising a questionnaire, to collect the primary data quantitatively from the sample of all principals, educators and staff

members at the thirty-two schools. The questionnaire contained quantitative data collection questions. Statistical analysis (Amos, SEM and ANOVA) were utilised to analyse all the data in this research study.

The research approach of this study can be represented in a notation system as: **qual → QUAN = generalize findings.** This notation represents a sequential exploratory design (Figure 1.5).

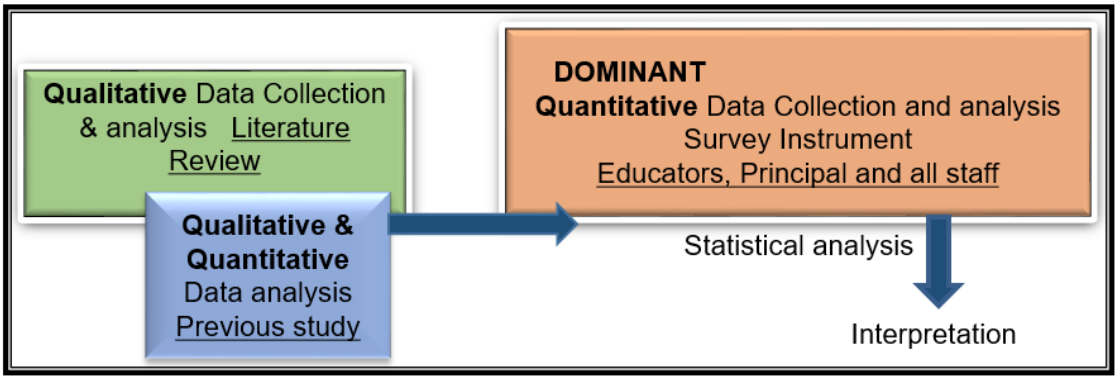


Figure 1.5: The research design: exploratory sequential design (Source: Creswell et al., 2011, p. 69).

1.10.1 Time horizons

The cross-sectional time horizon was utilised.

1.10.2 Data collection, construction of the measuring instruments and data analysis

The following methods of data collection were used in this research study to ensure that the results and data were valid as evidence was collected from a number of sources.

- Principal, Educators and all staff - Survey Instrument [SAT] (Appendix 1)
- Department of Education information on secondary schools (NCS Technical Report: Schools Performance Report, 2014).

Instruments with high reliability were sourced from previous literature studies to measure certain constructs or enabling factors, while self-constructed instruments

were adapted and used to measure certain variables in the conceptual model. The survey instrument utilised is discussed in detail in Chapter four.

1.10.3 Survey Instrument Questionnaire

A survey/questionnaire was administered to all principals, educators and school staff for the quantitative data collection. Questions ranged from scaled-response questions with both the 5 point Likert-type scale and the semantic differential scale. Validation of the data by triangulation and authenticity to show credibility, was important in showing how bias is countered. The items were carefully constructed to measure the constructs that were required to address the research questions, as well as to establish main linkages between the effective high team performance and the key enabling factors identified: leadership, communication and engagement.

The survey instrument for all principals, staff and educators consisted of seventy-one items and is shown in Appendix 1. All items and each sub-indicator were thoroughly researched to allow a linked group of questions to be accurately formulated, prior to commencement of the research study. A confirmatory factor analysis (CFA) and internal reliability coefficients were used to determine reliability and the extent of interrelationships between the latent variables.

1.10.4 Demarcation of the study: Population and unit of analysis

The target population for this research study are the principal/educators/school staff in thirty-two selected secondary schools in South Africa, in three different regions. The analysis was a range of high, medium and low performing secondary schools in the three different provinces: Western Cape, Eastern Cape, and KwaZulu-Natal.

1.10.5 Sampling frame, design, method and sample size

The sampling frame is a list of co-educational secondary schools in South Africa. From this sampling frame the schools were chosen from a range of high, medium and low preforming schools in different quintiles. The researcher used a random sampling technique utilising a stratified method and selected a range of schools from high, medium and low performing schools in each quintile group (urban or peri-urban) for

the study. This assured representation of all groups in each sample for comparisons to be made.

This study was undertaken in co-educational, secondary schools in three different regions in South Africa. The sampling frame utilised was the Department of Education records of South African secondary schools' performance, geographical locations and contexts (quintiles). Two geographical locations: city/urban and peri-urban/township categories will be used in the cluster sampling of the secondary schools, with a range of high, medium and low performing schools being selected from each geographical location. As far as possible, three quintiles 4-5 schools and three quintiles 1-3 schools were chosen in the various areas and regions, as well as two private schools in each different context.

The study involved the whole school operational teams of staff, principal and administration staff of secondary schools. Eight schools, three high performing to medium performing schools, three low performing schools and two private schools were therefore selected and sampled in each of the following provincial regions of South Africa: Eastern Cape, Western Cape and KwaZulu-Natal. Two groups of eight schools were selected in the Eastern Cape. This was a total of thirty-two secondary co-educational schools in South Africa (Figure 1.6).

The participants were all the operating staff of these participating schools, as well as the principal. The developed survey instrument and data sourced from the Department of Education were used for secondary school data and information. The samples (respondents) were the principal and all educators at the secondary school selected. The schools were selected from the list ranking the schools' performance levels, obtained from the Department of Education. This sub-group included three schools from a similar area or location, which included a high, medium and low performance ranked school, with similar number of learner enrolment figures.

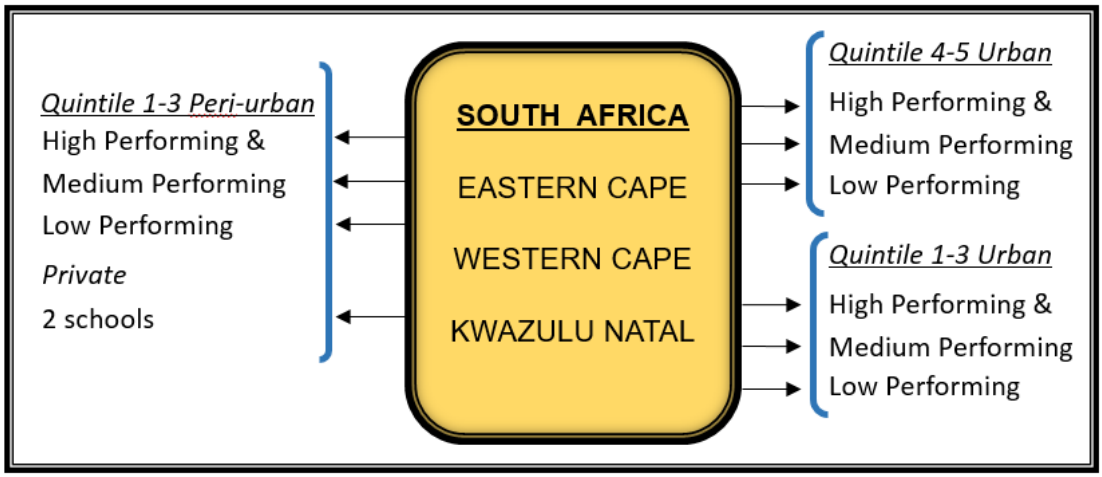


Figure 1.6: Sampling outline.

The determination of the sample size depended on the principals, teaching staff and senior learner complement at the school, but the researcher did attempt to ensure the smallest subgroup contained sufficient sampling units (50% of the staff) so that accuracy and reliability was maintained. Allowance was also made for the non-response factor.

Permission and ethical approval was obtained from all the necessary persons prior to commencement of the research study. Persons included the Provincial Departments of Education (Appendix 2A, B and C), Nelson Mandela Metropolitan University ERTIC committee (Appendix 3) and Principals of participating schools and educators or schools staff (Appendix 4 and 5).

1.10.6 Data analysis

Statistical analysis utilised both descriptive and inferential statistics as well as multiple regression analysis (MRA) and structural equation modelling (SEM) was conducted on the quantitative data by a qualified statistician, utilising a Microsoft Excel Statistics programme. Statistica Version 10 (2010) and Amos (SEM) were the statistical packages used in analysing the data. Descriptive statistics were undertaken on the biographical information (Section A) of the measuring instrument (Appendix 1).

1.10.7 Validation and Reliability

Validation strategies used in this study include triangulation, peer review and refining hypotheses as the research study evolves (Creswell, 2007).

The following strategies were utilised to ensure reliability and validity:

- The designed questionnaire was piloted at a secondary school and with a group of educators.
- Respondents were well briefed before the survey via the principal and an information letter, to ensure clarity as to any ambiguity in meanings of any questions or terms. The positive impact of the study was communicated orally and in a written communication to the participating schools.
- Confidentiality was guaranteed and no school or persons were identified in the reporting of this study.
- Certain metrics of indicators from literature were utilised within the developed questionnaire so that internal validity and reliability of the designed questionnaire could be tested. The theoretical models were developed from the literature review theory and research in this area.

1.10.8 Limitations of the study

The limitations of this study were the availability and access to the schools and the response rate of the participants, which limited the number of secondary school units analysed. The sample of respondents was limited to the principal, educators, management teams and administrative workers. The study aimed to study three urban and three townships (peri-urban) secondary schools in the Eastern Cape, Western Cape and KwaZulu-Natal, but access to many township schools was often difficult due to unrest in some of the areas.

1.11 PRELIMINARY SELECTED LITERATURE REVIEW

1.11.1 Effective school improvement plans

Educational systems can be described in terms of a context-input- process-output model as outlined by Scheerens (2000). The educational indicators, defined as “measurable characteristics of the educational system” can therefore be categorised into these key aspects. An example of a broad, causal comprehensive model of school and teaching effectiveness is outlined in this study (Figure 1.7) and provides the researcher with a fundamental basis of the employment and selection of key process-

indicators that have the function of offering explanations of effective schooling systems.

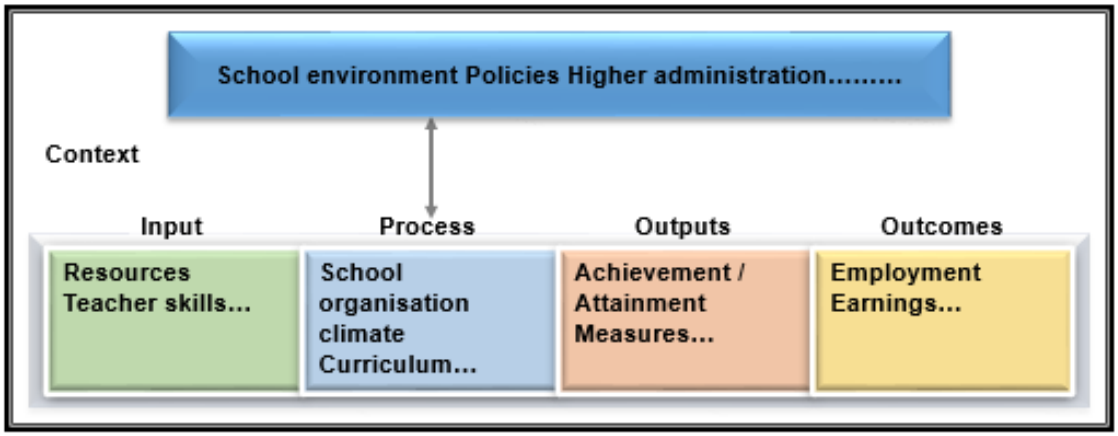


Figure 1.7: A model of schooling Context-input-process-output (Source: Scheerens, 1990, p.61).

Many case studies and research have been conducted utilising this model (Hopkins, 2001). Integrating the multiple contexts, levels and multiple indicators in educational systems using a meta-analytical approach may be a way of identifying the broader set of indicators that contribute towards educational outcomes (Sivasubramaniam, Liebowitz and Lackman, 2012).

Many recent school improvement plans (SIP) and strategies have been focused on the capacity of schools to transform themselves into more supportive teaching and learning environments. The strategies and interventions to improve learning outcomes, often called “comprehensive school reform”, are focused on needs assessment and SIP’s in many countries (Fernandez, 2011; Caputo and Rastelli, 2014). In a study on school improvement plans, undertaken on 248 secondary schools, results showed differences in planning strategies. Better school improvements were associated with a careful analysis of the context, prioritisation of key elements in the diagnostic phase of the process and detecting specific improvement goals (Caputo and Rastelli, 2014). This model serves as a basis of the research design for the background for this study.

1.11.2 Positive approach in educational context

Positive attitudes and motives toward school have been shown to translate into high academic performance and lifelong learning (Schneider, 2000). Studies on effective schools should not just be measured on percentage pass rates, but on the level of engagement and enthusiasm about teaching and learning. Research shows “good” schools are defined as those that include an articulated and shared vision of the schools purpose and goals, those that focus on the individual learner and those that prepares the learner for life with a community perspective (Maehr, Midgley and Urdan, 1992).

Five widely valued organisational-level virtues are identified in the Positive Organisational Strategy (POS) approach (Cameron, Dutton and Quinn, 2003). These are:

- purpose (a shared vision of purpose and goals, reinforced by actions);
- safety (protection against danger, threats and abuse or exploitation);
- fairness (equal rules in governance of rewards and punishment and consistency);
- humanity (genuine care and concern and communication);
- dignity (treatment with respect to all).

1.11.3 Educational process indicators or critical enabling factors

The educational indicators selected for this study were obtained from the preliminary literature review and the researcher’s pilot study (Gibbs, 2013). Results of this multidimensional research showed that, for high performance of the school operational teams, the following indicators were important. In the multiple linear regression (MLR) of all the selected indicators a R^2 value of .774 ($p < .0005$) was obtained for the four enabling factors: Leadership, Motivation including Engagement, Communication High Quality Connections (HQC) and Strategy. The importance of aligning your vision and mission of your school to be infused into all levels of operation, was an important observation.

There was a high correlation between the School High Performance Work Index (SHPWI): Innovation, Educator experiences, Fairness, Leadership, Learner Orientation and the Employee Engagement Index. This SHPWI was the researcher's own metric, developed from the research studies and HP Model of Boedker, Vidgen, Meagher, Cogin and Runnals (2011) and Wiley (2009). The Employee Engagement Index (EEI) was adapted from the business model by Kenexa (2010) and the best practices in the business field are detailed in the Kenexa World Survey Report (2012).

The four main process concepts, as termed in the Scheerens' process model (Scheerens, 2000) or enabling factors as selected for this research study were: Leadership, Educator Engagement/ Learner Engagement, Communication and Trust/Support. Certain selected literature is discussed below, to clarify and briefly define these main enabling factors and concepts. The full literature review, where all the factors are unpacked in more detail are discussed in Chapter two and three.

1.12 CONCEPT CLARIFICATION

1.12.1 Definition of terms and concepts

Since this study examines the effect of the different antecedents and enabling factors, or indicators, on the organisational effectiveness within the framework of Bronfenbrenner's ecological systems (Raymond and Pienaar, 2011) and the Scheerens process model (Scheerens, 2000), the terms in the systems model framework are discussed below. The variables of this research study in the conceptual model are further examined in the review of the literature in Chapters two, three and four, but a broad summary defining the key enabling factors is discussed below.

In this study, a school high performance work index measure (SHPWI) was adapted and used from the Kenexa business high performance index (Boedker et al., 2011; Gibbs and Poisat, 2013). This was chosen as one of the independent variables of this study. The main team enabling performance factors consisting of educator leadership (micro), educator team competencies (meso) and school milieu (macro) were examined as a team performance index (TPI). This was selected as the other independent variable. Different context secondary schools were sampled to ascertain the different effects on the dependent variables which was the effective performance

measured in organisational commitment and employee engagement. These enabling factors (SHPWI and TPI) were the independent variables. The mediating effect of trust and support, communication, and a leadership member exchange indicator were analysed. The effect of these independent variables on the dependent variables of organisational commitment and educator engagement was examined, as these two dependent variables are known and validated by many research studies to be positively linked to high performance and organisational effectiveness (Boedker et al., 2011; Wiley, 2010). The controlled variables included the regional and socio-economic status or quintiles of the schools.

This research study used the multivariate statistical structural equation modelling (SEM) created by Joreskog (1973). This process includes identifying a measurement model with unobservable (latent) variables and enabling factors from the literature review and then testing and analysing it. This hybrid data analysis technique is one of the dominant multivariate techniques used in contemporary research (Hair et al., 2006; Kline, 2005).

1.12.2 Leadership

Leadership is generally defined by Du Brin, (2010) as influencing others to work enthusiastically and purposefully towards a common organisational goal. South African leadership in schools has its own unique challenges and it is this brand of effective, transformational leadership that creates positive outcomes that must be studied. Educational leadership involves complex networks of relationships and multiple distributed leadership perspectives (Spillane, Halverson and Diamond, 2004). In a study of teacher- team and distributed leadership, it was concluded that it is critical that leadership is conceptualised in terms of interaction and that the distributed leadership style occurs at all levels of the organisation. Educators need to be aware of the conversational dynamics leading to high or low performance. Principals must establish clarity of purpose with mission and vision strategies that parallel with levels of autonomy, so that outcomes of effective organisational performance and team engagement and innovation are achieved (Scribner, Sawyer, Watson and Myers, 2007). Leadership styles and skills that assist in organisational effectiveness in our

school management teams, must be encouraged and developed (Bagraim et al., 2011).

The diversity of thought, over the years, regarding leadership provides support to the viewpoint that leadership styles and behaviours in Africa are unique and distinctly different from other parts of the world. Many studies propose that engaging with these integrating and disintegrating dynamics is essential in understanding the positive leadership behaviours in leadership in Africa (Jackson, 2004). Since there is a strong link between African culture and leadership behaviour (Kuada, 2010), it is imperative to integrate the consideration of the cultural context within which the leadership and management is practised. Effective leadership development interventions must take cognisance of the macro cultures of African societies as these inform goals, strategies and relationship decisions which contribute to the organisational effectiveness.

As stated by Kuada (2010) more research studies need to be undertaken to address the issue of what types of leadership styles in the African context will improve organisational performance. There appears to be very few research studies on educational African leadership models linked to outputs in secondary schools. This presents a research opportunity to outline a new blend of leadership that could be successfully role-modelled into educational contexts through a set of guidelines/ strategies.

Leadership development strategies such as cross-vergence (Jackson, 2004) and hybridisation (Kuada, 2006) must be studied with respect to organisational performance in an educational and cultural context. Leadership effectiveness is contextual and research by the GLOBE study established, empirically, nine cultural dimensions that capture similarities and differences in societies. These are power distance, uncertainty avoidance, humane orientation, institutional collectivism, group collectivism, assertiveness, gender inequality, future orientation and performance orientation (House et al., 2004).

The Multiplier effect was researched and the five vital disciplines as described by Wiseman were examined. Characteristics of a “diminisher” to a “multiplier” were outlined by Wiseman and Foster (2015). The diminisher is described as a

micromanager whilst the multiplier is an investor. This will be discussed further in Chapter three.

The multiplier effect may be a useful way to examine educational leadership since it utilises a binary measure that can oscillate along a continuum. Another binary category of leadership is the contrast between solo (traditional or hierarchical) and distributed leadership. In recent research conducted by Townsend in 2015, a more sophisticated approach of a consideration of educational leadership, as a hybrid activity and one that spans school networks, are proposed. In the modern world, there is an increasing individualistic approach (Veugelers and Zijilstra, 2005; Townsend, 2015) and arising from this is the unsatisfied need for interdependence (Hadfield and Chapman, 2009).

The researcher agrees with Gronn (2010) and Townsend (2015) that, to understand leadership in this complex situation, one needs to examine the "configuration of leadership", a perspective of hybridity that denotes a combination of two or more concepts or activities, specific to the context in which the school leadership is being examined. This concept of hybridity has been studied by a number of researchers (Margolis, 2012; Ngcobo and Tikly, 2010) which will also be discussed further in Chapter three.

Since a wide range of constructs are used to describe the operation of educational leadership, the hybrid leadership, in context of a South African situation, needs to include the different cultures. It is crucial that inequalities are objectively addressed and differences and indigenous actions recognised, in order to benefit creatively the way leadership is expressed within our different cultures. This does not only benefit Western leadership theory but can expand, refresh and offer new models applicable for societal change.

"Africans have this thing called UBUNTU. It is about the essence of being human; it is part of the gift that Africa will give the world. It embraces hospitality, caring about others, being able to go the extra mile for the sake of the others." Archbishop Desmond Tutu (Mbigi, 1997, p.1). This element is closely linked to the concepts of engagement and high quality communication, which are discussed in the next sections.

1.12.3 Engagement

A definition of engagement is “the psychological and behavioural outcomes that lead to better performance” (Merry, 2014, p. 24). Numerous studies have shown that an engaged workforce has a large positive effect on the organisational performance (Poisat, 2006; Boedker et al., 2011; Merry, 2014).

To assist organisations to drive their organisational performance Kenexa utilised the Employee Engagement Index (EEI) which asks employees the following four item questions and to what extent they agreed (Wiley, 2012).

These fell into the categories of Pride, Satisfaction, Advocacy and Commitment respectively.

- I am proud to tell people that I work for my organisation.
- Overall, I am extremely satisfied with my organisation as a place to work.
- I would gladly recommend a good friend or family member to my organisation for employment.
- I rarely think about looking for a new job with another organisation.

In this Kenexa research, which spans the last twenty years, data was gathered and analysed and in the Kenexa World Survey Report (2012) several “best practices” were detailed and identified as being critical in improving employee engagement in organisations. These are: publishing of the organisation’s mission, vision and values and strategies, sponsored training to improve quality in the organisation, conduct regular employee surveys and performance appraisals, gather feedback and share responses and cross train employees to perform jobs across disciplines.

The Aon-Hewitt Model (2014) uses the following engagement drivers as areas over which management has a great deal of control:

- Work they do (Empowerment, Tasks, accomplishment)
- People they work with (Leadership, Supervision and Team Collaboration)
- Opportunities (Career, Learning and Development)
- Total rewards (Reputation, Recognition, Benefits and Pay)

- Company Practices (Communication, Enabling infrastructure, Innovation, Customer focus, Diversity & Inclusion, Performance Management, Talent & Staffing)
- Life Quality (Safety, Job Security & Work/Life Balance)

The behaviours that are outcomes of these engagement drivers are SAY (speaking positively about the organisation to others), STAY (intense sense of belonging and desire) and STRIVE (motivated and exerting discretionary effort) (Merry, 2014). The researcher aligns this study with the engagement model of Poisat (2006) as the engagement of the educator is framed by the organisational leadership and organisational culture in Poisat's integrated engagement model (Poisat, 2006).

In this thesis, the researcher used a combination (hybrid) measure of engagement using the above theoretical models: Kenexa, Aon Hewitt and Poisat Models. These are outlined and discussed in more detail in Chapter three.

1.12.4 Communication and High Quality Connections (HQC)

Within the positive organisational scholarship (POS) approach the focus on the quality of the connection between people at work is pivotal in understanding organisational behaviour (Cameron, Dutton and Quinn, 2003). It is the High Quality Connections, (HQC's) that enliven people, provide that growth-fostering connection and enable knowledge transfer. HQC are the short-term positive interactions that can be experienced when someone expresses genuine concern for you (Dutton and Heaphy, 2003). Two clusters of connection-quality indicators are the *positivity of the emotional experience* of each individual in the connection. The second is the *potentiality and responsiveness* of the connection (Stephens, Heaphy and Dutton, 2003). This has been documented by researchers who study positive organisational network analysis, PONA (Baker, Cross and Wooten, 2003).

Communication is the linking process indicator between all school team members and research has shown that where there is open communication there is a higher level of trust and collaboration, breeding innovative and higher performance levels, which strengthens organisational commitment and performance. Structural design that emphasises functional differentiation, hinders openness in communication. However,

when teams are interdisciplinary and not within silo's, there is cross departmental communication which serves to create a committed, engaged and enriched communication environment (Cardno, 2002).

The significance of this, in examining the school operational teams in secondary schools, is to establish the level of open communication in the high, medium and low performing schools. Effective open communication which strengthens commitment and trust, as well as cascading into innovation and higher performance, is certainly seen to be an important enabling factor to drive effective operations in the interdisciplinary school teams. In this research study the level of open communication and high quality connections is one of the metrics analysed across the range of high to low performing secondary schools.

1.13 CONCEPTUAL MODEL

The literature review highlights many models and approaches that enables the researcher to establish an integrated theoretical framework. This is based on a number of well researched business models and a pilot study by the researcher (Gibbs, 2013).

The variables (Independent (IV); Dependent (DV) and Mediating (MV) selected for this research study, are briefly outlined in Table 1.2.

Table 1.2: Key Factors/Indicators and variables for the conceptual framework.

VARIABLE	FACTORS/INDICATORS	CODE
IV1	Enabling Team Performance Index	ETPI
IV1A	Staff Perception of Leadership of Superior	ELSH
IV1B	Staff Team Competencies	ETCE
IV1C	Staff Culture Alignment	OCAL
IV2	School High Performance Work Index	SHPWI
IV2A	Innovation Potential	INNO
IV2B	Employee Experience	EEE
IV2C	Fairness	FAI
IV2D	Hybrid Leadership style rating	HLSH
MV1	Trust and Support	TR SU
MV2	Leader Member Exchange	LMX
MV3	Communications and HCQ	COM
DV1	School Organisational Commitment	OCQ
DV2	Educator Engagement Educators Perceptions of Learner Engagement	EENG EPLE
DV3	Grade 12 % Pass Rate	GPR

For SEM, the literature review should develop the conceptual framework, as is outlined in Table 1.2. The relationships and linkages between the key independent indicators/variables are outlined as below, but are further elucidated and unpacked in Chapter two, three and four, where the literature sources for each enabling factor are also shown.

Independent Variables:

IV1: Enabling Team Performance Index (ETPI)

IV1A Staff Perceptions of Leadership of Superior (ELSH)

IV1B Staff Team Collaborative Competencies (ETCE)

IV1C Staff Culture Alignment (OCAL)

IV1D Trust level (TRU)

IV2: School High Performance Work Index (SHPWI)

IV2A Innovation Potential (INNO)

IV2B Employee Positive Experience (EEE)

IV2C Fairness (FAI)

IV2D Hybrid Leadership Style Climate Rating (HLSH)

IV2E Support (SUP)

IV2F Communication (COMM)

Mediating/Intervening Variables:

MV1 Leader Member Exchange Index (LMX)

MV2 Infrastructure (ISE)

MV3 Educator perception of Learner Engagement (EPLE)

Dependent Variables:

DV1 Educator Engagement (EENG) including Employee Engagement (ENG)

Work Engagement (WEN)

DV2 Organisational commitment (ORGC)

Controlled Variable /(DV3): Grade 12 % Pass Rate (GPR)

1.14 CONCEPTUAL MEASUREMENT AND STRUCTURAL MODEL

These variables (IV and DV) are linked together to show the theoretical conceptual model/framework being tested in this research study in a conceptual path diagram. A path diagram is a graphical depiction of a theory, relating measure and possible latent variables. The term latent means unobservable and represents a factor, hypothesised to have a causal bearing on one or more of the measured variables (Mueller and Hancock, 2010). A proposed conceptual model, which is a graphical depiction of a theory that relates the measures between the possible latent variables of the structural conceptual model, is presented in Figure 1.8.

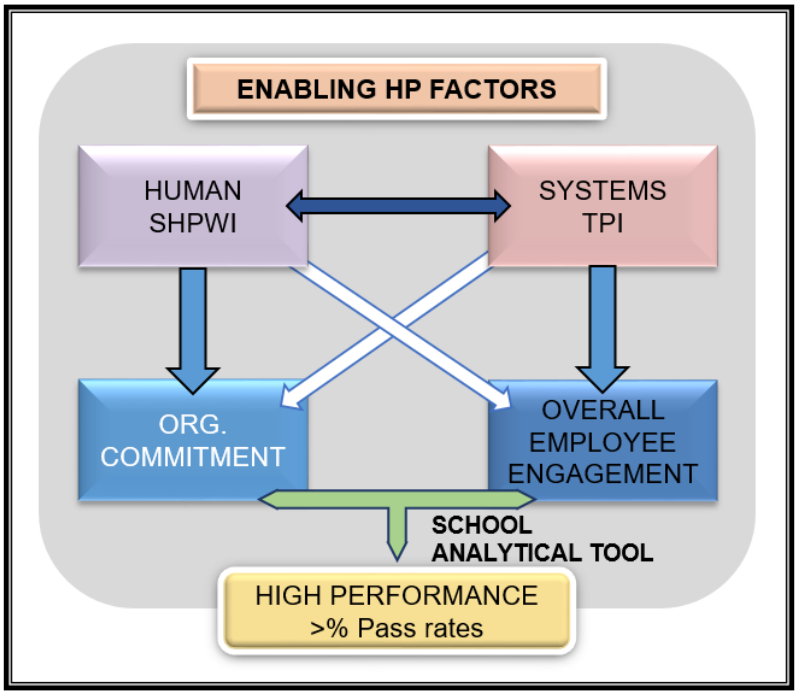


Figure 1.8: The conceptual model showing the main variables (Author's own construct).

These were linked in relation to the outcome dependent indicators/variables in school operations aspect DV1: Educator Employee Engagement, DV2: Organisational Commitment, which are two standard literature metrics and the DV3: Grade 12 pass rate, which is an outcome controlled variable (High, Medium or Low performing in Grade 12 average over three years' academic percentage), as the sample was selected to include schools in these three groups.

In this research the model involves structural relations among the latent variables. A two phase analysis (measurement analysis then a structural analysis) was followed and summarised. At least two to three items per factor were utilised and in most cases three to five indicators were chosen as measured indicators. These variables are further detailed in chapter five and the literature linkages with the theoretical models are shown. The main variables/indicators used in this research study are outlined as follows.

Table 1.3: Summary of the enabling factors selected as variables in this research study.

Enabling Factor	Sub-factors
Team Performance Index (TPI)	Staff Collaborative Competencies(ETCE) Staff Culture Alignment (OCAL) Staff perception of Leadership of Superior (ELSH) Trust level (ETRU)
School High Performance Work Index (SHPWI)	Innovation Potential (INNO) Employee Positive Experience (EEE) Fairness (FAI) Hybrid Leadership Climate (HLSC) Support (SUP) Communication (COMM)
Organisational Commitment (ORGC)	
Overall Employee Engagement(EENG)	Employee Engagement (ENG) Work Engagement (WEN)
Infrastructure (ISE) Educators perception of learner engagement (EPLE) Percentage Pass Rates Context and Quintile	

1.14.1 Hypotheses

The theoretical framework is an integrated one and therefore underpins the hypotheses that were formulated. Hypotheses were linked with individual or cluster variables and the null hypotheses were proved or disproved by statistical analytics. These hypotheses are all discussed and detailed in Chapter four and five.

The **general hypothesis of this research study (H_{G1})** is that there is a positive relationship between the enabling factors and the effective organisational high performance of the school operational teams in secondary schools.

Enabling factors $\xrightarrow{H_{G1}}$ Effective High Performance.

The null hypothesis is that there is no relationship between the enabling factors in driving the high performance of the school operational teams.

Enabling factors $\xrightarrow{H_{G0}}$ No effect on performance level.

1.15 ETHICAL MEASURES

Ethical approval was obtained from all the necessary persons prior to commencement of this research. Application was made to the Department of Education for permission to approach schools for this study (Appendix 2A, B and C), followed by the approval by the Ethical Research Committee of Nelson Mandela Metropolitan University: Ethical Clearance Number: **H14-BES-BUS-074** (Appendix 3). Permission letters were required from all principals of the participating schools, as well as voluntary consent of participation of each educator (Appendix 4 and 5). The respondents were well informed and their participation was voluntary. The data was only used for research purposes and confidentiality of schools, individuals and all interview and survey data was maintained.

1.16 STRUCTURAL OUTLINE OF THE STUDY

The thesis layout is shown in a roadmap outline indicating the linkages of the chapters in Figure 1.9 below.

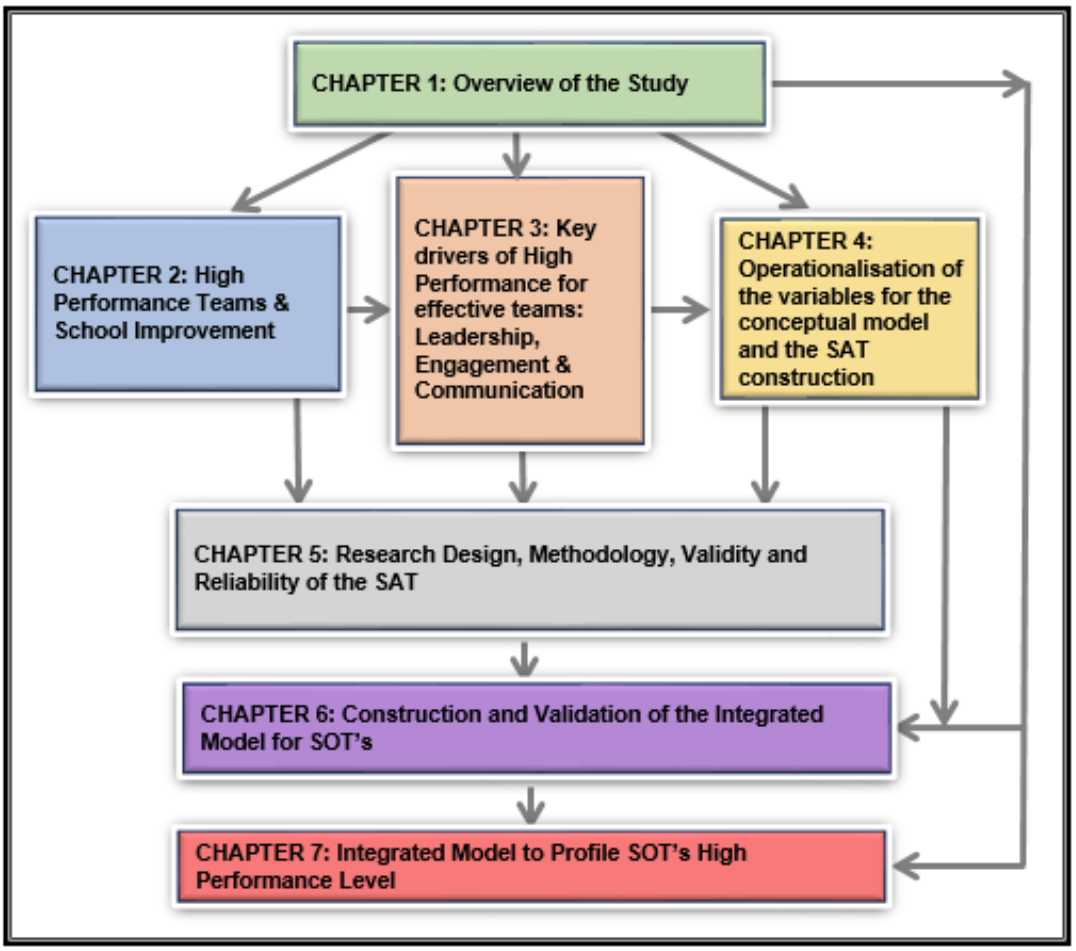


Figure 1.9: Roadmap of the research study

This research study comprises seven chapters, which are briefly outlined and linked to the research questions and objectives of the study as shown below in Table 1.4.

Table 1.4: Chapters linked to the research questions and objectives.

CHAPTER	Research Question (RQ)	Research Objective (RO)
2.	RQ_1, RQ_2	RO_1, RO_2
3.	RQ_2, RQ_3	RO_1, RO_2, RO_3
4.	RQ_2, RQ_3, RQ_4	RO_4, RO_5
5.	RQ_4, RQ_5	RO_4, RO_5, RO_6
6.	RQ_4, RQ_5, RQ_6, RQ_1	RO_6, RO_7
7.	RQ_{1-6}	RO_{1-8}.

Chapter 1: **Overview of the study**: Introduction, general outline and orientation of the study and its positioning in the research field of educational management and leadership. The purpose, research questions and objectives are outlined with a brief summary of the methodology, preliminary literature review and the thesis structure.

Chapter 2: HP teams and School Improvement Plans: This chapter discusses high performance teams and the enabling factors in research studies that have an impact on effective organisational performance, both in the business and the educational environment. It addresses the research questions RQ_1 and RQ_2**,** as well as the research objectives RO_1 and RO_2.

Chapter 3: Leadership, Engagement and Communication: In chapter three a literature review of the main enabling factors examined in this research study, within the context of both the business and school environment, is outlined. This chapter highlights the relevant studies researched and the trends in both global and local sectors related to the research questions RQ_2 and RQ_3**.** It also addresses the research objectives RO_1, RO_2 and RO_3.

Chapter 4: Operationalisation of the variables for the Conceptual Model: The preliminary proposed conceptual model based on the macro and micro groups of theoretical frameworks, is formulated and hypotheses stated. The literature with the supportive theoretical frameworks and models are outlined and discussed to support the hypotheses. Variables are defined and operationalised and the proposed conceptual model is outlined. Research questions RQ_2, RQ_3 and RQ_4 and the research objectives RO_4 and RO_5 are addressed in this chapter.

Chapter 5: Research design, methodology, validity and reliability of the SAT: This chapter focuses on the research design and methodology selected in this research study to address the main research problem, questions and objectives, which were outlined in chapter one. The preceding chapters all form the basis from which the survey instrument is designed and the data gathered and analysed. The discriminant validity of the survey instrument is discussed and the confirmatory factor analysis (CFA) of the sub models shows how the final proposed conceptual model

was constructed. Research questions RQ_4 and RQ_5 and research objectives RO_4, RO_5 and RO_6 are addressed.

Chapter 6: Construction and validation of the Integrated Model for SOT's: The results of analysis of the data are reported in this chapter. The inferential statistical results are presented and the descriptive statistics are analysed and discussed. The Confirmatory Factor Analysis (CFA) and Structured Equation Modelling (SEM) analysis and validation of the measurement part of the proposed model are outlined and discussed. It examines the SEM models proposed and compares the three models from a statistical and theoretical perspective. It discusses and outlines the SEM process and examines the sub-models A and B. The chapter concludes by selecting the best fit model as the integrated whole revised conceptual model that complies and is validated both statistically and theoretically. Research questions RQ_4 and RQ_5, RQ_6 and RQ_1 and research objectives RO_6 and RO_7 are addressed in this chapter.

Chapter 7: Integrated Model to profile SOT's high performance level: This final chapter focuses on the research process throughout the preceding chapters and links back to the original research problem and questions. The final revised proposed conceptual model, which has been developed and refined through the research process of this study, is presented. A theoretical diagrammatic form is also frame-worked and proposed. Possible future research aspects are outlined and the value and use of the research study is shown by profiling schools in the different regions of South Africa. These results are analysed using one-way ANOVA and are discussed. Finally, recommendations and conclusions are drawn and examples of the practical applications and use of the SAT are shown, to profile both high and low performing schools. This diagnostic tool can address the problem of identifying performance gaps and thereby assist with focused strategies and SIP's to achieve effective higher performance school teams in secondary schools. Research questions RQ_{1-6} and research objectives RO_{1-8} are addressed in this final chapter.

1.17 SUMMARY

This chapter outlined an overview of the research study, stated the research problems, objectives and questions, leading to the formulated thesis statement. In Chapters two

and three the literature overview and focus on the relevant theory concerning the key enabling factors that impact on the high performance of teams and organisational effectiveness. In Chapter two, the high performance teams and school improvement plans in South Africa are briefly outlined and discussed. In Chapter three, the leadership, engagement and communication factors including other enabling factors from literature research studies, are discussed and compared, both in the global and South African context.

Chapter two will therefore address the literature review in the field of the high performance teams and the enabling factors in literature research studies that have an impact on effective organisational performance.

CHAPTER TWO

HP TEAMS AND SCHOOL IMPROVEMENT PLANS

2.1 INTRODUCTION

In this chapter the literature review of the domain of high performance teams (HPT's) and the enabling factors that drive or impact on effective organisational performance, will be examined and discussed. The characteristics and enabling factors that drive HPT's from various research studies, in various contexts, will be analysed with the main focus being in the educational leadership field. School improvement strategies and plans are briefly examined. The purpose of this chapter is to address the research question RQ_1 and RQ_2, as well as the research objectives RO_1 and RO_2, which examine the key enabling factors that affect the effective operations of school operational teams and the significant relationships and linkages between them.

> *"To achieve high-performing teams, you must treat them as individual people. Individuals are engaged when they feel like their effort and opinions are valued and they are rewarded for their individual contribution."* (Wilder, 2011, p. 1).

> *"What sets apart high performance teams, however, is the degree of commitment; particularly how deeply committed the members are to one another."* (Katzenbach, 2000, p. 110).

Within our dynamic changing educational environment, it is crucial that our school organisations are adaptable and flexible yet able to utilise their full potential and intellectual human capacity in a cross-functional, highly connected way to improve organisational effectiveness and performance (Irani and Sharp, 1997; Curtis and City, 2009). In recent research by Mitchell and Sackney (2015), on high-capacity learning community schools, it was established that schools operating as living systems rather than managed systems, provided a more conducive environment for authentic leadership and instruction, where effective teaching and learning flourished. The researcher aligns with the viewpoint of Darling-Hammond, Meyerson, La Pointe et al. (2010); Pinar (2012) and Mitchell and Sackney (2015), where the highly effective schools built an environment which reflected an ontological approach framed in

"organisations as living-systems" approach rather than "organisations as machine" approach.

Following from the organisational theory of Burns (2007) and Wheatley (2007), it is argued by Mitchell and Sackney (2011), that there are *managed systems and living systems*. The managed system positions schools within a hierarchical leadership and learning process, restricted by curriculum and outcome measures, through centrally created structures. This limits the sharing of practice and purpose and there is little time for creativity, innovative thinking or personal directed learning (Pinar, 2012). In a living system, however, education and life-long learning are recognised as natural features of life. The unique capacity of each individual is respected and, if the curriculum is rooted in this connection between living and learning, educators can bring meaning and authenticity even to an imposed curriculum (Pinar, 2012).

Traditionally the dominant frame work in which schools operate has been the managed system and standards become the primary consideration. The human interaction and the people disappear from the equation. In managed systems, effective practice is defined by "best practice" rather than with reference to the outcomes of the actual practice. Human interactions are governed by the social structures and not the social relations. As stated by Mitchell and Sackney (2015, p.3), "if people are foregrounded in the ruling relations of schools, schools can function as living systems. If structures are foregrounded, the school is likely to operate as a managed system."

2.1.1 Theoretical framework

Bronfenbrenner's ecological systems model (1979) is a living systems holistic approach and considers all aspects which have an influence on the school teaching and learning development (Raymond and Pienaar, 2013). This model aligns with the living system in that it acknowledges the individual and his constant interaction with various systems within his social environment (Donald, Lazarus and Lolwana, 2011; Dreyer, 2012; Ntombela and Raymond, 2013). According to Swart and Pettipher (2005), these direct and indirect influences can occur on four levels; micro-, meso-, exo-, macro- and chronosystems.

The theoretical frameworks discussed in this introduction encompass the viewpoint or stance from which the researcher began this research study. It includes the basic organisational model outlined by Robbins, Judge, Odendaal and Roodt (2014), the organisational effectiveness model of Cameron (1986) and Bronfenbrenner's ecological systems model (Raymond and Pienaar, 2013). This examines the school as a living system at the individual, team/group and organisation level and is discussed further in Chapter three.

2.1.2 Research problem statement and key constructs

In Chapter one the main research question was stated as follows:

What enabling **team performance factors, indicators and strategies** are required to optimise the performance of the secondary school operational teams with regard to the **outputs in teaching and learning and high performance?**

This is linked to the research statement for this study: *The development of a model that analyses the linkages between **leadership approaches, communication and engagement** within secondary schools that can be used to create **higher team performance and effective teaching and learning i**n secondary schools in a South African context.*

In this study of the relationships between the enabling factors of **leadership, engagement and communication** for **effective performance**, the key concepts are reviewed, defined and discussed. In the previous paragraph the researcher's viewpoint on the main theoretical framework of effective outputs as described within a living system, was discussed. As it is imperative to identify the human soft skills in the inter-relationship of the whole school operational teams, the researcher has adopted a systems approach, with regard to the school operational teams within this research study.

The main key constructs selected, therefore, for the literature review, were:

- High performance teams (HPT) and enabling factors in the school context;
- School improvement programmes and organisational effectiveness;

- Leadership;
- Engagement;
- Communication, trust and support.

This chapter addresses the High Performance teams and enabling factors, as well as School Improvement Programmes and Organisational effectiveness. These constructs are then defined and discussed and various research studies from literature are included in the discussion. The key constructs of leadership, engagement, communication, trust and support, organisational commitment, school milieu and team performance are then outlined in Chapter three.

2.2 HIGH PERFORMANCE TEAMS AND ENABLING FACTORS

To start the discussion on high performance teams, the construct is defined and a brief overview of frameworks, characteristics and different applications and research studies are described. Lastly, the linkage of high performance teams and the critical enabling factors, that were chosen for this study, are outlined within certain research studies conducted in the educational context.

2.2.1 Definition and concept clarification

According to Boedker, Vidgen, Meagher, Cogin, Mouritsen and Runnals (2011, p.4) “high performing organisations prioritise people management as a key strategy”. This research study used the High Performance Workplace Index gathered from over 5600 Australian employees and showed that these business organisations are not only more profitable and productive, but they perform better in all the soft skills or “intangible assets”. Not only were they far more productive but they encouraged innovation and creativity, created a fair workplace environment and have a strong commitment to the leadership of their people.

This research carried out by a cross-disciplinary team of researchers worked with 78 Australian organisations to identify and analyse what constitutes a high performing workplace. The participating organisations were from the Australian services sector and thus measurements of their intangible assets reflected important insights. The high performing workplaces (HPW) out-performed and had higher levels than the low

performing workplaces (LPW) on their innovation potential, employee experience, fairness and leadership capabilities. In an analysis of the management practices, sorted by strength of correlation, the top four were: Participation in Decision Making (0.759), Participation in Strategy and Planning (0.688), Skills Utilisation (0.665) and Participation in setting targets (0.631).

All of the 18 measures in the High Performance Work Index are scaled to fall between 0 and 100. Items were captured using seven-point Likert scale measures. In reporting the HPW index the focal category was controlled for. So, for example, in reporting leadership a HPW index that included only the remaining categories, therefore showed which organisations are higher performing and which are lower performing when leadership is excluded (i.e. controlled for). Limitations in this study included common method bias or spurious co-variance.

Katzenberg and Smith (1993) define a team as a group of people with complementary skills who are committed to a common purpose, set performance goals and hold themselves mutually accountable. More recently, the definition of a team resides in co-operative behaviour to achieve the goals of their stakeholders (McIntyre and Salas, 1995) and groups that show a community of practice. According to Marquardt, Seng and Goodson (2010, p. 242), the team can be defined as a “group of willing individuals who are united around a common goal, interdependent on each other, structured to work together, sharing responsibility for team tasks, and empowered to implement decisions.” It is known that effective well-functioning teams are more capable than any other organisational structure to deliver performance and achievements that far exceed the cumulative performance of the collective individual’s work. The importance of these teams has been well documented (Reagens and Zuckerman, 2001; Coutu, 2009) and many theorists have outlined the characteristics present in these successful teams (Hackman, 1990, 1992, 2004; Lencioni, 2007). Eight characteristics were identified by Marquardt, Seng and Goodson (2010, p. 243) as being “most critical enabling factors” for successful teams. These are “clear and meaningful goals, explicit positive norms, strong interpersonal and communication skills, competence and commitment in problem solving and tasks, trust, openness and group cohesiveness, ability to manage conflict, shared leadership and accountability and continuous learning and development”.

Colenso (2000) describes the teams that show excellent interpersonal skills, participation, decision making, creativity and the ability to effectively manage the external environment, as high performance teams (HPT). It is argued that it is a strong sense of commitment which distinguishes the ordinary team from the high performance team (Katzenbach and Smith, 1993).

Since it is imperative to operate effectively in a school team environment and to achieve organisational success, it requires a focus on leadership practices and development of high performance teams. One must understand and identify the drivers, or enabling factors, of energised and productive leadership and organisational practices to catalyse this high performance, thereby developing a more effective organisation or school environment.

2.2.2 High Performance Team (HPT) models

According to the John Spence HPT competency model (Spence, 2012) the following factors are required to build a successful HPT: shared direction and clear measurable goals, team competencies, clear communication, mutual accountability, discipline, trust, respect, appreciation, strong commitment and a positive attitude. Leaders must be close to their team members, be role models and understand their members (Spence, 2012).

In the High Performance Model (Kenexa, Wiley, 2010, p.1) the four main components include “leadership practices, employee results (including communication, teamwork, engagement and retention), customer results and the overall business performance” (Figure 2.1). This model is based on research undertaken by Kenexa on 7,500 business units and shows the interdependence of all these constructs.

Figure 2.1: The High Performance Model (Wiley, 2010, p.1).

2.2.3 Research studies on effective or high performance teams

Teamwork is a well-researched concept and the focus is on three threads of research: (1) the teamwork skills of the individual team members, (2) the team process and (3) the team outcomes. It is imperative that these three lines of teamwork are addressed. For the first thread, Salas, Stagl and Burke (2007) present a model including the team knowledge, skills, attitudes and values. The second thread, the team process, is the connection and interaction between members, whilst the last thread is the team outcomes, which in this study would be the effective high performance of the school operational teams.

A recent research study conducted by Chrispeels, Burke, Johnson and Daly (2008) reported that school effectiveness was optimised when the school and the district

acted as co-ordinated units and the principal established school leadership teams (SLT's). The framework used in the above reported study was Leithwood et al. (2004), which regarded the four main leadership tasks as setting direction, developing people, redesigning the organisation and leading for social justice.

In another study on high performing school systems (Curtis and City, 2009) the researchers showed that there are three core competencies that were prevalent in these effective schools. These were a deep knowledge of learning, a clear aligned vision and effective resources and a theory of action and self-assessment strategies, along with the educator professional development.

In the South African education system, a significant development was made after 1994 to replace the notion of the principal being solely responsible for management and leadership towards a team approach with decentralised management structures. These included School Management Team (SMT) Learners representative council (LRC) and School Governing Body (SGB), which were established. This shift occurred from the hierarchical, top-down structure to a more transformational leadership (Aviolio and Bass, 2004) which stresses more participation and teamwork. This allows a more flexible participative management style within the organic living learning organisation. Concurrent with this development, evolved the de-emphasis on individual leadership and the rise of distributed leadership (MacBeath, 2005; Bauer and Bogotch, 2006) as well as site based management (SBM). Unlike the strong support and positive effects of this management through teamwork, there seems little evidence of this positive effect in site based management (SBM). According to Cheun and Cheng (1996, p.6) SBM "shifted the focus of accountability from the external to self-management".

Moreover, research showed that a "shift in thinking involving understanding the conditions or enabling factors necessary for teamwork, was critical for effective teamwork" (Walker, 1994, p.38). This is broadly outlined as structural and cultural. The **structural** support is the logistical arrangements and decisions needed in a school to accommodate effective teamwork. A hierarchical rigid organisation will not be conducive to promoting the attributes of team management involving creativity, flexibility and risk taking. Therefore, the organisation should move towards a flatter structure, with organic dynamic patterns, with a responsive school climate and

freedom to participate, with support both logistically and administratively. **Cultural** support and cohesion, as well as a sense of belonging, is a key characteristic of effective teams (Belbin, 2000).

Teacher teams have been introduced internationally as part of school improvement strategies, but often these are introduced in a top-down policy approach. Often the policy changes are introduced without the necessary training or coaching and the skills required to collaborate, manage conflict and manage teams effectively, are not developed. Many traditionally prepared educators lack the soft skills to work in new learner-centred classrooms, utilising an integrated curriculum or teaching in teacher teams with open classroom spaces, using new teaching strategies.

It is seen from the research studies that school improvement requires not only training and coaching in the new team skills, but aligned strategies and heuristics. These should be specifically devised to analyse the unique context in which the school exists. To improve organisational effectiveness and a positive high performance and engaged culture, the school will require applicable analytics so as to measure outcomes and behaviours. These will need to measure the relevant team constructs and profile the school so that the gap enabling factors required to create high performance teams and organisational effectiveness, may be identified and the necessary interventions implemented.

Research on effective team functioning in schools has been undertaken by research-practitioners including Haynes (2012); Chadbourne (2004) and Pendergast et al. (2005). There is a need for more empirical research studies to be conducted in this domain and to identify and analyse the characteristics and enabling factors that enhance and create these effective high performance teams.

2.2.4 Characteristics of HPT's

According to Bradstock and Desch (2008), the characteristics of HPT's can be outlined in the following model (Figure 2.2). These characteristics are group process, communication, contribution and interaction.

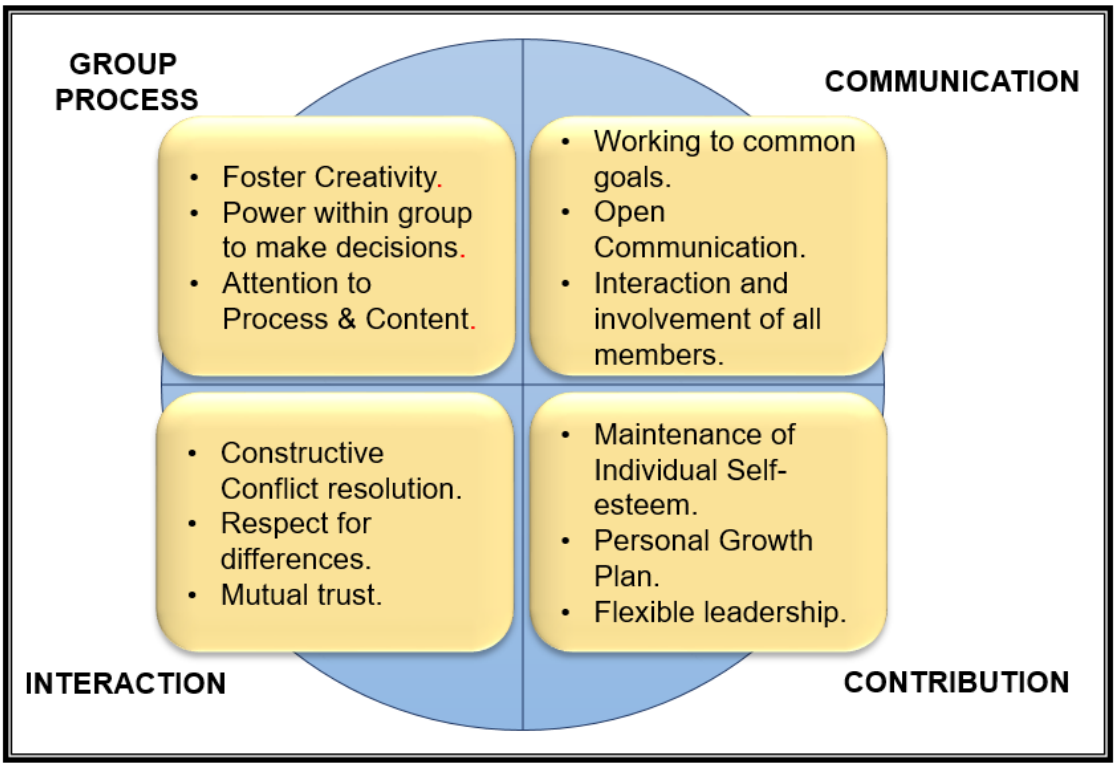


Figure 2.2: Characteristics of High Performance Teams (Bradstock and Desch, 2008).

This model is aligned with the High Performance Work Index (Boedker et al., 2011) as it has leadership (contribution), fairness (interaction), innovation potential (group process) and employee experience (group process). It is noted, by the researcher, that the communication characteristic was not included in the Boedker index.

In further models, communication is included, and the characteristics of HPT's in the SCORE model (Figure 2.3) shows the five main characteristics as:

Strategy (cohesive), **C**learly defined roles and responsibilities, **O**pen communication, **R**apid response and **E**xemplary and effective leadership.

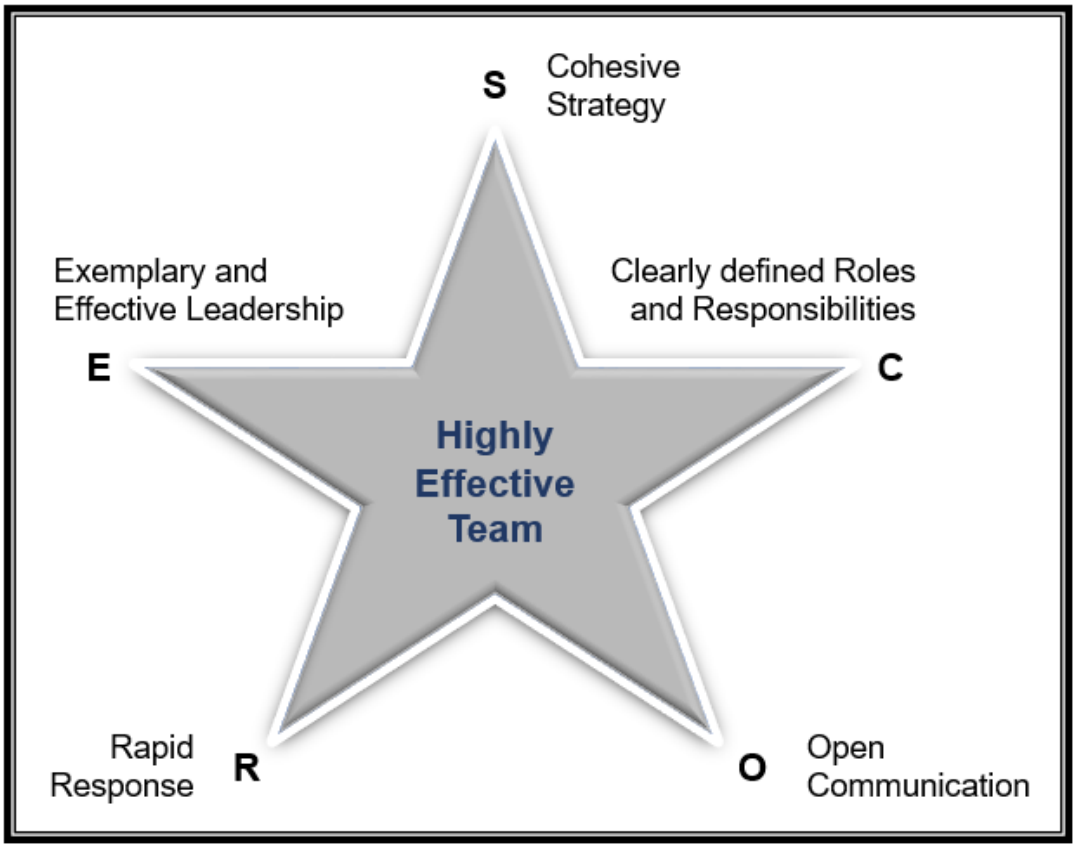


Figure 2.3: HPT SCORE model (Source: http://hri.my/wp/2014).

Another HPT model outlines eight possible characteristics of these collaborative teams. This is aligned with a number of viewpoints (Ricci and Weise, 2012; Boedker et al., 2011). These are: Participative Leadership, Purpose alignment, Task focus, Shared responsibility, Innovative, Problem-solving, Communicative and Responsive (Figure 2.4).

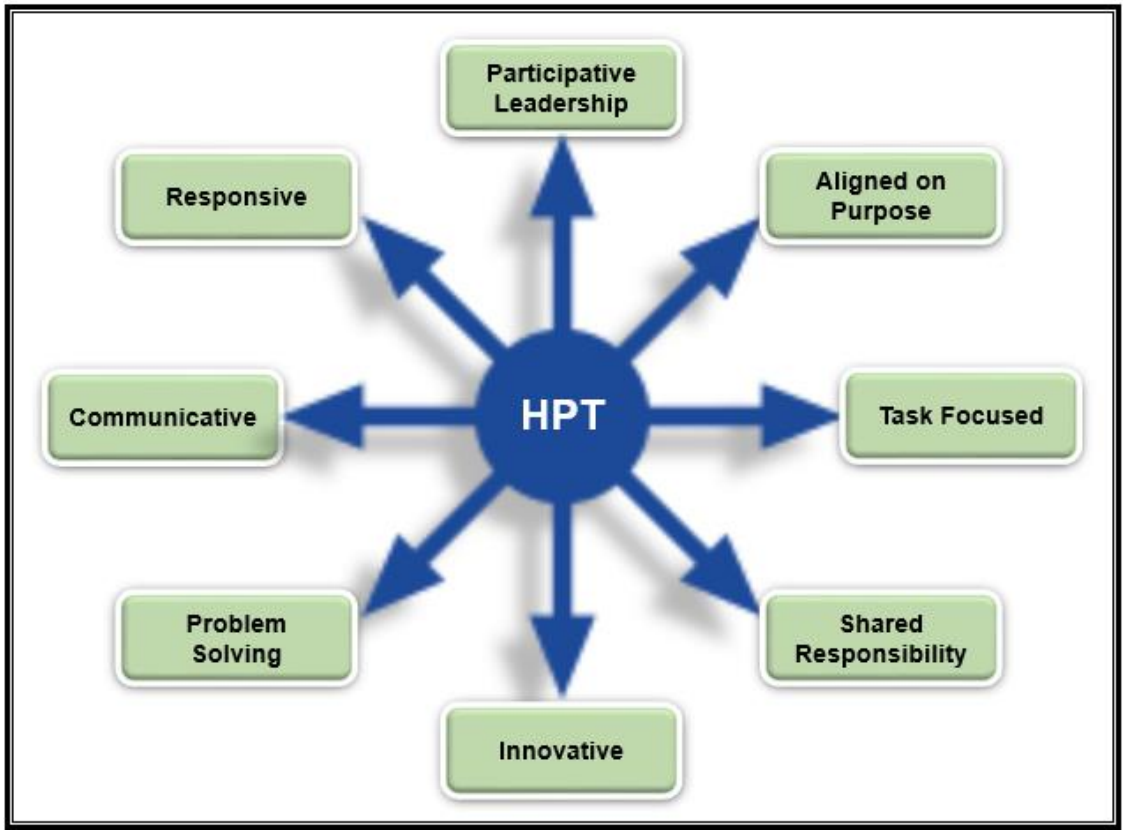


Figure 2.4: HPT characteristics (Source: http://www.themanager.org**).**

There are a number of common characteristics in many of these models, and these can be outlined as:

Leadership, Innovation, Engagement, Commitment, Common strategy, Positive organisational climate, Communication, Group Processes and Fairness.

2.2.5 Enabling factors of HPT's

Many researchers have tried to identify the key enabling factors related to team effectiveness (Hackman, 1987; Wageman, 2001; Katzenbach, 2000 and Bell, 2007). The team effectiveness model (Robbins, Judge, Odendaal and Roodt, 2014) shows four of the group categories that comprise the key components of effective teams. These are:

- *Contextual:* adequate resources and support, leadership, climate of trust and a performance evaluation and reward system reflecting team contribution.

Research in this area showed that organisational support has significant and positive relationship with organisational commitment, role clarity, experience and job security. A negative correlation was recorded with role conflict. In the South African context, research shows a positive relationship between leadership behaviour and organisational commitment, employee engagement and psychological empowerment (Stander and Tjeku, 2008). A climate of interpersonal trust facilitates co-operation and is the foundation of leadership of effective teams (Dirks, 2000; Williams, 2001).

- *Process:* Member commitment to a common purpose, specific goals, team efficacy, conflict and social loafing.
- *Work design:* Freedom and autonomy, opportunity to use skill variety, task identity and task significance. Research has shown that these enhance motivation and ownership of the work (Campion, Papper and Medsker, 2000).
- *Team composition:* Ability, personality, roles and diversity, size, flexibility and preferences for team work.

In recent studies the following factors were identified as contributing to high performance teams: Organisational commitment, leadership and trust, open communication and feedback, and back up behaviour (Dee, Henkin and Singleton, 2006; Park, Henkin and Egley, 2005). The benefits of HPT's for schools, as outlined by Naquin and Tynan (2003) include a positive school climate, better communication and interaction, self-efficacy and instructional responsibility. These transmitted to workplace productivity, lower absenteeism and reduced employee turnover.

The researcher aligns with the research study of Stott and Walker (1995) who propose three dimensions of team development, namely the individual, the task and the team. The theoretical framework of this research study encompasses this viewpoint as it concurs with the concepts of team at an individual level, group level and school level. However, with group reciprocal relationships, this symbiosis emphasises team leadership as relational, focused on service (Russel, 2001) and distributed (Macbeath 2005). Team leadership will be discussed further in Chapter three.

Since education has multi-level teams, the different team structures in education can be identified as four main team structures (Buckley, 2000). Team teaching, Curriculum development teams, Site-based teams and Administrative and governance teams, were some of the teams studied by Dee, Henkin and Singleton (2006). Team teaching and curriculum teamwork had the strongest effect, followed by participation in site-based and governance teams. Teamwork is known to strengthen the shared identity in achieving collaborative goals (Postmes, Tanis and DeWit, 2001; Muthusamy, Wheeler and Simmons, 2005) and allows freedom in decision making which results in increased performance and commitment (Kirkman and Rosen, 1999). This research supports the existence of more school teams detailed as: School Management Teams (SMT), Learners Representative Council (LRC), School Governing Body (SGB), teaching teams (TT), School Leadership Teams (SLT) and other informal team structures.

The key enabling factors that were selected from the literature review to be analysed in this research study as constructs that drive the high performance teams in the educational school context are:

- team competencies
- leadership
- school milieu (climate and culture)
- engagement (employee and work)
- commitment
- communication
- trust and support

It is important to identify these drivers or enablers but one must also be able to develop instruments that can measure these constructs empirically, with validity and reliability. In this research study, one of the researcher's primary objectives was to develop a conceptual model to show the relationships between these enabling factors. The development and validation of a suitable measuring instrument was a secondary objective as the researcher also envisioned developing a School Performance Metric that would allow each school to ascertain their own strengths and weaknesses (school profile). This unique school fingerprint of the "soft skills" in school teams could be used

in further longitudinal research studies where the effect of various “gap filling” interventions could be measured against a baseline within that school context and situation.

To measure team constructs, certain common well researched team role measuring instruments or team metrics, are available. Three well known ones are detailed below. Very few team metrics encompass the holistic school team measure and span right across the multi-level team system within single contexts. Therefore, very few available metrics are applicable and diagnostically relevant to each and every unique educational and school unit.

2.2.6 Different team metrics and roles

In general, the three most common metrics in South Africa for team role measures are:

- Myers Briggs Type Indicator (MBTI) which measures 16 personality types.
- Belbin team roles which include the following eight roles: company worker, chairman, shaper, planter, resource investigator, monitor-evaluator, team worker and completer-finisher.
- Margerison-McCann Team Management System which analyses and measure four key work preference factors.

The focus of this research study was not in these areas and resided in the educational team management field, so these measures metrics were not relevant or applicable for this particular study. This research designed and developed a School Analytical Tool (SAT) that identified and measured the enabling factors required in an effective HP school operational team. This specific hybrid metric was devised, adapted and created from a number of literature metrics so that it could profile metrics analytically in a school human resources needs analysis, to create better performance.

2.2.7 Self-managed teams to school leadership teams

In an educational context self-managed teams (SMT’s) and most educational teams can be considered to be multi team systems and this is where leadership plays a vital role. Leaders need to empower teams, delegate responsibility, facilitate and co-

ordinate and manage conflict. This participative decision making, strategic visioning, accountability for outcomes, information sharing and coaching have been identified as leadership behaviours that contribute towards a school climate of enhancing psychological empowerment. This climate of support contributes directly to the employees' perceived self-worth, self-determination and motivation. This positive organisational climate empowers and allows freedom and innovative thinking, as well as being less stressful as the employee is less likely to be concerned about making mistakes (Chen, Kirkman, Alien and Rosen, 2007).

According to Robbins et al., (2014), research is revealing that self-managed teams have not fared well in Mexico, where there is a culture of low tolerance of ambiguity and uncertainty as well as a strong hierarchical authority and leadership. In countries where there is high power distance, which means a large distance between the leaders and the followers, and their roles are clearly delineated, a team may need to be more structured with clearer leadership roles for effective team performance.

Research by Hawkins (2011) and Clutterbuck (2010) showed that it is imperative, when building team relations, that the interventions improve performance when aimed at a specific process or objective. In the research done on team coaching by Wageman et al. (2008), three key areas of effectiveness were established. These are

(i) the ability to create outputs and perform at the "extra mile" level
(ii) the ability to work together effectively, and
(iii) the team experience contributed positively to the member's development.

In further studies he also categorised 120 teams into high, mediocre and poor performance and created a model that outlined three essential and three enabling conditions for team effectiveness. These are summarised in Table 2.1 and Table 2.2.

Table 2.1: Three essential conditions (Wageman et al., 2008).

3 essential conditions	
1	• Real team, with clear membership and boundaries.
2	• A compelling purpose to guide the work- mission and vision.
3	• Right people aligned with the knowledge skills values and attitudes to do the work.

Table 2.2: Three enabling conditions (Wageman et al., 2008).

3 enabling conditions	
1	• Solid team of less than 10 members, with clearly set norms
2	• Supportive organisational context with resources, information and time
3	• Competent team coaching from an internal or external coach

Coaching interventions that focus on team effort, strategy and knowledge and skill, facilitate team effectiveness far more than the interventions that focus on the members' interpersonal relationships (Hackman and Wageman, 2005).

Since negativity and under performance is prevalent on many of our South African under resourced schools, it is critical that some strategies and school improvement plans are devised that can assist these schools to improve their organisational effectiveness. By providing research and informing practice within different contexts it is hoped to examine some positive essential and enabling factors that can contribute towards a school high performance strategy which ultimately can holistically improve our schools' performance in all domains.

2.3 SCHOOL IMPROVEMENT PROGRAMMES (SIP)

In line with a dynamic model of educational organisational effectiveness as outlined by the researcher in Chapter one, studies have shown that schools which are able to recognise or analyse their weaknesses and take actions to improve their School Learning Environment (SLE) can also improve their organisational effectiveness (Creemers and Kyriakides, 2010, 2012). This is in agreement with Reezigt and Creemers (2005) whose research resonates with many studies (Kruse, 2001; Beach and Lindahl, 2004) that effective school improvement requires school-level processes and that the educators "learn to learn" and are themselves, the change agents. It is imperative that the entire school community is a learning organisation (Hayes, Christie, Mills and Lingard, 2004). All these studies show alignment in consideration of the school system as a living, dynamic system. Associated with this is the Effective School Improvement project by Reezigt (2001) which identifies three key elements: Improvement culture, processes and outcomes.

2.3.1 Concept clarification and definition

The development of a School Improvement Plan (SIP) is an integral part of a school improvement effort and strategy as it designs a plan to outline where the organisation wants to go, what is needed to get there and how to get there (McNamara, 2003; Caputo and Rastelli, 2014). As there is not one definition for a SIP, each region and country provides guides and templates to assist schools in preparing their SIP, along with support teams and specialists to assist with advice. SIP's however, do share some commonalities, with these being described as:

- analysing problems by the staff, identify underlying causes,
- establishing measurable goals,
- incorporating strategies and adopting policies to address problems, and
- monitoring implementation (US Department of Education).

Aligned with the researcher's viewpoint around SIP's, Caputo and Rastelli (2014) showed in their research that better school improvements were associated with the school's ability to carefully carry out the analysis within the context, prioritise elements in the diagnostic phase and create specific improvement goals.

2.3.2 Recent SIP models, strategies and approaches

The National School Improvement Tool, devised by the Australian Council for Educational Research (2013), brings together findings from international research into the practices of highly effective schools and school leaders. It provides evidence of a school's daily work and has been designed to enable judgement in each nine inter-related domains separately (Table 2.3).

Table 2.3: National School Improvement Tool (Queensland Department of Education, Training and Employment, 2013).

DOMAINS	
1	Explicit improvement agenda
2	Analysis and discussion of collected data on student outcomes, including academic, attendance, behavioural and student well being

DOMAINS	
3	Culture that promotes learning
4	Targeted use of school resources (staff time, expertise, funds, facilities and materials)
5	Expert teaching teams
6	Coherent sequenced plan of curriculum delivery
7	Differentiated teaching and learning
8	Effective pedagogical practices and school leadership teams
9	School-community partnerships

The most effective way to use the Tool is to gather evidence broadly on the school's practices before focusing on the individual domains. Key features of this tool are that it allows holistic metrics to guide the design of improvement strategies and to monitor and drive school improvement over time. The set of performance levels are Low, Medium, High and Outstanding, with outlined criteria descriptors in each domain.

2.3.3 Recent research studies and findings

Teacher teams have on an international scale been introduced as part of the school improvement strategies. West, Ainscow and Stanford (2006) analysed the strategies and factors that were used within a group of secondary schools in England, that succeeded in sustaining attainment levels over time so that they could examine the factors associated with this success. School improvement research has often focused on successful schools and these schools often have track records of innovation and commitment. Other research in America, based on high achieving schools with learners from low socio-economic circumstances, discovered the following common factors:

- A strong organisational commitment and belief that the learners can achieve.
- Strong principal leadership which recognised that leadership should extend to the classroom.
- Principals who developed teams with a strong sense of ownership, accountability, commitment and motivation.

Other key elements which can be seen to be crucial, are the principal's ability and agility in analysing the context of the school as quickly as possible and selecting and applying strategies appropriate to the context of the school. Improvement strategies also included changing the culture of the school, focusing on teaching and learning, reviewing the school day and the purposeful use of data (Clarke, 2010).

All of the recent studies can be utilised to devise a SIP that encompasses all of the above enabling factors and strategies, to create an overall effective high performance strategy that will drive a high performance in a school. In this research study the empirical data was used to identify these enabling factors and utilising these alongside the SIP strategies from literature, a merged aligned School Improvement Framework and strategy to drive higher performance in secondary schools, was devised.

2.4 SUMMARY

The focus of Chapter two is to place the research study in context and within the broad conceptual framework. Firstly, a brief overview on the theoretical framework is discussed and linked to the research problem statement. Since the research study is structured around the high performance team (HPT) concept, the terms and models are defined and outlined. Characteristics and enabling factors of HPT's and research studies in this area of educational leadership are discussed. Different team metrics and types of teams in the educational management arena are unpacked, with School Improvement Plans and strategies briefly mentioned.

The focus of Chapter three is on the key enabling factors selected for this study in the preliminary literature review. The constructs of leadership, engagement, communication, organisational commitment, trust and support, team competencies and team leadership, are discussed within the school context.

CHAPTER THREE

LEADERSHIP, ENGAGEMENT AND COMMUNICATION

3.1 INTRODUCTION

In the preliminary literature review the main research question of "**What enabling team performing factors and strategies are required to optimise the performance of secondary school operational teams in South Africa, with regards to the outputs in teaching, learning and high performance?",** was examined with respect to the high performance factors and school improvement strategies in chapter two. In a previous research study (Gibbs, 2013), the key primary enabling factors to drive the high performance of teacher teams and **effective high performance** in schools, were established as ***leadership, team approaches, communication and engagement.*** These key concepts will be reviewed, defined and discussed. The other main key secondary constructs selected, therefore, from the literature review were:

- Leadership, Team approaches in education, Engagement and Communication;
- School Climate, Culture, School teams, Organisational commitment; and
- Trust and Support.

In this chapter the key constructs selected are discussed and defined, and recent research work in the relevant field of research are outlined. The research questions RQ_2 pertaining to the linkages and relationships between the enabling factors and RQ_3 which specifically examines leadership, are addressed in this chapter. The objectives RO_1, RO_2 and RO_3 are addressed in this chapter by a literature review on the enabling factors that have a positive effect on the school operational teams (SOT's) with specific emphasis on the leadership, engagement and communication focus areas.

3.2 LEADERSHIP APPROACHES IN EDUCATION

As the focus of this research study is on **educational leadership,** the main leadership approaches from recent literature studies were selected from the recent work in hybrid leadership (Townsend, 2015). Hybridity modifies leadership as being both focused on the individual leader and on the process of distributed influence throughout the school

team network (Gronn, 2010). The leadership approach in this research study, therefore entailed a range of leadership approaches with combinations of interrelated notions of leadership and not a binary perspective of a specific leadership approach such as distributive, transactional or transformational.

3.2.1 Hybrid leadership

In the field of educational leadership, there are multiple levels of complex networks of relationships and team dynamics amongst the entire school staff.

School systems can be argued to be considered as interactive, interdependent dynamic networks with leadership not formally embedded in certain roles, but evolving from within the relationships between the people.

One major recent emphasis of school networks is the perspective of hybrid leadership. School networks can be defined as flexible constructs that provide relational workings with collaboration. Thus it is seen as means by which people can work together and maintain and satisfy a need for independence (Day and Townsend, 2009). This concept of hybridity within these school networks has been stated as a means of advancing the research in the leadership field as it spans the seemingly opposed concepts and binaries in the leadership field (Youngs, 2009; Gronn, 2010; Townsend, 2015). These exclusive binaries of perspective such as leaders or followers, solo or distributed, are simplistic. The complexity of educational leadership dictates that leadership scholarship is portrayed in a range of perspectives. Hybridity modifies leadership as being either focused on individual leaders, or as a process of distributed influence throughout the school network (Gronn, 2010).

Leadership, considered as a hybrid activity, is proposed by Townsend (2015) as an alternative, entailing a range of leadership approaches. **Hybridity** is defined as denoting a combination of two or more concepts or activities that are applied in school leadership. In the educational context, teacher leaders can be seen to combine the roles of both teaching students and leading colleagues (Margolis, 2012) as well as combining diverse, but interrelated, notions of “leadership”, “management” and “headship” (Christie, 2010).

In a reconsideration of the concepts of solo or distributed leadership, it was argued by Gronn (2010) that there was a weakness in the portrayal of leadership as, by categorising into these two extremes, the actual patterns of leadership were obscured. He therefore established a new unit of analysis for leadership research, being a perspective termed the "configuration of leadership" (Wallace, 2003, p. 9). This may be very useful in understanding leadership in complex contexts and especially in the school team leadership field in which this research study is positioned.

3.2.2 Configuration of Leadership

Since the roles of educational leaders have changed so much over the last few years, alongside the changing transformations of the schools and education systems, it demands new conceptions of schooling, principalship and leadership (Walker and Hallinger, 2013; Caldwell and Spinks, 2013 and Levin, 2013). In studies where inter-relationships are seen between two types of leadership, for example instructional/pedagogical leadership and the capacity for sustaining transformational cultures of teacher and student, it is seen that the studies conclude that the two forms of leadership are not mutually exclusive (Day and Summons, 2013). This combination or configuration of leadership allows a combination strategy which ensures school success.

The author has adopted this same stance in this research study that there is a hybridity of leadership in successful high performance schools. It is this combination strategic hybridity where there is a continuum of leadership approaches in successful school and educational leadership. The instructional or pedagogical leadership of the educators alongside the distributive and transformational leadership culture of the school staff and learners, all contribute at various stages to the combination leadership strategy that ensures effective performance.

In research conducted by Townsend (2015), three particular re-configurations occurred in leadership, due to the introduction of different school networks. These were an emphasis on a bottom up approach, re-focussing on the teacher professional development, and stimulating collaborative work towards shared values and aligned goals. This strategic hybridity, in which the leadership functions already existing in the school remain unchanged but the additional processes require the creation of

alternative forms of leadership, is confirmed in studies by other researchers (Lieberman and Wood, 2003; Hadfield and Chapman, 2009). The broader inclusion and spreading of leadership was also identified as the concept of distributive leadership by Crawford (2012).

With the critique of distributive leadership, as both a normative and descriptive concept, Gronn (2015, p.545) reported a new unit of analysis of leadership, which he defined as “leadership configuration”. This provides a contrast between the mutually exclusive solo and distributed leadership. Combined hybrid activity of leadership trends away from rigid cultures and structures, towards a fluid, diversified and adaptable mixed combination which oscillates between solo leadership, team and other leadership approaches. Concepts of solo, distributive and hybrid leadership configurations are shown in Table 3.1.

Table 3.1: Contrasting Leadership configurations (Townsend, 2015, p. 732).

Configurations of Leadership	Solo	Distributed	Hybrid, i.e. Solo-distributed
Focus of research	Influences, actions and effectiveness of those in leadership positions.	Ways that leaders can work together, or spread of leadership.	Interaction between the individual and the leadership and the leadership arising within and between groups.
Interest of practice	How individuals can most effectively fulfil roles and what they should be doing.	Recognising, supporting the potential people have in spreading leadership.	Implementing practices that acknowledge role and spreading of leadership.
Assumptions about leadership	That leadership is a specialised activity associated with specialised positions.	That leadership is a collective activity, spreading through a form of influence via relationships in a social setting.	That leadership is associated with roles as well as through spreading influence on relationships.

Configurations of Leadership	Solo	Distributed	Hybrid i.e. Solo-distributed
Limitations	Ignores people who may work in different ways.	Can underplay the role of the solo leadership.	For practices in dealing with the conflicts and tensions that may arise dealing with hybrid combinations i.e. Facilitation vs authority.

With the growth of a new networked society and school relationships extending beyond the organisation itself, it is imperative to consider the school holistically within its context, community and environment, to understand the fluidity and flexibility of the leadership relationships. Research needs to be undertaken on the multi-faceted social school setting, within which the inter-relations of leadership configurations linked to processes, occurs. One construct of leadership cannot suffice and a hybrid approach is required to construct a leadership configuration applicable to the complex, interrelated and dynamic school environment.

Contemporary organisational theory presents two frameworks of managed and living systems (Wheatley, 2007). The managed, hierarchical system has the learning process directed, managed and controlled with standardised expectations, homogenised, routinised and with little space for creativity or personal interests in a centrally created structure. In living systems, education can be seen as a natural feature of life with unique authentic educational experiences allowing growth and freedom to capitalise on the unique capacity of each individual's strength. Darling-Hammond et al. (2010, p.239) argues that changes "need to encompass students' experiences and high quality instruction central to the design", and it is in these learning community schools that school leaders emerge organically throughout the school, building an environment that is both collaborative and self-motivating.

In this research study the author aligns with the viewpoint of Darling-Hammond et al. (2010) that the school leaders emerge within the team dynamic and culture of the school and therefore it is critical to understand and examine the hybrid leadership strategy that exists in each school, as it is unique. This combination of leadership

approaches involves many human relations and organisational behaviour enabling factors which can be examined, as by maximising these factors the school can improve the effective performance and teaching and learning outcomes in the school.

3.2.3 Educational leadership in the South African context

In South Africa the situation in educational leadership is critical as many under-performing schools are not operating at an effective level of performance and educational accountability. This increased concern for effective student learning and performance outcomes, along with more complex environments and contexts, has generated pressure on all levels of school operations. In school leadership, expectations are high in global school arenas (Robinson, 2011) and the role and approaches by educational leaders across many countries has mutated and adapted alongside the transformation of the school and the education systems. New systems call for new leadership approaches (McCulla and Degenhardt, 2015).

During the era of apartheid in South Africa, educational leadership was synonymous with the heroic leadership stereotype and equated with headship. This was related to the formal position, status and authority as the school principal was cast as the only leader. The style of leadership adopted was autocratic and tasks and directives were delegated down a managerial structure, without consultation or negotiation (Grant and Singh, 2009).

Leadership of many South African schools is still entrenched in the formal hierarchical management structure and therefore this restricts the potential for development of teacher leadership. At present, within a democratic South Africa, the policies (South African Schools' Act, 1996; Government Gazette of the Norms and Standards for Educators, 2000; Task Team Report on Education Management Development, 1996) challenge schools to review their top–down approach and create new approaches where management is seen as an activity in which all members engage. Many schools still remain unresponsive and unable to move beyond the hierarchical way of thinking. This shift towards a more participatory, inclusive and value based change has been termed 'distributed leadership' by Gronn (2000, p.317).

Teacher leadership can be defined as a process of working with all stakeholders in a collegial and creative way to develop the potential of people, in a supportive environment, for the improvement of the school. Research in this field has been undertaken in the South African schooling context by many researchers (Grant, 2006). Teacher leadership offers a departure from the traditional understanding of school leadership since it "deconstructs the leadership notion in relation to position in the organisation" (Grant and Singh, 2009, p. 289).

As both Ndebele (2007) and Spillane (2006) postulate, leadership is not just that ones' position of power dictates what one does, but it is the 'leader-plus perspective'. In alignment with this viewpoint, teacher leaders are, in the first place, not simply expert teachers focusing on improving teaching and learning, but they also take on leadership roles where professional development and innovation is necessary. The author agrees with the above viewpoint in the educational school context, as the extra leader-plus-perspective aligns closely with the employee engagement factor, which includes an aspect of going the extra mile. A measure of being involved in the school leadership, includes not just the instructional leadership but many other approaches of the hybrid leadership configuration and this will entail being involved in many different leadership approaches in different facets of the school operations. Hybrid leadership which emerges organically through involvement in the many different disciplines within the school, require adaptability and change in using a range of leadership approaches suitable within each context and situation.

3.2.4 Types of educational leadership

It was as recently as a decade ago that Currie, Boyett and Suhomlinova (2005) indicated that distributed leadership (DL) was a rare experience in many of the secondary schools in the UK. Yet a systematic search by Bolden (2011) secured 187,000 hits for the distributed leadership term and a dramatic spike was seen in the use of distributed leadership between 2007-2009, which put it ahead of the terms 'shared leadership', 'collective leadership' and 'collaborative leadership'. It was also reported that about two-thirds of the DL articles were published in school education sector journals (Gronn, 2015). Therefore, since this distributed leadership (DL)

approach, seemed prevalent in educational research and leadership, this was further examined and discussed below.

3.2.4.1 Distributed leadership (DL)

Distributed leadership is defined by Harris and Muijs (2005) as leadership that should be shared throughout an organisation and that, where there are multiple sources of guidance and direction; it should follow the expertise in an organisation and be made coherent by a common culture. In research by Harris (2004) distributed leadership emerged as a popular way of thinking about leadership, but there was little consensus on the actual meaning of the term distributed leadership (Bennett, Harvey, Wise and Woods, 2003). It can be argued (Grant and Singh, 2009) that it should be viewed as a fluid and adaptable practice in which every educator and school member can participate.

This viewpoint that distributed leadership can be seen as the dynamic connection and interaction between leaders and followers and is not a blueprint for more effective school leadership (Spillane, 2006). School leadership should, therefore, be considered as more a mutualism between people and process. According to Hartley (2007), the lack of clarity for defining distributed leadership as a concept doesn't allow a clear operationalisation of the concept in empirical research. However, many empirical studies have been conducted, all suggesting a positive relationship between the impacts of distributed leadership on organisational outcomes, school teaching and learning (Timperley, 2005; Spillane, 2008; Muijs and Harris, 2007).

Gunter (as cited by Grant and Singh, 2009) suggests that distributed leadership (DL) may be characterised into three main components: *authorised* distributed leadership; *dispersed* distributed leadership and *democratic* distributed leadership. *Authorised* DL can also be termed delegated leadership and involves teams, informal workgroups and committees, where work is distributed from the principal to others. In these the teacher leadership is dependent on the formal hierarchical leadership and the power remains at the organisational level. In *Dispersed* DL, an emergent network or group is established where members pool their expertise and this interrelationship and process takes place without the formal working of the hierarchy. This leadership focuses on spontaneity, re-defining roles, autonomy, a bottom-up process and is based on trust

and letting go by senior staff (Grant, 2006). *Democratic* DL doesn't assume political neutrality and embraces leadership for transformation and social justice.

Currie et al. (2009) reviewed the impact of the shift from individualistic school leadership to the adoption of distributed leadership in the United Kingdom. Mostly in his research they found that there was only a weak form of DL manifested in the schools, as since the head teachers were given more responsibility, many of the teachers were disengaged and exhibited only minimal compliance. However, in a DL study by Spillane (2008), which sampled 2500 school personnel, teachers consulted the non-formally designated leaders for advice regarding the teaching of mathematics and reading. The results showed that the principals and vice-principals did not play a large role in leading.

Researchers Spillane (2008), Currie et al. (2009) and Denis, Langley and Sergi (2012) alluded to the boundaries of DL being somewhat unclear and synthesised recent research into four strands of literature which could be outlined as follows:

i. Team-based activity where both self-leadership and shared leadership are required for effective outcomes.
ii. Pooling of interdependence and complementing of roles in top level leadership.
iii. Boundary-crossing leadership in projects and routines across hierarchical levels. It is here where most of the DL literature resides.
iv. Interpersonal and group relations in attribution of leadership to activities and processes.

In recent research work by Chreim (as cited by Gronn, 2015), she highlights a number of shortcomings of DL and also introduces the management and configuration of leadership role spaces. Since distributed leadership is, according to Turnbull, James, Mann and Creasy (2007), concerned mainly with distributing teachers to lead curricula, little attention has been paid to the leadership relationships. Many studies in DL emerged in the early 2000's and distributed leadership was referred to as educative and pedagogical (Webb, 2005); instructional and aligned to teacher practice (Camburn, Rowan and Taylor, 2003; Harris and Spillane, 2008; O'Reilly, Cladwell, Chatman, Lapiz and Self, 2010).

Teacher leadership can be seen as a manifestation of distributed leadership, since teachers are likely to be the people to whom the leadership is distributed in a school context. However, contextual and cultural variations are crucial, as formal leaders may not always relinquish control across boundaries in different cultures. The author of this research study examines the team leadership construct from a perspective similar to Townsend's non-binary approach and integrates with the Parallel Leadership of Crowther and Andrews (2003), as well as Gronn's hybrid leadership in a network model (2010), as a theoretical framework for the leadership aspect of this study.

Importantly, teacher leadership is growing in awareness as the weaknesses of the hierarchical traditional approaches emerge. Teacher professionals, with the specific instructional pedagogical leadership, can harness their skills to enhance decision making and classroom practice. This can be seen as a "bottom up approach" of enhancing the overall school team leadership and effectiveness. To inculcate this spreading of leadership across boundaries is more a distributive approach to leadership from the bottom. Some teachers may choose to lead on specific aspects of school practice whilst others may hold formal roles and both levels may be regarded as school leaders. These are manifestations of shared leadership, with the formal leadership being part of the "top down" approach, indicative of the hierarchical learning environment, whereas the distributive learning environment creates a "bottom up" approach. These exist in parallel in a school environment and the typology of the teacher leadership approach may vary significantly within different cultures.

Within the informal teacher leader group, the collective or team leadership practices, where they function as a community of practice and in teacher teams, provide a supportive distributive organisational culture to enable educational change and effective performance of the school team.

In other research, Hallinger's study (2003) examined a leadership model that empirically and conceptually outlines Instructional leadership and Transformational leadership. These will be discussed below.

3.2.4.2 Instructional/Pedagogical Leadership

This can be defined by Earley, Evans, Collarbone, Gold and Halpin (2002) as leadership that focuses on principal instructions and curriculum implementation.

These two strategies, and their inter-relationships, are reported to produce sustained transformational cultures in teaching and learning (Day and Summons, 2013). Evidence by Hattie (2009) and Robinson et al. (2008) showed that instructional and pedagogical leadership were mutually connected and were central in producing better outcomes in the students' academic performance.

Most research studies show that there is an indirect effect of the principals' leadership on the student outcomes, but it can be seen that, in some studies, there is a direct effect of the leadership of the principal (Branch et al., 2013).

A combination of leadership strategies can enhance conditions for teaching and learning by influencing the teachers and their work, thereby indirectly affecting the school success (Drago-Sevenson, 2012; Zepeda, 2012).

This viewpoint of a combination of leadership strategies was adopted in this research study as a basis and foundation for selection of the varied most prevalent leadership approaches in educational leadership combined in a hybrid leadership strategy, as one of the key enabling factors to be examined that may drive higher effective team performance in the schools.

3.2.4.3 Transformational Leadership

Transformational leadership can be defined as leadership that engages others in leadership and changes activity concerned with learning (Bass, 1985; Leithwood and Jantz, 2000). It is characterised by behaviours that inspire and motivate the followers to achieve beyond the minimum required standards. In a recent review, research undertaken in the transformational leadership field was highly criticised as the multidimensional nature of this construct was not considered. More attention needs to be focused on the dimensions to enable the practitioners to identify the actual enablers that account for the effective work outcomes (Knippenberg and Sitkin, 2013).

In a research study by Saboe, Taing, Way and Johnson (2015) two dimensions of transformational leadership were outlined: Provision of support and emphasis of group goals, were related to organisational citizen behaviour and turnover intentions via leader-member exchange (LMX) and employee commitment. Results showed that transformational leadership operated in unique channels. It is shown by the empirical data in the above research study that strengthening of group goals is mediated by organisational commitment and the relationship between support and organisational citizen behaviour was mediated by leader-member exchange (Saboe et al., 2015).

Because of the recent research study reported in the above paragraph, the author of this research thesis elected to include the measure of the factors of organisational commitment, support as well as leader-member exchange. Since in the reported research by Saboe et al. (2015), the factor of organisational commitment mediated the group goals. The relationship between support and organisational citizen behaviour was mediated by the leader-member exchange.

This leadership factor (LMX) was measured to gauge the difference of the LMX in different contexts and different quintile schools.

To further examine transformation leadership and how it is defined the following dimensions were found to be outlined in literature. According to Aviolio and Bass (2004), transformational leadership is characterised by four main dimensions:

- Charismatic behaviours
- Inspirational motivation and articulating a vision
- Intellectual stimulation and
- Attending to followers' needs.

In other studies, by Podaskoff et al. (1990), additional dimensions include setting high performance expectations and role modelling.

Two common transformational dimensions (Yukl, 2010) are the following:

- Provision of support, care and respect to followers and the alignment of individuals' goals with the team or group goals, which builds trust.

This strengthens relational ties and cultivates a high-quality LMX (Jackson and Johnson, 2012).

- Emphasizing of the group goals which builds group cohesion and increases organisational commitment and decreases turnover intentions (Jackson, Meyer and Wang, 2013).

In this research thesis, therefore a measure of the LMX was necessary, as the above literature reviewed showed that high quality LMX with trust and support yielded alignment of goals, team cohesion and increased organisational commitment which increases effective high performance. The LMX, trust and support were all elected as enabling factors in contributing towards the driving of effective high performance in school teams.

It has been consistently shown that the combination of effective instructional and transformational leadership practices is positively associated with increased teacher engagement and organisational commitment, as well as positive organisational culture and effectiveness. These, in turn, are positively associated with improved student outcomes. The research findings by Leithwood and Jantzi (2008), who explored the leadership influences on a sample of principals, teachers and student outcomes, demonstrated that the practices of the principal in instructional and transformational leadership – direction setting and teacher/organisation support, were the most effective in teacher engagement and effectiveness. The results showed that the effective transformational leadership practices had a direct effect on the school with respect to teacher-decision making, opportunities for development and a collaborative school culture, with indirect effects on the outcomes of student achievements.

In this research thesis the author selected some aspects of the transformational leadership dimensions which were reported by the researchers above (Leithwood and Jantzi, 2008) to have an effect on teacher engagement and effectiveness in schools, such as goal setting and support, to be enabling factors.

A positive organisational culture, teacher engagement and organisational commitment were all reported to be positively associated with improved student outcomes.

3.2.4.4 Servant leadership

Spears (as cited by Forde, 2010) identified the characteristics of servant leadership as the following: Listening, empathy, healing, foresight, conceptualisation, persuasiveness, awareness, stewardship, commitment to the growth of people, and the value of people and community building. This aligns with asset based thinking (Russell, 2009) as this approach examines empowering citizens to draw on their skills, resources and abilities to solve problems. It sees people as assets and is an alternative to the deficit needs based approach (Kretzmann and McKnight, 1993).

Servant leadership can be seen to be close to the “Ubuntu” principle in South Africa, as it requires a deep understanding of human nature and the reason why people behave in a certain way. This empathy and walking in the shoes of another is close to the philosophies of the great leader of South Africa, Nelson Mandela who is known to be the epitome of great servant leadership.

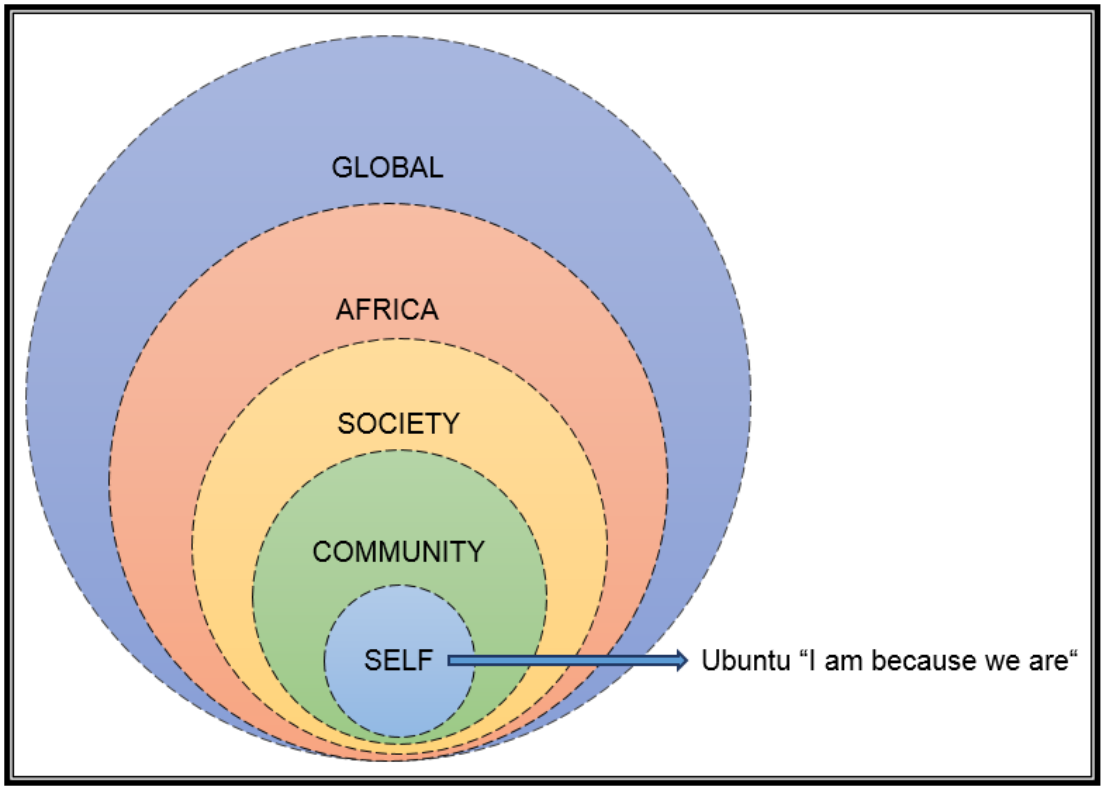


Figure 3.1: Leadership Model (Source: Adapted from Bolden and Kirk, 2005)

This model illustrates the embracing nature of African leadership in three aspects: the nature of leadership, the context of leadership and the application of leadership. This

conceptual framework (Bolden and Kirk, 2005) places self at the centre, from where the leadership role develops. Community is where the person interacts on a regular basis and involves work, family and community groups. Society is then taken in the wider context nationally and Africa is the transnational grouping, interconnecting to the global level. The leadership for behavioural social change represents the connecting thread and runs throughout them all. Boundaries are represented with dotted lines as these are permeable and shift like a ripple effect through mutual influence.

One sees that African leadership may have much that is inspirational, but also much that is destructive and undesirable. Research shows that African managers tend to be highly skilled in managing cultural diversity and multiple stakeholders as well as enacting humanistic management practices (Jackson, 2004). However, as alluded to by Jackson, we may have the tendency to think that African culture is “other than” or “different from” Western culture, yet that stance ignores the real nature of the true multi-cultural societies in which we live in the world. As reported by Jackson (2004) we have a hybrid form of management and organisation wherein different cultures, co-existing in parallel and side-by side, exhibit a multi-layer of dualism which can never be fully understood. This flexibility and humanness (Ubuntu) of taking up your leadership role is dynamic and conceived in relation to others (Van der Colff, 2003). These interactions that are dynamically cross cultural are often antagonistic and illustrate the tensions between the power of position (status/charismatic factors) and the power of community (Ubuntu). They form the foundations of integrating and dis-integrating leadership development, from which the individual African emerging leader learns, of what leadership is not and thus discards the negatives. The positive affirmative aspects, engage chaos and complexity, to create new inter-connectedness, are embraced and create new authentic, enabling environments for spreading positive leadership which instils hope, energising others to convey meaning and possibility.

3.2.4.5 Networked leadership

Following from the research on distributed leadership, Yammarino (2012) reviewed literature in teams, networks, shared leadership, complexity and collective leadership. These are all the ‘we’ approaches to leadership. This was done from an organisational

behaviour approach and this opens up a possibility of a new leadership configuration (White et al., 2014). This resonates with the African leadership model discussed above in creating leadership for beneficial social change.

This relatively new networked leadership approach seems close to the hybridity of leadership and could be significant in the educational context. It links with many organisational behaviour elements and resonates with the Ubuntu and African leadership model that creates leadership for beneficial social change. In this thesis, the author took the "we" stance of leadership approach and combined aspects of hybridity, servant, networked, strategic and other leadership approaches that contribute to the educational leadership domain in the team functionality space.

3.2.5 Trends in Leadership Developments

In recent studies by Leithwood et al. (2006) the collection of evidence that underpin practice, include four main leadership qualities:

- Vision and strategic direction
- Understanding and developing people
- Re-designing the organisation
- Managing the teaching and learning program

This thesis is aligned with this research study and in agreement with the quote below by Leithwood et al. (2006, p.68) "the actual effects of all external experiences on leader's practices are mediated by their inner lives. These capacities and traits act as interpretive screens for leaders in making sense of the world out there".

School leadership, in its complexity, exists across many levels in a school within a certain context, merging both the people's experiences and the external environment. The living systems approach applies this micro to macro level exploration to educational leadership and, as discussed by McCulla and Degenhardt (2015), should connect both the inner and the outer journey. This inner journey of self-discovery and knowledge with skills acquisition enables one to negotiate and respond to the challenges and constantly changing regulatory and accountability standards in the school context. Successful school leadership, therefore, requires an outer focused

journey alongside colleagues, to be undertaken with confidence, competencies and vision to lead to effective and high organisational performance.

3.2.6 Some aspects of school leadership development

Some of the good practices in school leadership development will be outlined and briefly discussed below.

3.2.6.1 Leadership management interface

Since there is no clear distinction between management and leadership and each is related to the other, as stated by Schley and Schartz (2011, p. 276): “Management is defined as more of a state of behaviour and refers to norms, whereas leadership is a moral attitude of influence”.

Some other quotes also illustrate this: Leadership is about “discovering new possibilities with the capacity to realise them”, management is about “problem solving”. While leadership is about “dignity for the human being (trust); management is about “the human being as support”. Finally, leadership is an “attitude of serving” and management is an attitude of “doing” (Kotter, 1990, p.1).

3.2.6.2 Recent research studies in school leadership in SA context

In recent case study research (Mbokazi, 2015) undertaken in three Soweto secondary township schools in South Africa, the Leithwood et al. (2006) model was utilised as a conceptual framework. This identified four core dimensions of successful school leaders: strategy, regulation, pedagogy and compensation. These dimensions in Leithwoods’ research were identified within a context different to the South African educational environment. Mbokazi’s study explored successful school leadership practices within three schools facing challenges in their disadvantaged township communities. The four dimensions of Leithwood’s model were common in the three schools but did not exist uniformly. The researcher revealed three discernible school leadership practices in this context of South African township schools: participative leadership driven by senior management, principal-driven success and teacher-led success. A critical observation in all three of the case schools is that they viewed the

primary purpose as teaching and learning and that their biggest challenge faced is the concern for the safety of teachers and learners.

Further school leadership studies by Chikoko, Naicker and Mthiyane (2015) conducted in the South African educational context concluded that, while there is a large body of knowledge that researches this internationally; little indigenous research has been undertaken. This qualitative study utilised face-to face semi-structured interviews with five purposively selected principals from five schools in Umlazi, a large township in KwaZulu-Natal province. These schools were selected as some of the schools in multiple deprived areas which display high resilience and high performance levels comparable to first class schools, in terms of the matriculation examination results. Research findings from this study concluded that the leadership was the greatest factor to explain this performance. Approaches utilised were an inside-out development approach and a philosophy that moved away from the deficit thinking towards an asset-based approach. The research concluded that South African schools in areas of multiple-deprivation had time, commitment and accountability as their greatest assets. Dimensions of servant leadership and an asset-based approach were the two theoretical lenses applied on this study.

3.2.6.3 Recent research studies in good practice and school leadership

A research project conducted in Spain, aimed to improve schools by identifying the main factors of best practice in a set of highly effective schools (Intexausti, Joaristi and Lizasoain, 2015). Results from this research indicated that leadership comprises a number of different competencies, which may be exhibited in varying degrees in the different schools and contexts. However, a set of common elements was identified and are stated as: positive leadership in the school management, a clearly defined shared mission, a positive attitude to training and lifelong learning, ability to foster commitment and motivation, support for teaching and learning, peaceful and harmonious co-existence and well organised co-ordination. These were all common to the selected 32 ‘highly effective’ schools, with ‘highly effective’ meaning higher than expected student results after adjustment for contextual factors.

3.2.7 Programmes and Models of school leadership

Various programmes and relevant models that were surveyed in the literature review are discussed below.

3.2.7.1 Flagship Programme

This programme was designed by the Association of Independent Schools of New South Wales, Australia, utilising internationally acknowledged principles of good practice in leadership. It was developed in response to the need for effective school leadership and is based on a holistic philosophy of personal and professional growth and learning. In examining the framework for principals, outlined by the Australian Institute for Teaching and Learning, the three leadership requirements are Vision and Values, Knowledge, Understanding and Personal Qualities, Social and Interpersonal skills. The content of this leadership program was grouped under four main headings:

- Contextual leadership
- Instructional leadership
- Organisational leadership
- Relational leadership

Central to these are the values and vision (Figure 3.2) and the leadership programme is based on the premise of the belief that leadership is both an inner journey of growing self-awareness as well as the outer journey of acquiring the appropriate knowledge and skills and engagement with people and contexts (McCulla and Degenhardt, 2015).

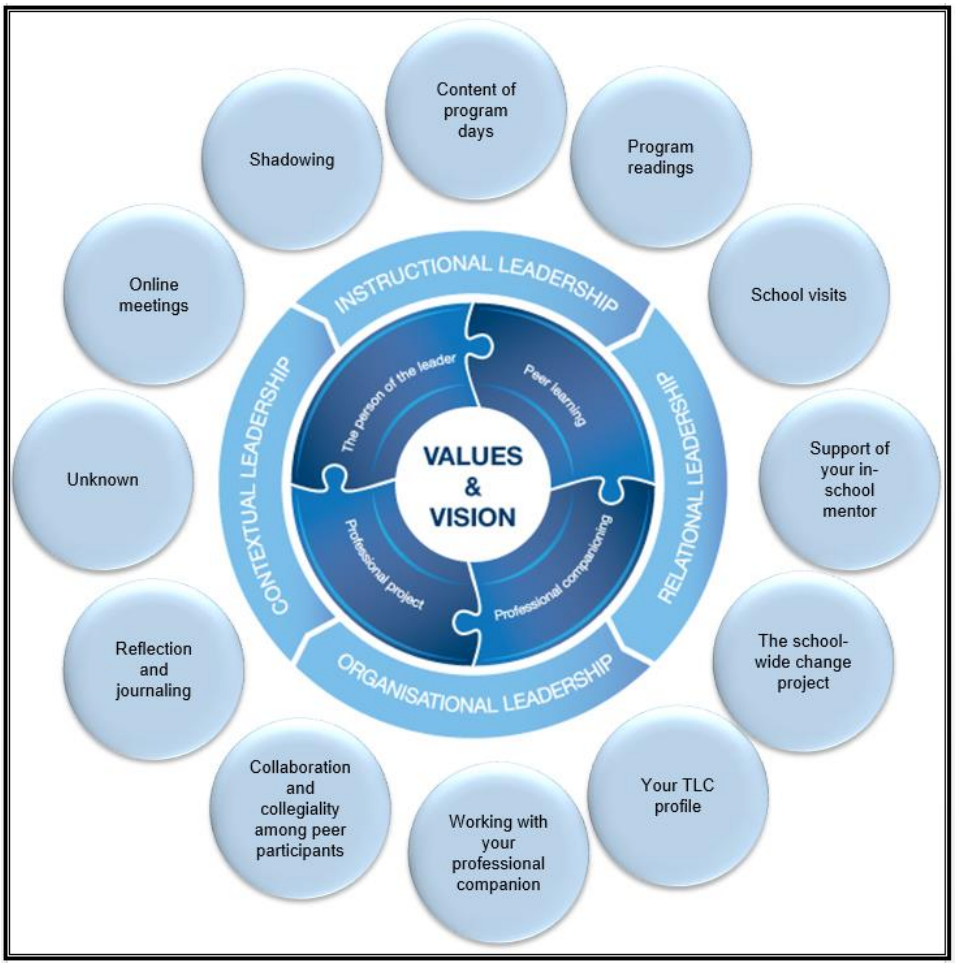


Figure 3.2: Flagship Program Outline (NSW Flagship Program, 2013)

Since numerous research studies have been undertaken to identify the components of good leadership that lead to school improvement (Darling-Hammond et al., 2010; Orphanus and Orr, 2013), it is imperative that the development programmes are practice centred, context centred and peer and partnership supported. It is interesting to take note of the areas that are covered by this leadership development program so that, by examining what is optimally covered, one can ascertain the areas that perhaps are missing in a different context. In the study by Orphanus and Orr (2013) it is found that school leadership exerted a positive but mostly indirect influence on school and student outcomes. Their research however, did show that investments in leadership preparation yields more positive teacher work conditions which are essential for school improvement.

3.2.7.2 Pashiardis and Brauckman Framework

Growing complexities in the educational field have led to an increased interest in leadership styles of school leaders. This interest is growing, subsequent to empirical evidence that leadership is a variable critical to school improvement (LISA, 2009). This projects purpose was to examine European school leadership to uncover relevant differences and some common core dimension in educational leadership.

For the majority of European countries, the **instructional style** forms the baseline of effective school leadership and there wasn't the best mix of school leadership style for all the leaders. **Instructional, Structuring and Entrepreneurial** styles of leadership were found to be essential components, irrespective of the context. It was found in this model that **Participative and Personnel development styles** turned out to be the more situational and contextual in nature. School leadership is seen to be highly contextualised. Contextual factors could be located at the system level or at the school level so the context factors, within which the school leaders operate, can vary markedly across areas depending on historical traditions, social structures and economic conditions.

No single model of leadership exists that could be transferred across different school levels and system levels. An important finding is that school leaders should be more knowledgeable and utilise more varied leadership styles which included a wide hybrid of different leadership styles some outlined in the Holistic Leadership Framework (Pashiardis and Brauckman, 2008).

3.2.7.3 Leader Member Exchange Theory framework

Leader-member exchange (LMX) quality assesses the leader and follower perspectives of the exchange relationship. High quality LMX is characterised by high levels of trust, respect, liking and obligation that a follower feels towards his or her leader (Graen and Uhl-Bien, 1995). When the leader supplies support, the followers identify with the leader and feel affinity and trust, thereby building a high quality LMX (Jackson and Johnson, 2012).

In line with the reciprocity norm, in social exchange theory (Blau, 1964), the follower will pay back this high quality exchange and support by showing higher commitment

both to the leader and to the organisation. Trust, empathy and respect are increased with high LMX exchanges between follower and leader (Johnson, Chang and Yang, 2010).

In this research thesis the LMX exchanges were measured to establish the relationship between this leader-follower exchange and the trust levels within different contexts in the different high, medium and low performing schools within different regions.

A new leadership dimension was researched as it could be significant in the educational context. The multiplier effect (Wiseman, 2015) stresses the innovative, high energy and creative thinking processes and build trust, accountability and drives higher performance. This leadership measure was therefore added to the study as it is a recent leadership model. It is discussed below.

3.2.7.4 The Multiplier Effect

As noted by Wiseman (2015), schools have an abundance of untapped potential that should be harnessed for the improvement of both students and employees. Observations suggest that “multiplier” leadership are those leaders who use their intelligence to amplify the capabilities of the people around them. They inspire and unleash creative energy and stimulate thinking. Multipliers or Investors have high expectations and drive people to higher performance and also hold them accountable. Multipliers create intense creative environments giving opportunities to achieve, stretch goals and drive sound decision making, allowing other people ownership and success. This results in trusting, strong relationships that generate belief. At the other end of the continuum are the “diminishers” who under-utilise their team members and leave talent untapped. A diminisher is a micro manager who creates a tense environment that suppresses thinking, makes abrupt decisions and gives directives that showcase their own knowledge. The five disciplines of both multipliers and diminishers are outlined in Table 3. 2.

Table 3.2: Five disciplines of the Multiplier (Wiseman, 2015).

DIMINISHER		MULTIPLIER	
Hoards resources & underutilises talent	Empire Builder	Attracts talent & uses them at their highest point of contribution	Talent Manager
Creates a tense environment suppressing thinking and capabilities	Tyrant	Creates an intense environment requiring the best thinking and work	Liberator
Gives directives that showcase how much they know	Know it All	Defines an opportunity causing people to stretch their goals	Challenger
Makes centralised abrupt decisions which often confuse	Decision Maker	Drives sound decisions with rigorous debate	Debate Maker
Drives results through personal involvement	Micro manager	Gives others ownership and invests in their success	Investor

When educational organisations are trying to do more with less, it is critical not to overlook intelligence and capability that sits right in front of them. If the principal and school leaders learned to lead like a multiplier and found ways to give teachers, parents and students greater ownership, what higher levels of performance would we achieve in our schools? New leadership models are required that unleash the human potential within each of us, so that the leader no longer knows, directs, and tells but moves to one who sees, provokes and channels our collective organisational intelligence into challenges and opportunities (Wiseman and Foster, 2015). The Multiplier model offers a unique new hybridity of leadership that could be useful in the school operational team leadership space. The Multiplier model offers various facets of leadership which are all important in the educational leadership domain.

Another new leadership model that examined the leaders and team dynamic in school improvements is the Parallel leadership model outlined by Crowther and Andrews (2003).

3.2.7.5 Parallel leadership model

A school improvement model that is based on the concept of parallel leadership (Crowther and Andrews, 2003) engages teachers as pedagogical leaders and administrative and teacher-leaders, and principals as meta-strategic leaders in collaborative action. This model allows a simultaneous fulfilment of the school member's individual capabilities, responsibilities and aspirations (Figure 3.3).

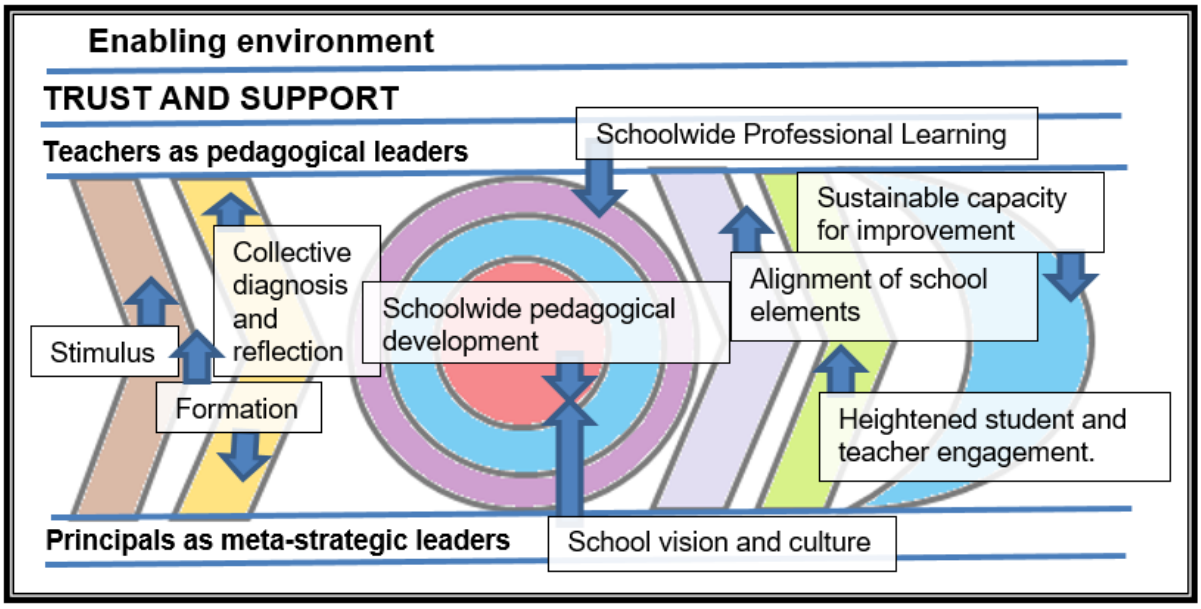


Figure 3.3: School Parallel Leadership: School Improvement (Source: Crowther and Andrews, 2003).

Within a professional learning community, the **pedagogical leadership** works in parallel with the **meta-strategic leadership** of teacher leaders and administrator leaders, as they develop inter-relationships and new roles within the school organisation. The pedagogical leadership includes student advocacy, confronts barriers in school's culture and structures and nurtures a culture of success. The meta-strategic leadership role of the principal and other teacher leaders includes envisioning, inspiring, aligning key elements, enabling teacher leadership, building

alliances and synergy, culture building and generation of identity (Crowther et al., 2009).

This model moves away from a conception of central leadership of the principal, towards that based on a crucial role of the principal to enable teachers to become leaders. This includes:

- Making space for this teacher leadership development
- Encouraging a culture of success
- Stepping back and allowing trust to develop and
- Acknowledgement of the importance of teacher leadership in pedagogy.

As research shows, the development of a professional community with shared responsibility of the school growth is important (Lambert, 2003; Frost and Durrant, 2003). The three essential characteristics of parallel leadership can be summarised as:

i. Mutualism
ii. A sense of shared purpose
iii. Allowance for individual expression (Chew and Andrews, 2009).

To enable teacher–leadership in a positive culture it is critical for new professional roles for teachers to be activated. This IDEAS (Innovative Designs for Enhancing Achievements in Schools) school improvement program was used over a three-year period from 2005-2007, in Singapore and Australia.

It challenges schools to build capacity for sustainable changes and the IDEAS programme was developed as a comprehensive approach to school improvement which values professionalism of teachers. The researcher agrees that new patterns of leadership need to be examined that expand beyond the hierarchical learning environments and structures of schools and leaders to a more distributive leadership learning culture.

Leadership is a complex factor, but as many research studies show, it is an important enabling factor to drive effective high performance. Well-designed metrics are required

to measure the correct hybrid leadership dimensions that contribute towards the effective higher performance in school teams so that the leadership factors that drive effective high performance in schools across all different contexts can be established.

3.3 TEAM LEADERSHIP AND COMPETENCIES

Team leadership involves understanding the needs of people for connection and belonging and thus to have effective team leadership, it is required to have the ability to manage human interaction.

3.3.1 Interdisciplinary teams

Interdisciplinary teams can be defined as a group of members from “two or more disciplines or functions in an organisation with complementary skills and who share a common purpose, goal and accountability (Clark, Spence and Sheehan, 1996).

It is important in a school organisational context to examine the literature and research on interdisciplinary teams, as this framework is indicative of the model of team structures existing in a school organisational structure. Since the interdisciplinary team has a variety of expertise with complimentary knowledge, skills and attitudes, the underlying disciplinary differences in education and, possibly conceptual frameworks may lead to divergent goals or values. These social barriers can hinder effective high performance in the team. This can lead to conflict and mistrust in the school teams.

More traditional viewpoints on leader-subordinate interaction instead of the actual leader-team dynamics and relationship are prevalent in the research studies, but shed little light on the actual team leadership and internal and external activities. More specifically the boundary activities can be defined as internal, when the leader engages in activities directed towards the team, and external, when activities are directed towards the teams’ external environment, for example to acquire resources (Benoliel and Somech, 2015). In a study conducted on 92 interdisciplinary teams, results indicated that the leaders’ internal activities fully mediate the relationship of the team functional heterogeneity, whereas the external activities mediated the inter-team goal to team innovation. Recently scholars have stressed the importance of the

balancing of the external and internal activities as this can achieve better team performance (Yuki, 2012).

3.4 EMPLOYEE ENGAGEMENT

The next factor that is discussed is Employee Engagement, which can be seen as an individual's involvement and satisfaction with, and their enthusiasm for the work they do. In recent research many organisations are examining this construct as it is a driver in increasing and creating better organisational performance as well as decreasing turnover and absenteeism.

3.4.1 Concept clarification

Highly engaged workers have a great passion for their work and feel a deep connection and passion for this work. Disengaged workers essentially have checked out and may put time, but not energy, into their work (Robbins, Judge, Odendaal and Roodt, 2014). In previous research, conducted by the Gallup organisation, Harter (1999) concludes that the most profitable companies have people doing what they do best, with people they like and with a sense of psychological ownership for the outcome. Kahn's premise of employee engagement focuses more on how the psychological experiences of work and work contexts influence them during task performance. He distinguishes three dimensions of employee engagement: emotional, cognitive or personal.

i. Emotional engagement: This refers to the personal satisfaction and sense of affirmation and inspiration an employee gets from doing his work and belonging to the organisations. This term is described in the Towers Perrin Talent Report (2007) as the will to offer discretionary effort or the effort to go the extra mile. Passion and personal pride are believed to motivate an employee to offer this discretionary effort (Kahn, 1990). Emotionally engaged employees form meaningful empathetic connections and are concerned about the feelings of others.
ii. Cognitive engagement: This includes the awareness and alignment of the employees with the mission and vision of the organisation, as well as the provision of the resources, tools and support required to act on their sense

of passion and pride for completion of their tasks. In the Perrin Talent Report (2007) it includes this organisational dimension, encompassing the role of their work within the company's objectives.

iii. Personal engagement: Based on the research studies by Coffman and Gonzalez-Molina (2002) and Kahn (1990), a person's personal employee engagement varies for different tasks and it's possible to be engaged in one dimension and not the other. Based on the definitions of the emotional and cognitive engagement, three levels of engagement are noted: Highly engaged, moderately engaged and disengaged employees.

These assertions and research studies are very relevant to this research study as it is these highly engaged employees who can show a large effect on the bottom line of an organisation and its effective operation. Highly engaged employees show drive and cognitive connection to the mission and vision of the organisation, adding discretionary effort because they find meaning in their work and this drives organisational performance. These employees also form strong motivational linkages with other co-workers and employees at all levels of the organisation who, in turn, willingly apply discretionary effort. Research in 2007 (Towers Perrin Global Workforce Report, 2007) showed that in the global workforce 21% were engaged employees whilst 38% were disengaged. Results from this research showed that the engagement gap, which is the difference between the discretionary effort that the employers need and effectiveness of the company to provide the organisational factors and culture that enhance higher performance, was large. It seems that engagement depends more on the organisational factors than it does on the personal factors.

3.4.2 Employee Engagement and the Drivers: The bigger picture

Many leaders will need to revisit and devise new sets of strategies in the multitude of changes, disruption and changing social global horizons. However, it will be impossible to execute any of these carefully devised strategies without the necessary people to implement them effectively. It is here that the **engaged employee** remains central to the emerging talent agenda. Engaged employees will be the drivers of change and are those that invest their time and passion, as well as discretionary effort and the right behaviours, to successfully achieve the required organisational results.

Organisations are going to require employees to go “above and beyond” to not only engage positively in their work but to exhibit behaviours and skills like adaptability, resilience, life-long learning, and time-management including high performance work rate.

In the Aon Hewitt Trends in Engagement Report (2014) (Table 3.3) the ranked key drivers of Employee Engagement for 2013 showed the top five key drivers globally to be:

- career opportunities
- managing performance
- organisation reputation
- pay and
- communication.

Table 3.3: Aon Hewitt Graphical representations (Source: Aon Hewitt Trends in Engagement Report 2014, p.29)

Drivers	2012 Global	2013 Global	Perception change 2012-13
Career opportunities	1	1	0% points
Managing performance		2	⇧ 2% points
Organisation Reputation	2	3	⇧ 7 % points
Pay	3	4	⇧ 2% points
Communication	5	5	⇩ -2%points
Innovation			⇩ -2% points
Recognition	4		⇧ 2 % points
Brand alignment			⇩ -2% points

3.4.3 Engaging Leaders

According to the Aon Hewitt Top Companies for Leaders, 2001-2014 (as cited in the Aon Hewitt Trends in Engagement Report, 2014) leaders hold the key to employee

engagement and play a very important role, both directly and indirectly. Leaders indirectly have a “multiplier effect “on all the top engagement drivers and best employee indices. Excellent leadership was found in to be the top differentiation between average and best employer organisations by Oehler (2013). Leaders, directly, also make most of the decisions regarding performance goals, pay and recognition, communication, work process and innovation. A data survey analysis (Aon Hewitt Trends in Engagement Report, 2014) found that the perceptions of leadership had an average correlation of $r= 0.6$ ($p< .01$) with the top global employee engagement drivers. Another interesting statistical relationship also reported in the same research, was that leadership had the strongest unique statistical relationship in separate multiple regression equations, with the sales growth and operating margins.

Leaders also impact the engagement of others, and the ability to engage others is a core leadership requirement. The engaging leader has a unique profile and this can be summarised in the following Table 3.4.

Table 3.4: Summarised from Aon Hewitt Trends in Engagement Report (2014, p. 38).

ENGAGING LEADER PROFILE Experience Belief & Behaviours
• Early experience that stretched them and allowed growth
• Optimistic outlook and sense of purpose
• Importance of followers and helping others to develop and grow
• Focus on inspiring others
• Seize opportunities to engage themselves and others
• Holistically drive a positive organisational culture of brand, reputation, performance and engagement

To make engagement happen in an organisation it is therefore critical to build engaging leaders. The conclusions from the report (Aon Hewitt, 2014) stressed the following:

- Understand the trends affecting your talent strategy
- Focus on the engagement behaviours required for performance and organisational success
- Deliver a compelling employee value proposition (EVP) by establishing your top engagement drivers to gain insight into what is highly valued by your employees
- Create a culture of engagement including brand, performance orientation and leadership
- Protect the foundational elements like strong company practices, infrastructure, safety and benefits, work-life balance and fulfilling work.
- Build engaging leaders, as companies that excel at engagement invariably have strong engaged leaders.

Various models have been proposed in employee engagement and some of these will be discussed below, with their relevance to this particular research study.

3.4.4 Engagement Measures and Models of Engagement

In the world's top performing organisations one observes a commonality that drives the business outcomes. Engaged employees are known to be more productive employees. Work done over 30 years of research by **Gallup** (2008; 2010), resulted in the development of 12 core business elements that linked to business outcomes.

These 12 statements (Figure 3.4) or the Gallup's engagement ratio is a macro-level indicator of the organisations proportion of engaged to actively disengaged employees. In a recent Gallup report (2016), engaged employees reached a new highest level of 34,1% in the United States and the trends from U.S. employee engagement (Gallup, 2016) are shown in Figure 3.5 from January 2011 until April 2016.

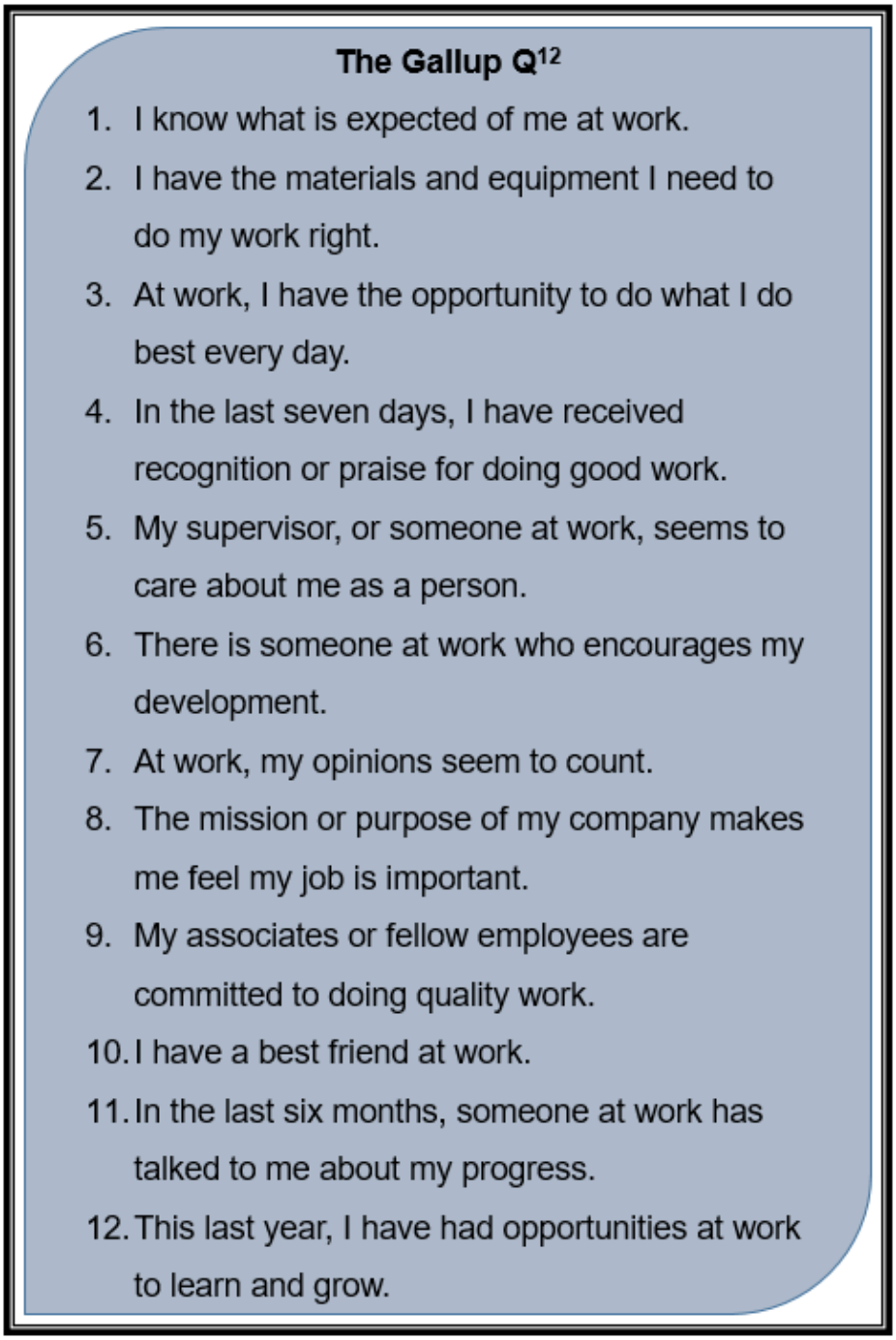


Figure 3.4: Gallup Q 12 statements. Source: Gallup's Employee Engagement Report, 2010

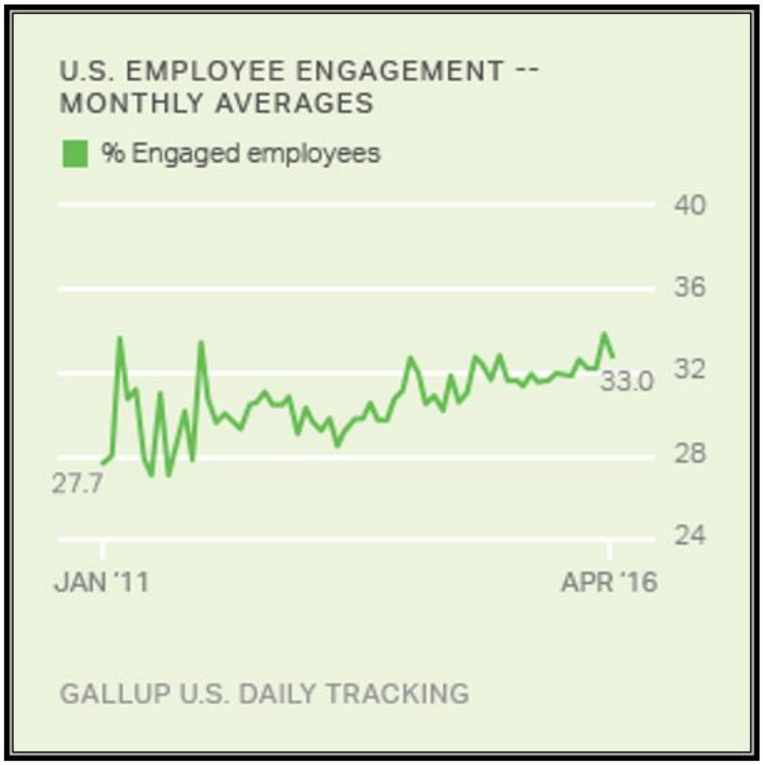


Figure 3.5: U.S. % Employee Engagement trends
(Source: Gallup's Employee Engagement, 2016**).**

Gallup's research showed that organisations optimised their employee engagement by prioritising and focusing on the following:

- Strategy: Ensuring an employee engagement strategy is in place.
- Accountability and Performance: Defining and measuring success at all levels.
- Communication: Strategy and Cultural alignment with high quality touchpoints and connections to reinforce commitment.

The **Aon Hewitt Employees Engagement Model** defines engagement as "the psychological state and behavioural outcomes that lead to better performance" It examines the outcomes of SAY, STAY and STRIVE. This model has been used across many companies but could also be very applicable in a slightly modified version in the school operational teams or educational context.

This research by Aon Hewitt conducted on over 7 million employees across 6 000 companies' uses engagement analytics to improve organisational performance. It examines the work experience indicators that have an impact on engagement under

management control: Brand, Leadership, Performance, Work and Company Practices. Business outcomes in the fields of Talent, Operational, Customer and Financial are included in the model. The model outline is shown in Figure 3.6.

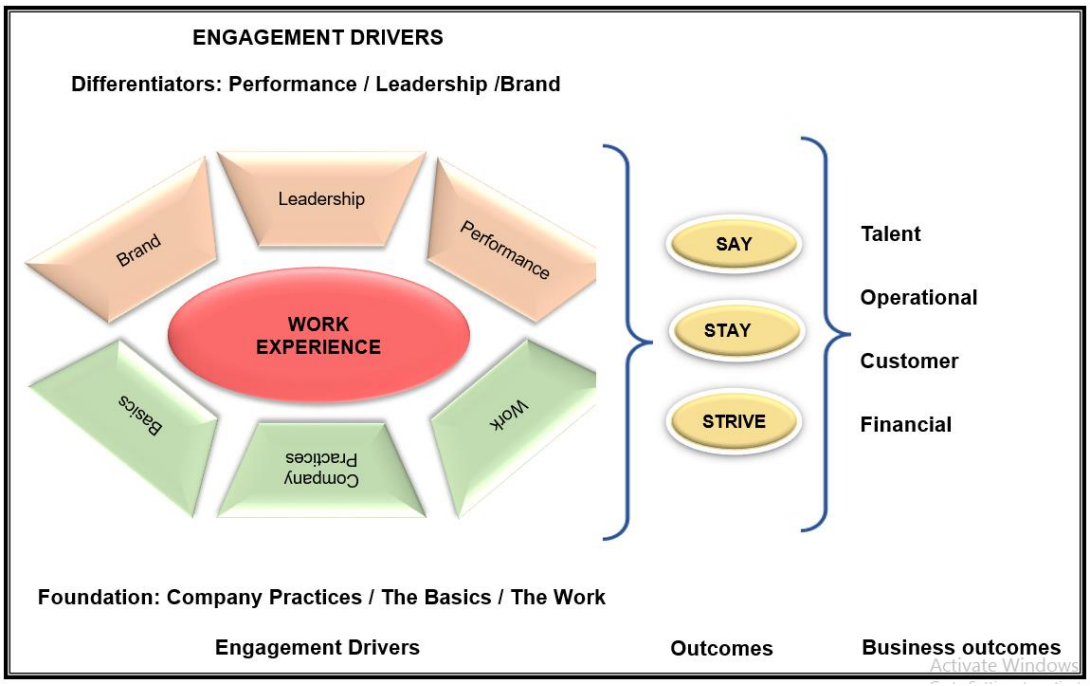


Figure 3.6: Aon Hewitt Model (Source: Aon Hewitt Trends in Global Employee Engagement, 2014).

The Engagement outcomes **(Aon Hewitt Model)** are outlined as:

SAY: to speak positively about your organisation to co-workers and potential customers.

STAY: have desire and longing to be part of the organisation.

STRIVE: are motivated and exert effort towards success for their job and the company.

This measure was utilised in this research study as a measure of the engagement of the educators in the school organisation, although it was combined with the Kenexa measure. In assisting organisations to increase their organisational performance Kenexa used the Employee Engagement Index (EEI) which asks employees the following four questions. These can be linked to Pride, Satisfaction, Advocacy and Commitment (Wiley, 2009) (Table 3.5).

Table 3.5: Kenexa Employee Engagement Index (EEI).

Number	Statement	Linked to
1.	I am proud to tell others that I work for my organisation.	*Pride*
2.	Overall, I am extremely satisfied with my organisation as a place of work.	*Satisfaction*
3.	I would gladly refer a good friend or family member to my organisation for employment.	*Advocacy*
4.	I rarely think about looking for a new job with another organisation.	*Commitment*

(Source: Wiley, 2009**)**

In the Kenexa research study, which involved an online survey on 33,000 employees in 28 different countries, the EEI was examined with responses to the four questions above and then analysed. In the Kenexa World Survey Report (2012) several organisational "best practices" were identified. These are listed below.

- Publish the organisation's mission, vision and values and strategies.
- Sponsor training to improve quality.
- Conduct opinion surveys and regular performance appraisals.
- Collect the customers' feedback and share it with the employees.
- Cross train employees to perform across disciplines and create inter-disciplinary teams.

This model had two components and research followed two threads. One tracked the employees' view of the products and service quality while the other focused on employee engagement. The latter measured the Employee Engagement Index (EEI) whilst the former captured the Performance Excellence Index (PEI). The combination of these two measures was a potent leading indicator of business success (Wiley, 2010).

Employee engagement is obviously a complex construct and functions at a number of different levels. It can be seen to be influenced directly and indirectly by all these levels like a reverse ripple effect (Macey and Schneider, 2008). When employees do not feel

like they belong or feel part of a team, the employee is less engaged. An uncooperative toxic team environment may affect the employee engagement irrespective of how positive other factors may be. It is by operating teams at a high performance level that it raises the bar and encourages the individual to exhibit higher performance (Kenexa, 2012).

Another model considered in this research study was the **Integrated Employee Engagement Model (Poisat**, **2006**) (Figure 3.7).

Here it can be seen that the Organisational Leadership and the Organisational culture embrace the entire model, and that these are considered vitally important in this integrated employee engagement model. In this research study the aspects of organisational leadership and culture were included into the holistic model as these were seen from the literature and models to be imperative in engagement.

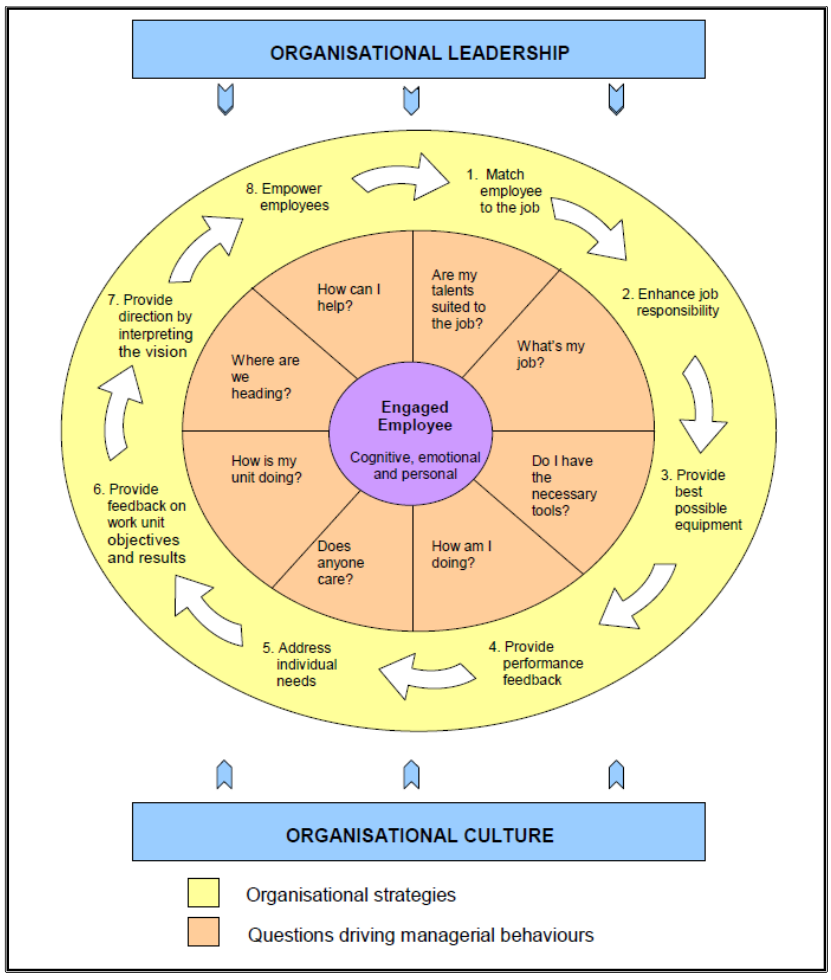


Figure 3.7: Integrated Employee Engagement Model (Source: Poisat, 2006).

In this research thesis, the constructs of leadership, engagement and strategy, including communication, were also selected as important enabling factors as drivers or variables as significant linkages to enable organisational effectiveness or a high performance organisation.

The **Poisat Integrated Employee Engagement model** was used as a basis to construct a revised theoretical model for examining high team performance engagement in secondary school teams, to create effective performance outcomes. This will be discussed further in the Model Development Chapter four and in Chapter seven.

Employee engagement is seen as a construct that really matters. Employees who are actively engaged are the key people to move the organisation forward and create a higher performing organisation. It has been reported that fewer than 1 in 3 employees worldwide (31%) are engaged, with actually 17% disengaged. There is a strong correlation between tenure, age and role/level engagement in an organisation. Engaged employees stay in an organisation for what they can give; whereas disengaged employees stay for what they can get. It is seen that opportunities to apply their talents, career development and training are some of the top key drivers of job satisfaction. Managers are not necessarily doing the things that matter most and their relationship skills are more important than the knowledge skills i.e. knowing your managers as people is more important than the manager's actions. Executives aren't getting the basis of performance right and trust in executives can have more than twice the impact than trust in the immediate line manager. These are all summarised key findings from the Blessing White Global Engagement Report (2011).

It is therefore imperative that engagement is considered as one of the enabling factors that drive the effective high performance. In respect of this research study, engagement is one of the key drivers in creating high performance teams in the business context. It is therefore critical to include engagement as one of the enabling factors in driving effective high performance in school operational teams.

The next important construct to be considered is communication, as the flow of information is critical for driving effective organisational performance.

3.5 COMMUNICATION AND HIGH QUALITY CONNECTIONS

Communication serves four main functions within an organisation: *control, motivation, emotional expression and information.* If one examines that communication acts to *control* member behaviour, this occurs in the authority hierarchies and formal guidelines that communication channels control behaviour. In fostering *motivation,* it encourages and supports to improve performance or clarify and praise to reinforce desired behaviour. *Emotional expression* is when communication provides a release of frustrations and feelings and fulfilling a social need. Communication also provides the role in facilitating decision making and transmitting the *information* that individuals require (Robbins, Judge, Odendaal and Roodt, 2014, p.268).

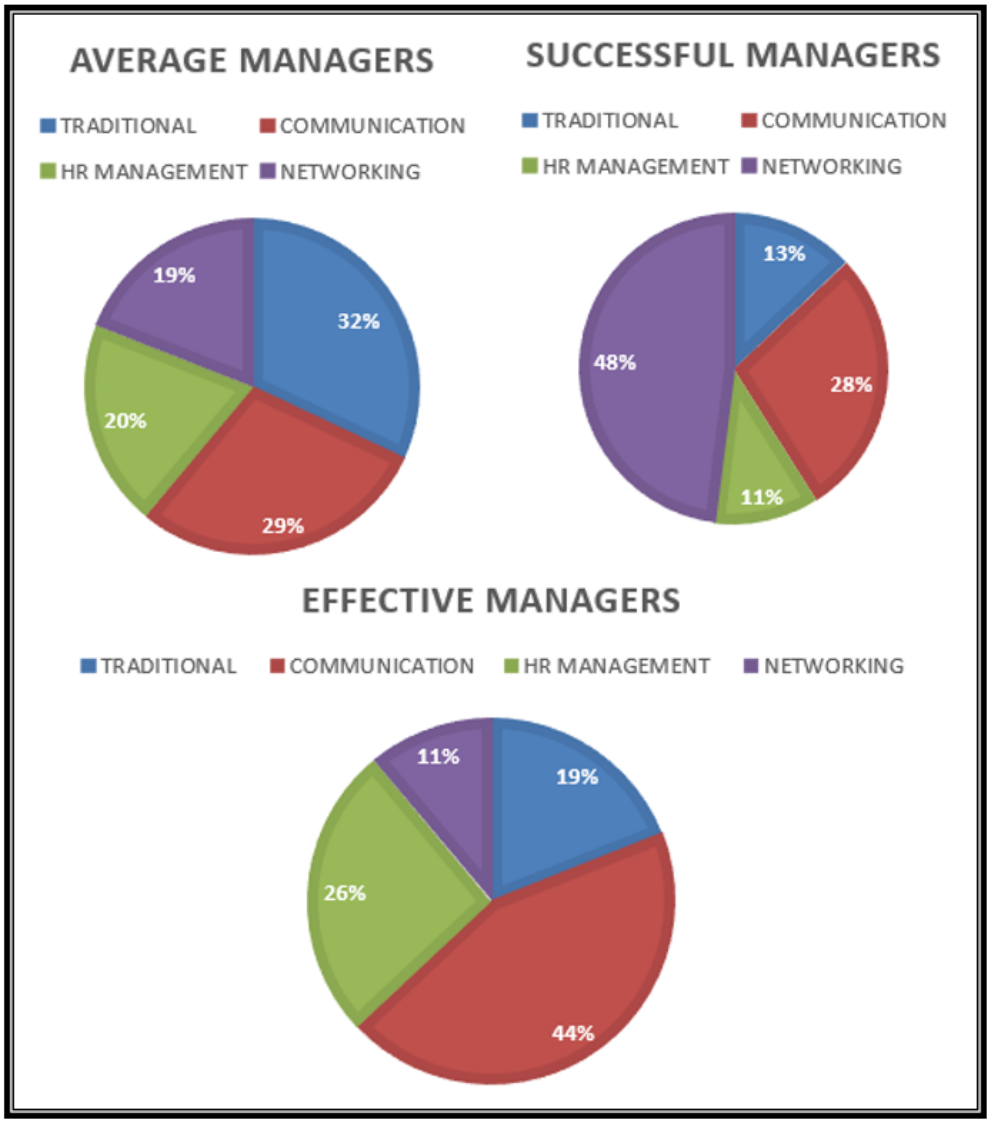
Effective teams are characterised by openness and a clear two-way flow of information. It is the linking mechanism between all the components of teamwork and involves exchange of information and building of relationships and trust. In less effective teams, the managers control all the resources and flow of information as a way to protect his/her power (Coffman and Gonzalez-Molina, 2002). It is therefore imperative for managers and supervisors to regularly initiate discussions so that clear lines of communication are opened to develop collaboration.

The quality of communication may also function as an antecedent to organisational commitment (Dee et al., 2006). It has been shown in a research study in 1995 by Stott et al., that when there is open communication, a high level of trust and collaboration is developed and this, in turn, breeds innovation and high performance levels. Overall, these all contribute towards a strengthened organisational commitment.

In further research, using a five item Openness subscale of O'Reilly and Robert's communication questionnaire (1976), the extent of member's communication with one another was computed. Results showed a Cronbach's alpha of 0.94 with a significant positive correlation of frequency and open communication. In this research study which examined organisational commitment, the intervening variables included empowerment, communication openness and teacher autonomy. Communication openness had the largest effect in each path analysis (Dee, Henkin and Singleton, 2006). This was validated by further research work undertaken by Hoy (2010) which

also showed open communication had a large effect in the path analysis in relationship with organisational commitment.

In a study by Luthans, Hodgetts and Roenkrantz (1988), the average manager spent 32% of their time on traditional management, 29% on communication, 20% on human resource management and 19% on networking. However, the successful manager spent most of his/her time on networking and the least on human resource management. The most **effective manager** spent **most of his/her time on communication 44%** and the least time on networking (Figure 3.8).



(Source: Robbins, Judge, Odendaal and Roodt, 2014, p.7**)**

Figure 3.8: Communication and Networking for Effective Management.

This shows how critically important communication is as an enabling mediating factor in creating effective managers and high performance teams. Communication was added into this thesis as an enabling factor and linkage as the process of forming effective HP school operational teams requires effective communication.

3.5.1 High Quality Connections (HQC)

The work connections can be defined as the dynamic living tissue that exists between two people at work when there is some interaction involving mutual awareness (Dutton and Heaphy, 2003). These connections may be single interactions or within the context of an ongoing relationship or conversation between two people. HQCs is the term used to explain short dyadic positive interactions at work that produce the uplift you feel when encountering someone who expresses genuine concern for you. These impacts of positive interrelating at work include collective flourishing and thriving (Dutton and Glynn, 2008). Three subjective experiences occur, one a positive arousal and positive energy, also a feeling of positive regard and finally a degree of mutuality. This mutuality captures a feeling of potential movement in the connection, as both people experience full participation and engagement at the moment (Stephens, Heaphy and Dutton, 2003).

With respect to this research thesis, communication and high quality connections are imperative in creating an effective team in schools and thus this enabling factor was included as a key enabling factor for the research study.

3.6 ORGANISATIONAL CULTURE AND ORGANISATIONAL CLIMATE

School milieu (Price, 2014) can be considered to consist of both organisational culture and organisational climate. Each of these will be briefly defined and discussed.

3.6.1 Organisational Culture

Organisational culture refers to a system of shared meaning held by its members which distinguish it from another organisation (Robbins, Judge, Odendaal and Roodt, 2014). It is a descriptive term concerned with how employees perceive their organisation. Since this can be a set of key characteristics, seven main primary ones were extracted in research studies that captured the essence of an organisation's

culture. In a study by Denison, Haaland and Goetzer (2004) results showed that the strong and positive aspects of organisational culture most critical to success across global regions can be summarised generally as:

- Having a team orientation
- Empowering employees
- Having a strategic direction and intent
- Possessing a strong and recognisable vision.

Overall, this study showed that having a strong organisational culture is associated with increased sales growth, profitability, employee satisfaction and overall organisational performance.

In the educational field the school culture embraces all values and belief systems contained in the structure of the school and its environment. The school traditions and history, context and environment of the school provides a wide environmentally meso, exo and macro system, as outlined by Bronfenbrenner (Raymond and Pienaar, 2013), as previously outlined in Chapter two. The systems approach includes the holistic picture which define the schools learning conditions and interactions (Maslowski, 2006; Price, 2014). Since the organisational culture embraces the belief systems and values within the school context, it is critical to consider it as an enabling factor in driving effective performance within each school operational team.

3.6.2 Organisational Culture Alignment

Organisational culture alignment is critical to provide people with a clear direction of the future and communicates a consistent message from senior management as to what is expected from them. A report by Towers, Watson and Willis, (2013) implicates that employee engagement significantly affects organisational performance when a number of factors are aligned. Leadership, business strategy and organisational culture should be aligned for effective and high performance levels.

3.6.3 Organisational School Climate

Numerous reviews have been done in discussing both school culture and school climate. Since school culture encompasses the wider array of the environmental

concepts, school climate refers to the narrower focused set of conditions in the micro system of the Bronfenbrenner Ecological Systems Model. School climate can assess the momentary ethos of the students and teachers' attitudes in the school (Price, 2014). The concept of school climate has a rich research history in the educational context and the development of a sixty-four item Organizational Climate Description Questionnaire (OCDQ) was pioneered to assess staff interactions and school climate (Halpin and Croft, 1963). Limitations of this were that many sub-constructs lacked construct validity and subsequent versions by Hoy (2010) allowed a more holistic picture of the school climate or school personality to be analysed.

In a review by Thapa, Cohen, Guffey and D'Alessandro (2013), five essential areas of focus or dimensions of school climate were outlined:

i. Safety
ii. Relationships
iii. Teaching and Learning
iv. Institutional Environment and
v. School Improvement Process.

The National School Climate Council (2007, p.1) recommends that a positive and sustained school climate be defined as follows:

> *"A sustainable positive climate fosters youth development and learning necessary for a productive, contributively and satisfying life in a democratic society. This climate includes norms, values and expectations that support people feeling socially, emotionally and physically safe. People are engaged and respected".*

This research thesis aligns with this definition of a positive sustainable school climate and reviews done by Cohen and Geier (2010) and Thapa, Cohen, Guffey and D'Alesandro (2013). The positive school climate was therefore included as one of the enabling factors in driving a high performance level in the school operational teams.

3.6.4 School Milieu

To define the term school milieu, within the organisational context of teaching and learning, the focus is on the middle ground or integration between the school climate and culture (Goldring et al., 2008; Price, 2014). Most authors subsume the term under 'school community' and state that each school has its own set of internalised norms that influence behaviours and perceptions of both the educators and learners. School milieu however, does not vary moment by moment as school climate does, but it is also not as permanent, inflexible and determined as school culture. In research studies in traditional public US schools, the culture had evolved into a culture such that the principals had little direct power to influence their school milieu (Wong and Klopnott, 2009). Recent empirical studies on charter schools in the US discovered that principals in these schools freely organise their schools without district administration rules and policies (Dressler, 2001; Price, 2012).

3.7 ORGANISATIONAL COMMITMENT

The construct organisational commitment is defined in a number of ways and involves the attitude that the employee has in linking the identity of the employee with the organisation. This merging of the individual goals and visions of the employee with those of the organisation and its strategic mission and vision, contribute towards organisational commitment. It includes the perceived costs of leaving the organisation and the rewards of staying associated with the employee and continuing to contribute towards the organisation (Mowday, Porter and Steers, 1982). According to the Meyer and Allen model (cited by Jaros, 2007) of organisational commitment, there are three main themes of organisational commitment: commitment reflecting affective behaviour, recognition of costs and moral obligation to stay with the organisation. Some of these dimensions overlap with the measure of employee engagement and hence these two constructs often follow similar trends. Team structures contribute to enhanced organisational communication and are associated with higher levels of school organisational commitment (Dee, Henkin and Singleton, 2006). Other studies by Postmes, Tanis and De Wit (2001); Muthusamy, Wheeler and Simmons, 2005) also showed a high level of team work which strengthened shared identity and collaboration which in turn intensified commitment to the organisation.

3.7.1 Organisational Commitment and Team Effectiveness

Team effectiveness is viewed as a fundamental building block of school management and the school depends on collective effort, motivation and the teamwork process (Crow and Pounder, 2000; Park, Henkin and Egley, 2005). It can be seen that there is a gap in research undertaken in the field of school teams and teamwork, with few studies that focus on skills and factors that influence the effective performance of the individual and school teacher teams operating in the school environment.

The model of teamwork by Dickson and McIntyre (1997) was used in this research thesis to establish the key factors that contribute towards operating a school high performance team, and included organisational commitment, communication, leadership and trust. Related behavioural indicators to increase teamwork included team leadership which included distributive leadership, communication, back up behaviour, coordination and trust. Findings in the research study (Park, Henkin and Egley, 2005) showed that teamwork was a significant predictor of commitment in teacher teams. Organisational commitment positively correlated with success in the workplace (Cronbach alpha coefficients 0.74-0.92). The shortened version of the Organisational Commitment Questionnaire (OCQ) was shown to have this reliability in a number of studies (Fields, 2012). The nine-item version of the fifteen item OCQ was used in these reported research studies.

Organisational commitment was defined by Naquin and Tynan (2003) as a longer term stable attachment and has been shown to be negatively associated with absenteeism and turnover but positively related to high performance and organisational effectiveness. Data driven research of team based structures and dimensions are seen to be effective on delivering high performance and positive climates, better communication, instructional responsibility as well as lower level of absenteeism and employee turnover (Naquin and Tynan, 2003). In educational research on affective commitment, it was shown that employees high in affective commitment were loyal, put in extra work and were less likely to quit their jobs (Thomsen, Karsten and Oort, 2015).

In this thesis, other enabling factors were added to the main factors of leadership, engagement and communication, as literature research studies showed their

significance. School climate, organisational commitment and culture, as well as culture alignment were factors that were included in the research as a number of studies indicated their importance and significance in creating effective school operational teams.

3.8 TRUST AND SUPPORT

Since school teams require a mutual level of trust for effective performance, it has been noted in many studies that trust is an essential element in the social interaction between school teacher team members, manifesting strong relationships, improved cooperation, reduction of conflict and increased engagement and organisational commitment (Tschannen-Moy and Hoy, 2000). In the Blessing White Engagement Report (2011), global results showed that trust in the executive level has a stronger correlation with engagement than the trust in the immediate managers does. However, employees are more likely to trust their immediate managers than the executives.

At the school level, a model was developed by Thomsen, Karsten and Oort (2015) that distinguished between trust in three agents: team members, the supervisor and higher management. This research took place in the context of schools of vocational education and training in Holland and data was collected using questionnaires with analysis being done with structural equation modelling. In this study, trust was a predictor for effective teacher outcomes but also a mediator in the social exchange process. Results illustrated that the trust in the team members was related to affective organisational commitment. Trust in the supervisor and higher management was however not related to affective commitment. The organisational support was related to teachers' trust at all management levels and this had a direct effect on affective organisational commitment.

An empirical research study using structured equation modelling was conducted on teacher collaboration related to the teachers' perceived leader support, in primary and secondary schools (Honingh and Hooge, 2015). Results showed that in the primary school, teacher collaboration is influenced by the amount of perceived leader support, as well as teacher's satisfaction of decision making participation and teacher's orientation towards the learner's performance. However, in the secondary school, only the perceived school-leader support directly affected the teacher collaboration.

It was critical that a literature review of the main enabling factors and models was undertaken, so that the relevant models and frameworks were selected for this research. In Chapter three the main enabling factors were examined in research studies undertaken over interdisciplinary focus areas, namely organisational behaviour, business leadership and constructs and educational leadership. As many components of organisational behaviour and management approaches in South Africa are based on United States and Western literature, studies from South Africa were included and examined as part of this research as the organisational behaviour models need to be aligned with the African approaches, in the school education contexts. The main **enabling factors** were therefore outlined as being significant in driving a high performance school operational team: Leadership, engagement and communication.

3.9 SUMMARY

The focus of Chapter three is to examine the literature for recent research studies conducted in the field of the enabling factors examined in this research thesis: Leadership, engagement and communication. These are discussed as well as other enabling factors that were deemed to have some of the effect on the higher effective performance of the school operational teams.

In this thesis, other enabling factors were added to the main factors of leadership, engagement and communication, as literature research studies showed their significance. Using theoretical frameworks and models from the consulted literature, these variables were clustered into analytical indices and enabling factor groupings to construct a conceptual model and the variables were operationalised for statistical quantitative analysis, thereby being able to test the formulated research hypotheses.

The next chapter, Chapter four, discusses the preliminary proposed conceptual model as well as the proposed hypotheses.

CHAPTER FOUR

OPERATIONALISATION OF VARIABLES FOR CONCEPTUAL MODEL AND SAT CONSTRUCTION

4.1 INTRODUCTION

The **enabling factors** that influence and create highly effective performance in both business and schools' operational teams from literature are discussed in Chapters two and three. As many factors holistically affect the school and its operations, it is critical to examine them in the broader picture and with an integrated approach, including both the individual and team educator (micro/meso human factor) and the school (macro system factor) as a system.

In this chapter the theoretical frameworks and proposed conceptual model for this research study is outlined. All of the selected enabling factors are grouped into clusters or indices and the variables operationalised. Because of these inter-relationships, the researcher chose an SEM statistical analysis to examine these linkages. This multivariate approach allows the examination of a set of intersecting relationships between independent, intervening and dependent variables, which may be either discrete or continuous.

The research questions RQ_2, RQ_3 and RQ_4 are therefore addressed in this chapter. The enabling factors improving organisational effectiveness are identified and from the theoretical framework, a conceptual model was devised, which included leadership, team and school system enabling factors. These involved the systems approach using the mechanistic or organisation (systems) alongside the humanistic or individual/team (human) approach.

Some of the main constructs that were examined in this research study are the high performance leadership and team enabling factors and practices, educator engagement, organisational commitment, communication connections, trust and support, school infrastructure and school climate. The linkages between these enabling factors and the effective performance outputs were later analysed from the empirical data collected from the research conducted for this thesis.

The overall research question was stated in chapter one as:

What enabling team performance factors, indicators and strategies are required to optimise the performance of the secondary school operational teams with regard to the outputs of a more effective organisation?

In order to benchmark and assess effective school performance, several benchmarking criteria or **enabling factors** could be ascertained from the literature review that resonated with the effective operation of school teams to create high performance levels within the school. In this research study the following benchmarked focus areas, along with the enabling factors, were identified and selected from the literature review as being imperative in creating effective high performance outcomes in the school operations teams.

This chapter formulates the theoretical and conceptual model and discusses the identified variables, which are hypothesised as enabling factors that positively or significantly influence the higher level of performance of school operational teams in the education field. The variables were thus operationalised to allow the statistical analysis (inferential, factor analysis and SEM) to test the proposed hypotheses.

4.1.1 Enabling factors

In a previous research study on high performance teams (Gibbs and Poisat, 2013), the enabling factors affecting the successful implementation of a high performance team (HPT) were categorised, according to Castka, Bamber and Sharp (2001), as either a *human* or a *system* factor. The **System factors** included: organisational impact, defined focus, alignment and interaction and measure of performance. **Human factors** are knowledge and skills, the needs of the individual and group culture, amongst others (Castka et al., 2001; Suyanthi and Samuel, 2004).

In this thesis, the enabling factors from the literature study and previous research work (Gibbs, 2103) that drive the high level of performance in business and school operational teams, were discussed in Chapters two and three.

These factors were grouped into the human high performance team index which included enabling factors of staff, collaborative competencies or teamwork skills,

culture alignment and perceptions of the immediate supervisor as a leader. The system factor included a school HP work index comprising enabling factors of potential for innovation, fairness, positive employee experience and an environment of hybrid leadership. The relevant literature sources for the theoretical frameworks used, are shown in Table 4.1.

Table 4.1: Literature review of main benchmark enabling factors or criteria associated with HP teams in school environments.

ENABLING FACTOR FOCUS AREA	Emerging Themes: Enabling Factors	Theoretical Frameworks
Human HPT Enabling Factor:		
Individual/Team	• Staff collaborative competencies • Culture alignment • Immediate supervisor/ leadership perceptions	Globe study, House 2004; Crowther and Andrews, 2003.
System HPT Enabling Factor:		
School HP Work Index	• Innovation potential • Fairness • Employee experience • Hybrid leadership environment	Boedker et al., 2011; Gibbs, 2013.
Intervening Variables		
Other factors:	• Trust and Support level • Communication • Staff perception of learner engagement.	Thomson, Karsten and Oort, 2015. Hoy, 1991; Stephens, Heaphy and Dutton, 2003; Cooper, 2014.
Infrastructure	• Infrastructure	Cuesta, Glewwe and Krause, 2015; Murillo and Roman, 2011
Leadership measures	• Leader Member Exchange	Epitropaki and Martin, 2005.
Outcomes of HPT	• Employee Engagement • Organisational commitment	Aon Hewitt, 2013; Wiley (Kenexa), 2010; Poisat 2006. Mowday, Steers and Porter, 1979; Snape and Redman, 2003.
Outcomes	• % Pass Rate (average over last three years)	Department of Education. 2014

Source: Author's own construct (2016)

The conceptual model was then constructed and grouped the enabling high performance factors into **two factor focus areas: *Human*** *HPT Enabling factors (Individual / Team) and* ***System*** *HPT Enabling factors (School HP Work Index/Milieu)*.

4.2 THE CONCEPTUAL MODEL

4.2.1 Conceptual Model

In this research thesis, the conceptual framework therefore used two **factor focus areas** with **Human HPT Enabling Factor** levels: Individual/Group/Team (Micro /Meso) and **System HPT Enabling Factor level:** Organisation (Macro) School level (Castka et al., 2001). This linked to the broader **macro theoretical framework** of the Bronfenbrenner's Ecological Systems Theory Model (Raymond and Pienaar, 2013) from chapter one.

The key enabling factors (Table 4.1) were extracted from the literature and tabulated into the two factor focus areas as outlined below (Table 4.2). This study had a dominant quantitative method approach and used a number of literature **theoretical models as frameworks** for each primary key variable or enabling factor or cluster of factors.

Table 4.2: Key factors with theoretical frameworks selected for this empirical study.

	Key Enabling Factors	Micro Theoretical frameworks
Human HPT Enabling Factors:		
Individual/Team (Independent Variables)		
1.	School staff member collaborative competencies	Globe study, House 2004.
2.	School staff member organisational culture alignment	Crowther and Andrews, 2003.
3.	School staff perceptions of supervisor leadership	Crowther and Andrews, 2003.
4.	**Enabling HP team index (1-3)**	Combination of 1-3
System HPT Enabling Factors:		
School (Independent Variables)		
5.	Innovation Potential	Boedker et al., 2011
6.	Employee Experience	Boedker et al., 2011
7.	Fairness	Boedker et al., 2011
8.	Hybrid leadership environment perception	Townsend, 2015
9.	**School HP Work Index (5-8)**	Boedker et al., 2011
Intervening Variables: Mediators		
10.	Trust level	Thomson, Karsten and Oort, 2015.
11.	Support level	Thomson, Karsten and Oort, 2015.
12.	Communication	Hoy, 1991; Stephens, Heaphy and Dutton, 2003.
13.	Infrastructure	Cuesta et al., 2015; Murillo and Roman, 2011.
14.	Staff perception of learner engagement	Cooper, 2014.
15.	Leadership ratings LMX	Epitropaki and Martin, 2005.
Dependent Variables: Outcomes:		
16.	Organisational Commitment	Mowday, Steers and Porter, 1979;
17.	Employee Engagement	Aon Hewitt, 2013; Wiley (Kenexa), 2010; Poisat 2006.

Source: Author's own construct (2016)

4.2.2 Development of Conceptual Model and Path Diagram

In this research an attempt was made to extract the most important factors influencing the perceived effective performance of school operational teams as reflected in the literature review.

No claim can be made to have covered every single variable in the school improvement field of research in South Africa. Research done in different countries might also have a different impact than within the South African context of education. Since the researcher was aware that too many additional elements might dilute the basic questions posed by the research problem, only those directly connected with the main themes of leadership (hybrid), engagement and communication were added (Cooper and Schindler, 2007) as delineated by the research question for this thesis.

The **independent variables** are therefore all the **enabling factors** that can drive a higher level of performance of the school operational teams within the schools.

The **dependent variable** in this proposed model is identified as the *Perceived effective performance of the secondary school teams* and is positively and directly related to the two dependent variables literature measures of *Employee Engagement* and *Organisational Commitment,* since both of these measures have been shown to be directly related to more effective and higher performance levels.

Effective performance was also examined within different contexts (Quintiles and Regions) as well as evaluating the measures against the percentage pass rate for Grade 12 learners, which was taken as the average over the last three years.

The literature study with a combination of theoretical frameworks for the constructs, highlighted many enabling factors that allowed the researcher to establish a conceptual model as a basis for this study. The initial proposed conceptual model contained these seventeen 17 variables as listed in Table 4.2. The grouping or categorising of the factors is justified by the sufficiency of theory expounded in chapter two and three. Some factors could later be categorised or grouped under different variables and were subject to changes because of the statistical analysis.

These variables were outlined in a proposed **basic conceptual model (Figure 4.1)** from the literature studies or theoretical frameworks (Devised by the author).

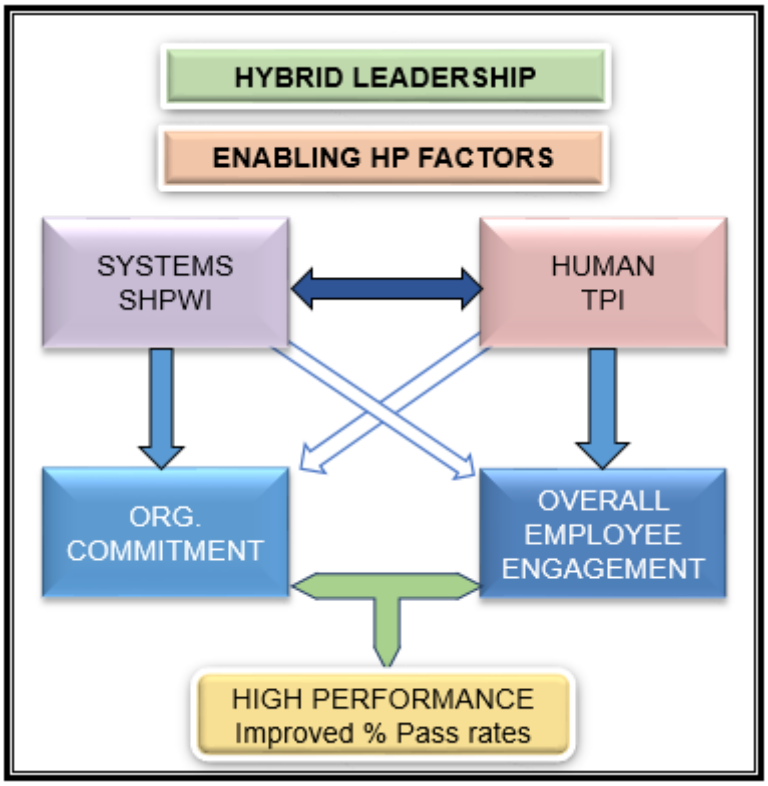


Figure 4.1: The basic conceptual model showing the main variables (Authors own construct built from Fig 1.8).

4.3 OPERATIONALISATION AND DEFINING OF VARIABLES

The Multivariate technique used in this research is structured equation modelling (SEM). For SEM, the literature review should develop the theoretical conceptual framework and then show where the models come from. The research design shows conceptually in the table how the key variables were identified and conceptualised from the literature review and how they are theoretically framed, from different previously researched models in Table 4.2.

The variables selected from the literature review as the key variables as seen in the **basic conceptual model** (Fig 4.1) involved in the enabling factors for high performance and organisational effectiveness, are outlined below.

4.3.1 Variables

The study used two independent measures (1) **Educator Enabling Team Performance Index (ETPI)** and (2) **School High Performance Work Index.**

Independent Variables:

Independent Variable 1:

The study used three sub-factors to measure one independent measure of an educators enabling Team performance index. This independent variable was a cluster of variables grouped together to form an Index, the **Educator Enabling Team Performance Index (ETPI).** It consisted of a **micro** component of the educator's perception of the leadership approaches at the school (ELSH), a **meso** component of the educator's team relations and competencies (ETCE) and a **macro** component of the alignment of the educator's culture to that of the school (OCAL).

These factors in the ETPI are all taken from the **INDIVIDUAL (HUMAN/INDIVIDUAL) perspective.** This variable thus consists of three sub-factors:

Micro: Perceptions of the School leadership of immediate supervisor, measured by 11 items.

Meso: Team leadership competencies and efficacy, measured by 8 items.

Macro: Alignment of educator culture to school culture, measured by 9 items.

Independent Variable 2:

The **School High Performance Work Index** (SHPWI) was originally based on four sub factors or constructs:

Innovation (based on three items),

Fairness (based on three items),

Employee Experience (based on four items) and

Perception of Educator Hybrid Transformational/ Distributive Leadership (based on three items).

The school high performance index was originally used from the business high performance index (Wiley, 2009; Boedker et al., 2011) and was then modified and improved later in a previous research study (Gibbs and Poisat, 2015). The model was also refined in this thesis to improve the construct analysis, which is discussed in Chapter seven.

These factors in the SHPWI are all taken from the **SYSTEM (ORGANISATION/SCHOOL) perspective.**

Mediating variables

The mediating variables are: MV1 Trust level, MV2 Support level, MV3 Communications and High Quality Connections, MV4 Infrastructure, MV5 Staff perceptions of Learner Engagement, MV6 Leader-Member Exchange (LMX).

Dependent variable

The dependent variables are DV1 School Organisational Commitment, DV2 Educator Engagement (Employee Engagement Index and Work engagement) and DV3 Percentage pass rate (Pass Rate %) which was obtained from the Department of Basic Education records for the specific schools surveyed in this research study (Department of Basic Education Technical Report, 2014).

All of these variables were analysed, using a structural equation modelling SEM process, outlined in Chapter five. From the literature review, the researcher identified and examined the previous research done on each of the variables and the specific relationships between the latent variables. By constructing this proposed structured model, each path or structure coefficient is therefore essentially a hypothesis (Mueller and Hancock, 2010).

These variables (IV and DV) are linked together to show the proposed conceptual model being tested in this research study in a conceptual path diagram. A path diagram is a graphical depiction of a theory, relating measure and possible latent

variables. The term latent means unobservable and represents a factor, hypothesised to have a causal bearing on one or more of the measured variables (Mueller and Hancock, 2010).

Table 4.3: Key Indicators and literature references: theoretical framework.

	FACTORS/INDICATORS	CODE	LITERATURE REFERENCE	*ITEMS indicators*
DV1	**School Organisational Commitment**	ORGC	Mowday, Steers and Porter, 1979; Snape and Redman, 2003.	9
DV2 DV2.1 DV2.2	**Educator Engagement** Employee Engagement Index Work engagement	EENG EENI WEN	Kenexa Employee Engagement Index, Wiley, 2010. Aon Hewitt, 2013; Poisat, 2006.	 4 4
DV3	Grade 12 pass rate	GPR	Department of Education.	1
IV1 IV1.1 IV1.2 IV1.3	**Team Performance Index** Educator Team leadership competencies and efficacy Culture Alignment Perceptions of Leadership at School	**ETPI** ETCE OCAL ELSH	**HUMAN/INDIVIDUAL** Tasa, Tagger and Seijts, 2007. Price, 2014. Crowther and Andrews 2003. GLOBE study, House, 2004.	**23** 8 6 9
IV2 IV2.1 IV2.2 IV2.3. IV2.4	**School High Performance Work Index** Innovation Fairness Employee experience Educator Leadership Hybrid environment freedom & recognition	SHPW INNO FAI EEE LSH	**SYSTEM/SCHOOL** Boedker et al., 2011. Gibbs and Poisat, 2013. Cameron, 2011. Townsend, 2015.	13
MV1 MV2	Trust level & Support level	TRU SUP	Thomsen, Karsten and Oort, 2015.	6
MV3	Communications and HCQ	COM	Hoy, 1991. Stephens, Heaphy and Dutton, 2003.	4
MV4	Infrastructure	ISE	Cuesta, 2015. Murillo, 2011.	1
MV5	Perceptions of Learners' Engagement	EPLE	Cooper, K., 2014.	5
MV6	Leadership LMX	LMX	Epitropaki and Martin, 2005	3

4.3.2 Theoretical framework into Proposed Conceptual Framework

These theoretical factors were then developed into the basic conceptual model (Figure 4.1) as shown previously. Using the linkages and proposed relationships in terms of the key identified variables as outlined from the literature review, a proposed **detailed** conceptual model was outlined (Figure 4.2).

Here the relationships and linkages between the key independent and dependent variables are shown with the mediating variables. From these linkages and relationships, a proposed detailed conceptual model (Figure 4.2) was designed and outlined. The variables were then operationalised and hypotheses were formulated to postulate answers for the research questions constructed for this study.

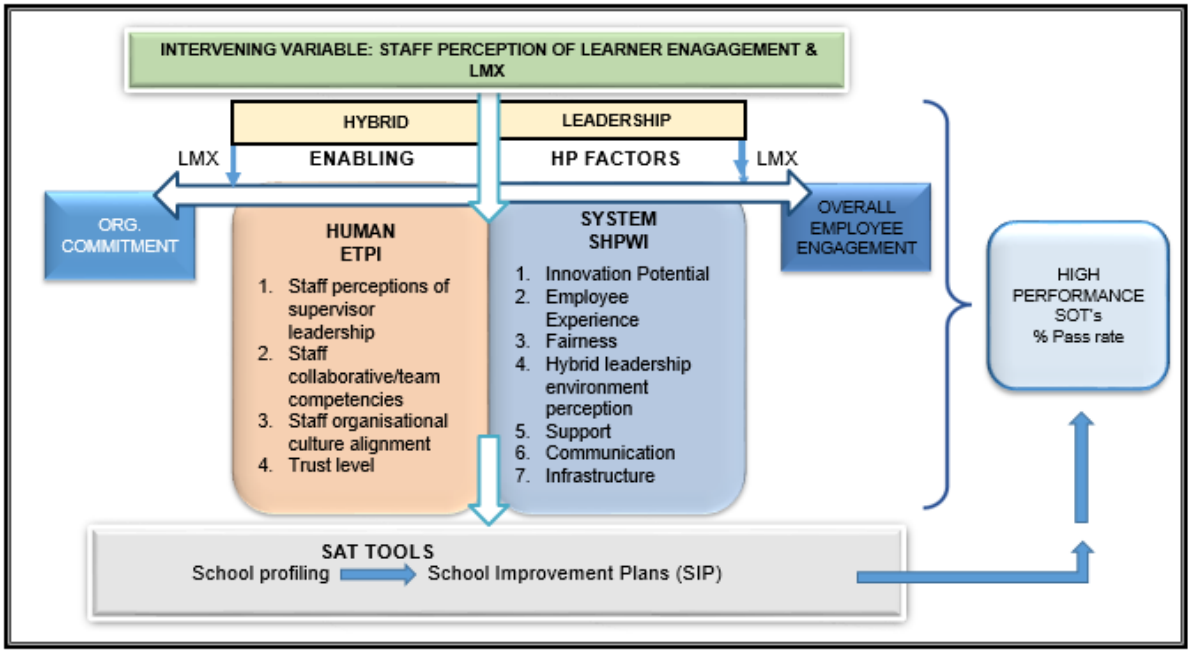


Figure 4.2: The detailed conceptual model showing the key variables (Authors own construct: Built from Fig 4.1).

4.4 OPERATIONALISATION AND LITERATURE LINKAGE OF EACH VARIABLE

4.4.1 Variables

In this section each variable is briefly defined and discussed with respect to the literature review, validating the selection of the variable in the model and aligning the

hypothesis with the literature studies. These constructs have been described in Chapter two and three. The 17 factors or variables examined in this study are outlined and numbered as in Table 4.4.

Table 4.4: The 17 selected sub-factors and variables for this research study.

Human	**TPI Performance Index: Human**
1.	**Educators Team Performance Index (TPI)**
1.1	Staff perceptions of supervisor leadership
1.2	Staff collaborative/team competencies
1.3	Staff organisational culture alignment
1.4	Trust level
System	**SHPWI** High Performance Work Index: School
2.	**School HP Work Index**
2.1	Innovation Potential
2.2	Employee Experience
2.3	Fairness
2.4	Hybrid leadership environment perception
2.5	Support
2.6.	Communication
2.7.	Infrastructure
2.8.	Staff perception of learner engagement
2.9.	Leadership ratings LMX
2.10.	Organisational Commitment
2.11.	Employee Engagement

4.4.2 Hypothesised model

The overall **general hypothesis of this research study (H_{G1})** is that there is a positive relationship between the enabling factors and the effective organisational high performance of the school operational teams in secondary schools.

Enabling factors $\xrightarrow{H_{G1}}$ Effective High Performance.

The null hypothesis is that there is no relationship between the enabling factors in driving the high performance of the school operational teams.

Enabling factors $\xrightarrow{H_{G0}}$ No effect on performance level.

The hypothesised model can be considered as the inner structural model and the outer models are the measurement models, so a detailed proposed hypothesised model is outlined as follows (Figure 4.3).

After the CFA, the **mediating variables Trust** became a sub-factor for the Enabling Team Performance Index (TPI) and **mediating variables Support, Communication** and **Infrastructure** became sub-factors of School High Performance Work Index (SHPWI). The Perceptions of Learner Engagement and LMX remained as mediating variables in the final proposed conceptual model, so the hypotheses are labelled as per the final adjusted model.

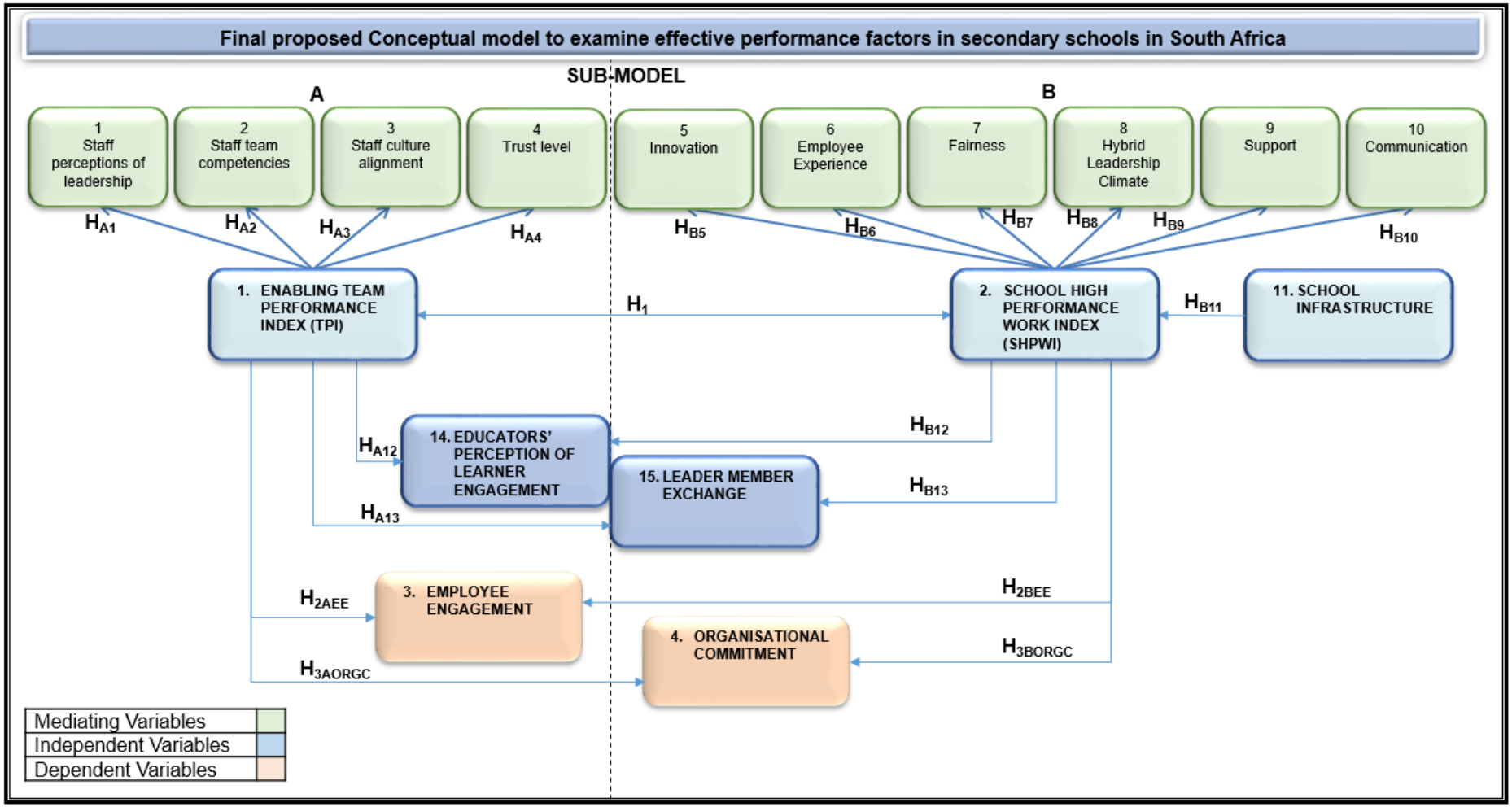
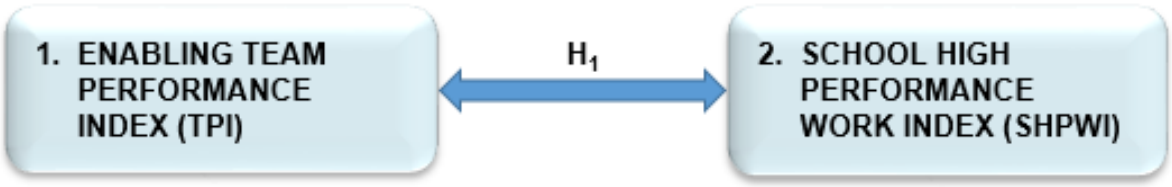
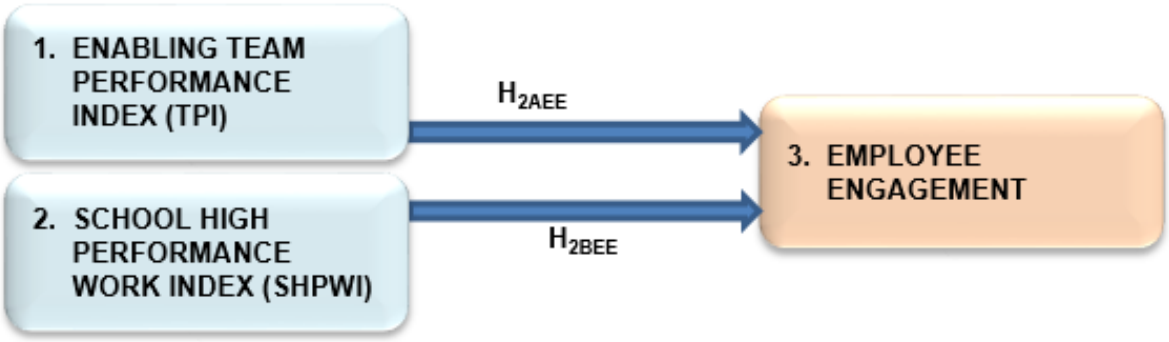


Figure 4.3: A proposed hypothesised conceptual model (After the CFA, Built from Fig 4.2: Authors own construct 2016).

The hypotheses in the structural model are stated as follows: **Hypothesis 1**: The more positive team performance index (TPI) the greater the level of the school high performance work index (SHPWI) and vice versa.



Hypothesis 2AEE, 2BEE: The extent of positive engagement (ENG) of the school staff increases with the higher levels of both the team performance index (TPI) and overall school high performance index (SHPWI).



Hypothesis 3AORGC, 3BORGC: The extent of positive organisational commitment (ORGC) of the school staff members' increases with higher levels of both the team performance index (TPI) and the overall school high performance index (SHPWI).

All the intervening variables are proposed to act as mediating variables in the conceptual model and hypotheses are shown in Figure 4.3.

Hypothesis A1,2,3,4: The extent of the sub-factors (ELSH, ETCE, OCAL, TRU) will have an effect on the level of the team performance index (TPI).

Hypothesis B 5,6,7,8,9,10,11: The extent of employee experience (EEE), innovation (INNO), fairness (FAI), hybrid leadership (HLSH) support (SUP), open communication (COMM) and infrastructure (ISE) will have an effect on the level of the school high performance index (SHPWI).

Hypothesis A12, B12: The extent of staff perceptions of learner's engagement (EPLE) will mediate the effects on the level of the team performance index (TPI) and on the level of the school high performance index (SHPWI).

Hypothesis A13, B13: The extent of leader member exchange (LMX) rating of leadership will mediate the effects on the level of the team performance index (TPI) and on the level of the school high performance index (SHPWI).

Hypothesis H14: The extent of organisational commitment will affect the level of employee engagement and vice versa.

4.5 OPERATIONALISATION OF VARIABLES

4.5.1 Dependent Variables: Effective performance of schools: Organisational Commitment, Employee Engagement.

In Chapter two the high performance teams and school improvement models were discussed and unpacked. In many recent studies it was found that organisational commitment, leadership and trust, open communication with feedback and back up behaviour were critical for contributing to effective high performance in teams (Dee, Henkin and Singleton, 2006). According to Naquin and Tyman (2003), a positive school climate, better communication, self-efficacy and instructional responsibility transmitted to workplace productivity.

In this study the dependent variable of effective high performance of the school teams was measured by examining the measure and level of *Organisational commitment and Overall Employee Engagement.* These measures are all indicative and positively related to a *High level of Effective performance.*

Organisational commitment can be defined as a long term, stable attachment and is positively related to high performance and organisational effectiveness. *Employee engagement* is a complex construct and functions at a number of different levels. Employees who do not feel that they belong or feel part of the team become less engaged and an uncooperative, toxic team environment may also affect how engaged the employee is, irrespective of how positive the other factors may be. In an integrated employee engagement model (Poisat, 2006), leadership and culture were also considered.

In this thesis an integrated approach was also adopted as employee engagement and organisational commitment are closely linked and dependant on a number of enabling factors, as was the case in a number of engagement research studies (Aon Hewitt, 2013; Wiley, 2010; Poisat, 2006). Therefore, the two constructs were selected for this research study, as dependent variables and metrics that were positively related to indicate the positive outcomes of an effective high performance school operational team.

4.5.2 Independent variables:

The independent variables selected for this study were identified as two indices:

Team Performance Index (TPI): *Staff collaborative competencies, Staff organisational culture alignment and Staff perception of supervisor leadership.*

The Team Performance Index was adapted from the research work and models of Crowther and Andrews (2003), as well as a number of other researchers (Marquardt, Seng and Goodson, 2010; Colenso, 2000).

School High Performance Work Index **(SHPWI):** *Innovation Potential, Employee Experience, Fairness and Hybrid Leadership Environment Perception.*

These were discussed in Chapter three, which shows the high performance model of Wiley, 2009 and the HPT model (Spence, 2012). The SHPWI was adapted for the school environment in a pilot study (Gibbs and Poisat, 2015).

The relationship between the two independent variables (**hypothesis 1**) and the two dependant variables (**hypothesis 14**) are discussed below, as well as the relationships between the IV and DV (**hypotheses 2 and 3**)

The relationship between the SHPWI and TPI (**hypothesis 1**) is a new linkage as these metrics were designed by the researcher in establishing a metric for school performance. However, team work has been known to increase effective performance for centuries, with a great deal of work being done in this field (Chapter two).

Many studies support the **hypotheses (14, 2 and 3)** of positive relationship between organisational commitment, employee engagement (DV's) and team performance, as well as a positive level of school high performance work index (IV's) (Park, Henkin and Egley, 2005; Naquin and Tynan, 2003; Boedker et al., 2011).

4.5.3 Mediating or intervening variables: Trust and Support, Communication, Infrastructure, Staff Perception of Learner Engagement and Leader Member Exchange (LMX)

4.5.3.1 Trust level

As shown in studies by Dee, Henkin and Singleton, 2006, trust at high levels contributes to higher team performance. Research (Tschannen-Moy and Hoy, 2000; Blessing White, 2011; Thomson, Karsten and Oort, 2015) supports these hypotheses (**hypothesis A4)**.

4.5.3.2 Support level

Recent studies (Thomson, Karsten and Oort, 2015) have shown that support levels were related to the teacher's trust in all management levels in the organisation and this had an effect on the organisational commitment levels. Other studies by Honing and Hooge, 2015, indicated that the perceived school-leader support in secondary

schools directly affected the teacher collaboration and working together. These studies show complete alignment with the **hypothesis B9.**

4.5.3.3 Communication

Effective teams have open, two-way flow communication, which is the linking mechanism to build trust and relationships (Coffman and Gonzalez-Molina, 2002). In studies by Dee, Henkin and Singleton, 2006, and Hoy (1991), communication openness had the largest effect in each path analysis. The **hypotheses B10** is therefore supported.

4.5.3.4 Infrastructure

Research has shown that better infrastructure is related to more effective performance in numerous studies (Cuesta, et al., 2015; Murillo and Roman, 2011) and this supports the **hypothesis B11**.

4.5.3.5 Staff perception of Learner Engagement

In research studies by Cooper (2014), it was shown that relational, personal connective instruction was strongly linked to engagement in the classroom. Practices that enabled students or learners to make personally meaningful connections to classes were a critical step to increasing student engagement. In this research study a measure of the staffs' perception of the level of engagement among the learners at the school was recorded. High levels of engagement have consistently been linked to effective academic success with research studies undertaken by Caraway, Tucker, Reinke and Hall (2003), as well as by Wang and Holcombe (2010). This supports the **hypotheses A12 and B12**.

4.5.3.6 Leader Member Exchange (LMX)

Leader-member exchange (LMX) assesses the perspectives of the leader and the follower. Aligned with the social exchange theory of Blau (1964), trust, empathy and respect are increased with high LMX exchanges between follower and leader (Epitropaki and Martin, 2005; Jackson and Johnson, 2012) which, in turn, lead to

higher commitment and more effective performance. This shows support for **hypotheses A13 and B13.**

4.6 OPERATIONALISATION OF VARIABLES, SURVEY ITEM DEVELOPMENT AND CONSTRUCTION OF THE SCHOOL ANALYICAL TOOL (SAT)

The main important factors and indicators for this research study were included in the operationalisation of the variables and the development of the survey instrument. To operationalise the variables (Babbie and Mouton, 2001), the variable must be defined, so that it can be measured and/or expressed either quantitatively or qualitatively. Utilising a survey instrument or questionnaire represents a common starting point of the process as the procedure for operationalisation can be outlined as follows:

- Identify and define the concept or factor to be measured (Section 4.3)
- Determine one or more quantitative measure of the concept and examine literature for linkages (Section 4.4)
- Determine the chosen method for the measure and item construction and instrument survey design (Section 4.5).

4.6.1 Independent Variables

HUMAN/INDIVIDUAL

4.6.1.1 IV1: Enabling Team Performance Indicator (TPI)

This indicator consisted of three sub-factors initially and, finally, a four-factor indicator:

- Staff collaborative competencies
- Staff culture alignment
- Staff perception of leadership of supervisor
- Trust Level (Added factor after CFA, moved from a mediating variable).

The questionnaire was designed to measure a Team Performance Indicator (TPI) (Table 4.5) with these three sub-factors: *Staff collaborative competencies, Staff culture alignment and Staff perception of the leadership of the supervisor.*

Table 4.5: Initial: Enabling Team Performance Indicator

	Factor **INITIAL METRIC**	**Code**	**Literature References**	**Items measuring this indicator.**
IV1	Enabling Team Performance Indicator	TPI		23 items
IV1.1	Staff collaborative competencies	ETCE	Tasa, Tagger and Seijts, 2007.	8 items (Q59-65)
IV1.2	Staff culture alignment	OCAL	Price, 2014.	6 items (Q71-76)
IV1.3	Staff perception of leadership of superior	ELSH	Crowther and Andrews,2003.	9 items (Q48-56)

IV1.1 Staff collaborative competencies **[Coded ETCE].**

This measure is based on team efficacy. When people work in teams, they differ in confidence of the team's capability to perform effectively and successfully. Team efficacy influences team dynamics, time allocated to work, work engagement and resilience (Robbins, Judge, Odendaal and Roodt, 2014).

High team collaborative competencies show intentions to solve problems in collaborating ways and finding win/win solutions. These conflict management skills are a conflict handling style known as "integrating" since a mutually beneficial outcome is achieved (Robbins et al., 2014).

Based on the work by Tasa, Tagger and Seijts (2007), an eight- item scale was constructed to measure the variable *Staff collaborative competencies* (Table 4.6).

Table 4.6: Eight item scale to measure Staff Collaborative Competencies (ETCE).

STAFF COLLABORATIVE COMPENTENCIES ETCE		
QUESTION –CODE	**Variable CODING**	
Q59	ETCE1	I set deadlines for achieving tasks.
Q60	ETCE2	I often assume leadership.
Q61	ETCE3	I try and include everyone in a group's discussion.
Q62	ETCE4	I take the group's ideas and develop plans from their contribution
Q63	ETCE5	I make correct judgements in complex situations.
Q64	ETCE6	I remind others of the team's goals.
Q65	ETCE7	I address conflict immediately by raising it for discussion with other team members.
Q66	ETCE8	I try and calm down team members who are in conflict.

IV1.2 Staff culture alignment [Coded OCAL]

Work done by Wong and Klopnott (2009) and recent studies by Price (2012) indicate the importance of the school milieu and the integration between the school climate and culture (Price, 2014). The survey instrument questions were based on these studies and the six- item scale was used for the measure of *Staff culture alignment.* On the survey instrument it included question 71-76 (Appendix 1). This included items such as "I like a stable and predictive environment", "I enjoy being part of a team" and "I am happy to have my performance assessed in terms of my contribution to a team".

IV1.3 Staff perception of leadership of the supervisor [Coded ELSH]

The item questions are based on the theoretical conceptual framework obtained from the literature review in Chapter two. The Crowther and Andrews (2003) parallel leadership framework was used as a basis for a measure of the perceptions of the leadership of the respondent's immediate supervisor. Measure of the facets of meta-strategy, authenticity, development, innovation and people skills were covered. A nine-

item scale was constructed to measure the *Staff perceptions of the leadership of their immediate superior* **(Table 4.7).**

Table 4.7: Nine item scale to measure Staff Perception of Leadership of Supervisor (ELSH).

STAFF PERCEPTIONS OF LEADERSHIP OF SUPERVISOR ELSH		
QUESTION –CODE	**Variable CODING**	**My immediate supervisor (HOD/Deputy/ Principal) ….**
Q48	ELSH1	Has a clear vision or goal for the future of the school.
Q49	ELSH2	Is clear about his/her values and demonstrates these values.
Q50	ELSH3	Responds well to feedback and criticism.
Q51	ELSH4	Supports and encourages staff development and learning.
Q52	ELSH5	Gives recognition and acknowledgement to staff.
Q53	ELSH6	Fosters involvement and cooperation among staff.
Q54	ELSH7	Is innovative and encourages thinking about problems in a new way.
Q56	ETCE8	Gives people opportunities to lead work assignments and activities.
Q57	ETCE9	Prioritizes people management.

These three sub-factors consisting of 23 items comprised the measure of the *Team performance indicator* (TPI).

After the CFA analysis, however the factor of Individual *Trust level* was added to the *Team performance indicator* (TPI) **(Table 4.8).**

IV1.4 Trust Level [Coded TRU]

Since an effective school requires a mutual level of trust between individuals for effective performance, this is an essential measure in the social interaction of the school teams. Work done by many researchers (Tschannen-Moy and Hoy, 2000;

Thomson, Kartsen and Oort, 2015) showed a high level of trust in team members led to greater levels of commitment and effective performance.

A three-item scale was used to measure the individual level of trust of the respondents in this research study.

Table 4.8: Final: Enabling Team Performance Indicator (TPI).

	Factor: HUMAN/INDIVIDUAL FINAL METRIC	**Code**	**Literature References**	**Items measuring this indicator.**
IV1	**Enabling Team Performance Indicator**	**TPI**		**26 items**
IV1.1	Staff collaborative competencies	ETCE	Tasa, Tagger and Seijts, 2007.	8 items (Q59-65)
IV1.2	Staff culture alignment	OCAL	Price, 2014.	6 items (Q71-76)
IV1.3	Staff perception of leadership of superior	ELSH	Crowther and Andrews, 2003.	9 items (Q48-56)
IV1.4	**Added:** Trust level	TRU	Tschannen and Hoy, 2000.	3 items (Q37,38, 40)

4.6.1.2 IV2: School High Performance Work Index (SHPWI)

SYSTEMS/SCHOOL

The School High Performance Work Index (Boedker et al., 2011; Wiley, 2009; Spence, 2012) was discussed in Chapter two. This index was adapted for the school environment and consisted initially of four factors:

- Innovation Potential (3 items)
- Employee Experience (4 items)
- Fairness (3 items)
- Hybrid Leadership Environment (3 items).

After the CFA analysis, the modified Index was as summarised below, as discussed in chapter five. The School High Performance Work Index was the School/Organisation/System part of the model and thus included more factors that affected the system work index. The following were added:

- School Climate (OSCL) was added to the Hybrid leadership factor (LSH).
- Support level (SUP)
- Communication (COMM).

The process and adjustments are shown in chapter five and were based on theoretical considerations and statistical analysis, in the validation of the measuring instrument.

The final School High Performance Work Index was a six-factor scale (Table 4.9).

Table 4.9: Final: School High Performance Work Index (SHPWI).

	Factor: SYSTEM/ORGANISATION FINAL METRIC	**Code**	**Literature References**	**Items measuring this indicator. After Adjustments**
IV2	**School High Performance Work Index**	**SHPWI**		**19 items**
IV2.1	Innovation Potential	INNO	Wiley, 2009.	2 items (Q1-3)
IV2.2	Employee Experience	EEE	Wiley, 2009.	2 items (Q4,7)
IV2.3	Fairness	FAI	Wiley, 2009.	3 items (Q8-10)
IV2.4	Hybrid leadership environment	HLSH included OSCL		3 items (Q37,38, 40)
	Added School climate OSCL			2 items (Q67, 68)
IV2.5	Support level	SUP	Honingh and Hooge, 2015.	3 items (Q41,42,43)
IV2.6	Communication	COMM	Dee, Henkin and Singleton, 2006.	4 items (Q44-47)

4.6.2 Dependent Variables

4.6.2.1 DV1: Organisational Commitment (ORGC)

In many research studies organisational commitment has been shown to be positively associated with high performance and organisational effectiveness (Mowday, Porter and Steers, 1982; Naquin and Tynan, 2003). The shortened Organisational Commitment Questionnaire (OCQ) was shown to have the reliability of Cronbach alpha's ranging from 0.74 to 0.92 in a number of studies reported by Fields (2012). This nine-item shortened version (Mowday, Steers and Porter, 1979) of the 15-item OCQ was used in this research study as a measure of the *School Organisational Commitment* (Table 4.10).

Table 4.10: Organisational Commitment (ORGC).

	Factor: SYSTEM/ORGANISATION	Code	Literature References	Items measuring this indicator. After Adjustments
DV1	Organisational Commitment	ORGC	Mowday, Steers and Porter, 1979.	9 items (Q14-22)

4.6.2.2 DV2: Employee Engagement (ENG)

Numerous studies have shown that an engaged workforce has an effect on the performance level of an organisation (Wiley, 2010; Kenexa 2012).

The *Personal* Employee *Engagement Index* used in this study utilised the four item scale (Wiley, 2009) which consisted of:

- I am proud to work at my school (Pride).
- Overall, I am satisfied with my organisation as a place to work (Satisfaction).
- I would gladly refer a good friend or family member to apply to work at my school (Advocacy).
- I rarely think about looking for a new job in another school (Commitment).

Added to this *Personal Employee Engagement* sub-factor was a *Work Engagement* sub-factor (Aon Hewitt, 2010; Poisat 2006). The *Work Engagement* sub-factor included 4 items: Time, Positive work attitude, Concentration and Resources. These items were modified to suit the school context (Table 4.11).

Table 4.11: Employee Engagement (ENG).

	Factor: SYSTEM/ORGANISATION	**Code**	**Literature References**	**Items measuring this indicator. After Adjustments**
DV2	**Employee Engagement**	**ENG**		**8 items**
DV2.1	Personal Employee Engagement	EENG	Wiley, 2009.	4 items (Q23-26)
DV2.2	Work Engagement	WEN	Aon Hewitt, 2010; Poisat, 2006.	4 items (Q27-30)

4.6.3 Mediating or Intervening Variables

The following three mediating variables are outlined below:

4.6.3.1 Perceptions of Learner Engagement (EPLE)

Perceptions of Learner engagement was measured using a five-item scale (Table 4.12).

Table 4.12: Perceptions of Learner Engagement (EPLE).

	Factor: SYSTEM/ORGANISATION	**Code**	**Literature References**	**Items measuring this indicator. After Adjustments**
MV	**Perceptions of Learner Engagement**	**ELPE**	**Cooper, 2014.**	**5 items (Q31-35)**

4.6.3.2 Leader Member Exchange (LMX)

Leader-Member Exchange was measured with a three-item scale (Table 4.13).

Table 4.13: Leader Member Exchange (LMX).

	Factor: SYSTEM/ORGANISATION	Code	Literature References	Items measuring this indicator. After Adjustments
MV	Leader Member Exchange	LMX	Epitropaki and Martin, 2005.	3 items (Q77-79)

4.6.3.3 Infrastructure (ISE)

Infrastructure was measured using a 1-item scale (Table 4.14). Since this was not a main focus of this study, the researcher only used one item as the research focus area was primarily on the enabling human factors. However, it was noted as a limitation of the study and it is the researchers' intention to expand this study to include a section of the School Analytical Tool (SAT) which would include resources and infrastructure. It was outside the main scope of this research study.

Table 4.14: Infrastructure (ISE).

	Factor: SYSTEM/ORGANISATION	Code	Literature References	Items measuring this indicator. After Adjustments
MV	Infrastructure	ISE	Cuesta,2015; Murillo,2011.	1 items (Q36)

The final survey instrument is shown in Appendix 1 with the coded questions as the School Analytical Tool (SAT) as used in the research survey.

4.7 STRUCTURED EQUATION MODELLING

As this study followed the SEM, the **theoretical to conceptual model** development precedes the measurement model so the first stages of the SEM was followed. Further SEM steps will be discussed in Chapter five and six.

In this research study the literature reviewed provided the background to cluster the factors influencing the effective performance of the school operational teams in secondary schools in South Africa, to formulate a conceptual model. Some factors could however be incorrectly grouped or erroneously placed. No claim is made of complete coverage of every factor that influences this system, but this research study

examined the selected enabling factors for effective SOT's within the school system and their effects and significant relationships and linkages.

The proposed conceptual model, path diagram and hypotheses model changed slightly during the course of the research study and the validation of the measuring instrument is discussed in chapter five. The **proposed conceptual model** with hypotheses is outlined in Figure 4.3 (p.122).

In the multilevel model, at a school level, the following moderating variables were examined:

Moderating Variable1**:** **Quintile** Group (Group 1-3 & Group 4 -5 & Private)

Moderating Variable 2: **% Grade 12 Pass rate** (High, Medium & Low Performing School). As the sample per school was too small to conduct individual SEM analysis, an ANOVA was undertaken within and between groups for these two variables.

Moderating Variable 3: **Regional position** (Eastern Cape, Western Cape and KwaZulu-Natal). To examine this variable, school profiling was conducted on each region with a high, medium and low performing school, using the School Analytical Tool (SAT). A comparison was also done between the high and low performing schools within one region, with differences and similarities.

Using the basic proposed conceptual model (Figure 4.2) along with the hypotheses model, the **proposed conceptual model** was outlined. This **proposed conceptual model to promote effective high performance in secondary school operational teams** with **all the variables and the hypotheses** was therefore represented in Figure 4.2 (p.119) and Figure 4.3 (p.122).

4.8 SUMMARY

This chapter outlined the development of theoretical frameworks from the literature study overviewed in chapter two and three. From the literature the relevant selected variables and enabling factors were constructed into a conceptual model that led to the formulated hypotheses to answer the research questions posed at the start of this research study. The theoretical frameworks from literature as well as previous studies were utilised to operationalise the variables, from various studies and often across inter-disciplinary fields. The detailed conceptual model showed the proposed relationships to be investigated in this study and hypotheses were formulated. These hypotheses drove the design of the school analytical tool (SAT), with the metric being constructed and designed from across a number of theoretical frameworks, leading to the initial design and development of the measuring instrument.

The research questions, RQ_2 and RQ_3 which examine the relationship between the enabling factors that drive effective performance of the SOT's in the key areas of leadership, engagement and communication in secondary schools, was addressed. In RQ_4, a framework or model which could assist a school profile to be conducted was devised as the designing of the School Analytical Tool addressed the objectives RO_4 and RO_5.

Chapter five will outline the research design and methodology leading onto the start of the SEM process and the validity and reliability of the measuring instrument.

CHAPTER FIVE

RESEARCH DESIGN, METHODOLOGY, VALIDITY & RELIABLITY OF SAT

5.1 INTRODUCTION

In this chapter the research methodology is outlined and discussed. Research question RQ_4 and RQ_5 and objective RO_4, RO_5 and RO_6 as stated in chapter one, are addressed. The research design, methods, approach and techniques of research implemented in this study are detailed. The SEM multivariate technique used in this study is outlined and the discriminant validity and reliability of the research instrument is discussed to show the analysis. The discriminant validity of the constructs in the conceptual model were confirmed or where necessary re-defined. The conceptual model presented in Chapter four was divided into two sub models and a confirmatory factor analysis was conducted.

This study, as reiterated in Chapter one, can be defined as a **design survey** utilising a theoretical model building **exploratory sequential method** to conduct an empirical, statistical quantitative (SEM) assessment of the proposed model. It thus aims to design and propose a new theoretical framework or model from the empirical results of the research, that adds to the body of knowledge in that particular research field, as well as a school analytical tool (SAT) that is able to profile the school operational teams. This may assist with strategically devising a relevant School Improvement Plan (SIP). The research process, as stated by Blumberg, Cooper, and Schindler (2008), is described as a sequential process to discover answers to questions through the application of a scientific process. Even though each research study may have its own unique, specific purpose, research objectives may fall into broad categories:

- Explorative or Formative Research studies: to gain knowledge or form new insights and perspectives into phenomenon;
- Descriptive Research studies: to portray accurately the characteristics of an individual, situation or group;
- Diagnostic Research studies: to determine frequency or with what other events it is associated;
- Hypothesis-testing Research studies: to test hypotheses of causal relationship between variables (Blumberg et al., 2008).

In this research study, the proposed theoretical model constructed from the literature review, will be tested using an SEM process of both confirmatory and exploratory modelling. This technique of quantitative data collection utilising a survey instrument and analysis using SEM, is suited to both model testing and development (Wothke, 2010). The research design is based on achieving the primary objective of the study and that is, as stated in Chapter one, as:

To investigate the main enabling factors that have an effect on the organisational effectiveness in secondary school teams in the educational human resources leadership/management and teaching and learning domains within the South African context (RO1).

Since research is purposefully conducted to achieve the objectives by data collection and ethical research (Blumberg et al., 2008), it is paramount to understand the researcher's stance. The research paradigm and viewpoint from which the researcher approached this study, is outlined below as it is important to know the researchers' stance and philosophical assumptions.

5.1.1 Research Philosophy

Using the philosophical assumptions (Creswell,1998) underpinning the two main paradigms (positivist and interpretivist), the researcher examined this thesis from the following ontological, epistemological and axiological stances.

From the **ontological assumption**, which is concerned with the nature of reality, the researcher relates to both the positivistic as well as the interpretivist approach. From the researcher's perspective, reality can be both objective and subjective as it has multiple dimensions and each person has their own sense of reality within different contexts. The **epistemological assumption** is concerned with what constitutes valid knowledge. Positivists regard only phenomena that are observable and measurable as valid, whereas interpretivists interact with that being researched. The researcher also positions herself in the middle of this viewpoint as reality must be seen in contexts and within systems, processes and change. The **axiological assumption** includes the role of values and whilst positivists believe that the process of research is value-free and unbiased, the interpretivist acknowledges that researchers have values and

biases may be present. For this study the researcher adopts a stance that values and biased are present, but may be controlled, and this lies between a positivistic and interpretivistic viewpoint.

The two extreme paradigms of positivism and interpretivism may be represented on a continuum and the features and assumptions of one paradigm are gradually merged by those of the next. The researcher therefore assumes a position marked as * on the continuum of paradigms as proposed by Morgan and Smirch (1980, p.492) (Table 5.1). This shows the alignment of the researchers' viewpoint with the associated methodological assumptions.

Table 5.1: Typology of assumptions and paradigms continuum (Source: Adapted from Morgan and Smirch (1980, p.492) and Collis and Hussey, 2009)

TYPOLOGY OF ASSUMPTIONS AND PARADIGMS CONTINUUM **Positivism** ⟷ **Interpretivism** **KEY: * Represents the researchers viewpoint**						
Ontological assumption	Reality-concrete structure*****	Reality-concrete process*****	Reality-contextual field of information*****	Reality-realm of social discourse	Reality social construction	Reality-projection of human imagination
Epistemological viewpoint	To construct a positivist science*****	To construct systems, process, change*****	To map contexts	To under-stand patterns of symbolic discourse	To under-stand how social reality is created	To gain phenomenological insight
Research method	Experiments surveys*****	Historical analysis	Interpretive Contextual analysis *****	Symbolic analysis	Hermeneutics	Exploration of pure subjectivity

The researcher postulates that the choice of paradigm for this research study is from a multiple paradigm or worldview. The philosophical framework for this study is therefore a positivistic pragmatist. Since the dominant paradigm tends to be positivism the main features of the **research design are shown as indicated by *** on the Table 5.2 below.

It is critical to describe the methodological strategy and the reasons behind the research, as research design is driven by strategy. In this research study, the dominant design is quantitative as the study conceptualises reality in terms of variables, measures these latent variables and then studies the relationships between the variables.

Table 5.2: Features of paradigms: Positivist and Interpretivist (Adapted from Morgan and Smirch (1980, p.492) and Collis and Hussey, 2009)

Positivist (Quantitative, Objective, Scientific, Traditional) Research tends to:	Interpretivist (Qualitative, Subjective, Humanist, Phenomenological) Research tends to:
Use large samples *	Use small samples
Have an artificial location	**Have a natural location ***
Be concerned with hypothesis testing *	**Be concerned with generating theories***
Produce precise, objective, quantitative data*	Produce rich subjective qualitative data
Produce results with high reliability but low validity*	Produce results with low reliability but high validity*
Allow results to be generalised from the sample to the population*	**Allow findings to be generalised from one setting to another similar setting***

Since research design can be described (Punch, 2011, p.211) as the overall plan with four main components:

- the strategy,
- the conceptual framework,
- the research questions of who or what will be studied, and
- the tools for collecting and empirically analysing the data.

These will be discussed with regard to this quantitative research study.

5.2 QUANTITATIVE RESEARCH DESIGN

Babbie (2007, p.112) defines research design as “analogous to the activities of an architect designing a building’’ since it focuses on the end product and all the process

steps required to achieve the desired outcome. In examining the research design, the researcher moved from the main research question with a dominant positivistic approach, as stated above, into the research design using the process of Punch (2011) of connecting the research questions to the data.

What enabling team performance factors, indicators and strategies are required to optimise the performance of the secondary school operational teams with regard to the outputs of a more effective organisation?

In this quantitative study, the research design links the research question above and the data (Figure 5.1).

Figure 5.1: Research design (Punch, 2011, p.212).

In quantitative research, where variables are central, the design and the conceptual frameworks tend to merge as the researcher is moving from what data will be needed to answer the research questions empirically. In this study the whole research design is considered to be an exploratory sequential design (Creswell et al., 2011, p.69) for the initial (SAT) instrument design part of the study. It then moves into a nonexperimental research design, drawing on quantitative survey research methods and analysis using structured equation modelling techniques.

A positivistic paradigm is quantitative, objective, scientific, experimentalist or traditionalist paradigm (Collis and Hussey, 2009). Since quantitative studies can be descriptive or experimental, this study, which included over 430 respondents, the research design can be considered explanatory, as experimental studies investigate causality.

5.3 RESEARCH METHODOLOGY

5.3.1 Theoretical and Conceptual Frameworks

The theoretical framework is derived from existing theories in literature that have already been tested and validated by others and therefore are considered acceptable in scholarly circles. The unique application of these theories through the researcher's lens comprises the theoretical frameworks.

Unlocking the theoretical framework from the Bronfenbrenner model (Raymond and Pienaar, 2013) as the overarching framework for this thesis, the researcher examined the school as an interacting system within the socio-economic context, (moving outwards from the individual, to the micro-, meso-, exo-, macro and chrono system). This aligns with the viewpoints of Donald et al. (2011).

The conceptual framework, as summarised by Miles and Huberman (1994, p.2), is the "system of concepts assumptions and beliefs that support and guide the research plan". It therefore offers a connective structure of the constructs within the epistemological and ontological worldview and approach of the researcher, as to the flow and unlocking of how the research problem is explored, along with the direction of the research study and the relationships of the variables.

A summary of the Theoretical and Conceptual Frameworks as devised, integrated and implemented for this research study, is outlined in Table 5.3.

Table 5.3: Conceptual Framework outlined in constructs from which the Micro Conceptual Framework was developed (Authors own construct).

Theoretical Framework	Conceptual Framework
Theory: Educational Systems Theory within Organisational Behaviour	Organisational effectiveness, high performance teams and educational leadership
Theorists: Bronfenbremmer (1979) ecological model; Raymond and Pienaar (2013); Darling-Hammond et al., (2010); OB Model (Robbins, Judge, Odendaal and Roodt, 2014).	Core concepts: educational leadership, organisational effectiveness, high performance, team performance, organisational culture, organisational commitment, engagement, communication, trust and support, school milieu. Key theoretical principles: **High performance teams** (Wiley, Kenexa, Boedker, 2011). Occupational/Organisational commitment (Mowday and Steers,1979; Snape and Redman, 2003). Organisational effectiveness (Cameron, 1986). Engagement (Poisat, 2006; Aon Hewitt, 2013; Kenexa, 2010). Hybrid (Townsend, 2015); Parallel Leadership (Crowther and Andrews, 2003); Distributive (Gronn, 2000) Transformational (Yukl, 2010); Servant Leadership (Bolden and Kirk, 2005).

Within each school unit the system is examined with the organisational behaviour lens, with best practices of high performance teams, organisational effectiveness and educational leadership being key theoretical principles. The **(Macro) conceptual framework model** is developed from Systems Theory (Castka, Bamber and Sharp,

2001), basic Organisational Behaviour Model (Robbins, Judge, Odendaal and Roodt, 2014) and the Organisational Effectiveness Model of Cameron (1986) (Figure 5.2).

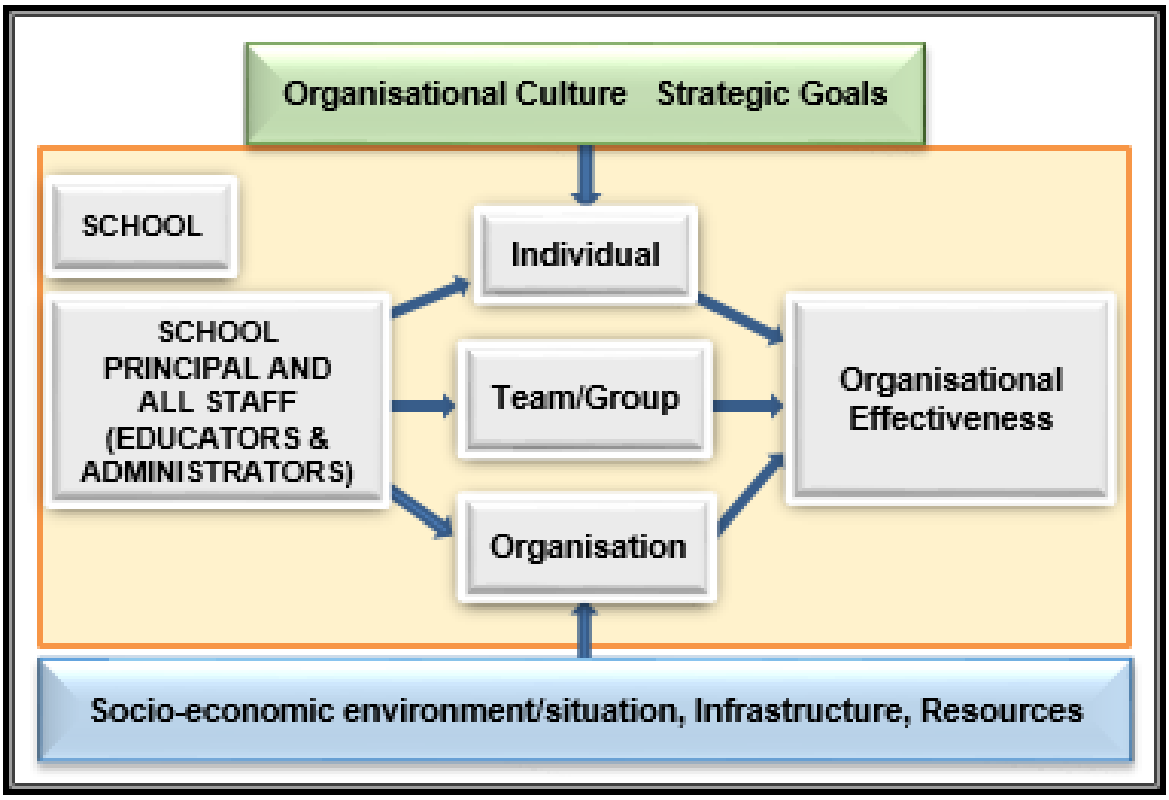


Figure 5.2: Macro Conceptual Framework Model (Authors own construct: Adapted from Castka et al., 2001, Cameron, 1986, OB Model: Robbins et al., 2014).

The link between the research paradigm (philosophical framework) and the methodology must be coherent in the research design. It is important to discuss that, although the researcher's paradigm falls predominantly under the positivist extremity on the continuum, it may represent a blend of some of the philosophical assumptions. The methodologies associated with positivism, utilised in this research study are the following:

- *Experimental Correlation study*: the relationship between variables.
- *Survey study*: an analytical survey is conducted to determine whether there is a relationship between the multiple variables, and a theoretical framework is developed from the literature with independent and dependent variables.

- *Cross sectional study*: the research examines similarities and differences between schools in different contexts and regions.

These above methodologies are combined in *triangulation* of both theories methodology and data. As Easterby-Smith, Thorpe and Lowe (1991) outlined, there are four main elements of triangulation: theory, data, investigator and methodological triangulation. The researcher utilised **theory triangulation, data triangulation and methodological triangulation** in this research strategy.

In the research data collection, the literature review analysis was a collection of *secondary data* from commercial and government databases, books, journal articles, internet and documented reports. The *primary data* or data collected from the original source utilised a survey instrument and a semi-structured interview approach. The self-completion questionnaire survey instrument administered to educators, all school operational team members and principals, collected mainly quantitative and some qualitative data (Creswell and Clark, 2011).

Using the literature review and the researcher's previous study (Gibbs and Poisat, 2015) the research data was used in the final selection of the main important indicators for this research study and were included in the **survey instrument development** (quantitative collection). The **theoretical to** final **conceptual model** development is further discussed in Chapter six.

5.3.2 Development of Conceptual Model and Conceptual/Path diagram

According to Castka, Bamber and Sharp (2001), enabling factors affecting the successful implementation of a high performance team (HPT) can be categorised as either a human or a system factor. System factors include, organisational impact, defined focus, alignment and interaction and measure of performance. Human factors are knowledge and skills, the needs of the individual and group culture, amongst others (Castka et al., 2001; Suyanthi and Samuel, 2004).

The conceptual model, constructed from the secondary data and previous research study (Gibbs and Poisat, 2015), used the theoretical research done by Castka et al. (2001) to group the enabling team factors into **two levels** of **second order factors:**

Human *HPT Enabling factors and* ***System*** *HPT Enabling factors*. Results of this study were used in the development of the conceptual model which was outlined in Chapter four.

In this research thesis, the theoretical framework is extended to **three levels** namely Individual (Micro), Group/Team (Meso) and Organisation (Macro) levels as outlined in Figure 5.2. The micro and meso were combined in the human sub factor A with the macro comprised of the system sub factor B.

This study has a dominant quantitative method approach and uses a number of literature theoretical models as frameworks for each primary key variable.

5.4 OPERATIONALISATION OF VARIABLES AND ANALYSIS

The multivariate technique used in this research is structured equation modelling (SEM). For SEM, the literature review should develop the theoretical conceptual framework and then show where the models come from. The research design shows, conceptually, how the key variables were identified and conceptualised from the literature review and how they are theoretically framed, from different previously researched models. The **theoretical framework and the proposed conceptual model** were developed and discussed in Chapter four.

These variables were analysed using structural equation modelling (SEM) and multiple regression analysis (MR). From the literature review, the researcher identified and examined the previous research done on each of the variables and the specific relationships between the latent variables. By constructing this proposed structured model, each path or structure coefficient is therefore essentially a hypothesis (Hair, 2009).

The variables (IV and DV) are linked together to show the theoretical framework and the conceptual model being tested in this research study in a conceptual path diagram. A path diagram is a graphical depiction of a theory, relating measure and possible latent variables. The term “latent” means unobservable and represents a factor, hypothesised to have a causal bearing on one or more of the measured variables (Mueller and Hancock, 2010).

These variables were outlined, discussed and defined in chapter four, with the **proposed conceptual model** delineated in Figure 4.1 (Basic, p.114), Figure 4.2 (Detailed, p.119) and Figure 4.3 (Path diagram, p.122).

5.5 RESEARCH DESIGN

The exploratory sequential research strategy initially involved a previous research study of school operational staff in one region, using only high performing schools. Statistical analysis used multiple regression analysis. This data then built onto the initial conceptual framework of this thesis and added to the development of the full research study across three different regions and contexts, with a sample that ranged across the continuum of low to high performing secondary schools.

From the literature review of the three key enabling high performance factors identified in the previous study (Gibbs and Poisat, 2015): **leadership, communication and engagement**, the survey instrument was developed. Other latent variables identified in the literature review were also operationalised and the proposed conceptual model developed (Chapter 4).

All school staff members at the thirty-three schools, selected from three different quintiles in three different provincial regions of South Africa, were requested to complete the survey instrument regarding the leadership approach, communication and engagement at their schools. The three provincial regions of South Africa that were sampled are the Eastern Cape, Western Cape and KwaZulu-Natal.

5.6 SAMPLE SIZE, LOCATION AND DEMARCATION OF THE STUDY

5.6.1 Study Population

The ‘target population’ for this research study is defined by Collis and Hussey (2009) as the body of participants selected to represent the population required for the research study. In this thesis they are the school operational teams of principal, staff, educators and administration staff of secondary schools in three regions of South Africa. The sample included a range of high, medium and low performing secondary schools in the three different provinces: Eastern Cape, Western Cape and KwaZulu-Natal, South Africa.

A total of thirty-three co-educational secondary schools were approached, in a stratified sampling procedure including high performing, medium performing, low performing schools and two private schools. Schools were from three levels of quintiles: Quintile 1-3; Quintile 4-5 and Private secondary schools. These were situated in each of the following provincial regions of South Africa: Eastern Cape, Western Cape and KwaZulu-Natal. A total of twenty-six schools agreed to take part in the study and the completed surveys from 413 respondents were collected from these twenty-six schools. The response rates at each of the secondary schools were over 40% of the staff at each of the respective schools.

5.6.2 Sampling and sampling unit

Since a sample can be described as a subset of the population that it represents, the accuracy and precision of the sample design is how well it actually represents the characteristics of the population it claims to represent (Blumberg et al., 2008). Accuracy of the sample design refers to the elimination of bias in the sample. However, no sample will be fully representative of the population and therefore one needs to follow a sampling method. This includes defining the target population, obtaining or constructing a sampling frame, determining how to select the sample members and then construct a method of converting sample estimates to population estimates (Collis and Hussey, 2009).

5.7 SAMPLING PLAN, FRAME, DESIGN AND SAMPLE SIZE

Sampling means taking a portion or smaller number of units of a population or selecting a set of individuals from a population, (Collis and Hussey, 2009) which is considered to be representative of the broader population. It is important to understand the concept of a sample or a subset of the population, as a representative sample is critical if one wants to “draw any generalisations from the sample to the larger population” (Marlow, 2005, p.36). The probability sampling in this research study was stratified random sampling. This sampling according to Creswell (2007) is used to ensure that the different groups or segments of a population are represented sufficiently in the sample.

The sampling frame is a list of high, medium and low performing secondary schools in three regions of South Africa, Eastern Cape, Western Cape and KwaZulu-Natal, obtained from the selected ranking list of the schools' performance levels, compiled by the Department of Education. From this sampling frame the thirty schools were sampled from high, medium and low performing schools from each region. The researcher used a probability sampling technique utilising a stratified method and selecting three schools from each sub-groups of a high, medium and low performing school in each quintile group (urban or peri-urban) for this study. This assured representation of all groups in each sample and comparisons could be made. The respondents were the principal, all educators and staff at the selected secondary schools which were co-educational and had similar number of learner enrolment figures.

5.7.1 Sample size

The determination of the sample size was dependent on the principals, teaching and administrative staff at the school, but the researcher aimed to ensure the smallest subgroup contains sufficient sampling units (50% of the staff) so that accuracy and reliability were maintained.

Sample size provides the basis for estimation of sample error and will affect the models ability to be correctly estimated (Hair et al., 2006). According to Bentler and Chou (1987) a suggested sample size for SEM studies requires a ratio of 5 respondents per free parameter. Hair et al. (2006) stated that to minimize problems with deviations from normality, the generally accepted ratio is 15 respondents for each parameter estimated in the proposed model. Based on literature, various authors state that samples under 100 respondents are too small (Kline, 2005; Hair et al., 2006) and generally should be higher than 200. Samples less than 200 may give good fit for RMSEA and CFI but too sensitive for Chi-square (X_2) measurements (Hair et al., 2006).

The sample of participants for this research study was initially 413 respondents with 411 respondents used in the descriptive statistical analysis, due to 2 respondents not completing all the biographical sections. In the SEM analysis, 14 respondents were not used due to 50% of the survey not being completed, therefore only 399

respondents were used in the SEM analysis. A summary of the secondary schools, regions and quintiles is tabulated below (Table 5.4).

Table 5.4: Summary of the school sample in regions, school number, quintile and performance level (% pass rate over last three year's average).

REGION	SCHOOL	QUINTILE	% Pass rate(Low , Medium, High)
Eastern Cape	1	Q3	LOW
Eastern Cape	2	Q5	HIGH
Eastern Cape	3	Q5	HIGH
Eastern Cape	4	Private	HIGH
Eastern Cape	5	Private	LOW
Eastern Cape	6	Private	HIGH
Eastern Cape	7	Q5	HIGH
Eastern Cape	8	Q5	MEDIUM
Eastern Cape	9	Q3	HIGH
Eastern Cape	10	Q3	LOW
Eastern Cape	11	Q3	LOW
Western Cape	12	Q5	HIGH
Western Cape	13	Q5	HIGH
Western Cape	14	Q5	HIGH
Western Cape	15	Q5	HIGH
Western Cape	16	Private	HIGH
Western Cape	17	Q4	MEDIUM
Western Cape	18	Q3	LOW
Western Cape	19	Q3	LOW
KwaZulu-Natal	20	Q5	HIGH
KwaZulu-Natal	21	Q5	MEDIUM
KwaZulu-Natal	22	Q5	MEDIUM

REGION	SCHOOL	QUINTILE	% Pass rate(Low , Medium, High)
KwaZulu-Natal	23	Private	HIGH
KwaZulu-Natal	24	Q4	MEDIUM
KwaZulu-Natal	25	Q5	MEDIUM
KwaZulu-Natal	26	Q5	MEDIUM
Withdrew	27	-	-
Withdrew	28	-	-
Withdrew	29	-	-
Withdrew	30	-	-
Total number of respondents = 413			Descriptive statistics: n= 413-2 = 411 SEM analysis : n= 413 -14 = 399

5.8 DATA COLLECTION AND ETHICAL APPROVAL

This research study was conducted using an exploratory research design, so that some parts of the specific measuring instrument were with certain newly designed scales. Some assessment scales and standardised scales were tested in a previous research study (Gibbs and Poisat, 2015) but in this study a wider range of schools was sampled and the measuring instrument was expanded to construct a School Analytical Tool (SAT) to profile the SOT's.

For collecting the primary quantitative data, a self-administered questionnaire was utilised and administered to all educators and school operational staff within the selected schools. The measuring instrument was designed as the School Analytical Tool (SAT).

The following methods of data collection was used in this research study to ensure that the results and data were valid as evidence was collected from a number of sources.

- Principal, Educators and all staff – SAT /Survey instrument (Appendix 1)
- Department of Education information on secondary schools (Department of Education, Technical Report, 2014)

Permission and ethical approval was obtained from all the necessary persons prior to commencement of the research study. Persons include the Department of Education, from each Region in South Africa (Appendix 2A, 2B and 2C), Nelson Mandela Metropolitan University ERTIC committee (Ethical Clearance Number: H14-BES-BUS-074 [Approved] (Appendix 3), and the School principals and educators (Sample of letter: Appendix 4,5). All protocols required by the Department of Education and Ethics committees were followed in the execution of this research study.

5.9 DEVELOPMENT AND CONSTRUCTION OF THE SURVEY INSTRUMENT

A self-administered questionnaire was used to collect the data and administered to all principals, educators and secondary school staff at the twenty-six secondary schools, that agreed to voluntarily participate in the research study. Questions ranged from scaled-response questions with both the five Point Likert-type scales (Quantitative) and the semantic differential scale.

5.9.1 Structure of the survey instrument

The survey instrument was compiled using the literature review and literature validated scales for organisational behaviour research. It utilised two parallel surveys administered to (1) the principal and (2) all education and administrative staff at the secondary school but question items were aligned and similar.

Variables were measured with multi-item scales. The scales consisted of both previously validated items and some newly developed items.

This survey (Appendix 1) was comprised of two main sections:

Section A: Biographical details, demographic and educational experiences including leadership training, age, gender, current educational level and years of service.

Section B: Quantitative team performance measures: Enabling factors are outlined in Table 5.5, coded and grouped as Independent (IV), Dependent (DV) or Mediating Variables (MV). Each variable has a number of items from which the variable was measured on a 5-point Likert scale.

Table 5.5: Final measuring instrument with 73 items and factor variables.

	FACTORS/INDICATORS	CODE	*ITEMS indicators (See Appendix 1 for each statement of Item)*
DV1	**School Organisational Commitment**	ORGC	9
DV2	**Educator Engagement**	EENG	
DV2.1	Employee Engagement Index	EENI	4
DV2.2	Work engagement	WEN	4
DV3	Grade 12 pass rate	GPR	1
IV1	**Team Performance Index**	**ETPI**	**23**
IV1.1	Educator Team leadership competencies and efficacy	ETCE	8
IV1.2	Culture Alignment	OCAL	
		ELSH	6
IV1.3	Perceptions of Leadership at School		9
IV2	**School High Performance Work Index**	SHPW	13
IV2.1	Innovation	INNO	
IV2.2	Fairness	FAI	
IV2.3.	Employee experience	EEE	
IV2.4	Educator Leadership Hybrid environment freedom & recognition	LSH	
MV1	Trust level &	TRU	6
MV2	Support level	&SUP	
MV3	Communications and HCQ	COM	4
MV4	Infrastructure	ISE	1
MV5	Perceptions of Learners' Engagement	EPLE	5
MV6	Leadership LMX	LMX	3

Dependent, mediating and independent variables with initially 79 items with the respondents indicating their agreement with each item on a five-point Likert scale (1=strongly disagree, 5=strongly agree). The final measuring instrument after the factor analysis utilised only 73 items.

5.10 DATA ANALYSIS

5.10.1 Quantitative data methodology

Statistical analysis utilising both descriptive and inferential statistics as well as confirmatory factor analysis (CFA) and structural equation modelling (SEM) was conducted on the quantitative data by a qualified statistician, utilising Microsoft Excel Statistics and AMOS programmes.

This research study involved the relationships between variables and thus can be described as a correlational survey research design. These relationships are studied using conceptual frameworks similar to those in an experimental research design. In this study, with a sequential design, the quantitative analysis proceeds from correlational survey to confirmatory factor analysis (CFA) and structural equation modelling (SEM).

The main data analysis technique of a non-experimental research design, using a quantitative survey research method and structural equation techniques, was used in this research study. It is important therefore to discuss the multivariate technique utilised and how it is applied in this particular research study.

5.11 STRUCTURED EQUATION MODELLING

The multivariate technique used in this research study is structured equation modelling, which was developed by Joreskog in 1973. According to Geffen, Straub and Boudreau (2000), it allows one to examine both the measurement and structural components of the model by testing relationships between the multiple independent and dependant variables or grouped categories. It provides a method to test the hypothesised interrelationships among a set of substantially significant or meaningful variables (Hair et al., 2006). This hybrid technique includes confirmatory factor analysis (CFA), path analysis and multiple regression components and is known to be a dominant multivariate technique in recent research studies (Cooper and Schindler, 2007). Advantages of SEM are the following:

- The ability to estimate both multiple and interrelated dependencies concurrently, unlike regression analysis which only gives one single relationship at a time.
- The ability to give results from multiple independent and dependent variables and detect changing relationships between the variables.
- The ability not only to integrate different variables during analysis but also report errors during the estimation process (Hair et al., 2009).

As stated by Hair et al. (2006, p.734), “if the researcher can express a theory in terms of relationships among measured variables and latent categories or variables (variates), then SEM will assess how well the theory fits reality as represented by the data”.

This statistical technique was therefore chosen to be utilised in the present research study, as it supports and aligns with the proposal to examine the relationships between leadership, engagement, communication and effective school high performance levels. Various researchers have argued that because of the complexity of human nature, managerial and behavioural issues, this data analysis method that can simultaneously examine a series of relationships, is a useful technique (Hooper, Coughan and Mullen, 2008).

SEM is considered an excellent data analysis technique since it comprises two models, namely the measurement model (essentially the Confirmatory Factor Analysis) and a structural model. Two other terms used in SEM are *exogenous,* similar to independent variables and *endogenous* which is similar to the dependent or outcome variable.

SEM has been described as a combination of exploratory factor analysis (EFA) and multiple regression analysis (MRA) by Ullman (2001). SEM is thought to rather combine confirmatory factor analysis (CFA) and multiple regression analysis (MRA), because it is more of a confirmatory technique but, however, also can be used for exploratory purposes (Schrieber, Nora, Stage, Barlow and King, 2006).

5.11.1 Terminology for CFA and SEM

Observed variables are also termed as measured, indicators or manifest variables and are traditionally designated a square or rectangle graphically. They are often measured by responses to three or more statements on Likert-scaled items, with the response ranging from 5 (strongly agree) to 1 (strongly disagree). *Unobserved* variables are termed latent factors, factors or constructs and are depicted graphically with circles or ovals (Figure 5.3).

The circles at the bottom are the unique factors-measurement errors in the variables. The straight line pointing from a latent variable to the observed variable indicates the causal effect of the latent variable on the observed variable. The curved arrow between latent variables indicates correlation.

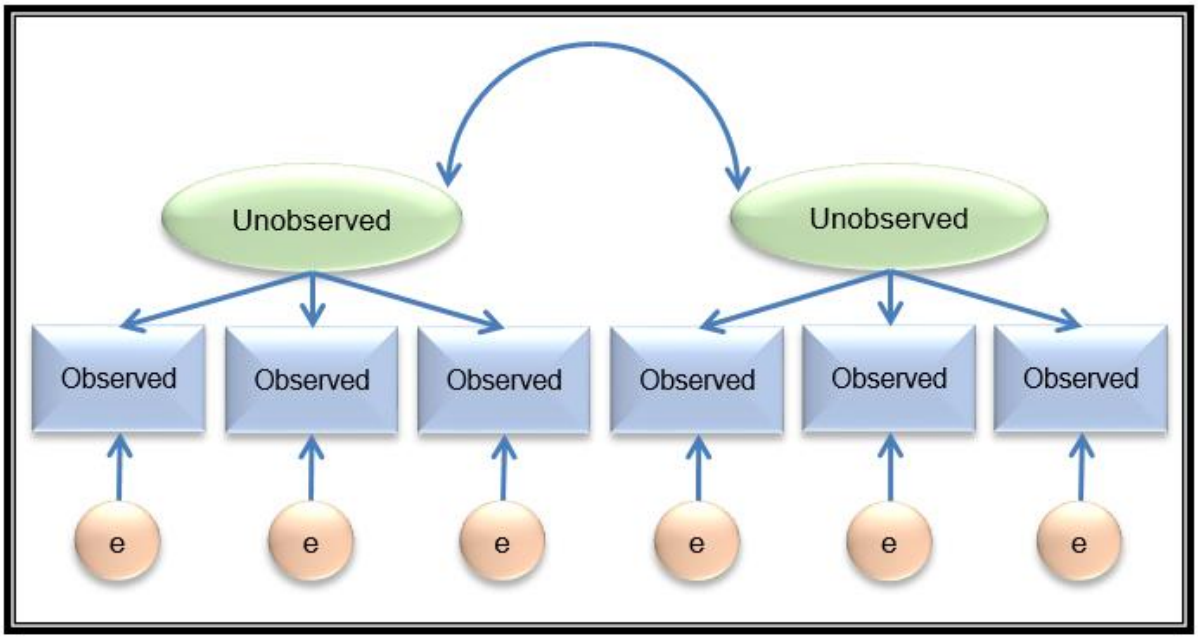


Figure 5.3: Generic example of a CFA e = error (Source: Schrieber, Nora, Stage, Barlow and King, 2006).

To measure such variables a confirmatory technique is used (CFA) which is theory driven (Lei and Wu, 2007). The planning of this analysis is therefore by examining the theoretical relationships among the observed and unobserved variables. When conducting a CFA, the researcher uses a hypothesised model to estimate a population covariance matrix that is compared with the observed covariance matrix, and hence wants to minimise the difference between the estimated and observed matrices. Each latent variable (unobservable) is measured with at least three manifest variables

(observed). The number “1” indicated on the path diagram shows that the regression coefficient has been fixed to one.

In SEM the measurement model is essentially the CFA and depicts patterns of observed variables for those latent constructs in the hypothesised model. In the CFA the reliability is tested and the extent of the interrelationships between the latent variables, or lack thereof, is examined. This includes the following: factor loadings, unique variances and modification indexes. This allows one to examine estimates and whether a variable should be dropped or a path added, to derive the best indicators of latent variables prior to the SEM testing.

In the generic structural model, the *exogenous* variable is similar to the independent variable and the *endogenous* variable is similar to the dependent or outcome variable. Exogenous and endogenous variables can be observed or unobserved and the exogenous variables represent those constructs which exert **an influence** on other constructs in the research study and are not influenced by the factors in the study.

5.11.2 Requirements for the application of SEM

For an effective SEM application, there are two conditions that must be sufficed. There must be a theoretical foundation for the model under study and the study must aim to develop a modelling strategy (Hair et al., 2009). The importance of theory is to ensure that each concept is accurately defined and measured with items that are understood by the respondents; otherwise this could lead to a measuring error.

From the theoretical frame in this research study (Table 5.3), the key variables were categorised, being defined and linked to existing literature and research studies. Each variable was theoretically explored and then operationalised. Using sound theories, a well-designed outline of the manifest variables that are aimed at measuring the latent variables, was constructed, using recent literature, research studies and a pilot study conducted (Gibbs and Poisat, 2015). The second SEM application is a good modelling strategy so that acceptable levels of validity are achieved. Three distinctive strategies are confirmatory modelling strategy, competing model strategy and the model development strategy (Hair et al., 2009).

In **confirmatory modelling strategy**, the model needs to be compared with the **competing model strategy**; the analyst may test two or more competing causal models in order to determine the best fit. Tests performed include the following: the normed Chi-square (the ratio of the Chi-squared to degrees of freedom X^2/df); Root Mean Square Error of Approximation (RMSEA); Goodness-of-fit-Index (GFI) and Comparative fit index (CFI). **The model development strategy** involves the modification and improvement of the identified model with improvements to both the measurement and structural models (Hair et al., 2009). This last strategy was utilised in this research study.

5.11.3 Process Steps in SEM

A combination of both the six-step and seven-step model proposed by Hair et al. (2006) was used in this research study as it appeared applicable to this particular study. The steps (Combining the six and seven step outlines by Hair (2006)) are shown in Table 5.6.

Table 5.6: Structural Equation Model Steps (Hair et al., 2006).

Steps	
1.	Define individual categories or variables, developing a theoretical model (framework)
2.	Develop and specify the measurement model constructing path diagrams of causal relationships
3.	Design a study to produce empirical results, including the path diagram into a measurement model of structural equations
4.	Assess the measurement model validity, choosing the correlation matrix or covariance matrix and estimating the proposed model
5.	Specify the structural model assessing the identification of model equations
6.	Assess the structural model validity evaluating the goodness-of-fit and making the indicated modifications if theoretically justified

The steps (1-6) in this SEM procedure are theoretically outlined below in the discriminant validity and reliability of the measuring instrument (Section 5.13). The actual SEM results are outlined in chapter six.

5.12 TRIANGULATION, VALIDITY AND RELIABILITY

The quantitative data was subjected to the validation criteria and all factors were examined for content, construct and internal reliability to ensure discriminant validity and reliability of measurements of the survey instrument.

Validation strategies used in this study include triangulation, peer review and refining hypotheses as the research study evolves. The researcher bias should be clear before the study starts and the researcher includes statistical processing and observers (Cresswell, 2007).

The following strategies were utilised to ensure reliability and validity:

- The designed questionnaire was piloted on a small group of educators.
- Respondents were well briefed before the survey to ensure clarity as to any ambiguity in meanings of any questions or terms.
- The positive impact of the study was communicated orally and/or in a written communication to the participating schools.
- Confidentiality was guaranteed and no school or persons will be identified in the reporting of this study.
- Certain metrics of indicators from literature were utilised within the developed questionnaire so that internal validity and reliability of the designed questionnaire could be tested. The theoretical models were developed from the literature review theory and research in this area.

The validity and reliability is discussed further below.

5.13 DISCRIMINANT VALIDITY OF THE RESEARCH INSTRUMENT

5.13.1 SEM steps and process

In SEM the measurement model is essentially the CFA and depicts patterns of observed variables for those latent constructs in the hypothesised model. In the CFA the reliability is tested and the extent of the interrelationships between the latent variables or lack thereof is examined. This includes the following: factor loadings, unique variances and modification indexes. This allows one to examine estimates and

whether a variable should be dropped or a path added, to derive the best indicators of latent variables prior to the SEM testing.

The following steps were undertaken in the SEM process.

- **Step 1: Developing a theoretical framework**

General: In SEM, strong theoretical grounding is necessary for a theoretical framework which specifies both the independent and dependent variables. The identified variables must be well conceptualised and matched with multiple indicator items.

This research study: The theoretical framework and the conceptualisation of the independent and dependent variables are outlined in Table 5.3 and the indicator items and the literature key theories are summarised. In this study the independent variable the ***Team Performance Index*** was made up of three sub-variables: *perceptions of sub-ordinates leadership*, *educator team competencies* and *culture alignment*. The mediating or intervening variables included *trust, support, communication, engagement and organisational commitment.* The dependent variable, **School High Performance Work Index** was made up of *four* sub-variables: *innovation, fairness, employee experience and hybrid leadership climate.*

Operationalisation of the elements in the theoretical framework started with the selection of individual assessment variables from previous research studies, established valid scales and adapted indices from a different field that could be modified to suit the educational context.

As Hair states (2006, p.735), the operationalisation of a variable “involves a series of scale items in a common format such as a Likert scale or a semantic differential scale”. In this research study all variable constructs were measured using a five point Likert scale. A well designed survey instrument was developed aligned with some validated scales and some developed scales. The concept clarification and operationalisation of the variables as well as the details of each indicator item of the key constructs was discussed in Chapter four.

- **Step 2: Develop a measurement model and construct a path diagram of relationships**

General: Constructing a path diagram portraying the theoretical framework is essential in SEM analysis. A path diagram is constructed to show the dependence and hypothesised relationships as derived from the theoretical framework being investigated. This allows a visual representation of the depicted relationships between the variables (Garson, 2006).

A straight arrow indicates the direct dependence between variables, whereas a double headed arrow illustrates a reciprocal relationship. Exogenous variables are those not associated with another variable. Endogenous variables can be predicted or caused by another variable. Intervening variables are mediating variables.

In this research study: The path diagram of the variables was constructed from the detailed conceptual model in Chapter four (Figure 4.2). This is re-drawn and outlined as below (Figure 5.4)

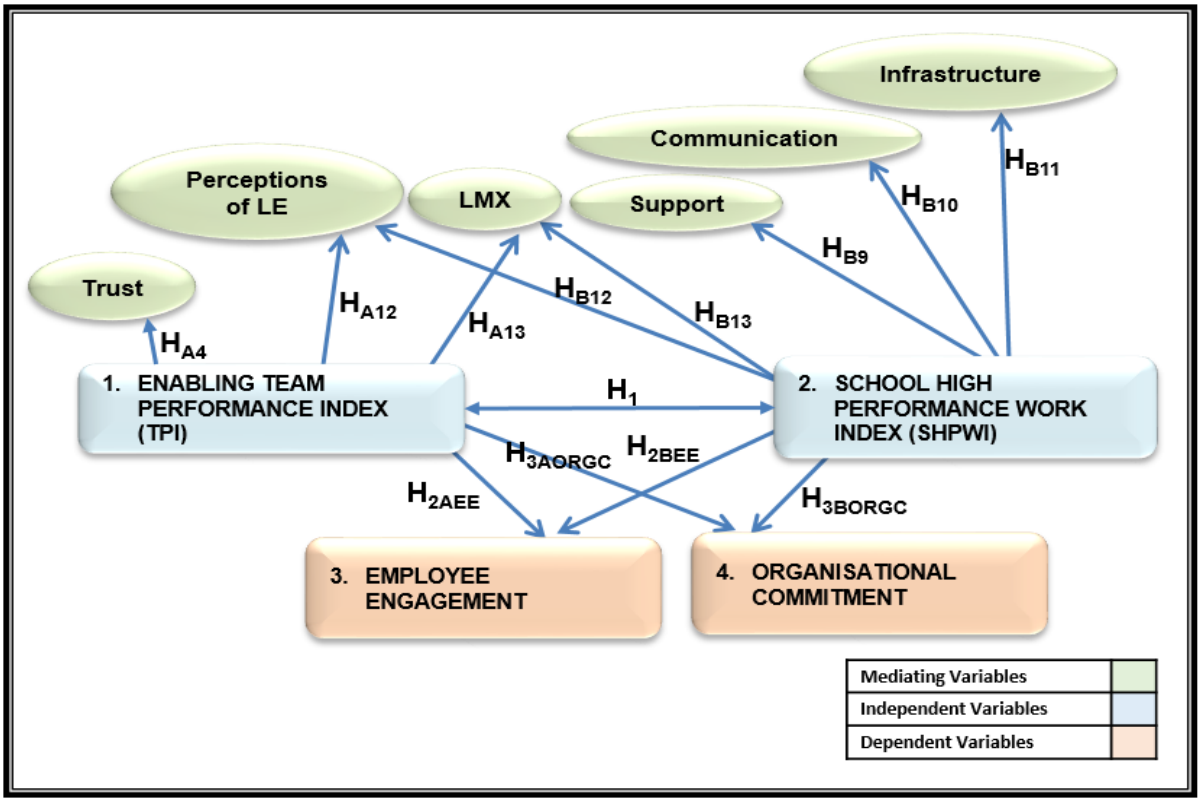


Figure 5.4: Path diagram showing the independent, intervening and dependant variables for this research study (Author's own construct)

- **Step 3: Converting the path diagram into a set of structural equations and measurement models**

General: Before specifying the SEM model, the relationships need to be ascertained in the measurement models, using confirmatory factor analysis (CFA). During the CFA, the manifest variables are identified on the basis of their factor loadings. These are termed *indicators* in the measurement model as they are used to indicate the latent variables. According to Field (2009) three items are the minimum or common number of indictors for each construct, whereas the maximum is usually five to seven. The loading coefficient gives estimation of the reliabilities of the indicators and the variables (Hair et al, 2006). Factor loadings were required to be >0.3 for acceptable loadings on the factor as per the research studies by Field (2009).

In this research study: This research study used AMOS software to convert the path diagram into structural equations and measurement models.

The measurement and structural model constructed by the researcher for this study is shown in Figure 5.5.

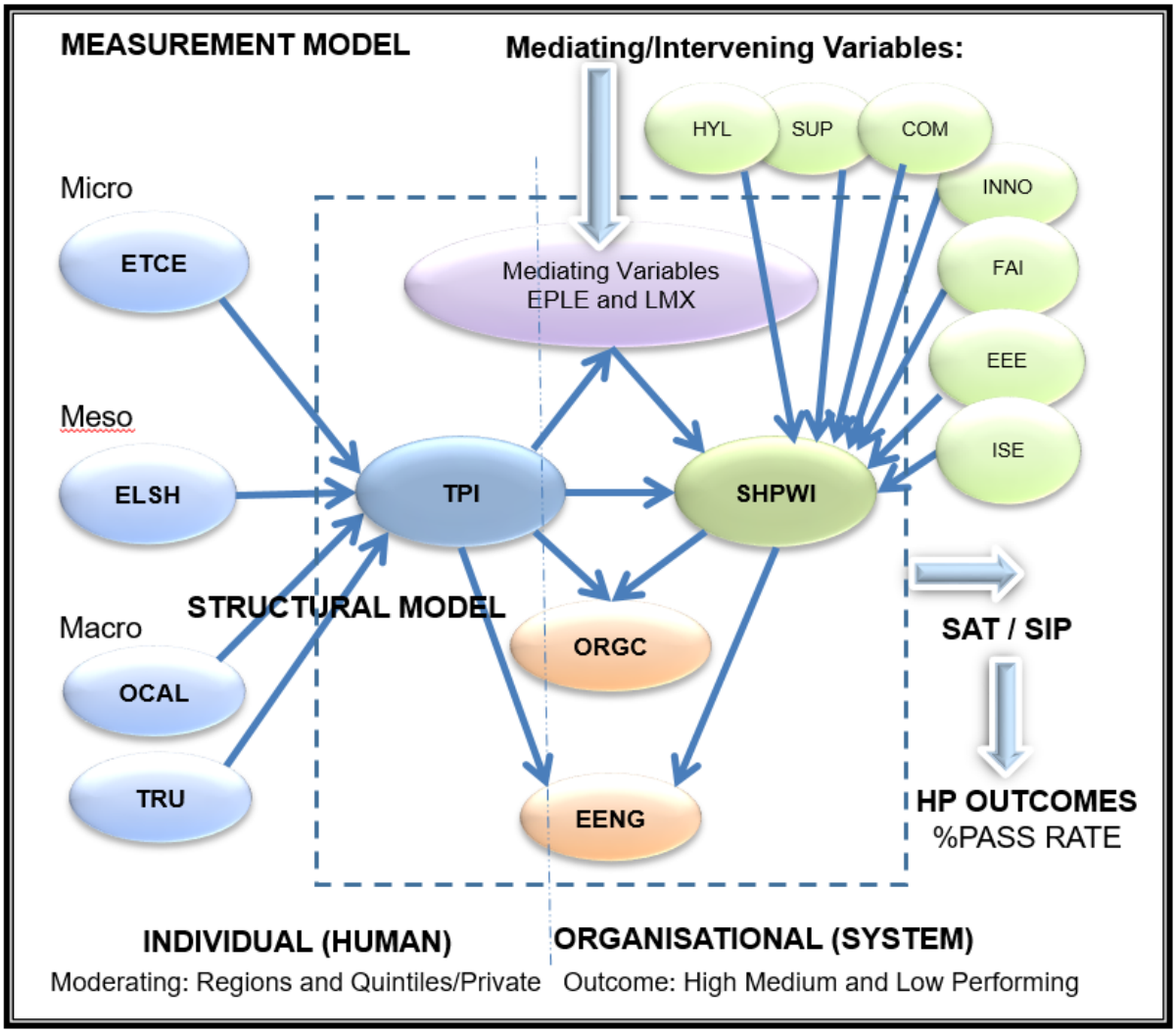


Figure 5.5: Conceptual framework Initial (Authors own construct) Construction of the measurement model and path diagram (Step 3)

Measurement theory is followed by validating using CFA and Cronbach's alpha coefficients. Measurement models tested and approved CFA then move to the SEM. In all SEM there are hypothesised effects of IV on DV and a structural coefficient is estimated with an error term added to take care of the random measurement error. The SEM analysis is discussed in Chapter six.

- **Step 4: Input matrix selection: Correlation matrix or Covariance matrix and estimation of proposed model**

General: After specifying the model three steps are undertaken. Testing data applicability, selection of the type of input matrix relevant (either correlation matrix or covariance matrix) and then estimating the measurement and structural models.

Structural coefficients are then estimated to determine any relationships between latent variables. Variables were tested for kurtosis and expected normality.

In this research study: Following successful structural and measurement models and input data the AMOS application program was selected for statistical analysis.

- **Step 5: Assessing the identification of model equations**

General: This step involves assessing whether the process has produced any meaningless or illogical results and unique estimates. There are four major symptoms of the identification including very large standard errors for one or more coefficients, negative error variances, inability to invert the information matrix and high correlations 0.90 or greater among estimated coefficients.

These may be solved by adding more constraints to the model under study thereby reducing the number of estimated coefficients (Hair et al., 2006).

In this research study: The SEM analysis and results are discussed in Chapter six.

- **Step 6: Goodness-of-fit Evaluation and indicate modifications to the model if theoretically justified**

General: The assessment of the extent to which the data fits the evaluated theoretical model of SEM gives a goodness-of-fit result (GFI). These goodness-of-fit results are a measure of how good the actual or observed input correlation or covariance matrix correlates with the matrix that is predicted by the theoretical model.

The goodness-of–fit is based on three assumptions: All relationships being linear, random sampling of respondents and independent observations.

Assessment is conducted using coefficient tests and then goodness-of-fit on the overall model, measurement model and structural model.

Three main measures are used:

- Absolute fit measures: Overall model fit
- Incremental fit measures: Proposed model with a null model

- Parsimonious fit measures: Compare differing models with different coefficient estimates (Hair, 2006). CFI: Comparative Fit Index.

Model-of-fit criteria use four main tests:

1. The Satorra-Bentler Chi-square statistic (X^2)
2. Normed Chi -square Ratio of Chi-square to degree of freedom (X^2 /df)
3. Root Mean Square Error of Approximation (RMSEA)
4. 90% confidence interval for RMSEA

In this research study: The present study assessed all the relationships between the variables using the criteria above, as well as a few more measures. These are discussed in more detail in Chapter six.

In education studies, the notion that there can only be an influence from one variable to another is unrealistic hence the use of path analysis techniques is not appropriate. Assumptions in this technique include that the error terms (or residuals) are not interconnected, and that the variables in the model flow is unidirectional. These are all highly desirable but are rarely found in educational settings in which the non-experimental research design is more conducive to representative analysis. Almost all variables in education are not directly observable and thus the selection of the multivariate statistical approach of CFA and SEM can therefore be justified for selection in this research study.

5.14 CONFIRMATORY FACTOR ANALYSIS AND SUB MODELS A & B

The Confirmatory Factor Analysis (CFA) included dividing the Proposed Integrated Model into Sub Model A and Sub Model B constructs. Exploratory Factor Analysis and Confirmatory Factor Analysis (CFA) were conducted to identify the underlying dimensions of the sub-models and to assess the discriminant validity of the items used to measure the factors.

The detailed conceptual framework 1 was re-written as outlined below (Figure 5.6 and Figure 5.7) with Sub Model A and B respectively.

INDIVIDUAL (HUMAN): SUB MODEL A: For the Sub Model A: Independent Variable: *Team Performance Index (TPI)* the item descriptors are listed for each sub-construct.

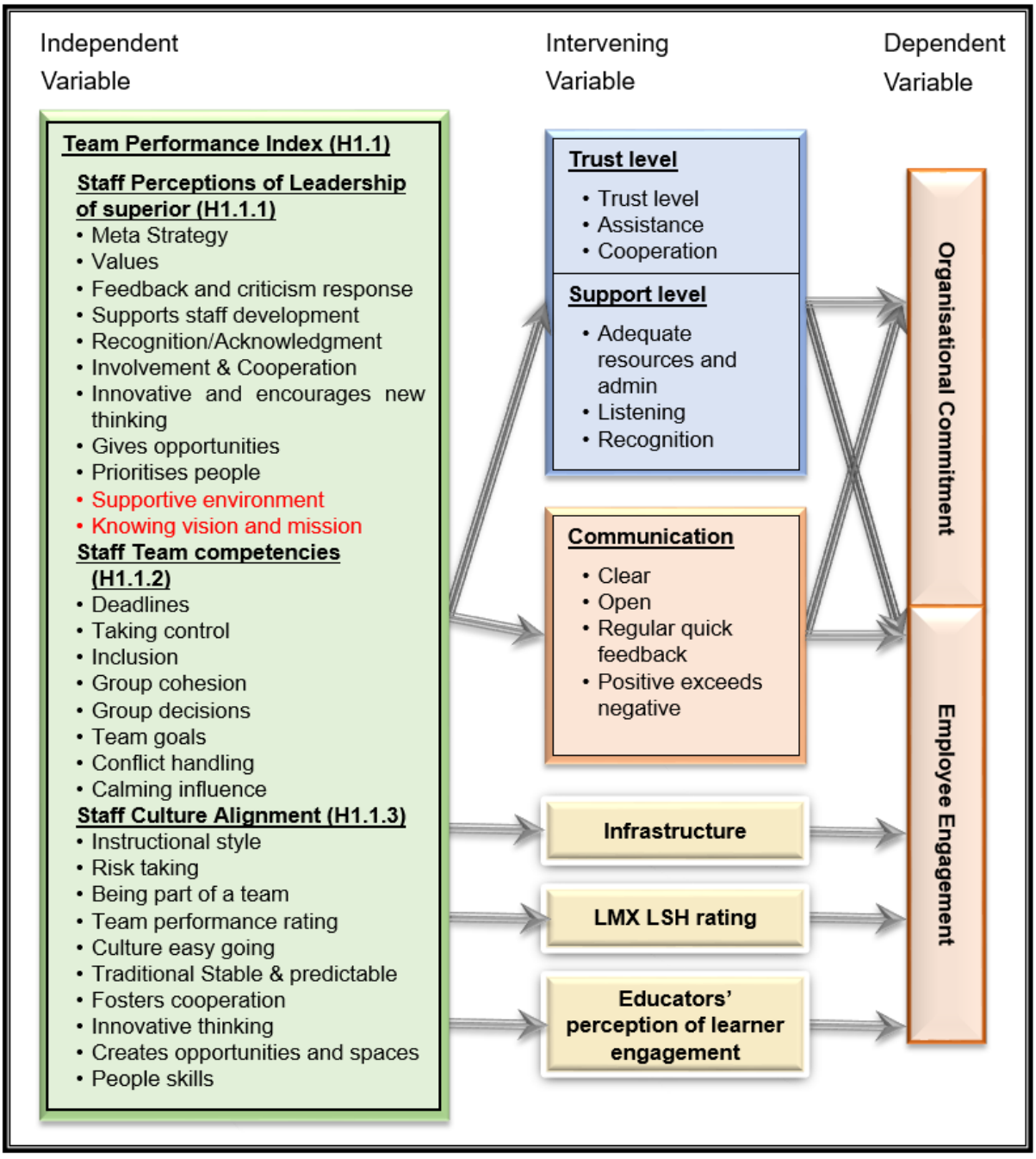


Figure 5.6: Sub Model A: Individual (Human)

ORGANISATIONAL (SYSTEM): SUB MODEL B: For the Sub Model B: Independent Variable *School High Performance Work Index (SHPWI)* the item descriptors are listed for each sub-factor /construct.

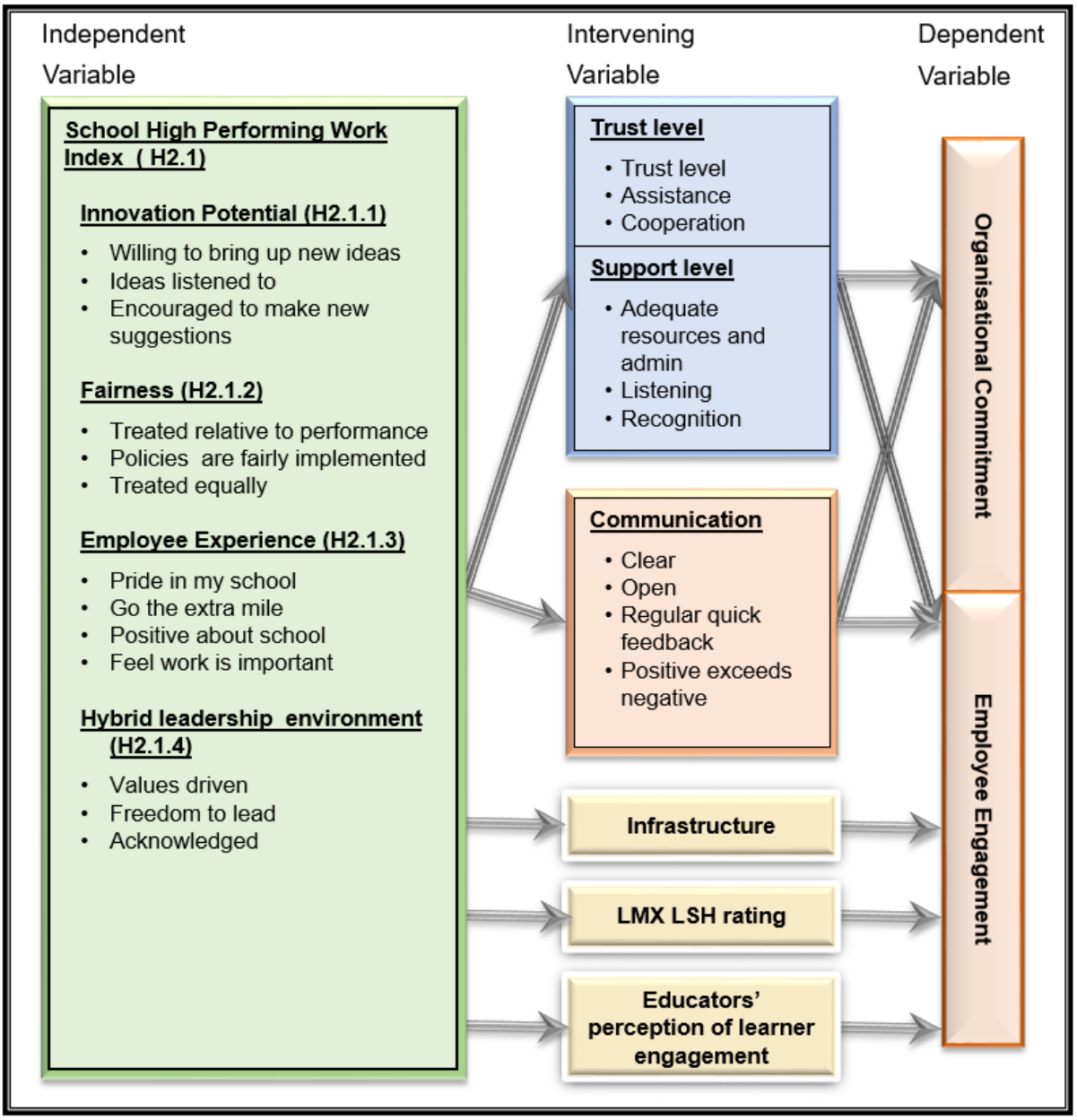


Figure 5.7: Sub Model B: Organisational (System)

5.15 RELIABILITY AND VALIDITY PROCESS

The first step in assessing reliability and validity in the data was to conduct a factor analysis. An EFA (Exploratory Factor Analysis) and CFA (Confirmatory Factor analysis) was carried out on each of the sub-models and the purpose of these was to confirm whether the data contained the relevant dimensions of the factors that they were measuring, and to ascertain reliability and validity.

CFA is a confirmatory technique and is theory driven in examining the relationships between the observed and the unobserved variables. In conducting a CFA the

researcher is basically using a hypothesised model to estimate a population covariance matrix and then comparing it with an observed covariance matrix (Hair et.al., 2010). One therefore wants to minimise the difference between the estimate and the observed matrices. The purpose of this analysis was to investigate the construct validity of the intended constructs behind the sub-scales.

By examining the model in parts and two sub models (Individual) and (System) some of the items were shifted to different more relevant variables according to the literature theoretical basis, EFA and CFA, and to the particular item wording in the research survey instrument. If factor loadings were less than 0.3 and the wording ambiguous, the item may be removed (Field, 2009). This was discussed in the survey instrument development section in chapter four but if the item was moved or removed it will also be shown in the tabulated summary.

It is important to remember that the two sub-models are integrated and are combined in the structural inner model. The team performance index (Individual level) and the school high performance index (school level) are both independent variables related to the dependent variables of employee engagement and organisational commitment, which relate directly to effective performance in schools. The Independent Variables: the original and adjusted Sub Model A: Individual (Human) and the Sub Model B: Organisational (System) will first be outlined and the Intervening Variables will be added to the sub models. The Dependent Variables will then be outlined. Subsequent to these analyses the originally proposed conceptual model as developed from the literature in chapter four will be revised and modified. The hypotheses will also be revised and outlined. The integration of the final inner model and the SEM analysis will be outlined and discussed in chapter six.

5.16 ORIGINAL AND ADJUSTED SUB MODEL A: INDIVIDUAL (HUMAN)

5.16.1 ORIGINAL: Sub-Model A: TPI (Independent Variable1)

The *Team Performance Index* in this variable was originally composed of three sub-constructs, Staff perceptions of Leadership of superior (11 items), staff team competencies (8 items) and staff team culture alignment (6 items). The coding is shown for all the factors: *Team Performance Index (TPI); Staff perceptions of*

Leadership of superior (ELSH); Staff Team competencies (ETCE) and *Staff team culture alignment* (OCAL) (Appendix 6: CFA diagram of Original TPI).

The Item themes, Median Scores (20th and 80th percentile), factor loadings and standard deviations of the sub-model *Team Performance Index* (TPI) are reported in Table 5.7, Table 5.8 and Table 5.9. In Table 5.7, the first sub factor of *Staff perceptions of Leadership of superior (ELSH)* is shown, with strong factor loadings ranging from 0.802 – 0.900.

Table 5.7: Median scores, factor loadings and adjustments for the Staff perceptions of leadership of superior: *Team Performance Index: Staff perceptions of leadership of superior.*

CODE	Theme of Item TEAM PERFORMANCE INDEX (Reason for moved or removal)	**Median Score (20th and 80th percentile score)**	SD	Factor loading	√ or Moved or removal
ELSH	**Staff perceptions of leadership of superior**	4.00 (3.56-0.67) Mean 3.95	SD 0.88		√
ELSH1	Meta strategy	4.01	1.04	0.813	√
ELSH2	Values	3.99	1.04	0.829	√
ELSH3	Feedback & criticism response	3.77	1.12	0.802	√
ELSH4	Supports staff development	4.15	0.94	0.900	√
ELSH5	Recognition/Acknowledgement	4.00	1.00	0.879	√
ELSH6	Involvement & cooperation	3.92	1.01	0.865	√
ELSH7	Innovative & new thinking	3.92	1.01	0.892	√
ELSH8	Gives opportunities	4.04	0.93	0.816	√
ELSH9	Prioritises people	3.76	1.03	0.830	√
ELSH10	Supportive environment This item was moved to Support Factor (SUP) (Item more relevant, theoretical basis and low Factor Loading: 0.514)	3.51	1.04	0.514	Moved to SUP
ELSH11	Knowing vision and mission This item was moved to Sub Model B: Hybrid Leadership environment (HYL) (Item more relevant, theoretical basis and low Factor Loading: 0.424).	4.20	0.91	0.424	Moved to School Sub Model B: HYL

In this construct of Staff perceptions of the immediate superior, Items ELSH10 and ELSH11 were moved to Support (SUP) factor and School Hybrid Leadership (HYL) in Sub Model B respectively.

The Staff *Team Competencies* Item themes, Median Scores (20th and 80th percentile), factor loadings and standard deviations of the sub-model *Team Performance Index* (TPI) are shown in Table 5.8, with all items having strong, acceptable factor loadings ranging from 0.529 – 0.813.

Table 5.8: Median scores, factor loadings and adjustments for the Staff team competencies: *Team Performance Index: Staff team competencies.*

CODE	Theme of Item TEAM PERFORMANCE INDEX (Reason for moved or removal)	**Median Score (20th and 80th percentile score)**		Factor loading	√ or Moved or removal
ETCE	**Staff team competencies**	4.00 (3.63-4.38)	SD		√
		Mean 3.96	0.64		
ETCE1	Deadlines	4.36	0.73	0.668	√
ETCE2	Taking control	3.92	0.94	0.695	√
ETCE3	Inclusion	4.06	0.80	0.759	√
ETCE4	Group cohesion	4.00	0.79	0.813	√
ETCE5	Group decisions	3.88	0.74	0.734	√
ETCE6	Team goals	3.85	0.88	0.800	√
ETCE7	Conflict handling	3.66	1.04	0.529	√
ETCE8	Calming influence	3.96	0.88	0.592	√

Staff Team Culture Alignment Item themes, Median Scores (20th and 80th percentile), factor loadings and standard deviations are shown in Table 5.9, with all acceptable factor loadings (0.320 – 0.723). Factor loadings must fulfil the minimum requirement for acceptance of > 0.3 (Field, 2009).

Table 5.9: Median scores, factor loadings and adjustments for the Staff team culture alignment: *Team Performance Index: Staff team culture alignment.*

CODE	Theme of Item TEAM PERFORMANCE INDEX (Reason for moved or removal)	**Median Score (20th and 80th percentile score}**	SD	Factor loading	√ or Moved or removal
OCAL	**Staff team culture alignment**	4.00 (3.67-4.50) Mean 4.04	SD 0.61		√
OCAL1	Instruction style	4.24	0.89	0.513	√
OCAL2	Risk taking	3.50	1.12	0.422	√
OCAL3	Being part of a team	4.22	0.86	0.723	√
OCAL4	Team performance rating	4.26	0.82	0.685	√
OCAL5	Easy going nature	3.87	1.03	0.320	√
OCAL6	Traditional stable& predictable	4.13	0.92	0.433	√

5.16.2 ADJUSTED: TPI Sub-Model A

The model was adjusted from the original Sub Model A, to exclude the two items ELSH10 and ELSH11 with the addition of three items of Trust factor (ETRU1, ETRU2 and ETRU 4), to the *Team Performance Index* to get to the final Sub Model A which was used in the Integrated Model for SEM.

Trust was added as it fitted better, theoretically, into the Individual (Human) Sub Model since the items examined the individuals level of trust. This factor Trust was shifted from the original theoretical model to be included into the Sub Model A: Individual instead of the System (Organisation) Model. The item ETRU3 was removed completely from the analysis, as the statement was ambiguous and also yielded an unacceptable -0.92 factor loading. Factor loadings must fulfil the minimum requirement for acceptance of > 0.3 (Field, 2009). The *Staff Team Trust* (ETRU) sub factor with the four original Items themes, Median Scores (20th and 80th percentile), factor loadings

and standard deviations are shown in Table 5.10. Factor loadings ranged from 0.591 – 0.875, which are acceptable.

Table 5.10: Median scores, factor loadings and adjustments for the Staff Team Trust: *Team Performance Index: Staff Team Trust.*

CODE	Theme of Item TEAM PERFORMANCE INDEX (Adjusted) (Reason for moved or removal)	**Median Score (20th and 80th percentile score}**	SD	Factor loading	√ or Moved or removal
ETRU	**Staff Team Trust**	3.67 (3.00-4.00) Mean 3.56	SD 0.83		√
ETRU1	Trust in others	3.49	1.07	0.796	Moved from Systems Model
ETRU2	Helpfulness of others	3.64	0.97	0.875	Moved from Systems Model
ETRU3	People untrustworthy Factor loading <0.3 (Unacceptable Farrington (2009)	3.38	1.22	-0.920	Removed
ETRU4	Cooperation of others	3.54	0.94	0.591	Moved from Systems Model

ETRU1, 2 and 4 were shifted from the Systems Sub Model B to the Individual Sub Model A. This, therefore, became the fourth sub factor in the Team Performance Index (TPI) and a CFA was done on this adjusted model.

5.16.3 VALIDATION CRITERIA: TPI: INDEPENDENT VARIABLE 1

In each sub model for both the Independent and Dependent variables, as well as in the final integrated model, the validation process involves using the following standard validation criteria:

- Content validity
- Construct validity and

- Internal consistency.

5.16.3.1 Content validity for all variables

The research instrument was aimed at developing a theoretically founded instrument for school improvement and examining the linkages or relationships between facets of educational team leadership, communication and engagement in secondary schools. It was built on theoretical frameworks of prior literature studies as outlined in chapter two and three, as well as informal interviews and the researcher's prior experiences in a number of secondary schools. The results of a previous study conducted by the researcher on four high performing secondary schools (Gibbs and Poisat, 2015) and the literature review provided the basis of this research study and contributed to the content validity of this research. The standardised literature metrics that were used as the dependent variables were based on literature metrics reported by Fields (2012) to measure organisational commitment and employee engagement. The employee engagement scale was based on the work done by Kenexa (2010), Poisat (2006) and Aon Hewitt (2013).

5.16.3.2 Construct Validity

All items were assessed for discriminant validity using the Principal Axis Factoring extraction method with Quantimin Oblique Rotation. A Confirmatory Factor Analysis (CFA) was utilised to examine the factor loadings for each item and the minimum loading deemed to be significant was (>0.3) (Field, 2009).

For the Sub Model A: *Team Performance Index,* all items loaded significantly **(>0.3) on only one factor** for the Sub Model A: **Eigen Value: 2.827** and **percentage of variance: 56.55%** with a **Cronbach-alpha: 0.73**.

Using CFA for the adjusted Sub Model A: Individual (Human), items were constrained to load onto only the factor which they belonged, as well as to align with the literature theory. The adjusted Sub Model A: *Team Performance Index* summarised CFA analysis is shown in **Table 5.11.** This Adjusted Sub Model A fitted the data CFA TPI *Team Performance Index* with Chi-squared = 438.93, df =273, p-value <.0005 and

RMSEA = 0.039 (95% 0.032-0.046). These values indicate a good fit between the model and the observed data (Table 5.12).

Table 5.11: Adjusted Sub Model A: Summarised CFA analysis.

Team Performance Index	Chi squared	df	RMSEA
NFI = 0.94 **CFI = 0.98**	**438.93**	**273**	**0.039** **(95% 0.032 – 0.046)**
p < 0.0005	Good fit between the model and the observed data.		

Table 5.12: CFA Analysis: Adjusted *Team Performance Index* (TPI) Sub Model A.

		CFA TPI	
Sample size **No. of items**	**N** **M**		**399** **27**
Sample size; No. of items Category	**n;m.Cat.**	250 < n < 1000; 12 < m < 30	
Absolute/predictive fit	**Abbr.**	**Target**	**Observed**
Chi-square (Maximum likelihood)	χ^2		438.93
	Df		273
	P	≤ .050	**< .0005**
	χ^2/df	≤ 3	**1.61**
Comparative Fit Indices			
Bentler-Bonnet normed fit index	**NFI**	≥ .92	**.94**
Bentler comparative fit index	**CFI**	≥ .92	**.98**
Root mean square error of approximation	95%Lo **RMSEA** 95%Hi	≤ .08	**.032** **.039** **.046**

Factor loadings for *Team Performance Index* ranged from 0.802 - 0.900 in ***Staff perceptions of leadership of superior,*** from 0.529 - 0.813 in ***Staff team***

competencies, from 0.320 - 0.723 in ***Staff team culture alignment*** and from 0.591-0.875 in ***Staff Team Trust level.***

Inter bivariate correlations**, Pearson's Correlation Coefficients (Significance p<0.05)** among the sub factors for Adjusted Sub Model A: TPI are summarised in Table 5.13. The correlations between the factors ranged from 0.39 – 0.77 with all values significant at the p < .05 level.

Table 5.13: *Team Performance Index* Adjusted Sub Model A with four sub factors Inter bivariate correlations (Pearson's Correlation Coefficients) *Significant p<0.05

Sub Factor	Staff perceptions of leadership of superior	Staff team competencies	Staff team culture alignment
Staff team competencies	**0.39***		
Staff team culture alignment	**0.50***	**0.77***	
Staff team Trust level	**0.60***	**0.34***	**0.46***

The responses from participants who had completed all data for all the original 79 items of the survey instrument (n = 399) of the total sample of 413 respondents were used in the CFA. The factor loadings and the correlations of the themes all contribute to the construct validity of the Sub Model A: *Team Performance Index.*

5.16.3.3 Internal Consistency

The third validity criterion is the internal consistency reliability (Cronbach-alpha) and these are summarised in Table 5.14. The interpretations of Cronbach-alphas are < 0.50 unacceptable; 0.50-0.59 Poor; 0.60-0.69 Acceptable; 0.70-0.79 Good; >0.80 + Excellent (Hair et. al., 2006). The adjusted Sub Model A: *Team Performance Index* consisted of the four sub-factors: *Staff Perceptions of leadership of superior*, *Staff team competencies, Staff team culture alignment and Staff team trust.*

Table 5.14: Cronbach-alphas of all the items of the Team Performance Index: Sub Model A.

CODE	TEAM PERFORMANCE INDEX TPI	Cronbach- Alpha 0.73
ELSH	**Staff perceptions of leadership of superior**	**0.96**
ELSH1	Meta strategy	0.81
ELSH2	Values	0.83
ELSH3	Feedback & criticism response	0.80
ELSH4	Supports staff development	0.90
ELSH5	Recognition/Acknowledgement	0.88
ELSH6	Involvement & co-operation	0.87
ELSH7	Innovative & encourages new thinking	0.89
ELSH8	Gives opportunities	0.82
ELSH9	Prioritises people	0.83
ETCE	**Staff team competencies**	**0.88**
ETCE1	Deadlines	0.67
ETCE2	Taking control	0.70
ETCE3	Inclusion	0.76
ETCE4	Group cohesion	0.81
ETCE5	Group decisions	0.73
ETCE6	Team goals	0.80
ETCE7	Conflict handling	0.53
ETCE8	Calming influence	0.59
OCAL	**Staff team culture alignment**	**0.71**
OCAL1	Instruction style	0.51
OCAL2	Risk taking	0.42

CODE	TEAM PERFORMANCE INDEX TPI	Cronbach- Alpha 0.73
OCAL3	Being part of a team	0.72
OCAL4	Team performance rating	0.69
OCAL5	Easy going nature	0.32
OCAL6	Traditional stable& predictable	0.43
ETRU	**Staff Team Trust**	**0.79**
ETRU1	Trust in others	0.80
ETRU2	Helpfulness of others	0.88
ETRU4	Cooperation of others	0.59

The Cronbach-alphas were all above the acceptable level except for the following items: Poor ETCE7 (0.53); ETCE8 (0.59); OCAL (0.51) and ETRU (0.59) and the Unacceptable OCAL2 (0.42); OCAL5 (0.32); OCAL6 (0.43). The lowest Cronbach alpha (0.32) was poor but since it contributed towards the overall *Staff team culture alignment* was 0.71, it was retained. Thus, the overall Cronbach-alphas for the four sub factors were as follows:

Staff Perceptions of leadership of superior (0.96), *Staff team competencies (0.88), Staff team culture alignment (0.71) and Staff Team Trust (0.79)* with the Cronbach-alpha for the *Team Performance Index* being 0.73 which is regarded as good. A Cronbach-alpha coefficient of greater than 0.70 was used in this research study to indicate a reliable factor as it was considered to be the norm in many other reported studies (Hair et al., 2006). As for all of the overall main constructs in the survey instrument, the Cronbach alpha coefficients were above the accepted 0.7 reliability level, including most of the sub factors (exceptions being in Staff team culture alignment with lower Cronbach alphas), the instrument was judged to be reliable.

With the outcome of the factor analysis and the other measures of correlation and Cronbach-alphas, there is sufficient evidence to support discriminant validity and reliability for the Sub Model A: Team Performance Index (TPI).

5.17 ORIGINAL AND ADJUSTED SUB MODEL B: ORGANISATIONAL (SYSTEM)

5.17.1 ORIGINAL: Sub-Model B: SHPWI (Independent Variable2)

The *School High Performance Work Index* (SHPWI) was developed from the work done by Boedker et al. (2011) and a previous study conducted by Gibbs and Poisat (2015). It was originally composed of only four sub-constructs namely Innovation Potential, Employee Experience, Leadership potential and Learner Orientation. In this research study the modified SHPWI utilised the following four sub-factors: *Innovation Potential* (3 items), *Employee Experience (*4 items), *Fairness* (3 items), and *Hybrid Leadership School Climate* (3 items). The coding is shown for all these factors: *Innovation Potential* (INNO), *Employee Experience (EEE*), Fairness (FAI) and *Hybrid Leadership School climate (HLSC).*

The Item themes, Median Scores (20th and 80th percentile), factor loadings and standard deviations of the sub-model *School High Performance Work Index* (SHPWI) are reported below. The original modified SHPWI with these four sub-factors of *Innovation Potential* (INNO), *Employee Experience (EEE*), *Fairness (FAI)* and *Hybrid Leadership Climate* (HLSC) is shown in Table 5.15.

Table 5.15: Median scores, factor loadings and adjustments for the four sub-factors: *School High Performance Work Index*

CODE	Theme of Item SCHOOL HIGH PERFORMANCE WORK INDEX (Reason for moved or removal)	**Median Score (20th and 80th percentile score)** **3.81**	SD 0.81	Factor loading	√ or Moved or removal
INNO	**Innovation Potential**	4.00 (3.00-4.50) Mean 3.86	0.92		√
INNO1	Willing to bring up new ideas	4.37	0.78	0.423	Removed Factor loading low Individual not Organisation
INNO2	New ideas listened to	3.81	1.00	0.751	√
INNO3	Encouraged environment for new ideas	3.90	1.02	0.881	√

CODE	Theme of Item SCHOOL HIGH PERFORMANCE WORK INDEX (Reason for moved or removal)	**Median Score (20th and 80th percentile score)** **3.81**	SD 0.81	Factor loading	√ or Moved or removal
EEE	**Employee Experience**	4.50 (4.00-5.00) Mean 4.21	0.90		√
EEE1	Pride	4.29	0.93	0.882	√
EEE2	Engagement Going extra mile	4.39	0.80	0.759	Removed as Engagement EENG
EEE3	Positive	4.14	0.97	0.878	√
EEE4	Value and importance of work	4.44	0.84	0.639	√ Repeat Removed
FAI	**Fairness**	3.67 (3.00-4.33) Mean 3.59	0.96		√
FAI1	Treated relative to performance	3.63	1.15	0.722	√
FAI2	School policies implementation	3.54	1.09	0.730	√
FAI3	Equal treatment at all levels	3.59	1.19	0.731	√
HLSC	**Hybrid Leadership Climate**	4.00 (3.40-4.40) Mean 3.92	0.77		√
HLSC1	Freedom to lead	4.21	0.93	0.705	√ Added from LSH2
HLSC2	Acknowledgment and recognition	3.78	1.12	0.853	√ Added from LSH3
OSCL1	Praise given often	3.87	0.99	0.613	√
OSCL2	Professional attitude	3.74	1.00	0.557	√
OSCL3	Clear value system	4.02	1.07	0.651	√

The original CFA diagram before adjustments of this sub-model B is shown in

Appendix 7: CFA diagram of Original SHPWI.

5.17.2 ADJUSTED: SHPWI Sub-Model B

An Exploratory and Confirmatory Factor Analysis (EFA and CFA) was undertaken on the School High Performance Index and the following results were obtained. A minimum significant loading of > .300 was required for acceptance and retention in the

SHPWI. The analysis revealed a two-factor structure that explained 59.8% of the variance (Appendix 8).

The items loaded onto two factors as per Appendix 9 showing Eigen Values for the two factor at 1.260 and 59,79% explained variance. With the Eigen values >1 a total of two factors were indicated in the original SHPWI. The EEE3 and LSH2 items shown in Appendix 9 showed cross loading onto both factors one and two. These items were re-examined and the following extraction and movement of items were based on the EFA, the factor loadings and the content of the item in relation to the literature theory covered on school teamwork and high performance (Hair et al., 2006).

Since the theoretical and conceptual model was divided into two sub-models, based on the theoretical framework (Castka et. al., 2001), Sub Model A: (TPI) was classified as the Individual/Team (Human) Factor, while the Sub Model B: SHPWI was grouped as the Organisation/School (System) Factor.

All items that dealt with the school environment and the external factors (System Factors) were retained as Sub Model B is the Organisational (System) part of the SEM model. All Individual (human) items were shifted to Sub Model A: Individual/Team (Human) part of the SEM or removed. The changes and adjustments are shown in Table 5.16 with EE3 being added to the Factor 1: External environment factor as it had a higher factor loading (.892) and aligned with theory in that factor. As this SHPWI was measuring constructs in the systems domain, all the items in the Human Factor 2 were either moved to another sub factor in the Systems Factor 1 where they possible aligned or removed completely from the SHPWI.

Table 5.16: School High Performance Index (SHPWI) with Factor loadings. Two factor structure: Individual/Team (Human) items were excluded and Organisation/School (System) items were included.

Item	Factor	Loading	Focus Area			
EEE1	1	.606	external			
EEE3	1	.892	external			
FAI1	1	.721	external			
FAI2	1	.790	external			
FAI3	1	.725	external			
INNO2	1	.718	external			
INNO3	1	.746	external			
LSH3	1	.754	external	Moved to HLSC Hybrid Leadership School Climate		
EEE2	2	.711	Person	Removed as covered by factor: Engagement		
EEE4	2	.691	Person	Individual Not used		
INNO1	2	.618	Person	Individual Not used		
LSH1	2	.818	Person	Individual Not used		
LSH2	2	.530	Person / external	Moved to HLSC Hybrid Leadership School Climate and combined with OSCL Organisational School climate		

After the EFA, the **revised theory SHPWI** was constructed with the individual (personal) items excluded and the Organisational School Climate (OSCL) items added including items LSH2 and LSH3 items added to comprise the factor **Hybrid Leadership Climate (HLSC).** The reason for this was based on the theoretical justification (Castka et al., 2001; Darling-Hammond et al., 2010; Townsend, 2015) as well as the factor analysis. As the Sub Model B: SHPWI was grouped as the Organisation/School (System) Factor the hybrid leadership and school climate were both sub-factors that comprised the school climate and therefore fitted more appropriately into the System factor of the model.

Added into this revised Sub Model B SHPWI were the following sub-factors: *Support* (SUP) and *Communication (*COMM), which were also considered to be more aligned

in the Organisation/School (System) Factor. The adjusted SHPWI therefore, was then composed of six sub-factors:

- Innovation Potential (2 items),
- Fairness (3 items),
- Employee Experience (2 items),
- Hybrid Leadership Climate (5 items),
- Support (3 items) and
- Communication (4 items).

The original modified SHPWI had the four sub-factors of *Innovation Potential* (INNO), *Employee Experience (EEE*), *Fairness (FAI),* and *Hybrid Leadership Climate* (HLSC). The adjusted SHPWI models are all shown in Appendix 9.

A CFA was done on this six factor Sub Model B: SHPWI adjusted model. The new factor loadings for all the final items of the six sub-factors are recorded in Table 5.17.

Table 5.17: Median scores, factor loadings and adjustments for the all the six sub-factors of adjusted *School High Performance Work Index* SHPWI.

CODE	Theme of Item SCHOOL HIGH PERFORMANCE WORK INDEX (Reason for moved or removal)	**Median Score (20th and 80th percentile score)** **3.81**	SD 0.81	Factor loading	√ or Moved or removal
INNO	**Innovation Potential**	4.00 (3.00-4.50) Mean 3.86	0.92		√
INNO2	New ideas listened to	3.81	1.00	**0.755**	√
INNO3	Encouraged environment for new ideas	3.90	1.02	**0.876**	√
EEE	**Employee Experience**	4.50 (4.00-5.00) Mean 4.21	0.90		√
EEE1	Pride	4.29	0.93	**0.888**	√
EEE3	Positive	4.14	0.97	**0.882**	√
FAI	**Fairness**	3.67 (3.00-4.33) Mean 3.59	0.96		√

FAI1	Treated relative to performance	3.63	1.15	**0.679**	√
FAI2	School policies implementation	3.54	1.09	**0.802**	√
FAI3	Equal treatment at all levels	3.59	1.19	**0.782**	√
HLSC	**Hybrid Leadership Climate**	4.00 (3.40-4.40) Mean 3.92	0.77		√
HLSC1	Freedom to lead	4.21	0.93	**0.592**	√ Added from LSH2
HLSC2	Acknowledgment and recognition	3.78	1.12	**0.767**	√ Added from LSH3
OSCL1	Praise given often	3.87	0.99	**0.573**	√
OSCL2	Professional attitude	3.74	1.00	**0.590**	√
OSCL3	Clear value system	4.02	1.07	**0.623**	√

SUP	**Support**	4.00 (3.33-4.33) Mean 3.78	SD 0.81		√
SUP1	Admin and resources supportive	3.84	0.98	**0.632**	√
SUP2	Listen and support each other	3.79	0.89	**0.677**	√
SUP3	External team support	3.72	1.06	**0.817**	√
COMM	**Communication**	3.50 (3.00-4.00) Mean 3.48	SD 0.87		√
COMM1	Clear	3.57	0.99	**0.801**	√
COMM2	Open and free	3.47	1.07	**0.743**	√
COMM3	Regular rapid feedback responses	3.42	1.02	**0.806**	√
COMM4	Positive exceed negatives	3.47	1.08	**0.770**	√

5.17.3 VALIDATION CRITERIA: SHPWI: INDEPENDENT VARIABLE 2

The three main criteria to be validated are content validity, construct validity and internal consistency.

5.17.3.1 Content validity

The research instrument was aimed at developing a theoretically founded instrument for school improvement and examining the linkages and significant relationships between enabling factors or constructs of school operational teams, leadership, communication and engagement in secondary schools. It was built on theoretical frameworks of prior literature studies as outlined in chapter two and three.

5.17.3.2 Construct validity

Using CFA for the adjusted Sub Model B Organisational (Systems) SHPWI, items were constrained to load only onto the factor which they belonged as well as to align with the literature theory. The adjusted Sub Model B: *School High Performance Work Index* summarised CFA analysis is shown in Table 5.18. This Adjusted Sub Model B fitted the data CFA SHPWI *School High Performance Work Index* with Chi-squared = 325.84, df = 128, p-value <.0005 and RMSEA = 0.062 (95% 0.054-0.071). These values indicate a good fit between the model and the observed data (Table 5.19).

Table 5.18: Adjusted Sub Model B: Summarised CFA analysis.

School High Performance Work Index	**Chi squared**	df	RMSEA
NFI = 0.93 **CFI = 0.96**	**325.84**	**128**	**0.062** **(95% 0.054 – 0.071)**
p < .0005	Good fit between the model and the observed data.		

A good Bentler Comparative Fit Index (CFI) > 0.95 which shows a good fit between the model and the observed data. Comparative Fit Index is explained in Chapter six, Table 6.3 (p.217).

Table 5.19: CFA Analysis: Adjusted *School High Performance Work Index* (SHPWI) Sub Model B

		CFA SHPWI	
Sample size	**N**		**399**
No. of items	**M**		**19**
Sample size; No. of items Category	**n;m.Cat.**	250 < n < 1000; 12 < m < 30	
Absolute/predictive fit	**Abbr.**	**Target**	**Observed**
Chi-square (Maximum likelihood)	χ^2		325.84
	Df		128
	P	≥ .050	**< .0005**
	χ^2/df	≤ 3	**2.55**
Comparative Fit Indices			
Bentler-Bonnet normed fit index	**NFI**	≥ .92	**.93**
Bentler comparative fit index	**CFI**	≥ .92	**.96**
	95%Lo		**.054**
Root mean square error of approximation	**RMSEA**	≤ .08	**.062**
	95%Hi		**.071**

Factor loadings for *School High Performance Work Index* ranged from 0.755-0.876 in ***Innovation Potential,*** from 0.882-0.888 in ***Employee Experience,*** from 0.679-0.802 in ***Fairness***, from 0.573-0.767 in ***Hybrid Leadership Climate,*** from 0.632-0.817 in ***Support*** and from 0.743-0.806 in ***Communication*** (Table 5.17).

Inter bivariate correlations**, Pearson's Correlation Coefficients (Significance p<0.05)** among the sub factors for Adjusted Sub Model B: SHPWI are summarised in Table 5.20. The correlations between the factors ranged from 0.61 – 0.98 with all values significant at the p < .05 level.

Table 5.20: *School High Performance Work Index* Adjusted Sub Model B with six sub factors Inter bivariate correlations (Pearson's Correlation Coefficients).

Sub Factor	Innovation Potential	Employee Experience	Fairness	Hybrid Leadership Climate	Support
Employee Experience	0.65*				
Fairness	0.78*	0.77*			
Hybrid-Leadership Climate	0.81*	0.86*	0.98*		
Support	0.63*	0.74*	0.81*	0.97*	
Communication	0.61*	0.63*	0.78*	0.86*	0.85*

***Significant p<0.05**

The responses from participants who had completed all data for all the 79 items of the survey instrument (n = 399) of the total sample of 413 respondents were used in the CFA. The factor loadings and the correlations of the themes all contribute to the construct validity of the Sub Model B: SHPWI.

5.17.3.3 Internal Consistency

The third validity criterion is the internal consistency reliability (Cronbach-alpha) and for Sub Model B: SHPWI the values are summarised in Table 5.21. The interpretations of Cronbach-alphas are <0.50 unacceptable; 0.50-0.59 Poor; 0.60-0.69 Acceptable; 0.70-0.79 Good; >0.80 + Excellent (Hair et al., 2006).

The adjusted Sub Model B: *School High Performance Work Index* consisted of six sub-factors: *Innovation Potential* (2 items), *Fairness* (3 items), *Employee Experience* (2 items), *Hybrid Leadership Climate* (5 items), *Support* (3 items) and *Communication* (4 items).

Table 5.21: Cronbach-alphas of all the items of the School High Performance Work Index: Sub Model B

CODE	SCHOOL HIGH PERFORMANCE WORK INDEX SHPWI	Cronbach- Alpha 0.90
INNO	**Innovation Potential**	**0.80**
INNO2	New ideas listened to	0.75
INNO3	Encouraged environment for new ideas	0.88
EEE	**Employee Experience**	**0.87**
EEE1	Pride	0.88
EEE3	Positive	0.88
FAI	**Fairness**	**0.80**
FAI1	Treated relative to performance	0.68
FAI2	School policies implementation	0.80
FAI3	Equal treatment at all levels	0.78
HLSC	**Hybrid Leadership School Climate**	**0.81**
HLSC1	Freedom to lead	0.60
HLSC2	Acknowledgment and recognition	0.77
OSCL1	Praise given often	0.58
OSCL2	Professional attitude	0.59
OSCL3	Clear value system	0.62
SUP	**Support**	**0.77**
SUP1	Admin and resources supportive	0.63
SUP2	Listen and support each other	0.68
SUP3	External team support	0.82
COMM	**Communication**	**0.86**
COMM1	Clear	0.80
COMM2	Open and free	0.74
COMM3	Regular Rapid feedback responses	0.81
COMM4	Positive exceed negatives	0.77

The Cronbach-alphas were all above the acceptable level (> 0.7) except for the following items: Acceptable FAI1 (0.68); HLSC (0.60); OSCL3 (0.62); SUP1 (0.63) and SUP2 (0.68) and Poor OSCL1 (0.58) and OSCL2 (0.59).

However, the overall Cronbach-alphas for the four main sub factors were all above the 0.7 level and are summarised as follows: *Innovation Potential (0.80); Employee*

Experience (0.87); Fairness (0.80); Hybrid Leadership School Climate (0.81); Support (0.77) and Communication (0.86) with the overall Cronbach-alpha for the *School High Performance Index* being 0.90 which is regarded as excellent. A Cronbach-alpha coefficient of greater than 0.70 was used in this research study to indicate a reliable factor as it was considered to be the norm in many other reported studies (Hair et al., 2006). As all the Cronbach alpha coefficients of the main overall constructs were above the accepted 0.7 reliability level, the items of the survey instrument used to measure this construct SHPWI was judged to be reliable.

With the outcome of the factor analysis and the other measures of correlation and Cronbach-alphas, there is sufficient evidence to support discriminant validity and reliability for the Sub Model B: School High Performance Index (SHPWI).

5.18 MEDIATING OR INTERVENING VARIABLES

There were three mediating variables that were initially added to the integrated SEM model as work done by (Cooper, 2014; Epitropkai and Martin, 2005; Cuesta, 2015) showed that these factors had a significant influence on the outcomes of high performance at secondary schools. The researcher therefore added these variables as intervening or mediating variables: *Perceptions of Learners Engagement* (EPLE), *Leader Member Exchange (*LMX*)* and lastly *Infrastructure* (IS).

5.18.1 Perceptions of Learners Engagement (EPLE)

This mediating variable, *Perceptions of Learners Engagement* (EPLE) was measured using 5 items. In a research study undertaken by Cooper (2014) the educators' perceptions of how engaged the learners were, was a significant factor in the level of effective performance of the educator. The Item themes, Median Scores (20^{th} and 80^{th} percentile), factor loadings and standard deviations of this variable are reported below. Strong, acceptable factor loadings were recorded for *Perceptions of Learners Engagement* (EPLE) and ranged from 0.618-0.884 (Table 5.22),

Table 5.22: Median scores and factor loadings for the five items in *Perceptions of Learners Engagement* (EPLE)

EPLE	Perceptions of Learner Engagement	3.00 (2.20-3.80) Mean 2.94	1.09	Factor loadings	√
EPLE1	Learner apathy	3.30	1.27	0.618	√
EPLE2	Unprepared Learners	3,26	1.26	0.664	√
EPLE3	Absenteeism	2.95	1.30	0.711	√
EPLE4	Bunking of classes	2.79	1.37	0.735	√
EPLE5	Disrespect	2.98	1.32	0.884	√

In testing the validity and reliability of this factor *Perceptions of Learners Engagement* (EPLE), all items clustered on one factor and factor loadings were >0.4, which was acceptable (Field, 2009). The overall Cronbach alpha for measurement of this factor was 0.89.

The *Perceptions of Learners Engagement* (EPLE) CFA analysis is shown in Appendix 10 and reported values are Chi-squared = 5.49, df = 3, p-value = .139 and RMSEA = 0.046 (95% 0.000-0.105). These values indicate a good fit between the model and the observed data (Table 5.23).

Table 5.23: Perceptions of Learners Engagement (EPLE): Summarised CFA analysis.

Perceptions of Learner Engagement	Chi squared	df	RMSEA
NFI = 1.00 **CFI = 1.00**	**5.49**	**3**	**0.046** **(95% 0.000 – 0.105)**
p < .05	Good fit between the model and the observed data.		

Bivariate correlations with the two Independent Variables (IV's): *Team Performance Index (TPI) and School High Performance Work Index (SHPWI)* are summarised in Table 5.24. The correlations between the factors ranged from 0.12 – 0.78. The correlations between the EPLE and TPI (0.12) and SHWPI (0.20) were **not significant.**

Table 5.24: Perceptions of Learners Engagement (EPLE) with IV's of Team Performance Index (TPI) and School High Performance Work Index (SHPWI) (Pearson's Correlation Coefficients) * Significant p<0.05

Sub Factor	Perceptions of Learners Engagement (EPLE)	Team Performance Index (TPI)	School High Performance Index (SHPWI)
Team Performance Index	0.12		
School High Performance Work Index	0.20	**0.78***	

With the outcome of the CFA, Pearson's correlation coefficients and Cronbach-alphas, there is sufficient evidence to support discriminant validity and reliability for *Perceptions of Learners Engagement* (EPLE). However, the relationship between the *Perceptions of Learners Engagement* (EPLE) and the two Independent Variables *Team Performance Index (TPI) and School High Performance Work Index (SHPWI)* were found to be non–significant bivariate correlations. Discussion of these relationships and path analysis with regard to this factor is outlined in chapter six.

5.18.2 Leader Member Exchange (LMX)

From research studies undertaken by Epitropaki and Martin (2005) and included in the theoretical framework in chapter four of this thesis, this mediating variable Leader Member Exchange (LMX) was measured using 3 items. The Item themes, Median Scores (20^{th} and 80^{th} percentile), and standard deviations of this variable are reported below (Table 5.25).

Table 5.25: Median scores and Standard deviations for the three items in *Leader Member Exchange* (LMX).

LMX	Leader Member Exchange	4.00 (3.00-4.67) Mean 3.87	SD 1.00	Factor loadings	√
LMX1	Personal connection of leader	3.82	1.09	**Not Possible**	√
LMX2	Open communication style of leader	3.94	1.05		√
LMX3	Leader makes time to connect	3.85	1.08		√

The CFA analysis was not possible with only three items but the Cronbach alpha was 0.92 (Excellent). The bivariate correlations with the IV's which were all significant at $p < 0.05$ and were in the range from 0.63 – 0.78 are shown in Table 5.26. Discussion of these relationships and path analysis will be outlined in chapter six.

Table 5.26: Leader Member Exchange (LMX) with IV's of Team Performance Index (TPI) and School High Performance Work Index (SHPWI) (Pearson's Correlation Coefficients) * Significant p<0.05

Sub Factor	Leader Member Exchange (LMX)	Team Performance Index (TPI)
Team Performance Index	**0.65***	
School High Performance Work Index	**0.63***	**0.78***

5.18.3 Infrastructure (IS)

Since research (Sebake et al., 2007; Murillo, 2011; Cuesta, 2015) indicates that infrastructure and resources have a significant effect on school performance, this variable was included in the integrated model to be a possible moderating variable towards the IV2: School High Performance Work Index. It was added in this Sub Model B as it was considered an Organisational (System) factor.

Infrastructure (IS) was measured with 1 item, as this was assessing the perceptions of the school staff as to whether they felt that they had sufficient resources and infrastructure to successfully operate at a high performance level.

Since this was not the main focus of this study the researcher could not use more items on this sub factor, so unfortunately this limited this constructs validity and reliability. It is hoped that further development and expansion of the SAT may allow for further analytics in this important focus area. As there is only 1 item no CFA or Cronbach alpha analyses were possible. However, the bivariate correlations with the IV's which were all significant at the level $p < 0.05$ are shown in Table 5.27.

Table 5.27: Infrastructure (IS) and Team Performance Index (TPI) and School High Performance Work Index (SHPWI) (Pearson's Correlation Coefficients) * Significant p<0.05

Sub Factor	Infrastructure (IS)	Team Performance Index (TPI)
Team Performance Index	**0.30**	
School High Performance Work Index	**0.32***	**0.78***

The schools are also grouped in three groups: Quintile 3, Quintile 4 and 5 and Private as per the Department of Basic Education classification in the Schools Performance Report (Department of Basic Education, 2014). These levels are also indicative of various levels of socio-economic status, city/rural positioning and infrastructure and resources. Further discussion will be given in chapter six on this factor and its relationship with the *School High Performance Work Index* (SHPWI) and the *Team Performance Index* (TPI).

5.19 DEPENDENT VARIABLES: ORGANISATIONAL COMMITMENT AND EMPLOYEE ENGAGEMENT

The two dependent variables chosen for the outcomes of the research study are

the factors: *Organisational commitment* (ORGC) and *Employee Engagement* (EENG). Both these factors are positively related to effective high performance in schools, according to research studies by Mowday et al. (1982), Dee et al. (2006) and Boedker et al. (2011). These two dependent variables have measurements that were taken from standardised literature metrics, so in this research analysis the validity of the

measuring survey instrument could also be gauged or validated, as the published literature Cronbach alphas could be compared.

5.19.1 ORGANISATIONAL COMMITMENT (Dependent Variable1)

The Organisational Commitment (ORGC) factor was measured using the 9-item Shortened Organisational Commitment Questionnaire (SOCQ) version (Mowday, Steers and Porter, 1979) of the original 15 item OCQ. It was shown and reported by Fields (2012) to yield Cronbach Alpha coefficients ranging from 0.74 - 0.92. Since the reported literature (Dee et al., 2006; Boedker et al., 2011) shows strong positive correlations between effective performance outcomes and organisational commitment, this factor could be used as a benchmark of effective school performance rating.

5.19.1.1 VALIDATION CRITERIA: Dependent Variable 1

The three main criteria to be validated are content validity, construct validity and internal consistency. Content, construct validity and internal reliability are discussed with relevance to this dependent variable ORGC.

Using CFA the Item themes, Median Scores (20^{th} and 80^{th} percentile), factor loadings and standard deviations of this variable are reported in Table 5.28 below. Content and Construct validity was shown, as all the items loaded with >0.4 (acceptable according to Field, 2009) and the factor loadings varied from 0.400 - 0.892.

Table 5.28: Median scores, factor loadings and adjustments for the nine items of *Organisational Commitment* (ORGC)

ORGC	Organisational Commitment	4.11 (3.44 - 4.56) Mean 3.95	0.79	Factor loadings	√
ORGC1	Effort beyond the normal	4.32	0.82	0.567	√
ORGC2	Talk positively about school to friends	4.02	1.01	0.842	√
ORGC3	Accepting tasks	3.34	1.28	0.400	√
ORGC4	Own values similar to school values	3.69	1.08	0.783	√
ORGC5	Proud to tell others about being part of this school	4.10	1.03	0.892	√
ORGC6	School inspires me	3.86	1.05	0.880	√
ORGC7	Choice of school above others	4.05	1.00	0.834	√
ORGC8	Care about the school's future	4.42	0.86	0.582	√
ORGC9	Best possible school for me	3.70	1.16	0.766	√

In testing the validity and reliability of this factor *Organisational Commitment* (ORGC) all items clustered on one factor and all factor loadings were >0.4. The overall Cronbach alpha coefficient for measurement of this factor was 0.91. This was aligned with literature (Fields, 2012) as the reported Cronbach alpha for this ORGQ nine-item metric was 0.74 - 0.92. This showed validity and internal reliability of this survey instrument to measure this factor of Organisational Commitment.

The *Organisational Commitment* (ORGC) summarised CFA analysis is shown in Table 5.28 and reported values are Chi-squared = 12.25, df = 17, p-value = .785 and RMSEA = 0.000 (95% 0.000-0.031). These values indicate a good fit between the model and the observed data, showing that the survey instrument showed discriminant reliability and validity in measuring the factor Organisational Commitment (ORGC). The summarised and full CFA are shown in Table 5.29 and 5.30 respectively.

Table 5.29: Organisational Commitment (ORGC): Summarised CFA analysis.

Organisational Commitment	Chi squared	df	RMSEA
NFI = 1.00 **CFI = 1.00**	**12.25**	**17**	**0.000** **(95% 0.000 – 0.031)**
p < .05 p = .785	Good fit between the model and the observed data.		

Table 5.30: CFA Analysis: *Organisational Commitment* (ORGC)

		CFA ORGC	
Sample size **No. of items**	**n** **m**		**399** **9**
Sample size; No. of items Category	**n;m.Cat.**	250 < n < 1000; m ≤ 12	
Absolute/predictive fit	**Abbr.**	**Target**	**Observed**
Chi-square (Maximum likelihood)	χ^2		12.25
	df		17
	p	≥ .050	**.785**
	χ^2/df	≤ 3	**0.72**
Comparative Fit Indices			
Bentler-Bonnet normed fit index	**NFI**	≥ .95	**1.00**
Bentler comparative fit index	**CFI**	≥ .95	**1.00**
Other			
Joreskog adjusted GFI	**AGFI**	≥ .95	**.98**
	95%Lo		**.000**
Root mean square error of approximation	**RMSEA**	≤ .08	**.000**
	95%Hi		**.031**

Correlations among the dependent variable, *Organisational Commitment* (ORGC) and the two independent variables of *Team Performance Index* (TPI) and *School High Performance Index* (SHPWI) are shown in Table 5.31. Correlations between the factors ranged from 0.66 – 0.78.

Table 5.31: *Organisational Commitment* (ORGC) and *Team Performance Index* (TPI) and *School High Performance Work Index (SHPWI)* (Pearson's Correlation Coefficients) * Significant p<0.05

Sub Factor	Organisational Commitment (ORGC)	Team Performance Index (TPI)
Team Performance Index	**0.66***	
School High Performance Work Index	**0.78***	**0.78***

Further discussion is given in chapter six on this factor, Organisational Commitment and its significant relationship with the *School High Performance Work Index* (SHPWI) and the *Team Performance Index* (TPI).

5.19.2 EMPLOYEE ENGAGEMENT (EENG) Dependent Variable 2

Numerous studies (Boedker et al., 2011; Wiley, 2009; Kenexa World Survey Report, 2013) have shown that an engaged workforce has a large effect on the bottom line of an organisation and on the effective high level of organisational performance. The Employee Engagement factor was measured using the Kenexa Employee Engagement Index with four items of Pride, Satisfaction, Advocacy and Individual Commitment. This sub-factor was analysed using 4 items and the Cronbach Alpha was reported by Wiley (2009) to be between 0.78 - 0.90. Added to this Personal Employee Engagement sub-factor (Kenexa, 2013) was the Work Engagement sub-factor (Aon Hewitt, 2014; Poisat, 2006). The Work Engagement also used four items and included time, positive work attitude, concentration and resources. Items for this research study were modified and adapted slightly to suit the school context as the some of the research studies reported take place in a business context.

5.19.2.1 VALIDATION CRITERIA: Dependent Variable 2

The main validation criteria of content, construct validity and internal reliability is discussed with relevance to this dependent variable Employee Engagement EENG. Using CFA, the Item themes, Median Scores (20^{th} and 80^{th} percentile), factor loadings and standard deviations of this variable are reported in Table 5.32 below. Content and

Construct validity, was shown as all the items loaded with >0.4 and the factor loadings showed acceptable values which varied from 0.509-0.876.

Table 5.32: Median scores, factor loadings and adjustments for the four items of *Personal Employee Engagement* (EENG) and the four items of *Work Engagement (WEN)* making up the factor *Employee Engagement* (ENG)

ENG	Employee Engagement	4.00 (3.50-4.63) Mean 3.95	0.77	Factor loadings	√
EENG	**Personal Employee Engagement**	3.95	0.90		√
EENG1	Pride	4.20	0.98	0.876	√
EENG2	Satisfaction	3.99	0.97	0.794	√
EENG3	Advocacy	3.97	1.07	0.868	√
EENG4	Individual Commitment	3.64	1.31	0.600	√
WEN	**Work Engagement**	3.95	0.79		√
WEN1	Time passing	4.07	1.04	0.789	√
WEN2	Positive work attitude	4.29	0.82	0.749	√
WEN3	Concentration	3.97	1.02	0.538	√
WEN4	Resources	3.48	1.31	0.509	√

In testing the validity and reliability of *Employee Engagement* (ENG) with two sub-constructs, all factor loadings were >0.4. The overall Cronbach alpha coefficient for measurement of ENG factor was 0.80, with the Cronbach Alpha coefficients for Personal Employee Engagement (0.84) and Work Engagement (0.73). This showed validity and internal reliability of this survey instrument to measure this factor of Employee Engagement (ENG). The *Employee Engagement* (ENG) CFA analysis is shown in Table 5.33.

Table 5.33: Employee Engagement (ENG): Summarised CFA analysis.

		CFA ENG	
Sample size **No. of items**	**n** **m**		**399** **8**
Sample size; No. of items Category	**n;m.Cat.**	250 < n < 1000; m ≤ 12	
Absolute/predictive fit	**Abbr.**	**Target**	**Observed**
Chi-square (Maximum likelihood)	**χ^2**		31.46
	df		16
	p	≥ .050	**.012**
	χ^2/df	≤ 3	**1.97**
Comparative Fit Indices			
Bentler-Bonnet normed fit index	**NFI**	≥ .95	**.98**
Bentler comparative fit index	**CFI**	≥ .95	**.99**
Other			
Joreskog adjusted GFI	**AGFI**	≥ .95	**.96**
	95%Lo		**.023**
Root mean square error of approximation	**RMSEA**	≤ .08	**.049**
	95%Hi		**.075**

The summarised CFA analysis is shown in Table 5.34.

Table 5.34: CFA Analysis: *Employee Engagement* (ENG)

Employee Engagement	Chi squared	Df	RMSEA
NFI = .98 **CFI = .99**	**31.46**	**16**	**0.049** **(95% 0.023 – 0.075)**
p < .05 p = .012	Good fit between the model and the observed data.		

The *Employee Engagement* (ENG) reported values are Chi-squared = 31.46, df = 16, p-value = .012 and RMSEA = 0.049 (95% 0.023-0.075). These values indicate a good fit between the model and the observed data, showing that the survey instrument

showed discriminant reliability and validity in measuring the factor Employee Engagement (ENG).

Bivariate correlations among the dependent variable 2, *Employee Engagement* (ENG), *Personal Employee Engagement (*EENG) as well as the *Work Engagement* (WEN) and the two independent variables of *Team Performance Index* (TPI) and *School High Performance Index* (SHPWI) are shown in Table 5.35. Correlations between the factors ranged from 0.59 – 0.93.

Table 5.35: Employee Engagement (ENG), Personal Employee Engagement (EENG) and Work Engagement (WEN) in relation to *Team Performance Index* TPI) and *School High Performance Work Index (SHPWI)* (Pearson's Correlation Coefficients) * Significant p<0.05

Sub Factor	Employee Engagement (ENG)	Personal Employee Engagement (EENG)	Work Engagement (WEN)	Team Performance Index (TPI)
Personal Employee Engagement (EENG)	**0.93***			
Work Engagement (WEN)	**0.90***	**0.67***		
Team Performance Index	**0.67***	**0.63***	**0.59***	
School High Performance Work Index	**0.78***	**0.80***	**0.62***	**0.78***

Further discussion is given in chapter six on, Employee Engagement and its relationship with the *School High Performance Work Index* (SHPWI) and the *Team Performance Index* (TPI).

5.20 SUMMARY AND CONCLUDING REMARKS

As per the generic research process (Saunders, Lewis and Thornhill, 2009), the research philosophy was outlined, followed by the research approach and selection of the research strategies. The research methodology and design were detailed and discussed, with an outline of the theoretical and conceptual frameworks. All the

independent, dependent and mediating variables selected for the conceptual model were outlined. The conceptualisation of the variables and the relevant theoretical frameworks were outlined. The data collection process and the development of the measuring instrument (questionnaire), as well as a description of the selected statistical SEM as a suitable analysis tool were then discussed.

The validity and reliability of the measuring instrument (SAT) was examined utilising EFA /CFA /SEM analysis and validation of the measurement part of the proposed model for the SEM process. The Sub-Models A and B were outlined and the adapted final proposed conceptual model was refined with the CFA analysis and validation of the measuring instrument, with the added investigated hypotheses on the path diagram.

The research objective $RO_{4,5}$ were achieved as the sequential research design was utilised in this quantitative study, with empirical data being processed utilising the structured equation modelling (SEM) process, thereby answering the RQ_4 and RQ_5. These two $RQ_{4,5}$ involve the development of a metric and framework, which is empirically tested and validated in the South African context. These were achieved and outlined in this chapter.

In Chapter six, the descriptive biographical and inferential statistical results are presented and discussed. The SEM **structural model** is analysed and discussed with the causal relationships between the Independent and Dependent Variables, along with the Mediating or Intervening variables clarified. This is the linking of the exogenous and endogenous variables and is analysed in the next chapter, where the final conceptual model along with the hypotheses are elucidated. The final steps of the SEM process are theoretically detailed and the final SEM models are tested and analysed for best fit parameters.

CHAPTER SIX

CONSTRUCTION AND VALIDATION OF THE INTEGRATED MODEL FOR SOT's

6.1 INTRODUCTION

The literature study outlined in Chapter two and three discussed the main enabling factors that were critical to create high performance teams in secondary schools and drive effective levels of organisational performance. A conceptual model was proposed, based on the theoretical frameworks of this research study as outlined in Chapter four. The research design and methodology utilised in this investigation to establish the relationships between the enabling factors of leadership, communication and engagement on effective performance in secondary schools in South Africa were presented in Chapter five. Also in chapter five, the discriminant validity of the school analytical tool (SAT) was outlined and the CFA analysis and proposed conceptual model was clarified.

At the start of this chapter the demographic and biographical descriptive statistics are examined and then the outline of the process of the SEM analysis is briefly stated with the best fit parameters being described and outlined. The SEM analysis and empirical results with the inferential statistics are discussed. The whole integrated model relationships are unpacked with three versions analysed. Since version three (v3) was the best fit model the path estimates and hypotheses of this SEM model v3 was then detailed. The chapter concludes with a summary of the hypothesised and path estimate relationships, a further ANOVA analysis within and between groups and a final conclusive summary of the chapter. This leads onto the final discussion and recommendations of the concluding chapter of this thesis.

In this chapter the RQ_1, RQ_4, and RQ_5 are therefore addressed. The research question RQ_1 has been answered in this thesis, as the key enabling factors that drive the high performance of school operational teams in secondary schools were identified. An SEM integrated model v3 was verified with all the relationships and linkages between these variables analysed. The School Analytical Tool (SAT) was devised and validated as a reliable metric in conducting a SWOT analysis in the SOT's. These outcomes

answered the research questions: RQ_4 and RQ_5 of this research study as proposed in chapter one of this thesis.

6.2 KEY ENABLING FACTORS

This research study examined the following independent variables: Team Performance Index (TPI) and School High Performance Work Index (SHPWI) and the effect on dependent variable Organisational Commitment (ORGC) and Employee Engagement (ENG). It has been shown in a number of research studies that ORGC and ENG both are positively correlated with effective high performance levels, so these two standardised literature metrics with reliable and valid Cronbach alpha coefficients, were selected as good benchmarked outcomes to reflect effective high performance levels in secondary schools.

Enabling factors that influence effective performance levels in schools were grouped as either Individual (Human) or Organisational (System) factors: **Team Performance Index** was composed of *Staff Perceptions of Leadership of Superior, Staff Team Competencies, Staff Culture Alignment and Trust Level,* with the **School High Performance Work Index** being composed of *Innovation Potential, Fairness, Employee experience, Hybrid Leadership Climate, Support Level, and Communication.* Intervening variables identified were *Staff Perceptions of Learners' Engagement, Leader Member Exchange Rating* and *School Infrastructure.*

6.3 SAMPLE DISTRIBUTION AND SAMPLE PROFILES

Data was collected from 26 of the 31 secondary schools approached to participate in this research study using a design survey research method. An explorative survey was used in a pre-study to investigate certain constructs and provided new possibilities for analysis in this follow up study. From the literature review and the explorative survey, a more refined survey was designed to undertake this research study and to achieve the goal of the study. The operationalisation of the variables into a theoretical model and survey design which progressed to data collection at the 31 selected secondary schools. Five schools withdrew from the study for various reasons; resulting in twenty-six schools (26) participating in the research study.

The target population were the educators, staff and principals in the selected secondary schools in three different geographical regions: Western Cape, Eastern Cape and KwaZulu-Natal. These were selected from different quintiles and from the list of school performance (Percentage Pass rate of Grade12) obtained from the Department of Education (Department of Basic Education Technical Report, 2014) (Figure 6.1).

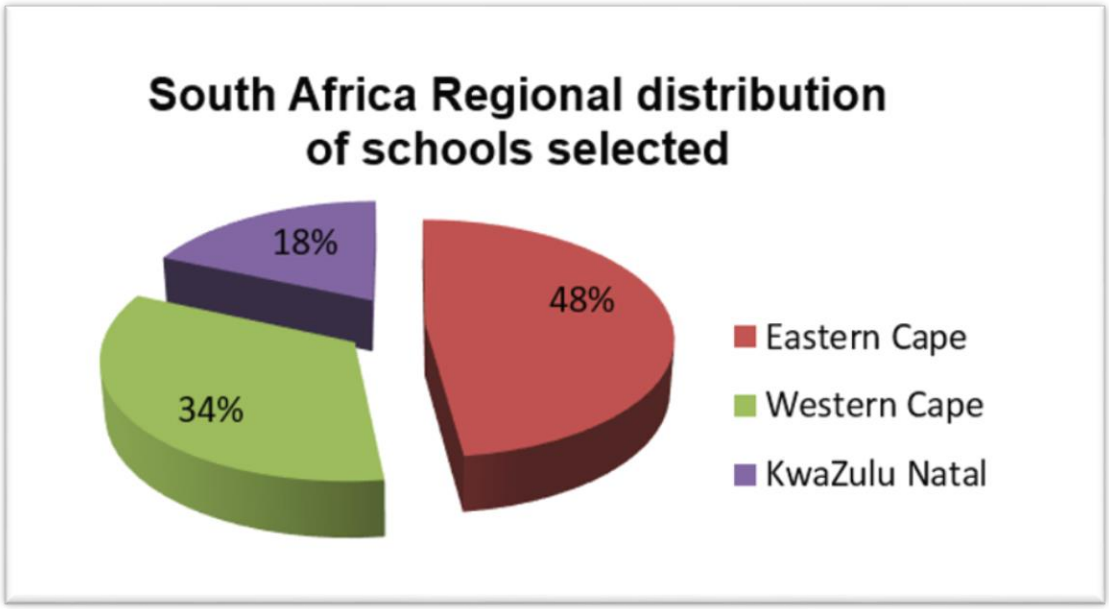


Figure 6.1: Regional distribution of schools selected

At each school, the principal was also requested to complete the SAT survey and a survey was obtained from all 26 schools principals or the deputy principal from each of the schools that participated in the study.

Overall, the response rates for schools was 84% whilst, within the schools, the staff response rate varied from between 35% - 90% of the staff of the twenty-six participating secondary schools. Originally there were 413 respondents with 2 being discarded due to incompletion of the whole survey. 411 respondents were used for the descriptive data analysis. The schools were grouped into Private, Quintile 5 and Quintile 3 and 4 schools and the pass rate was calculated as an average of the Grade 12 pass rate over the past three years (2012, 2013 and 2014). The schools were also grouped into high, medium and low performing schools, with high (>90% pass rates), medium (75-89% pass rates) and low (<75% pass rates). See Table 6.1.

Table 6.1: Summary of the school sample in regions, quintiles pass rate % and high, medium and low performance grouping.

School Group	School	Region	%Pass Rate	Performance Group
Private	School 4	EC	100	High
	School 5	EC	70.7	Low
	School 6	EC	100	High
	School 16	WC	100	High
	School 23	KZN	97.4	High
Quintile 5 Q5	School 2	EC	99	High
	School 3	EC	96.9	High
	School 7	EC	90.2	High
	School 8	EC	81.9	Medium
	School 12	WC	100	High
	School 13	WC	94.4	High
	School 14	WC	88	Medium
	School 15	WC	88.2	Medium
	School 20	KZN	97.9	High
	School 21	KZN	85	Medium
	School 22	KZN	77	Medium
	School 25	KZN	87.8	Medium
	School 26	KZN	86.4	Medium
Quintile 4 Q4	School 17	WC	85.2	Medium
	School 24	KZN	87.1	Medium
Quintile 5 Q5	School 1	EC	72.6	Low
	School 9	EC	92.2	High
	School 10	EC	64.3	Low
	School 11	EC	68.4	Low
	School 18	WC	62	Low
	School 19	WC	50.6	Low

The sampling profile of private and quintiles are shown in Figure 6.2 below.

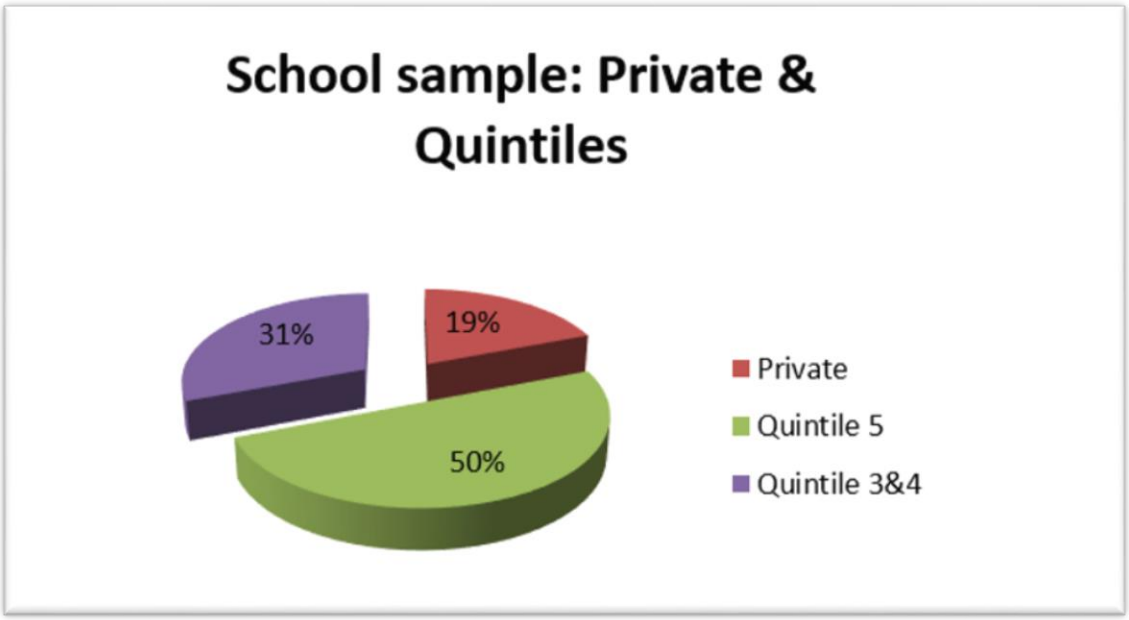


Figure 6.2: Private and Quintile groups

The percentage pass rates in the three groups (high, medium and low) are shown as percentage of the school sample group in Figure 6.3.

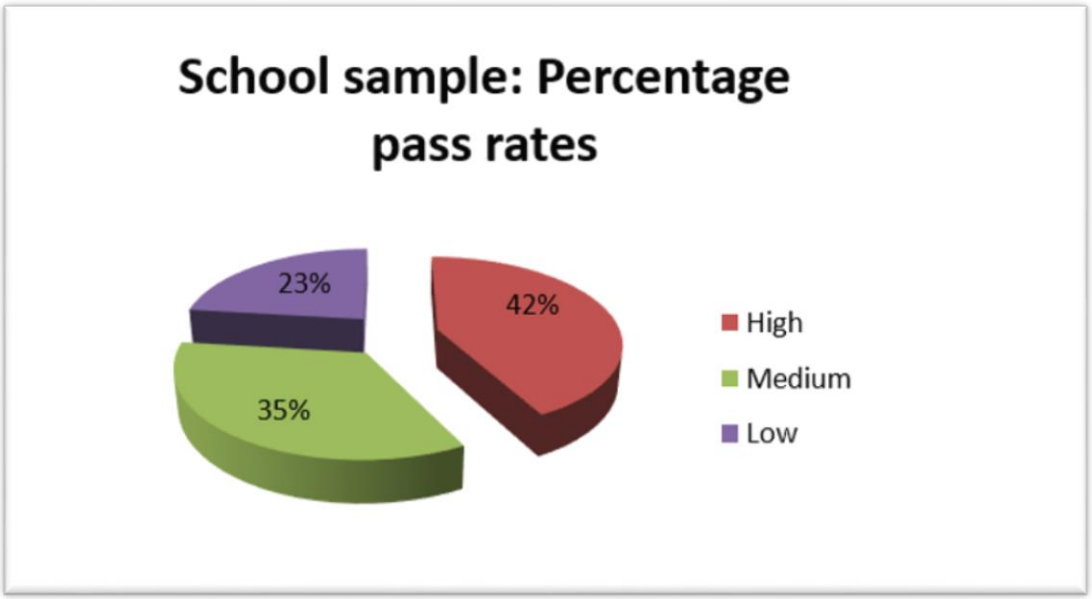


Figure 6.3: School sample: Percentage Pass rates

The Pass rate percentages from this research study sample in the different quintiles are shown in the bar graph (Figure 6.4).

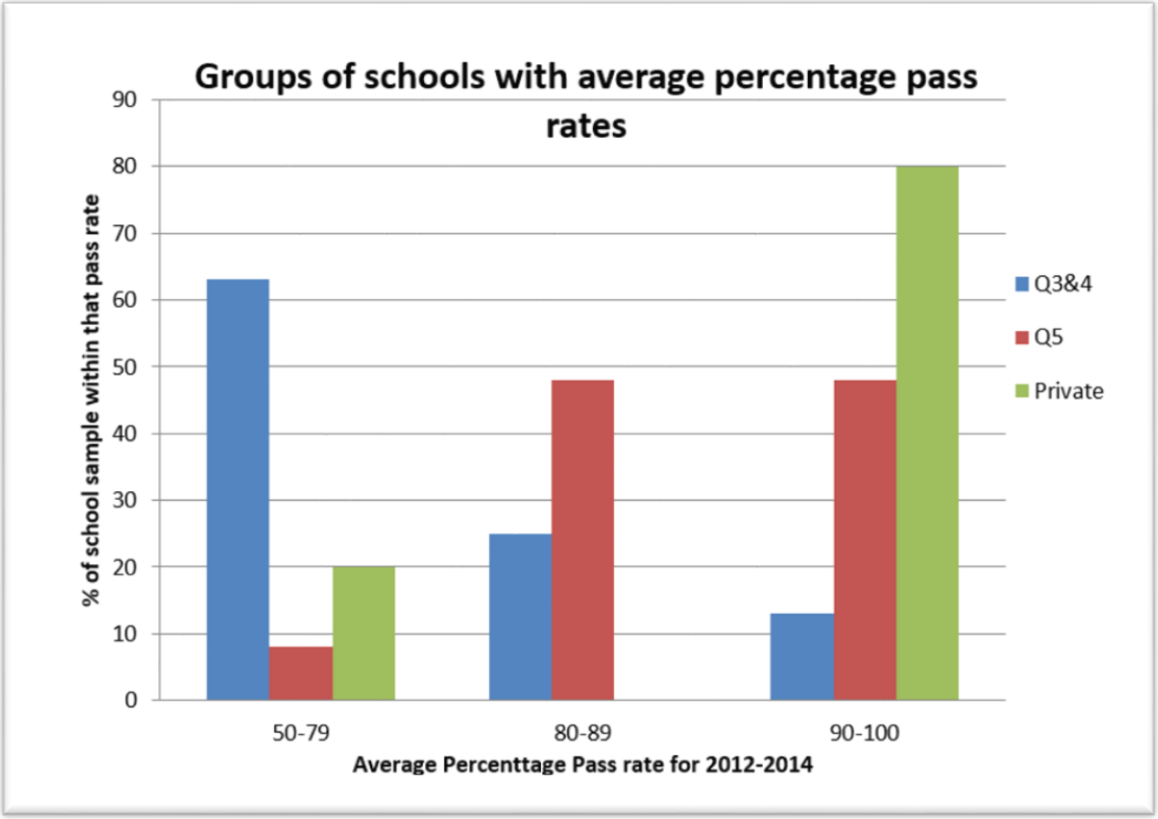


Figure 6.4: School groups with the average percentage pass rates

The above data presented is to show the population sample profiles of the particular sample that was used in this research study. As this sample was only twenty-six schools from three regions in South Africa, no predictive inferences to the entire population can be made or predicted in this preliminary research study.

The descriptive statistics from the biographical data (Section A of the Survey Instrument) is discussed below.

6.4 BIOGRAPHICAL STATISTICAL INFORMATION

The demographic information from Section A of the survey instrument of 411 respondents, who participated in this research study, is reported in this section. Biographical information collected included (Individual respondents) gender, age, current level of employment, years of service, education level and leadership training

of all of the respondents. The frequency distribution of the biographical data is represented below.

6.4.1 Gender

The 411 respondents who participated in this study were 57% female and 43% male as represented in Figure 6.5

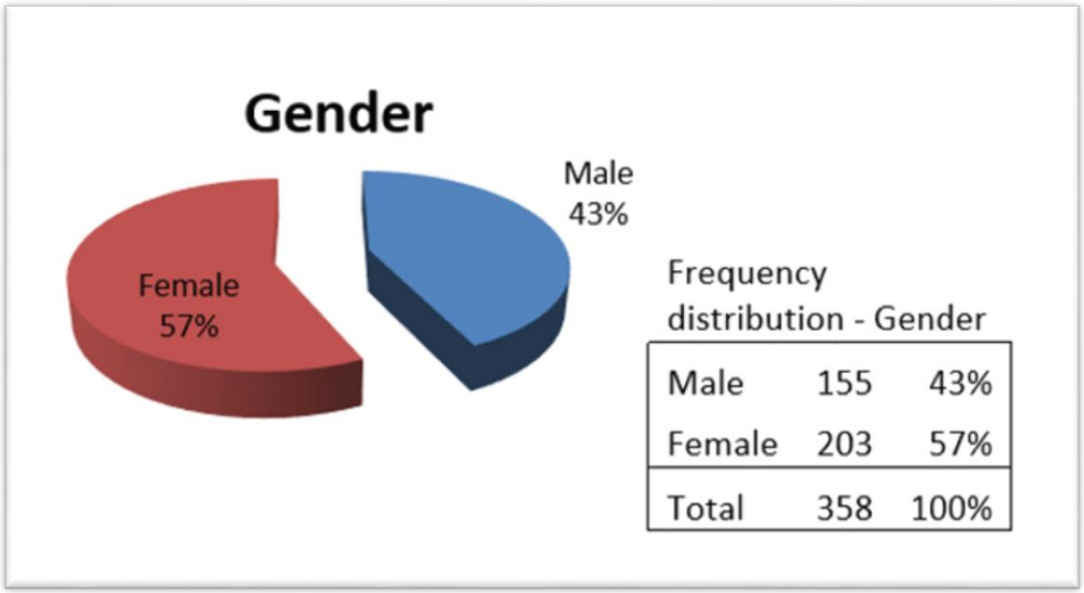
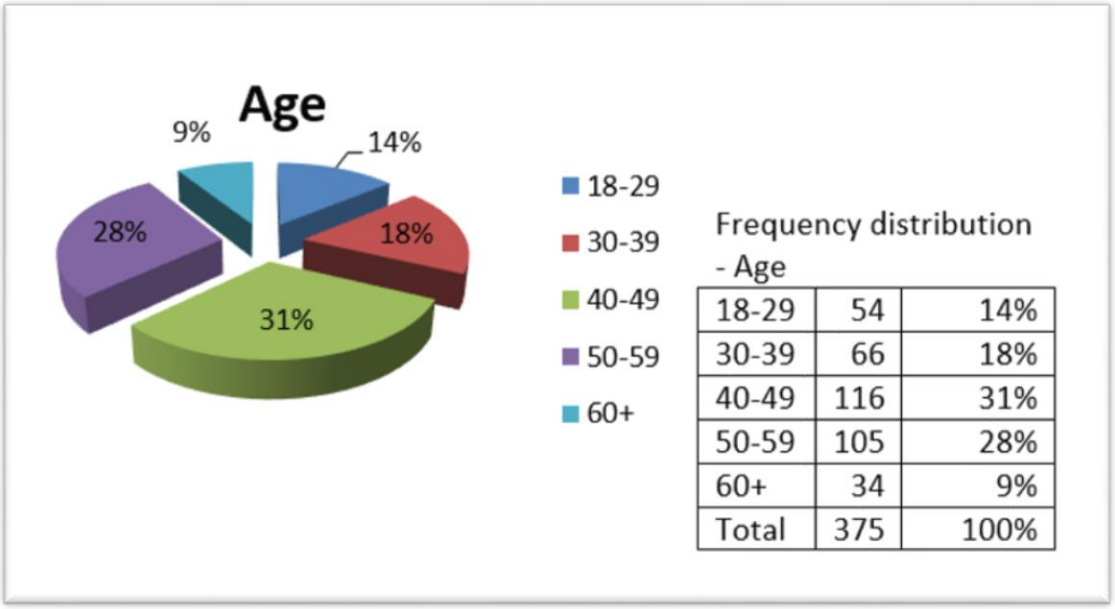


Figure 6.5: Respondents Gender

6.4.2 Age

As reflected in Figure 6.6 the respondents who participated in this research study were 14% (18-29 years), 18% (30-39 years), 31% (40-49 years), 28% (50-59 years) and 9% (60+).



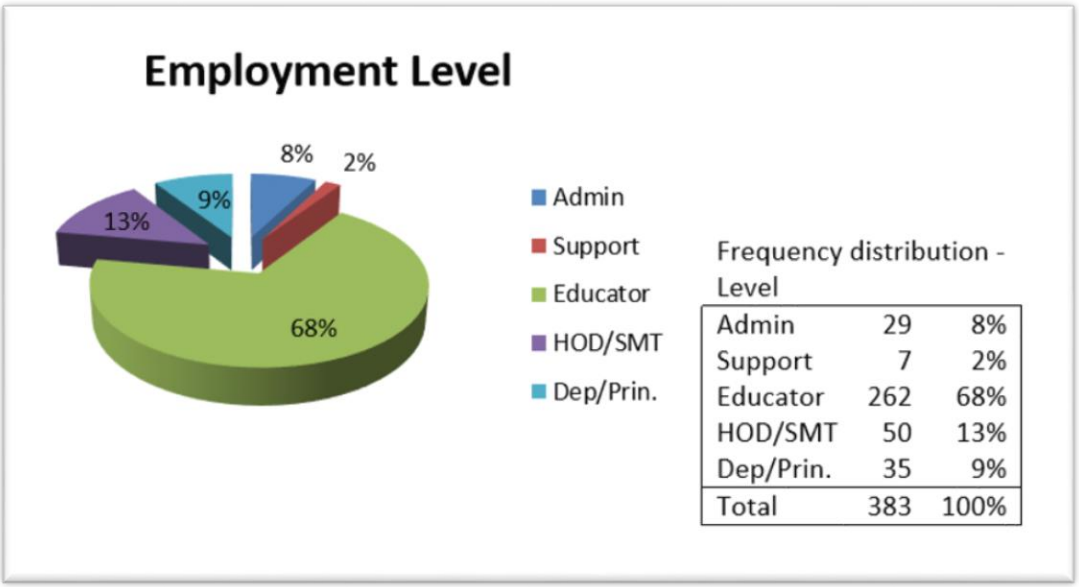
Frequency distribution - Age

18-29	54	14%
30-39	66	18%
40-49	116	31%
50-59	105	28%
60+	34	9%
Total	375	100%

Figure 6.6: Respondents Age

6.4.3 Current employment level in the school

In Figure 6.7 the respondents' employment level in the schools is represented with 10% (administrative and support), 68% (educators), 13% (Head of Departments/School Management Team) and 9% (Deputy or Principals),



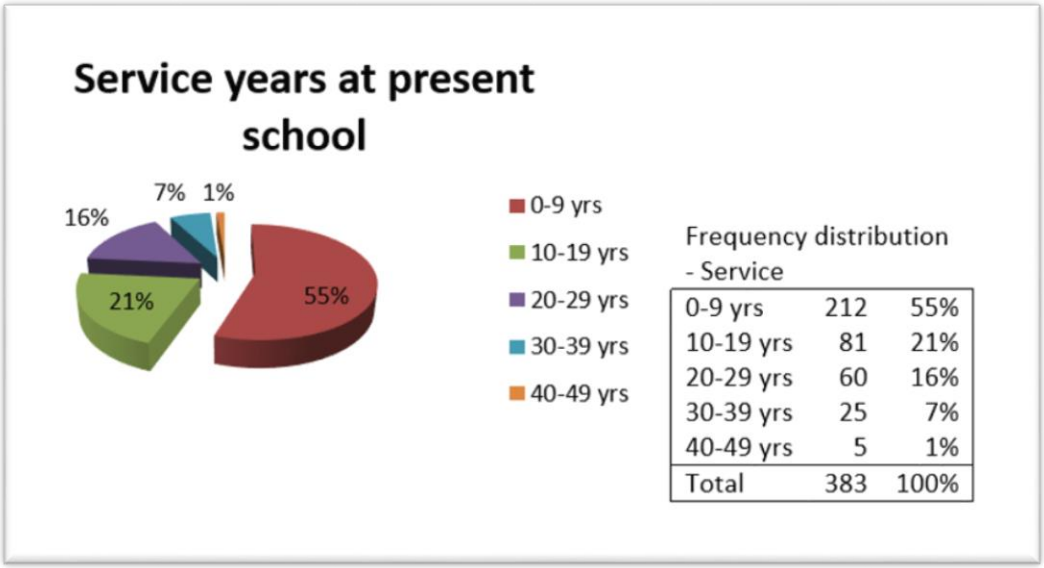
Frequency distribution - Level

Admin	29	8%
Support	7	2%
Educator	262	68%
HOD/SMT	50	13%
Dep/Prin.	35	9%
Total	383	100%

Figure 6.7: Respondents Employment Level

6.4.4 Number of years' service at the school and years of experience

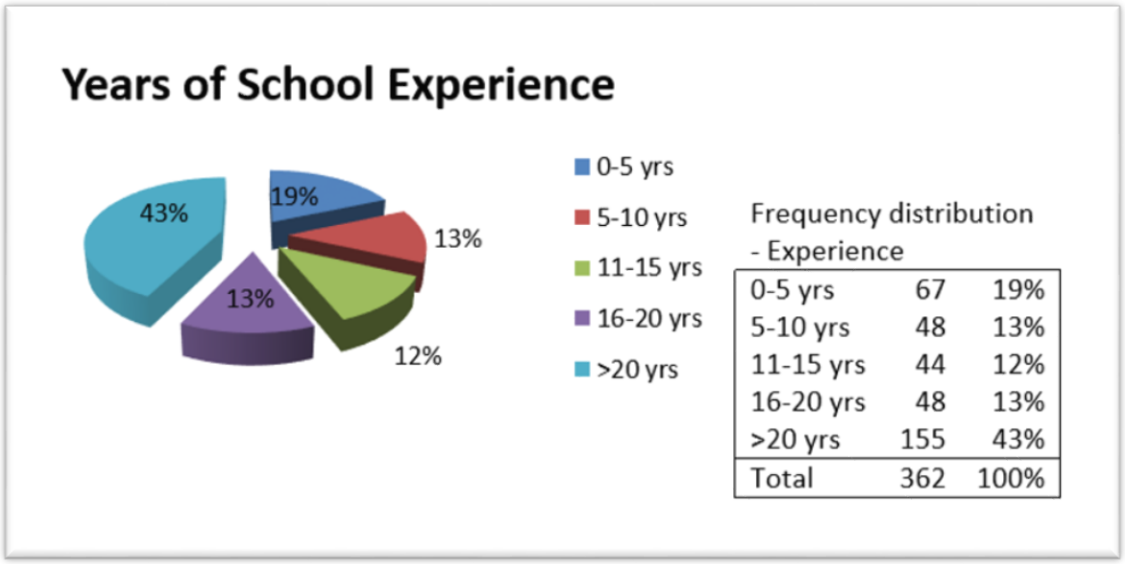
The frequency distribution of the number of service years and years of experience are shown below in Figure 6.8 and Figure 6.9.



Frequency distribution - Service

0-9 yrs	212	55%
10-19 yrs	81	21%
20-29 yrs	60	16%
30-39 yrs	25	7%
40-49 yrs	5	1%
Total	383	100%

Figure 6.8: Respondents service years at present school



Frequency distribution - Experience

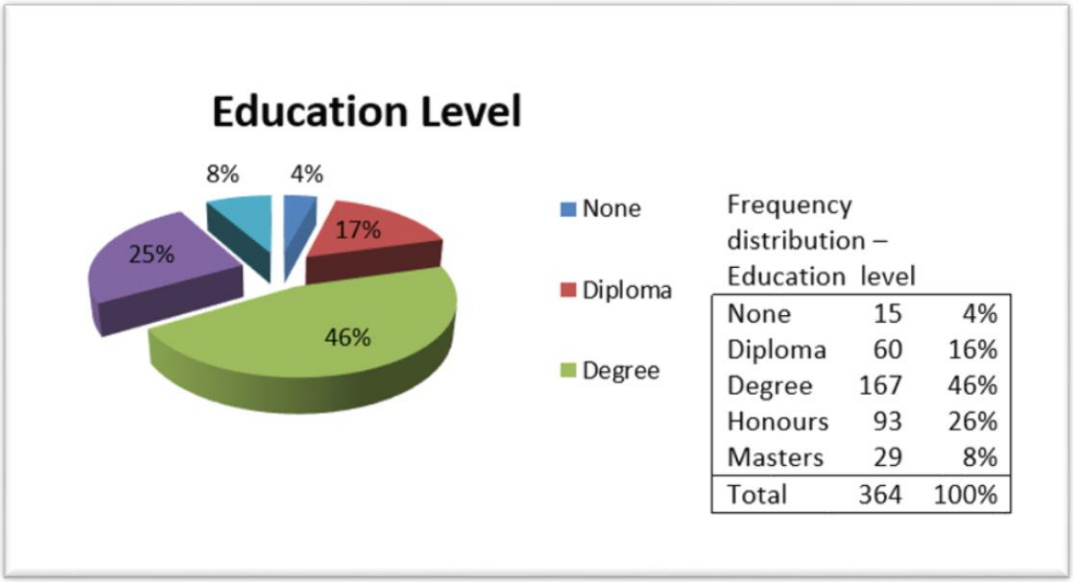
0-5 yrs	67	19%
5-10 yrs	48	13%
11-15 yrs	44	12%
16-20 yrs	48	13%
>20 yrs	155	43%
Total	362	100%

Figure 6.9: Respondents Number of years' school experience

It is noted that although many people (55%) only have 0-9 years' experience in their present school the majority (43%) in this research sample have over 20 years of experience in school environments. This is indicative of a large amount of shifting amongst senior positions in educational institutions.

6.4.5 Education level

Figure 6.10 shows the education level of the respondents. The respondents' education level reflected that 4% had no qualification, 16% diploma level, 46 % of the school staff had attained a degree, 26% with Honours degrees and 8% staff at a Masters or Doctoral level.



Frequency distribution – Education level

None	15	4%
Diploma	60	16%
Degree	167	46%
Honours	93	26%
Masters	29	8%
Total	364	100%

Figure 6.10: Respondents Education level

6.4.6 Leadership training

The data showed that of the 411 respondents, 68% of the school staff had not to date, attended any leadership training courses over the course of their career (Figure 6.11). It was interesting to note that only 32% of the school staff had attended any leadership training during their career.

(If n ≠ 411, it is due to non-response of that item).

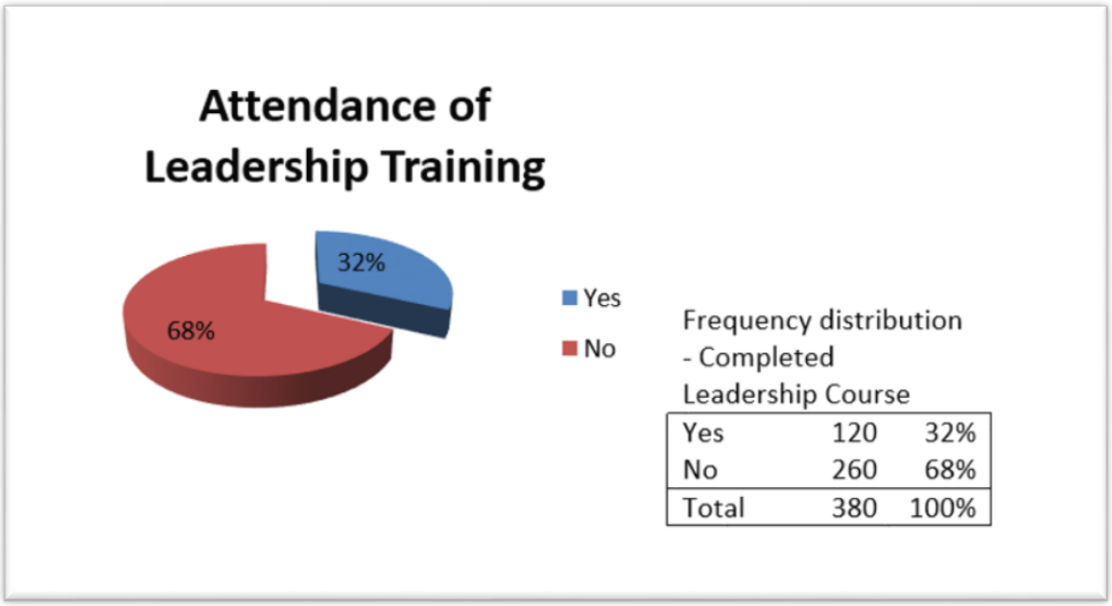


Figure 6.11: Respondents attendance of Leadership training

6.5 SUMMARY TABLE OF DEMOGRAPHIC INFORMATION: SECTION A

The demographic information was obtained from Section A of the survey instrument and the reported data was graphically summarised above and is shown in Table 6.2 **In some questions the n does not equal the total number sampled (411) as some information was not filled in by each respondent.**

Table 6.2: Demographic Information (Section A).

n=411	Frequency	Percent	Cumulative Frequency	Cumulative percent
Question: What is your gender?				
Male	155	43%	155	43%
Female	203	57%	358	100%
Question: What is your age?				
18-29	54	14%	54	14%
30-39	66	18%	120	32%
40-49	116	31%	236	63%
50-59	105	28%	341	91%
60+	34	9%	375	100%
Question: What is your employment level?				
Administrator	29	8%	29	8%

Support Services	7	2%	36	10%
Educator	262	68%	298	78%
HOD/SMT/Exec	50	13%	348	91%
Deputy/Principal	35	9%	383	100%
Question: What is your number of service years at your present school?				
0-9 years	212	55%	212	55%
10-19 years	81	21%	293	76%
20-29 years	60	16%	353	92%
30 -39 years	25	7%	378	99%
40-49 years	5	1%	383	100%
Question: What is your number of years teaching experience?				
0-5 years	67	19%	67	19%
5-10 years	48	13%	115	32%
11-15 years	44	12%	159	44%
16-20 years	48	13%	207	57%
>20 years	155	43%	362	100%

Question: What is your education level?				
None	15	4%	15	4%
Diploma	60	16%	75	20%
Degree	167	46%	242	66%
Honours	93	26%	335	92%
Masters /Doctoral	29	8%	364	100%
Question: Have you attended any leadership courses?				
Yes	120	32%	120	32%
No	260	68%	380	100%

6.6 SEM ANALYSIS

In this thesis using an SEM analysis, the research design involved building a theoretical conceptual model followed by an empirical assessment of the hypothesised model. Structured Equation Modelling (SEM) provides the researcher with the ability to estimate relationships of multiple, interrelated, dependent linkages in a single model. It allows one to examine several multiple linear regression relationships simultaneously and is therefore advantageous as a more advanced and rigorous

statistical technique to examine and analyse data in the social sciences compared to multiple regression (Hair et al., 2006).

This chapter will discuss the sequential process of the SEM analysis and as outlined in Chapter five, the SEM process involves 7 stages or steps. All the steps were briefly outlined in Chapter five, whilst Steps 3-7 are discussed in more detail in this chapter. As a multivariate technique SEM has two main parts (Garson, 2012), the measurement model which shows the relationships between the items or indicators and the latent variables. The second part is the structural inner model which shows possible causal relationships between the independent and dependent variables or endogenous and exogenous variables.

Since either IV's or DV's can be continuous or discrete and both can be either directly measured or latent variables, this technique offers a rigorous multivariate analysis. It can be used as a causal modelling, causal analysis, simultaneous equation modelling, analysis of covariance structures, path analysis or a confirmatory factor analysis tool (Garson, 2012).

6.6.1 SEM Analysis Process: Discussion of step 3-7.

Step 3-7 in the SEM process are discussed in more detail below and the SEM analysis and results presented. Further discussion and the final revised conceptual framework examined and proposed.

Step 3: Converting the path diagram into a set of structural equations and measurement models.

In this research AMOS software was used to ascertain validity and reliability of the measurement models, using CFA and EFA, utilising the original proposed conceptual model and hypothesised model from Chapter five (Figure 5.6 and 5.7).

Once the path diagram specifies the relationships between the variables, it becomes necessary to define the model in sets of equations. These define the structural linking constructs, the measurement model and a set of matrices to indicate the hypothesised relationships between the variables.

Two models are associated with SEM:

- Measurement model which specifies which variables measure the latent constructs.
- Inner structural model which assigns relationships between the latent variables based on the proposed theoretical model (Wothke, 2010; Hair et al., 2006).

Therefore, from the structural model, each hypothesised correlation relationship can be expressed as an equation. A structural coefficient (b) is estimated and an error term (ϵ) is added to each equation.

As an example as to how the relationships between the variables are processed, the following X and Y path diagrams are constructed and the equations shown for Y1 and Y2 with one Mediating Variable Ya (Figure 6.12), as an example as to how the relationships between the variables are processed.

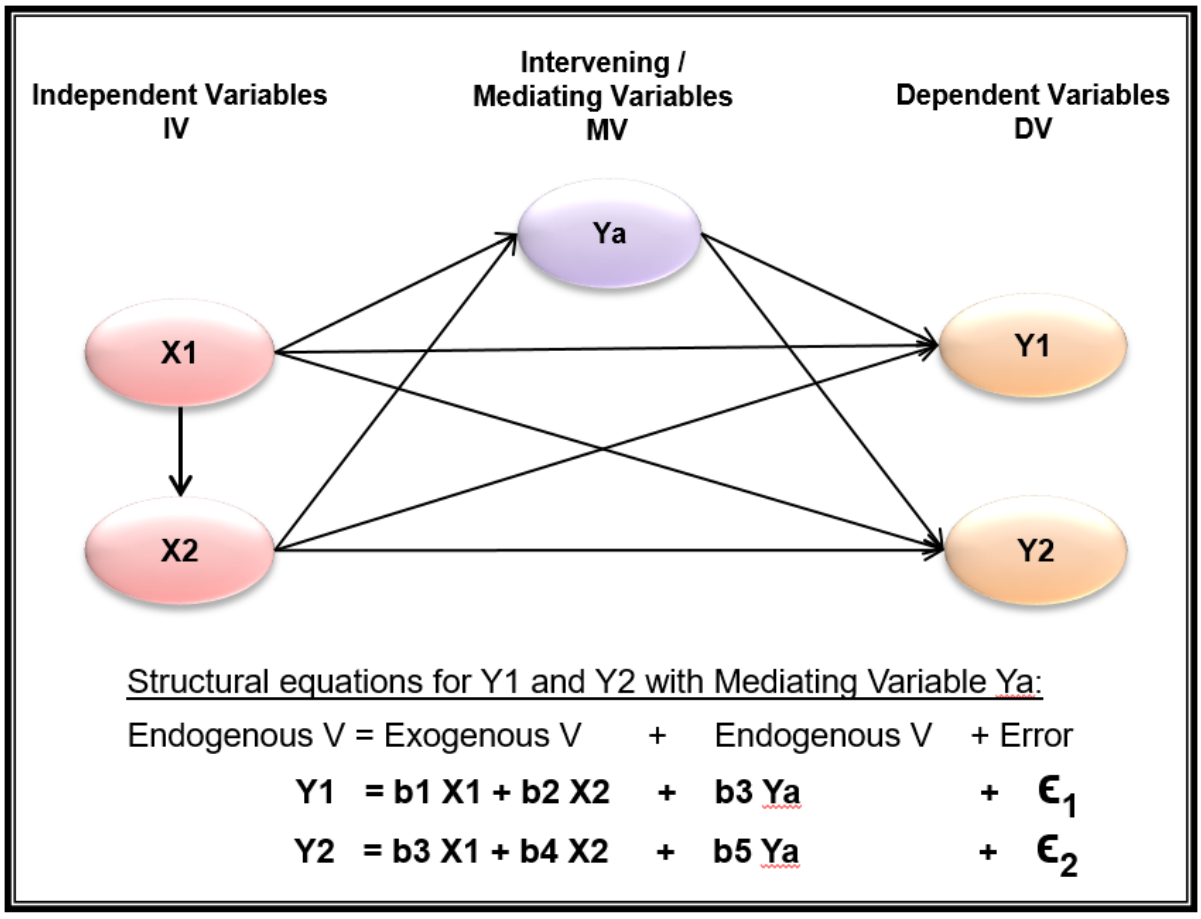


Figure 6.12: Structural equation for Y1 and Y2 of this research study

According to Ullman (1996) path analysis is a subset of SEM. After estimation of both the measurement and structural models, the loading coefficients give estimates of the reliability of the indicators and variables (Hair et al., 2006). To determine the relationships between the IV's and the DV's, the data was processed using an application developed by a statistical consultant in VBA on a Microsoft Excel platform. All statistical analysis utilising descriptive and inferential statistics, One-way Anova, as well as the CFA and SEM analysis using AMOS as it is widely used for examining similar models (Joreskog, 1973). All analyses were conducted on the quantitative data by a qualified statistician in the Statistical Unit at the Nelson Mandela Metropolitan University, utilising a Microsoft Excel Statistics programme.

Step 4: Choosing the input matrix type (Correlation or Covariance) and estimating the proposed model.

After specifying the model, the data is tested to ascertain how it fits into the structural equation modelling assumptions and the relevant input matrix is selected. Finally, the measurement and structural models are estimated and structural coefficients are gathered to determine any relationships between the variables in the study. It is important to assess the variables for normality and kurtosis (Hair et al., 2006) as normality is assumed in multivariate analysis.

After specifying the measurement and structural model, the computer programme for estimation (AMOS) was selected. SEM uses both covariance and correlation matrices. The structural coefficients will then quantify the relationships between the latent variables in the structural model (Wothke, 2010). To make the scales invariant for standardisation two approaches may be used. One involves setting one of the loadings at a fixed 1 in each construct and the other is to estimate the construct variance directly. Both approaches result in the same estimate (Hair et al., 2006). Once the model was specified from the literature review, three steps needed to be undertaken. *Testing data applicability, Selection of the type of input matrix relevant* (either correlation matrix or covariance matrix) and then *Estimating the measurement and structural models*. Structural coefficients were then estimated to determine any relationships between latent variables.

Following successful structural and measurement models and input data the programme AMOS was selected. CFA analysis of all sub models was undertaken and validity and reliability were established for the survey instrument and the factor independent and dependent variables.

Step 5: Assessing the identification of model equations

This step involves examining whether the software programme has produced any illogical or meaningless results (Hair et al., 2006). Four major symptoms of model identification problems are:

- very large standard errors for one or more coefficients;
- inability to invert the information matrix;
- impossible estimates and negative error variances;
- high correlations of >0.90 among estimated coefficients (Hair et al., 2006)

In the establishment of a model, it is important to ensure that variables have at least three items (Indicators) which reduces these model identification problems (Hair et al., 2006).

The solution to model identification problems is to add more constraints and eliminate some of the estimated coefficients, by eliminating paths from the path diagram until the problem is rectified. This allows a model that has degrees of freedom available to provide a better estimation of the actual relationships between the variables (Hair et al., 2010).

Step 6: Evaluating the models and results for goodness-of-fit.

In this research study the assessment of the models was done using the coefficient tests and then the goodness-of-fit on the overall model using the four main model criteria.

- The three main measuring processes are:
- Absolute fit measures: Overall model fit

- Incremental fit measures: Proposed model with a null model
- Parsimonious fit measures: Comparing different models with different coefficient estimates (Hair et al., 2006).

In this research study both the absolute fit measures and the parsimonious fit measures were used to ascertain the best SEM measurement and structural models that aligned with the theoretical literature reviewed by the researcher.

When evaluating the model fit, a variety of indices should be reported as different indices reflect on different parts of the model fit (Hooper et al., 2008). The following criteria were selected to report on for this research study (Table 6.3).

Table 6.3: Model Fit Criteria selected for this research study (Authors own construct).

Model Fit Criteria	Symbol	Comments /Limitations
Sample size	**n**	**This should always be reported (Kline, 2005).**
Satorra-Bentler Chi Squared	**X^2**	**This test assumes multivariate normality and may result in model rejections with large samples (Joreskog and Sorbom, 2006).**
Degree of freedom	**df**	**This should always be reported (Kline, 2005).**
Normed Chi-squared	**X^2/df**	**The normed Chi-squared value should ≤ 3. According to Hooper et al. (2008) and Wheaton et al. (1997), a value between 2.0 and 5.0 indicates a good fit.**
p value	p	**The associated p value should always be reported (Kline, 2005).**
Root Mean Square Error of Approximation (95% Confidence Intervals CFI)	RMSEA (95% CFI)	**The RMSEA and associated confidence interval should be included.** **Cut offs been reduced from 0.80 to 0.50 in recent years (Hooper et al., 2008).**
Squared Multiple Correlations	SMC	**Suggested by Kline (2005) to be reported.**
Comparative Fit Index	CFI	**Should be ≥ .80 CFI ≥ .92 and ≥ .90 (Hair et al., 2006; Hooper et al., 2008).**
Goodness of Fit	GFI	**Should be between 0.90-0.95 for very good fit (Ghazali et al., 2013). Close to 0.8 still acceptable (Hu and Bentler, 1999).**

Since SEM analysis is sensitive to sample size and number of items measured in the model, a further summary is shown in Table 6.4, showing the acceptable goodness of fit criteria levels in relation to the sample size (n) and number of items (m) in the SEM model.

Table 6.4: Goodness-of-Fit Criteria depending on samples size (n) and no. of items (m) (Adapted from Hair et al., 2006; Schrieber et al., 2006).

n.m. Categories	1	2	3	4	5	6
	n < 250			250 < n < 1000		
	m ≤ 12	12 < m < 30	m ≥ 30	m ≤ 12	12 < m < 30	m ≥ 30
χ^2	p < .05	p < .05	p < .05	p < .05	p < .05	p < .05
χ^2/df	≤ 2	≤ 2	≤ 2	≤ 3	≤ 3	≤ 3
CFI or TLI	≥ .97	≥ .95	≥ .92	≥ .95	≥ .92	≥ .90
NFI	n.a.	≥ .95	≥ .92	≥ .95	≥ .92	≥ .90
SRMR	n.a	≥ .80 and CFI ≥ .95	≥ .90 and CFI ≥ .92	n.a	≥ .80 and CFI ≥ .92	≥ .80 and CFI ≥ .90
RMSEA	≤ .08	≤ .08	≤ .08	≤ .08	≤ .08	≤ .08
AIC	For comparing models; lower is better					

Step 7: Making indicated modifications to the model, if theoretical justification.

During this final stage the results were examined to see how they corresponded with the proposed theory and included modifying the proposed conceptual model to find a better fit and interpretation of the results. It is imperative that the objective is not only to maximise the fit and estimate the most likely relationships but to ensure that the principal theoretical relationships are still supported. Modifications to the model include adding or removing estimated parameters from the model but these must be theoretically justified and deemed empirically significant (Hair et al., 2006).

A theoretical model can be supported and considered if the parameter estimates are statistically significantly and in the predicted direction. Each individual parameter estimate representing each hypothesis must also be considered to support the proposed structure, as goodness of fit is not sufficient alone to support the proposed structural theory.

These last two steps in the SEM process will now be briefly discussed along with the relevance and applicability in the analysis within this research thesis.

6.7 REVISED MODEL ADJUSTMENTS

The original proposed model was adjusted and some items were shifted to different variables, as well as some items being removed as the factor loadings were <0.3 and unacceptable. This is justified, as they must fulfil the minimum requirement for acceptance of >0.3 (Field, 2009). The initial SEM process with EFA and CFA analyses were outlined in Chapter five.

A summary of the adjustments to the original proposed model with theoretical justification included the following **Model Adjustments:**

Stage 1: Original theoretical conceptual framework: This was developed from the relationships based on the literature review (Chapters 2 and 3) and the integrated model was divided into Individual and System sections (Gibbs and Poisat, 2015; Castka et al., 2001; Suyanthi et al., 2004).

Stage 2: Measurement and Structural models were delineated and a path diagram model and structural equations formulated (Hair et al., 2006).

Stage 3: After the EFA/ CFA of the SEM analysis were done, various adjustments were made aligning with both the theoretical basis and the statistical analysis. These are as follows:

- The Integrated model was divided into two sub-models A and B, with **Sub Model A including the Individual/Team (Human) factors** and **Sub Model B including the Organisational (System) factors** which constitute the **independent variables** (Cameron, 1986; Robbins et al., 2014; Gibbs and Poisat, 2015).
- **Sub Model A with the latent variable of Team Performance Index:** originally had three sub factors of *Staff Perceptions of Leadership of Superior, Staff Team Competencies and Staff Culture Alignment.* Subsequent to the analysis of the measurement model the factor *Trust Level (Intervening Variable)* was added to

the Sub Model A, as it measured on the Human/Individual/Team level (Thomson, Karsten and Ort, 2015).

- **Sub Model B with the latent variable of School High Performance Work Index:** originally had four sub factors of *Innovation Potential, Employee Experience, Fairness and Hybrid Leadership Climate.* Subsequent to the analysis of the measurement model the factors *Support Level*, *Communication* and *Infrastructure (Intervening Variables)* were added (Honingh and Hooge, 2015; Dee et al., 2006; Cuesta et al., 2015) to Sub Model B. These factors were all System/Organisational level factors.
- The remaining two factors were ***Intervening Factors*** in the model *Leader Member Exchange and Staff Perceptions of Learner Engagement.*
- The validated standardised literature metrics of *Organisational Commitment* (Mowday, Steers and Porter, 1979; Fields, 2012) and *Employee Engagement* (Wiley, 2010, Aon Hewitt, 2013) form the **Dependent Variables.**

Stage 4: As discussed in Chapter five, the reliability and discriminant validity of all the variables in the empirical model was confirmed using CFA and the **Revised Proposed Conceptual Model (Figure 5.4)** was validated with a few model adjustments as discussed in chapter four and five. The SEM analysis was then conducted.

On completion of the evaluation and discussion of all empirical data an illustrative diagram of the relevant theories, linked and integrated into one model, will be presented in Chapter seven. This was designed for promoting and examining the effective high performance of school teams in South Africa, from the research results of this SEM analysis.

6.8 ASSESSMENT OF MULTIVARIATE NORMALITY OF DATA

In this research study the multivariate normality was assessed by considering the following null and alternate hypotheses.

$H^{0:}$ Distribution of the data does fit the multivariate normal distribution

H^{1}: Distribution of the data does not fit a multivariate normal distribution

A summary of the Sub Model A and B results are outlined in Table 6.5 below.

Table 6.5: Summarised Results of Sub Model A and B.

	Chi Squared	df	p value	RMSEA (95%)
Sub Model A	**438.93**	**273**	**< .05**	**0.039 (0.032-0.046)**
Sub Model B	**325.84**	**128**	**< .05**	**0.062 (0.054-0.071)**

Since a Chi-square value is used for evaluating overall model fit, it is stated by Hu and Bentler (1999, p.2) that it "assesses the discrepancy between the sample and the fitted covariance matrices". A good model fit would provide an insignificant result at a threshold of 0.05 (Hooper et al., 2008). A large Chi-square value is therefore "badness of fit or lack of fit measure" (Kline, 2005), as any deviations from the null hypothesis (stating that there is normal distribution) makes the chi-square value larger. The value for the Satorra-Bentler (Satorra and Bentler, 1994) scaled Chi-Square test statistic was 438.93 and 325.84 for the Sub Models A and B, with an associated p value of < 0.05. The Chi-squared/df was < 3 in both cases, which indicate the data shows a good fit between the samples and the covariance matrices and was therefore significant and the null hypothesis was rejected and the alternate hypothesis accepted for both Sub Model A and B. Detailed statistical results of Sub Model A and Sub Model B are shown in Appendix 7-10.

The Whole Integrated Model (Sub Model A and Sub Model B) were utilised in the SEM analysis after using the Measurement Model (Sub Model A for the Team Performance Index and Sub Model B for the School High Performance Index). Thereafter, the relationships between the constructs in the structural model were identified with the measurement specifications included. The path diagram, therefore, is representative of both the structural and measurement part of SEM in one overall model (Hair et al., 2006).

6.9 COMPLETE INTEGRATED MODEL

6.9.1 Data processing and missing data

The process of SEM analysis allows all the relationships within the complete integrated model to be analysed. With the SEM analysis of 71 items the minimum sample required to conduct the model estimation is 355. In this research study the number of respondents was originally 413. Four respondents had less than 50% of all items of the survey instrument and were deleted. 64 respondents had some data missing and, of these, 14 respondents had to be deleted where missing data was more than 50% of items of a particular factor. The median of the observed values was imputed into the missing data for 22 cases.

6.9.2 Assessment of model fit: Model Versions 1, 2 and 3.

A SEM analysis was undertaken on the complete model with all the variables and the following three models were obtained Version 1, Version 2 and Version 3. Each of these models are shown in Figure 6.13, Figure 6.14 and Figure 6.15, respectively, and are discussed below.

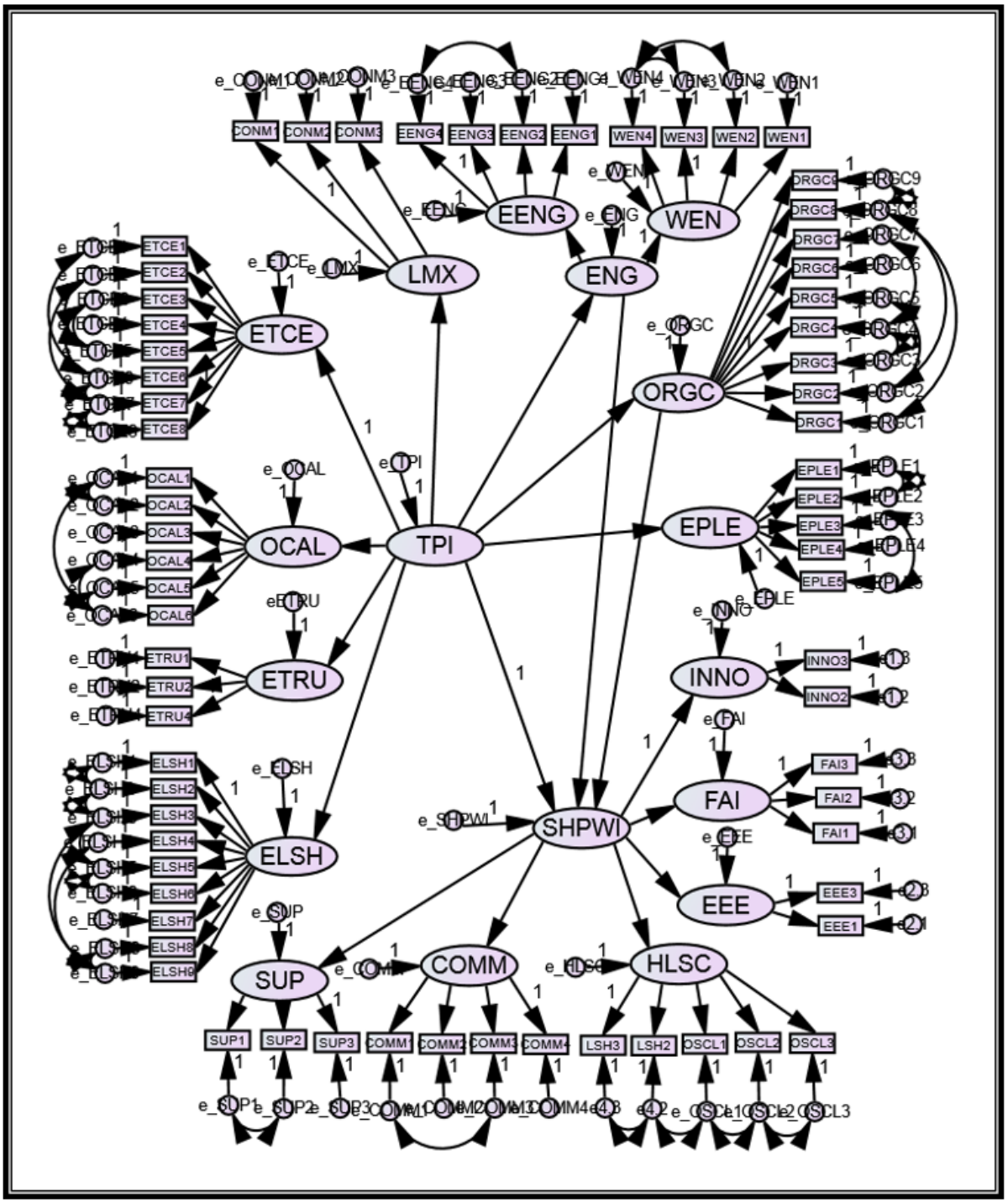


Figure 6.13: SEM model Version 1

Model Version 1 (Figure 6.13): In this model the relationship of the Independent Variables proceeded from TPI (IV1) to SHPWI (IV2). However, the Infrastructure Variable was not added to this model.

This model was rejected as not all the variables had been added in the SEM analysis and SEM analysis requires all variables to be added (Hair et al., 2006). Version 2 was run with all the variables.

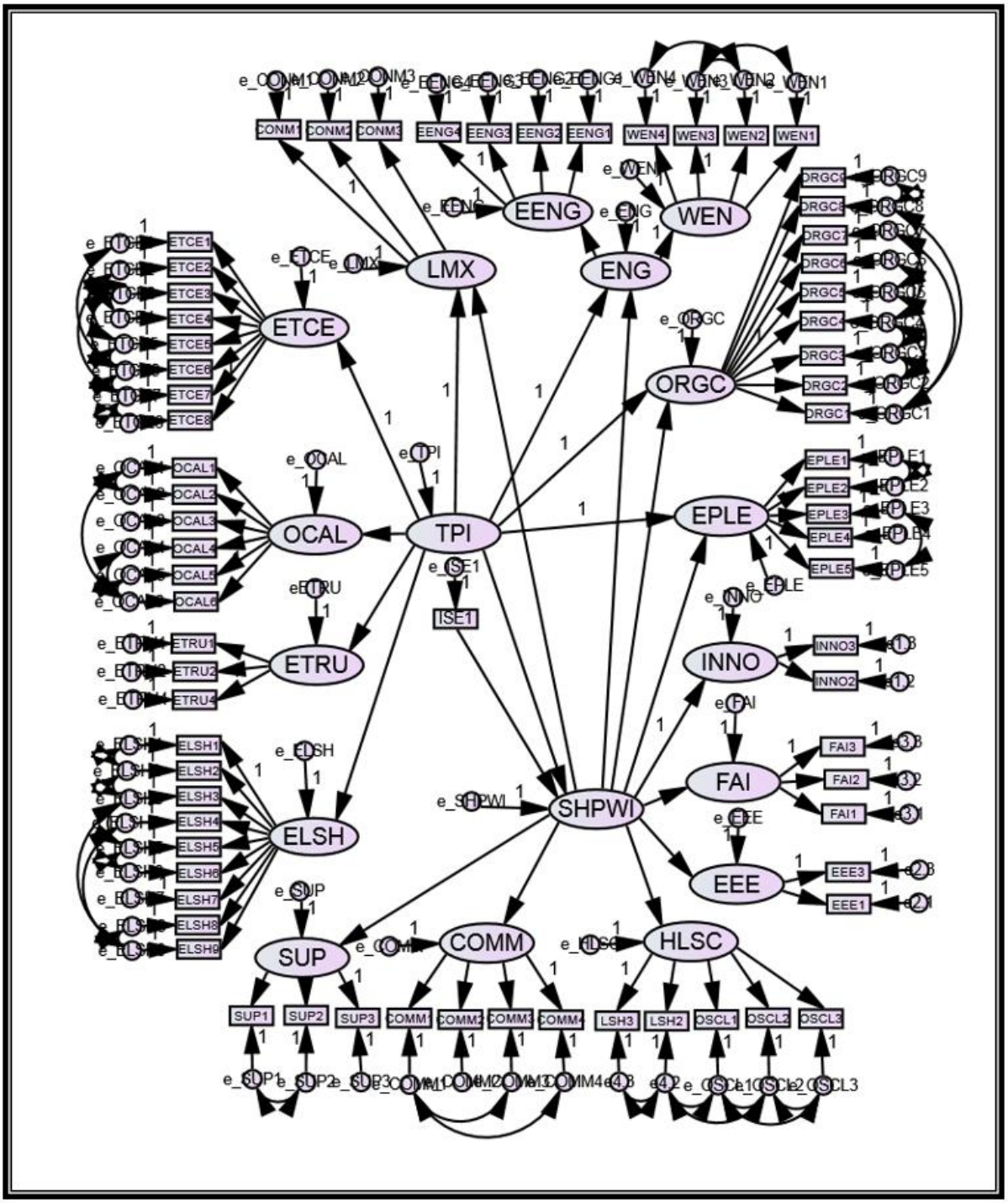


Figure 6.14: SEM model Version 2 (TPI → SHPWI)

Model Version 2 (Figure 6.14): In this model the relationship of the Independent Variables proceeded from TPI (IV1) to SHPWI (IV2) and the Infrastructure Variable

was added to the model. This model ran with all the variable relationships being significant at $p < 0.05$ **except the TPI → EPLE estimate**. The **IS → SHPWI however showed an estimate of 0 which was unexplainable.** This model was rejected as literature research shows infrastructure definitely has an effect on the performance level in the schools (Cuesta, 2015; Murillo, 2011). Version 3 was then run with the pathway of the Independent Variables interchanged.

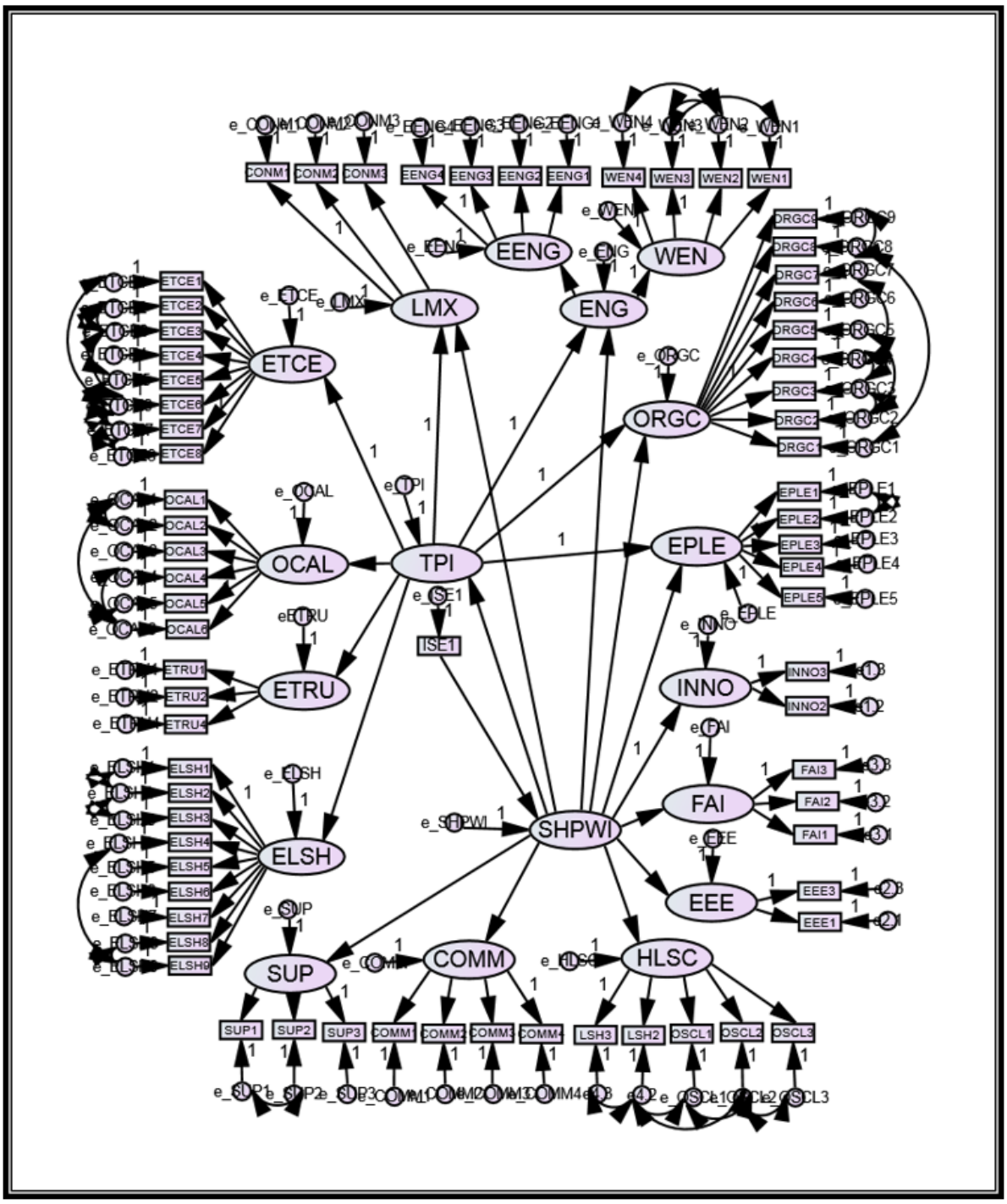


Figure 6.15: SEM model Version 3 (SHPWI→ TPI)

Model Version 3 (Figure 6.15): In this model the relationship of the Independent Variables proceeded from SHPWI (IV2) to TPI (IV1) with the addition of the Infrastructure Variable. This model ran with all the variable relationships being significant at $p < 0.05$ except the TPI → EPLE estimate which was insignificant. The IS → SHPWI gave an estimate of 0.315 $p < 0.05$ which was significant. This model was accepted as the best model fit and aligned with the theoretical evidence.

In this research study the assessment of the models was done, using the co-efficient estimation tests and then the goodness-of-fit on the overall model, using the absolute fit and parsimonious fit measures. The parsimonious fit measures compare different models with different coefficient estimates and examines each model's goodness of fit criteria (Hair et al., 2006).

6.9.3 Different Models *goodness of fit* criteria

The purpose of examining the *goodness of fit* results is to evaluate the data and the theoretical models against SEM assumptions. The Goodness of fit tests are measures of how good the actual or the observed measures of the input correlation or covariance matrix matches or fits the matrix that is produced by the theoretical model (Field, 2009). According to Hair et al. (2010), there are three assumptions when utilising *goodness of fit* tests:

- Observations are independent
- Sampling of respondents is random, and
- All relationships are linear.

This assessment of the data and theoretical framework uses coefficient tests. Estimates are given for each relationship and for this research study the standardised regression weights were recorded.

Model Version 1: This model was rejected.

Model Version 2

The estimates for all the relationships in **Model Version 2** were significant ($p < 0.05$ level) and were justified and supported with theoretical evidence with some exceptions summarised in Table 6.6.

Table 6.6: Exceptions of reported estimates: Model Version 2

Model Version 2	Reported Estimate	Significance ($p < 0.05$)	Theory
SHPWI → EPLE	**-0.456**	**Not significant**	**Unsupported**
IS → SHPWI	**0**	**Significant**	**Unsupported**

A summary of the Model Fit Criteria for Model Version 2 is outlined in Table 6.7.

Table 6.7: Model Fit Criteria for Model Version 2

Model Fit Criteria	Model Version 2
Sample Size	**399**
Chi squared	**5321.24**
Degrees of freedom df	**2353**
Normed Chi squared (<3)	**2.26**
p value	**< .0005**
CFI (>0.90)	**0.86**
RMSEA (95% CI)	**.056 (.054- .058)**
	Results show a reasonable model fit on the RMSEA but with a low CFI.

The Model Version 2 showed a reasonably good model fit with an RMSEA (0.056) (CI 95%: 0.054-0.058) and a normed Chi squared (2.26) which is less than 3. The RMSEA is within the range of < 0.08 whilst the CFI (0.86) is just below the 0.90. The model is a reasonable model fit, but was rejected due to the exceptions outlined above, as well as the slightly low CFI, being very close to the limit of >0.90.

Model Version 3

The estimates for all the relationships in **Model Version 3** were significant ($p < 0.05$ level) and were justified and supported with theoretical evidence. The following previous exceptions from Model Version 2 were examined (Table 6.8)

Table 6.8: Previous exceptions V2 of reported estimates: Model Version 3

Model Version 3	Reported Estimate	Significance ($p < 0.05$)	Theory
SHPWI → EPLE	**-0.456**	**Not significant**	**Unsupported**
IS → SHPWI	**0.315**	**Significant**	**Supported**
			ACCEPTED

This Model Version 3, when compared to Version 2, showed more theoretical basis for **model acceptance** as the infrastructure relationship with the *School High Performance Index* showed an estimate of 0.315 *(significant at $p < 0.05$ level).*

A summary of the Model Fit Criteria for Model Version 2 is outlined in Table 6.9.

Table 6.9: Model Fit Criteria for Model Version 3.

Model Fit Criteria	Model Version 3
Sample Size	**399**
Chi squared	**5281.70**
Degrees of freedom df	**2353**
Normed Chi squared (<3)	**2.24**
p value	**p< 0.05**
CFI (> 0.90)	**0.86**
RMSEA (95% CI)	**0.056 (CI 95% 0.054 – 0.058)**
	Results show a good model fit on the RMSEA but with a lower CFI.

The Model Version 3 showed a reasonably good model fit with an RMSEA (0.056) (CI 95%: 0.054-0.058) and a normed Chi squared (2.24) which is less than 3 and better than Version 2. The RMSEA is within the range of < 0.08 whilst the CFI (0.86) is just below the >0.90. The model is a reasonably good model fit.

A comparative Table (Table 6.10) showing all three model versions is detailed.

From these best fit criteria, **Model Version 3** is accepted with a reasonable or good fit. Using the parsimonious method, Model Version 3 was chosen as the **best model fit.**

Table 6.10: Three models Model Version 1, 2 and 3 (SEM analysis) (Gibbs, 2016).

Observed SEM Fit Statistics							
Indices for Single Models					TPI -> SHPWI		SHPWI→TPI
		MODEL 1		MODEL 2		MODEL 3	
Sample size	**n**		**399**		**399**		**399**
No. of items	**m**		**70**		**71**		**71**
Sample size; No. of items Category	**n;m.Cat.**	250 < n < 1000; m ≥ 30		250 < n < 1000; m ≥ 30		250 < n < 1000; m ≥ 30	
Absolute/predictive fit	**Abbr.**	**Target**	**Observed**	**Target**	**Observed**	**Target**	**Observed**
Chi-square (Maximum likelihood)	χ^2		5058.22		5321.24		5281.70
	df		2292		2353		2353
	p	≥ .050	**< .0005**	≥ .050	**< .0005**	≥ .050	**< .0005**
	χ^2/df	≤ 3	**2.21**	≤ 3	**2.26**	≤ 3	**2.24**
Comparative Fit Indices							
Bentler-Bonnet normed fit index	**NFI**	≥ .90	**.78**	≥ .90	**.77**	≥ .90	**.77**
Bentler comparative fit index	**CFI**	≥ .90	**.87**	≥ .90	**.86**	≥ .90	**.86**
Other							
Joreskog adjusted GFI	**AGFI**	≥ .95	**.71**	≥ .95	**.70**	≥ .95	**.70**
	95%Lo		.053		.054		.054
Root mean square error of approximation	**RMSEA**	≤ .08	**.055**	≤ .08	**.056**	≤ .08	**.056**
	95%Hi		.057		.058		.058
Note: **Red** indicates acceptable fit for Single Models (yellow cells)							
Absolute/predictive fit							
Akaike information criterion	**AIC**	< better	**5444.217**	< better	**5727.243**	< better	**5687.703**
Browne-Cudeck criterion	**BCC**	< better	**5528.028**	< better	**5816.911**	< better	**5777.371**

6.9.4 Version 3 model: Theoretical and Statistical Justification

Version 3 Model with a lower AKI (Akaike information) of 5687.703 compared to Version 2 model of 5727.243. 687 was accepted as the best fit model based on statistical information and theoretical justifications. Akaike information (AKI) can be used to compare various models, and the lower the value the better the model fit (Schrieber, Stage, King, Nora and Barlow, 2006).

Therefore, for this research study and the sampled population, Version 3 Model was selected as the best good fit model. The path diagram estimates of this Version 3 (V3) will be discussed for the Integrated SEM Model Version 3.

6.10 INTEGRATED STRUCTURAL MODEL: PATH ESTIMATES V3

6.10.1 Significant relationships: General

The *goodness of fit* indices of the measurement model and statistical analysis showed evidence of a model with a reasonable to good fit. In the structural model presented there are **19 significant relationships out of the 20** in the integrated model. All the enabling factors selected significantly influenced the independent variable and the two independent variables: *Team Performance Work Index* and the *School High Performance Work Index* positively and significantly influenced the dependent variables of *Employee Engagement* and *Organisational Commitment.* All the relationships will be discussed in more detail later and in the final chapter of this thesis and linked to the research questions and objectives.

The **proposed integrated final conceptual model** for this thesis was constructed by the author in **Figure 6.16** using all the results of this study, using **model v3**. The significant enabling factors that contribute towards the Independent Variables (TPI) and the School High Performance Index (SHPWI) are shown by adding the path estimates to the relationships on the path diagram. Significant relationships at $p < 0.05$ level are shown by * and non-significant by N.S.

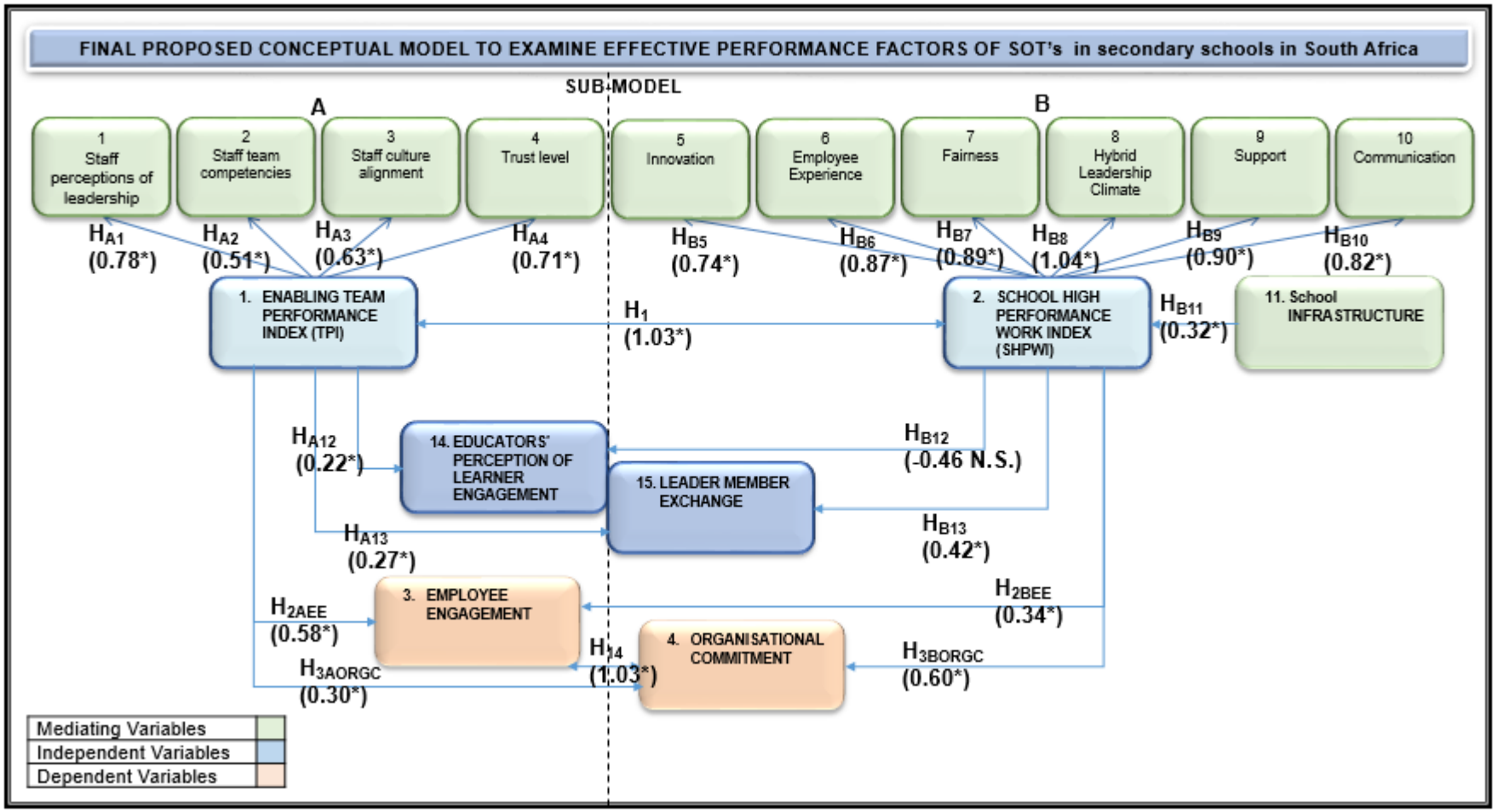


Figure 6.16: The proposed final conceptual model to examine effective performance factors in secondary schools in South Africa with path estimates (Constructed by Author, 2016). ***(Significant * (p < 0.05 level) N.S. Not significant)***

6.11 INTEGRATED STRUCTURAL MODEL: HYPOTHESES V3

Each of these constructs is hypothesised to relate to the outcome variable of *Effective performance in the school* and **two dependent (proximal) variables** measure of *Employee Engagement and Organisational Commitment.* They were selected as known validated standardised metrics which relate positively to effective school performance levels in literature (Fields, 2012). All the hypothesised relationships are numbered in the **proposed final conceptual model** and presented in Figure 6.16. Each of these proposed hypotheses as outlined in the beginning of the thesis (Chapter 1) are now discussed below.

6.11.1 Hypothesis HA1 to HA4 in Sub Model A and HB1 to HB11

The hypotheses supported in this model are HA1, HA2, HA3 and HA4 which show a positive and significant influence on the *Team Performance Work Index* (TPI). Hypotheses (HB5, HB7, HB8, HB9, HB10 and HB11) contribute positively and significantly to the *School High Performance Work Index (SHPWI).*

The hypotheses of each of these relationships (Figure 6:16) will now be outline and statistically and practically accepted within the framework this SEM model. As one cannot generalise this research study to the population, the researcher does not claim that these propositions are applicable to the whole population as further research with a larger random sampling would be required for those claims to be made.

6.11.2 Staff Perceptions of Leadership of superior (ELSH)

Hypothesis HA1: *There is a positive relationship between the Staff Perception of Leadership of superior and the Team Performance Index*

The enabling factor of a positive *Staff Perception of Leadership* of the immediate superior has a positive influence on the *Team Performance Index (*path estimate = 0.78, $p < 0.05$). This result suggests that if staff has a positive perception of the leadership of their superiors, it relates to a better team performance in the school teams. Hypothesis HA1 is therefore accepted.

6.11.3 Staff Team Competencies (ETCE)

Hypothesis HA2: *There is a positive relationship between the Staff Team Competencies and the Team Performance Index*

The enabling factor of positive *Staff Team Competencies* has a positive influence on the *Team Performance Index (*estimate = 0.51, $p < 0.05$). This result suggests that if staff has positive team competencies it will positively influence the level of staff team performance. Hypothesis HA2 is therefore accepted.

6.11.4 Staff Culture Alignment (OCAL)

Hypothesis HA3: *There is a positive relationship between the Staff Culture Alignment and the Team Performance Index*

The enabling factor of positive *Staff Culture Alignment* has a positive relationship on *Team Performance Index (*estimate = 0.63, $p < 0.05$). This result suggests that if the staff culture is alignment with that of the school there is a positive influence on the level of staff team performance. Hypothesis HA3 is therefore accepted.

6.11.5 Trust level (TRU)

Hypothesis HA4: *There is a positive relationship between the Trust Level of the Staff and the Team Performance Index*

The *Trust level* of the staff as an enabling factor has a positive relationship on *Team Performance Index (*estimate = 0.71, $p < 0.05$). This relationship suggests that if the trust level of the staff is high then there is a positive influence on the level of staff team performance. Hypothesis HA4 is therefore accepted.

6.11.6 Innovation Potential (INNO)

Hypothesis HB5: *There is a positive relationship between the Innovation Potential and the School High Performance Work Index*

The *Innovation Potential,* as an enabling factor, has a positive relationship on the *School High Performance Work Index (*estimate = 0.74, $p < 0.05$). This relationship suggests that if the innovation potential of the staff is high then there is a positive

influence on the level of school high performance work level. Hypothesis HB5 is therefore accepted.

6.11.7 Employee Experience (EEE)

Hypothesis HB6: *There is a positive relationship between the Employee Experience and the School High Performing Work Index*

The *Employee Experience of* the staff as an enabling factor has a positive relationship on the *School High Performance Work Index (*estimate = 0.87, $p < 0.05$). This relationship suggests that a positive employee experience will influence the higher level of school work performance. Hypothesis HB6 is therefore accepted.

6.11.8 Fairness (FAI)

Hypothesis HB7: *There is a positive relationship between Fairness level and the School High Performance Work Index*

The enabling factor of a high *Fairness Level* of the treatment of staff has a positive influence on the *School High Performance Work Index (*estimate = 0.89, $p < 0.05$). This result suggests that if staff is treated at a high fairness level then it relates to a higher school work performance in the school teams. Hypothesis HB7 is therefore accepted.

6.11.9 Hybrid Leadership Climate (HLSC)

Hypothesis HB8: *There is a positive relationship between the Hybrid Leadership Climate and the School High Performing Work Index*

The *Hybrid Leadership Climate* at the school is an enabling factor that has a positive relationship on the *School High Performance Work Index (*estimate = 1.04, $p < 0.05$). This relationship suggests that a positive hybrid leadership climate will positively influence a higher level of school work performance. Hypothesis HB8 is therefore accepted.

6.11.10 Support (SUP)

Hypothesis HB9: *There is a positive relationship between Support Level and the School High Performance Work Index*

The enabling factor of a high *Support Level* at the school has a positive influence on the *School High Performance Work Index (*estimate = 0.90, $p < 0.05$). This result suggests that if there is a high positive support level at the school then it enables a higher school work performance at the school. Hypothesis HB9 is therefore accepted.

6.11.11 Communication (COMM)

Hypothesis HB10: *There is a positive relationship between Communication and the School High Performing Work Index*

The enabling factor of good, positive and open *Communication* has a positive influence on the *School High Performing Work Index (*estimate = 0.82, $p < 0.05$). This result suggests that if the staff culture is aligned with that of the school, there is a positive influence on the level of staff team performance. Hypothesis HB10 is therefore accepted.

6.11.12 Infrastructure (IS)

Hypothesis HB11: *There is a positive relationship between Infrastructure and the School High Performing Work Index*

The enabling factor of better *Infrastructure* at the school enables a positive influence on the *School High Performing Work Index (*estimate = 0.32, $p < 0.05$). This result suggests that there is a relationship between the infrastructure at the school and the level of staff team performance. Hypothesis HB11 is therefore accepted.

6.11.13 Staff Perception of Learner Engagement (EPLE)

Hypothesis HB12: *There is a relationship between the Staff Perception of the Learner Engagement and the School High Performing Work Index*

The intervening factor of the staff *Perception of Learner Engagement* enables an influence on the *School High Performing Work Index (*estimate = -0.46, N.S.). This result suggests that this relationship is not significant and therefore the hypothesis HB12 was **not accepted**.

Hypothesis HA12: *There is a positive relationship between the Staff Perception of the Learner Engagement and the Team Performing Index*

The *Perceptions of the Learner Engagement* related positively to the *Team Performance Index (*estimate = 0.22, $p < 0.05$). This result suggests that if there is a positive perception of the learner engagement at the school then there is a positive influence on the level of staff team performance. This estimate was very low (< 0.3) and therefore, even though Hypothesis HA12 is accepted, the variable was not that significant.

6.11.14 Leader Member Exchange (LMX)

Hypothesis HB13: *There is a relationship between the Leader Member Exchange and the School High Performing Work Index*

The intervening factor of a positive *Leader Member Exchange* enables a positive influence on the *School High Performing Work Index (*estimate = 0.42, $p < 0.05$). This result suggests that this relationship is significant and therefore the hypothesis HB13 was accepted.

Hypothesis HA13: *There is a relationship between the Leader Member Exchange and the Team Performance Index*

The intervening factor of a positive *Leader Member Exchange* enables a positive influence on the *Team Performing Index (*estimate = 0.27, $p < 0.05$). This result suggests that this relationship is significant and therefore the hypothesis HA13 was accepted.

6.11.15 Team Performance Index (TPI)

Hypothesis H2AEE: *There is a relationship between the Team Performance*

Index and the Employee Engagement

The independent variable *Team Performance Index* has a positive relationship with the dependent variable *Employee Engagement (*estimate = 0.58, $p < 0.05$). This result suggests that this relationship is significant and therefore the hypothesis H2AEE was accepted.

Hypothesis H3AORGC: *There is a relationship between the Team Performance Index and the Organisational Commitment*

The independent variable *Team Performance Index* has a positive relationship with the dependent variable *Organisational Commitment (*estimate = 0.30, $p < 0.05$). This result suggests that this relationship is significant and therefore the hypothesis H3AORGC was accepted.

6.11.16 School High Performance Work Index (SHPWI)

Hypothesis H2BEE: *There is a positive relationship between the School High Performance Work Index and the Employee Engagement*

The independent variable *School High Performance Work Index* has a positive relationship with the dependent variable *Employee Engagement (*estimate = 0.34, $p < 0.05$). This result suggests that this relationship is significant and therefore the hypothesis H2BEE was accepted.

Hypothesis H3BORGC: *There is a positive relationship between the School High Performance Work Index and the Organisational Commitment*

*T*he independent variable *School High Performance Work Index* has a positive relationship with the dependent variable *Organisational Commitment (*estimate = 0.60, $p < 0.05$). This result suggests that this relationship is significant and therefore the hypothesis H3ORGC was accepted.

Hypothesis H1: *There is a positive relationship between the School High Performance Work Index and the Team Performance Index*

The independent variable *School High Performance Work Index (IV1)* has a positive relationship with the other independent variable *Team Performance Index IV2)* (estimate = 1.003, $p < 0.05$). This result suggests that this relationship between the *Individual (Human)* metric of *Team Performance* is positively, closely and significantly related to the *Organisation (System) School High Performance Work Index* and therefore the hypothesis H1 was accepted.

6.12 SUMMARY OF HYPOTHESISED RELATIONSHIPS

This final phase in the data analysis involved testing and reporting on all the empirical results, path coefficients and hypotheses. These are defined as being supported or not and are summarised in Table 6.11.

Table 6.11: Summary of the hypothesised relationships (Authors own construct).

	Hypothesis (for this research study in SA secondary schools)	Decision
HA1	*There is a positive relationship between the Staff Perception of Leadership of Superior and the Team Performance Index*	**Supported**
HA2	*There is a positive relationship between the Staff Team Competencies and the Team Performance Index*	**Supported**
HA3	*There is a positive relationship between the Staff Culture Alignment and the Team Performance Index*	**Supported**
HA4	*There is a positive relationship between the Trust level of the staff and the Team Performance Index*	**Supported**
HB5	*There is a positive relationship between the Innovation Potential and the School High Performance Work Index*	**Supported**
HB6	*There is a positive relationship between the Employee Experience and the School High Performing Work Index*	**Supported**
HB7	*There is a positive relationship between Fairness level and the School High Performance Work Index*	**Supported**
HB8	*There is a positive relationship between the Hybrid Leadership Climate and the School High Performing Work Index*	**Supported**
HB9	*There is a positive relationship between the Support level and the School High Performance Work Index*	**Supported**
HB10	*There is a positive relationship between Communication and the School High Performing Work Index*	**Supported**
HB11	*There is a positive relationship between Infrastructure and the School High Performing Work Index*	**Supported**
HB12	*There is a relationship between the Staff Perception of the Learner Engagement and the School High Performing Work Index*	**NOT Supported**
HB13	*There is a relationship between the Leader Member Exchange and the School High Performing Work Index*	**Supported**
HA12	*There is a positive relationship between the Staff Perception of the Learner Engagement and the Team Performing Index*	**Supported**
HA13	*There is a positive relationship between the Leader Member Exchange and the Team Performance Index*	**Supported**
H16	*There is a positive relationship between the School High Performance Work Index and the Team Performance Index*	**Supported**
H2A EE	*There is a positive relationship between the Team Performance Index and the Employee Engagement*	**Supported**
H3A ORGC	*There is a positive relationship between the Team Performance Index and the Organisational Commitment*	**Supported**
H2B EE	*There is a positive relationship between the School High Performance Work Index and the Employee Engagement*	**Supported**
H3B ORGC	*There is a positive relationship between the School High Performance Work Index and the Organisational Commitment*	**Supported**

This SEM analysis and model resulted in 4 sub enabling factors that influenced the Individual (Human) part of the *Team Performance Index* (TPI) and 7 sub factors that influenced the Organisational (System) part of the School High Performance Work

Index (SHPWI). These potentially influenced the two dependent variables of *Employee Engagement* (EENG) and *Organisational Commitment (ORGC).* Those enabling factors that were found to have a significant relationship with the dependent variables within this SEM model, are:

- ***Team Performance Index***
- *Staff Perception of Leadership of Superior*
- *Staff Team Competencies*
- *Staff Culture Alignment*
- *Trust level*
- ***School High Performance Work Index:***
- *Innovation Potential*
- *Employee Experience*
- *Fairness Level*
- *Hybrid Leadership Climate*
- *Support*
- *Communication*
- *Infrastructure*
- *Leader Member Exchange*
- *Staff Perception of the Learner Engagement*
- *Employee Engagement*
- *Organisational Commitment*

Since Employee Engagement and Organisational Commitment are known to be positively correlated with high organisational performance these metrics were used as indicators of high performance measures in the schools in this research study. Another outcome measure was used to further examine the effective performance of the schools and this was the % Pass rate for Grade 12 learners. This was extracted from the Department of Education documents on South African Schools and was calculated as the average of the school's performance over the last three years % Pass rate for Grade 12 learners. An SEM analysis was unable to be conducted as the sample per school was too small, so an ANOVA analysis was conducted. Results of these investigations are briefly reported below.

6.13 FURTHER DATA ANALYSIS: ANOVA WITHIN AND BETWEEN GROUPS

6.13.1 QUINTILE GROUPS: ANOVA data analysis, t-Tests: Factors by Quintiles in 2 Groups

For this ANOVA one-way analysis, the data was grouped into two groups with schools in quintile 3 and 4 grouped together (Q3&4) and quintile 5 and private schools grouped together (Q5&P).

Results of the t-Tests of the factors by quintile groups with Sample Size (n), Mean, Standard Deviation (SD), Difference between groups, t, Degree of freedom (df), p value and Cohen's d are reported.

If the variance between groups is greater than within the groups' variance, then there are significant differences between the groups. Only the data with Scheffe p values that are practically significant, are reported. Cohens d values were calculated per group and values reported if small, moderate or large.

The practical significance Interpretation intervals for t-test: Cohen's d values are shown in Table 6.12 as per literature research (Cohen, 1977).

Table 6.12: Practical Significance Interpretation Intervals for Cohen's d.

Inferential t-test Statistic	Small	Moderate	Large
t-Test:			
Cohen's d	**0.2 < d < 0.5**	**0.5 < d < 0.8**	**d > 0.8**

The details of the practical significant key enabling factors in this thesis are summarised below (Table 6.13).

Table 6.13: Cohen's d values of practically significant factors.

Factor	Quintile G2	n	Mean	S.D.	Difference	t	d.f.	P	Cohen's d
F1_EENG	Q3&4	123	69.77	22.18	-5.62	-2.32	409	.021	0.25
	Q5&P	288	75.38	22.57					Small
F1_WEN	Q3&4	123	69.87	21.70	-5.59	-2.66	409	.008	0.29
	Q5&P	288	75.46	18.51					Small
F1_SUP	Q3&4	123	66.19	22.57	-4.79	-2.20	409	.028	0.24
	Q5&P	288	70.98	19.10					Small
F1_ETRU	Q3&4	123	58.88	22.37	-7.20	-3.24	409	.001	0.35
	Q5&P	288	66.07	19.80					Small
F1_EPLE	Q3&4	123	40.38	24.27	-11.77	-4.10	408	<.0005	0.44
	Q5&P	287	52.14	27.59					Small
Factor	**Quintile G2**	**n**	**Mean**	**S.D.**	**Difference**	**t**	**d.f.**	**P**	**Cohen's d**
F1_IS	Q3&4	123	56.50	35.33	-14.24	-3.99	409	<.0005	0.43
	Q5&P	288	70.75	32.15					Small
F2_ENG	Q3&4	123	69.82	20.25	-5.60	-2.71	409	.007	0.29
	Q5&P	288	75.42	18.68					Small

From the statistical analysis completed on Anova in this research study the Cohen's d values that were of practical significance, are shown in Table 6.13. The factors that showed the highest Cohen d values indicated a difference between the two groups of quintiles of schools (Q3&4 and Q5&P). In this thesis these two groups were generally the higher and lower performing SOT's, and the **7 key enabling factors** which therefore distinguished between the groups were the following:

- *Employee engagement*
- *Work engagement*
- *Employee experience*
- *Trust level*
- *Support level*
- *Infrastructure and*
- *Staff perception of learner engagement*.

6.13.2 ANOVA analysis: QUINTILES (Private, Quintile 3&4 and Quintile 5)

For the ANOVA analysis the schools were then grouped into three quintile groups (Private schools, Group Quintile 3&4 schools and Group Quintile 5 schools). Between

and within groups data was analysed and only those results that recorded significant p values and a Cohen d value (Small, Medium or Large) are reported below (Table 6.14). The enabling factor of Communication was significant but no Cohen d value was available.

In the Quintile analysis, the following 8 enabling factors were significant*:

- *Communication* (Scheffe p value 0.043*)
- *Hybrid Leadership Climate* (Scheffe p value 0.038*)
- *Work engagement* (Scheffe p value 0.017*)
- *Trust level* (Scheffe p value < 0.0005*)
- *Support level* (Scheffe p value < 0.0005*)
- *Staff Perception of Learner Engagement* (Scheffe p value < 0.0005*)
- *Infrastructure* (Scheffe p value < 0.0005*) and
- *Employee Engagement* (Scheffe p value 0.026*).

Table 6.14: Reported Cohen d values for significant enabling factors.

WORK ENGAGEMENT				
Quintile_G3 1	**Quintile_G3 2**	**Diff. M_1-M_2**	**Scheffé p**	**Cohen's d**
Q3&4	Private	-7.58	.027	0.37 Small
HYBRID LEADERSHIP CLIMATE				
Q3&4	Private	-6.88	.045	0.35 Small
TRUST LEVEL				
Q3&4	Private	-14.54	<.0005	0.70 Medium
Q5	Private	-10.12	.001	0.52 Medium
SUPPORT LEVEL				
Q3&4	Private	-8.81	.010	0.43 Small
STAFF PERCEPTION OF LEARNER ENGAGEMENT				
Q3&4	Private	-29.69	<.0005	1.20 Large
Q5	Private	-24.73	<.0005	0.98 Large
INFRASTRUCTURE				
Q3&4	Q5	-14.43	.001	0.43 Small
Q3&4	Private	-13.75	.017	0.40 Small
OVERALL EMPLOYEE ENGAGEMENT				
Q3&4	Q5	-5.45	.045	0.29 Small

The largest significant difference was between the Private schools and Quintile 3&4 groups (Cohen d value: 1.20 **Large**) in the factor: ***Staff Perceptions of Learner Engagement.*** The difference in the same factor between the Private and Quintile 5 groups was Cohen d value: 0.98 **Large**.

Another significant factor difference was recorded for the difference between Private and Quintile 3&4 groups (Cohen d value: 0.70 **Medium**) in the factor of ***Trust levels.*** A Cohen d value of 0.52 **Medium** is recorded for the ***Trust level*** factor for the difference between the Private and Quintile 5 groups.

Small Cohen d values were significant for the difference between **Private and Quintile 3&4** groups in the following factors:

- 0.43 *Support level*
- 0.40 *Infrastructure*
- 0.37 *Work Engagement*
- 0.35 *Hybrid Leadership Climate.*

Small Cohen d values were significant for the difference between **Quintile 3&4 and Quintile 5** groups in the following factors:

- 0.43 *Infrastructure*
- 0.29 *Overall Employee Engagement*

6.13.3 ANOVA analysis: PASS RATE GROUPS (High, Medium and Low)

The percentage pass rate was sourced from the Department of Education reports of School Performance (Department of Basic Education Technical Report, 2014) and the last three years Grade 12 pass rates were averaged to obtain an Average Pass Rate for the school. A High: % Average Pass Rate: >90%, Medium: % Average Pass Rate: 75-89% and Low: % Average Pass Rate: < 75%.

For the ANOVA analysis with % Pass Rates, the schools were then grouped into three pass rate groups (High: > 90% Average Pass rate, Medium 75-89% Average Pass rate and Low <75% Average Pass rate). Between, and within groups, data was analysed and only those results that recorded significant p values and a Cohen d value

(Small, Medium or Large) are reported below (Table 6.15). The factor of Employee Experience and Hybrid Leadership Climate were both significant but no Cohen d values were available.

In the % Pass Rate analysis, the following 11 factors were found to be significant*:

- *Employee Experience* (Scheffe p value < 0.045*)
- *Hybrid Leadership Climate* (Scheffe p value 0.048*)
- *Employee Engagement* (Scheffe p value < 0.0005*)
- *Work Engagement* (Scheffe p value < 0.0005*)
- *Communication* (Scheffe p value < 0.007*)
- *Support level* (Scheffe p value < 0.0005*)
- *Trust level* (Scheffe p value < 0.0005*)
- *Staff Perception of Learner Engagement* (Scheffe p value < 0.0005*)
- *Infrastructure* (Scheffe p value < 0.0005*)
- *Organisational Commitment* (Scheffe p value 0.021*)
- *Overall Employee Engagement* (Scheffe p value < 0.0005*)

Table 6.15: Reported Cohen d values for significant factors affecting % Pass Rate

Pass_Rate3 1	Pass_Rate3 2	Diff. M_1-M_2	Scheffé p	Cohen's d
EMPLOYEE ENGAGEMENT				
Low <75	High 90+	-12.21	<.0005	0.57 Medium
Med 75-89	High 90+	-8.53	.004	0.40 Small
WORK ENGAGEMENT				
Low <75	High 90+	-8.64	.002	0.47 Small
Med 75-89	High 90+	-7.60	.003	0.41 Small
COMMUNICATION				
Low <75	Med 75-89	9.11	.008	0.39 Small
SUPPORT LEVEL				
Med 75-89	High 90+	-8.83	.001	0.46 Small
TRUST LEVEL				
Med 75-89	High 90+	-9.43	<.0005	0.46 Small

STAFF PERCEPTION OF LEARNER ENGAGEMENT				
Low <75	High 90+	-21.51	<.0005	0.83 Large
Med 75-89	High 90+	-19.78	<.0005	0.77 Medium
INFRASTRUCTURE				
Med 75-89	High 90+	-18.11	<.0005	0.54 Medium
ORGANISATIONAL COMMITMENT				
Med 75-89	High 90+	-5.92	.031	0.31 Small
OVERALL EMPLOYEE ENGAGEMENT				
Low <75	High 90+	-10.42	<.0005	0.57 Medium
Med 75-89	High 90+	-8.06	.001	0.45 Small

The largest significant difference was noted between the Low performing schools (<75%) and the High Performing Schools (>90%) where the Cohen d value was 0.83: **Large** in the factor: ***Staff Perceptions of Learner Engagement.*** The difference in the same factor between the Medium Performing Schools (75%-89%) and the High Performing Schools (>90%) was a Cohen d value: **0.77 Medium.**

Another further significant difference was recorded for the difference between Low (<75%) and High (>90%) performing schools in the factor Overall Employee Engagement (Cohen d value: 0.57 **Medium**) and in the Individual Employee Engagement factor (Kenexa measure) which also gave a Cohen d value of 0.57 **Medium** between the same two groups. Another factor **Infrastructure** recorded a Cohen d value of 0.54 **Medium** for the difference between the Medium (75%-89%) schools and the High Performing schools (>90%).

Small Cohen d values were significant for the difference between **High (>90%) and Low (<75%) Performing School groups** in the following factor:

- 0.47 Work Engagement

Small Cohen d values were significant for the difference between **High (>90%) and Medium (75-89%) Performing School groups** in the following factors:

- 0.46 *Trust level*
- 0.46 *Support level*

- 0.45 *Overall Employee Engagement*
- 0.41 *Work Engagement*
- 0.40 *Individual Employee Engagement*
- 0.31 *Organisational Commitment*

Lastly a small but significant Cohen d value (0.39) was also recorded between the **Low (<75%) and Medium (75%-89%) Performing School groups,** for the Communication enabling factor.

In summary, important **key significant enabling factors** that were identified as being different in the high, medium and low performing schools in relation to the pass rate percentages ranked in order of highest to lowest Cohen d values are shown in Table 6.16.

Table 6.16: Significant Key enabling factors with Medium reported Cohen d values.

Ranking	Enabling HP Factor	Cohen's d	Groups (Largest difference between)
1.	Staff Perceptions of Learner Engagement.	0.83 Large	**Low and High Performing Schools**
	Staff Perceptions of Learner Engagement.	0.77 Medium	Medium and High Performing Schools
2.	Overall Employee Engagement.	0.57 Medium	**Low and High Performing Schools**
	Individual Employee Engagement. (Kenexa)	0.57 Medium	**Low and High Performing Schools**
3.	Infrastructure	0.54 Medium	**Low and High Performing Schools**
4.	Work Engagement	0.47 Small	**Low and High Performing Schools**
5.	Trust level	0.46 Small	Medium and High Performing Schools
6.	Support level	0.46 Small	Medium and High Performing Schools
7.	Overall Employee Engagement	0.45 Small	Medium and High Performing Schools

Ranking	Enabling HP Factor	Cohen's d	Groups (Largest difference between)
8.	Work Engagement	0.41 Small	Medium and High Performing Schools
9.	Individual Employee Engagement (Kenexa)	0.40 Small	Medium and High Performing Schools
10.	Communication	0.39 Small	Low and Medium Performing Schools
11.	Organisational Commitment	0.31 Small	Medium and High Performing Schools

6.14 SUMMARY

In this chapter the descriptive, inferential statistics and empirical data, were presented as well as the main process steps of the SEM analysis. The three versions of the SEM model are discussed and the best fit parameters of these are unpacked and applied to the three versions of the SEM models. The best fit model v3 was examined with the path estimates and hypotheses relationships as per the linkages proposed in chapter one of the theses. The $RQ_{1,4,5,6}$ were also answered in this chapter with the descriptive and inferential statistics isolating the **key enabling factors** that are required to drive a high performance school operational team in secondary schools. This chapter also conceptualised the SEM best fit model v3 for this thesis and evaluated the model against the best fit parameters thereby achieving $RO_{1,4\&5.}$

In the final chapter seven, the discussion of the SAT as a valid and reliable diagnostic metric is expanded upon and the research study, in its entirety is discussed with recommendations and key conclusions linked to the aims, research questions and objectives formulated, as well as the postulated hypotheses, which were stated in chapter one.

CHAPTER SEVEN

INTEGRATED MODEL TO PROFILE SOT's HIGH PERFORMANCE LEVEL

7.1 INTRODUCTION

The final chapter of this thesis presents an overview of the study and discusses the results and recommendations from the empirical data analysis. From chapter one, which presented a synopsis of the research study, chapter two and three outlined the literature reviewed to identify the research gap and the key enabling factors that were necessary to create boundaries for this study. Theoretical frameworks allowed the design of the proposed conceptual model and hypotheses as outlined in chapter four. Chapter five described the research design and methodology, whilst chapter six explained the empirical data analysis, the factor and SEM analysis. The implications of the findings and recommendations are suggested in this final chapter, where the factual and conceptual conclusions of the research are linked to the research questions and objectives from chapter one.

By undertaking an SEM analysis and statistical analysis in this research study the survey instrument was shown to have a valid theoretical basis with reliability and validity. It was also shown that the outcome of high performance schools is closely linked to the Employee Engagement and Organisational Commitment. A diagnostic metric, the School Analytical Tool (SAT) was designed that examined the enabling factors that were identified from the literature review in relation to the holistic school high performance teams in a number of contexts. In this research study a School High Performance Tool was developed that could identify the "soft HR skills" and profile the school, so that a "fingerprint of the school" would allow analysis of the weaknesses and strengths of the school operational teams with respect to the key enabling factors that were identified in the literature study.

This School Analysis Tool (SAT) allows identification of the weaker areas that require specific attention and professional development of that school team to develop necessary skills and more effective performance. By using specific interventions designed, aligned and tailored for each specific school's need, it exposes the weak

enabling factors that are required to be developed to create a higher performing school operational team.

Cost effective interventions are therefore implemented in the schools that require the "specific gap skills" identified by the School Analysis Tool (SAT). This research therefore, identified and validated specific enabling factors required to drive the higher performance of secondary school teams and created a theoretical framework that was subjected to SEM analysis. This model was utilised as a basis for examining best practice of high performance development in secondary schools' operational teams and the SAT metric analysed the profiles of both high and low performing secondary schools in different regions of South Africa.

7.2 OVERVIEW OF THE STUDY: RESEARCH QUESTIONS ANSWERED

This research study was concerned with the problem that in many South African schools the operational teams of staff (administrators, educators, management teams and principals) are battling to perform at an effective high level. Few schools are operating at effective high performing levels and operate below their human capital potential. This effective high performance team could provide a supportive and transformational hybrid leadership environment for teaching and learning. It is crucial to design and develop new strategies and heuristics that can assist all schools to analyse their particular needs and identify interventions that are required for achieving an improved organisational effectiveness.

The study examined the following research problem as was stated in the beginning of this thesis:

Since Educational leaders need to focus on the critical issues in each school that will make the biggest difference in ensuring better performance, these enabling factors need to be identified.

From the literature the main factors influencing and affecting the school teams were identified and a proposed conceptual model was developed. This was empirically tested and then using CFA and SEM, it was adjusted and validated to a final acceptable (both **statistically and theoretically**) final conceptual model.

The researcher aimed to achieve the **primary objective** by devising and validating this final proposed model. The RO_1 *which* was to **investigate the main enabling factors that have an effect on the organisational effectiveness in secondary school teams in the educational human resources leadership /management and teaching and learning domains within the South African context,** was supported by achieving the following outcomes.

The outcomes achieved are as follows:

1. In this research study a SEM model-fit Version 3 (Chapter 6) was validated as the best conceptual model within the contexts of this study, both statistically and theoretically.
2. The measuring instrument (SAT) showed that only one of the variables path estimates (Staff perceptions of learner engagement: EPLE -0.46) for the model, was not significant (Chapter 6 Figure 6.17).

The research study therefore, effectively achieved the RO_1 by identifying the main enabling significant factors relating to achieving effective organisational high performance teams in schools, as all other path estimates between the enabling factors were significant. The SEM model version 3 showed a reasonable good model fit and was the best model fit from this research study (Chapter 6 Figure 6.15).

In examining the secondary research objectives (Chapter 1, p. 11), the following are summarised as the outcomes achieved in alignment with the set objectives for the study (Table 7.1). These will be discussed further under the particular variables and hypotheses in Section 7.3.

Table 7.1: Secondary Research Objectives and outcomes achieved.

Research Objective	Outcome achieved
RO_1	**The main significant enabling factors that are related to more effective performance of school teams, and affecting teaching and learning outcomes were identified.**
RO_2	**The proposed conceptual model showed the relationships between the identified variables using a path diagram. The significant linkages and relationships between the key enabling factors and indicators that improve organisational effectiveness in secondary schools were identified from literature.**
RO_3	**The literature review identified a number of leadership approaches utilised in secondary school teams for effective organisational performance and this research showed a parallel hybrid leadership approach was an enabler within many contexts of the sample selected in this study.**
RO_4	**A detailed research methodology allowing reproducibility and an extensive empirical evaluation was conducted on the conceptual model to validate the process and results.**
RO_5	**The SEM Version 3 model was validated from the empirical study and a proposed HPT theoretical framework model was devised.**
RO_6	**Empirical analyses were done on all the data using CFA, SEM and ANOVA one way statistical analyses.**
RO_7	**This metric could be utilised as a heuristic (School Analysis Tool: SAT) along with a positive high performance strategy to improve effective organisational high team performance in secondary schools.**
RO_8	**Integrated strategies, recommendations and conclusions were formulated and outlined based on both the theoretical and statistical evidence and are presented later in chapter seven.**

The literature review aimed to identify as many of the key factors as possible that may influence the effective high organisational performance of the school teams in secondary schools in the South African context. Each variable was defined and operationalised in the survey instrument which was tested for reliability of measurement, using both Cronbach Alpha measurements and then Confirmatory Factor Analysis.

The dependent variables were identified as the two known standardised literature metrics of *Organisational Commitment* (ORGC) and *Employee Engagement* (ENG).

These are known from many literature sources to be positively linked to high organisational effectiveness (Snape and Redman, 2003; Aon Hewitt, 2013; Wiley, 2010; Naquin and Tynan, 2003).

In the final model (subsequent to the CFA analysis), the independent variables were grouped into a *human and system* indicator or index with some mediating or intervening variables as outlined below:

Human: Team Performance Indicator (TPI) consisting of Staff Collaborative Competencies, Staff Organisational Culture Alignment, Staff Perceptions of Supervisor Leadership and Trust level.

System: School High Performance Work Index (SHPWI) consisting of Innovation Potential, Employee Experience, Fairness, Perception of Hybrid leadership environment, Support level, Communication and Infrastructure.

The proposed Mediating or Intervening Variables selected from the literature included: Staff perceptions of Learner Engagement (EPLE) and Leader-Member exchange (LMX).

The conceptual model was thus composed of a total of 17 variables: 11 latent variables or sub-factors, with 2 independent variables (index and indicator), 2 dependent variables and 3 mediating or intervening variables. This integrated proposed final conceptual model is outlined in Figure 6.16 with all the hypotheses and path estimates.

By conducting a CFA and SEM analysis using the 7 Step process (Hair et al., 2006), the relationships between all the variables were empirically tested. This resulted in the primary and secondary objectives being achieved. In the SEM analysis, the initial analysis (CFA) was on the two sub-models:

Sub-Model A: Human/Individual/Team level and the

Sub-Model B: System/School/HP Milieu.

The SEM analysis with three versions of models was conducted on the whole, integrated model, with the SEM model version 3 being selected as the best fit model, on the basis of both **statistical and theoretical** parameters.

Theoretical basis:

- All variables from the literature review were added to the model version 3, unlike in version 2 where Infrastructure (ISE) was excluded.
- All hypotheses were supported by literature and previous research studies, except for the Staff perceptions of Learner Engagement.

Statistical basis:

- SEM Version 3 showed a RMSEA of 0.056 (CI 95%: 0.054-0.058) and a normed Chi squared (2.24) which is less than 3 and better than Version 2. The RMSEA is within the range of ≤ 0.08 whilst the CFI (0.86) is just below the ≤ 0.90. The model is a good model fit as the RMSEA should be ≤ 0.08 and the CFI ≤ 0.90. (Hair, Black, Babin, Anderson and Tatham, 2006; Schrieber, Stage, King, Nora and Barlow, 2006).
- The Akaike Information (AKI or ACI) can be used to compare various models and the lower the value for that model compared to another, shows the best model choice (Schrieber, Stage, King, Nora and Barlow, 2006).

Therefore, the SEM Model Version 3 was selected as the best model that fitted the empirical evidence within this particular research study. The above, therefore, achieved the RO_{1-7} in this research study, with RO_8 being addressed in this final chapter.

7.3 HYPOTHESES AND PATH ESTIMATES DICUSSION SEM MODEL V3

7.3.1 Key Factual conclusions

These hypotheses are outlined in chapter six and all showed a positive and significant relationship with the two dependent variables, Organisational Commitment (ORGC) and Employee Engagement (ENG). These variables are indicative of effective organisational performance. The **final proposed conceptual model** was simplified to

show the significant and non-significant relationships between the variables and the hypotheses as well as the path estimates (Figure 6.16).

The **standardised regression path estimates** for the structural model are the estimates that measure the expected change in the dependent variable in standard deviation units that accompanies a one standard deviation change in an explanatory variable while holding constant the other variables. All the reported estimates, with the exception of the relationship HB12 (non-significant), were significant at the $p < 0.05$ level of significance.

Key Factual Conclusions are that the main enabling factors as shown by the ANOVA studies were that Engagement (Employee, Work and Learner), Leadership, Communication, Trust and Support were important and significant drivers in catalysing a high performance level of school operational teams in secondary schools in this particular research study.

An important finding showed that the TPI which was an Individual/Human metric contributed largely to the Employee Engagement metric (0.58*) and less to the Organisational Commitment metric (0.30*). The SHPWI which was a Systems/Organisational metric contributed more to the Organisational Commitment metric (0.60*) and less to the Employee Engagement metric (0.34*).

The next section discusses each of the hypotheses and the statistically significant relationships of the key enabling factors, as well as theoretical literature agreement and validation of these findings from previous research studies. Any literature studies that state a different viewpoint from this research will also be discussed.

7.3.2 Conceptual conclusions

Using the components of the **proposed conceptual framework** (Figure 4.2) which was derived from a number of theoretical frameworks as shown in chapter one the two independent variables IV1 and IV2, were the Team Performance Indicator (TPI) and the School High Performance Work Index (SHPWI).

A number of conceptual conclusions were drawn and linked to the theoretical frameworks and literature study.

7.4 CONCEPTUAL CONCLUSIONS: KEY ENABLING FACTORS WITH LINKED THEORETICAL STUDIES

7.4.1 Team Performance Index (Sub Factor A):

With **the Team Performance Index (TPI) metric** it was noted that it had the following linkages with the four sub-factors:

HA1: *Staff Perception of the Leadership of the Superior*.

The highest significant contribution (0.78*) to this indicator was the *Staff Perception of the Leadership of the Superior* (**HA1**). A higher perception of positive leadership of their superior (ELSH) was associated with an increase in the school team performance (TPI). A one standard deviation increase in ELSH would lead to an increase of 0.78 in the TPI.

In many literature studies, it is shown that for high performance teams to be effective, convincing leadership with clear goals and distribution of responsibilities, is necessary (Wolff, 1993; Hoyt and Gerloff, 2000). In work done by Epitropaki and Martin (2005), their research established that both transactional and transformational leadership perceptions were significant in predictors of the employee's identification, with transformational leadership having a greater effect. They established that creating a connection between the individual and the organisational collective was facilitated by this type of leadership. Other recent studies by Townsend (2015) on the binary categories of leadership, argue that leadership should be considered a hybrid activity. The researcher aligns with this viewpoint, as the hybrid notion of leadership offers a wide range of approaches, which is manifest in a school network environment (Youngs, 2009; Gronn, 2010; Townsend, 2015). These views aligned with this thesis, as in the Systems Sub factor SHPWI, the hybrid leadership climate also added significantly to the Index in the enabling of high performance SOT's. Thus perceptions of leadership of the immediate superior also was a significant relationship in driving HP school operational teams.

Other research conducted using SEM analysis on both secondary and primary schools in the Netherlands, developed models which reveal that teacher collaboration in

secondary schools is directly influenced by the perceived school-leader support. This study showed that in the primary schools the model was more complicated, as teacher collaboration was influenced by teacher satisfaction in participation in decision making, teachers perceived school-leader support and teachers' orientation towards the student performance (Honingh and Hooge, 2014).

There is therefore a great deal of literature supporting this linkage but obviously the approaches could be elaborated upon. Research has shown the importance of leadership in school improvement (Huber and Muijs, 2010; Leithwood et al., 2008).

Therefore, the hypothesis **HA1** from this study can be supported as:

There is a positive and significant relationship between the Staff Perception of Leadership of their Superior and the Team Performance Index.

School management could increase their effective school team performance level by increasing good leadership approaches and strategy to result in more effective school operational performance and outcomes.

H2: *Staff team competencies*

The lowest contribution to TPI was this sub-factor (0.51*) which was significant and can be described as those competencies that individuals require to bring about team efficacy (Tasa, Taggar and Seiljts, 2007). A one standard deviation increase in the staff team competencies (ETCE) produces a 0.52 increase in the performance of the school team (TPI).

In 2010, a study by Marquadt, Seng and Goodness, showed there were eight competencies of successful groups: clear, meaningful goals, positive norms, strong communication skills, problem solving competence and commitment, trust, openness and group cohesiveness, ability to manage conflict, shared leadership and continuous development.

In a recent research study done by Benoliel and Somech (2015), the importance of boundary activities both internal and external are highlighted. Their results show that leaders' internal activities fully mediated the relationship of the teams' functional

heterogeneity while the external activities mediated the inter-team goals and innovation competencies. This aligned with this research in that leadership and team competencies are closely linked on the individual level. The two factors *Staff Perception of Leadership of Superior* and the *Staff Team Competencies* were therefore grouped in the Sub-Model A: Human/Individual for the Team Performance Indicator as they were in the internal boundary team activity (Benoliel and Somech, 2015) and not in the external activity (Sub-Model B).

This research aligned with this study in that the hypothesis **HA2** can be stated as:

There is a positive and significant relationship between the Staff Team Competencies and the Team Performance Indicator.

By increasing the team skills and competencies the performance of your team can be increased.

HA3: *Staff Culture alignment*

The *Staff Culture alignment* contributed 0.63* to the enabling Team Performing Indicator (TPI), showing that there was a 0.63 increase in standard deviation of the team performance indicator, when there was an increase of one standard deviation in staff culture alignment (OCAL).

The School culture encompasses a set of values and beliefs which are contained within the school organisational structure and context. Often these environmental conditions carry the schools' traditions and history, and a set of internalised norms that influence the perceptions and behaviour of both teachers and students (Price, 2014). To align these, the researcher agrees with the Tichy HRM cube model that the company culture holds it together, as it is these values, beliefs and shared views of all the employees within the company that create this alignment (Tichy, 1983). This aligns with the overall framework of this study in the systems approach of Bronfenbrenner (Raymond and Pienaar, 2011) as the school creates the meso, exo and macro system within which the learning interactions and exchanges reside.

This research, therefore, aligned with these research studies that the hypothesis **HA3** can be stated as:

There is a positive and significant relationship between the Staff Culture alignment and the Team Performance Indicator.

The alignment of the staff's values, beliefs and shared views with the schools' cultural system creates a more effective performance school team.

HA4: *Trust level*

The *Trust level* showed a 0.71* relation with the *Team Performance Indicator*. A one standard deviation increase in trust level (TRU) would therefore lead to an increase of 0.71 in the TPI.

The individual trust level of the teachers was shown to be a significant predictor in effective organisational performance in the school context from the pilot study previously conducted (Gibbs and Poisat, 2015). Other research by Thomsen and Oort (2015) have developed a model from an SEM analysis showing that trust was a predictor for desirable teacher outcomes and a mediator in social exchange. In this study it was also shown that trust in the team members was strongly related to organisational commitment. This was in agreement with this research thesis which also showed that trust in colleagues is an important enabling factor for higher performance of the school operational teams as was evident in other research studies (Tschannen-Moy and Hoy, 2000).

It was interesting to note that this trend was also noted in the business context. According to the study by Blessing White (2011), trust in the immediate manager by employees was much higher than the trust in their senior leaders.

This research, therefore, aligned with numerous other studies and therefore the hypothesis **H4** can be stated as

There is a positive and significant relationship between the Trust level and the Team Performance Indicator.

The trust level in the school team members was a significant enabling factor, and increased trust levels have a positive effect on higher team performance.

These four sub-factors comprise the Team Performance Indicator (TPI) which was the Individual/Human part of the whole model (Sub-Model A). This TPI indicator had a Cronbach alpha coefficient of 0.73 which is regarded as good (Hair et al., 2006).

7.4.2 School High Performance Work Index (Sub Factor B):

In this research study the basis of the School High Performance Index (SHPWI) was adapted from the business high performance work index used by Wiley (2012) and Boedker et al. (2011). It was modified by the researcher for the school context and then improved upon in a previous study (Gibbs and Poisat, 2015). This thesis showed further modifications and improvements could be made to increase the content and construct validity and internal reliability of the SAT metric. Examination of the sub-factors yielded the following discussion.

H B5: *Innovation Potential*

The results of this research study showed an estimate of 0.74* for this enabling factor towards the School High Performance Index (SHPWI). It means that for every one standard deviation increase in the Innovation Potential (INNO), an increase in 0.74 will occur in the SHPWI.

This factor was modified from the business context to an *Innovation mind-set potential* in the school context, as it is imperative in the technologically changing teaching and learning environment that the school strategies align with the external changing environment. It was interesting to note that this factor was high in the High Performing Schools and showed that where there is an innovative environment, it leads to effective performance. As stated by Boedker et al. (2011), if innovation succeeds in organisations, it is because they make an effort to listen to their customers and to question their existing processes and methods. In a school context, it is important that the school leaders know their student's learning approaches, as well as being flexible, innovative and receptive to new teaching and learning pedagogies, that are applicable to the twenty first generation learners. The alignment of procedures and processes,

leadership styles, creativity, resources and problem solving approach within the school cultures, should all reflect the innovative mind set, allowing staff to have opportunities to develop their potential. This shows support for the school innovation strategy and catalyses further high performance levels (Boedker et al., 2011).

Other studies with innovative leadership programmes and teacher professional development using innovative external programmes at schools, show an increase in positive teacher outcomes and performance (Darling Hammond et al., 2010; Orr and Orphanus, 2013). Therefore, the hypothesis **HB5** from the study can be supported as:

There is a positive and significant relationship between the Innovation Potential (Mind set) and the School High Performance Work Index.

School management could increase their effective school team performance level by increasing their innovation strategies and understanding the learning environment of the new generation learners. This flexibility and adaptability to the external environment may assist in creating a higher performance school index.

H B6: *Employee Experience*

In this research study the estimate between the Employee experience (EEE) and the SHPWI was 0.87* which showed a high positive relation. In the school context it showed that the teacher had a positive and strong belief in the schools' goals and values. This positive alignment in the workplace is crucial to achieve high performance workplaces and effective linkages of a number of enabling factors such as leadership, strategy, culture and systems with employee engagement. This factor is a measure of the positive system environment that the teacher experiences. A positive work environment is known in many studies to lead to effective organisational outcomes (Cameron, Mora, Leutscher and Calarco, 2011). The hypothesis **HB6** is supported and stated as:

There is a positive and significant relationship between the Employee Experience and the School High Performance Work Index.

In the school context the positive experience of working in an environment that commits the person to the school or organisation, motivates the team to an increased higher School High Performance Work Index.

H B7: *Fairness*

The estimate between Fairness (FAI) and the SHPWI is 0.89* and this shows that Fairness (FAI) is also a significant enabling factor.

In the study by Boedker et al. (2011), the measure of fairness, in a business context, consisted of procedural and distributional fairness. In the low performing (LP) organisations, the employees felt that they were less fairly treated in the both the distributional fairness and the procedural fairness than in the high performing (HP) organisations. The distributional fairness concerns the fair distribution of rewards and recognition relative to effort and responsibility. There was 30% difference between the LP and HP organisations. It showed that fairness was determined by the leadership, culture and management practices in that particular organisation.

Within a school context, it is noticed that this factor could be an enabling factor as fair treatment was significant. The hypothesis was supported and stated as:

There is a positive and significant relationship between Fairness and the School High Performance Work Index.

By creating a fair human resource strategy and leadership, with industrial relations procedures and a reward and recognition environment, the high performance level in the school could be increased.

H B8: *Hybrid Leadership Climate*

The estimate for the relationship between the Hybrid Leadership Climate (HLSC) and the SHPWI was 1.04*. This showed that with an increase of one standard deviation of the hybrid leadership environment, the school high performance index would increase by 1.04. This is the strongest estimate that was recorded in this study and showed the importance of this enabling factor to achieve a higher performance school.

In examining the "leadership configuration" approach (Gronn, 2015; Chreim et al., 2010) it is argued that recent scholarship is wrestling with conceptualising leadership across different units of analysis. The researcher agrees with Chreim's discussion of querying the term "distributed" leadership, and aligns with Townsend (2015) on the concept of "hybridity". This is the perspective of leadership which stems from the fact that the binary point of view of either a leader or a follower is over simplistic. A range or continuum of leadership, far more accurately aligns to the complexity of leadership, especially in the education field, which has a changing teaching and learning environment with a focus on both individuals (human) and schools (system). This continuum is dynamic and should oscillate along the continuum, as different leadership approaches are applicable at different levels of the school environment.

This flexibility of the school strategies and operation of leadership in educational settings, allows the alternative of leadership as a "hybrid activity" comprising a range of approaches (Townsend, 2015). This allows the unique teacher leaders' concept, merging the notion of leading colleagues and the role of teaching students (Margolis, 2012).

Alongside this research is the leadership model of the IDEAS process, which examines the Parallel Leadership model (Crowther and Andrews, 2003). This was adopted for this research study as a theoretical framework base and examines the enabling environment for leaders to build school high performance capacity. According to Crowther and Andrews (2003), the parallelism engages the teacher as a pedagogical leader and administrative as meta strategic leaders in collaborative action. This concurrently encourages individual capabilities, aspirations and responsibility. It thus allows a professional development of all leaders to create new roles and facilitates communication throughout the organisation. The principal and deputy also have meta-strategic roles in creating alongside their team, the envisioning, inspiring futures, aligning strategies, enabling teacher-leaders, building culture and identity and creating synergistic alliances (Crowther et al., 2009). This model is adapted in this research study and aligns with crafting the environment for creating spaces for this development, encouraging a culture of trust and success and stressing the importance of teacher leadership in pedagogy.

The hypothesis was therefore supported and stated as:

There is a positive and significant relationship between Hybrid Leadership Climate and the School High Performance Work Index.

As many different leadership styles are exhibited in schools and a generic classification may be difficult within a range of contexts, the researcher adopted the hybrid leadership approach for this study. An increase in Hybrid leadership, (HLSC) in a school could increase the high performance level in the school.

H B9: *Support level*

The estimate for the relationship between the *Support Level* (SUP) and the SHPWI was 0.90* and this showed that this is an important enabling factor. A one standard deviation increase in the *Support Level (SUP)* results in an increase of 0.90 in the standard deviation of the SHPWI.

Support is known through many recent research to be paramount in creating school high performance teams. In the study by Honingh and Hooge (2014) on secondary schools, the trimmed SEM model showed that 'perceived school leader support' at 0.68 (standardised regression weight estimate), was the only independent variable in their study that had a direct effect on teacher collaboration, with an explained variance of .46 (R^2). This research study was in line with many studies that show findings of the enabling factor of support, from their school leaders, plays an important role in motivating teachers to participate and engage (Honingh and Hooge, 2014).

Support is an important enabling factor and the hypothesis **HB9** was supported and stated as:

There is a positive and significant relationship between Support level and the School High Performance Work Index.

In school teams the high performance work index can be increased if there is a larger measure of support to the teachers and administrators.

H B10: *Communication*

A standardised weighted estimate of 0.82* was recorded for the relationship between Communication (COMM) and the SHPWI. This high level shows that one standard deviation change in increasing the communication level would effect a 0.82 change in the standard deviation of the School High Performance Work Index.

Communication can be considered an important and significant enabling factor for high performance teams. Aligned with this research thesis, a study on 92 interdisciplinary teams undertaken by Benoliel and Somech in 2015, the internal and external activities of the team were examined. The results of the SEM indicate that there is both an internal and external perspective of the team activities. According to Druskat and Wheeler (2003), effective leaders focus on both the internal boundary activities which focus on the internal processes and external boundary activities, which focus outwards.

Communication in organisations is a complex process and effective teams are shown to have a clear two-way flow of information, as it is the linking mechanism between the team components. In less effective teams, one sees managers controlling the flow of information and resources to protect their power and control (Coffman and Gonzalez-Molina, 2002). It has been shown in a research study by Dee, Henkin and Singleton (2006) that open communication had the largest positive effect on organisational commitment. This research was also undertaken by Hoy in 1993. These research studies on positive communication and many others on high quality connections (HQC) (Dutton and Heaphy, 2003; Dutton and Glynn, 2008) show that these are enabling factors towards engagement and effective performance (Stephens, Heaphy and Dutton, 2003; Robbins, Judge, Odendaal and Roodt, 2014).

The hypothesis is therefore supported and stated as:

There is a positive and significant relationship between Communication and the School High Performance Work Index.

In the school context, team communication is an important linking mechanism as the teaching and learning environment may be perceived quite negatively in South Africa at present. Positive, genuine, open and high quality connections are imperative to lead to high levels of school performance.

HB11: *Infrastructure*

This study showed there was a standardised regression estimate of 0.32* that affected the SHPWI. An increase of one standard deviation in *Infrastructure* (ISE) and resources availability increased the SHPWI by 0.32.

As the profiling of high and low performing schools in the different regions of South Africa exhibited a large difference in this *Infrastructure* enabling factor, it may be considered an important factor in effective school high performance.

The hypothesis is supported by a large number of studies and can be stated as:

There is a positive and significant relationship between Infrastructure and the School High Performance Work Index.

These seven sub-factors comprise the School High Performance Work Index (SHPWI) which was the Systems/School/Organisation part of the whole model (Sub-Model B). This SHPWI measure had a Cronbach Alpha of 0.90 which is considered excellent (Hair et al., 2006).

7.4.3 Independent and Dependent Variable Relationships (H2AEE, H3AORGC and H2BEE, H3BORGC)

The Team Performance Indicator (TPI) showed a 0.58* path estimate with the dependent variable Employee Engagement (EENG) which means that for every one standard deviation increase in the TPI an increase of 0.58 will occur in the EENG (**HA2EE**). The estimate of the TPI with the other dependent variable, Organisational Commitment (ORGC) was 0.30* (**HA3ORGC**) which was much lower, showing that the effect of the team performance on the organisational commitment was less. This result emphasises that at the individual level the group team process had a larger effect on the engagement levels (Human level) than on the organisational commitment levels (System level). In the SHPWI the **HB2EE** was 0.34* with Employee Engagement and **HB3ORGC** was 0.60*.

Since in this research study, the researcher is utilising both the dependent variables (Employee Engagement (EENG) and Organisational Commitment (ORGC)) as

predictors of school organisational effectiveness, it is interesting to note that in combining the two Sub Models A and B, a better prediction could be measured of the organisational performance, using a combination of the EENG and ORGC. By utilising a systems approach, the TPI metric from the Individual/Human perspective and a School High Performance Work Index (SHPWI) from the System/School perspective, the metric allowed a measure of the engagement and commitment from two perspectives.

In examining these relationships, one can see that with the School High Performance Work Index, a standardised regression estimate of 0.34* was recorded for Employee Engagement (EENG), whereas the estimate was 0.60* for the Organisational Commitment (ORGC). This metric, therefore, showed that the human and system approach each contribute to a different factor.

The Human/ Team (TPI) showed more effect on the Employee Engagement (EENG) 0.58* and less on the Organisational Commitment (ORGC) 0.30* whereas the School High Performance Index (SHPWI) showed greater effect on the Organisational Commitment (ORGC) 0.60 and less on the Employee Engagement (EENG) 0.34. This could be explained as Employee Engagement (EENG) takes place at the human interface level and more linked to the team dynamics and individual level (TPI), whereas the Organisational Commitment (ORGC) is at the organisational interface and is in the systems and task orientation at the school level, thereby being linked more closely to the School High Performance Work Index.

This was an important finding which contributes to the body of knowledge pertaining to these two standardised literature metric constructs of Organisational Commitment (ORGC) and Employee Engagement (EENG).

Lastly the two mediating or intervening variables and their relationships will be briefly discussed, including the hypotheses **HA12, HB12 and HA13, HB13**

7.4.4 Mediating or Intervening Variables

H12: *Staff perception of Learner Engagement*

The Staff perception of Learner Engagement (EPLE) showed a negative standardised regression estimate of -0.46 and was not significant in this research study. As stated by Cooper (2014) learner engagement is predicted with connective instruction, seven times more strongly than academic rigour or lively teaching. Learner engagement has been linked to academic success by many research studies (Caraway, Tucker, Reinke and Hall, 2003; Wang and Holcombe, 2010). The hypothesis is **not supported** in this research study as EPLE as an enabling mediating factor was **not significant** in the relationship with the **School High Performance Work Index**. There was no positive relationship between EPLE and the SHPWI (**HB12)**

However, there was a **small significant relationship 0.22* with the TPI Team** Performance Indicator and this is indicative of a small significant relationship of the EPLE with the TPI.

H13: *Leader Member Exchange (LMX)*

The Leader Member Exchange can be explained as the reachability of the leaders to the followers. The greater the leaders/principal reachability, the higher the LMX value and these are reported to have a positive and significant influence on the staff perceptions of learner engagement.

Research shows that the reachability of the principal is important in this LMX exchange and that this contributes both to a more positive teacher perception of their students' engagement as well as a positive perception of the school support level (Price, 2014). In this thesis, the results aligned with these conclusions as the high performing schools in most of the regions of South Africa exhibited a high LMX value. In this study the estimates between the LMX value and the SHPWI was 0.42*, showing that a one standard deviation change in the LMX value would increase the SHPWI by 0.42* (**HB13).**

This leadership reachability was more important in the system sub model B than in the human/team individual sub model A, as seen by the path estimate being only 0.27* (**HA13**) between the LMX value and the TPI. The hypotheses were supported and stated as:

There is a positive and significant relationship between the LMX value and the School High Performance Work Index.

There is a positive and significant relationship between the LMX value and the Team Performance Indicator.

7.5 INTERPRETATION AND CONCEPTUAL CONCLUSIONS FROM THE STUDY

Therefore, as the hypotheses from this SEM model v3 showed the significant relationships between these variables the original conceptual model can be shown to include these findings. This final integrated proposed conceptual model was refined to show a more detailed framework which emanated from the theoretical framework and statistical analysis of this research study (Figure 7.1). The linkages and relationships between the variables were validated in the SEM analysis, with the best fit criteria validating the SEM model v3, which was conceptualised into a final integrated model as shown below Figure 7.1.

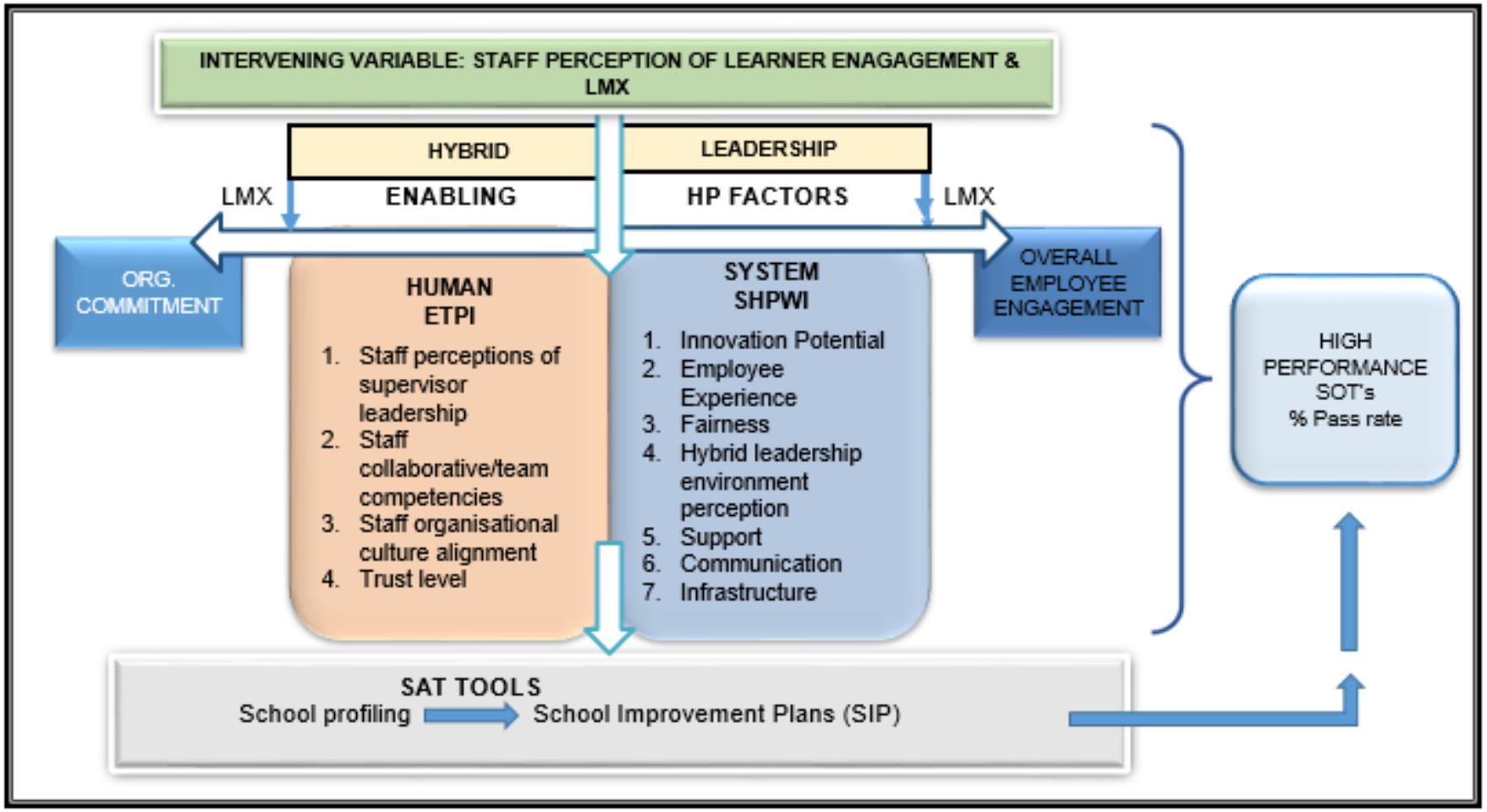


Figure 7.1: Integrated Conceptual Model to profile the effective and HP performance level of SOT's (Authors own construct).

7.5.1 Quintiles and HP enabling factors: Key Interpretations and conclusions

Since the SEM model allowed the linkages between the enabling factors to be outlined, the last section of the study was to examine the within and between groups using ANOVA. This allowed the schools in different quintiles to be compared with regard to all the enabling factors.

In examining the practical significant (only factors with significant p values were reported) the Cohen's d values of the following enabling factors showed small practical significance. The schools were grouped in two groups with quintile 3 and 4 together (Q3&4) and quintile 5 and private (Q5&P). The enabling HPT factors are listed below in ranked order (largest to smallest) with their Cohen's d value:

1. Staff perception of Learner Engagement (0.44)
2. Infrastructure (0.43)
3. Trust level (0.35)
4. Employee engagement (0.29)
5. Work engagement (0.29)
6. Employee experience (0.25)
7. Support level (0.24)

These are the practical significant differences between the top quintile and low quintile schools enabling HP factors from all the data collected in this research study. It is interesting to note that Staff perceptions of Learner Engagement, Infrastructure and Trust Levels are ranked as the top three.

A further ANOVA was done on using the three grouped quintiles (Q3&4, Q5 and Private Schools). This showed the following significant enabling factors:

Staff perception of Learner Engagement between the quintile 3 and 4 schools and the private schools (Cohen's d: Large 1.20)

Staff perception of Learner Engagement between the quintile 5 and private schools (Cohen's d: Large 0.98).

Key Conclusion: The **enabling factor *Staff perception of Learner Engagement*** was significantly different in the different quintile levels of secondary schools in the South African context.

Trust levels between the quintile 3 and 4 schools and the private schools (Cohen's d: Medium 0.70).

Trust levels between the quintile 5 and private schools (Cohen's d: Medium 0.52).

Key Conclusions: The **enabling factor Trust levels** were significantly different in the different quintile levels of secondary schools in the South African context.

The Small Cohen's d values were reported for the significant differences between the **quintile 3 and 4 groups and private schools** in the following enabling factors: Support level (0.43); Infrastructure (0.40); Work Engagement (0.37) and Hybrid Leadership Climate (0.35).

Significant differences between the **quintile 3 and 4 and the quintile 5 groups** were shown in the following enabling factors: Infrastructure (0.43) and Employee Engagement (0.29). **Communication** was also found to be significant but a Cohen's d value was unavailable.

Key Conclusions: Infrastructure, Engagement, Support and Leadership (and possibly Communication) seem to be the key enabling HP factors that define the differences between the quintile groups in secondary schools in the South African context.

These **key conclusions** above are in line with the proposed main key enabling factors for driving high performance in School Operational Teams for this thesis.

In the conceptual model the main factors examined contained the Engagement, Leadership, Support and Communication in the framework. Infrastructure was not focused on as the research was limited to those main three enabling factors and this fell outside the boundaries of this specific study.

7.5.2 Percentage Pass rate and HP enabling factors: Key Interpretations and conclusions

Key Conclusions from the research data examining the most significant HP enabling factors related to the percentage pass rates in high, medium and low performing schools, as sampled in this research investigation, exhibited an alignment with the significant HP enabling factors that arose in the conclusions of the study within different quintiles groups.

- The differences between the LOW and HIGH performing secondary schools could significantly link with the HP enabling factors of: **Staff Perceptions of Learner Engagement, Employee Engagement and Infrastructure**.
- The differences between MEDIUM and HIGH performing secondary schools could significantly link with the HP enabling factors of: **Staff Perceptions of Learner Engagement, Trust and Support level, Employee Engagement and Organisational Commitment.**
- The differences between LOW and MEDIUM performing secondary schools could significantly link with the HP enabling factor of: **Communication.**

Since the research study stated that the investigation would examine the linkages and relationships between these three enabling factors (**Leadership, Engagement and Communication**), a brief outline of the links to the theoretical main models that were utilised in this research was presented. This was collated with the conclusions of the results of this research and constructed into a final proposed conceptual framework. This resulted from the factor analysis and linkages that were empirically validated in the best–fit SEM model Version 3.

7.6 ENABLING FACTORS AND CONCEPTUAL MODEL FROM THE THEORETICAL FRAMEWORK OF THE LITERATURE REVIEW

The three main enabling factors: **Leadership, Engagement and Communication** selected to delineate the boundaries of this research, were used as pillars for the conceptual model of this thesis.

7.6.1 Leadership

The models used in this research study included the Hybrid leadership (Townsend, 2015) and the Parallel Leadership Model (Crowther and Andrews, 2003). The Leadership styles in each school exhibited a widely diverse range and the hybrid leadership was observed. A measure in this study of a hybrid leadership climate which was based on both servant and authentic leadership was devised.

Key Conceptual conclusions:

A school climate allowing for the parallel model of leadership to develop was noted to be prevalent in the higher performing schools. The creation of spaces with high trust and support levels within an enabling environment, allowed for high levels of staff engagement and professional development which builds school high performance capacity. According to Crowther and Andrews (2003), the parallelism "engages the teacher (pedagogical leader) and the administrative (meta strategic) leaders in collaborative action, concurrently encouraging individual capabilities, aspirations and responsibility".

It was also noted that the principal reachability and LMX value was high in the high performing schools and showed how important the leader-teacher interface is in creating positive engagement. The LMX measure (LMX) in the SEM model showed a 0.42* significant path estimate to the School High Performance Index (SHPWI).

An important finding showed the **hybrid leadership climate (HLSC) factor** was shown to be a **significant enabling factor in the integrated SEM model** with path estimate of 1.04*. This showed that for every one standard deviation increase in the hybrid leadership climate, a 1.04 standard deviation increase would occur in the School High Performance Index.

7.6.2 Engagement

The theoretical models that the researcher used in examining the HP enabling factor of Employee Engagement, were the Aon-Hewitt Model (2013); Poisat Integrated Engagement Model (2006) and the Kenexa Employee Engagement Index (Wiley, 2010). These were modified and adapted for the school context and also included the

Staff Perceptions of the Learner Engagement factor (Cooper, 2014). Overall Employee Engagement included Individual Employee Engagement and Work Engagement.

Key conceptual conclusions:

Employee engagement was concluded to be a significant HP enabling factor in the differences between LOW and HIGH performing secondary schools, as well as between MEDIUM AND HIGH performing secondary schools.

In the SEM model the SHPWI linked with Employee Engagement at a significant 0.34* and the Team Performance Indicator (TPI) linked with Employee Engagement at a significant and higher level of 0.58*. These independent variables were grouped as Human and System Indices and this research validated that the Human Indicator (TPI) related higher than the System Indicator (SHPWI).

The Staff Perceptions of Learner Engagement (EPLE) was also ranked as a significant influence in the differences between LOW, MEDIUM and HIGH performing secondary schools.

7.6.3 Communication

Communication in organisations is a complex process and effective teams are shown to have a clear two-way flow of information. Open and high quality connections and communication were shown to be important as an enabling HP factor (Dutton and Glynn, 2008; Robbins, Judge, Odendaal and Roodt, 2014).

Key conceptual conclusions:

Communication was found to be a significant enabling HP factor, especially in the differences between MEDIUM and LOW performing secondary schools.

It was also seen to be significant in linking to the School High Performance Work Index (SHPWI) with path estimate ($p < 0.05$ level) of 0.82*.

As seen from the propositions above, the three enabling factors of leadership, engagement and communication were all found to be significant in driving the high

performance of school operational teams within the context of this research study. However, as the enabling factors are inter-related, it was crucial that the research was undertaken utilising an SEM analysis, which allowed all the variables to simultaneously be related in a multivariate analysis. The enabling factors are holistically intertwined and thus the relationships all needed to be taken into account as a **whole integrated model**.

7.7 IMPLICATIONS AND BENEFITS: CONTRIBUTION TO KNOWLEDGE

7.7.1 Contribution to the body of knowledge

This SEM study adds to the body of knowledge in the educational leadership field as quantitative analytical data is critical in school improvement and best practice analysis. Research utilising diagnostic metrics add value to the empirical research in the school improvement domain and the SAT was developed to assist in profiling schools for their SOT's strengths and weaknesses.

7.7.2 Educational School Improvement Plan (SIP) and Metric (SAT)

In many human resource (HR) studies the alignment of HR strategies is shown to be successful if aligned both **vertically and horizontally, with flexibility** to respond to various changing demands (Wright and Snell, 1998). The researcher aligns with the so called "complementary" group that views both of these concepts as essential for organisational effectiveness. A **vertical fit** involves alignment of HR practices and the strategic management practices. Therefore, the goals, missions and visions of the school must be seen to be part of the culture, operation and human resource practices of the school and leadership of the school should be role modelling these practices for the trust and support levels to be at a high level. Human resources should be directed towards the main initiative of the school, teaching and learning and student engagement and outcomes should be prioritised. A **horizontal fit** implies congruence with all the Human Resource Management (HRM) practices with career and staff development, compensation benefits, training, recognition, job design and resource allocation.

The HRM also gives input on the internal strengths and weaknesses of the organisation and the external opportunities and threats. Thus in the school context, it is imperative that the strengths and weaknesses of the individual school is analysed and not generalised, so that the SWOT analysis can be aligned with the individual School Strategy and Improvement Plan. This would allow fit and flexibility alignment of HR strategy for effective organisational (school) performance. For this analysis to occur, well designed School Analysis Tools are required that regularly measure the operations of the school teams within the context and ever-changing educational environments. This thesis aimed to devise and design a HR school analytical tool that was reliable and valid to profile schools for accurate analytics, allowing more strategic school improvement plans and thus more cost effective and relevant interventions.

7.7.3 Implications and benefits of this study summary

The implications of this study are that the results from this research add to the new knowledge in the South African secondary school improvement context. A model or framework was devised, showing the enabling factors that create high performance teams in the operations of secondary school. The measuring tool or metric (School Analytical Tool SAT) was devised as a unique heuristic which was validated empirically. The model may benefit school improvement plans and school strategy development, as it will add knowledge where there is a gap in this research field, pertaining especially to South African secondary schools.

The benchmarking, accountability and SWOT analysis of schools in South Africa is an under developed field. This research study with the school metric could be utilised to further develop more advanced holistic school metrics for accurate "fingerprinting or profiling" of schools. A School Analysis Tool (SAT) which profiles and identifies the areas of strength and weaknesses in each school will be a valuable tool for identifying relevant cost effective interventions that result in effective key performance outcomes.

7.8 UTILISING THE SCHOOL ANALYTICAL TOOL: FURTHER RECOMMENDATIONS: SCHOOL PROFILING AND SIP'S

Using the School Analytical Tool (SAT), designed by the researcher, for profiling secondary schools as a diagnostic analytical metric or tool is shown in the examples below, to illustrate the **practical application of this SAT.**

7.9 EXAMPLES SCHOOL PROFILING (SPROF)

The proof of the SAT being used as a valid and reliable metric is shown as it is utilised to profile a high and low performing secondary school selected from the sample of each region: Eastern Cape (EC), Western Cape (WC) and KwaZulu-Natal (KZN). The results are briefly discussed and shown below, to illustrate the practical application of the School Analytical Tool. **The identification codes of each of the enabling factors that drive high performance school operational teams are shown in Table 4.3 (p.117).**

7.9.1 EC: HIGH AND LOW PERFORMING SCHOOLS Differences

To show the differences and similarities between the Eastern Cape High and Low Performing Schools, a profile of the highest and lowest performing secondary schools in this research sample, were profiled (Figure 7. 2).

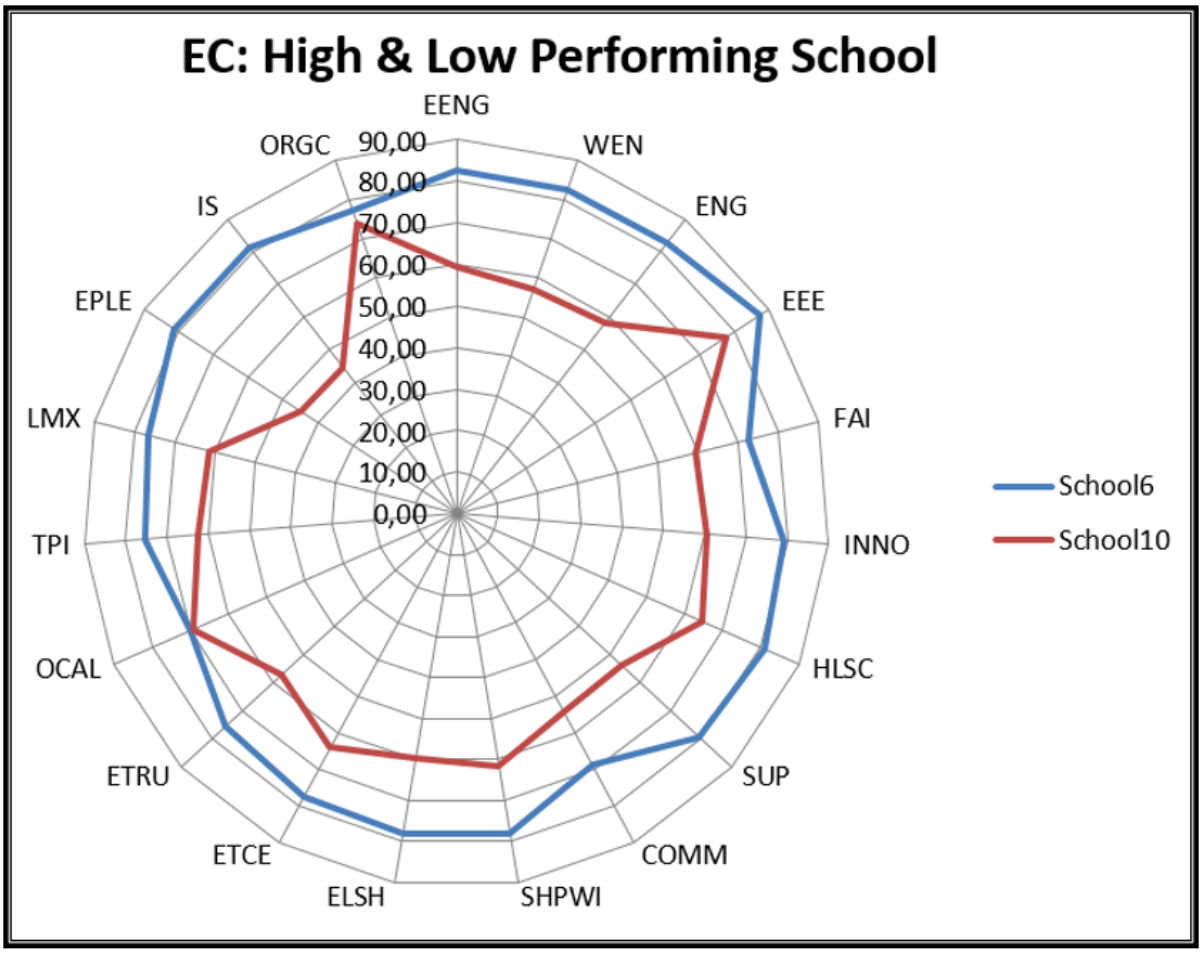


Figure 7.2: EC: High and Low Performing Schools.

The following observations were noted:

Similarities:

Staff Culture Alignment was high at 70%, Organisational Commitment was high at 73-77%, Positive Employee Experience was close at 78-87%.

Differences: Largest differences were in the following:

Staff Perception of Learner Engagement (Difference: 36%), Infrastructure (Difference: 36%), Support level (Difference: 26%), Employee Engagement (Difference: 25%).

In the EC schools there were three main **similarities** in **Staff Culture Alignment, Organisational Commitment and Positive Employee Experience.**

The largest **differences** were in **Staff perceptions of Learners Engagement, Infrastructure, Support level and Employee Engagement.**

7.9.2 WC: HIGH AND LOW PERFORMING SCHOOLS Differences

The profiles of the Western Cape High and Low Performing Schools sampled in this research study, are shown in Figure 7. 3.

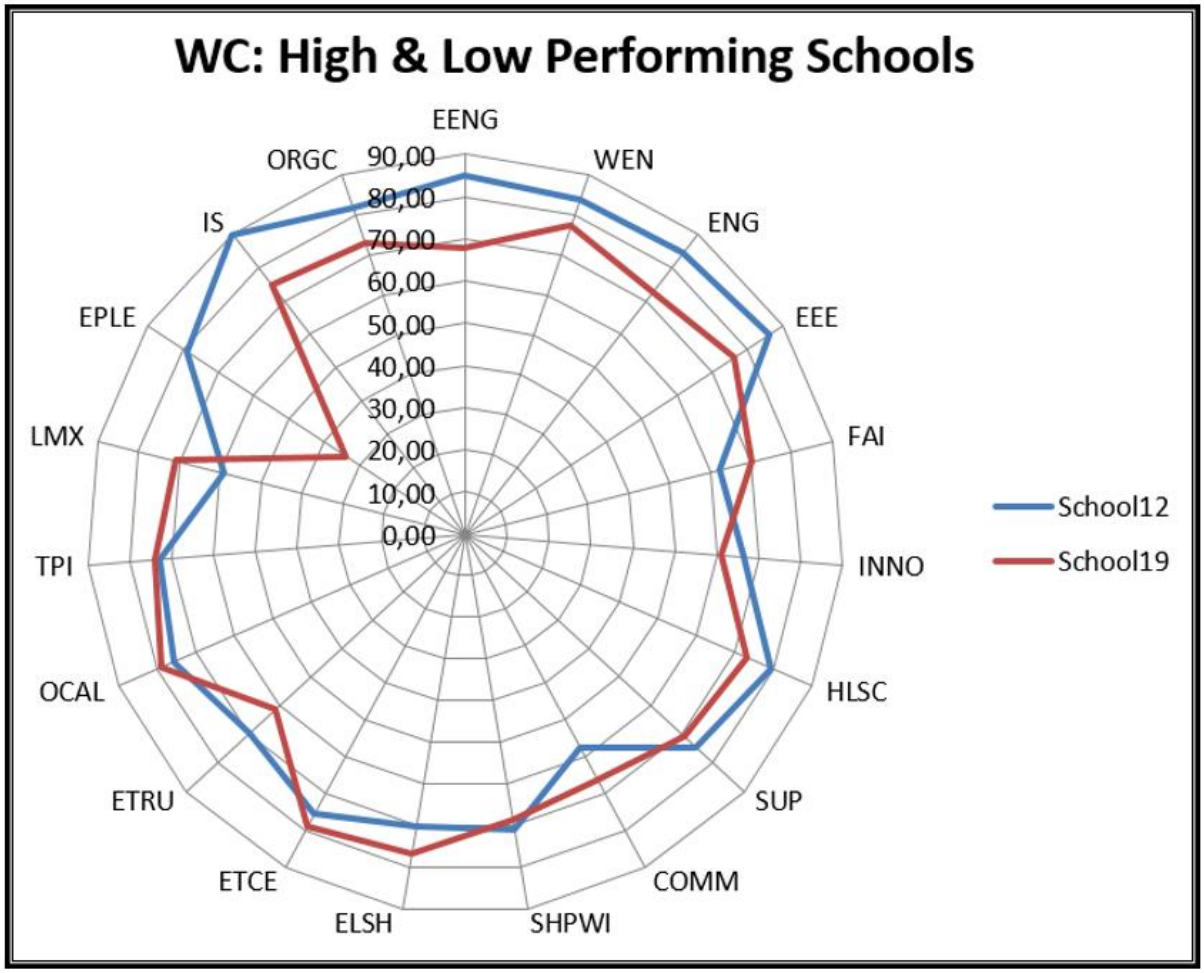


Figure 7.3: WC: High and Low Performing Schools.

The following observations were noted:

Similarities: Team Performance Index at 73%, School High Performance Work Index at 68-70%, Staff Culture Alignment at 76-79%, Support level was at 70-74%, Innovation level was at 61-66%.

Differences: Largest differences were in the following:

Staff Perception of Learner Engagement (Difference: 45%) Individual Employee Engagement (Difference: 17%), Infrastructure (Difference: 15%) and Leader Member Exchange (12%).

In the WC schools there were these main **similarities** in **Staff Culture Alignment, Team Performance Index, School High Performance Work Index, Support level and Innovation Potential.**

The largest **differences** were in **Staff perceptions of Learners Engagement, Individual Employee Engagement, Infrastructure and Leader Member Exchange.**

7.9.3 KZN: HIGH AND LOW PERFORMING SCHOOLS Differences

In this research study sample, the KwaZulu-Natal High and Low Performing Schools profiles are illustrated in Figure 7.4. The following observations were noted:

Similarities: There were very few close similarities with Staff Culture Alignment at 72-86% and Staff Team Competencies at 71-88% being the closest.

Differences: The largest differences were in the following:

Infrastructure (Difference: 59%), Employee Engagement (Difference: 41-43%), Organisational Commitment (Difference: 40%), Positive Employee Experience (Difference: 39%) and Leadership (32%).

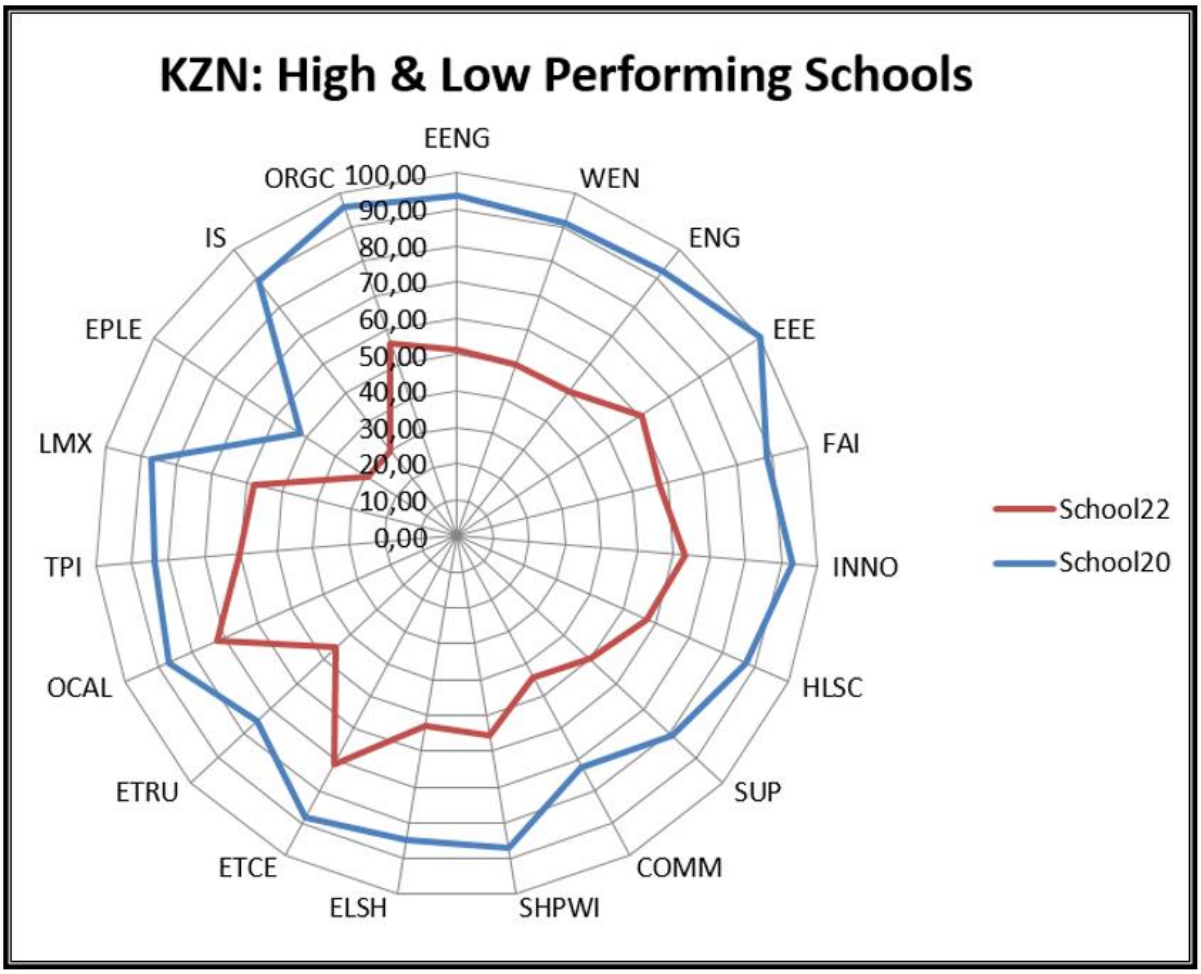


Figure 7.4: KZN: High and Low Performing Schools.

In the KZN schools there were no close **similarities** except for **Staff Culture Alignment** (72-86%) and **Staff Team Competencies** (71-88%). The main **differences** were in **Infrastructure, Employee Engagement, Organisational Commitment, Positive Employee Experience** and **Leadership.**

Key conclusions:

Many interesting conclusions could be drawn from these profiles but this section is to demonstrate the importance of the practical application of the metric (SAT) to assist schools to identify their strengths and weaknesses (SWOT analysis).

Concluding claims are that the SAT was able to discriminate and distinguish characteristics between the enabling factors of the SOT's in high and low performing schools as well as across different regions.

As the research sample was only 26 schools with more schools drawn from the Eastern Cape, a comparative of the regions was not the intention or focus of this research study. The focal point of the study was on the enabling factors for the high performance level of the SOT's.

This SAT practical application illustrated the importance of the "individual school fingerprint" analysis as a diagnostic metric. The analytic tool or metric could be utilised to assess the schools prioritised needs. This could form the basis for the School Strategic Plan and School Improvement Plan (SIP).

Further research studies could be undertaken on:

- Improving the metric to include the Learner's voice.
- Designing a holistic metric that includes a pedagogical aspect.
- A larger sample of respondents across different African countries.
- Expanding this foundation model to include primary and secondary schools in different countries and in the educational global context.
- Examining the Leadership Index in a separate research study.
- Developing a School Analytical Tool with different components that could be utilised to improve South African schools in all areas.

7.10 SOME KEY RECOMMENDATIONS RESULTING FROM THIS STUDY

Some key recommendations arising from this research study are briefly outlined below

7.10.1 Hybrid leadership

As the hybrid leadership climate factor was large, leadership is shown to be an important driver in creating the HP school operational teams. In many of the high performing schools the hybrid leadership factor, the LMX factor and the Multiplier factor was high. Further research studies are required in this area. Leadership was a significant enabling factor in the effective performance school operation teams. Leadership skills and training was not undertaken by many of the respondents.

7.10.2 Engagement and Communication

Many employees in the lower performing school operational teams were disengaged and also perceived the learners in their school to be disengaged. This resulted in lower performance of the SOT's. By examining the factors that increase positive engagement the level of school operational team performance and outcomes increase.

7.10.3 School Improvement Plans

School Improvement Plans should include Leadership and HR soft skills training throughout the school teams, as gaps in these skill sets create operational problems. A good diagnostic metric such as the School Analytical Tool (SAT), as developed in this thesis, allows a unique profile of the strengths and weaknesses within each school that is relevant and pertinent, hence interventions may be cost-effectively introduced and targeted to the areas where they are required. This allows for a focused strategic plan and a more specific SIP.

7.11 LIMITATIONS OF THE RESEARCH STUDY

The theoretical model for this research study is limited to the conditions in the specific educational sectors within a specific time cycle.

Because the completion of the survey instrument was dependent on the self-report of the respondent, common method variance could be a problem as well as social desirability effects. Since the factors were measured by individual structured questions, exaggerated or underrated answers may result in method bias and context bias. As the survey was only printed in English, a problem may have arisen due to language misinterpretations or ambiguity.

Another limitation concerns the definition and operationalisation of the variables, as the item questions may not completely cover the broadness of each construct. It must also be acknowledged in research studies that the relationships between the factors identified by the researcher, could be influenced by a number of other variables not accounted for in this particular study. The proposed SEM best–fit model is not claimed to be the best and only model for the whole school improvement field but merely the

best fit model for the key enabling factors that were selected by the researcher. Other constructs such as parent involvement, the funding model, resources and staff to learner ratios were just some of the constructs that were not considered.

Further limitations that were mentioned in the research methodology section include: availability and response rate of schools, sampling limitations and response bias. Time frames and sample size were also limitations which affected this research study. Another limitation of this study was the availability and access to the schools as well as the response rate of the participants. The sample of respondents was limited to the principal, educators and staff management and administrative teams. The study aimed to sample respondents at thirty secondary schools but three schools declined to participate in the study due to the following reasons: restructuring in the school at the time; new staff, violence, protests and insecurity in the schools at the time of sampling.

Further limitations include possible survey fatigue, item clarity and ambiguity experienced when the survey was administered. However, from the feedback of the respondents this did not seem to be a large problem. Possible limitations were time frames as a larger sample with more schools, across more regions, would have been more representative. It was hoped to sample in another country but unfortunately this was not possible in the time frames.

A further limitation could be seen in that certain mediating variables may have been excluded as the school environment is not a closed system. The key and most prevalent enabling constructs taken from the literature review and related to enabling the school operational team to perform at an effective level, were therefore selected. Other constructs such as parent involvement, the funding model, resources and staff to learner ratios were not considered in this research study.

7.12 CONCLUDING REMARKS

During the development and the process of conducting this research, the **main objectives** of the thesis were achieved, but further research could extend the development of the School Analytical Tool to expand its analytical range. In this thesis, the key enabling factors that drive effective high performance in the school operational teams of secondary schools in South Africa, were identified. An ecological systems

theory approach was used and both a humanistic and mechanistic grouping was utilised in the theoretical framework and conceptual model. In the SEM analysis, the **hybrid leadership climate, engagement, communication, infrastructure, trust and support** were found to be significant key drivers for enabling high performance.

In this thesis the theoretical framework led to the design of a **conceptual model, as well as a School Analytical Tool (SAT)** or metric, which was tested for validity and reliability in the South African context for secondary schools. This instrument allowed profiling of high, medium and low performing schools, indicating the strengths and weaknesses of the different enabling factors that drive HP teams. From this research study and analysis, a **final integrated conceptual model to profile SOT's high performance levels** was constructed. It is recommended that further research expands this SAT to include learner engagement and resources. This thesis, along with the SAT development and integrated conceptual model, adds to the body of knowledge in school improvement and best practice research in the educational leadership field.

The developed SAT diagnostic metric could prove a useful analytic in fingerprinting school operational teams so that valid and reliable empirical data may be obtained. This allows focused strategic planning and relevant School Improvement Plans to be devised with identification of gap enabling factors that require interventions. Cost effective and focused training can be implemented, leading to greater success in creating a higher performance level in the school operational team.

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Appendix 1: Measuring Instrument: School Analytical Tool (SAT)

CODE REF...../.....

Many thanks for your participation in this survey, it is greatly appreciated.

Please take a few moments to complete this questionnaire

Please be honest and constructive in your answers.

1. Please complete Sections A, B and C.
2. Please mark the relevant block with an X or tick.
3. **Choose only one block.1-Strongly disagree to 5 – Strongly agree.**

Please note that all information supplied will be treated with confidentiality

SECTION A

AGE IN YEARS					GENDER	
18 - 29	30 - 39	40 - 49	50 - 59	>60	MALE	FEMALE

EMPLOYERS NAME (Optional)

CURRENT LEVEL IN YOUR SCHOOL				
ADMINISTRATOR	SUPPORT SERVICES	EDUCATOR	HOD/SMT EXEC	DEPUTY/ PRINCIPAL

NUMBER OF YEARS SERVICE AT YOUR SCHOOL				
0 - 9	10 - 19	20 - 29	30 - 39	40 - 49

TEACHING EXPERIENCE				
0 -5yrs	5- 10 years	10-15 years	15-20 years	>20 years

EDUCATION LEVEL				
No qualifications	National Diploma	Bachelor's Degree	Honours degree	Master's degree/Doctoral

Have you completed any additional Leadership training over the last 5 years?

_____

NMMU Research Clearance No: H14-BES-BUS-074

	Strongly Disagree 1	2	3	4	Strongly Agree 5
1. I am willing to bring up new ideas.					
2. New ideas are listened to.					
3. I am encouraged to make new suggestions.					
4. I am proud to work in our school.					
5. I will gladly go the extra mile for our staff team and our school.					
6. I feel positive about our school.					
7. I feel that my work is important and of value.					
8. I am treated relative to my performance.					
9. The school policies are implemented fairly across all levels.					
10. Senior educators and managers treat everyone equally.					
11. I have clear values and strive to be a role model.					
12. I have freedom to lead tasks and assignments.					
13. I feel recognized and acknowledged.					
14. I am willing to put in a great deal of effort beyond that normally expected in order to assist success in the school.					

NMMU Research Clearance No: H14-BES-BUS-074

	Strongly Disagree 1	2	3	4	Strongly Agree 5
15. I talk about this school to my friends as a great school to work at.					
16. I would accept almost any task in order to keep my job at this school.					
17. I find my values and this school's values are very similar.					
18. I am proud to tell others that I am part of this school.					
19. This school inspires the very best in me in the way of job performance.					
20. I am extremely glad that I chose this school to work at above other schools I was considering at the time I joined.					
21. I really care about the fate of this school.					
22. For me, this is the best of all possible schools for which to work.					
23. I am proud to work at my school.					
24. Overall, I am satisfied in my job.					
25. I would gladly refer a good friend to apply to work at my school.					
26. I rarely think about looking for a new job in another school.					
27. Time goes quickly when I am at work.					
28. I am positive and enthusiastic about my work.					
29. I forget about things around me when I am working.					
30. I have all the resources and equipment that I need to do my work right.					

	Strongly Disagree 1	2	3	4	Strongly Agree 5
31. Learner apathy is a problem in the school.					
32. Learners come to school unprepared to learn.					
33. Learners are frequently absent from school.					
34. Learners often bunk or cut class.					
35. Learners act disrespectfully towards the educators.					
36. There are adequate classrooms, desks and school infrastructure for effective operations in our school.					
37. Most people can be trusted.					
38. Most people are inclined to help others.					
39. If you are not careful people can take advantage of you.					
40. Human nature is fundamentally cooperative.					
41. The administration and resources available are supportive in our work.					
42. We listen and support each other. .					
43. We are recognized for a task well done.					

	Strongly Disagree 1	2	3	4	Strongly Agree 5
44. Communication is clear.					
45. We all talk openly and freely to each other.					
46. Communication is regular and feedback response rates are quick.					
47. In one day the positive comments exceed the negative ones.					
48. My immediate supervisor (HOD/ Deputy/Principal) has a clear vision or goal for the future of the school.					
49. My immediate supervisor (HOP/Deputy/Principal) is clear about his/her values and demonstrates these values.					
50. My immediate supervisor (HOP/Deputy/Principal) responds well to feedback and criticism.					
51. My immediate supervisor (HOP/Deputy/Principal) supports and encourages staff development and learning.					
52. My immediate supervisor (HOP/Deputy/Principal) gives recognition and acknowledgement to staff.					
53. My immediate supervisor (HOP/Deputy/Principal) fosters involvement and cooperation among staff.					
54. My immediate supervisor (HOP/Deputy/Principal) is innovative and encourages thinking about problems in a new way.					
55. My immediate supervisor (HOP/Deputy/Principal) gives people opportunities to lead work assignments and activities.					
56. My immediate supervisor (HOP/Deputy/Principal) prioritizes people management as an important priority.					

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	Strongly Disagree 1	2	3	4	Strongly Agree 5
57. The school and district provide a supportive environment for developing my pedagogy, skills and content knowledge.					
58. I know the vision and mission of our school.					
59. I set deadlines for achieving tasks.					
60. I often assume leadership.					
61. I try and include everyone in a group discussion.					
62. I take the group's ideas and develop plans from their contributions.					
63. I make correct judgements in complex situations.					
64. I remind others of the team's goal.					
65. I address conflict immediately by raising it for discussion with other team members.					
66. I try and calm down team members that are in conflict.					
67. Praise is often given.					
68. There is a professional attitude amongst the staff.					
69. There are adequate classrooms, desks and school infrastructure, for effective operations in our school.					
70. At our school there is a clear value system and code of conduct in place.					
71. I prefer leaders who give detailed explanations for their decisions.					
72. I like the thrill and excitement from taking risks.					
73. I enjoy being part of a team.					

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	Strongly Disagree 1	2	3	4	Strongly Agree 5
74. I am happy to have my performance assessed in terms of my contribution to a team.					
75. I like to work where people are easy going and there isn't a great deal of pressure.					
76. I like a stable and predictable environment.					
77.My immediate supervisor (HOD/Deputy/Principal) connects with us on a personal level.					
78. My immediate supervisor (HOD/Deputy/Principal) has an open communication style.					
79. My immediate supervisor (HOD/Deputy/Principal) always makes time to connect with his staff.					

SECTION C

Please complete the following questions in the space below.

Rate the leadership relationships in your school in the following areas:

Rate 1- 5 with 1 as STRONG and 5 as WEAK

Teachers' principal leadership .....
Parents' principal leadership .....
Learners' principal leadership .....
Administrators' principal leadership .....
Other, Please explain
.....

1. **The 3 main factors that influence or assist me in performing well at our school are**

_____
_____
_____

3. The 3 main factors that stop or hinder us as a staff team to perform at our most effective level are

_____
_____

THANK YOU VERY MUCH FOR YOUR KIND CO-OPERATION.

8

NMMU Research Clearance No: H14-BES-BUS-074

Nelson Mandela METROPOLITAN UNIVERSITY Business School
Leaders for tomorrow

Dear Respondent **ALL EDUCATORS Excluding PRINCIPALS**

I am studying towards my DBA (Doctor in Business Administration) degree at the Nelson Mandela Metropolitan University Business School. I am conducting research on the relationship between leadership, communication, engagement and performance in secondary schools. I believe that my study will make an important contribution to the improvement of effective performance of both operational teams in secondary schools and teaching and learning outcomes.

You are part of our selected sample of respondents whose views we seek on the above-mentioned matter. We would therefore appreciate it if you could answer a few questions. It should not take more than fifteen minutes of your time and we would like to thank you in advance for your co-operation and time.

There are no correct or incorrect answers. Please answer the questions as accurately and honestly as possible. For each statement, tick the number which best describes your experience or perception. For example, if you strongly agree with the statement, tick the number 5. If you strongly **disagree** with the statement, tick the number 1.

Please tick only one answer for each statement and answer all the questions.

Please note also that your participation in this study is entirely voluntary and that you have the right to withdraw from the study at any stage without any penalization.

Thank you very much for your valuable contribution.

Contact details:

Researcher: Marilyn Gibbs 041 504 2701 marilyn.gibbs@nmmu.ac.za

To verify the authenticity of the study, please contact

Prof Paul Poisat at 041-504 3750 paul.poisat@nmmu.ac.za.

ETHICAL APPROVAL: This questionnaire has been ethically cleared by:

Research Ethics Committee of the Nelson Mandela Metropolitan University (Clearance Number: H14-BES-BUS-074)

Eastern Cape Education Department Permission: Dr Nyathi Ntsiko: Port Elizabeth.

Western Cape Education Department Permission: Dr Audrey Wyngaard:Cape Town

The NMMU Business School: 20 Bird Street, Central, Port Elizabeth, South Africa | Tel: +27 (0)861 504 500 | E-mail: business.school@nmmu.ac.za
Main Campus and International Head Office: Port Elizabeth, South Africa | Affiliate Campuses and Satellite Offices: Pretoria, East London and George
www.leadersfortomorrow.co.za Connect with us on our social networks via our website

Appendix 2A: Eastern Cape Provincial Education Department Permission Letter

Province of the
EASTERN CAPE
EDUCATION

Port Elizabeth District
Ethel Valentine Building • Sutton Road • Sidwell • Port Elizabeth • Eastern Cape
Private Bag X3931 • North End • Port Elizabeth • 6056 • REPUBLIC OF SOUTH AFRICA
Tel: +27 (0)41-4034400 • Fax: +27 (0)41-4510193 • Website: www.ecdoe.gov.za

Enquiries: Dr Nyathi Ntsiko Email: nyathi.ntsiko@edu.ecprov.gov.za

Professor P. Poisat
Business School
Nelson Mandela Metropolitan University
Port Elizabeth
email: paul.poisat@nmmu.ac.za; Marilyn.gibbs@nmmu.ac.za

Dear Prof Poisat

REQUEST FOR PERMISSION TO CONDUCT RESEARCH IN DEPARTMENTAL SCHOOLS: PORT ELIZABETH – MS MARILYN GIBBS (STUDENT)

I refer to your letter dated 07 July 2014 and received 15 September 2014.

Permission is hereby granted for Ms Marilyn Gibbs (student) to conduct her research on the following conditions:

1. Her research must be conducted on a voluntary basis.
2. All ethical issues relating to research must be honoured.
3. Her research is subject to the internal rules of the school, including its curricular programme and its code of conduct and must not interfere in the day-to-day routine of the school.

Kindly present a copy of this letter to the principal as proof of permission.

I wish her good luck in her research.

Yours faithfully

DR NYATHI NTSIKO
DISTRICT DIRECTOR: PORT ELIZABETH
/ab

17 September 2014

building blocks for growth

PGDP EASTERN CAPE

Masiphakamisane!

Appendix 2B: Western Cape Provincial Education Department Permission Letter

Western Cape Government
Education

Directorate: Research

Audrey.wyngaard@westerncape.gov.za
tel: +27 021 467 9272
Fax: 0865902282
Private Bag x9114, Cape Town, 8000
wced.wcape.gov.za

REFERENCE: 20140122-42293
ENQUIRIES: Dr A T Wyngaard

Mrs Marilyn Gibbs
72 Constance Road
Fernglen
Port Elizabeth
6070

Dear Mrs Marilyn Gibbs

RESEARCH PROPOSAL: THE RELATIONSHIP BETWEEN LEADERSHIP COMMUNICATION ENGAGEMENT AND EFFECTIVE PERFORMANCE IN SECONDARY SCHOOLS

Your application to conduct the above-mentioned research in schools in the Western Cape has been approved subject to the following conditions:

1. Principals, educators and learners are under no obligation to assist you in your investigation.
2. Principals, educators, learners and schools should not be identifiable in any way from the results of the investigation.
3. You make all the arrangements concerning your investigation.
4. Educators' programmes are not to be interrupted.
5. The Study is to be conducted from **02 February 2015 till 25 June 2015**
6. No research can be conducted during the fourth term as schools are preparing and finalizing syllabi for examinations (October to December).
7. Should you wish to extend the period of your survey, please contact Dr A.T Wyngaard at the contact numbers above quoting the reference number?
8. A photocopy of this letter is submitted to the principal where the intended research is to be conducted.
9. Your research will be limited to the list of schools as forwarded to the Western Cape Education Department.
10. A brief summary of the content, findings and recommendations is provided to the Director: Research Services.
11. The Department receives a copy of the completed report/dissertation/thesis addressed to:

    The Director: Research Services
    Western Cape Education Department
    Private Bag X9114
    CAPE TOWN
    8000

We wish you success in your research.

Kind regards.
Signed: Dr Audrey T Wyngaard
Directorate: Research
DATE: 23 January 2015

Appendix 2C: KwaZulu-Natal Provincial Education Department Permission Letter

education

Department:
Education
PROVINCE OF KWAZULU-NATAL

Enquiries: Nomangisi Ngubane | Tel: 033 392 1004 | Ref.:2/4/8/492

Ms M Gibbs
72 Constance Road
Broadwood
PORT ELIZABETH
6070

Dear Ms Gibbs

PERMISSION TO CONDUCT RESEARCH IN THE KZN DoE INSTITUTIONS

Your application to conduct research entitled: **"AN ANALYSIS OF LINKAGES BETWEEN LEADERSHIP, ENGAGEMENT AND COMMUNICATION FOR EFFECTIVE PERFORMANCE IN SECONDARY SCHOOLS"**, in the KwaZulu-Natal Department of Education Institutions has been approved. The conditions of the approval are as follows:

1. The researcher will make all the arrangements concerning the research and interviews.
2. The researcher must ensure that Educator and learning programmes are not interrupted.
3. Interviews are not conducted during the time of writing examinations in schools.
4. Learners, Educators, Schools and Institutions are not identifiable in any way from the results of the research.
5. A copy of this letter is submitted to District Managers, Principals and Heads of Institutions where the intended research and interviews are to be conducted.
6. The period of investigation is limited to the period from 20 July 2015 to 31 August 2016.
7. Your research and interviews will be limited to the schools you have proposed and approved by the Head of Department. Please note that Principals, Educators, Departmental Officials and Learners are under no obligation to participate or assist you in your investigation.
8. Should you wish to extend the period of your survey at the school(s), please contact Miss Connie Kehologile at the contact numbers below.
9. Upon completion of the research, a brief summary of the findings, recommendations or a full report / dissertation / thesis must be submitted to the research office of the Department. Please address it to The Office of the HOD, Private Bag X9137, Pietermaritzburg, 3200.
10. Please note that your research and interviews will be limited to schools and institutions in KwaZulu-Natal Department of Education.

Pinetown District

Sisonke District

Nkosinathi S.P. Sishi, PhD
Head of Department: Education
Date: 16 July 2015

KWAZULU-NATAL DEPARTMENT OF EDUCATION
POSTAL: Private Bag X 9137, Pietermaritzburg, 3200, KwaZulu-Natal, Republic of South Africa
PHYSICAL: 247 Burger Street, Anton Lembede House, Pietermaritzburg, 3201. Tel. 033 392 1004
EMAIL ADDRESS: kehologile.connie@kzndoe.gov.za / Nomangisi.Ngubane@kzndoe.gov.za
CALL CENTRE: 0860 596 363; Fax: 033 392 1203 WEBSITE: WWW.kzneducation.gov.za

Appendix 3: Ethical Approval Nelson Mandela Metropolitan University: H14-BES-BUS-074

Nelson Mandela Metropolitan University
for tomorrow

Ref: H14-BES-BUS-074 [Approved]

Chairperson: Faculty RTI Committee
Faculty of Business and Economics Sciences
Tel. +27 (0)41 504 2906

7 August 2014

Prof P Poisat
NMMU
Business School
Second Avenue Campus

Dear Prof Poisat

PROJECT PROPOSAL: THE RELATIONSHIP BETWEEN LEADERSHIP, COMMUNICATION, ENGAGEMENT AND EFFECTIVE PERFORMANCE IN SECONDARY SCHOOLS (DBA)

PRP: Prof P Poisat
PI: Mrs M Gibbs

Your above-entitled application for ethics approval served at Fac RTI.

We take pleasure in informing you that the application was approved by the Committee. However, please note that the approval is on condition that permission to conduct the study is also obtained from the other relevant individuals, parties, organisations and/or role players to which the study pertains.

The ethics clearance reference number is **H14-BES-BUS-074**, and is valid for three years. Please inform the Faculty RTI Committee, via the faculty representative, if any changes (particularly in the methodology) occur during this time.

Please inform your co-investigators of the outcome.

Yours sincerely

Prof C Rootman
Faculty of Business and Economic Sciences

Appendix 4: Sample of Principal letter of school's permission to participate

School Principal Consent Form

I give consent for you to approach educators and staff at this school to participate in this study.

I have read the Project Information Statement explaining the purpose of the research project and understand that:

- The role of the school is voluntary
- I may decide to withdraw the school's participation at any time without penalty
- Only educators who consent will participate in the project
- All information obtained will be treated in strictest confidence.
- The educators' names will not be used and individual respondents will not be identifiable in any written reports about the study.
- The school will not be identifiable in any written reports about the study.
- Participants may withdraw from the study at any time without penalty.
- A report of the findings will be made available to the school.
- I may seek further information on the project from Marilyn Gibbs on 041 5042701 or Prof Paul Poisat 041 504 3750

_____ _____

Principal Signature

_____

Date

Please return to: Marilyn Gibbs Marilyn.gibbs@nmmu.ac.za on an official school letterhead

Many thanks for your time and valuable support in this research study. It is greatly appreciated.

Appendix 5: Sample of Educators permission letter to participate

APPENDIX 3: INFORMATION LETTER TO PARTICPANTS

Faculty of Business Economics
NMMU
Tel: +27 (0)41 504-xxxx Fax: +27 (0)41-504-xxxx
E-mail Faculty Chairperson: xxxx@nmmu.ac.za
Date 4th July 2014

Ref: H14-BES-BUS-074
Contact person: Prof Paul Poisat /Marilyn Gibbs, NMMU

Dear Valued Respondent

You are being asked to participate in a research study. We will provide you with the necessary information to assist you to understand the study and explain what would be expected of you the participant. These guidelines would include the outline, benefits, and your rights as a study subject. Please feel free to ask the researcher to clarify anything that is not clear to you.

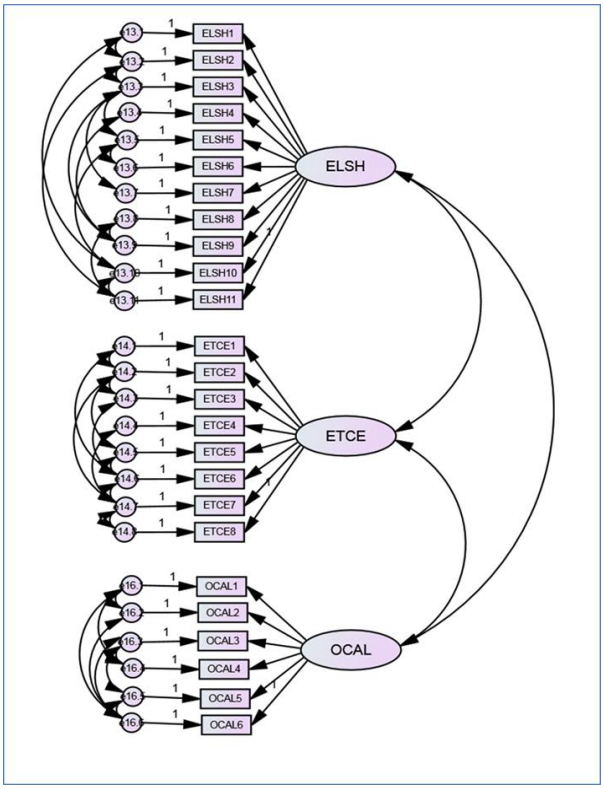
To participate, it will be required of you to provide a written consent that will include your signature, date and initials to verify that you understand and agree to the conditions. Information regarding the study is summarised on the informed consent form. (Appendix 2). You have the right to query concerns regarding the study at any time. Please contact the researcher for any queries or problems during the study. Telephone numbers of the researcher are provided. Please feel free to call these numbers.

Furthermore, it is important that you are aware of the fact that the ethical integrity of the study has been approved by the Research Ethics Committee (Human) of the university. The REC-H consists of a group of independent experts that has the responsibility to ensure that the rights and welfare of participants in research are protected and that studies are conducted in an ethical manner. Studies cannot be conducted without REC-H's approval. Queries with regard to your rights as a research subject can be directed to the Research Ethics Committee (Human), Department of Research Capacity Development, PO Box 77000, Nelson Mandela Metropolitan University, Port Elizabeth, 6031. If they are unable to assist you, you may write to: The Chairperson of the Research, Technology and Innovation Committee, PO Box 77000, Nelson Mandela Metropolitan University, Port Elizabeth, 6031.

Participation in this research is completely voluntary and you will in no way be penalised if you choose not to take part in this study. If you do complete the survey you do not necessarily need to partake and volunteer for a focus group. The focus group would require only one meeting in a group interview and is voluntary. You have the right to not complete the survey or withdraw at any given time. The study may be terminated at any time by the researcher, the sponsor or the Research Ethics Committee (Human).
Although your identity will at all times remain confidential, the results of the research study may be presented at scientific conferences or in specialist publications, but both individuals and schools will not be identified with complete confidentiality being maintained. The informed consent statement has been prepared in compliance with current statutory guidelines.
Thank you in advance for your participation and time.

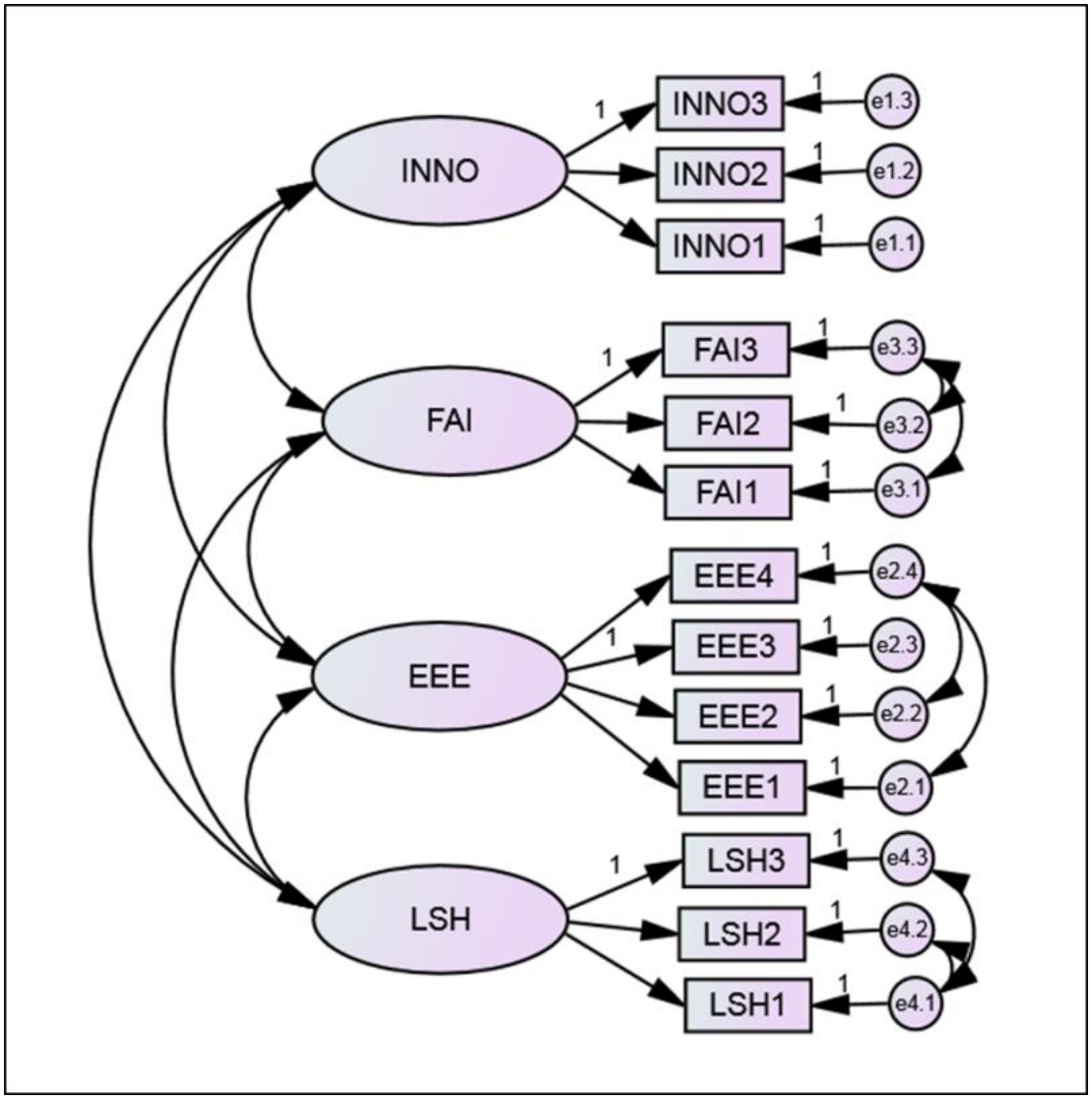
Yours sincerely
MARILYN GIBBS
RESEARCHER Cell 084 583 1958 (W) 041 504 2701
Signed consent by the respondent……Date……
PLEASE HAND IN COMPLETED QUESTIONNAIRE IN SEALED ENVELOPE BY……

Appendix 6: CFA diagram of Original TPI



Appendix 6: Original CFA diagram, before adjustments of this TPI sub-model A: Original.

Appendix 7: CFA diagram of Original SHPWI



Appendix 7: CFA of School High Performance Work Index (SHPWI) Sub Model B: Original

Appendix 8: SHPWI 2 factor structure

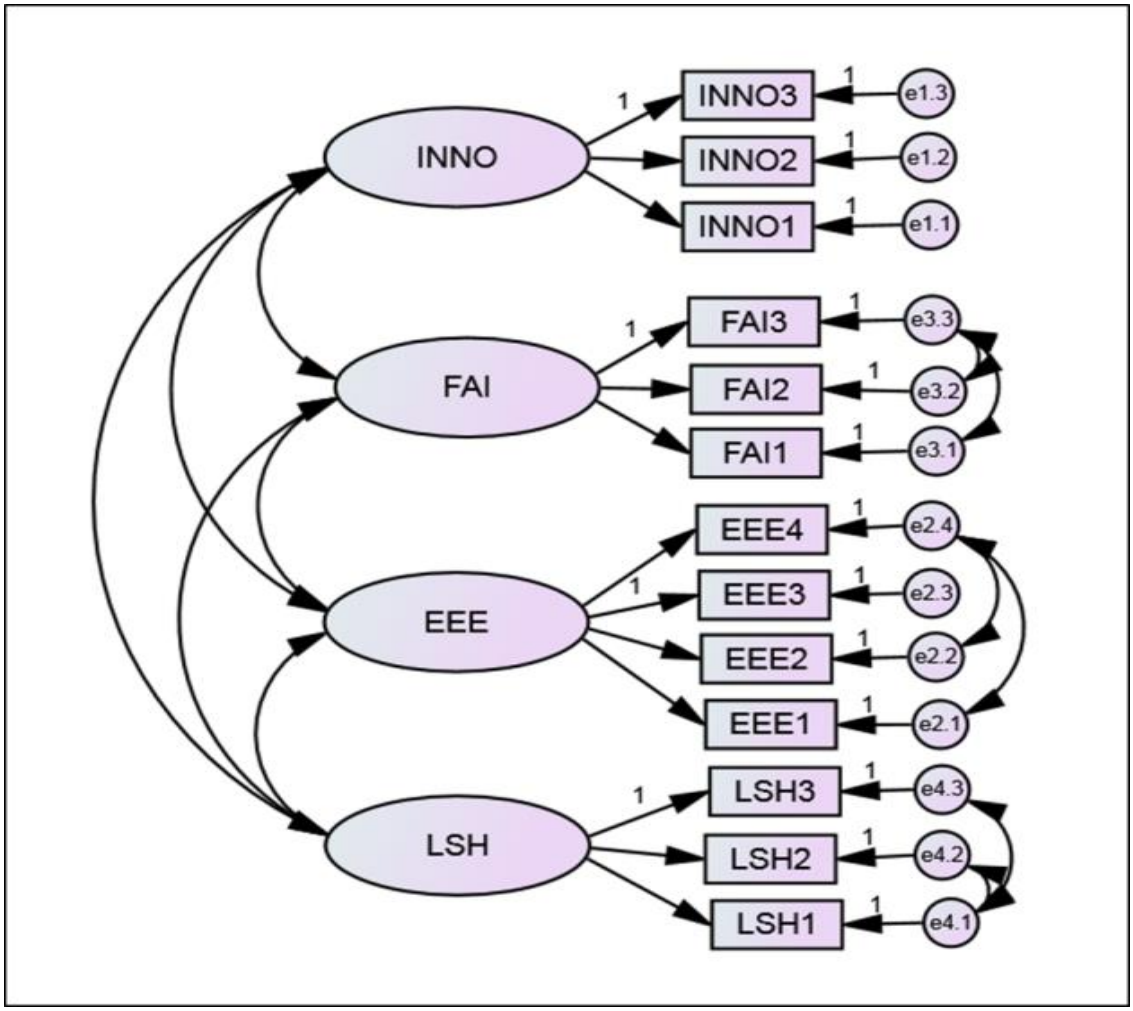
Min. Signif. Loading	NS	Factor	Cross Loading	Non-Sig. Loading	Item	Factor 1	Min. Loading deemed significant Factor 2
.300	Yes	1	-	-	FAI2	**.790**	.175
.300	Yes	1	-	-	LSH3	**.754**	**.322**
.300	Yes	1	-	-	INNO3	**.746**	.237
.300	Yes	1	-	-	FAI3	**.725**	.246
.300	Yes	1	-	-	FAI1	**.721**	.205
.300	Yes	1	-	-	INNO2	**.718**	.138
.300	Yes	1	-	-	EEE1	**.606**	**.538**
.300	Yes	1	Yes	-	EEE3	**.592**	**.554**
.300	Yes	2	-	-	LSH1	.110	**.818**
.300	Yes	2	-	-	EEE2	**.400**	**.711**
.300	Yes	2	-	-	EEE4	.300	**.691**
.300	Yes	2	-	-	INNO1	.090	**.618**
.300	Yes	2	Yes	-	LSH2	**.502**	**.530**
.300	Yes	-		Significant	Expl.Var	4.551	3.222
.300	Yes	-		**59.8%**	% of Total	35.0%	24.8%

Appendix 8: Adjusted model excluded Items: INNO1, EEE2 and LSH factor became HLSC which included LSH2, LSH3 and OSCL1, 2 and 3. Added: Support (SUP), and Communication (COMM).

Appendix 9: Adjusted SHPWI models

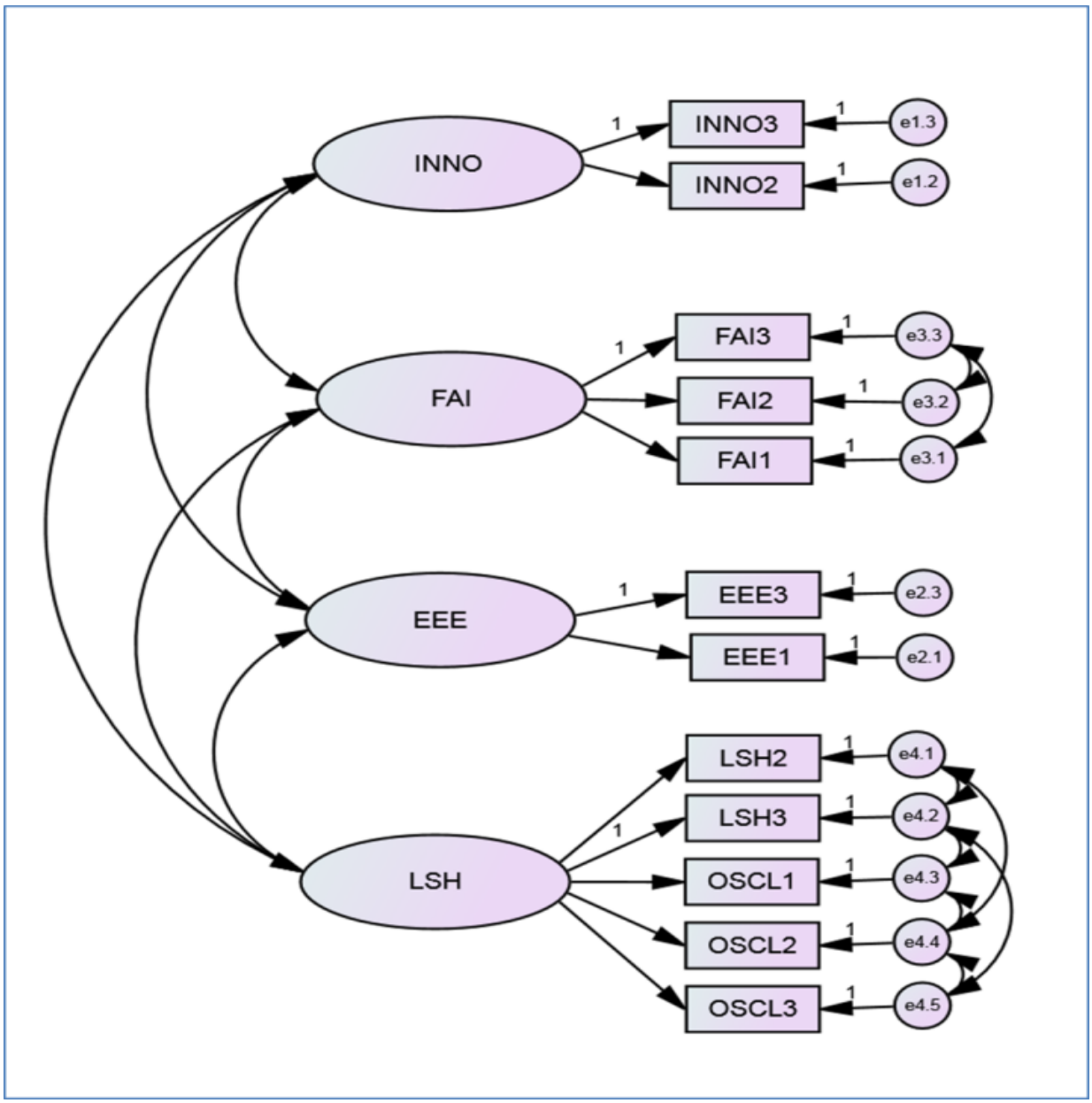
Value	Eigenvalues Extraction: Principal components			
	Eigenvalue	% Total	Cumulative	**Cumulative**
1	**6.512659**	50.09738	6.51266	**50.0974**
2	**1.260500**	9.69616	7.77316	**59.7935**
3	0.967322	7.44094	8.74048	67.2345

Appendix 9A: Exploratory Factor Analysis (EFA) of the School High Performance Work Index.



Appendix 9B: Original SHPWI: CFA analysis with four factors before EFA

Adjusted: SHPWI Sub-Model B (Independent Variable2



Appendix 9C: Revised SHPWI with personal (Individual) items removed and OSCL items added, as well as LSH2 and LSH3 items added to the factor Hybrid Leadership Climate (HLSC).

Adjusted model: Other sub-factors added Support (SUP) and Communication (COMM).

Appendix 10: CFA analysis of Perceptions of Learner Engagement (EPLE)

Sample size	**n**	**CFA EPLE**	**399**
No. of items	**m**		**5**
Sample size; No. of items Category	**n;m.Cat.**	250 < n < 1000; m ≤ 12	
Absolute/predictive fit	**Abbr.**	**Target**	**Observed**
Chi-square (Maximum likelihood)	χ^2		5.49
	df		3
	p	≥ .050	**.139**
	χ^2/df	≤ 3	**1.83**
Comparative Fit Indices			
Bentler-Bonnet normed fit index	**NFI**	≥ .95	**1.00**
Bentler comparative fit index	**CFI**	≥ .95	**1.00**
Root mean square error of approximation	95%Lo		**.000**
	RMSEA	≤ .08	**.046**
	95%Hi		.105

Appendix 10: CFA Analysis: *Perceptions of Learners Engagement (EPLE)*