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**HOW CORPORATE STRATEGY CONTRIBUTES TO FIRM PERFORMANCE: A
CROSS-SECTIONAL STUDY OF RESOURCE GOVERNANCE DECISION MAKING
IN US FIRMS.**

A thesis presented in partial fulfilment of the requirements for the degree of
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Corporate strategy has been a neglected topic in both theoretical and empirical discussions on superior firm performance. In addition to using competitive strategy to attain sustainable competitive advantage, firms should also focus on achieving a corporate level measure of performance, namely, persistent superior firm performance. The resource based theory paradigm suggests that factors which lead to superior firm performance are largely endogenous to the firm. Corporate strategy is one such factor. Empirical evidence has shown that corporate strategy matters. It has a small but significant influence on the variance of both business unit performance and firm performance. This research extends current knowledge by determining, firstly, if corporate strategy could be used to distinguish successful firms from unsuccessful firms and, secondly, if so, how does corporate strategy actually influence firm performance. Fifteen Fortune 1000 US firms were categorised into three subpopulations based on persistent superior, average and inferior levels of performance. Eighteen indicators representing both excellence in corporate strategy and the incidence of corporate strategy were collected through the content analysis of Wall Street Journal articles from 1980 to 2004. Various inferential statistical techniques were conducted to provide a broad profile of findings.

The frequency of resource governance decisions was found to distinguish the persistent superior firm performance category from both the persistent average and inferior firm performance categories. The corporate level decision making skill perspective provides an explanation for this empirical evidence. Superior performing firms, through the use of superior corporate level decision making skills, are able to simplify resource governance decision making (e.g., decision making rules). This simplification results in superior resource governance decisions being made, *lowering* the incidence of resource governance decisions. This research extends resource based theory by providing empirical evidence of the importance of resource governance decisions in achieving persistent superior firm performance. This research also integrates the concept of superior corporate level decision making skills into existing resource based theory. The research has implications also for both theoretical and practitioner literatures as it redefines corporate strategy. It shows that corporate strategy matters to firm performance, and importantly, it shows why corporate strategy matters.

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TABLE OF CONTENTS

Abstract	i
Acknowledgements	ii
Table of Contents	iii
List of Abbreviations	vii
List of Tables	x
List of Figures	xiv
Chapter 1 Introduction	1
1.1 Research aims and objectives	2
1.2 Research process	3
1.3 Delimitation of scope	7
1.4 Justification for the research	8
1.5 Outline of the thesis	9
Chapter 2 Literature review	11
2.1 Chapter overview	11
<i>Part I: Theoretical literature review</i>	<i>11</i>
2.2 What is the aim of strategic management?	11
2.3 Defining persistent superior firm performance	12
2.4 The exogenous perspective of sustainable competitive advantage	14
2.4.1 Structure-conduct-performance paradigm	15
2.5 The endogenous perspective of sustainable competitive advantage	25
2.5.1 Resource based theory	26
2.6 Differences between the exogenous and endogenous perspectives of sustainable competitive advantage	41
2.7 Theoretical summary: Part I	42
<i>Part II: Empirical literature review</i>	<i>47</i>
2.8 Empirical overview	47
2.9 The empirical evidence of corporate effects	48
2.9.1 Methodologies employed	54
2.9.2 Measurements of corporate effects	55
2.9.3 Validity issues with models employed to estimate corporate effects	60
2.9.4 Corporate effects research summary	65
2.10 Other empirical corporate strategy – performance research	66
2.10.1 Specific corporate strategies and their effect on performance	66
2.10.2 Normative models of the parent, corporate advantage and performance	68
2.10.3 Implicit assumptions of a relationship between corporate strategy and performance	70
2.11 Empirical summary: Part II	72
Chapter 3 Conceptual framework and operationalisation	75
<i>Part I: A conceptual framework of corporate strategy</i>	<i>75</i>
3.1 Conceptual overview	75

3.2	What is corporate strategy?	75
3.2.1	Corporate strategy as all strategy formulated within the organisation	76
3.2.2	Corporate strategy as strategy at the level of the corporate	76
3.2.3	Strategy at the corporate level	78
3.2.4	The definition of corporate strategy employed in this research	80
3.3	The ends and means of corporate strategy	81
3.3.1	Organisational direction	82
3.3.2	Means of achieving organisational direction	89
3.4	Corporate strategy and persistent superior firm performance	102
3.4.1	The proposed relationship between corporate strategy and persistent superior firm performance	104
3.5	Conceptual framework summary: Part I	104
<i>Part II: Operationalisation of corporate strategy attributes</i>		105
3.6	Introduction to operationalisation	106
3.7	Operationalising firm performance	110
3.8	Hypothesis five: Corporate strategy	112
3.9	Indicators of the corporate strategy attributes	113
3.9.1	Strategic intent	113
3.9.2	Organisational domain	117
3.9.3	Internal governance	121
3.9.4	Resource governance	124
3.10	The nature of the association between the firm performance categories	127
3.11	Potential confounds	127
3.11.1	The potential confounds considered	127
3.11.2	The potential confounds selected	130
3.12	A model measuring the effect of corporate strategy on persistent superior firm performance	134
3.13	Operationalisation summary: Part II	136
Chapter 4 Methodology and data		138
4.1	Introduction	138
4.2	Selection of the time frame	139
4.3	Share market price	139
4.4	Selection of sample firms	140
4.4.1	Sample error	143
4.5	Data collection tool: Content analysis	144
4.6	Selection of the data source for explanatory variables: The Wall Street Journal	145
4.6.1	The benefits of the Wall Street Journal	146
4.6.2	Limitations of the data source	147
4.7	Data cleaning	147
4.7.1	Missing data	148
4.7.2	Index creation	149
4.7.3	Outliers	149
4.7.4	Data transformation	155
4.8	Statistical analysis	155
4.8.1	Descriptive statistics	155
4.8.2	Inferential statistics: Tests of heterogeneity for three samples	156
4.9	Dataset summary	164
4.10	Reliability	167
4.10.1	Stability	168

4.10.2	Consistency	168
4.10.3	Robustness	169
4.11	Validity	169
4.11.1	Internal validity	169
4.11.2	External validity	172
4.12	Potential confound variables	173
4.12.1	Data source selection	173
4.12.2	Potential confound results	175
4.12.3	Potential confound results summary	176
4.13	Summary	177
Chapter 5	Results	179
<i>Part I: Preliminary data analysis</i>		179
5.1	Preliminary data analysis overview	179
5.2	Tests for normality	179
5.3	Tests for the assumption of homogeneity of variance	181
5.4	Exploratory data analysis	181
<i>Part II: Hypothesis testing: Between-firm performance categories</i>		182
5.5	Hypothesis testing overview	182
5.6	Hypothesis testing: Corporate strategy	183
5.6.1	Did the corporate strategy index differ between the firm performance categories?	183
5.6.2	Could the corporate strategy index be used to distinguish the PSFP category from the non-PSFP categories?	185
5.7	Hypothesis testing: Strategic intent	187
5.8	Hypothesis testing: Organisational domain	187
5.9	Hypothesis testing: Internal governance	188
5.10	Hypothesis testing: Resource governance	188
5.10.1	Did the resource governance attribute index differ between the firm performance categories?	189
5.10.2	Could the resource governance attribute index be used to distinguish the PSFP from the category non-PSFP categories?	191
5.11	Hypothesis testing results summary: Part II	192
<i>Part III: Hypothesis testing: Excellence and quantity indices</i>		193
5.12	Excellence and quantity overview	193
5.13	Hypothesis testing: Corporate strategy excellence	194
5.13.1	Did the corporate strategy excellence index differ between the firm performance categories?	194
5.14	Hypothesis testing: Corporate strategy quantity	196
5.14.1	Did the corporate strategy quantity index differ between the firm performance categories?	196
5.14.2	Could the corporate strategy quantity index be used to distinguish the PSFP category from the non-PSFP categories?	198
5.15	Hypothesis testing: Quantity indices	199
5.15.1	Did the quantity indices differ between the firm performance categories?	199
5.15.2	Could the resource governance quantity index be used to distinguish the PSFP category from the non-PSFP categories?	202
5.16	Excellence and quantity indices results summary: Part III	203

5.17	Chapter summary	204
Chapter 6	Discussion	205
6.1	Introduction	205
6.2	Identifiable patterns in the dataset	205
6.2.1	Factors to consider when interpreting the statistically nonsignificant results	211
6.3	Distinction between the PSFP versus the non-PSFP firm performance categories: Theoretical explanations	212
6.3.1	Alternative explanation 1: Chance	213
6.3.2	Alternative explanation 2: Spuriousness	213
6.3.3	Alternative explanation 3: Core competencies	213
6.3.4	Alternative explanation 4: The role of corporate level resource governance decision making skill	224
6.4	Theoretical implications	245
6.4.1	Theoretical implications: Core competency theory	245
6.4.2	Theoretical implications: Corporate level decision making skill	249
6.5	Empirical, conceptual and operational implications	255
6.5.1	Strategic intent	255
6.5.2	Organisational domain	257
6.5.3	Internal governance	258
6.5.4	Resource governance	260
6.5.5	Corporate strategy	261
6.6	Implications for the field of strategic management	264
6.7	Implications for practitioners	265
6.7.1	Implications for PIFP firms	267
6.7.2	Implications for PAFP firms	268
6.7.3	Implications for PSFP firms	269
6.8	Summary	270
Chapter 7	Conclusion	272
7.1	Chapter introduction	272
7.2	The theory and results	273
7.2.1	The corporate level decision making skill perspective	274
7.3	Limitations: Exogenous to the results	276
7.4	Directions for future research	277
7.5	Recommendations for practitioners	279
References		281
Appendix 1	Coding book	312
Appendix 2	Examples of article coding	317
Appendix 3	Exploratory data analysis	324
Appendix 4	Hypothesis testing results	335
Appendix 5	Discriminant analysis results	338
Appendix 6	Excellence and quantity results	350

LIST OF ABBREVIATIONS

Text abbreviations

BU	Business unit performance
Compustat	Standard and Poor's Compustat Business-Segment Reports database
CRSP	Centre for Research in Security Prices of the University of Chicago
DJIA	DOW Jones Industrial Average
FTC	Federal Trade Commission database
H-form	Holding firm organisational structure
IO	Industrial organisation economics
M-form	Multidivisional firm organisational structure
PAFP	Persistent average firm performance
PIFP	Persistent inferior firm performance
PSFP	Persistent superior firm performance
RBT	Resource based theory
ROA	Return on assets
R&D	Research and development
SBU	Single business unit
SCA	Sustainable competitive advantage
SCP	Structure-conduct-performance paradigm
SIC	Standard Industrial Classification codes
SMP	Share market price
SPSS	Statistical Package for Social Science 13.0 for Windows
US	United States of America
U-form	Functional firm organisational structure
WSJ	Wall Street Journal

Sample firm abbreviations

Amerada	Amerada Hess Corporation
BNSF	Burlington Northern Santa Fe Corporation
CMS	CMS Energy Corporation
CSXC	CSX Corporation
Duke	Duke Energy Corporation
Emerson	Emerson Electric Company
FPL	FPL Group, Incorporated
GenCorp	GenCorp Incorporated
Masco	Masco Corporation
Northrop	Northrop Grumman Corporation
Raytheon	Raytheon Company
Southern	Southern Company
Sunoco	Sunoco Incorporated
Union	Union Pacific Corporation
Whirlpool	Whirlpool Corporation

Hypotheses and subhypotheses abbreviations

ϵ	Error
CS	Corporate strategy index
CSQ	Quantity of corporate strategy decisions index

CSX	Excellence in corporate strategy index
FS	Firm size (potential confound variable)
HE	Historical endowment (potential confound variable)
H ₀	Null hypothesis
IG	Internal governance attribute index
IGQ	Quantity of internal governance decisions index
CLC	Corporate level commitment to the status quo (potential confound variable)
OD	Organisational domain attribute index
ODQ	Quantity of organisational domain decisions index
ODX	Excellence in organisational domain index
RG	Resource governance attribute index
RGQ	Quantity of resource governance decisions index
RGX	Excellence in resource governance index
SI	Strategic intent attribute index
SIQ	Quantity of strategic intent decisions index
SIX	Excellence in strategic intent index

Additional variables used in formulae

ASI	Alignment (strategic intent excellence variable)
CIG	Change in internal governance decision (internal governance quantity variable)
CSI	Change in strategic intent (strategic intent quantity variable)
DFD	Decrease in firm domain decision (organisational domain quantity variable)
EMC	Emotional connection (strategic intent excellence variable)
FDD	Firm domain decision (organisational domain quantity variable)
FUT	Futurity (strategic intent excellence variable)
IFD	Increase in firm domain decision (organisational domain quantity variable)
IGC	Consequences of internal governance (internal governance variable)
JV	Joint venture decision (organisational domain quantity variable)
RAL	Resource allocation decision (resource governance quantity variable)
RGD	Resource governance decision (resource governance quantity variable)
RL	Resource leverage (resource governance excellence variable)
RLM	Resource leverage mechanisms (resource governance excellence variable)
RNC	Revealing the new and creativity (strategic intent excellence variable)
SSD	Statement of strategic direction (strategic intent variable)
STR	Stretch (strategic intent excellence variable)
SYN	Synergy (organisational domain excellence variable)

Statistical notations

ANOVA I	One-way independent analysis of variance test
ANOVA	Analysis of variance test
BDM	Brunner, Dettter and Munk heteroscedastic rank-based ANOVA test
COV	Variance components analysis test
<i>D</i>	Kolmogorov-Smirnov test statistic
df	Degrees of freedom
<i>F</i>	Levene's test statistic
GH	Games-Howell test
<i>H</i>	Kruskal-Wallis test statistic
<i>J</i>	Jonckheere-Terpstra test statistic
JT	Jonckheere-Terpstra test
KW	Kruskal-Wallis one-way analysis of variance by ranks test

M	Sample mean
Mdn	Sample median
MW	Mann-Whitney test
N	Sample size
η^2	KW effect size statistic
p	The probability value indicating the significance of a statistical test
r	Effect size statistic for JT, MW and planned contrasts
s	Sample standard deviation
SC	Siegel-Castellan critical difference test
Sig	Significance
τ	Kendall's tau statistic
T2	Tamhane's T2 test
T3	Dunnett's T3 test
U	Mann-Whitney test statistic
v	versus
ω	ANOVA1 effect size statistic
Welch's F	One-way independent analysis of variance test statistic for possible violation of the homogeneity of variance assumption
X^2	Chi-square statistic
Λ	Wilks' lambda statistic

LIST OF TABLES

Table 2.1	Summary of the structure-conduct-performance and resource based theory paradigms.	43-45
Table 2.2	Empirical research of corporate effects reported in academic literature during the period of 1985 – 2006.	49-53
Table 3.1	Summary of research statements.	105
Table 3.2	Levels of data analysis and the associated variables and indices.	108
Table 3.3	Performance variable.	110
Table 3.4	Strategic intent variables.	116
Table 3.5	Organisational domain variables.	120
Table 3.6	Internal governance variables.	123
Table 3.7	Resource governance variables.	125
Table 3.8	Potential confounds.	131
Table 3.9	Abbreviations for the corporate strategy equations.	135
Table 4.1	Outline of methodological stages.	138
Table 4.2	Process to select the three firm performance subpopulations.	140
Table 4.3	Selection of persistent superior firm performance category sample firms.	142
Table 4.4	Selection of persistent average firm performance category and persistent inferior firm performance category sample firms.	143
Table 4.5	Levels of data analysis and the associated variables and indices.	148
Table 4.6	Corporate strategy and attribute indices outliers by firm.	151
Table 4.7	Adjustments to corporate strategy and attribute index values by firm.	152
Table 4.8	Excellence and quantity indices outliers.	153
Table 4.9	Adjustments to excellence and quantity indices outliers.	154
Table 4.10	The corporate strategy index and the attribute indices by firm performance categories.	165
Table 4.11	Validity and reliability measurement methods.	167
Table 4.12	Potential confound data sources.	174

Table 4.13	Kruskal-Wallis one-way ANOVA by ranks test and Brunner, Deitter and Munk heteroscedastic rank-based ANOVA test results for the potential confound variables.	175
Table 4.14	One-way independent ANOVA test results for the potential confound variables.	176
Table 5.1	Kruskal-Wallis test for the corporate strategy index.	184
Table 5.2	Mann-Whitney tests for the corporate strategy index: Post-hoc test for Kruskal-Wallis test.	185
Table 5.3	Siegel-Castellan critical difference test for the corporate strategy index: Post-hoc test for Kruskal-Wallis test.	186
Table 5.4	Discriminant analysis: Summary of results.	190
Table 5.5	Summary of hypothesis results.	192
Table 5.6	Descriptive statistics: The corporate strategy excellence index by firm performance category.	194
Table 5.7	Descriptive statistics: The corporate strategy quantity index by firm performance category.	197
Table 5.8	Descriptive statistics: The quantity indices by firm performance category.	200
Table 5.9	Summary of excellence and quantity hypothesis results.	203
Table 6.1	Hypothesis summary.	206
Table 6.2	Mean and standard deviation: Corporate strategy and its attributes indices by firm performance category.	209
Table 6.3	Mean and standard deviation: Quantity and excellence indices by firm performance category.	210
Table 6.4	Characteristics of core competencies across the firm performance categories.	215-216
Table 6.5	Characteristics of attributes of corporate level decision makers across the firm performance categories.	227
Table 6.6	Characteristics of frames of references across the firm performance categories.	232
Table 6.7	Characteristics of search and evaluation of alternatives across the firm performance categories.	236
Table 6.8	Characteristics of decision implementation across the firm performance categories.	239

Table 6.9	Outcomes of heterogeneous corporate level decision making skill in resource governance.	243
Table A3.1	Descriptive statistics: The corporate strategy index by firm performance category.	324
Table A3.2	Descriptive statistics: The strategic intent attribute index by firm performance category.	327
Table A3.3	Descriptive statistics: The organisational domain attribute index by firm performance category.	329
Table A3.4	Descriptive statistics: The internal governance attribute index by firm performance category.	331
Table A3.5	Descriptive statistics: The resource governance attribute index by firm performance category.	333
Table A4.1	Kruskal-Wallis test for the organisational domain attribute index.	335
Table A4.2	Kruskal-Wallis test for the internal governance attribute index.	335
Table A4.3	Kruskal-Wallis test for the resource governance attribute index.	336
Table A4.4	Mann-Whitney tests for the resource governance attribute index: Post hoc test for the Kruskal-Wallis test.	336
Table A4.5	Siegel-Castellan critical difference test for the resource governance attribute index: Post-hoc test for the Kruskal-Wallis test.	337
Table A5.1	Discriminant analysis: Test of equality of group means.	338
Table A5.2	Discriminant analysis: Eigenvalues.	339
Table A5.3	Discriminant analysis: Wilks' lambda.	340
Table A5.4	Discriminant analysis: Standardised canonical discriminant function coefficients.	341
Table A5.5	Discriminant analysis: Functions at group centroids.	341
Table A5.6	Discriminant analysis: Classification results.	342
Table A5.7	Casewise results: Strategic intent versus resource governance model.	344
Table A5.8	Casewise results: Organisational domain versus resource governance model.	345
Table A5.9	Casewise results: Resource governance versus internal governance model.	346
Table A5.10	Discriminant analysis: Box's M results.	349

Table A5.11	Discriminant analysis: Kappa.	349
Table A6.1	Jonckheere-Terpstra test for the corporate strategy quantity index.	351
Table A6.2	Kruskal-Wallis test for the corporate strategy quantity index.	351
Table A6.3	Siegel-Castellan critical difference test for the corporate strategy quantity index.	351
Table A6.4	Mann-Whitney tests for the corporate strategy quantity index.	352
Table A6.5	Kruskal-Wallis test for the quantity indices.	353
Table A6.6	Brunner, Detter and Munk heteroscedastic rank-based ANOVA test for the quantity indices.	354
Table A6.7	One-way independent ANOVA test for the quantity indices.	354
Table A6.8	Siegel-Castellan critical difference test for the resource governance index.	354
Table A6.9	Mann-Whitney tests for the resource governance quantity index.	355

LIST OF FIGURES

Figure 1.1	The relationship between the indices.	4
Figure 1.2	Theoretical model of the association between corporate level decision making skill and the rate of resource governance decisions.	6
Figure 2.1	Conceptualisations of the relationship between strategy and firm performance.	13
Figure 2.2	Model of structure-conduct-performance paradigm.	18
Figure 2.3	Model of resource based theory paradigm.	28
Figure 3.1	Strategy hierarchy.	77
Figure 3.2	Corporate strategy conceptual framework.	103
Figure 3.3	The proposed relationship between construct, attributes and concepts.	107
Figure 3.4	The relationship between the indices.	109
Figure 3.5	Monroe's (2002) sense of direction variables.	114
Figure 3.6	Monroe's (2002) sense of discovery variables.	114
Figure 3.7	Monroe's (2002) sense of destiny variables.	115
Figure 4.1	The relationship between the indices.	150
Figure 5.1	The relationship between the indices.	180
Figure 6.1	Strategic intent by firm performance category.	207
Figure 6.2	Organisational domain by firm performance category.	207
Figure 6.3	Internal governance by firm performance category.	208
Figure 6.4	Resource governance by firm performance category.	208
Figure 6.5	Corporate strategy by firm performance category.	209
Figure 6.6	Theoretical model of the association between the adoption of the core competency approach and the rate of resource governance decisions.	214
Figure 6.7	Theoretical model of the association between corporate level decision making skill and the rate of resource governance decisions.	225
Figure 6.8	Theoretical model of the association between corporate level decision making skill and the rate of resource governance decisions incorporating the core competency approach.	246

Figure 6.9	Theoretical model of the association between corporate level decision making skill and the rate of resource governance decisions.	251
Figure A3.1	Box plots of the corporate strategy index by firm performance category.	325
Figure A3.2	Box plots of the strategic intent attribute index by firm performance category.	328
Figure A3.3	Box plots of the organisational domain attribute index by firm performance category.	330
Figure A3.4	Box plots of the internal governance attribute index by firm performance category.	332
Figure A3.5	Box plots of the resource governance attribute index by firm performance category.	334
Figure A5.1	Function 1 versus Function 2 scatter plot: Strategic intent versus resource governance model.	347
Figure A5.2	Function 1 versus Function 2 scatter plot: Organisational domain versus resource governance model.	347
Figure A5.3	Function 1 versus Function 2 scatter plot: Resource governance versus internal governance model.	348
Figure A6.1	Box plots for the corporate strategy excellence index.	350
Figure A6.2	Box plots of the quantity indices.	353

1.0 INTRODUCTION

Strategic management research focuses on identifying reasons for firm performance (Hoskisson, Hitt, Wan, & Yiu, 1999). Firm performance heterogeneity has been linked to a number of sources, for example, opportunity responsiveness, creativity, and the redefining of customer expectations ahead of competitors. Firm success has been attributed to and summarised as arriving at the future, more prepared and better positioned than competitors (Hamel & Prahalad, 1994). A number of theoretical frameworks have been developed to account for interfirm performance heterogeneity, whether emphasising an endogenous perspective (the strengths and weaknesses of firms) or an exogenous perspective (the opportunities and threats evident in the firm's environment).

This research focuses on one largely endogenously derived source of interfirm performance variation, namely, corporate strategy. Corporate strategy is distinct from competitive and operational strategies because corporate strategy defines the firm's strategic intent and how the firm should be structured and administered (Thompson, 2001). Corporate strategy is a series or pattern of consistent and systematic decisions over time made at the corporate level of a firm that integrate "an organization's major goals, policies, and action sequences into a cohesive whole" (Quinn, Mintzberg & James, 1988, p. 3). However, corporate strategy is not a singular element: it appears to comprise a number of different constructs. The conceptual framework developed and used in this study incorporates four such constructs, namely, strategic intent (representative of strategy formulation), organisational domain, internal governance, and resource governance (representative of strategy implementation).

Corporate strategy is a fundamental concept within the field of strategic management. Yet, since corporate strategy's inception, it appears to have been successively misconstrued, at best partially understood, or at the least ambiguously defined. If the term "corporate strategy" has been misconceived and misunderstood, strategy evident at the corporate level of the strategic hierarchy appears to be even more ambiguous. The proliferation of definitions has resulted in unclear and distorted boundaries of corporate strategy, leading to confusion within both academic and practitioner fields of study. It is apparent then that the concept of corporate strategy is both internally inconsistent and incomplete.

The majority of the corporate strategy literature has been inclined towards practitioner rather than academic literature resulting in a predominantly normative model rather than the pursuit of

empirical knowledge. Consequently, empirical evidence linking firm performance and corporate strategy is limited. It should be noted that in addition to the possible direct impact of corporate strategy on persistent firm performance, although beyond the scope of this piece of research, corporate strategy has been found to influence business unit performance (BUP) which in turn indirectly influences firm performance. However, corporate strategy has been perceived as only playing a minor role on BUP (refer to Chapter Two for presentation of empirical evidence). More specifically, a clear understanding of how corporate strategy successfully influences firm performance does not yet appear to have been incorporated into the theory of strategic management. What then is corporate strategy and does a firm's corporate strategy result in sustained differences in performance? If so, can a model of corporate strategy be developed that accounts for disparate levels of performance in the long term.

1.1 RESEARCH AIM AND OBJECTIVES

A central goal of strategy research is to uncover the determinants of firm performance. The influences of corporate strategy on firm performance, that is heterogeneous corporate strategy, may actually result in heterogeneous firm performance. Corporate strategy could then be used to distinguish superior performing firms from other firms. This research endeavours to develop on the current literature on the construct of corporate strategy, and make an important contribution to the empirical research on corporate strategy in terms of its possible impact on persistent superior firm performance. A number of issues regarding the comprehensiveness of the corporate strategy concept exist, because much of this literature has focused on either diversified organisations or specific corporate strategies.

The aim of this research then is to elucidate and develop the extant corporate strategy literature in terms of uncovering if, and how, corporate strategy may be used to distinguish between persistently successful and unsuccessful firms. Therefore:

The primary aim of this research is to determine whether corporate strategy actually contributes to persistent firm performance.

To assist in fulfilling the above research aim, a number of steps will sequentially need to be undertaken and completed, namely, the key attributes of corporate strategy will be described and a number of propositions presented to highlight the primary principles fundamental to the concept of corporate strategy. An integrative framework for uncovering the extent of the

attributes of corporate strategy within persistently successful firms will then be formulated and statistically tested. Therefore, the three objectives of the research are:

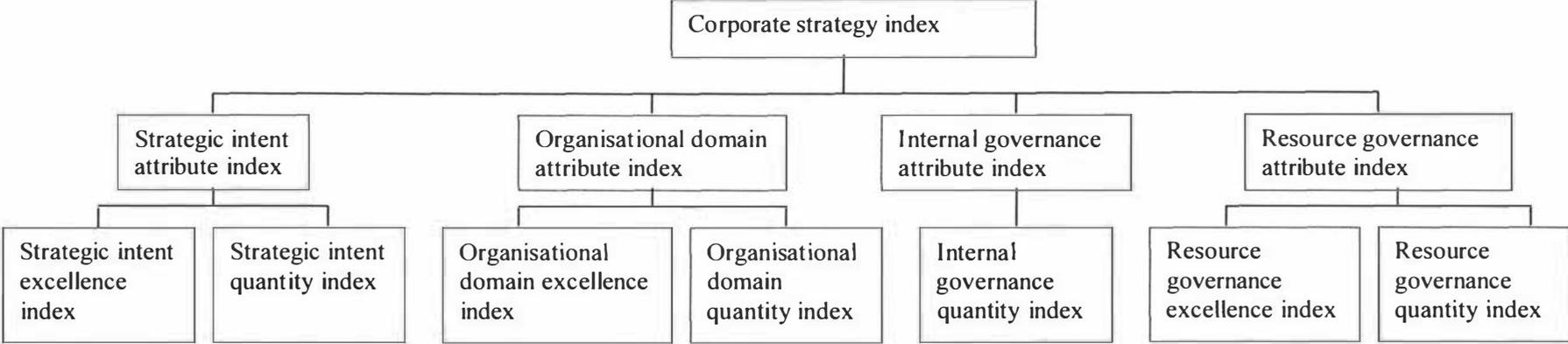
- To define corporate strategy and identify the key attributes (constructs) within corporate strategy
- To develop a framework to evaluate each of the attributes that contribute to the concept of corporate strategy
- To determine if any attributes of corporate strategy actually contribute to persistent firm performance, namely, to learn how corporate strategy matters.

1.2 RESEARCH PROCESS

The construct of corporate strategy will be developed inductively from a comprehensive review of the literature. From this clarification and definition of corporate strategy, four attributes namely, strategic intent, organisational domain, internal governance, and resource governance, will be identified. These attributes then provide a conceptual framework of corporate strategy. An expert panel will be used to review the conceptual development and their contributions subsequently incorporated into the model. A number of research statements will be developed. Each of these attributes are developed in a form that they are measurable, that is, various indicators will be selected to represent the diverse aspects of each corporate strategy attribute. Where relevant, these corporate strategy attributes comprise indicators representing both excellence in the attribute, and the quantity (level of activity) of corporate level decisions made. A number of hypotheses will be formulated representing the expected relationship between corporate strategy and persistent firm performance.

Cross-sectional samples will test the distinctness of the corporate strategy construct in a process similar to that used by Levitas and Chi (2002). Therefore, from the population of firms listed on the New York Stock Exchange from 1980 to 2003, three subpopulations of firm performance are identified. These subpopulations are selected on the basis of demonstrable persistent superior firm performance (PSFP), persistent average firm performance (PAFP) and persistent inferior firm performance (PIFP) based on an effective corporate level measure of firm performance: share market price (SMP). Five firms will be selected from each of the three firm performance categories; they then represent the sample for this study. Content analysis will be performed on all Wall Street Journal (WSJ) articles collected on each firm from 1980 to 2004, providing an estimation of both the level of excellence and the rate of corporate strategy attribute decision

Figure 1.1. The relationship between the indices



making within each firm. Various potential confounds will also be formulated and data will be collected utilising the firm's annual reports, Security and Exchange Commission filings, and websites of the sample firms.

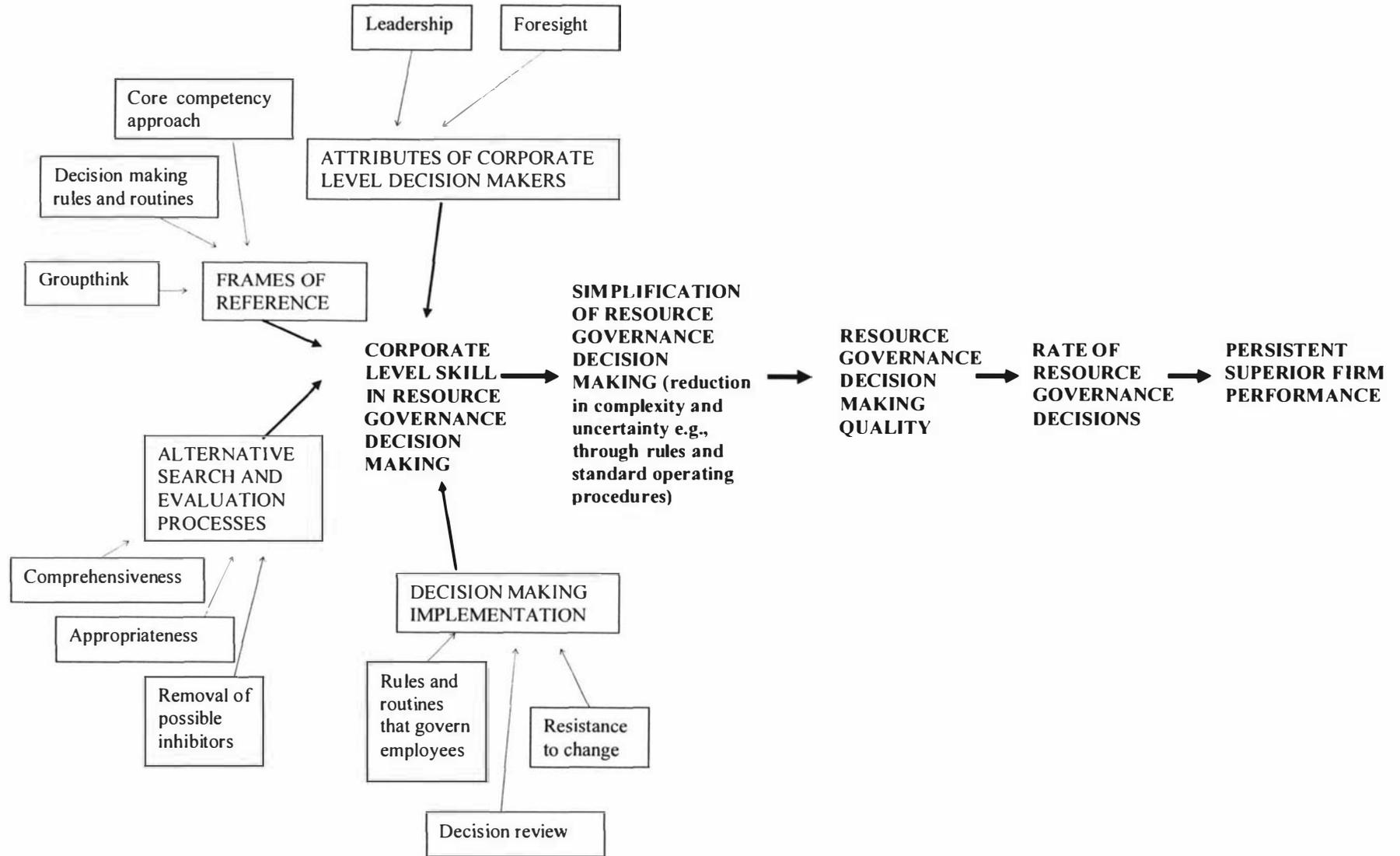
While the research is being reported in a supposed linear fashion, it was not necessarily conducted in this manner. Providing a clear representation of the three levels of indices (Figure 1.1 displays the three index stages) offers clarity to the research design and provides clear signposts for the research, while not intended to necessarily reflect the process undertaken. The indicators of each corporate strategy attribute will be transformed into a series of indices for each firm, a process involving three stages: First, the excellence and quantity indices will be calculated. Second, attribute indices will be computed from the excellence and quantity indices and lastly, a corporate strategy index will be formulated from the attribute indices.

Both parametric and distribution-free inferential statistical techniques will be conducted to determine if the potential confound variables can be utilised to distinguish the PSFP category from the other two firm performance categories. Descriptive statistics and box plots of the attribute indices and the corporate strategy index will be analysed to provide a determination of the various hypotheses created during the operationalisation stage. Hypothesis testing utilising a series of both parametric and distribution-free inferential statistical techniques will be conducted in two stages: firstly, on the corporate strategy index and the corporate strategy attribute indices, and secondly, on the various excellence and quantity indices.

The results of these tests will then be discussed in terms of both the prior empirical evidence and the theoretical literature. Specifically, two corporate level theoretical views on persistent firm performance are discussed, namely, core competency theory and the corporate level decision making skill perspective. Core competency theory argues that core competencies provide the basis for all corporate level decisions as they are the critical to firm survival. However, core competency theory does not provide a comprehensive explanation of the curvilinear relationship between persistent firm performance and the frequency of resource governance decisions.

The corporate level decision making skill perspective incorporates the expectation that heterogeneous managerial ability could account for heterogeneity observed in firm performance. Therefore, it follows that corporate level decision making skill could also be heterogeneous. Two areas of corporate level decision making skill exist which may explain the heterogeneity of the rate of resource governance decisions observed (refer to Figure 1.2). Firstly, the decision

Figure 1.2. Theoretical model of the association between corporate level decision making skill and the rate of resource governance decisions



NB: The model is depicted in linear form as it is anticipated that it evolves from left to right (PSFP) over time

making frameworks employed within firms are heterogeneous. Decision making frameworks are influenced both by the decision makers' attributes and frames of reference. Secondly, it is expected that quality decisions arise from superior decision making. The decision making process involves a number of steps: setting objectives, searching for alternatives, evaluating alternatives, making the decision, implementing the decision and, lastly, evaluating of the success of the decision. Therefore, the second component centres on the decision making process employed within firms, specifically, the search and evaluation of alternative processes and implementation of the decision which may provide an explanation for the heterogeneity in the incidence of resource governance decision making observed. Corporate level skill in resource governance decision making appears to provide the most appropriate explanation for the distinction in persistent firm performance obtained from this dataset (refer to Figure 1.2).

1.3 DELIMITATION OF SCOPE

Many theoretical frameworks could be used to provide an explanation of how corporate strategy impacts on persistent firm performance as the field of strategic management overlaps with a range of "management" subjects such as leadership, organisational theory, organisational learning, upper echelon literature, corporate governance, decision making theory, and organisational culture. However, as outlined above, two more appropriate corporate level perspectives of the resource based theory (RBT) were applied to the findings, namely, core competency theory and the perspective of corporate level skill in decision making.

All research is constrained by boundaries that are inherent in the research design. The findings of this research are consequently limited to the following research scope:

1. Deliberate, realised strategic behaviour at the corporate level
2. Large, publicly listed firms registered in the United States of America (US)
3. The theoretical framework employed as an explanatory tool was largely limited to the relevant aspects of RBT
4. The four attributes of corporate strategy and the three potential confounds as presented in this research. Interaction effects between the various attributes of corporate strategy were not considered
5. The characteristics of corporate strategy across three categories of firm performance (i.e., PSFP, PAFP and PIFP) rather than individual firm characteristics
6. The unit of analysis is at the corporate level

7. The relationship studied here centres on the role of corporate strategy on persistent firm performance.

Focusing on deliberate, realised strategy was necessary due to the difficulties inherent in measuring emergent strategy from the secondary data sources available to the researcher. Therefore, this piece of research must represent a minimum level of corporate strategy behaviour evident within the sample firms. Large publicly listed firms were selected as the site to observe corporate strategy due to two factors. They are, firstly, that some authors have suggested corporate strategy does not occur within single business firms and, secondly, that large publicly listed firms were expected to more readily “broadcast” their corporate strategy decisions to the media (the main data source for this research). Any possible interaction effects between the corporate strategy attributes could not be accurately tested as the small sample size, in conjunction with the large number of variables collected, restricted the inferential statistical techniques available to the researcher. As this research focused on categories of firm performance, conducting a further in-depth analysis involving, for example, various interviews with the corporate level decision makers of the 15 firms, would have both rendered analysis unnecessarily complicated and beyond the resources available to the researcher. Although corporate strategy has been found to influence BUP and thus, indirectly influences firm performance, the unit of analysis is selected to identify the possible relationship between corporate strategy and persistent firm performance. Lastly, the role of corporate strategy on persistent firm performance is the aim of this thesis. Therefore, reverse causality, that is, the notion that firm performance can influence corporate strategy, will not be considered. In addition, it could be suggested that the relationship between corporate strategy and firm performance is one based on reciprocal causality. For example, corporate strategy and firm performance move together through time as the firm actually changes. Again, this possible association is outside the scope of this research.

This research utilises the terminology of organisation, corporation, firm and company synonymously. The term business will be utilised to define subunits of a firm, usually operating in a single market or industry.

1.4 JUSTIFICATION FOR THE RESEARCH

This research contributes to the knowledge of strategic management on four counts. First, as the principal focus of the field of strategic management has been on business level strategy, little

theoretical and empirical research has been presented on *corporate level* strategy. This research begins to address that imbalance.

Second, as strategic management primarily has a business level focus, the level of analysis is the business unit. This research attempts to transfer strategic management's spotlight from achieving sustainable competitive advantage (SCA) to achieving PSFP. As this research concerned corporate level strategy, as opposed to business level strategy, the unit of analysis was moved from the business unit level to that of the firm. These points are more extensively treated in Chapters Two and Three.

Third, as it is expected that corporate strategy can result in successful outcomes, it should be conceptualised in terms of how firm decisions would be successful. This begins with the development of a corporate strategy construct that integrates the various current definitions of corporate strategy into a concise framework. Furthermore, the provision of clear empirical evidence of the contribution of corporate strategy to superior firm performance (however that may be measured) would provide clarity and greater applicability as a management tool. Comparisons between the both the rate and quality of corporate level decisions between different categories of firm performance will provide a clearer understanding of the nature of the relationship between corporate strategy and persistent firm performance. Additionally, if corporate strategy can be used to distinguish between categories of persistent firm performance, further insight may be gained from determining which attribute of corporate strategy contributes to this difference, namely, the rate of resource governance decision making.

Fourth, the structure-conduct-performance paradigm (SCP) contends that SCA arises from industry characteristics and the firm's position within that industry; whereas, RBT contends SCA is based on imperfections in the resource market and discretionary firm decisions in response to environmental uncertainty and complexity, that is, firm heterogeneity. Consequently, the findings provide empirical support for the endogenous perspective of firm performance, specifically, the rate that resource governance decisions can be utilised to distinguish the PSFP category from other lesser categories of persistent firm performance.

1.5 OUTLINE OF THE THESIS

This thesis proceeds with a review of the relevant theoretical literature. The examination of the literature highlights the difficulties within the theoretical treatment of corporate strategy, that is,

the concentration of both the theoretical and empirical literature on business level strategy. The construct of corporate strategy employed in this study is outlined in Chapter Three. The approach followed is that advocated by Berson, Avolio and Kahai (2003). They recommended that “the cycle of construct specification starts with an inductive process whereby researchers use a priori observations, personal experience, or other authors’ research to build some insight” (p. 93). Explicitly defining the construct and attributes in terms of a firm level of analysis defines the context and, thus, directs the methodology.

The next phase of research moves from a largely inductive to a deductive process. Chapter Three also presents the three levels of indices that are created. The corporate strategy index is comprised of four attribute indices, namely, strategic intent, organisational domain, internal governance and resource governance. These four attribute indices are comprised of three excellence and four quantity indices (except for internal governance which is not represented by excellence in this research). The excellence and quantity indices are operationalised in terms of 18 indicators and proxies that could be empirically observed. The five research statements outlined in Chapter Three are also redefined into five hypotheses and nine subhypotheses to assist in the verification of the conceptualisation of corporate strategy.

Chapter Four provides a detailed discussion of the methodology used for sample selection, data collection, and the statistical techniques employed in data analysis. The findings from the dataset collected are reported in Chapter Five. The exploratory data analysis results are followed by the findings for the hypotheses testing for the corporate strategy index and the four corporate strategy attribute indices. The last part of Chapter Five displays the results for the various excellence and quantity indices. These two chapters are followed by a discussion which identifies a pattern that exists within the dataset collected. The main finding of this research will be discussed in terms of various alternative explanations. This is followed by a discussion of the possible pattern in terms of the implications for the conceptual framework of corporate strategy. Thereafter, this thesis is concluded with a summary of the significance and contribution of the research, its limitations, implications and potential avenues for future research.

2.0 LITERATURE REVIEW

2.1 CHAPTER OVERVIEW

A literature review of relevant aspects within the field of strategic management has been conducted and is now presented in two sequential parts: Part I presents a theoretical review while Part II outlines the empirical evidence of the effect of corporate strategy on subsequent firm performance.

PART I: THEORETICAL LITERATURE REVIEW

The theoretical review opens with a presentation on the aims of strategic management. The concept of persistent superior firm performance is then defined. The major component of the theoretical review follows and encompasses a review of the two conceptual lenses employed to interpret strategic management phenomena: in other words, exogenous and endogenous perspectives of sustainable competitive advantage. The main paradigms evident within each of these perspectives, the structure-conduct-performance paradigm and resource based theory, are then outlined. Two aspects of the resource based theory which focus on the corporate level, namely, core competency theory and the corporate level decision making skill perspective, are then discussed. The differences between the two paradigms are then identified and discussed. Part I concludes with a summary of the critical extant knowledge that contributes to this research.

2.2 WHAT IS THE AIM OF STRATEGIC MANAGEMENT?

The field of strategic management seeks to both explain and predict firm success. Strategy involves decisions:

It is a basic proposition of the strategy field that these choices have critical influence on the success or failure of the enterprise, and, that they must be integrated. It is the integration (or reinforcing pattern) among these choices that makes the set a strategy (Rumelt, Schendel & Teece, 1991, p. 6).

More specifically, as suggested by Carroll (1993, p. 247), “the fundamental question for strategic management is why successful firms differ.” As noted by Rumelt et al (1991), “strategic

management is about coordination and resource allocation *inside the firm*" (p. 19, italics in original) rather than within markets and economies as evident in the field of economics. As the field of strategic management was developed to explain the existence of firm performance heterogeneity, the aim of strategic management can be defined as uncovering the determinants of persistent superior firm performance. Strategic management predicts that PSFP results from better managed firms through mechanisms such as corporate strategy. Consequently, strategic management seeks to develop an understanding of endogenous decisions with a view to formulating explanations as to why some firms outperform others.

2.3 DEFINING PERSISTENT SUPERIOR FIRM PERFORMANCE

Theories have been developed to explain why some firms appear to consistently outperform others. The concept of PSFP has many definitions focusing on the achievement of superior performance relative to competitors and can include profit, survival or satisfaction (Arend, 2003). It is commonly assumed that a firm achieves PSFP through the possession of sustainable competitive advantage (Powell, 2001; Wiggins & Ruefli, 2002). Reed and DeFillippi (1990) noted that two main concepts of SCA appear in the literature: Firstly, Hofer and Schendel's (1978) view that firm core competencies create SCA. This view is one of three represented in Figure 2.1. The second view of SCA was attributed to Day (1984), and Porter (1985) by Reed and DeFillippi (1990). Here the objective of a firm's strategy is to create advantage over rivals that is, "superior performance is correlated with competitive advantage, and achieving an advantage will automatically result in higher performance" (Reed & DeFillippi, p. 90). In other words, strategy can be utilised to manipulate the nature of competition, thus creating SCA (again refer to Figure 2.1).

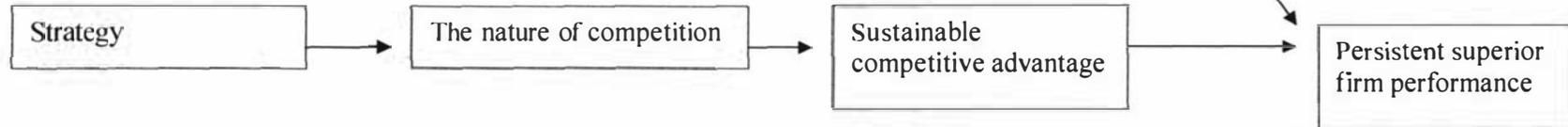
Much published literature focuses on SCA and thus strategy conducted at the business level of the firm, namely, competitive strategy. Therefore, limited theoretical or empirical investigations have concentrated on PSFP. Consequently, the predominant theoretical perspectives on firm performance in strategic management have employed a business or industry unit of analysis (i.e., SCA). While some research on corporate strategy has been conducted at the firm level of analysis, this research does not appear to be particularly fruitful as it provides an incomplete understanding of firstly, the construct of corporate strategy and secondly, the possible effects of corporate strategy on the persistent performance of the entire firm separate from the impact of corporate strategy on business unit performance. Analyses conducted at such levels are then

Figure 2.1. Conceptualisations of the relationship between strategy and firm performance

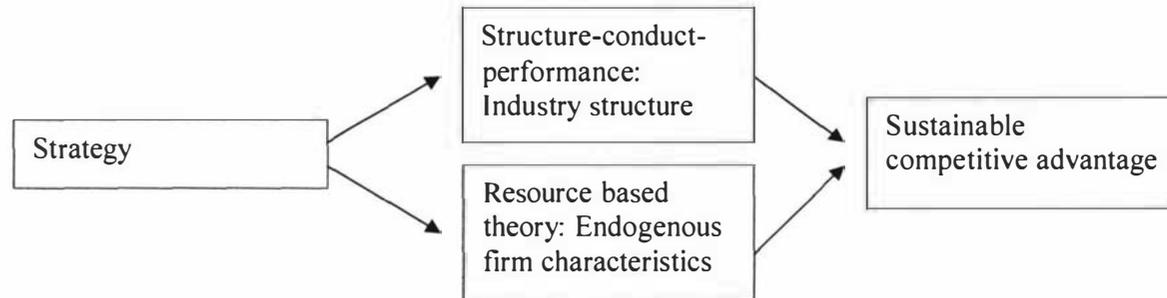
Hofer and Schendel's (1978) view of strategy and sustainable competitive advantage



Day (1984) and Porter's (1985) view of strategy and sustainable competitive advantage



Structure-conduct-performance and resource based theory's view of strategy and sustainable competitive advantage



Derived from: Hofer & Schendel (1978) as cited in Reed, R., & DeFillippi, R. J. (1990). Causal ambiguity, barriers to imitation, and sustainable competitive advantage. *Academy of Management Review*, 15(1), 88-102.

Day (1984) as cited in Reed, R., & DeFillippi, R. J. (1990). Causal ambiguity, barriers to imitation, and sustainable competitive advantage. *Academy of Management Review*, 15(1), 88-102.

Porter, M. E. (1985). *Competitive advantage: Creating and sustaining superior performance*. New York: The Free Press.

inappropriate for corporate strategy. Corporate strategy will be comprehensively defined in Chapter Three. Instead, investigations into corporate strategy should employ a firm unit of analysis (i.e., PSFP).

For the purposes of this research, PSFP is defined in the following manner: “Persistent” refers to long-term (in regards to time) performance (Porter, 1985). Wiggins and Ruefli (2002) noted this definition can be operationalised quantitatively. The use of “firm” relates to the *entire* organisation, in contrast to SCA which applies to single business units (SBU). “Superior performance” is defined as equivalent to above average returns, supernormal returns, effectiveness or superior profitability. Quantitatively, PSFP is *relative* to the performance of other firms, regardless of the industry or industries within which they operate.

Due to the limited theoretical discussion of the relationship between corporate strategy and PSFP, it has been necessary to outline the alternative theoretical constructs, namely, sustainable competitive advantage and its associated unit of measure, business unit performance. The two main theoretical perspectives evident are the sources of SCA resulting from either exogenous or endogenous factors. These perspectives theorise that certain elements (i.e., industry structure for SCP or firm specific attributes for RBT) can be developed or manipulated by strategy to create SCA and thus, producing PSFP (refer to Figure 2.1). The two different theoretical perspectives emphasise contrasting disciplines: an economic approach and the strategic management approach respectively. Thus analysing the phenomena of firm performance by either theoretical logic has led to the generation of different methodologies, predictions, explanations and knowledge. The exogenous perspective will be outlined first.

2.4 THE EXOGENOUS PERSPECTIVE OF SUSTAINABLE COMPETITIVE ADVANTAGE

The field of strategic management during the 1970s and the 1980s was dominated by the analysis of the firm’s external environment as the source of SCA (Hoskisson et al, 1999). The exogenous perspective attempts to explain the performance heterogeneity displayed by industries and, as such, seeks to uncover how the mechanism of an industry works, creating SCA and, thus, firm performance (Nelson, 1991).

A predominant exogenous theory of SCA is based on the principles of industrial organisation economics (IO). IO encompasses a group of theories that seeks to explain the impact of

imperfect competition on SCA whereby firms can maximise their performance beyond that experienced by firms operating in a perfectly competitive environment. IO offers theoretical views on SCA as then being influenced by industry structure (Hansen & Wernerfelt, 1989). Conner (1991) suggested that five predominant schools of thought exist within IO separated by assumptions on industry structure: First, neoclassical perfect competition which views firms as profit maximisers who correctly ascertain the right input (capital and labour) mix to produce end-products (e.g., McNulty, 1968); Second, the Harvard tradition that conceived firm profitability could be explained by the SCP paradigm (e.g., Bain, 1954, 1968; Mason, 1939); Third, Schumpeterian competition views firms as searching to change industry structure through innovation (e.g., Nelson & Winter, 1982; Schumpeter, 1950); Fourth, the Chicago School considered that industry structure does not determine SCA; rather it is an outcome of efficiency seeking firm behaviour within the industry (e.g., Demsetz, 1973); Fifth, transaction cost economics where successful firms produce the most efficient outcome by minimising transaction costs (e.g., Williamson, 1975, 1980, 1985).

As the main aim of IO is to study interindustry heterogeneity, IO only considers the impact of firms (their resources and decisions) on an industry in a broad sense. IO provides industry based explanations (e.g., industry membership) for the primary sources of SCA. Industries compete for resources, and the successful competition increases the attractiveness of an industry, raising industry profit; thus explaining why some industries outperform others and why industry affiliation affects SCA. IO theory implicitly assumes that firms within an industry are homogenous, except for size differences. IO assumptions also include rational behaviour, homogenous supply and demand, and markets in equilibrium (SubbaNarasimha, 2001). Therefore, IO suffers from the limitation of oversimplifying both the nature of firms and the environment in which they operate.

2.4.1 Structure-conduct-performance paradigm

The structure-conduct-performance paradigm has had a significant impact on strategic management. The three components of SCP are: industry Structure, which includes such examples as industry concentration, industry growth, product differentiation, and barriers to entry. Conduct refers to product pricing, advertising intensity, and the degree of investment, for example. While performance encompasses rates of efficiency, industry or firm profitability usually determined by traditional accounting measurements such as, return on assets (ROA). SCP provides a framework for assessing the nature of competition and for formulating strategy (Jacobson, 1992).

a) *The aim of the structure-conduct-performance paradigm*

SCP seeks to account for the determinants of SCA in terms of industry structure, specifically entry and mobility barriers. Furthermore, SCP aims to produce a normative set of competitive strategies which can be utilised to manipulate industry structure.

b) *The assumptions of the structure-conduct-performance paradigm*

A number of premises underlie the SCP paradigm. SCP presumes relatively static and repetitive environments, perfect knowledge, rational decision making, and that persistent performance heterogeneity exists in equilibrium. The rationale behind the use of equilibrium theory is that stable systems are thought to be more common and best able to predict outcomes, therefore, producing duplicable knowledge. As the unit of analysis is the industry, SCP concentrates on the *collective* properties of firms not the unique characteristics of individual firms. SCP views the firm as an isolated, internally closed, ahistorical, simple system, remaining constant over time (Tsoukas & Knudsen, 2002). Firms within industries are only heterogeneous in size due to economies of scale or product differentiation. SCP assumes resources are homogeneous and are not sources of SCA because high resource mobility restricts the development of long-term resource heterogeneity (Barney, 2001a; Spanos, Zaralis & Lioukas, 2004). Firm behaviour is determined by external situations. Montgomery (1994) noted that management is assumed to be located at the business level, making “decisions without regard to the firm’s participation in other markets” (p. 163). SCP also presumes that firms seek to maximise profitability through the achievement of SCA, and thus profitability is the aim of strategy. Consequently, other aims, such as managerial goals, are simply not considered or are at best embedded in profit. The assumption of profit maximisation reflects a set of behavioural rules as a defined set of decisions.

c) *Structure-conduct-performance paradigm predictions*

The main SCP hypothesis states that “because structure determines conduct (or conduct is simply a reflection of the industry environment), which in turn determines performance, conduct can be ignored and performance can, therefore, be explained by structure” (Hoskisson et al, 1999, p. 425). Consequently, SCP presumes an industry structure-performance correlation; in other words, variations in profitability between different firms are predicted to be determined by industry structure (Hawawini, Subramanian & Verdin, 2003; McGahan & Porter, 2002; McWilliams & Smart, 1993; Tsoukas & Knudsen, 2002). For example, “market structure ... [is] the principal explanation for the emergence of common patterns of behaviour and similar performance outcomes for firms in the same industry” (Mauri & Michaels, 1998, p. 212).

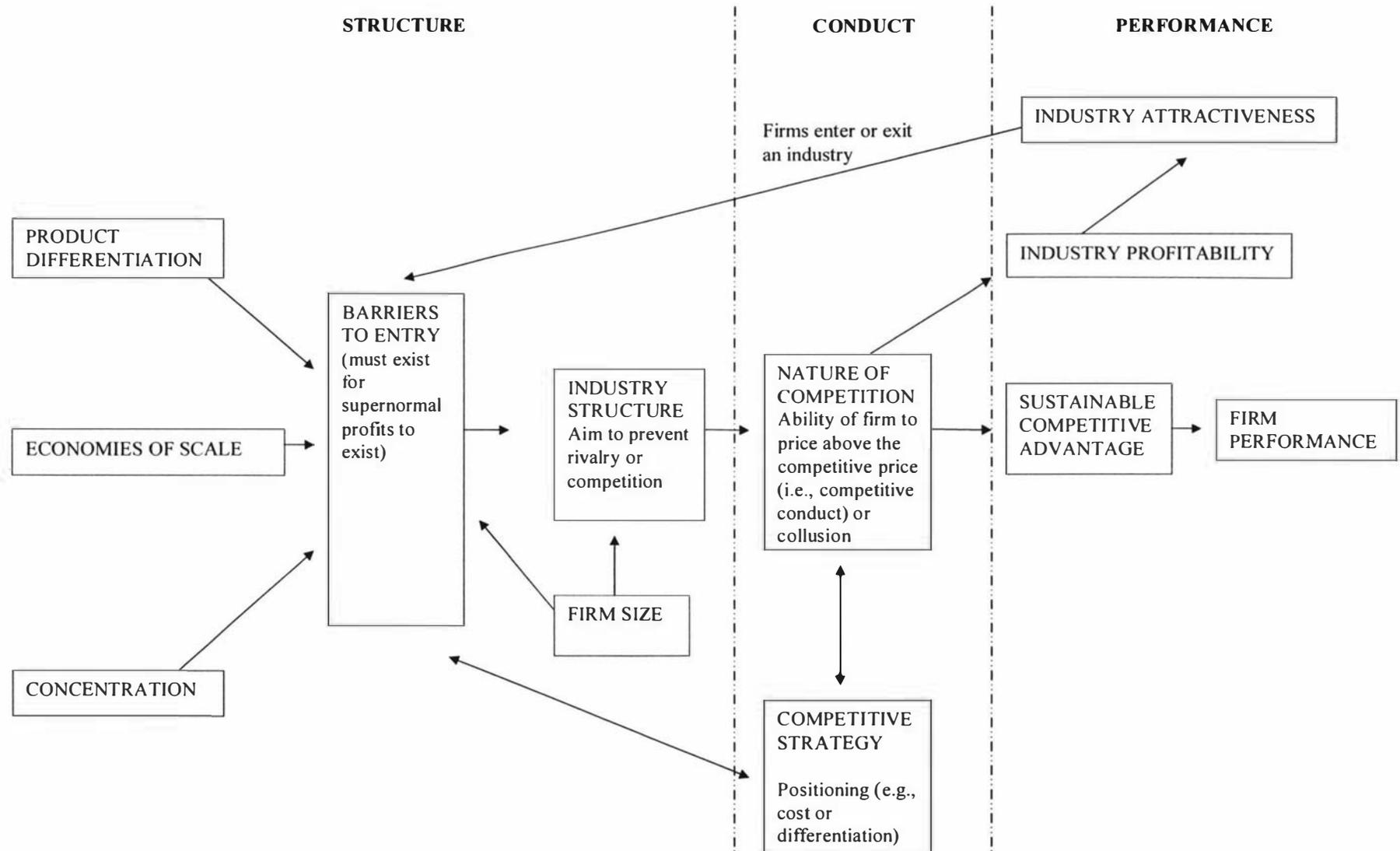
Performance is predicted to arise from characteristics of the industry in which the firm competes (Porter, 1980), and the firm's position relative to its competitors (Prahalad & Hamel, 1990). To summarise, SCP predicts that industry effects on firm performance are of greater magnitude and persistence compared to business and corporate effects (discussed more fully in Section 2.9).

The SCP paradigm makes additional predictions on the manner in which industry structure determines firm profitability (refer to Figure 2.2). For example, industry structure restricts unrestrained competition as firms operating in highly concentrated industries are predicted to cooperate, restricting rivalry, and thus increasing industry profitability. Secondly, SCP predicts that industry structure protects above average profitability, for example, through mechanisms such as high barriers of entry (Hill & Deeds, 1996; McWilliams & Smart, 1993). Firms are able to set their prices above the competitive price as higher concentration and barriers to entry produces higher collusion leading to lower competition and, consequently, higher industry profits (McWilliams & Smart, 1993).

SCP suggests that the aim of strategy is to obtain pseudomonopolistic market power, thereby reducing competition and increasing profit (refer to Figure 2.2). By implication, rent appropriation occurs within the industry (Coff, 2003). Barriers to entry (such as economies of scale or product differentiation) can be manipulated to create or preserve pseudomonopolistic power (Conner, 1991). In addition to high entry barriers, SCP predicts that large firms are successful due to industry structural characteristics such as high market share (Conner, 1991; Wiggins & Ruefli, 2002). Furthermore, firms of similar size are predicted to possess equivalent advantages, therefore providing the incentive to collude or mutually refrain from competition (Hill & Deeds, 1996).

Different industries are thought to be characterised by different average profit levels that persist over time. The inherent attractiveness of an industry reflects its relative potential for profitability (refer to Figure 2.2). SCP predicts that successful firms exist in high performing industries characterised by auspicious structural characteristics (Spanos et al, 2004) or alternatively, poor performing firms exist in lower performing industries. Porter's (1980) model of competition offers a contrasting view whereby he recognises that businesses choose competitive positioning (via competitive strategy) altering the nature of competition or/and industry structure and thus, industry attractiveness.

Figure 2.2. Model of structure-conduct-performance paradigm



NB: The model is depicted in linear form as it is anticipated that it evolves from left to right (PSFP) over time

Various interpretations on the time span of SCA are evident within SCP. One view proposes that variations due to firm heterogeneity are either insignificant or temporary (Kessides, 1990). For example, Chang and Singh (2000) contended that “any competitive advantage held by a specific firm is transient because competitors will eventually imitate it” (p. 741). However, it has been postulated that firms can achieve medium-term to long-term SCA (Wiggins & Ruefli, 2002).

Explanatory variables of interest to SCP are located exogenously to the firm and include: Industry concentration as a proxy for barriers to entry or low rivalry; asset, capital or advertising intensity, as indicators of entry or exit barriers; and industry growth, as a control for unspecified industry effects (Robins & Wiersema, 1995; Spanos et al, 2004). A fundamental aspect of SCP analysis involves using average industry performance heterogeneity to distinguish structural obstructions to competition (Hansen & Wernerfelt, 1989; Robins & Wiersema, 1995).

The influence of SCP’s economic theories resulted in the introduction of deductive methodologies to strategic management to empirically test hypotheses, namely, quantitative analysis techniques and the use of large datasets collected from secondary sources (Hoskisson et al, 1999). These empirical studies have provided evidence of a positive relationship between industry effects and firm performance (discussed further in Section 2.9).

d) The role of strategy in the structure-conduct-performance paradigm

As SCP assumes that management is located at the business level (Montgomery 1994), strategy is also assumed to be at the business level, that is, competitive strategy. Three predominant views on strategy exist within SCP: Firstly, strategy has a limited or nonexistent influence on SCA as SCP predicts that industry structure controls firm conduct. Thus strategy’s role on SCA is seldom considered (Spanos et al, 2004). Secondly, strategy is perceived as congruency or “fit” to the firm’s environment whereby the firm should appropriately fit its competitive strategy, by selecting one of a number of predetermined strategies, to the structural characteristics of the industry (Scarbrough, 1998). Addleson (2001, p. 178) noted that fit “implies that strategy is concerned with items, like pieces of a jigsaw, which should interlock when they are properly coordinated.”

Closely aligned to the fit model of strategy, and the most influential, is the third perspective on strategy as competitive positioning whereby the firm can protect its SCA from competition or alternatively influence the nature of competition in its favour (Porter, 1980). For example, strategy is viewed as the decision of selecting to operate in attractive industries and erecting

barriers to entry. Each industry is evaluated on the basis of imperfections in structural elements as a measure of attractiveness (Jarillo, 2003; Porter, 1980, 1985; Venkatraman & Subramaniam, 2002). Thus the nature of competition can be altered or restricted by the manipulation of competitive forces via strategy. Theoretically, if done successfully, firms can impose higher costs or inferior product quality onto customers.

Positioning involves employing the most effective strategy in line with industry imperfections, for example, Porter's (1980) Five Forces Model. Industry structure should be assessed and the identified constraints of the industry directs firms to position their products as per specific competitive strategies (e.g., Porter's [1980] generic competitive strategies of cost or differentiation). Addleson (2001) asserted that the view of strategy as positioning is aligned to the view of strategy as an incremental tactical "battle" of moves to overcome a rival's current position. Therefore, strategy is prescriptive and "exists as a theoretically validated set of prescriptions waiting to be discovered by particular firms" (Tsoukas & Knudsen, 2002, p. 430), whereby industry structure dictates the selection of strategies. Creativity is limited and uniqueness is not sought. Managers operating in the same industry are then assumed to make identical decisions (Mauri & Michaels, 1998). Therefore, strategies that create competitive advantage are duplicated by the other firms operating in that industry. Consequently, firm performance is predicted to converge towards the industry average over time.

The rationales underlying the last two perspectives of strategy possess similar characteristics. Perfect markets are perceived as unattractive. Disequilibrium allows the creation of advantage through the effective identification and management of imperfect industry structural characteristics which impede and prevent equilibrium (Porter, 1980; Venkatraman & Subramaniam, 2002). Based on equilibrium theory, the market or industry the firm operates in can be divided up between the current competition. These perspectives advocate that the firm should influence industry structural characteristics even though other firms may also benefit. The firm should then employ strategies to get into attractive industries and out of unattractive ones (Miller & Freisen, 1986; Smith, Guthrie & Chen, 1989). Strategy is, therefore, either situationally determined or externally enforced (Porter, 1980).

The fit and positioning perspectives view strategy as rational, uncomplicated and static, for example, the allocation of existing resources rather than resource creation. Viewing strategy as allocation decisions between product or market opportunities is appropriate for firms operating under environments characterised by certainty and stability (Scarbrough, 1998). Resource

allocation efficiency is achieved through market selection. This static model suggests that the best predictor of future performance is past experiences: in other words, strategy that was appropriate in the past will work in the future.

Strategy is perceived as one of mapping, namely, identifying pieces and arranging the pieces into appropriate positions for future success (Addleson, 2001). The focus of strategy is on the firm's existing rivals. Both views of strategy advocate in-depth analysis of industry structure and planning under a rational framework where the information gathered from the large scale environmental analysis is entered into various "standard" models and frameworks (e.g., The Boston Consulting Group Growth-Share Matrix).

The fit and competitive positioning perspectives concentrate on competitive strategy rather than corporate strategy. Due to the overwhelming focus on competitive strategy and the limited theoretical discussion on corporate strategy questions remain within SCP on the validity and role of corporate strategy on firm performance: for example, there is an "absence of a persuasive logic for managing multiple businesses" (Venkatraman & Subramaniam, 2002, p. 463). SCP perceives corporate strategy as the aggregation or consolidation of the competitive strategies of SBUs. Synergy between SBUs is not considered. In summary, SCP predicts that the influence of corporate strategy on firm performance is negligible or nonexistent.

e) Issues with the structure-conduct-performance paradigm

A number of issues regarding the SCP paradigm have been highlighted in the literature leading to such statements as, "SCP logic has ... been abandoned outright" (Barney, 2001a, p. 648). A number of issues will be discussed in this section including: first, the assumptions inherent within SCP theory; second, the apparent limited predictive power of SCP theory, that is, SCP's apparent failure to explain heterogeneous firm performance; third, the limitations due to the concentration on industry level analysis; fourth, tautological issues; fifth, the focus of SCP theory on competitive strategy.

Assumptions

Pandian and Robertson (2003, p. 326) observed that SCP "require[s] a number of assumptions that are unacceptable to strategists because of their lack of realism." For example, McWilliams and Smart (1993, p. 68) observed that "most business environments are not in a state of equilibrium. Rather, they are characterised by some degree of change." The changing nature of competition from stable oligopolies to hyper-competition leads to uncertainty, complexity,

dynamism (D'Aveni & Gunther, 1994; Ilinitch, D'Aveni & Lewin, 1996; Rumelt et al, 1991) and are dramatically different to the assumptions evident in SCP, further limiting the applicability of the model. For example, Jacobson (1992) contended that the assumption of perfect knowledge implies innovation has ended.

Another example includes the assumption of clearly defined identifiable industry boundaries from which analysis is performed to identify industry structural elements (Addleson, 2001). However, this assumption does not account for the blurring convergence as observed in the telecommunications, entertainment and computing industries. A point acknowledged by Porter (1980) although he stated that the subjective definition “has little to do with the choice of strategy” (p. 32). SCP only considers operating within existing industry structures. Young, Charns and Heeren (2004) found that firm performance can increase due to intense firm-level competitive behaviour, in contrast with SCP’s assumption that competitive rivalry is detrimental to SCA (Ilinitch, et al, 1996; Thomas, 1996).

SCP has produced inaccurate predictions and explanations due to its assumption that the total industry demand can be calculated as per equilibrium theory and what occurred in the past will be repeatable in the future. Assumptions concerning the nature of competition also limit the application of SCP. Equilibrium theory narrows the range of possibilities considered by firms, for example, the positive relationship between concentration and collusion views innovation as disturbing the competitive balance (Hill & Deeds, 1996). Furthermore, in reality, the nature of competition is not solely controlled by concentration or barriers to entry, for example, innovation can overcome the SCP assumption of static barriers to entry.

Barney (1991) noted that SCA arising from barriers to entry can only occur if firms are heterogeneous. Firm resources protected by barriers to entry must be, by definition, imperfectly mobile and different to those firms excluded by the barriers to entry. The costs associated with higher barriers to entry potentially raise a number of issues for firms in that the investment may not result in SCA or that it may actually result in competitive disadvantage. For example, the firm utilises its resources to protect the entire industry, including its competitors. In other words, SCP supposedly focuses on the use of strategy to manipulate and control industry structural characteristics “even though their firm will not uniquely benefit from the changes” (Black & Boal, 1994, p. 131). The concentration on industry structural characteristics also deflects attention from other influences on SCA such as, endogenous factors.

Inability to account for firm heterogeneity (including strategic decisions)

There are deficiencies within the SCP paradigm with respect to its predictive power. The logic of SCP appears to be ineffective when applied to the “real” environment, as the empirical evidence obtained has not supported the theoretical models. The goal of developing law-like certainties has not materialised such that industry effects have been found to be of minor significance in relation to firm effects (discussed further in Section 2.9). Although some researchers found that concentration is positively related to profitability (e.g., Ravenscraft, 1983; Scherer & Ross, 1990), contrasting empirical evidence has also been presented. For example, Jacobsen (1988) observed an insignificant relationship between firm performance and industry concentration. The anticipated one-way causal relationship between industry structure and firm performance seems to be inaccurate as empirical evidence suggests that firm conduct can affect industry structure (Spanos et al, 2004). For example, industry structure appears to exert a small impact on industry attractiveness (Hill & Deeds, 1996). In doing so, industry structure can result from firm decisions (including corporate strategy) and competitive interaction, raising entry barriers, through such strategies as extending market power beyond SBUs or single industries and cross-subsidising businesses.

As Hill and Deeds (1996) noted, the proxies utilised to represent the relationship between SCA and barriers to entry and concentration may also incorporate firm attributes (such as firm efficiency). Furthermore, if a standard set of strategies to achieving SCA were uncovered, over time their widespread use would render SCA unachievable. The SCP model does not attempt to fully capture the nature of the industry phenomena on performance, that is, performance is only tested on a limited number of dimensions assuming all other things remain equal.

SCP has not captured the complexity of performance and, therefore, has not significantly advanced knowledge. Spulber (2003, p. 254) asserted that “these highly stylised models of the firm have not lent themselves easily to addressing management questions nor have sufficient efforts been made to adapt them to pressing business problems.” SCP theory has not provided an explanation for the fundamental strategic management question of why firms operating under the same industry structure experience different profits (Hawawini et al, 2003; Roquebert, Phillips & Westfall, 1996). Furthermore, some firms operating in “unattractive” industries appear to possess SCA over rivals. Empirical evidence has confirmed the persistence of profit heterogeneity in contrast to what is predicted by SCP. Empirical evidence has also been presented that falsifies SCP; in other words, firm specific influences on BUP have been found to be greater than industry effects (discussed further in Section 2.9).

Tsoukas and Knudsen (2002) observed that the focus of SCP on cross-sectional analysis instead of longitudinal research designs has led to the theory being unable to conceive of SCA resulting from firms. Human elements are not incorporated into the SCP model such as the influence of power, incomplete perceptions, relationships or uncertainty (Jacobson, 1992). Addleson (2001, p. 171) asserted that “an equilibrium theory precludes an understanding of firms as social institutions, delimits our view of what managers do as well as why and how they do things, and prevents a meaningful explanation of the nature of decision-making.” He also noted that such concepts as clearly identifiable industry boundaries limited the applicability of SCP.

SCP theory assumes that firms exhibit the same behaviour in identical circumstances following the rules of maximisation (Tsoukas & Knudsen, 2002). Firms are then perceived as being homogeneous. However, alternatives to the status quo occur and in reality firms *decide* whether to change or not. A more appropriate assumption to explain firm behaviour may be incorporated in the notion of “profit seeking” rather than “profit maximising”. Alternatively, firms are viewed as only altering their conduct in alignment to environmental changes, not in line with firm attributes. SCP does not incorporate an assessment of the strategic decision making processes managers undertake as the equilibrium theory assumptions deems that firms have exploited the opportunities they face, ruling out the possibility of strategic decisions. Moreover, SCP theory does not account for the ability of firms to shape the environment through their decisions and actions, such as through innovation (Addleson, 2001; Hamel & Prahalad, 1994).

In reality, strategy is a manifestation of the perceptions, understandings and decisions of people rather than following the “correct” strategic position (Addleson, 2001). Porter (1980, 1991) acknowledged the role of managerial decision making when he advocated the use of his generic competitive strategies. Thus, Porter appears to take an intermediate view whereby SCA is affected by both exogenous and endogenous characteristics. The assumptions inherent in SCP, therefore, restrict its ability to explain and accurately predict why some firms are able to consistently outperform others.

Industry unit of analysis

The third issue within SCP theory concerns the concentration on an industry unit of analysis. While the concept of strategic groups has modified SCP to account for intraindustry performance heterogeneity, its focus remains at the industry level. While Caves and Porter (1977) contended that intraindustry performance heterogeneity can be attributed to mobility barriers preventing firms from moving between strategic groups, the empirical evidence does not appear to support

the existence of such strategic groups. Even if strategic groups exist, the evidence suggests that instead of collusion between strategic group members intense competition may occur (see Gimeno & Woo, 1996). The application of strategic group theory has also been limited by the determination of these subjective groups.

Utilising industry unit of analyses may be inappropriate when investigating firm performance phenomenon and may lead to spurious results and incorrect interpretations (Spender, 1993). As McWilliams and Smart (1993, p. 67) noted, “using the wrong level of analysis is problematic because it will not lead to useful predictions/prescriptions of individual firm performance.” Firm strategy that is concentrated on industry structure only or on currently attractive industries, neglects other potential sources of advantage and these firms may be “surprised” by unconventional competitors (Hamel & Prahalad, 1994).

Tautological issues

Some scholars have raised tautological issues, for example, “industries with characteristics more distant from the hypothetical perfectly competitive extreme ... are by definition more likely to offer attractive returns” (Arend, 2003, p. 281). Powell (2001, p. 883) also noted that “many industry level phenomena are causally and ontologically ambiguous (e.g., is product differentiability a firm-specific or industry level phenomena? Exogenous or endogenous?).”

Competitive strategy focus

The last issue with SCP’s approach to strategy relates to its concentration on the achievement of SCA via the mechanism of competitive strategy. According to Venkatraman and Subramaniam (2002), SCP primarily possesses a business level focus which has led to explaining corporate strategy as simply an accumulation of the strategy of SBUs rather than considering the possibility of intraorganisational synergies. Consequently, corporate strategy is viewed as an amalgamation of competitive strategy utilised at the business level. Therefore, SCP theories appear to be of little relevance to corporate strategy.

2.5 THE ENDOGENOUS PERSPECTIVE OF SUSTAINABLE COMPETITIVE ADVANTAGE

Hoskisson et al (1999) observed that the research in strategic management performed during the 1950s and the 1960s centred on identifying SCA in terms of endogenous aspects, for example, managerial capabilities, organisational structure and systems (e.g., Ansoff, 1968; Chandler,

1962; Penrose, 1959). For instance, Penrose (1959) noted that firm growth can be attributed to the deployment of a range of skills, knowledge and capabilities that are accumulated by the firm. Over the last 15 years, the analysis has swung from the industry to the firm whereby, the focus has changed from the external environment as the generator of unusual returns (Langlois, 2003). Through the utilisation of the resources available to the firm, “strategic management provides a more valuable guide to profit maximising behaviour than neoclassical economics can” (Pandian & Robertson, 2003, p. 330).

The endogenous perspective suggests that both the firm’s internal, idiosyncratic characteristics and conduct are the main source of PSFP (Barney, 1991; Das & Teng, 2000; Hamel & Prahalad, 1994; Hawawini et al, 2003; Peteraf, 1993; Powell, 1996; Prahalad & Hamel, 1990; Rumelt, 1991). In contrast to the exogenous perspective of SCA, the fundamental assumption of the endogenous perspective is that firms are actually heterogeneous. As noted by Coff (2003), the key assumptions of management literature rest on the notions of opportunism and bounded rationality, that is, decision makers do not possess perfect knowledge, symmetric information or cognitive capability. The endogenous perspective seeks to explain performance heterogeneity displayed by *firms* evident *both within and across* industries.

2.5.1 Resource based theory

The significant theory within the endogenous perspective is RBT. Hoopes, Madsen and Walker (2003) observed that RBT is a combination of economics, organisational theory, and business policy. In contrast to structure-conduct-performance paradigm, RBT is a theory of growth rather than one of equilibrium. Harrison (2003) postulated that RBT is theoretically based on Ricardo’s early assertion that possessing and utilising superordinate resources can lead to SCA. The source of profitability can then be attributed to firm resources that are costly to imitate (Conner, 1991; Mahoney, 2001). Mahoney (2001) noted that RBT encompasses a variety of subtheories: resource based view (e.g., Barney, 1991; Wernerfelt, 1984), competence based theory (e.g., Eisenhardt & Martin, 2000; Hamel & Prahalad, 1994; Henderson & Cockburn, 1994; Prahalad & Hamel, 1990), first mover advantage (e.g., Dean & Brown, 1995; Lieberman & Montgomery, 1988; Nehrt, 1998), and knowledge based theory (e.g., Grant, 1996b; Madhok, 1996; Nonaka, 1991, 1994; Spender, 1989).

a) *The aim of resource based theory paradigm*

The primary aims of RBT are firstly, the measurement of a firm's resources and secondly, to uncover positive causal relationships between the firm's use of resources and SCA (Ray, Barney & Muhanna, 2004).

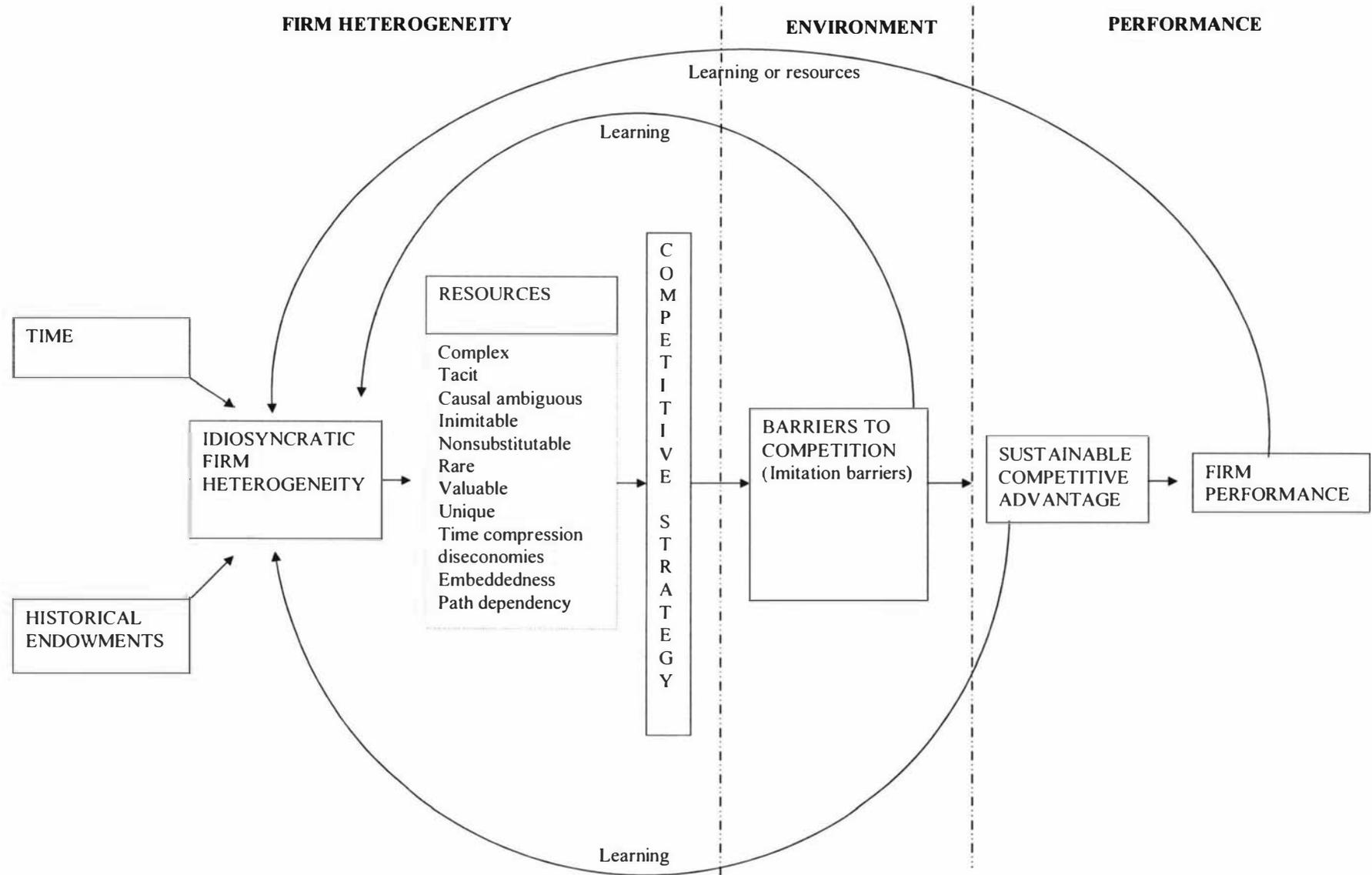
b) *Resource based theory paradigm assumptions*

Barney (1991) presented two fundamental RBT axioms. First, the resources that are distributed heterogeneously across firms are imperfectly mobile and thus resource heterogeneity can be long lasting, and second, costs are incurred when resources are transferred between firms. RBT then views the firm as possessing heterogeneous resources (Scarbrough, 1998). Resources can include capital, assets, capabilities, human resources processes, knowledge, relationships, and reputation. Resources are viewed as a mass of heterogeneous interconnected factors imbedded within the firm, for example, core competences (Nelson & Winter, 1982) as depicted in Figure 2.3. Firms are viewed as being inherently different possessing a portfolio of resources that could be leveraged over a number of industries (Hamel & Prahalad, 1994; Venkatraman & Subramaniam, 2002). Not all resources are tradable; in other words, untradable resources can be of value to the firm as they can be adapted to or directed into desired roles or can be accumulated internally. For example, "resources are converted into final products or services by using a wide range of other firm assets and bonding mechanisms such as technology, management information systems, incentive systems" (Amit & Schoemaker, 1993, p. 35).

Capabilities "refer to a firm's capacity to deploy *Resources*, usually in combination, using organisational processes, to effect a desired end" (Amit & Schoemaker, 1993, p. 35, italics in original). Through continual learning and knowledge accumulation, capabilities develop over time. Their use does not automatically result in their diminishment as experienced by other types of resources. As Amit and Schoemaker (p. 42) noted, "capabilities, by definition, cannot be purchased off the shelf but require strategic visions, development time and sustained investment." Although resources, capabilities, and core competencies have been defined separately in the literature, for the purpose of this research, the term "resource" will be used as a general term to cover all attributes (unless core competency theory is being specifically discussed).

"Envisioning the firm as a bundle of resources has broad implications. For example, the most important role of a manager becomes that of acquiring, developing, managing, and discarding

Figure 2.3. Model of resource based theory paradigm



NB: The model is depicted in linear form as it is anticipated that it evolves from left to right (PSFP) over time

resources” (Harrison, 2003, p. 9). This process is presented in Figure 2.3. Resources may be employed in unique ways, for example, complementary, concurrent and multiple uses, increasing the value of the resource. RBT has an essentially economic view as the underlying causal mechanism is economic competition whereby “firm behaviour is driven by rent seeking, as firms invest in resources and capabilities to gain competitive advantage” (Barney, 2000a, p. 266). Scarbrough (1998, p. 229) concluded that “developments in the resource-based theory of the firm produced a much more convincing view of organizations than the neoclassical assumptions of IO theory.” In summary, the assumptions that underlie RBT centre on the characteristics of the firm rather than the industry as apparent in SCP.

c) *Resource based theory paradigm predictions*

As evident in structure-conduct-performance, sustainable competitive advantage is of primary importance to resource based theory (Godfrey & Hill, 1995; Wiggins & Ruefli, 2002) although achieving SCA is predicted to occur via different mechanisms, namely, the resources possessed (refer to Figure 2.3). Resources are predicted to be difficult to imitate by competitors and, therefore, they can be a source of SCA. Resources are expected to be history dependent as they develop within the firm over time. Consequently, resources develop idiosyncratic characteristics leading to imitation and time compression difficulties (Amit & Schoemaker, 1993). Resources can be inherently unique or created in causally ambiguous and socially complex situations (Barney, 1991).

RBT predicts that firms achieve advantage over rivals from the possession and utilisation of rare, valuable (necessary but not sufficient for competitive advantage), unique, inimitable, and nonsubstitutable (necessary but not a sufficient condition for sustaining existing competitive advantages) resources (Barney, 1991; Priem & Butler, 2001a, 2001b). Thus, the very nature of resources (involving path dependency, tacit knowledge and skills, expense, complex, and causally ambiguous) protects SCA through barriers to imitation (Barney, 1986, 1991; Dierickx & Cool, 1989; Godfrey & Hill, 1995; Mauri & Michaels, 1998; Powell, 2001; Reed & DeFillipi, 1990).

The modes in which resources are created and utilised are predicted to be tacit in nature and, therefore, are firm specific. They cannot be easily traded and it is expected to be difficult for competitors to ascertain what vital resources are required. Godfrey and Hill (1995) claimed that performance persistence is due to the rate of resource obsolescence and the substitutability or inimitability (through imitation barriers) of the resource. RBT predicts that the more causally

ambiguous the resource, the more difficult it is for rivals to duplicate resulting in greater sustainability of advantage over those rivals.

The nature of competition is viewed in a broad and dynamic manner whereby firms compete for resources to satisfy existing and potential demand. Whereas, SCP views competition as striving for equilibrium in a static environment, RBT views competition as a continual struggle. The potential of a firm's resources are released to the market via business processes. In other words, the external environment determines the value of a resource (Priem & Butler, 2001a; Ray et al, 2004). RBT predicts that value creation derives from "strategic resources [that] are distributed unevenly across firms, or that different firms possess different bundles of strategically relevant resources" (Peteraf & Barney, 2003, p. 317). Value may also arise from the embedded nature of resources. In addition, firm performance is linked to capabilities gained from the synergetic utilisation of resources throughout the firm (Hamel & Prahalad, 1994).

In contrast to SCP, RBT predicts that SCA arises from firm *conduct* (i.e., decisions relating to acquiring, developing and deploying resources) rather than industry structure. The relationship between executive motives and behaviour, firm dynamics, and organisational goals are predicted to provide distinctive sources of success (Brown & Eisenhardt, 1998). RBT contends that managerial knowledge and decision making are barriers to imitation and thus, they are important (Adner & Helfat, 2003; Coff, 2003; Roquebert et al, 1996; Ruefli & Wiggins, 2003; Tallman, 1991). "One of the first competencies identified was general management capability. This led to the proposition that firms with "high quality" general managers will outperform their rivals" (Harrison, 2003, p. 9). For example, Spanos et al (2004) presented empirical evidence suggesting that managerial capabilities and strategy positively influence SCA. RBT assumes that decision makers, while not always the top management team, within the firm can intentionally contrive, select, direct and modify strategies (Tsoukas & Knudsen, 2002). As Montgomery (1994, p. 167) stated, "the same resources can be used differently under different circumstances", for example, different evaluations of potential opportunities produce different decisions. Resource creation and deployment decisions are predicted to alter in response to perceived environmental change: "What defines equilibrium is always changing because firms are continually reinventing novel ways to escape it" (Oliver, 2000, p. 292). Furthermore, Schumpeter (1934) proposed that firms have to adjust to exogenous shocks resulting from innovation and technology, again influencing firm resource decisions.

RBT suggests that, in contrast to SCP, SCA is not defined at the industry level. Barney (1991, 2001b) advanced two reasons for the failure of SCP to account for SCA, namely, the arbitrariness of defining industry boundaries, and the instability of industry boundaries due to technology and competition. Instead, Barney (1986, 1991) suggested that SCA can be characterised in two ways, namely, an efficiency or effectiveness advantage relative to existing or future competitors, or economic rents that is, in terms of advantage generated through the management of resources resulting in consistently higher firm returns over time (assuming risk is constant) than anticipated by stockholders. Explanatory variables of interest to RBT include relative market share as a proxy for performance, and firm size as an indicator of economies of scale and market power (Robins & Wiersema, 1995). The methodologies deemed most appropriate to analysing endogenous phenomena centre on inductive methods such as historical analysis and comparative case studies (e.g., Chandler, 1962). Longitudinal analysis is more appropriate because RBT assumes that the mechanism for SCA (e.g., strategy) develops over time.

d) *The role of strategy in resource based theory paradigm*

An ontological model of performance is employed with RBT whereby it seeks to locate the determinants of performance, specifically resources (Scarbrough, 1998). RBT aims to prove heterogeneous firm specific resources are a source of SCA rather than the competitive positioning of the SCP paradigm (Das & Teng, 2000). Market and industry characteristics are not a given because RBT views them as being able to be altered by firm decisions (Hamel & Prahalad, 1994; Scarbrough, 1998). Instead of viewing strategy as competitive positioning decisions, RBT considers strategy, itself, as being unique to individual firms. Resource heterogeneity entails different resource endowments and firm history, each leading to heterogeneous strategic decisions. A firm's core competencies are considered to have developed over long periods of time as the result of decisions made within the firm. As Jacobson (1992, p. 796) noted, "given a firm's invisible assets, some strategy choices will prove more effective than others. Strategies developed in the absence of an appreciation of these invisible assets are unlikely to prove successful." RBT contends that managers are expected to purposefully seek to differentiate their firms (Carroll, 1993).

In contrast to SCP, RBT predicts that the actions of firms can dramatically alter the environment (Scarbrough, 1998). RBT views strategy as a more constantly evolving phenomenon whereby barriers to imitation can be overcome by competitors through such strategies as continuous improvement and innovation. The dynamic nature of competition in RBT is also reflected in the

emphasis not only on resource deployment but also in the importance of resource creation. It is a view of strategy that is creative, adaptable and dynamic. The nature of competition is viewed as an ongoing process where advantages due to scale are viewed as less important than innovation and flexibility. Consequently, RBT attempts to explain why small firms can often compete successfully against much larger firms.

The majority of RBT views on strategy have regrettably centred on achieving SCA in other words, *competitive* strategy. Concentration on SBU competition primarily involves a short-term, narrowly defined focus on brand share, often at the expense of cross-business synergetic cooperation. Hamel and Prahalad (1994) contended that much strategy research has primarily focused on market (or product based) competition rather than premarket competition (i.e., the competition in the development and shaping of new markets and industries). They argued that gaining advantage or winning the battle for premarket competition (e.g., the competition for core competencies and foresight) is the most significant competition a firm faces. Thus, failure at the premarket stage means a firm has no advantage relative to rivals, and ultimately firm failure.

While Hamel and Prahalad (1994) presented a number of “essential” competitive strategies, they also advocated *corporate strategy* was of primary importance to firms whereby “corporate strategy must be more than an amalgamation of individual unit strategies” (p. 242). Additionally, Peteraf and Barney (2003) considered that RBT may be applied to the corporate unit of analysis as firms use this level of strategy to accumulate, direct and utilise their resources to achieve SCA. Therefore, RBTs view on corporate strategy can be divided into two areas. The first is environment manipulation and control due to a firm-wide focus. Hamel and Prahalad (1994) asserted that successful companies transform and reinvent industries by altering the rules of engagement, redrawing industry boundaries, discovering “white spaces,” and creating new industries: all corporate strategy initiatives. They recognised that advantage can only arise from prolonged, firm-wide commitment. Therefore, corporate strategy *should* direct competitive strategy.

RBT’s second view of corporate strategy centres on synergy, encompassing core competencies and leverage whereby RBT predicts “strategic interrelationships among businesses have a direct positive effect on firm performance” (Robins & Wiersema, 1995, p. 279). The synergy between the firm’s SBUs can lead to higher firm performance (Hamel & Prahalad, 1994) because “shared strategic assets or resources are critical to firm performance, and corporate strategy relies upon scope economies ... among businesses” (Robins & Wiersema, 1995, p. 277). The nature of

strategy changes if it is conceptualised in terms of developing and deploying core competencies. However, focusing on one core competency may result in the lack of core competencies in other areas. Therefore, appropriate core competency selection is of paramount importance to firm performance (SubbaNarasimha, 2001). SCA can be gained through leveraging firm resources across industries and SBUs via the *use* of corporate strategy. Although RBT views on strategy are more in accordance with those experienced by firms (i.e., dynamic in nature), to date this paradigm has focused on competitive strategy not strategy at the corporate level (with the exception of Hamel & Prahalad, 1989, 1993, 1994).

e) *Issues with the resource based theory paradigm*

Some scholars have identified a number of issues with RBT. These are assumptions on the nature of resources; the analytic and tautological nature of RBT; empirical verification issues, namely, immeasurability of unobservable resources and the causally ambiguous nature of resources; and lastly, the focus on competitive strategy. Each of these limitations are now discussed.

Assumption about the nature of resources

The assumptions in RBT related to the nature of resources introduce a limitation as despite the fact that RBT recognises the importance of the firm's resources, the theory does not specify how or from where they are obtained. Drawing from evolutionary theory, resources originate from unexpected idiosyncratic opportunities or from searches for solutions to conundrums or boundary conditions when existing resource combinations or innovation are exhausted (Ahuja & Katila, 2004; Nelson & Winter, 1982). Furthermore, the sources of SCA arising from unique resources are often difficult to identify.

RBT possesses a limiting assumption about the nature of resources in that resources can only generate value if they are heterogeneous, imperfectly mobile, valuable, rare, imperfectly imitable, and imperfectly substitutable (Barney, 1991; Cool, Costa & Dierickx, 2002). However, Teng and Cummings (2002) argued that resource inimitability may lead to competitive disadvantage rather than advantage as predicted by RBT whereby "imitability seems particularly advantageous with new technologies, where their wide[spread] adoption provides the basis for value creation" (p. 81). They also observed that RBT does not account for competitive advantage in one part of the firm causing competitive disadvantage in another part or for the firm as a whole. For example, airline frequent flyer programmes can provide an advantage in terms of customer numbers (loyalty) but may create a disadvantage in terms of administrative control.

Hoopes et al (2003, p. 891) stated that RBT “seems to assume what it seeks to explain” in that RBT defines performance in terms of heterogeneous resources. RBT provides only a partial explanation of competitive heterogeneity as other sources distinct from resources can influence SCA such as barriers to entry (Hoopes et al, 2003; Powell, 2001). Whereas, the assumptions of the SCP paradigm focus on the resource side, the implicit assumptions of RBT are on the demand side that is, homogeneous and immobile product markets (Priem & Butler, 2001a).

RBT does not define what, where, and how resource decisions are made. Although RBT predicts that capabilities are distributed throughout the firm, the theory appears to assume resources are created and deployed via managerial direction (Scarbrough, 1998). In addition, RBT does not consider resources beyond a single firm such as those resources arising from networks, alliances or relationships (e.g., suppliers) through which resources are combined to create advantage (Dyer & Singh, 1998).

Analytic statements and tautological reservations

It has been argued that RBT possesses analytic issues for instance, “different firms are heterogeneous by nature” (Arend, 2003, p. 281). In fact, Powell (2001, p. 882) contended that “virtually all resource based propositions are analytic.” These analytic propositions cannot be empirically tested. Priem and Butler (2001a; 2001b) argued that RBT appears tautological as resources are defined as those that generate rents and, therefore, the theory is true by definition. For example, “resources that are valuable by definition create value” (Arend, 2003, p. 281). Similarly, a firm which has a capability in producing capabilities will outperform firms that only possess capabilities (Scarbrough, 1998). However, Barney (2001b) argued that any tautological criticisms of RBT are flawed as the theory operates at different levels of analysis whereby the explanatory variables are located at the functional level whereas the dependent variable (i.e., performance) is measured at the level of strategy formulation that is, business *or* corporate levels. Barney (2001b) also suggested that any tautological aspects of RBT can be overcome by envisaging RBT as an extension of the equilibrium theories of zero economic profit (such as neoclassical microeconomics) whereby the market determines the value of resources. Alternatively, Conner (1991) noted that the tautological aspects of RBT could be eliminated by analysing the dissimilar levels of resources that may contribute differently to SCA.

Empirical verification

The third issue with RBT concerns the difficulties associated with empirical verification of its hypotheses and predictions. These issues can be classified into two categories, namely, resource

immeasurability and the causal ambiguous nature of SCA-producing resources. Unobservable resources or particularly SCA-producing capabilities are either by their very nature hidden, or are unclear to researchers' resulting in immeasurability (Hoopes et al, 2003; Teece, 1984; Winter, 1987 as cited in Robins & Wiersema, 1995). As Jacobson (1992) noted, "it is reasonable to conclude ... that important strategic factors influencing business performance will never be measured completely or without error. Such important factors as corporate culture are fuzzy and ill-defined" (p. 801).

Although it may be difficult to identify and measure advantage producing resources, Mahoney (2001, p. 657, italics in original) noted that "unobservable constructs can be useful in making *predictions*." However, Scarbrough (1998) argued that RBT employs an ontological model of performance whereby the firm should uncover the resources within the firm that lead to competitiveness. The ontological model employed produces "attribution of ultimate causes to nonempirical factors negates attempts at the careful dissection of cause and effect" (Scarbrough, 1998, p. 223). Consequently, researchers have inductively identified resources on the basis of outputs resulting in assumptions on cause and effect. Scarbrough (1998) contended that this has then led to difficulties establishing definitions and concepts.

The second issue of empirical verification concerns the causally ambiguous nature of some resources which cannot be empirically verified. Powell (2001) argued that these propositions should be classed as metaphysical statements. Causal ambiguity indicates that firms are unable to fully understand the relationship between resources and SCA, and therefore, cannot leverage the advantage (King & Zeithaml, 2001). Similarly, Prahalad and Hamel (1990) argued that the value of competitive advantages can recede if such resources are not identified, used or transferred. Theoretically the identification of causally ambiguous resources as sources of SCA and their utilisation throughout a firm may then render them imitable by competitors (Scarbrough, 1998). In other words, "causally ambiguous resources cannot be measured without making them causally unambiguous" (Arend, 2003, p. 281). Therefore, the act of identifying those advantage producing resources will alter the processes that originally created them (Scarbrough, 1998), a process that appears to be singularly destructive of the theoretical aims.

As outlined above, difficulties exist in the empirical measurement of RBT hypotheses, that is, identifying specific mechanisms linking resources to SCA. The identification of resources that produce SCA have usually been determined ex post (not a priori), limiting analysis of how these resources were created (Levinthal & Myatt, 1994). Hoopes et al (2003) contended that empirical

evidence presented disconfirming the importance of resources on SCA was viewed by the proponents of RBT as indicating “only that the resources or capabilities examined lack value” (p. 891). However, Barney (1995) argued that the VRIO model provides the framework for assessing of resources in firm performance in terms of Value (the fit of the resource to strategy and external environment), Rareness (value in terms of perception or determined by the market), Inimitability (cost of recreating synergy or imperfect factor markets), and organisational Orientation to use resources.

Godfrey and Hill (1995) suggested two ways in which RBT can be falsified. Firstly, by relying on either the application of the correspondence theory of truth, that is, that RBT is found to represent reality or secondly, by relying on abduction. Proxies have been used to operationalise RBT concepts of interest but issues arise from the possibility that invalid measures have been employed (Hoskisson et al, 1999). Powell (2001) suggested the adoption of a pragmatic epistemological justification whereby acknowledging RBT’s views of SCA add value as they explain and assist in creating SCA, until RBT can be replaced by synthetic propositions. RBT appears to provide valuable propositions regarding possible sources of SCA and should not then be set aside without replacement by a superior theoretical framework, which to date, has not, arguably, been presented.

Competitive strategy focus

Lastly, and as with SCP, the focus of RBT has been on achieving SCA through the mechanisms of competitive strategy. Focus has been on advantage created by SBUs not advantage created by the firm as a whole. Common to RBT empirical research, the explanatory variables have been correlated to BUP rather than firm performance measurements. This principle contrasts with much of the theoretical work whereby resources are considered to be a firm-wide phenomena. Again, corporate strategy has received limited attention, both theoretically and empirically, with the exception of a few contributions that incorporated corporate strategy, for example, the work of Hamel and Prahalad relating to foresight, strategic architecture, core competencies, and strategic intent.

f) Aspects of the resource based theory paradigm that incorporate corporate strategy

Two aspects of RBT that do feature the concept of corporate strategy are now discussed. One centres on corporate strategy, namely, core competency theory, and the other on the skills of the corporate strategy decision makers.

Core competency theory

While most aspects of RBT focus on the achievement of SCA, the group of theories presented by Prahalad and Hamel (1990) and Hamel and Prahalad (1989, 1993, 1994) advocated a firm level unit of analysis, in other words, the role of corporate strategy on PSFP or as they term its “inter-firm competition”. They recognised that future opportunities should not be the domain of a single business unit, industry, or market. PSFP is thought to be achieved via the utilisation of core competencies that are located *across* the firm in addition to the management of business portfolios. Core competency theory suggests that firms must acquire the foresight to recognise future markets will occur outside existing industries or neatly defined business units. For example, various researchers have suggested that a relationship exists between core competencies and subsequent product innovation (Dougherty, 1992; Henderson & Cockburn, 1994; Leonard-Barton, 1992).

Core competencies are an intertwining collection of abilities, learning and technologies which may reside in more than one SBU. Hamel and Prahalad advocated that core competencies (including sometimes disparate technologies) will need to be assessed, integrated and applied throughout the firm. Therefore, core competencies if they are to be leveraged over a number of industries, require a corporate view of the firm. However, deciding to concentrate on core competencies requires deliberate and sustained decisions over long periods of time. This is inherently difficult to achieve in SBUs as firstly, the time frames required for competitive strategy usually encompass a maximum of a few years and secondly, the investment resources required are usually beyond those available to a SBU. Thirdly, the size, scope, complexity required to build new core competencies extend beyond the capacity of a SBU, and lastly, SBUs are narrowly focused on a small number of industries or markets and thus, may not recognise the opportunities for leveraging resources *across* the firm. Moreover, SBUs may imprison firm core competencies. Therefore, the synergistic governance of the entire firm *is* a corporate responsibility.

However, researchers have experienced difficulty in operationalising the concept of core competencies. Some examples of operationalisation include those by Henderson and Cockburn (1994) who divided core competencies into component competencies (day-to-day skills and knowledge) and architectural competencies (the use of component competencies through integration and development of new competencies). Their analysis suggests that core competencies could be represented by the identification of firm promotion of knowledge and information flows, for example, close relationships between firms and universities, and joint

research projects. They uncovered evidence that firms are heterogeneous in terms of expertise. Alternatively, Mascarenhas, Baveja and Jamil (1998) suggested that there are three sources of core competencies. Superior technical know-how (as evidence of deep understanding) and latest product developments; secondly, reliable processes (i.e., decomposition, relinking and transferring skills) and lastly, close relationships with external parties. Douglas and Ryman (2003) utilised external experts to evaluate potential core competencies, a process that appears flawed from the outset as external experts are unlikely to be privy to the unique knowledge and skills embedded in these core competencies. Another method of assessing core competencies involved researchers employing surveys and interviews with internal respondents asking them to nominate the firm's core competencies (e.g., King & Zeithaml, 2001). Attempts have been made to link core competencies to synergy and thus, diversification. For example, Markides and Williamson (1996) noted that the successful performance of related diversification firms was due to the transferring and sharing of core competencies across SBUs.

In summary, core competency theory proposed that the creation and use of them throughout the firm can result in PSFP. Firms must first decide to use the core competency approach as a means of achieving firm success. However, the embedded nature of core competencies may make it difficult to identify the core competencies that exist within the firm. Understanding the nature of core competencies further enhances their protection and deployment in the competition for future markets and industries. Industry foresight to focus on the correct core competencies will be required for success. This process must then be followed by consistent and effective decision making over time. Furthermore, the core competency plans formulated should be implemented to account for the integration of disparate skills and technologies required to release the core competency's potential. Information and learning at all stages of the core competency formulation and implementation process are fed back into the cycle. The core competency approach, therefore, requires a deep and comprehensive understanding of the often path dependent, complex, and obscure nature of both existing and future core competencies. But this understanding further enhances core competency creation and deployment, an iterative and embedded process that would appear to result in sustained rates of improved performance (PSFP).

Corporate level decision making skill

As previously presented in the RBT section, it is expected that heterogeneous managerial ability, as an example of an endogenous resource, could account for heterogeneity observed in firm performance. Therefore, it follows that corporate level decision making skill could also be

heterogeneous. Managerial skill has been recognised as a contributor to PSFP since the foundations of RBT were laid. As early as 1955, Drucker argued that managers have to possess the skill to lead their firms towards PSFP. Additionally, Penrose (1959) noted that each firm creates subjective opportunities given its resources. The realisation of opportunity fulfilment can be achieved by what the firm does with resources in addition to what resources the firm possesses (Johnson, Merlin & Whittington, 2003).

Corporate level decision makers included the top management team (e.g., Chief Executive Officer [CEO]) and the board of directors. For the purposes of this research, both groups are considered together, in other words, representing the *level* of corporate strategy decision making. Corporate strategy decision making skill can provide an explanation of heterogeneous corporate strategy decisions. As corporate strategy is expected to provide the basis for all organisational actions, the implicit assumption is that poorly constructed or inappropriate corporate strategy can greatly impact PSFP. Corporate strategy decision makers are inherently different as each decision maker possesses heterogeneous knowledge and experience. These characteristics are thought to shape the perceptions and values of a decision maker (Ebert & Mitchell, 1975; Streib, 1992). Although beyond the scope of the current research, associations between specific managerial characteristics have been investigated, for example, longer tenured managers are less liable to implement change (Finkelstein & Hambrick, 1996), while more recent research suggests that optimal tenure for a CEO is between 10 and 15 years (Henderson, Miller & Hambrick, 2006).

Adner and Helfat (2003) identified three factors which comprise managerial skills. These are firstly, managerial human capital or the skills a manager acquires through “on the job” learning. They noted that “managers may differ in both the mix of their skills and in the level of ability for each type of skill” (p. 1020) which leads to heterogeneous decisions. Hamel and Prahalad (1994) advocated that decision making skill incorporates such concepts as foresight and leadership. They further suggested that these aspects of decision making skill have a profound impact on firm performance whereby these skills will be employed within superior firms. The heterogeneity in the search for alternatives and selection of decision, implementation, and evaluation of decisions also produces heterogeneous corporate decisions (Hambrick, 1982; Milliken, 1990). Decision making skills are incorporated into the frames of references which shape decisions.

The second managerial skills factor is the social capital incorporating the manager’s internal and

external relationships. These relationships have been found to impact on firm performance due to information and knowledge flows, and communication, again resulting in heterogeneous decisions (Burt, 1992; Gelatkanycz & Hambrick, 1997). The last factor underlying managerial skill is managerial cognition which relates to the decision makers' frames of reference. The complexity and uncertainty of the environment in which decision makers make decisions means that they rely on previous successful experiences (Cyert & March, 1963; Hitt & Tyler, 1991). These experiences are incorporated into the frames of reference employed during the decision making process. This dominant logic employed by decision makers, whether by perceptions or recognition of potential issues, has been found to influence firm performance (Holbrook, Cohen, Hounshell & Klepper, 2000; Prahalad & Bettis, 1986, 1995; Tripsas & Gavetti, 2000).

Decisions are not made in a vacuum; instead decisions are made under conditions characterised by uncertainty, asymmetrical information, complexity, and constrained by path dependencies (Baird & Thomas, 1985; Trull, 1966). Therefore, limitations on cognitive power are encountered and, consequently, accommodations are made (Simon, 1977; Wilson & Alexis, 1962). Janis (1989) suggested that to reduce complexity, decision makers employ satisficing, rules, make small adjustments to previous decisions and lastly, break down issues into components. Corporate strategy decision makers will respond to the conditions facing their firm in line with how they deal with these restrictions to "ideal" decision making. These four factors then impact on the quality of the decision making as superior decision makers are able to make the right decisions, at the right time whereas inferior decision makers make inferior decisions. Reasons for inferior decisions have been offered and include, for example, ambiguity of a garbage-can decision making model (March & Weissinger-Babylon, 1986) or from groupthink (Janis, 1989).

Corporate strategy decision making cannot be encompassed into a single event: It can be conceptualised as a process. Research has indicated that quality decisions arise from decision making processes (Jones, Jacobs & van't Spijker, 1992; Jones, Jones & Deckro, 1994; Nutt, 1992; Rodrigues & Hickson, 1995). Bourgeois and Eisenhardt (1988) established that higher levels of comprehensiveness in the decision making process lead to higher firm performance suggesting that the background decisions (which were beyond the scope of this research) assist in the comprehensiveness of decision making. Decision making has been conceptualised as a process involving setting objectives, searching for alternatives, evaluating alternatives, making the decision, implementation of decision and lastly, evaluation of the success of the decision (Harrison, 1999). Failure at any stage of the process could render the decision as ineffective or

inefficient. Fredrickson and Mitchell (1984) noted that logical consistency throughout the decision making process should exist.

Corporate level decision making skill, through the efficacy of decisions, could account for the heterogeneity in resource governance which shapes firm performance. Some firms are more qualified to take advantage of these corporate level opportunities through the skill and knowledge of the managerial pool available to a firm. Even if constrained by internal and external influences, corporate strategy decision makers formulate *discretionary* corporate level decisions. As Penrose (1959, p. 68) noted, “the same resources can be used differently in different circumstances.” The accumulation and deployment of finite resources means these vital decisions require trade-offs between opportunities. Furthermore, Collins (2001, p. 11) argued that “greatness, it turns out, is largely a matter of conscious choice.”

2.6 DIFFERENCES BETWEEN THE EXOGENOUS AND ENDOGENOUS PERSPECTIVES OF SUSTAINABLE COMPETITIVE ADVANTAGE¹

Exogenous and endogenous perspectives represent different theoretical frameworks for predicting sustainable competitive advantage. Whereas economists focus on the performance of industries or economies (thereby only considering the impact of firms on industry in a broad sense), strategic management is concerned with the performance of individual firms. The distinguishing difference between industrial organisation economics and strategic management is each School’s view of firm heterogeneity. A summary is presented in Table 2.1.

The structure-conduct-performance and resource based theory paradigms predict that sustainable competitive advantage arises from isolating mechanisms (industry structure and resources respectively) as depicted in Figures 2.2 and 2.3. The two sources of isolating mechanisms drive different notions of strategy. The structure-conduct-performance paradigm posits that firms have only a limited role in strategy whereby industry structural characteristics (e.g., concentration and barriers to entry) influence the competitive “rules” and the generation of generic sets of strategy applicable to certain industry structures. The structure-conduct-performance view of sustainable competitive advantage predicts that firms select market positions from a certain number of appropriate strategies as determined by industry structure. Therefore, “given the same conditions, all firms will do the same thing” (Nelson, 1991, p. 65) and thus, firm heterogeneity is

¹ Given the frequent use of abbreviations and to assist the reader, abbreviations are not used in the summary sections and conclusion chapter.

not significant when explaining sustainable competitive advantage. Whereas the logic of the structure-conduct-performance paradigm suggests that industry effects on business unit performance are of greater magnitude and persistency comparative to business and corporate effects, the endogenous view predicts business and corporate effects (including strategy) are the greater determinants of sustainable competitive advantage.

Resource based theory views the role of the endogenous characteristics of the firm as having wider implications in the strategy available to the firm. Resources are viewed as a mass of heterogeneous interconnected capital, assets, capabilities, processes and knowledge imbedded within the firm. Firms are viewed as inherently different and that they possess a portfolio of resources that could be leveraged over a number of industries. The endogenous perspective predicts that sustainable competitive advantage heterogeneity results from the discretionary behaviour and actions of firms in relation to their environment. As decision making skill is a capability, different firms implement heterogeneous strategies resulting in performance heterogeneity. Exogenous factors may influence sustainable competitive advantage but they are not the only aspects that do. If the endogenous aspects of a firm have a greater impact on firm performance, this suggests that strategic decisions about the creation and deployment of firm attributes matters.

2.7 THEORETICAL SUMMARY: PART I

One of the aims of strategic management is to develop an understanding of the endogenous decisions with a view to formulating explanations as to why some firms outperform others. Persistent superior firm performance is thought to arise from sustainable competitive advantage created from the use of strategy to develop and manipulate certain elements. Determining the characteristics of the “certain elements” is dependent on the theoretical lens applied. The focus of these theoretical perspectives has been at the business unit of analysis (i.e., sustainable competitive advantage) rather than a firm unit of analysis (i.e., persistent superior firm performance) which is applicable to corporate strategy. Two theoretical perspectives on the source of sustainable competitive advantage were presented.

Although industrial organisation economics is concerned with intraindustry heterogeneity, the structure-conduct-performance paradigm has had a major impact on strategic management. Firms within industries are regarded collectively and are considered heterogeneous only in size. Furthermore, firm decisions which are made at the business level are determined by external

Table 2.1. Summary of the structure-conduct-performance and resource based theory paradigms

Aspect	Structure-conduct-performance paradigm	Resource based theory paradigm
Unit of analysis	Industry or business unit	Firm or business unit
Assumptions		
1. Firms	<p>Regarded collectively</p> <p>Firm homogeneity (except for size differences)</p> <p>Rational behaviour</p> <p>Homogeneity of the past</p> <p>Management at the business level</p> <p>Make identical decisions or duplicate competitors</p> <p>Firms of similar size possess equivalent advantages</p> <p>Firm behaviour determined by external situations</p>	<p>Firm heterogeneity</p> <p>Possess a portfolio of heterogeneous resources</p> <p>Resources can be leveraged over a number of industries</p> <p>Seek to differentiate from competitors</p> <p>Important role of managers</p>
2. Industry	<p>Characterised by different average profit levels that persist over time (industry attractiveness)</p> <p>Existence of optimal industry structure which leads to sustainable competitive advantage</p> <p>Rivalry and/or competition is bad for performance</p> <p>Clearly definable industry boundaries</p>	<p>Resources can be leveraged over a number of industries</p> <p>Can be altered by firm decisions</p>
3. Environment	<p>Static, repetitive, constant, perfect knowledge, rationality, homogeneous</p> <p>Equilibrium</p>	<p>Dynamic, asymmetric information</p> <p>Disequilibrium and growth</p>
4. Resources	<p>High mobility restricts development of long-term resource heterogeneity, therefore are not sources of sustainable competitive advantage</p> <p>Physical assets creating barriers to entry or economies of scale</p>	<p>Distributed heterogeneously across firms</p> <p>Imperfectly mobile</p> <p>Costs occur when resources are transferred between firms</p> <p>Not all resources are tradable</p> <p>Resources are converted into final products or services</p> <p>Resources may be employed in unique ways</p> <p>Mass of heterogeneous interconnected factors</p> <p>Develop over time</p> <p>Path dependent</p> <p>Historically embedded</p> <p>Causally ambiguous</p> <p>Idiosyncratic characteristics</p>
5. Nature of factors	<p>Observable</p> <p>Controllable</p>	<p>Unobservable</p> <p>Complex</p> <p>Dynamic</p>
Nature of competition	<p>Control industry structure</p> <p>Striving for equilibrium in a static environment</p>	<p>For resources</p> <p>Broad and dynamic</p> <p>Continual struggle</p> <p>Importance of resource creation</p>
Isolating mechanism	Industry structural characteristics	Possession and utilisation of resources
Performance defined in terms of	<p>Efficient allocation of resources</p> <p>Profit maximisation</p>	<p>Resource governance</p> <p>Profit seeking</p>

Aspect	Structure-conduct-performance paradigm	Resource based theory paradigm
Profits depend on	Isolating mechanisms that restrict competition	Isolating mechanisms due to imitable resources and capabilities Firm resources that are costly to imitate
Explains and predicts	Industry level phenomena	Firm level phenomena
Predicts		
1. Sustainable competitive advantage is due to	Industry structure Key driver of sustainable competitive advantage: economies of scale	Firm resources Key driver of sustainable competitive advantage: economies of scope Firms achieve advantage from the possession and utilisation of valuable, rare, inimitable, nonsubstitutable resources Sustainable competitive advantage arises from firm conduct
2. Over time performance	Converges toward the industry average	Constantly changing due to firm uniqueness, Idiosyncratic behaviour, creativity, innovation
3. Empirical predictions	Industry effects persist over time Industry effects are more important than firm effects	Firm effects more important than industry effects
4. Other predictors	Successful firms operate in attractive industries Attractive industries are characterised by auspicious industry structure Industry structure protects average profitability Variations in profitability determined by industry structure Positive relationship between industry concentration and collusion Positive relationship between height of barriers to entry and industry profits Large firms are successful due to industry structural characteristics Industries characterised by greater concentration are more attractive Product differentiation is an important barrier to entry Stage of the life-cycle or the industry growth rate are important barriers to entry	Resources are difficult to imitate by competitors Resources are history dependent Resources are idiosyncratic leading to imitation difficulties Firms protect sustainable competitive advantage through barriers to imitation Managerial knowledge and decision making are barriers to imitation Causally ambiguous resources are difficult to duplicate
Limitations	Unit of analysis (business or industry levels) Static analysis Reliance on barriers to entry	Unit of analysis (business level) Does not specify how or where firms obtain the resources Provides only a partial explanation of competitive heterogeneity Does not define what, where and how resource decisions are made Does not consider resources beyond a single firm Resource immeasurability
Empirical research focus	Interindustry performance heterogeneity	Interfirm performance heterogeneity
Methodology	Utilise average industry performance differences to distinguish structural obstructions to competition Deductive Cross-sectional analysis Historical data Quantitative (large datasets collected from secondary sources)	Inductive Longitudinal analysis Case studies
Variables commonly used	Industry concentration (proxy for barriers to entry or lower rivalry) Asset, capital and advertising intensity (proxy for barriers to entry) Industry growth	Relative market share Firm size

Aspect	Structure-conduct-performance paradigm	Resource based theory paradigm
Aims of strategy	Obtain or maintain pseudomonopolistic market power (through collusion or mutual forbearance) Maximising profit Porter: exploit market imperfections by altering nature of competition or industry structure	Uniqueness Long-term success Seeks to locate determinants of performance (i.e., resources)
Strategy is determined by	Industry structure	Nature of resources
Strategy is viewed as	Limited influence on sustainable competitive advantage or Fitting into predetermined choices to the firm's environment or Competitive positioning (influencing competition in the firm's favour) <ul style="list-style-type: none"> - selecting attractive industries - erecting barriers to entry - impose higher costs or lower quality - leveraging market imperfections 	Unique Portfolio of capabilities Response to changing environment Managers purposefully seek to differentiate their firms Decisions can dramatically alter the environment Constantly evolving, creative, dynamic Continuously competing for resources Long-term concept
Successful firms strategy is	Selecting attractive industries characterised by auspicious industry structure Use normative strategic choices	Transforming and reinventing industries Continuously alter the nature of competition (e.g., innovation)
Corporate strategy	Limited impact/influence on sustainable competitive advantage or firm performance Is the aggregation of competitive strategy of single business units	Environment manipulation and control due to a firm-wide focus and commitment Reinventing industry boundaries, creating new industries Synergy, encompassing core competencies and leverage Core competency approach Corporate strategy directs competitive strategy Managerial skill in corporate strategy decision making

factors, in other words, industry structure. Strategy is viewed as either, having limited influence on sustainable competitive advantage, or fitting predetermined strategic choices to the firm's environment, or competitive positioning. Strategy aims to obtain and protect pseudomonopolistic market power (e.g., deciding to erect barriers to entry) thereby lowering competition and increasing profit. Successful firms' strategy selects attractive industries which are characterised by auspicious structural characteristics. In other words, strategy can be utilised to alter or manipulate the nature of competition whereby sustainable competitive advantage is achieved for the correct positioning of products via specific competitive strategies through business units. Creativity and uniqueness is not sought as managers operating in the same industry are thought to make identical decisions or duplicate competitors' strategies. Consequently, the structure-conduct-performance paradigm does not theorise on corporate strategy beyond the supposed accumulation of the competitive strategy of single business units.

The second theoretical lens applied has been that of the endogenous perspective whereby firm performance results from the heterogeneity of internal, idiosyncratic firm characteristics and conduct. Resource based theory is the dominant paradigm within this view. Rather than the assumption of equilibrium as evident within the structure-conduct-performance paradigm, resource based theory is a theory of growth whereby possessing and utilising resources leads to sustainable competitive advantage. Resources are historically embedded as they develop over time, developing idiosyncratic characteristics which are unique, difficult to imitate and substitute (i.e., the nature of the resource leads to the inability to imitate) and thus, resulting in sustainable competitive advantage over rivals. The nature of competition is viewed as broad and dynamic whereby firms continuously compete for resources to satisfy existing and potential demand. Resource based theory concentrates on competitive strategy apart from two aspects, namely, core competency theory and corporate strategy decision making skill. These two aspects of the resource based theory provide a theoretical framework at the corporate level that is, corporate strategy. The possession and utilisation of core competencies theoretically influences firm performance. Firms must possess the understanding of these complex core competencies so that they can be leveraged firm-wide. Furthermore, due to the expense, complexity and long-term nature of core competencies, their management simply cannot be performed successfully at the business level.

Resource based theory recognises that skill in decision making at the corporate level is heterogeneous and can be a barrier to imitation and hence success. In other words, superior decision makers will outperform inferior decision makers. Decision makers control, select,

direct, and modify strategy in response to the dynamic competitive environment and, therefore, strategy is unique. Resource shortages can be overcome by decisions regarding innovation and other mechanisms that firms seek to continuously alter the nature of competition. Overall, strategy is viewed as a long-term concept. Firms create and utilise strategy with the aim of ensuring persistent superior firm performance.

A predominant assumption within the strategic management literature focuses on the positive contribution of executives on persistent superior firm performance (Bailey & Helfat, 2003). Corporate strategy is formulated and chosen by corporate level decision makers. It is reasonable to suggest then that higher quality decision makers create and implement superior decisions and thus, achieve higher firm performance. This view contrasts with the main assumption evident within the empirical literature that will be presented in the remainder of this chapter, namely, decisions made at the corporate level have a limited impact on both business unit and firm performance. This assumption is unwarranted when one considers the influence of corporate strategy evident in all firms in reality (i.e., the selection of industry or industries in which the firm operates, the selection of businesses, and decisions relating to the selection of internal governance structures such as, organisational design and control and compliance mechanisms) which may significantly influence business unit performance and the firm as a whole. These decisions are corporate strategy decisions (discussed in Chapter Three). Consequently, persistent superior firm performance may result from more than just products, markets, or industries.

PART II: EMPIRICAL LITERATURE REVIEW

2.8 EMPIRICAL OVERVIEW

Researchers in the field of strategic management have proposed that the delivery of persistent superior firm performance can be achieved via the mechanism of corporate strategy. Bowman and Faulkner (1997, pp. 207-208) for example, noted that “the major concerns of corporate strategy are to add value to the direction of the corporation by selecting the right markets to be in, resourcing them appropriately, and controlling the resources efficiently.” The firm can influence performance outcomes through the mechanism of corporate strategy, in other words, strategy is utilised to create and deploy firm resources and to influence the nature of competition (Reed & DeFillippi, 1990). Although the majority of strategic research focuses on competitive strategy, some research has been purported to investigate the influence of corporate strategy on PSFP.

Part II presents a review of the empirical evidence of corporate strategy being a source of firm performance. The empirical evidence of corporate effects is outlined first, including the methodologies employed, the main conclusions, and the validity issues evident in the statistical models employed to estimate corporate effects. Secondly, additional empirical research into the corporate strategy-performance association is explored and has been divided into specific corporate strategies and their relationship to firm performance, then the relationship between normative models of the centre, corporate advantage and firm performance and lastly, implicit assumptions of a corporate strategy-performance association.

2.9 THE EMPIRICAL EVIDENCE OF CORPORATE EFFECTS

The two competing exogenous and endogenous perspectives evident within strategic management have driven researchers in their attempt to uncover empirically which factors (industry or firm) are the sources of performance. As the majority of research has measured the influence of various effects on BUP, it is more accurate to review this research in terms of BUP rather than PSFP (only two studies of those reviewed in Table 2.2 utilised firm performance measures when estimating corporate effects). A large body of research has provided empirical support for the hypothesis that endogenous constituents (i.e., firm effects) account for a larger proportion of BUP in comparison to exogenous characteristics (i.e., industry effects). Firm effects supposedly account for a range of between 0.8% and 114% of the variance in BUP, in comparison to industry effects which account for a more modest -1.6% to 62.8% of the variance in BUP (refer to Table 2.2). Rather than uncovering the nature of profitability heterogeneity between firms, this empirical research has focused on developing statistical models that sought to establish the *existence* of a number of variables (e.g., industry, business, and corporate effects) that influence BUP. These empirical studies have built on the previously published IO research which investigated the persistence of above average returns (e.g., Cubbin & Geroski, 1987; Mueller, 1977, 1986; Waring, 1996). A small body of economic researchers have also presented empirical evidence of industry effects in comparison to firm effects (e.g., Liebenson & O'Connor, 1972).

As the topic of this research centres on corporate strategy, the focus of the following overview of the extant literature concentrates on the phenomena of corporate effects. Within this research stream, a number of scholars have specifically sought to identify the impact of corporate effects

Table 2.2 Empirical research of corporate effects reported in academic literature during the period of 1985 - 2006

Author	Year	Data utilised	Method of analysis	Dependent variable	Model/sample	Industry effects %	Business effects %	Corporate effects %	Does corporate strategy matter?
Schmalensee	1985	US FTC Sample: 456 manufacturing firms Segments with >\$10m sales and assets 1975	ANOVA	ROA per business		18.8 - 19.3	0.2 - 0.6	0	No Corporate effects defined in terms of corporate culture
			COV			19.5	0.6	NM	
Wernerfelt & Montgomery	1988	US FTC Sample: 247 manufacturing, industrial and utility firms 1976	ANOVA	Tobin's <i>q</i> per firm		10.9 - 20.1	0 - 2.3	0.2 - 3.7	Yes Narrowly diversified firms' performance is better than widely diversified firms
Hansen & Wernerfelt	1989	US 60 Fortune 1000 firms Widely diversified firms Time frame not specified	ANOVA	5-year average ROA per firm		18.5		37.8	Not measured
Kessides	1990	US FTC Sample: 456 manufacturing firms Market share > 1% 1975	Weighted least squares regression with mix of random- and fixed-effects	Price-cost margin per business		4.7 - 25.2	6.6 - 27.5	5.1 - 9.8	Yes
Runelt	1991	US FTC Manufacturing firms Segments with >\$10m sales and assets Sample A: market share > 1% (457 firms) Sample B: market share > 0 (463 firms) Model 1 Full model (all variables) Model 2 Restricted model 1974 - 1977	Nested ANOVA	ROA per business	A1 B1	15.3 - 17.9 9.8 - 10.3	33.9 - 34 41.3 - 41.4	14.8 - 17.6 10.9 - 11.6	No Corporate effects three times larger when included small businesses No evidence of synergy
			COV		A1 A2 B1 B2	7.3 8.3 4.0 4.0	47.2 46.4 44.2 44.2	0 0.8 1.6 1.6	
Powell	1992	US Mailed survey to CEOs Wood upholstered furniture (stable industry) and women's dresses (unstable industry) 80% of sample were single business firms Sample A: 113 firms Sample B: 52 firms (in-depth interviews) 1987 - 1988	Survey of executive perceptions Hierarchical regression Analysis of covariance	Overall performance 3-year profitability per firm Sales growth per firm		25 19 35	NM NM NM	NM NM NM	Not measured
Balakrishnan & Fox	1993	US Compustat 295 single business firms Mining and manufacturing firms 1978 - 1987	COV	Leverage per firm Log leverage (capital structure) per firm		10.5 5.5		52.1 50.5	Not measured
Kotha & Nair	1995	Japan NEEDS financial data base 25 firms in machine-tool industry Average degree of diversification in 1991 < 14% 1979 - 1992	LIMDEP	Return on sales per firm Changes in sales per firm		56 26		45 5	Not measured

Author	Year	Data utilised	Method of analysis	Dependent variable	Model/sample	Industry effects %	Business effects %	Corporate effects %	Does corporate strategy matter?
Powell	1996	US 166 Northeastern single business firms with +50 employees	Survey of executive perceptions	Overall performance Profitability per firm Sales growth per firm		15 - 25 10 - 19 19 - 35	NM NM NM	NM NM NM	Not measured
Roquebert, Phillips, & Westfall	1996	US Compustat Manufacturing firms Excluded single business firms 91-114 in each sample (total 10 samples) 1985 - 1991	COV	ROA per business		10.2 0 - 20.7	37.1 20.6 - 58.2	17.9 9.3 - 27.7	Yes Corporate effects diminish with increased diversification
Brush & Bromiley	1997	Simulated data of business and corporate effects <i>Model 1: Corporate effects influences all businesses</i> <i>Model 2: Corporate effects influences half the businesses</i>	Monte Carlo simulation of estimates	ROA		variance components non-linear indicator of importance			Yes Rumelt model underestimated corporate effects Importance of effect is approx sqrt of the variance component
McGahan & Porter	1997	US Compustat Excluded finance + government sectors Sample: 7003 firms 26% diversified firms Segments with >\$10m sales and assets 1981 - 1994	Nested ANOVA COV	ROA per business		6.8 - 9.4 18.7	34.9 - 35.1 31.7	9.1 - 11.9 4.3	Yes Assumes corporate effects only if firms diversified But varies in impact across sectors (e.g., lower corporate effects in manufacturing and higher in wholesale/retail, transportation, and agriculture/mining sectors)
Mauri & Michaels	1998	US Compustat Sample: 264 manufacturing firms Single business firms Excluded 1992 sales < \$100m Sample A: 1988 - 1992 Sample B: 1978 - 1992	COV	ROA per business	A B	6.2 5.8	36.9 25.4		Not measured
Brush, Bronuley & Hendrickx	1999	US Compustat Excluded finance sector <i>Model 1 R2</i> <i>Model 2 R</i> <i>Model 3 Allocated all shared variance to industry effects</i> <i>Model 4 Standardised coefficients</i> 1986 - 1995	Continuous-variable model with 2-stage least squares regression COV	ROA per business	1 2 3 4	Average ratio incremental CE to IE 1.6 Average ratio incremental CE to IE 1.25 Average ratio incremental CE to IE 1.15 Average ratio incremental CE to IE 1.9 CE=corporate effects, IE=industry effects			Yes COV suggests industry more important than corporate effects while simultaneous equation results suggest corporate effects more important than industry effects
McGahan	1999	US Compustat Excluded finance and governmental sectors Segments with >\$10m sales and assets 65% sample comprised of single business firms where corporate effects was set to 0 Sample A: 4947 firms Sample B: 1777 diversified firms only <i>Model 1 Full model (all variables) adjusted R2</i> <i>Model 2 Restricted and error not included</i> 1981 - 1994	ANOVA	Tobin's q per firm Accounting profitability per firm Return on replacement value of assets per firm	AP1 AT1 BP1 AP2 AT2 AP1 AT1 BP1 AP2 AP1 AT1 BP1 AP2	27.9 2.9 NM 41.5 NM 10.7 7.7 NM 29.6 14 3.6 NM 31.6	37.1 NM NM 55.2 NM 23.7 NM NM 65.7 27 NM NM NM 60.9	0 0.1 1.5 NM 0.1 0 0 0.2 NM 0 0 0.1 NM	No Corporate effects arises from relatedness due to diversification Corporate effects less stable than industry effects Corporate effects less predictable than industry effects

Author	Year	Data utilised	Method of analysis	Dependent variable	Model/sample	Industry effects %	Business effects %	Corporate effects %	Does corporate strategy matter?
McGahan & Porter	1999	US Compustat 2981 firms 35% diversified firms Excluded finance sector Segments with >\$10m sales and assets Segments with >6 years data <i>Sample A: Order entry year, industry, corporate, business</i> <i>Sample B: Order entry year, corporate, business, industry</i> 1981 - 1994	COV	Accounting profitability per business	A B	76.6 - 81.8 66.2 - 83.2	47.9 - 65.5 45.7 - 63.1	53.6 - 71.7 56.0 - 77.2	Incremental industry effects persists longer than corporate effects Corporate effects varied for high and low performers Supported the structure-conduct-performance paradigm Measured persistence of incremental effects
Chang & Singh	2000	US Trinet Manufacturing with +20 employees Excluded single business firms <i>Sample A: market share ~ 1% (435 firms)</i> <i>Sample B: market share ~ 0 (709 firms)</i> <i>(sample B divided by firm size I./236],M 237],S 236])</i> 1981, 83, 85, 87, 89	COV	Market share per business	A B L M S	13.1 - 15.9 17.0 - 17.5 19.3 40.6 54.2	31.9 - 50.2 28.0 - 48.7 47.6 8.8 8.9	2.4 - 7.6 6.3 - 11.0 9.5 27.3 15.8	Yes Corporate effects increase when include small firms Corporate effects increase when lines of business are defined more narrowly Corporate effects are largest among medium sized firms
Khanna & Rivkin	2001	Emerging markets Various data sources Argentina (Ar), Brazil (Br), Chile (C), India (In), Indonesia (Ind), Israel (Is), Mexico (M), Peru (Pe), Philippines (Ph), South Africa (SA), South Korea (SK), Taiwan (Ta), Thailand (Th), Turkey (Tu) Excluded finance and real estate sectors Ranged from 1988 - 1997	Nested ANOVA	ROA per business	Ar Br C In Ind Is M Pe Ph SA SK Ta Th Tu	11.1 - 16.5 4.0 - 4.4 13.8 - 15.3 14.6 - 15.7 1.6 8.5 - 22.4 3.9 - 11.9 -1.6 - 1.2 22.2 - 23.2 2.1 - 2.5 5.6 - 7.2 8.9 - 10.0 1.0 - 1.3 1.8 - 4.8	8.9 - 29.7 9.7 - 11.2 26.4 - 41.3 20.2 - 21.8 34.5 - 35.5 4.5 - 26.0 0.8 - 46.0 40.7 - 46.7 28.7 - 45.4 84.9 - 114.0 33.3 - 40.7 49.2 - 52.5 17.6 - 28.9 22.4 - 42.9	Not measured	
Chang & Hong	2002	Korea Information Service Excluded single business firms Excluded finance sector <i>Sample A: 1666 firms</i> <i>Sample B: Top 30 business groups</i> <i>Sample C: Smaller businesses</i> <i>Model 1 1985-1996 Random-effects (RE)</i> <i>Model 2 1985-1996 Mixed-effects (ME)</i> <i>Model 3 1985-1996 ME with interaction term</i> <i>Model 4 1985-1989 ME</i> <i>Model 5 1990-1996 ME</i> <i>Model 6 1985-1989 RE</i> <i>Model 7 1990-1996 RE</i> 1985 - 1996	Restricted maximum likelihood method (cross-validated model using sequential ANOVA)	Return on invested capital per business	A1 A2 A3 A4 A5 B1 B2 B3 B6 B7 C1 C2 C3 C6 C7	7.6 7.6 7.7 11.8 6.9 17.1 17.2 17.2 20.1 16.1 5.6 5.7 5.9 12.1 4.6	20.8 21.4 21.8 33 35.1 23.7 22.7 22.8 31.8 38.1 20.1 20.6 20.9 31.5 33.4	9.4 9.0 5.7 9.7 8.0 2.0 2.0 0.2 5.2 0.7 10.2 10.4 7.1 9.9 10.6	Yes Results consistent with Roquebert -> corporate effects inversely related to firm's degree of diversification Corporate effects decrease over time

Author	Year	Data utilised	Method of analysis	Dependent variable	Model/sample	Industry effects %	Business effects %	Corporate effects %	Does corporate strategy matter?
McGahan & Porter	2002	US Compustat Excluded government sector Segments with >\$10m sales and assets Included single business firms (52.2%) where corporate effects was set at 0 <i>Sample A: All sectors (7793 firms)</i> <i>Sample B: Manufacturing sector only</i> <i>Model 1 Uncorrected (ordinary R2)</i> <i>Model 2 Adjusted R2</i> <i>Model 3 Standard correction (ordinary R2)</i> <i>Model 4 Correction on full model (ordinary R2)</i> 1981 - 1994	Simultaneous ANOVA	ROA per business	A1 A2 A3 A4 B1 B3 B4	9.6 8.9 9.2 10.3 7.1 6.9 7.6	37.7 32.5 39.3 36.0 35.2 38.7 35.1	12.0 8.8 11.7 11.6 12.0 11.0 10.8	Yes Industry, business and corporate effects related to each other Corporate effects decrease over time Corporate effects maximised when included diversified firms
Adner & Helfat	2003	Financial Reporting System Wall Street Journal (corporate level decisions) US petroleum industry <i>Model 1 Time-varying corporate effects entered last</i> <i>Model 2 Time-varying corporate effects entered before year effect</i> 1977 - 1997	ANOVA	ROA per business	1 2	2.1 2.1	19.4 19.4	stable 2.7 time 4.5 stable 2.7 time 4.6	Yes Only measured one corporate decision (downsizing) -> underestimated corporate effects Corporate level managers in different firms make different decisions in response to the environment Strategic decisions change over time
Hawawini, Subramanian & Verdin	2003	US Stern Stewart Consultancy Top 1000 firms listed by MVA Removed conglomerates <i>Model 1 562 firms</i> <i>Model 2 Excluded top and bottom two in each industry</i> 1987 - 1996	COV	ROA Total market value (MVA) Economic profit (EVA)	1 2 1 2 1 2	8.1 16.0 11.4 30.2 6.5 12.4	35.8 16.7 32.5 17 27.1 17.6		Not measured
Ruefli & Wiggins	2003	US Compustat Excluded private firms and small firms <i>Sample A: All firms</i> <i>Sample B: Diversified firms only</i> 1980 - 1996	Iterative Kolmogorov-Smirnov	ROA per business	A B	0.14 - 0.18 0.13 - 0.14	12.2 - 12.3 13.3	7.1 - 7.4 3.5 - 3.6	Yes Measured prediction of performance position Corporate effects yielded better predictions of business performance than categorisation than did industry effects Industry effects stronger relationship with persistence performance position than corporate effects -> different factors associated with level of performance than were associated with maintenance of performance
Van der Stede	2003	37 large, diversified Belgium firms with at least three European subsidiaries Questionnaire to 153 business unit managers 1996	COV	Budgetary control processes per business Monetary incentives per business		NM NM	0 - 2.4 0 - 7.4	6.6 - 26.6 24.5 - 46.3	Greater influence on management control and incentive systems from corporate effects than business effects Corporate management control and incentive systems are implemented uniformly rather than reflect local business unit conditions

Author	Year	Data utilised	Method of analysis	Dependent variable	Model/sample	Industry effects %	Business effects %	Corporate effects %	Does corporate strategy matter?
Spanos, Zaralis & Lioukas	2004	Greek manufacturing firms Greater than 20 employees Model 1 Adjusted R2 Model 2 Change R2 (over the null equation) 1995 - 1996	Ordinary least squares regression	Price-cost margin per firm	1	7.6	15.9	NM	Not measured
					2	6.7	15.0	NM	
Hough	2006	US Compustat Diversified and single business firms (controlled for diversification in model) Excluded assets or sales <\$10m Sample A Manufacturing firms Sample B Non-manufacturing firms 1995 - 1999	3-level model analysis	ROA per business	A	4.7	30.0	29.6	Yes Corporate effects is half as important as business effects Corporate effects explain almost four times more variance in business performance than industry effects
					B	5.3	43.8	17.1	
			COV	A	4.7 - 15.0	32.7 - 52.6	0 - 16.1		
				B	5.7 - 13.7	33.9 - 52.4	0 - 9.1		
Nested ANOVA	A	12.5	43.8	15.6					
	B	14.4	42.8	15.5					
Continuous-variable model with 2-stage least squares regression	A	15.7 - 62.8	18.5 - 47.2	9.1 - 12.7					
	B	11.0 - 27.3	42.2 - 58.1	1.9 - 10.7					
Misangyi, Elms, Greckhaner & Lepine	2006	US Compustat Excluded governmental organisations Excluded assets or sales <\$10m Stratified random sample 1984 - 1999	Hierarchical linear modelling	ROA per business		7.6 14.3	36.6 31.3	7.2 13.9	Yes Corporate effects are unportant Corporates which provide a resource rich environment positively influencing business performance Capital intensive corporate environments negatively affect business performance Multibusiness firms outperform single business firms -> scope of firm important to performance

Key:

ANOVA	Analysis of variance
CEO	Chief Executive Officer
Compustat	Compustat database
COV	Variance components analysis
FTC	Federal Trade Commission database
\$x m	Million dollars
NM	Not measured
P	Permanent effects
ROA	Return on assets
sqrt	Square root of variance component
T	Transient effects
US	United States of America

(as one aspect of firm specific constituents) on the variance in BUP. Theoretically, one aspect of the corporate effects measured is corporate strategy, that is:

$$\text{Corporate effects} = f(\text{Corporate strategy. Among other things}). \quad (1)$$

Other factors which may influence corporate effects include weather, decisions by governmental bodies, or competitors. Estimates of corporate effects were usually determined from the comparison of the differences in average returns of multiple business firms and the individual businesses within those firms. A high percentage of variation in the BUP has been interpreted as equivalent to a greater importance of the effect measured (Adner & Helfat, 2003; Bowman & Helfat, 2001).

2.9.1 Methodologies employed

Most of these studies utilised various calculations (e.g., ROA, Tobin's q) to measure BUP as the dependent variable. Accounting measures of performance calculate historical accomplishment whereas, "Tobin's q is the ratio of the market value of financial claims on a corporation to the replacement value of the corporation's assets" (McGahan, 1999, p. 374) and provides an indication of future profitability. McGahan (1999) also contended that Tobin's q is more sensitive to industry effects. Some authors, notably Chang and Singh (2000) and Hawawini et al (2003) employed economic measures of performance such as market share and total market value. In addition, Powell (1992, 1996) utilised measures based on managerial perception. Nevertheless, Hawawini et al (2003) observed that the selection of the performance measurement did not affect the estimation of corporate effects.

A variety of methodologies have been utilised to estimate corporate effects. The majority of these have employed inferential statistical analysis techniques (e.g., analysis of variance [ANOVA] and variance components analysis [COV]) to decompose the variance of performance from large scale, cross-sectional databases (e.g., Federal Trade Commission database [FTC], Standard and Poor's Compustat Business-Segment Reports database [Compustat]). Note that the ANOVA methods outlined in this Chapter are dissimilar to the one-way independent ANOVA (ANOVA1) employed in Chapters Four and Five. ANOVA "partitions the total variation in a dataset according to the sources of variation that are present" (Johnson & Bhattacharyya, 2001, p. 587). ANOVA tests for significance (employing a fixed-effects assumption). In other words, it examines the incremental explanatory power of a specific set of effects whereby, "ANOVA basically estimates an ordinary linear regression model using dummy variables [e.g., industry,

business or corporate effects] for different qualitative treatments and, sometimes, continuous variables. ... Researchers assess the importance of an effect by the amount of variance explained by a given set of dummy variables” (Brush, Bromiley & Hendrickx, 1999, p. 520).

Another common statistical analysis technique employed in empirical estimation of corporate effects is COV. COV evaluates the relative importance of each effect employing a random-effects assumption, in other words, the effects are independent of each other. COV “estimates a model similar to ANOVA, but instead of actual estimates of each dummy variable’s parameter, it reports the variance of a set of implicit dummy variables. This variance corresponds to the amount of variance in the dependent variable explained by that set of implicit dummy variables” (Brush et al, 1999, p. 520). Thus for COV, “the unique firm characteristics are modelled as latent factors, captured using individual latent variables for each firm; while industry attributes are captured using a common latent variable shared by members of the same industry” (Mauri & Michaels, 1998, p. 214).

2.9.2 Measurements of corporate effects

A number of significant empirical studies are listed in Table 2.2. The most influential studies are discussed in further depth below starting with a comparison of industry effects to firm effects and thereafter, estimation of the influence of corporate effects on both BUP and firm performance measures.

a) *Firm effects versus industry effects*

This research has generally concluded that firm effects were more substantial than industry effects supporting the relative importance of the endogenous approach. In their 1989 study, Hansen and Wernerfelt established that organisational factors accounted for almost twice the impact on variance in ROA than those resulting from economic factors (which included industry). Later evidence supported their findings, for instance, Balakrishnan and Fox (1993) sampled single business firms and found that industry effects accounted for between 5.5 and 10.5% of the total variance in capital structure and firm effects explained between 50.5 and 52.1%. These authors concluded that “if one expects to find industry effects to be important, it should have been evident in a sample of single business firms” (p. 11) as these firms confront homogeneous environments when raising capital. Furthermore, Balakrishnan and Fox (1993) suggested that their results highlighted the importance of the impact of unique characteristics of the firm. Similarly, Mauri and Michaels (1998) found in their sample of nondiversified manufacturing firms that firm effects reduced as they increased the length of the period under

examination (from 36.9% in 1988 - 1992 to 25.4% in 1978 - 1992) and measured industry effects of between 5.8 and 6.2%. However, Hawawini et al (2003) concluded that industry effects explained more variance in performance of “averagely” performing firms (the majority), in comparison to firm effects which influenced both industry leaders and poorly performing companies.

b) Measurement of corporate effects on business unit performance

In 1985 Schmalensee presented the first empirical evidence from research involving corporate effects. He analysed a single year's data from 456 manufacturing firms and reported that the greatest variance in BUP resulted from industry effects (18.8 - 19.5%). The corporate effects Schmalensee measured were interpreted to be of minor significance. The high level of unexplained variance (80%) in BUP evident in Schmalensee's (1985) study led to additional research. These studies extended Schmalensee's work by applying different statistical methods, time periods, datasets and variables.

The second significant addition to the literature on corporate effects was the Rumelt (1991) study. Rumelt (1991) utilised dummy variables to measure the importance of the variables (i.e., industry, business and corporate effects) on the performance of manufacturing firms from 1974 - 1977. Although his ANOVA analysis provided significantly higher estimates of corporate effects (10.9 - 17.6%), in his conclusion, Rumelt (1991) focused on justifying the COV results (0 - 1.6%). He concluded that firstly, firm effects (i.e., corporate effects plus business effects) were more important than industry effects and secondly, that when explaining BUP, corporate strategy was inconsequential. Furthermore, he argued that variances in ROA due to corporate effects were negligible when compared to the other effects.

However, five years later Roquebert et al (1996) postulated that corporate effects were more important than those identified by Rumelt (1991). Roquebert and colleagues utilised a wider, more recent dataset (1985 - 1991) of manufacturing firms from which they excluded single business firms. They found that on average, corporate effects explained 17.9% of the variance in BUP. This conclusion has been supported (to varying degrees) by other studies. For example, Brush et al (1999) applied a continuous-variable model estimated with two-stage least squares. They argued that their approach was superior to those employed in previous models as it firstly, allowed for fewer assumptions, secondly, it explicitly removed simultaneous effects that might cause inconsistent results, and lastly, it could more accurately measure lower estimates as the model used fewer degrees of freedom. Their results indicated that the average ratio of

incremental corporate effects to industry effects ranged from 1.15 to 1.9. They then concluded that corporate effects were more important than industry effects. Furthermore, they found that the choice of the statistical analysis tool employed influenced the results that is, the COV “results suggest industry is somewhat more important than corporation while the simultaneous equation results suggest the opposite” (p. 541). This finding supports those in Chapter Two concerning the view that firm performance heterogeneity within an industry is greater than the relative performance of individual industries.

Chang and Singh (2000) utilised a different dataset (i.e., Trinet) of manufacturing firms. They also employed an alternative measurement of performance (i.e., market share per business unit) and established that corporate effects accounted for between 2.4 and 11% variance in BUP. In addition, they divided their dataset into large, medium and small firms and found that medium sized firms possessed the greatest magnitude of corporate effects (27.3% in comparison to 9.5 % evident in large firms and 15.8% in small firms) suggesting “business units within medium-sized companies may depend on corporate level resources, such as transferring skills and sharing activities with other business units” (p. 750). A result that is intuitively appealing, namely, that the contribution from corporate effects, while important, declines as firms get larger and more diverse.

Various studies have been published by McGahan and Porter. McGahan and Porter (1997) found that 4.3% (COV) and 9.1 to 11.9% (nested ANOVA) variance in BUP can be attributed to corporate effects. Their results also indicated that corporate effects varied across sectors. For example, lower corporate effects were displayed in the manufacturing sector whereas, higher corporate effects were evident in the wholesale/retail, transportation, and agriculture/mining sectors. In an alternative piece of research (1999), they further tested the two competing theories by hypothesising that either industry or firm effects on BUP are more persistent (as a measure of importance). McGahan and Porter reported that “incremental industry effects persist longer than the incremental business-segment and corporate-parent effects” (p. 152) and that corporate effects were more significant than business effects.

In yet later research, McGahan and Porter (2002) utilised an alternative method of analysis (i.e., simultaneous ANOVA) and measured corporate effects on variance in BUP of between 8.8 and 12%. They concluded that firstly, corporate effects were maximised when the sample included diversified firms and secondly, that corporate effects decreased over time. McGahan and Porter (2002) observed that industry, corporate, and business effects are related in complex

ways. They contended that their results confirmed the failure of SCP due to the “evidence of feedback and coevolution between the industry, corporate-parent, and business-specific effects” (McGahan & Porter, 2002, p. 848).

Different approaches to estimating corporate effects have also been employed. Chang and Hong (2002) utilised a mixed-effects modelling methodological approach which simultaneously estimated both random (e.g., industry effects, corporate effects) and fixed-effects (i.e., top 30 group effects and period effects). They estimated that corporate effects ranged from 0.2 to 10.6% variance in BUP. Their findings supported Roquebert et al’s (1996) conclusion that corporate effects are inversely related to the degree of diversification. They also concluded that corporate effects decreased over time. Ruefli and Wiggins (2003) employed the Iterative Kolmogorov-Smirnov technique to measure the prediction of performance position and estimated corporate effects of between 3.5 and 7.4%. Their results indicated that corporate effects yielded better predictions of BUP than industry effects. They concluded that industry effects were characterised by a stronger relationship with persistence performance position than corporate effects, suggesting different elements are affiliated with the level of performance than were associated with the maintenance of performance.

Adner and Helfat (2003) divided corporate effects into stable corporate effects and time-varying corporate effects on variance in BUP. These authors analysed the petroleum industry with the aim of reducing possible ramifications of different accounting standards and business definitions. The methodology utilised corporate announcements of downsizing (as a representative of corporate level strategic decisions made by managers, and thus not attributable to time-varying business effects) to estimate corporate effects. Even though they only measured one corporate decision (thus, underestimating corporate effects), their results estimated the proportional contribution of stable corporate effect and time-varying corporate effects on total variance in BUP was 2.7% and 4.5 to 4.6% respectively. They concluded that corporate level managers make dissimilar decisions in response to the environment and that corporate strategy changes over time.

Van der Stede (2003) examined the impact of corporate management control and incentive processes (as a measure corporate effects), and business unit culture (as a measure of business effects), on the variance in BUP of 37 Belgium-based multinational firms. He found that corporate effects ranged from 6.6 to 46.3% of variance in BUP. In comparison, business effects were found to be of a more minor influence on BUP (less than 7.5%). Corporate effects may be

implemented across the firm's business units in a consistent manner rather than mirroring the more specific influences of business units.

Two recent pieces of research, namely, those by Hough (2006) and Misangyi, Elms, Greckhamer and Lepine (2006) have utilised multilevel approaches to measure corporate effects which sought to overcome a number of limitations inherent in the previously employed statistical techniques. For example, error terms can be applied to each level of analysis, eliminating the collinearity that exists between corporate and industry, eliminating artificial classification (alternative models require conformation to a set number of segments), increasing statistical power, and lastly, testing causal relationships. Hough (2006) found that corporate effects ranging from 17.1 to 29.6% of variance in BUP. Misangyi et al (2006) reported similar corporate effect results as the previous research (13.9%).

Singh, Ang and Leong (2003) argued that research extensions provide confidence in the reliability of the various methodologies employed and their findings and consequently, further developing theory. Overall, the robustness of the results indicated that firm effects account for a greater influence than industry effects, supporting the underlying theory of the endogenous approach. In addition, the empirical research suggested corporate effects explained between 0 and 46.3% of the variance in BUP. Therefore, it can be concluded that both corporate effects exist and they are important to BUP.

c) Measurement of corporate effects on corporate performance

Two studies measured the influence of corporate effects on corporate performance (refer to Table 2.2). These are by Wernerfelt and Montgomery (1988) and McGahan (1999). Firstly, and extending on Schmalensee's (1985) work, Wernerfelt and Montgomery (1988) utilised Tobin's q per firm to measure the relative importance of corporate effects (as an indicator of firm focus i.e., the level of diversification) on variance in firm performance. The sample represented 247 manufacturing, industrial and utility firms from FTC during 1976. Their findings indicated that corporate effects existed but were minor in nature accounting for only 0.2 to 3.7% variance in firm performance. They concluded that narrowly diversified firms performed better than widely diversified firms, implying that there may be some deadweight cost (corporate) among more diversified firms.

Secondly, McGahan (1999) performed an extensive measurement of corporate effects (again assuming corporate effects arose from relatedness due to diversification) on three different

indicators of firm performance, namely, Tobin's q , accounting profitability, and return on replacement value of assets. The McGahan sample consisted of businesses in Compustat from 1981 to 1994, excluding the financial sector. Two samples were constructed incorporating 4,947 firms (where corporate effects was set at zero for 65% of this sample as they were single business firms) and 1,777 diversified firms only. The concept of corporate effects (corporate effects were deemed to be measured by the relatedness between the industries in which the firm operates) was divided into permanent and transient effects. The findings indicated that permanent corporate effects for the first sample were zero across all three measures and ranged from 0.1 to 1.5% for the diversified sample. The transient corporate effects for the first sample ranged from 0 to 0.1% variance in firm performance. McGahan noted that corporate effects were less stable and less predictable than industry effects and, therefore, concluded that corporate effects did not have an important impact on firm performance.

In contrast to the measurement of corporate effects on the variance in BUP, it would appear that corporate effects had a minor role on the variance in firm performance. This would suggest that corporate strategy had a greater impact on BUP than the firm as a whole, contrary to both SCP and RBT. Therefore, this limited empirical evidence of corporate strategy suggests that concepts such as foresight, core competencies and synergy, are not supported.

2.9.3 Validity issues with models employed to estimate corporate effects

A number of authors have challenged the interpretation of the results obtained, particularly various statements referring to corporate strategy as being irrelevant. These issues have been divided into three categories: methodological, assumptions, and limitations in generalising results.

a) Methodological issues

Important methodological concerns evolving from this paradigm are outlined below. These include the influence of order of entry into the mode, the reliability of findings, and difficulties in estimating corporate effects (Adner & Helfat, 2003; Bowman & Helfat, 2001; Brush & Bromiley, 1997; Brush et al, 1999; Chang & Hong, 2002; Chang & Singh, 2000; Khanna & Rivkin, 2001; Ruefli & Wiggins, 2003). First, the variances in BUP derived may be imprecise as the results depended upon the order of entry into the model (especially ANOVA) as "the first of the correlated effects entered into the analysis may pick up some of the increment actually associated with effects entered later" (Adner & Helfat, 2003, p. 1018). For example, Rumelt

(1991) found higher corporate effects when he entered the corporation (representing corporate effects) before business unit (representing business effects) as the model “assigns all shared variance between the business units and corporation to the corporation” (Brush et al, 1999, p. 521).

Second, the robustness and reliability of the results of these studies appears limited due firstly to the range of estimates. Brush and Bromiley’s (1997) model produced a wide range of values when they performed multiple simulation runs. The Roquebert et al (1996) study found corporate effects derived from 10 samples ranged from 9.3 to 27.7%. Secondly, the use of dummy variables in the models does not adequately reflect reality and are thus, unreliable.

Finally, the tools utilised to measure corporate effects may not accurately reflect the effect of corporate strategy on performance when they do exist, especially COV as COV cannot reliably uncover smaller but significant effects. In addition, Adner and Helfat (2003) observed that most of the antecedent research models provided an incomplete reflection of corporate effects as they did not incorporate corporate effects derived from fluctuations in profitability over time resulting from changes in corporate strategy (rather the research estimated primarily “stable” corporate effects). They concluded that the dynamic nature of strategic decisions should be measured as “time-varying corporate effects may reflect an important element of corporate strategy” (Adner & Helfat, 2003, p. 1014). Their research estimated time-varying corporate effects of between 4.5 and 4.6% variance on BUP, *in addition* to stable corporate effects of 2.7%.

b) Issues with the assumptions employed

Assumptions are inherent in all models and the assumptions included affect the way the results of a piece of research may be interpreted whereby, “findings by refining methods are for naught if the results of those methods are constrained in their interpretation by the deeper contextual assumptions inherent in the methodology” (Ruefli & Wiggins, 2003, p. 864). The following assumptions have been questioned. These are first, *ceteris paribus*; second, uniformity of corporate strategy over the entire firm; third, no multicollinearity; fourth, inclusion of single business firms in samples yet defining corporate strategy as referring to only diversified firms; fifth, random samples of businesses; and lastly, the magnitude of estimated effects equates to its importance.

First, Ruefli and Wiggins (2003) argued that much of the prior research “presupposes a *ceteris paribus* worldview in regard to firm performance, [whereas] strategic management theory

presumes a *mutatis mutandis* model” (p. 864, italics in original). The *mutatis mutandis* model suggests greater managerial influence at the corporate level in comparison to industry effects. However, McGahan and Porter (2005) contended that the aim of the variance composition research was not investigating the underlying associations between the effects on BUP, but rather accounting for the variance in BUP.

Second, another common assumption employed is that corporate strategy is evenly distributed over the range of business units, in other words, corporate strategy affects BUP in a uniform manner. Consequently, the models employed have underestimated the importance of corporate effects (as demonstrated by Brush & Bromiley, 1997), especially for larger firms with more business units (Chang & Singh, 2000).

Third, the COV method assumes that the effects are uncorrelated, that is, no multicollinearity. For example, Ruefli and Wiggins (2003, p. 863) observed that “the assumption of independence of effects on a particular business that is inherent in the COV method and the omission of covariance between effects [is] inherent in the nested ANOVA approach.” Adner and Helfat (2003, p. 1018) suggested that “the business level dummy variables are completely collinear with the corporate level dummy variables, since each corporation has a dummy variable for every business within the firm.” An assumption that underlies Rumelt’s (1991) research is that corporate and business effects are not correlated, in other words, firms do not actually select the businesses within which they operate. This assumption raises some issues in terms of the definition of corporate strategy (refer to Chapter Three).

Fourth, contrary to the definition of corporate strategy employed in these studies that corporate strategy only relates to diversified firms, these influential studies (with the exception of Chang & Hong, 2002; Chang & Singh, 2000; Hansen & Wernerfelt, 1989; Roquebert et al, 1996 who only analysed diversified companies) utilised datasets of diversified *and* single business firms (e.g., Hough, 2006; McGahan, 1999; McGahan & Porter, 1997, 2002; Rumelt, 1991; Schmalansee, 1985). Bowman and Helfat (2001) argued that corporate effects were reduced by the addition of single business firms in the samples, an outcome you would expect. McGahan and Porter (2002) observed diversified firms accounted for 48% of corporations within Compustat and justified the inclusion of single business firms by suggesting that corporate and business effects cannot be separated in single business firms, thus “for undiversified firms, the corporate-parent effect is assumed to be zero” (p. 839). And yet, McGahan (1999) attributed the low measurement of permanent corporate effects to the decision to set corporate effects for the single businesses at

zero, which accounted for 65% of her dataset. When she eliminated single business firms from the sample, a higher estimated corporate effect was, unsurprisingly, reported for diversified firms only.

Fifth, the assumption that the businesses are randomly drawn from the population of businesses may underestimate the magnitude of corporate effect. Again, this assumption contradicts the commonly held definition of corporate strategy. A covariance term is often included in the model for corporate and industry, but due to the nested nature of the data, it is impossible to add a covariance term for corporate and business (Rumelt, 1991). Furthermore, these models do not account for the effects of corporate strategy across industries (e.g., leveraging across many industries) resulting in the blurring of the distinction between corporate and industry effects. Therefore, it is difficult to argue whether industry effects pertain to the industry or to firms within the industry.

Finally, this research stream possesses the assumption that the magnitude of estimated corporate effect equates to its importance. It appears common practice to conclude, that if corporate effects are one sixth of business effects, then business effects are six times more important than corporate effects. Brush and Bromiley's (1997) study highlighted that this interpretation of the findings is incorrect. They argue that the correct view should be that if the ratio of corporate effects to business effects is one sixth, then corporate effects are 40% as important as business effects. When Brush and Bromiley (1997) ran a Monte Carlo simulation, they noted that a more accurate representation of the importance of an effect was reflected when the variance components are square-rooted, overcoming the nonlinearity expressed in their data that is, when squaring, small estimates produces smaller effects.

c) *Limitations of the corporate effects research*

Some authors have highlighted the limitations inherent in this research including differences between business performance, external validity of the databases used, generalisability of samples, and lastly, inappropriate level of analysis. First, the techniques employed do "not provide information about the effects of these [corporate level] decisions on the *level* of business performance. Rather, the analysis shows whether the decisions account for a portion of the *variance* in performance, indicative of *differences* between businesses in the level of performance" (Adner & Helfat, 2003, p. 1017, italics in original). However, alternative statistical techniques have been used. For example, Ruefli and Wiggins (2003) employed a distribution-free technique which measured relative rather than absolute differences and found

that the performance relationships between inferior, modal or superior performing firms altered over time. Corporate effects were more significant than industry factors.

Second, issues also surround the datasets analysed, especially concerning external validity (Powell, 1996). “Given the constraints that Rumelt and Schmalesee placed on their samples, the results they derived should be interpreted strictly within the context of their samples of large business units of large and well-diversified corporations” (Chang & Singh, 2000, p. 745). For example, Federal Trade Commission database comprises SBUs of large diversified firms, thus excluding the majority of firms in the population, in other words, nearly all service firms, small, private or single business firms (Powell, 1996). Generalising results based on FTC may then be inappropriate as these samples do not reflect the population. Chang and Hong (2002) remarked that the difference in results across the various studies may be due to the use of heterogeneous data sources, that is, “the Compustat database includes many small companies, while FTC database consists mainly of large diversified corporations” (p. 265). FTC and Compustat are also biased in regards to business unit categorisation due to self reporting and the restrictions on the number of businesses on which a firm is able to report. For example, Compustat restricts a firm to a maximum of 10 business units. Chang and Singh (2000) utilised the Trinet database which in their view eliminated these issues. Powell (1996) and Adner and Helfat (2003) argued that the studies that utilised datasets which combine industries raised generalisation issues: differences due to industry specific accounting methods or what constitutes an “industry”. McGahan (1999) also observed that the US datasets utilised may possess accounting anomalies which influence any findings.

Third, Chang and Singh (2000) analysed varying firm sizes and found that, for example, corporate effects are stronger for medium and smaller firms (equivalent to the Fortune 500 listing of companies ranked 360 to 500). They also argued that the findings of this research stream should be interpreted with regards to the sample selected. In addition, Wiggins and Ruefli (2002) found that large numbers of firms in some industries (between 47 and 90%) could be classed as average. They suggested that the empirical support for many IO theories arose due to “this large number of average firms, coupled with the relative symmetry of the sizes of the above-average and below-average strata” (p. 100) and the use of regression techniques.

Finally, the unit of analysis employed in the empirical literature centres on both the industry and the business unit level of the firm. Peteraf and Barney (2003) contended that these studies have demonstrated that when explaining BUP heterogeneity, multiple levels of analysis may add to

the understanding of firm performance, in other words, industry, corporate and business effects *all* influence BUP. An important limitation to the reviewed research involves the corporate level of analysis. Theoretically, if one seeks to estimate corporate effects the most appropriate methodology would be to analyse those effects in terms of proxies for corporate performance, for example, share market price (SMP). Instead much of the research listed in Table 2.2 (i.e., only 31% of research specified a corporate unit of analysis) estimated the importance of corporate effects against a dependent variable calculated at the business level, in other words, this research estimated the importance of *corporate* effects on *business* performance. If the purpose of corporate strategy is to deliver corporate-wide advantage and PSFP, it would be more appropriate to utilise a proxy for *firm* performance. Thus, the majority of this research has not measured the effect of corporate decisions (including corporate strategy) on *firm* performance or for that matter, industry or business effects on *firm* performance.

2.9.4 Corporate effects research summary

Research that has sought to estimate the effect of corporate strategy on variance in BUP, has employed statistical models that have made a contribution to our understanding of what factors (corporate, business, industry, or year) impact on BUP. Generally, firm effects (business and corporate) have been estimated to have a larger influence on BUP supporting the endogenous perspective. Overall, the identified corporate effects ranged from 0 to 46.3% (refer to Table 2.2). According to Adner and Helfat (2003, p. 1011), “a nontrivial and statistically significant corporate effects implies that firms differ in the impact that their corporate level resources have on profitability.” It has been suggested that the methodologies employed in these empirical studies may consistently underestimate the importance of corporate strategy on BUP (Adner & Helfat, 2003). The underestimation of corporate strategy on BUP in the reviewed empirical research may have led to the implicit assumption that corporate level decision makers do not make decisions that influence BUP, namely, those relating to industry selection and controlling business unit direction. Some authors have focused on the absence of corporate effects suggesting that BUP can be achieved without corporate offices or theoretically corporate strategy (e.g., Bowman & Faulkner, 1997). The two studies that did measure the influence of corporate effects on firm performance found small measurements of corporate effects ranging from 0 to 3.7%. The corporate effects measured in these studies were an indicator of diversification not corporate strategy per se (unless diversification *is* the only corporate strategy).

2.10 OTHER EMPIRICAL CORPORATE STRATEGY – PERFORMANCE RESEARCH

Dess, Gupta, Hennart and Hill (1995) suggested that research on the strategy-performance relationship has been characterised by ambiguity with weak results. Empirical research in corporate strategy, as distinct from the empirical studies presented in Section 2.9, has been divided into three topics. The three topics are first, investigations into the relationship between specific corporate strategies and firm performance; second, normative models of the parent, corporate advantage and firm performance; and lastly, empirical research that appears to make implicit assumptions of the relationship between corporate strategy and firm performance. Each of these topics of research are now discussed.

2.10.1 Specific corporate strategies and their effect on performance

A large proportion of corporate strategy literature has focused on specific corporate strategies, for example, acquisition, divestment, merger, alliances and restructuring. This research has concentrated on comparing the “before and after” effects of a specific corporate strategy on performance. Empirical evidence presented has been equivocal and mixed. Generally, the literature supports the view that specific corporate strategies have a poor record of performance (e.g., Franks & Harris, 1989; Porter, 1987). As Porter (1991, p. 225) advocated, “the corporate strategies of most companies have dissipated instead of created shareholder value.” Empirical research has indicated the acquisition target’s SMP increased whereas the acquiring firm’s SMP decreased upon announcement of an acquisition (Bradley, Desai & Kim, 1988). Mueller (1985) reported that horizontal and conglomerate mergers also resulted in market share losses.

Diversification strategy has received significant research attention since Rumelt’s (1974) seminal article. Dess et al (1995, p. 364) observed that “there have probably been more empirical studies of diversification strategy and corporate performance than of any other phenomenon of interest to strategic management researchers.” Examples include: Gary, 2005; Helfat and Eisenhardt, 2004; Herrmann and Datta, 2005; Lu and Beamish, 2004; Markides and Williamson, 1994; Rumelt, 1974; Varadarajan and Ramanujam, 1987. Theoretically, similarities in products and markets should create synergies in terms of economies of scope, and the transference of core competencies. In support, Davis and Thomas (1993, p. 1334, italics in original) noted that “if diversification strategy is to succeed it is imperative that *synergy*, or super-additivity in valuation of business combinations, be achieved.” They suggested that diversification has often failed to result in higher firm performance due to the inability of firms to gain this much anticipated

synergy. In contrast, Dess et al (1995) noted that the inconclusive and conflicting empirical evidence of the diversification strategy-firm performance relationship presented is due to either the existence of weak and ambiguous results (e.g., Palepu, 1985), or to the fact that the conclusions drawn from the results are dependent on methodologies employed. The widely cited article by Rumelt (1974) found that related constrained diversification (i.e., diversification on the basis of a single core competency) led to higher performance. However, his later 1982 study questioned the validity of the earlier study as he realised that the 1974 results were characterised by a serious omitted variable (i.e., industry effects). Grant (2002b) observed that the empirical evidence has generally failed to establish whether related diversification outperforms unrelated diversification.

Overall, the diversification literature has concluded that firstly, lower levels of diversification result in higher performance and that secondly, firms should diversify into closely related areas. Conversely, Porter (1991) stated that corporate strategy research (he defines as equivalent to diversification strategy) has not supplied evidence of the importance of these strategies. He argued that corporate strategy does not add value due to the three reasons of business level competition, addition of costs and constraints to business units as a result of diversification, and lastly, the ease of shareholder diversification. Levinthal and Myatt (1994) observed that the failure to provide overwhelming empirical evidence on the success of diversification “provides some indirect evidence that the choice of industry may be less critical to firm performance than the presence of distinctive capabilities to operate within a given industry” (p. 45).

A number of theories have been advanced seeking to explain why diversification has not resulted in empirical evidence of higher performance. Agency theory proposes that managers may employ firm resources for reasons other than profit maximisation, following their own interests at the expense of shareholders (e.g., empire building for reasons such as increasing demand for managerial skill and lowering employment risk) and consequently, exceeding the level of efficient diversification or mergers (Amihud & Lev, 1981; Jensen, 1986; Montgomery, 1994; Mueller, 1969). In addition to agency theory, RBT provides an alternative explanation for the failure of diversification to positively influence performance that is, “firms with more specific and valuable resources find it optimal to diversify less than firms with less specific and less valuable resources” (Montgomery, 1994, p. 170). Montgomery suggested that RBT accounted for the direction of diversification (i.e., into related diversification) as it proposes that firms should diversify on the basis of core competencies and firm capabilities (Collis, 1988; Hamel &

Prahalad, 1994; Prahalad & Hamel, 1990). Contextual elements may also provide reasons for the failure of diversification to result in higher firm performance.

2.10.2 Normative models of the parent, corporate advantage and performance

A number of normative models relating to corporate strategy have been presented in the literature. Many of these are based on case studies (e.g., Ackerman, 1970; Chandler, 1962, 1991; Ghoshal & Bartlett, 1995; Halal, Geranmayeh & Pourdehnad, 1993; Hill & Hoskisson, 1987; Lorsch & Allen, 1973; Pitts, 1977; Vancil, 1980). These normative models have provided lists of the functions a corporate parent should perform. Chandler (1991) proposed that the corporate function is to create strategy to protect the long-term use of resources and to monitor firm performance. Collis and Montgomery (1997) listed four activities of the parent as to create strategy, protect resources, establishing administrative requirements, and, to perform overhead tasks. Campbell, Gould and Alexander (1995) specified that the role included exploiting synergistic linkages between divisions, managing external relations, specifying firm domain, and creating organisational structure. Recent literature has now moved towards flexibility, and learning and empowerment rather than command and control by the corporate parent.

Regrettably, these normative models suggest that firms should conform to the conclusions of the respective author. These frameworks neither encourage creativity or uniqueness. Consequently, any advantage gained from employing a normative model would be eroded if all firms duplicated the same advice. Best practice would become the norm for competition instead of generating advantage over rivals. It is difficult to ascertain whether normative models provide effective frameworks to achieving advantage in new industries or dynamic environments. To date, timeless principles as to the sources of PSFP (even if they do exist) have not been uncovered. Markides (2002) argued that many of these models are based on common sense. He proposed that answering the question of “what should the parent do?” should be grounded in theory of why multiple business firms exist. For example, transaction cost theory suggests that excess resources leads to diversification and that the parent performs the function of an internal capital market whereby it allocates resources to SBUs. The role of the parent also depends on firm strategy that is, different goals require different internal governance structures.

A number of researchers have concentrated on the role that the corporate centre or parent has played on firm performance. In addition to SCA, it has been suggested that firms can also achieve corporate advantage (Bowman & Faulkner, 1997; Campbell, 1995, 2003; Collis &

Montgomery, 1997). For example, corporate advantage should be utilised to develop and assess corporate strategy, providing the basis for portfolio management, and design of the organisation (Campbell, 2003). These authors advocate that the criterion for corporate strategy should be corporate or parenting advantage (Campbell, 1995, 2003). The corporate advantage research, usually based on case studies, contends that activities relating to corporate strategy should add value to the firm. Corporate strategies should add value by matching corporate skills and the individual business's needs (Campbell et al, 1995). Goold and Campbell (1991) stressed that if corporate strategy does not add value, the firm will become a take-over target. Moreover, Campbell et al (1995, p. 132) argued that "companies without sound corporate-level strategies gradually lose strength and fall prey to hostile predators or become emaciated from periodic downsizing and cost cutting." Firm competitiveness should be augmented by corporate strategy: "Corporate strategy needs to identify clearly how and where the corporate centre will add value, both by what it does well, and by how it is able to assist the business units to achieve a higher performance" (Bowman & Faulkner, 1997, p.179-180).

Two main corporate advantage concepts exist within the literature. The first concept is more narrowly defined as being one that corporate advantage is created from the management of the bundle of business units, commonly termed portfolio management. The second concept encompasses the view that corporate advantage arises from the management of the entire firm. Collis and Montgomery's (1998) concept of corporate advantage implies that the corporate headquarters of a firm should be able to create an advantage (or value) from the management of SBUs. The corporate advantage view is based on the definition of corporate strategy from the perspective of the multiple business firms and thus, does not consider single business firms can create advantages over their competitors through the utilisation of corporate strategy that is distinct from competitive strategy. Collis and Montgomery's view of corporate strategy has contributed to the lack of a universal definition (refer to Chapter Three). Some authors have investigated the relationship between performance and portfolio management, for example, "portfolio interrelationships have a positive effect on performance" (Robins & Wiersema, 1995, p. 293). Campbell (1995) agreed that the multiple business firms' success or failure is dependent on the influence and role of the corporate parent. However, Goold and Luchs (2003) inferred that the application of portfolio planning in the 1970s did not add value and resulted in a number of firms divesting businesses during the 1980s.

The second approach to corporate advantage advocates conceptualising corporate advantage more holistically, usually focusing on synergy and core competencies. Bowman and Faulkner

(1997), for instance, suggested that core competencies are not only at the business level, in other words, advantage can be achieved by the firm as a whole. Hamel and Prahalad (1994, p. 25, italics in original) advocated that “competition for *core competency* leadership precedes competition for product leadership, and that conceives of the corporation as a portfolio of competencies as well as a portfolio of businesses.” They also observed that competition for the future exists on a larger scale than just between products or SBUs, for example, interfirm or coalitions of firms. They advocated that interfirm competition is of primary importance for three reasons. Firstly, because future markets will occur outside existing industries or neatly defined SBUs, and secondly, firm-wide core competencies (including sometimes disparate technologies) will need to be assessed, integrated and applied throughout the firm, and lastly, the size, scope, complexity, investment and time frames required to build new core competencies extend beyond the capacity of SBUs. Consequently, SBUs are unable to effectively develop and leverage core competencies. Instead, SBUs may actually imprison firm core competencies. Thus, the synergistic governance of the entire firm and its attributes becomes a corporate responsibility.

The publications on corporate advantage also possess a normative aspect. However, as is often evident with normative models, the first approach to corporate advantage that is, portfolio management, does not encourage creativity or uniqueness. Consequently, any advantage gained from employing a normative model would be eroded if all firms duplicated the same advice. Although empirical evidence has been limited, the second approach to corporate advantage may suggest a positive relationship between corporate advantage and PSFP. To date, operationalisation has been difficult due to the causally ambiguous, tacit nature of the concepts such as, synergy and core competencies.

2.10.3 Implicit assumptions of the relationship between corporate strategy and performance

A common, often implicit assumption evident in corporate strategy research is that corporate strategy positively influences PSFP (e.g., Bower, 1982; Hitt, Ireland & Palia, 1982). Dragun and Knight (2001, p. 44) stated that “successful corporate strategies strengthen market power, augment sales, align the interests of stakeholders, and contribute to shaping the superior financial performance.” Bowman and Helfat (2001, p. 3) perceived that “many corporate level factors ... theoretically affect profitability”, for example, the scope and range of the firm, core competencies (e.g., Hamel & Prahalad, 1994; Hitt & Ireland, 1985, Prahalad & Hamel, 1990), organisational structure (e.g., Chandler, 1962; Mintzberg, 1979), firm culture (e.g., Collins & Porras, 1991; Hansen & Wernerfelt, 1989; Peters & Waterman, 1982), and internal governance

(e.g., Campbell et al, 1995; Hamermesh, 1986; Nelson, 1991). Corporate strategy and firm architecture are claimed by Prahalad and Hamel (1990) to positively influence PSFP, as demonstrated by GTE's fragmented corporate strategy emphasising competitive strategy and thus weakening its competitiveness relative to its rival NEC. Adner and Helfat (2003) proposed that corporate level capabilities, especially capabilities within corporate management, greatly affect PSFP. Markides and Williamson (1996) noted that successful performance of related diversification firms was due to the transferring and sharing of core competencies across the firm's SBUs.

As corporate strategy is expected to provide the basis for all firm actions, the implicit assumption is that poorly constructed or inappropriate corporate strategy should greatly impact on PSFP. Goold and Campbell (1987a) concurred with the view that "poor" corporate strategy can negatively impact on PSFP. They argued that the efficiency of SBUs within firms can be constrained by corporate involvement in their strategic planning. Furthermore, Finlay (2000) remarked that most parent organisations do not add value as firstly, those involved with corporate strategy do not possess adequate knowledge of their firm's SBUs, secondly, the parent unnecessarily constrains and controls SBUs, and thirdly, the same corporate strategies are inappropriately applied across the portfolio of businesses.

Corporate management research (e.g., leadership, executive group and decision making processes literatures) appears to contribute to the understanding of corporate strategy (e.g., Thomas, 1988; Weiner & Mahoney, 1981). For example, research conducted by Ambrosini and Bowman (2003) concentrated on the content of corporate strategy in terms of the perceptions of SBU managers. Powell (1996) utilised the perceptions of executives, rather than numerical sources in determining the impact of the industry on firm performance "because executives' perceptions influence organisational behaviour, they are an important organisational variable" (p. 326). RBT research at the corporate unit of analysis includes investigations into the relationship between corporate assets and firm performance (Farjoun, 1998; Markides & Williamson, 1994). However, some scholars have noted the limitations evident in corporate strategy research. Lynch (2003) suggested that there is significant disagreement in corporate strategy research due largely to the presence of two schools of thought on the formulation process of corporate strategy: the deliberate framework versus the emergent model. Alternatively, Dess et al (1995) argued that corporate strategy has focused on formulation rather than implementation. They also contended that "most of the research in the corporate level strategy area has attempted to examine the relationship between strategy and performance

without considering the role played by corporate strategy in creating and sustaining competitive advantage at the business level” (p. 358).

A large portion of published accounts investigating corporate strategy appear to be based on either anecdotal evidence derived from either limited numbers of case studies by researchers acting as consultants, or by large scale statistical analysis. Dess et al (1995) observed that the results and conclusions drawn from cross-sectional analysis poses two issues. Firstly, the inability to distinguish cause from effect does not account for a possible performance-strategy causal relationship, only the strategy-performance relationship. Secondly, cross-sectional studies are unable to control the impact of unobservables on PSFP, for example, RBT predicts managerial skills and tacit knowledge are a source of SCA. Furthermore, Johnson et al (2003) suggested that managerial activities are marginalised by the concentration of statistical techniques: “The value of a resource depends not on its existence but on its utilisation” (p. 7). They argued that methodology should focus on a microperspective delving deeper into the mechanisms of firms through small sample in-depth case studies.

Much research has been undertaken in areas “outside” the broad area of corporate strategy that has, to date, not been incorporated in an overall theoretical framework on corporate strategy. While the body of work on strategic intent has indicated a relationship with PSFP, this research has not yet been fully incorporated into the concept of corporate strategy. Some authors when writing on corporate strategy do not include organisational direction as a component of corporate strategy (this limitation is discussed further in Chapter Three).

2.11 EMPIRICAL SUMMARY: PART II

Research focus on competitive strategy (at the business unit level) has resulted in little empirical research specifically being conducted on corporate strategy. This is compounded by the inappropriate use of business unit performance being an inadequate proxy for firm-wide performance. Due to the lack of empirical evidence of the relationship between corporate strategy and persistent superior firm performance, it has been necessary to exhibit empirical research undertaken in an alternative construct, namely, sustainable competitive advantage. This then raises the question of whether strategic management is only concerned with uncovering sources of sustainable competitive advantage as an explanation for heterogeneous persistent superior firm performance. The bulk of antecedent literature, both theoretical and empirical, appears to suggest that only *competitive* advantage leads to persistent superior firm performance.

The major limitation of the extant empirical literature involves the focus on inappropriate units of analysis when estimating the effect of corporate strategy. Any segmentation in this manner is artificial as firms decide to operate in particular industries, or to structure their firms in terms of single business units. However, these decisions are made by the firm at the corporate level through the mechanisms of corporate strategy.

The aim of both the structure-conduct-performance and the resource based theory paradigms regarding the creation of law-like generalisations has not eventuated, for example, industry-business-corporate effects on business unit performance, diversification strategy-performance linkage, and the structure-performance relationship. However, the various normative models presented assume law-like generalisations are able to be reproduced universally. Contextual issues also exist, for example, the generalisability of usually cross-sectional studies on large United States-based firms. In summary, the empirical relationship between corporate strategy and persistent superior firm performance remains largely unresolved. Competitive strategy and corporate strategy may be correlated but they are *not* the same phenomenon.

The following questions remain unanswered: Why do some firms continually outperform others and what role, if any, does corporate strategy have on the performance of firms? Much of the empirical research reviewed in this chapter did not estimate the influence of corporate, business, industry or year effects on the performance of the entire firm. Theoretically, corporate strategy influences not just the performance of a single business, corporate strategy should also influence all business units and the firm as a whole through such mechanisms as core competencies, synergy and unified direction. Furthermore, although the empirical literature reviewed supplied evidence that decisions made at the corporate level have a positive influence on business unit performance, they did not seek to provide an explanation of how or why.

There has been limited literature on developing specific theoretical models of corporate strategy and analysis at the firm level. A universally accepted definition of corporate strategy has not been agreed upon. Therefore, the prevailing misconception of what is corporate strategy suggests that the impact of corporate strategy could be greater than that estimated in the empirical literature. The lack of research into corporate strategy is surprising considering amount of time and effort invested in firms (Ambrosini & Bowman, 2003). Often corporate strategy reflects the firm's future direction and decisions and these are the strategies communicated to the business community. Therefore, the primary aim of this research is to determine if heterogeneous firm performance is a result of heterogeneity of corporate strategy

evident across firms, that is, does corporate strategy contribute to persistent superior firm performance? Consequently, this question initiates two additional avenues of research: a focus on *corporate strategy* rather than competitive strategy, and a focus on *persistent superior firm performance* rather than sustainable competitive advantage. Persistent superior firm performance has been introduced as an alternative measure of firm performance.

There has been a concentration of strategic management research on the concept of sustainable competitive advantage and business level competitive strategy. Consequently, corporate strategy has often been considered extraneous to the achievement of firm performance. Those aspects of corporate strategy that have been advanced appear to have been placed on the periphery of strategic management.

3.0 CONCEPTUAL FRAMEWORK AND OPERATIONALISATION

This Chapter is divided into two sequential parts: Part I presents a conceptual framework of corporate strategy while Part II outlines the potential operationalisation of the conceptual framework. The discussion presented in Chapter Two concluded with the observation that corporate strategy has not been well incorporated into the prevailing strategic management theoretical frameworks. The incompleteness of these frameworks has encouraged additional conceptualisations of corporate strategy. Framing corporate strategy decisions as a resource, as suggested by RBT, may provide an explanation as to why and how corporate strategy impacts on firm performance. The conceptual framework presented provides a tentative theory, in other words, it is a system of theorised concepts, assumptions and relationships which explains if corporate strategy contributes to firm performance.

PART I: A CONCEPTUAL FRAMEWORK OF CORPORATE STRATEGY

3.1 CONCEPTUAL OVERVIEW

Part I is structured as follows. The common definitions of corporate strategy are reported on and an appropriate definition of corporate strategy employed in this research is presented. A concise conceptual model is provided in which the components of corporate strategy are categorised into the four corporate strategy attributes first introduced in Chapter One. The propositions and research statements used in this study are then developed. This part of the Chapter concludes with a critical review of the four attributes of corporate strategy.

3.2 WHAT IS CORPORATE STRATEGY?

Firm performance is a multidimensional construct which can be influenced by numerous variables. It is often assumed that firm performance is relatively stable, predictable, determinable, and controllable (March & Sutton, 1997). Both exogenous and endogenous factors are thought to influence corporate strategy decisions and, therefore, PSFP. The empirical evidence outlined in Chapter Two suggests, however, that endogenous factors could account for the largest contribution to PSFP. The focus here is on the aggregate appraisal of firm

performance that is, at the corporate level. As noted in Chapter Two, some authors incorrectly tie corporate strategy directly to the concept of SCA (e.g., Davis & Devinney, 1997). However, this research seeks to link corporate strategy as a separate source of PSFP.

Firms are largely heterogeneous due to heterogeneous historical endowments, information, knowledge, core competencies, resources, and from the different manner in which firms make strategic decisions (Cyert & March, 1963; Foss & Christensen, 2001). The firm is an entity which operates, interacts, adapts and actually changes its external environment. The external environment is accepted to be dynamic, it both influences and constrains the choices and behaviours of the firm.

The term “corporate strategy” is ubiquitous in both academic and practitioner literature and has now developed into being generic and regrettably risks becoming meaningless. Many conceptualisations have been presented leading to this imprecision (Heil, Maxwell, & Whittaker, 2003; Purcell & Ahlstrand, 1989). Authors that use the term “corporate strategy” seldom define it comprehensively. The few writers that provide limited definitions relate corporate strategy incorrectly to competitive strategy or on occasions, strategy solely of diversified firms. Although the existence of various definitions of corporate strategy assists in the creativity of the field, correspondence between different conceptions and empirical analysis is often fraught with difficulties. The two main conceptual approaches to corporate strategy are now discussed.

3.2.1 Corporate strategy as all strategy formulated within the organisation

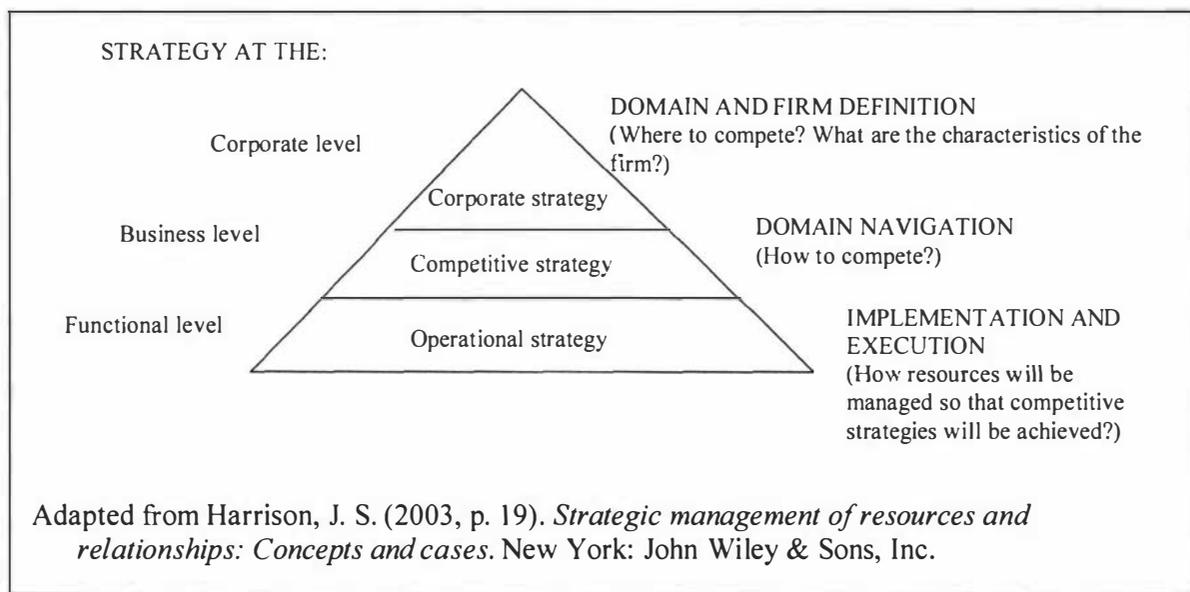
Some authors suggest that corporate strategy encompasses *all* of the strategies formulated and implemented within a firm whereby a number of authors do not specifically provide a definition of corporate strategy as being not at all distinct from organisational strategy (e.g., Ambrosini & Bowman, 2003; Dragun & Knight, 2001; Juttner & Peck, 1998). Corporate strategy is implied to include all operational, competitive and corporate level strategies. Corporate strategy, for example, is a common title of student texts on strategy that encompasses the full range of strategies employed within a firm (e.g., Davis & Devinney, 1997; Johnson & Scholes, 1999). A more appropriate term for this broad perspective is organisational strategies.

3.2.2 Corporate strategy as strategy at the level of the corporate

An alternative conceptualisation of corporate strategy defines it as a component of a strategic hierarchy employing a distinction between operational, competitive, and corporate level

strategies (e.g., Beard & Dess, 1981; Campbell & Faulkner, 2003). Bourgeois (1980) cites Vancil and Lorange (1975) as the first to divide strategy into a corporate and competitive strategy hierarchy. Various alternative firm strategy hierarchies have been proposed and include those by Andrews (1971) and Hamermesh (1986) who suggested that three levels of strategy exist: competitive, corporate, and, institutional strategy. Grunig and Kuhn (2001) also contended that organisational strategy should be divided into three constituents, but of a different hierarchy: mission statement, corporate strategy and, competitive strategy. The strategic hierarchy utilised for this research separates strategy into three levels (refer to Figure 3.1), namely, corporate strategy, competitive strategy, and operational strategy (Beard & Dess, 1981; Harrison, 2003).

Figure 3.1 Strategy hierarchy



Competitive strategy is defined as those strategies employed to determine how the firm will compete in its markets, aiming to secure SCA. In other words, strategies that operate at the business level of the firm (Bowman & Faulkner, 1997; Colley, Doyle & Hardie, 2002; Grant, 2002a; Porter, 1980, 1985). Examples of competitive strategies include the discovery of new market opportunities, and the development of new products and services to satisfy customer demand. The most influential competitive strategy typologies include those of Miles and Snow's (1978) reactor, prospector, analyser and defender model, and Porter's (1980) generic competitive strategies. However, competitive strategy translates corporate strategy into that of the SBU.

Operational strategy is defined as those functional level strategies created to implement and execute competitive strategy. Short-term operational strategies direct individual departments within the firm. Johnson and Scholes (1999) defined operational strategies as those "concerned

with how the component parts of the organisation in terms of resources, processes, people and their skills effectively deliver the corporate- and business-level strategic direction” (p. 13).

3.2.3 Strategy at the corporate level

If the term corporate strategy has been misconceived and misunderstood, strategy evident in the corporate level of the strategic hierarchy is even more ambiguous. The proliferation of definitions has resulted in unclear and distorted boundaries between what is and what may not be corporate strategy. Ambrosini and Bowman (2003) observed that due to the different definitions of corporate strategy, it has been difficult to empirically quantify and measure. The disparate nature of corporate strategy is demonstrated by the following three perspectives evident within the literature.

a) *Corporate strategy is only appropriate for multiple business firms*

Coordination and control issues resulting from the diversification strategies of the early twentieth century led to the design of firms changing from functional structures (U-form) to business unit configurations, that is, multidivisional structure (M-form) (Chandler, 1962; Hoskisson, Hill & Kim, 1993a). Consequently, operational decisions were decentralised to the SBUs with the aim of allowing the corporate headquarters to focus on the overall coordination, control and strategic direction of the organisation (Chandler, 1962; Hoskisson et al, 1993a). The unit of analysis focused on the business level and firm performance was perceived as an aggregation or consolidation of business performance.

A number of authors have subsequently implied that corporate strategy is only applicable to firms with more than one SBU. The “multiple business firms only” definition of corporate strategy rests on the premise that corporate strategy is only domain orientated that is, concerns the selection of products, markets and industries, and allocating resources among them (e.g., Bergh, 2001; Bourgeois, 1980; Campbell & Faulkner, 2003; Chaffee, 1985; Ghemawat & Ricart I Costa, 1993; Grant, 2002a; Hitt & Ireland, 1985; Stalk, Evans & Shulman, 1992). For example, Grant (2002a) argued that corporate strategy involves decisions on the scope of the firm’s operations within particular selected industries and markets. Therefore, corporate strategy should answer the following questions: Where should a firm compete? and, what business/es should a firm be in? (Beard & Dess, 1981; Porter, 1991).

Furthermore, because most of the literature assumes that multiple business firms are diversified, corporate strategy is assumed to be related to diversified firms only. Such examples include the

view that “because corporate strategy is fundamentally concerned with the selection of which businesses a firm will be in, it basically involves decisions about the nature of diversification” (Barton & Gordon, 1987, p. 73). Both Bowman and Helfat (2001) and McGahan and Porter (2002) argued that corporate effects cannot be separated from business effects in single firms (as discussed in Chapter Two). An example of the rationale employed to justify defining corporate strategy in terms of diversified firms includes that by Hamermesh (1986) who suggested that single business firms do not utilise corporate strategy as they only compete in one industry and allocate resources to the one business.

As previously discussed in Section 2.10.2, some authors have utilised the concept of “parenting” to define corporate strategy (e.g., Campbell & Faulkner, 2003; Campbell et al, 1995; Collis & Montgomery, 1998; Finlay, 2000). This view of corporate strategy classifies the parent as the remaining organisational structure once the SBUs have been subtracted. For Campbell et al (1995, p. 121), “the parenting framework is grounded in the economics of competitive strategy” whereby the parent should add value to the SBUs through the fit of the skills of the parent. The skills of the parent include enhancing SBU strategy, organisational legitimacy, and the management of firm portfolios, financial institutions, governmental agencies, public relations (Beard & Dess, 1981). Campbell and Faulkner (2003) conceptualised corporate or parenting advantage as an integration of two paradigms, namely, the synergy school (i.e., RBT) and the portfolio school (i.e., diversification). As a result of this merging, they defined corporate strategy as the fit between the following three factors: value creation through the management of multiple businesses by one team, the selection of appropriate businesses for the firm’s portfolio, and lastly, the successful management of the portfolio. Defining corporate strategy as the management of the firm’s portfolio through the management of synergies across the firm’s businesses has also been advanced by Thompson (2001). However, Mintzberg (1988) suggested that this view of corporate strategy is false as portfolio management merely extends competitive strategy.

b) Specific corporate strategies

A significant body of research has defined corporate strategy in terms of specific corporate strategies such as restructuring, acquisitions, mergers, divestment and diversification. Dess et al (1995) defined corporate strategy as “the study of diversification strategy, acquisitions, new ventures, and vertical integration can all be grouped into the rubric of corporate strategy”

(p. 364) for example. The content of this research concentrates on an in-depth analysis of the specific corporate strategy and its possible impact on firm performance. Consequently, these articles seldom provide a definition of corporate strategy.

c) *Corporate strategy as competitive strategy*

The third argument suggests that either corporate strategy is equivalent to competitive strategy or corporate strategy is an extension of competitive strategy. The first view defining corporate strategy as being equivalent to competitive strategy includes contributions from Hula (1989) who utilised the term “corporate strategy” in his paper but the research actually addresses competitive strategy (i.e., advertising and R&D strategies within a business unit). Similarly, Miller and Toulouse (1986) titled their article, “Chief executive personality and corporate strategy and structure in small firms” and yet the strategies investigated were business level rather than corporate strategies. Furthermore, Tsoukas and Knudsen (2002, p. 422) stated that “most researchers agree that the chief purpose of corporate strategy is the creation of sustainable competitive advantage.” However, the creation of SCA is the chief purpose of *competitive* strategy, not corporate strategy, and remains a concept relevant only to BUP, not firm performance.

Secondly, corporate strategy is often defined as an extension of competitive strategy but on a multiple-product scale (Bowman & Faulkner, 1997). Grunig and Kuhn (2001) extended the definition of competitive strategy making it less specific and broader in context, transferring it to a higher level and termed it “corporate strategy”. For example, they argued that corporate strategy involves determining target market positions (as measured by market share) for the businesses within the firm. The focus of the strategic management literature on competitive strategy has been justified by the assumption that the key to a firm’s success is achieving SCA (Campbell et al, 1995; Finlay, 2000; Grant, 2002a). For example, Bowman and Faulkner (1997) proposed that a firm may be profitable even if its corporate strategy is defective whereas, the firm will fail if the competitive strategy it employs is inappropriate. In single business firms, this approach to corporate strategy treats competitive strategy and corporate strategy as being largely synonymous (Bowman & Helfat, 2001; Hamermesh, 1986; Hitt & Ireland, 1985; McGahan & Porter, 2002; Sadler, 2003; Thompson, 2001).

3.2.4 The definition of corporate strategy employed in this research

This research regards corporate strategy as a separate and distinct category of strategy utilised by firms, as graphically represented in Figure 3.1. Corporate strategy is applicable to all firms, not

just multiple business firms. Corporate strategy then arises from the discretionary and deliberate decisions made at the corporate level that is, corporate strategy is created from managerial intent. The competitive strategy of SBUs is subsequently “aligned” to the firm’s corporate strategy.

If corporate strategy results from various firm decisions, dissimilar corporate strategies are likely to be developed and employed, eventually leading to heterogeneous firm performance. As Bower (1982, p. 631) observed, “the way Polaroid carries out research is fundamental to the strategy of the firm and to why it is different from Kodak”. It is assumed that corporate strategy involves largely a top-down process because if strategy was created solely from a bottom-up process, firms would most likely operate only as SBUs. There must be some advantages for the corporate form, and hence the need for corporate strategy for these advantages to exist. Although strategy can be viewed as an emergent process, this research focuses on a firm’s stated intended or realised strategy (resultant from deliberate formulation) as it is easier to identify and measure. This research then does not seek to make a distinction between deliberate and emergent strategy. Creating broad theoretical and conceptual frameworks of what corporate strategy is will assist in the ongoing development of empirical findings and this will be discussed below.

3.3 THE ENDS AND MEANS OF CORPORATE STRATEGY

Purcell and Ahlstrand (1989) argued that limiting corporate strategy to future objectives and business portfolios is simplistic. Separating corporate strategy into the components of “ends and means” has precedence in the literature (e.g., Bower, 1982; Lynch, 2003; Nelson, 1991). For example, strategy encompasses “the determination of the basic long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals” (Chandler, 1962, p. 13).

Various components of corporate strategy have been proposed in the literature (e.g., Bowman & Faulkner, 1997; Collis & Montgomery, 1998; Porter, 1987). For example, Goold and Campbell (1987b) suggested that corporate strategy encompasses corporate identity and internal governance. Corporate strategy has also been viewed as involving firm legitimacy, directing what businesses the organisation should be in, and establishing long-term strategic intent (Pearce & Randel, 2004). Andrews (1971) considered that market opportunities, core competencies and resources, values and aspirations, and societal obligations are the four components of corporate

strategy. Therefore, the construct of corporate strategy is primarily concerned with determining organisational direction and formulating how the company will achieve their stated strategic intent. As was noted in Section 3.2.4, these strategic decisions are made at the corporate level of the firm.

3.3.1 Organisational direction

The following section outlines the rationale within the literature of why organisational direction should be selected as a component of corporate strategy. This is followed by a definition of strategic intent, reasons for selecting strategic intent, and lastly the relationship between strategic intent and PSFP.

There is disagreement as to whether organisational direction should be included as part of corporate strategy. Although some scholars have elected to establish organisational direction as a distinct construct (e.g., Hamermesh, 1986; Hofer & Schendel, 1978), this research follows the preponderance of views that incorporates organisational direction as a component of corporate strategy. For example, “corporate strategy is the pattern of major objectives, purposes, or goals and essential policies and plans for achieving those goals” (Andrews, 1971, p. 28).

Various lines of research within organisational direction have included identifying the composition of organisational direction and suggesting preferred or desirable elements (e.g., Ireland & Hitt, 1992; Klemm, Sanderson & Luffman, 1991). Organisational direction research has also been utilised to justify the initiation of the organisational direction process within firms (e.g., O’Gorman & Doran, 1999), and to formulate “how to create” models (e.g., Allen, 1995). Other research streams include highlighting emerging trends in management initiatives and specifying what objectives firms should aspire to (e.g., quality, customer service), and revealing the relationships between organisational direction and other aspects (e.g., human intellectual capital, Bart, Bontis & Taggar, 2001).

The establishment of a centralised organisational direction should provide the basis for all firm decision making processes, thus highlighting and guiding potential opportunities, innovation and contributions that are acceptable to the particular firm (Ackerman, 1970; Hamel & Prahalad, 1989, 1994). It has been noted that organisational direction was a prerequisite for firm leadership, especially long-term effectiveness and success (Chakravarthy, 1997; Fahy, 2000; Johnson & Scholes, 1999; Thompson, 1997). Matejka, Kurke and Gregory (1993) in support of this approach, argued that “organisations are underachieving because they are directionally

impaired” (p. 35). Organisational direction establishes communication through tools such as vision, mission, business definition, and values (Harrison, 2003). Organisational direction also creates firm identity with stakeholders both internally whereby providing guidance for decision making, and externally whereby providing an understanding of the firm’s motives and relationships (Thomas & Pruett, 1993).

Hamel and Prahalad (1989, 1994) argued that organisational direction should be based on resources and core competencies. Both Lawler (1994), and Bartlett and Ghoshal (2002) argued that skilled people (their knowledge and expertise) are vital and scarce resources in most firms and the effective utilisation of people does not entail the traditional management mechanisms associated with compliance, but rather includes practices affiliated with self-discipline and emotional connection. Castanias and Helfat (2001) noted that managers are able to potentially influence PSFP through the appropriate utilisation of their human capital (i.e., leading, organising, directing and decision making skills). Similarly, Bennis (2002) in a contribution to leadership, argued that employees sought direction from their leaders. Obtaining employee motivation and commitment can lead to the attainment of strategic intent (Hansen & Wernerfelt, 1989; Monroe, 2002; Powell, 1996; Vecchio & Appelbaum, 1995; Wilson, 1992).

Several constructs have been presented as mechanisms of organisational direction, for example, mission, vision and objectives. For the purposes of this research, strategic intent has been selected as the mechanism for delivering organisational direction and will be comprehensively defined in the remainder of this Section. Although strategic intent could have been placed at the “ends” level rather than using the term “organisational direction”, for simplicity for the reader, strategic intent has been placed at the same level of analysis as the “means” components, so that the level of the attributes in the model and subsequent data collection and analysis is equivalent.

a) *Strategic intent*

Numerous researchers have published research on a variety of conceptions of organisational direction, whether termed purpose, vision, mission, or strategic intent (e.g., Avison, Eardley & Powell, 1998; Bart et al, 2001; Brown & Eisenhardt, 1998; Campbell, Devine, & Young, 1990; Collins & Porras, 1991, 1994; Covin & Slevin, 1994; De Kluyver, 2000; Hamel & Prahalad, 1989, 1994; Ireland & Hitt, 1992; Kirkpatrick & Locke, 1996; Miller & Dess, 1996; Pearce & David, 1987; Proctor, 1997; Rampersad, 2001). The proliferation of definitions has resulted in unclear and distorted boundaries between the concepts of organisational direction, leading to confusion within both academic and practitioner fields. From the mission (which is often

defined as a statement of firm purpose) and vision literature, it is apparent that these concepts are both somewhat incompatible and incomplete. Skat-Rordam (1999) argued that vision and mission have been misused and are vague. He suggested that the reason for the failure of these concepts has been due to the inability to define and implement desired change that links the future with the present.

Defining strategic intent

Strategic intent was defined by Hamel and Prahalad (1989, 1994). Strategic intent is framed within the principle of strategy as “stretch” (ambition beyond the firm’s current resources) and is the “spirit” of a company’s strategic architecture (Hamel & Prahalad, 1994). Hamel and Prahalad defined strategic intent as a unique view of leadership in a future market or position shared by all employees. It is a stretch target that can be described by all employees. Hamel and Prahalad viewed strategic intent as critical to the long-term survival of the firm, especially for those wishing to obtain global leadership. Strategic intent is fundamentally concerned with reaching the future first and changing industry rules, boundaries and standards. In other words, challenging the status quo by ensuring that firm activities are contributing to the core competencies required (Day, 1994), and by overcoming the constraints of limited resources (Babbar & Rai, 1993). Thus, these firms are in the best position to challenge existing positions and to take advantage of emerging opportunities (Markides, 1999). Strategic intent encompasses future threats and opportunities thereby increasing the range of strategic choices available to the firm (Heugens & van Oosterhout, 2001). Furthermore, “strategic intent broadly constrains the ‘where’, but not the ‘how’” (Hamel & Prahalad, 1994, p. 145). It is concerned with economies of scope, in addition to economies of scale (Przybylowicz & Faulkner, 1993).

Strategic intent is the “heart” of strategy: It is a positive and ambitious aspiration that supplies the emotional and intellectual vitality for reaching the future (Hamel & Prahalad, 1989, 1994). The strategic intent should create an internal firm-wide tension, inspiring and compelling all employees to be dedicated to the specified future direction. Strategic intent generates creativity, motivation, flexibility, stability, directional focus, enthusiasm and commitment to achieving the stated goal (Monroe, 2002). For the Coca-Cola Company, strategic intent has been to put a Coke within “arm’s reach” of every consumer in the world. This clearly defined, transformational intent is in contrast to the commonly utilised goals based on financial measures (Pearson & Proctor, 1994; Proctor, 1997).

Hamel and Prahalad divided the strategic intent construct into three elements, namely, a sense of direction, a sense of discovery, and a sense of destiny. A sense of direction is expressed as the strategic intent articulates a long-term position that the firm seeks to achieve over time. Strategic intent should shape the structure of future industries. Strategic intent encompasses a sense of discovery as it provides a unique picture of the future distinct from other firms. Therefore, employees must release their creativity and discover new possibilities and opportunities to reach the stated future. Strategic intent should also be perceived as worthwhile by employees whereby employees possess an emotional connection to the firm, and thus, achieving a sense of destiny. Creating firm aspirations is a key role of corporate strategy (Bryan, Lyons & Rosenthal, 1998). The three strategic intent elements are closely related and combine to create energy, passion, motivation, purpose and direction (Monroe, 2002).

Reasons for selecting strategic intent as an attribute of corporate strategy

Hamel and Prahalad (1989, 1994) proposed that the concepts of mission or vision are deficient as these mechanisms do not focus on the firm's destiny therefore, this research utilises strategic intent as the attribute of organisational direction. Vision and mission appear to constrain how to achieve the stated organisational direction and restrict the application of the core competency approach. Strategic intent involves both direction creation and a process to achieve the direction. In addition, strategic intent encapsulates elements of the other concepts and it is a "total" construct rather than part of a hierarchy (as evident with mission and vision). Furthermore, one target, rather than a hierarchy of various missions and visions, is easily communicated and serves as a unifying theme for the numerous, competing stakeholders (Hannon, 1997).

Strategic intent moves beyond the other organisational direction concepts as it advocates continued improvement, in other words, the aim of strategic intent is to persuade employees that current performance is inadequate (Hamel & Prahalad, 1989, 1994; Markides, 1999). A significant constituent of strategic intent is the creation of an obsession for winning at all levels within the firm with a long-term quest for global leadership. Strategic intent demands resources and capabilities are stretched, and thus, challenging and increasing inventiveness, creativity and momentum. Strategic intent does not require a charismatic or transformational leader to communicate strategic direction and obtain employee commitment. Strategic intent demands the involvement of all employees, not just the corporate level decision makers. The corporate level decision makers must create and sustain the additional components of strategic intent, specifically, the emotional connection and challenge of strategic intent (Hamel & Prahalad, 1994). Employees are fully integrated into the process and move beyond rational acceptance,

instead becoming personally and emotionally committed to achieving the firm's strategic intent (Markides, 1999; Monroe, 2002). Therefore, strategic intent becomes the energising force behind the firm's success.

Proposition 1. Strategic intent is an attribute of corporate strategy.

Empirical research on the association between strategic intent and persistent superior firm performance

Various scholars have provided anecdotal statements of how and why strategic intent leads to PSFP, for example, as a mechanism for controlling firm-wide decision making (Ambrosini & Bowman, 2003; Fawcett, Smith & Cooper, 1997; Love, Priem & Lumpkin, 2002). Similarly, Bontis and Dragonetti (1999) noted that organisational commitment is critical to higher firm performance. The firm should be managed in terms of the specified strategic intent as it "represents the framework for the entire business, the values that drives the company and the belief that the company has in itself and what it can achieve" (Colin Marshall, Chief Executive Officer British Airlines, 1985 as cited in Sadler, 2003, p. 58).

Corporate strategy encompasses the strategic perspective of the firm (Thompson, 2001). It is the corporate level decision makers' job to develop a core competence building plan, creating corporate challenges which are stepping stones to the strategic intent, to continually focus the firm on the stated corporate challenge, and ensure the alignment of employee performance measurement and the stated corporate challenge (Hamel & Prahalad, 1994). An important aspect of corporate strategy is provided by strategic intent as it imparts a unified firm-wide ideology or interpretation system (Westley, 1990). Strategic intent is also utilised in establishing firm culture, ethics, leadership, stakeholder relationship management, portfolio management of individual businesses and core competencies (Finlay, 2000).

Whether or not firms require all aspects of strategic intent has not been resolved. Possessing one, or all, of the characteristics of strategic intent should cause PSFP. The three components of strategic intent may be achieved in different time frames although they should be initiated at the same time. For example, the aspects of personal commitment and obsession with winning may take longer to embed in the organisation.

Regrettably, limited empirical evidence investigating strategic intent has been presented. Imprecise definitions enveloping the mechanisms of strategic intent have reinforced the

uncertainty and indistinctness surrounding the relationship between strategic intent and PSFP. Four empirical studies of strategic intent are outlined. Fawcett et al (1997) surveyed executives to determine whether there was a relationship between strategic intent and firm performance. They examined the alignment between strategic direction, measurement systems and operational performance by utilising a mailed survey to 131 senior executives. They found that “the greatest obstacle to competitive success seems to be maintaining focus and consistency among strategic goals and value-added capabilities” (Fawcett et al, 1997, p. 411). They concluded that what is measured is more important to employees than the stated strategic intent. Therefore, when the corporate level decision makers aligned both strategic intent and measurement systems, PSFP resulted. The careful selection of the strategic intent and the process undertaken when seeking to achieve it, also contributes to PSFP.

Przybylowicz and Faulkner’s (1993) article on Kodak outlined the implementation of strategic intent in a firm. They suggested that strategic intent provided focus, energy and long-term direction. Kodak also benefited from the building and leveraging of capabilities across departments, and forging closer interdepartmental relationships. The third major gain centred on highlighting horizontal market opportunities: opportunities that the firm would not have been taking advantage of during the normal course of events.

Monroe (2002) empirically investigated strategic intent in New Zealand firms and found a relationship between the possession and utilisation of strategic intent and PSFP. Successful firms were characterised to hold strategic intent by varying degrees. Those with high levels of strategic intent also possessed high of levels of emotional connection to their employees. Monroe (2002) concluded the three strategic intent components are closely related, mutually reinforcing, and interdependent.

Johnson and Sohi (2001) utilised strategic intent as a measure of a firm’s strategic ambition or aggressiveness, and measured strategic intent to the success of interfirm relationships. This research was based on data collected from 319 questionnaires. They concluded that the more strategically aggressive the company, the greater the effectiveness of these relationships, due to increases in reciprocity, information transfer and cooperation.

As the empirical research on strategic intent offered is limited, it is necessary to outline research which has been presented on the relationship between PSFP and additional concepts of organisational direction, namely, mission and vision. Some research appears to implicitly

assume that statements of organisational direction are a determinant of success (e.g., Falsey 1989; Germain & Cooper, 1990; Klemm et al, 1991; Martin, 1999; Rarick & Vitton, 1995). As Mazza (1999, p. 86) noted, “the success of mission statements as a fashionable management tool is mainly taken for granted, without further explanations on the reasons of this success and on its nature.” O’Gorman and Doran (1999) and Sexton and Van Auken (1985) observed that some researchers automatically related PSFP to the possession of a mission instead of considering that success may be attributed to the processes a firm undergoes when formulating that mission.

A number of researchers could not link PSFP to mission (e.g., David, 1989; Mone, McKinley & Barker, 1998; Mueller, McKinley, Mone & Barker, 2001; O’Gorman & Doran, 1999). Other studies have attempted to link mission to PSFP without conclusive results (e.g., Calfee, 1993; Campbell, 1992; David, 1989; Ireland & Hitt, 1992; Matejka & Brooks, 1993; Wilson, 1992). This view was reinforced by Bart and Baetz (1998, p. 848) who concluded that “most of the previous writings extolling the virtues of having a mission statement appear to be wrong or incomplete.” The linkage between mission and PSFP was also questioned by Piercy and Morgan (1994) as they observed that there is a “remarkable lack of empirical evidence for the claimed and assumed positive effects of mission” (p. 1). For example, Bart and Baetz (1998) studied the mission statement-PSFP relationship and found that “the presence of mission statements were not automatically associated with superior firm performance” (p. 848). Furthermore, Quigley (1993) proposed that the empirical linkage between vision and PSFP appeared limited.

However, some researchers have provided empirical evidence linking the existence of a mission or vision to PSFP. Pearce and David (1987) presented the first empirical research linking mission statements and PSFP. They concluded that successful companies have “comprehensive” missions. By contrast, Appelbaum, St-Pierre and Glavas (1998) noted that firms may create unclear, inappropriate visions which impact negatively on PSFP. Rarick and Vitton (1995) showed that firms possessing a mission had a higher average return on equity than those without missions. A number of researchers proposed that a positive relationship to PSFP resulted from a more intensive effort to monitor firm performance or by improvements in employee motivation and alignment. For example, Collins and Porras (1991) demonstrated that missions motivated employees, and thus increased performance in comparison to “nonmission” firms. Bart and Baetz (1998) argued that PSFP originates from the adjoining development of inclusive mission creation processes and alignment with performance evaluation systems. In later research, Bart et al (2001) advocated that the success of the mission was dependent upon “post-development realignment” with employee behaviour. They observed that the success of a mission is

dependent on the emotional connection, linkage to values and commitment of the firm's employees. The impact of vision on PSFP has been related to culture (Kotter & Heskett, 1992). Kirkpatrick and Locke (1996) suggested that a relationship between vision and PSFP existed whereby vision provided intellectual stimulation and inspiration. Vision was also found to impact positively on the firm Clark and Morgan (2001) studied by instilling a sense of focus and discipline, especially given the dynamic environment experienced. Wilson (1992) and Testa (1999) also concluded that PSFP is positively correlated to vision by increases in sales, employee commitment and shareholder value.

Research statement 1. *Strategic intent does contribute to persistent firm performance.*

3.3.2 Means of achieving organisational direction

Several researchers have argued that corporate strategy involves those decisions relating to how the firm is to be managed (e.g., Harrison, 2003; Porter, 1987; Thompson & Strickland, 1996). These corporate level decisions encompass defining the boundaries of the firm, namely, what the firm does and does not do (Baron, 1995), and allocating resources among competing businesses and activities (Hamermesh, 1986). In addition, internal governance and management processes have been viewed as being important aspects of corporate strategy (Campbell et al, 1995; Pettinger, 1996). Spender (1993) advocated that strategy can be viewed as "the pursuit of efficiency through market selection, resource allocation and the administration of work" (p. 14). Three means of achieving organisational direction, namely, organisational domain, internal governance, and resource governance are now discussed. For each, a definition is outlined, including the reasons for its selection, and the relationship between it and PSFP.

a) *Organisational domain*

Defining organisational domain

Organisational theorists have recognised that the complex and dynamic nature of the environment means that managers cannot effectively comprehend and react with the entire environment. Consequently, the corporate level decision makers decide to restrict the interaction between the firm and its environment to selected parts. The definition of the operating environment of the firm is termed organisational domain. Organisational domain has been defined as the "domain of activity through selection of business areas in which the company will compete" (Harrison, 2003, p. 19). It encompasses decisions relating to the boundaries of the firm including what it does not do therefore, guiding the characteristics of the firm (Baron, 1995). Organisational domain then involves decisions on whether to enter or leave an industry

as that industry evolves (Duncan & Weiss, 1979). As Helfat and Lieberman (2002, p. 727) noted, “every time the technology or state of business practice shifts, firms must decide whether to participate in this next phase of the industry.”

Reason for selecting organisational domain as an attribute of corporate strategy

Corporate strategy has been defined as encompassing the range, scope and diversity of firm activities and includes deciding what industries firms should be in and withdraw from (Harrison, 2003; Thompson, 2001; Viljoen & Dann, 2003). Other researchers provide similar inferences of the importance of organisational domain as a key component of corporate strategy. For example, “a fundamental part of any firm’s corporate strategy is its choice of what portfolio of businesses to compete in” (Markides & Williamson, 1994, p. 149). Another approach to organisational domain is on the basis of core competencies (Hamel & Prahalad, 1994; Prahalad & Hamel, 1990), whereby corporate strategy should identify, nurture and leverage core competencies (or core competency portfolios) across the firm rather than solely building portfolios based on product offerings.

Organisational domain has been viewed as encompassing three dimensions, namely, product diversification, geographical diversification, and vertical integration (Grant, 2002a). Diversification enables firms to achieve market power whereby profits can be transferred among the various SBUs, reciprocal buying whereby larger firms are in a more advantageous position to exert superior buying power than a SBU and, lastly, a near monopolistic situation can arise from mutual forbearance whereby firms competing in numerous markets restrict competition due to fear of retaliation (Bernheim & Whinston, 1990; Korn & Baum, 1999). Vertical integration promotes market power by forcing competitors to also vertically integrate or by creating a pseudomonopolistic position.

Various management tools have been formulated as a means of managing organisational domain. For example, portfolio management has been suggested as an important tool for use in corporate strategy (Hamermesh, 1986; Porter, 1991). Bowman and Faulkner (1997) stated that prescriptive tools, such as portfolio matrices, were created to assist in decision making and the management of the scope and range of firm activities (e.g., The Boston Consulting Group Growth-share Matrix, and The General Electric/McKinsey Directional Policy Matrix). These tools suggest that company resources should be allocated to the appropriate (i.e., in terms of attractiveness or fit) products, markets or businesses. However, these tools are the antithesis of the core competency approach as they predominantly relate to unrelated diversification. The effectiveness of these

models then appears limited as they do not incorporate synergies or core competencies among the various SBUs (Bowman & Faulkner, 1997; Hamel & Prahalad, 1994). Instead, they focus on products, markets or businesses, that is, competitive strategy, rather than the overall scope and range of the firm. Many firms that utilised these models during the 1970s to 1980s to diversify into more attractive businesses found the expected PSFP did not occur. Alternative models have been advanced such as the core competency approach and the parenting framework (i.e., parenting opportunity analysis and the parenting-fit matrix), whereby firms should use these models as the basis for successful organisational domain decisions (Campbell et al, 1995; Hamel & Prahalad, 1994).

Organisational domain includes economies of scope which develop from resource sharing across several markets (Grant, 2002a). Organisation domain also encompasses the degree of relatedness of firm activities (e.g., product, market, technology, and core competency) which creates synergies and assists in the creation and deployment of firm-wide core competencies (Hamel & Prahalad, 1994). Synergy encompasses utilising connections and combinations between different businesses, industries, resources and capabilities (Foss & Christensen, 2001; Grant, 2002a).

Proposition 2. Organisational domain is an attribute of corporate strategy.

Empirical research on the association between organisational domain and persistent superior firm performance

While definitive empirical evidence between organisational domain decisions as a whole and PSFP has not been presented, many scholars have suggested a positive relationship between PSFP and two of the three organisational domain dimensions, namely, product and geographical diversification. The diversification research has sought to answer why it is efficient for some firms to diversify and not others, and what makes diversification successful. For example, related diversification impacts positively on PSFP (e.g., Christensen & Montgomery, 1981; Lecraw, 1984; Rumelt, 1974, 1982). However, diversification occurs not solely across businesses and industries as commonly measured by the empirical research, but also within businesses and industries, that is, existing product line extension and new product explorations (Stern & Henderson, 2004). Furthermore, as Foss and Christensen (2001, p. 216, italics in original) noted,

a fundamental problem in most of the empirical (if not necessarily theoretical) work on diversification and relatedness is that traditional measures of relatedness only focus on the

industry or product-market level – *not* on the level of capabilities and other firm assets.

Diversification has also been found to be beneficial to a point before complexity and coordination costs are too high (Grant & Jammine, 1988; Misangyi et al, 2006; Palich, Cardinal & Miller, 2000).

Research has noted that diversification altered during the 1980s which led to the reduction of conglomerate firms and a trend towards divestment (e.g., Davis, Diekmann & Tinsley, 1994). Davis et al (1994) concluded that diversification became inefficient; that is, investors were more efficient at diversifying their portfolios than firms. In addition, they noted that in the US regulatory changes reduced the attractiveness of diversification. Likewise, the stock market valued conglomerates lower than other organisational structures and, correspondingly, research found that announcements of refocusing, regardless of the outcome, led to higher stock market valuations (Markides, 1992).

Similarly, economies of scope and synergies are thought to arise from geographic diversification as firms are able to leverage existing resources into new locations, further enhancing those resources through new learning opportunities (Delios & Henisz, 2000). In addition, risk (e.g., from environmental shifts that may result in revenue changes) can be spread over different geographic markets. New markets may provide additional growth opportunities that may not be present in current markets. Other researchers have focused on the role of global expansion on PSFP and have generally concluded multinational firms outperform locally or nationally focused firms (e.g., Grant & Jammine, 1988; Hitt, Hoskisson & Kim, 1997). However, Lu and Beamish (2004, p. 606) found that “at high and low levels of internationalisation, the extent of geographic diversification was negatively associated with firm performance, while at moderate levels of internationalisation, greater geographic diversity was accompanied by higher performance.”

More consistent empirical findings have been presented in vertical integration research whereby vertical integration has been observed to underperform both diversified and focused firms (e.g., Rumelt, 1974). A negative correlation was observed between within-stage (e.g., product extension) vertical integration and return on investment whereas a statistically nonsignificant association was found for between-stage (e.g., manufacturing and distribution) vertical integration (Peyrefitte & Golden, 2004). However, Delmas and Tokat (2005) found a curvilinear association between vertical integration and efficiency whereby lowly and highly vertically integrated firms are more efficient than moderately vertically integrated firms.

Further organisational domain decisions include organisational domain restructuring, for example, acquisition and divestment. Colley et al (2002, p. 5) suggested that the sole corporate level decision mechanism for making noteworthy adjustments to BUP “is to make changes in the portfolio of businesses. That is, it can choose to acquire new, more desirable businesses and/or it can choose to divest less attractive businesses”. Bowman, Singh, Useem and Bhadury (1999) performed a meta-analysis of 21 empirical studies that linked performance to portfolio restructuring and concluded that decisions to spin-off parts of firms yielded the greatest performance reward, with 5% gains on average by the parent company. Sell-offs attributed 2%, whereas acquisitions and divestments with refocusing saw no improvement on the average.

Research statement 2. *Organisational domain does contribute to persistent firm performance.*

b) *Internal governance*

Defining internal governance

Internal governance represents the mechanism by which strategic decisions are implemented (Duncan & Weiss, 1979). Barney (1995) proposed that valuable, rare and inimitable resources can be exploited by appropriate internal governance mechanisms such as reporting, control and compensation systems. Internal governance then represents decisions regarding how the firm should be managed, organised and controlled. Contingency theory has influenced the internal governance literature due to its central theme that internal governance mechanisms should have been developed in response to the particular environment experienced by the individual firm (Lawrence, 1993). The uniqueness of firms is also upheld through various cultural characteristics (e.g., Peters & Waterman, 1982).

Several typologies for classifying internal governance have been advanced. Prahalad and Doz (2003) suggested that internal governance comprises four aspects, namely, structural clarity, administrative processes, basic premises, and the values, beliefs and behaviours for all employees. However, Ghoshal and Bartlett (1995) identified the three key management processes of entrepreneurial, integration, and renewal. In 1994, Hamel and Prahalad proposed that strategic architecture was the correct means of internal governance. Strategic architecture is an overarching, loosely defined plan “for the deployment of new functionalities, the acquisition of new competencies or the migration of existing competencies, and the reconfiguring of the interface with customers” (Hamel & Prahalad, 1994, p. 118).

Internal governance may be characterised by three aspects, namely, organisational design, organisational structure, and control and compliance. Organisational design is the configuration of coordinating mechanisms and lines of authority and responsibility, for example, centralisation or decentralisation of decision making. Organisational structure refers to the levels of hierarchy, such as the establishment of functional or divisional reporting lines. Control and compliance includes the various performance measurements and incentive systems (Bowman & Faulkner, 1997; Hoskisson et al, 1993a). Through these three aspects, firms are able to influence culture, values, and communication channels through which flow knowledge and information (Daft & Weick, 1984; Westley, 1990).

Reasons for selecting internal governance as an attribute of corporate strategy

Internal governance mechanisms also assist in directing individual behaviour in line with strategic intent (Kerr, 2004). How a firm is organised shapes the structure of the work employees undertake and consequently influences employee emotions, thoughts, learning and behaviour (De Jong & van Witteloostuijn, 2004). Some firms, for example, Southwest Airlines (Kerr, 2004), utilise cultural controls (e.g., social norms and expectations) rather than relying solely on bureaucratic controls (e.g., procedures and policies). But while SubbaNarasimha (2001) noted that individuals possess knowledge, PSFP results from collective action. Therefore, individual knowledge needs to be transferred within the firm and can be released through the mechanisms of internal governance. Evolutionary theory suggests that knowledge resides in the routines that are created and maintained by the mechanisms of internal governance (Cyert & March, 1963; Nelson & Winter, 1982).

Organisational design is the mechanism for the management of the firm aligning its goals, resource allocation and employee roles (Duncan & Weiss, 1979). A number of typologies have been developed on organisational design, for example, Mintzberg (1983) proposed the now well known five configurations of simple, machine bureaucracy, professional bureaucracy, divisional, and adhocracy. However, Child and McGrath (2001) observed that organisational design faces a number of paradoxes, notably, alignment versus flexibility, efficiency versus creativity, control versus responsiveness, and centralisation versus empowerment. Contingency theorists suggest that internal governance mechanisms should achieve “fit” with the external environment. Internal governance decisions also include the creation of coordination and cooperation strategies regarding external relationships, such as, supplier alliances (Juttner & Peck, 1998).

Organisational structure “involves how a firm is organized and governed, and how decisions actually are made and carried out” (Nelson, 1991, p. 67). Organisational “structure reduces the task uncertainty by setting up the division of labour (amount of role differentiation), the departmental structure, the shape (the number of levels, spans of control), and the distribution of power” (Habib & Victor, 1991, p. 590). Hamel and Prahalad (1994) suggested that firms should, in contrast to the portfolio tools as outlined in Section 3.3.2a, structure themselves around core competencies rather than SBUs, products, or markets. Organisational structure impacts the control and coordination of employees via an administration system (Kerr, 2004; Mintzberg, 1979; Young et al, 2004). Three categories of organisational structure were provided by Robbins and Barnwell (1994), namely, complexity, formalisation, and centralisation. However, traditionally, organisational structure has been divided along holding (H-form), U-form and M-form structures. For example, Alexander (1991) suggested that the M-form enables the separation of corporate strategy from competitive strategy due to the physical separation of the corporate from the SBU. In doing so the value of the corporate is further reduced.

Internal governance can also impose control and compliance arrangements that influence how the firm and employee behaviour are managed. Examples include performance appraisal processes, financial reporting systems, and monitoring and feedback systems for departmental targets. According to Alexander (1991), most research has focused on assessing the control and compliance practices at the SBU level as it is assumed that firms decentralise decision making in response to environmental uncertainty. The outcomes of organisational design and structure include control, connections and interfaces; the encouragement of creativity and innovation; employee commitment; coordination; and, lastly, core competence and capability transfer (Sadler, 2003). Internal governance then supplies the systems in which knowledge is transferred among businesses (Szulanski, 1996).

Proposition 3. Internal governance is an attribute of corporate strategy.

Empirical research on the association between internal governance and persistent superior firm performance

Internal governance is viewed as being heterogeneous across firms, and, therefore, could provide a mechanism for delivering PSFP. Robins (1993) suggests that for the American film industry, as did Lorenzoni and Baden-Fuller (1995) for Benetton, distinctive modes of internal governance are intrinsic to PSFP. Transferring core competencies, capabilities and knowledge across the entire firm can be limited by poor internal governance decisions. Internal governance

mechanisms can be created or adjusted to accommodate the generation and transference (exploration and exploitation) of knowledge throughout the firm (Venkatraman & Subramaniam, 2002). For example, informal and lateral linkages, rich social context, and personal interaction aim to reduce the stickability of knowledge transference (Almeida, Song & Grant, 2002; Jaffe, Trajtenberg & Henderson, 1993; Kogut & Zander, 1992, 1996; Szulanski, 1996). Knowledge recombination, from both endogenous and exogenous sources, can lead to higher rates of innovation (Galunic & Rodan, 1998; Grant, 1996a; Kogut & Zander, 1992). However, inconsistent organisational systems appear to limit synergy and knowledge sharing (Harrison, Hall, & Nargundkar, 1993).

Child and McGrath (2001) contended that a universal organisational design does not exist, as it should be contingent on, for example, strategic intent, existing organisational design, and the nature of resources. Contingency theory hypothesises that optimal organisational structure varies according to contingency factors such as firm size, technology, task uncertainty, and strategy (Burns & Stalker, 1961; Lawrence & Lorsch, 1967; Pugh, Hickson, Hinings, & Turner, 1969; Woodward, 1965) whereby the extent of the fit of the firm's internal structure with the environment correlates to performance outcomes (Duncan & Weiss, 1979). This approach advocates environmental selection rather than recognising the ability of a firm to select the environment it operates in (Child, 1997). However, DeSanctis, Glass & Ensing (2002) indicated that although organisation design does not directly influence PSFP it does determine whether firms can transform resources into value.

Whittington (2002, p. 116) argued that "the staying power of large organizations in general, and some in particular, argues for structure's more positive role in the creation of value." Organisational structure can lead to competitiveness such as providing innovation, speed and flexibility as it represents how employees are organised, for example, via decentralised or modularised companies (Harrison, 2003). Foss and Christensen (2001) observed that the organisation design evident in Philips (e.g., rewarding local managers for innovative problem solving) encourages "local experimentation and learning by giving significant autonomy to local managers, and to have the results of such experimentation made accessible to other parts of the organization through personnel transfers" (p. 224). However, bureaucratic organisational designs have been thought to restrict innovation and encourage rigidity through routinisation, conformity and stability leading to less than optimum performance (Child & McGrath, 2001; Ellig, 2001).

As organisational structure has received the majority of the research focus, it will provide the primary empirical evidence of the relationship between internal governance and PSFP. One view of the role of organisational structure on firm performance suggests that it should be aligned to or fit the corporate strategy employed by the firm (Chandler, 1962; Grinyer, Yasai-Ardekani & Al-Bazzaz, 1980; Habib & Victor, 1991; Hamilton & Shergill, 1992, 1993) or should be taken into account when formulating corporate strategy (Collis & Montgomery, 1998) as theoretically “structure provides the necessary systems and processes essential for successful strategy implementation” (Habib & Victor, 1991, p. 589-590).

However, Chandler (1962) presented a strategy-structure-performance model whereby strategy precedes structure, specifically, divisionalisation follows diversification as firms engaging in growth strategies alter their organisational structure in response to the increased complexity (i.e., from the U-form to the M-form). Tushman and O'Reilly (1996) and Williamson (1975) argued that alignment between strategy, structure and culture leads to PSFP. Empirical validation of the strategy-structure-performance model includes, for instance, Hamilton and Shergill (1992) who found that the move from U-form to M-form was caused by strategy and that strategy-structure fit accounted for between 16.1 and 23.2% of financial performance in the New Zealand firms they sampled. Moreover, it has been found that the impact of strategy on performance can be limited by organisational structure (Chandler, 1962; Vancil, 1980). For example, Hill, Hitt and Hoskisson (1992) attributed the success of diversified strategies to constrained organisational structures and that prosperous firms altered their structure to best deliver their strategies. Amburgey and Dacin (1994) argued that strategy directs structure and that changes in organisational structure do not necessarily alter strategy. Nevertheless, some empirical research has noted a reverse causality: that is, structure can influence strategy (Peters, 1984; Tsoukas & Knudsen, 2002; Yin & Zajac, 2004). For example, Rumelt (1974) found that decentralisation resulted in greater diversification due to SBU managers' proclivity for incorporating additional opportunities into their areas of responsibility. Some scholars suggested the relationship between strategy and structure is one based on reciprocal causality; for example, Mintzberg (1990) stated that strategy and structure move together as the firm changes. In contrast, Habib and Victor (1991) found that although multinational companies align structure to the strategy pursued, firm performance was not influenced by this strategy-structure fit. The strategy-structure view derives from the deliberate strategy school of thought which proposes strategy is controlled by the actions of primarily management (Mintzberg & Waters, 1985). The other school, namely, emergent strategy suggests that strategy can be unintended and that over time

can form a consistent pattern of strategic choices by management and sometimes other than management (Mintzberg & Waters, 1985; Quinn, 1980).

Various authors have proposed the following relationship: Organisational structure influences organisational culture which then leads to PSFP (Miles & Snow, 1978; Schein, 1984; Wilkins & Ouchi, 1983). For instance, Cadbury's culture was altered by the implementation of M-form organisational structure during the 1960s which indirectly undermined the existing culture (Rowlinson, 1995). Bowman et al (1999) performed a meta-analysis of organisational restructuring literature and found the impact of performance was mixed. They concluded that positive but small influences on performance occurred from organisational restructuring, and downsizing in conjunction with organisational restructuring. They also found negative influences on performance arose from layoffs unaccompanied by other firm alterations. In contrast, Lewin and Johnston (2000) noted that restructuring rarely produced the expected gains in productivity and profitability, as employees are removed without restructuring roles and processes.

The M-form hypothesis presented by Williamson (1970, 1985) theoretically predicts that PSFP can be attributed to the possession of M-form organisational structure as it is more efficient in allocating scarce resources via the firm's internal capital market (i.e., separating structure and allocation decision making from firm operations), and in monitoring SBU performance to ensure maximum efficiency. Williamson (1970) suggested that firms may choose to retain tasks within the internal environment of the firm due to higher transaction costs. The M-form hypothesis assumes profit maximising behaviour of management (i.e., no agency issues). However, more recent empirical evidence suggests the M-form can lead to inefficient diversification (Porter, 1987; Russo, 1991).

Barney, Wright and Ketchen (2001) contended that PSFP results from heterogeneity in the ability of firms to implement mechanisms of internal governance and that "while governance, per se, may not be a source of competitive advantage, failure to implement the correct governance in a situation can lead firms to not fully realise the benefits of the resources they control" (p. 632). Thus, successful strategic implementation and, therefore, PSFP, can be achieved via internal governance, specifically resulting from the establishment of systems, processes and information utilisation mechanisms (Habib & Victor, 1991; Sadler, 2003). In summary, the relationship between organisational structure and persistent firm performance appears to be complex. A universal view of this association that contributes to the literature has not yet developed.

However, it can be suggested that research has found that organisational structure does not ensure PSFP but that it can be impeded by the selection of an inappropriate form.

Research statement 3. *Internal governance does contribute to persistent firm performance.*

c) *Resource governance*

Defining resource governance

Evolutionary theory describes firms as a resource governance mechanism, that is, explaining why firms exist (Nelson & Winter, 1982). However, the literature focuses on resource allocation rather than resource governance whereby resource allocation consists of the deployment of existing resources between competing projects, tasks, activities and areas. For example, Sharpe and Keelin (1998) suggested that SmithKline Beecham's resource allocation decision making processes involved generating a full range of investment alternatives for each project, assessing value, uncertainty and risk in terms of specific requirements, variables and measures and, lastly, ranking the projects in terms of highest return on investment and developing a value portfolio along specific strategic dimensions by a neutral team.

The concept of resource governance involves more than resource allocation implies. In addition to resource allocation, resource governance encompasses the deliberate intent to capture, accumulate, reconfigure, protect and leverage renewable, existing, potential and unrealised resources (Hamel & Prahalad, 1993, 1994). They also noted that additional value can be created when firms leverage their resources, thus increasing the effectiveness of the resource. Resource leverage encompasses maximising the return from resources, further developing resources through learning, exploitation, and spreading resources into additional arenas, that is, resource widening (Doz, 1997; Hamel & Prahalad, 1993, 1994). Resource leverage can be achieved by concentrating resources on strategic targets, resource accumulation, increasing value by complementing resources, resource conservation, and the rapid recovery of resource expenditure to payoff (Hamel & Prahalad, 1993, 1994).

Reasons for selecting resource governance as an attribute of corporate strategy

Adner and Helfat (2003) argued that managerial capabilities are utilised by firms to "build, integrate, and reconfigure organizational resources and competences" (p. 1012). To create value, resources need to be "released", that is, transferred or deployed. The main mode of delivery of

these decisions is via corporate strategy: “The corporate centre can act as an internal capital market – that is, as an alternative to the outside capital market – in allocating resources to the divisions.” (Markides, 2002, p. 100). Corporate strategy accumulates, leverages and allocates the firm’s resource base. For example, specific corporate strategies, such as mergers, acquisitions, alliances and joint ventures, are often employed to accumulate additional resources.

Various typologies for classifying firm resources have been advanced in the literature; for example, Grant (1991) categorised resources into tangible and intangible resources, whereas Barney (1991) identified categories of physical, human, and organisational resources. In contrast, Miller and Shamsie in their 1996 study on Hollywood film studios divided resources into property-based resources (e.g., physical assets and human capital) and knowledge based resources (e.g., organisational culture and managerial resources).

Various management tools have been devised to evaluate resources and include The Make-Buy-Ally Matrix, The Scope, Scale and Synergy Matrix, core competency profiling, and resource audits. For example, “in an analogy to the growth-share matrix, a resource-product matrix was used as a way to examine the balance between the exploitation of existing resources and the development of new ones” (Hoskisson et al, 1999, p. 438). One specific technique for the allocation of resources among the various businesses is portfolio management (Campbell et al, 1995; Goold & Luchs, 2003; Hamermesh, 1986). As noted in the organisational domain section, many of these tools focus on competitive strategy, and thus provide limited application to company-wide resources, especially core competencies.

Interfirm competition involves the competition for the core competencies of the future (Hamel & Prahalad, 1994; Prahalad & Hamel, 1990). The characteristics of core competencies, that is, long-term, investment heavy, firm-wide, and their importance to firm survival, mean that core competency management eclipses viewing resource governance simply as an allocation programme between SBUs (Hamel & Prahalad, 1994). Hitt and Ireland (1985) suggested that the transference of core competencies throughout the company can lead to synergy. Consequently, core competency governance should be managed centrally (via corporate strategy decisions) so that the core competencies are integrated and repeatedly used firm-wide, rather than in a decentralised, fragmented manner. In other words, “because core competencies are the highest level, longest-lasting units for strategy making, they must be the central subject of corporate strategy” (Hamel & Prahalad, 1994, p. 242).

Proposition 4.

Resource governance is an attribute of corporate strategy.

The influence of resource governance on persistent superior firm performance

There has been limited empirical research on resource governance. Subsequently this discussion of the association between resource governance and PSFP will be presented in terms of expectations. In addition to the individual and collective value of resources, the managerial skill in resource governance decision making may alter (enhance or diminish) resource value (Teng & Cummings, 2002). Some researchers have actually found that the use of management tools can mislead decision making (e.g., Armstrong, 1996). Resources can be allowed to atrophy, are eroded or squandered by inappropriate resource governance decisions, for example, poor adaptability, poor understanding of sources of advantages (i.e., causal ambiguous nature), limited investment, poor foresight or understanding of the firm's environment (Hamel & Prahalad, 1994; Hunt & Morgan, 1995).

RBT predicts that the possession and utilisation of valuable resources leads to PSFP, for example, "only accumulated competences that enable the firm to build *new* strategic assets more quickly and efficiently than its competitors will allow it to sustain supernormal profits" (Markides, 2002, p. 101-102, italics in original). The means of achieving PSFP is by the proficient exploitation and renewal of resources and capabilities relative to competitors (Coff, 2003; Davis & Devinney, 1997). Likewise, Hamel and Prahalad (1993, 1994) suggested that industry leadership will be determined by the ability of firms to leverage their resources. Collis and Montgomery (1998) advocated that the successful management of firm resources leads to the creation of corporate advantage. Furthermore, it has been argued that PSFP can be attributed to the creation of synergy from the possession of similar resources amongst various SBUs although synergy occurs from the successful integration and administration of resources (Harrison et al, 1993).

Dyer and Singh (1998) also noted that resources held within and across firm relationship networks (e.g., suppliers) can lead to PSFP through such mechanisms as investing in relationship specific assets, knowledge exchange (organisational learning), creating new products and technologies through combining complementary resources and lastly, the effective governance mechanisms which lower transaction costs. Lorenzoni and Lipparini (1999) found that interfirm relationships improved firm performance due to resource leverage resulting from access to additional core competencies and capabilities, expansion and improvement in existing core

competencies, development of complementary resource combinations, network capabilities, and the creation of multiple knowledge flows.

An example of empirical evidence of a relationship between a specific resource and PSFP includes the managerial skills/leadership-performance relationship (Bailey & Helfat, 2003; Castanias & Helfat, 2001). Some authors have uncovered a relationship between performance and executives' past performance record (e.g., Pfeller & Davis-Blake, 1986; Smith, Carson & Alexander, 1984). Performance has also been found to be influenced by top management team size, composition and tenure (e.g., Halebian & Finkelstein, 1993).

Research statement 4. *Resource governance does contribute to persistent firm performance.*

3.4 CORPORATE STRATEGY AND PERSISTENT SUPERIOR FIRM PERFORMANCE

The conceptualisation of corporate strategy employed in this research decomposes a firm's decisions at the corporate level into the four attributes presented in Figure 3.2. This concept of corporate strategy has been defined in a precise synthetic manner ensuring that corporate strategy can be empirically tested and generalised. The framework incorporates both strategy formulation (i.e., strategic intent) and strategy implementation (i.e., organisational domain, internal governance and resource governance). It is important to include both aspects of the strategic management process because if strategic intent is executed as a separate function, misalignment between the two parts of the strategic management process could occur, leading to lower firm performance. Various approaches or styles can be applied to the entire corporate strategy process, for example, product, market, industry, or core competency approaches. Numerous tools can be utilised to support the four attributes of corporate strategy, for example, mission, vision and particular strategies. The model employed in this research encompasses the four attributes of corporate strategy which can be expressed as:

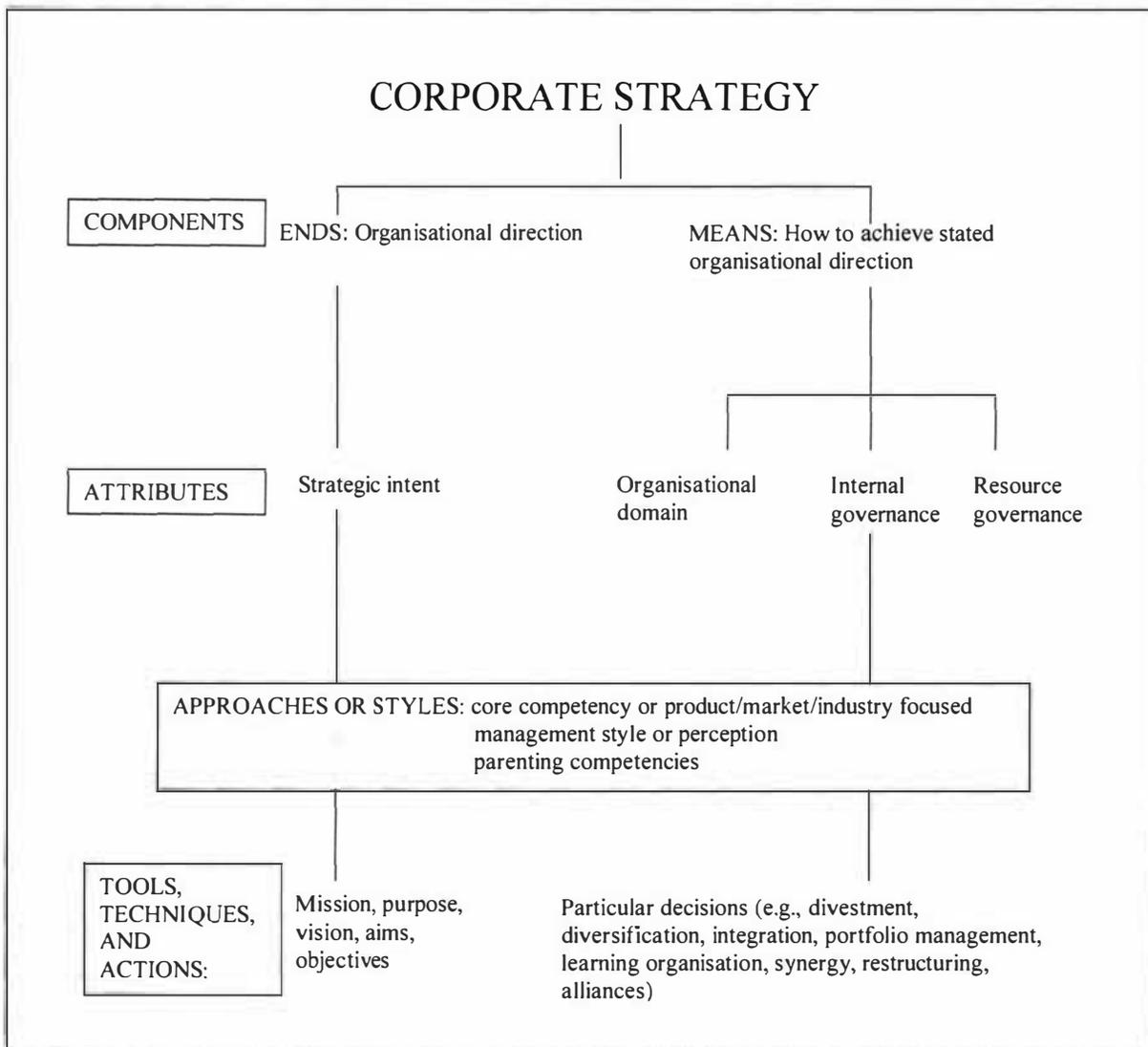
$$\text{PSFP} = f(\text{Strategic intent. Organisational domain. Internal governance. Resource governance}) + \epsilon \quad (2)$$

By explicitly modelling corporate strategy as decisions at the "corporate level" involving strategic intent, organisational domain, internal governance and resource governance, the unit of analysis shifts from the business or industry level to that of the firm. The four corporate strategy

attributes individually appear to influence PSFP. The research aim can now be separated into two parts, namely, differentiation on the basis of the four corporate strategic attributes and then differentiation on the concepts of excellence and quantity which will be discussed in Part II of this Chapter.

Proposition 5. One or more (all) of the elements of corporate strategy contribute to firm performance.

Figure 3.2. Corporate strategy conceptual framework



3.4.1 The proposed relationship between corporate strategy and persistent superior firm performance

A theoretical link between corporate effects and corporate strategy has been identified. Corporate strategy is seen to be a component of the corporate effect measured empirically in the literature (refer to Equation 1). The empirical research reviewed has established that corporate strategy does influence BUP; however only limited empirical evidence has been presented on the influence of corporate strategy on corporate performance. Consequently, the effect of corporate strategy on BUP may actually be larger than that previously measured. To date, this literature has *not* provided evidence of the drivers underlying the linkage between corporate strategy and PSFP (either theoretically or empirically). Is corporate strategy a multidimensional construct? If so, do any of the corporate strategy attributes contribute to persistent firm performance?

Corporate strategy may have a significant impact on the firm; for instance, corporate strategy involves selecting the industries within which the firm operates. Firms can also influence the development of industry evolution (Hamel & Prahalad, 1994). Likewise, Spulber (2003, p. 257) observed that “the manager chooses whether or not to enter new markets. The manager further chooses whether or not to develop new resources and competencies and to change the firm’s organizational structure.” The actions and behaviour of a firm and the way the firm is organised are essentially connected to its corporate strategy.

Research statement 5. *Corporate strategy does contribute to persistent firm performance.*

3.5 CONCEPTUAL FRAMEWORK SUMMARY: PART I

It has been argued that in trying to understand the source of persistent superior firm performance, the following question can be advanced: Does corporate strategy contribute to persistent superior firm performance? This research proposes that corporate strategy is an important mechanism for creating, harnessing and delivering persistent superior firm performance. Corporate strategy should align and drive firm performance towards a stated target. Corporate strategy is a separate concept, distinct from competitive and operational strategy and should be defined in terms of strategy created and implemented from the corporate level. A conceptualisation of corporate strategy has been presented which encompasses the four attributes of strategic intent, organisational domain, internal governance, and resource governance. Corporate strategy is observed to reduce uncertainty and complexity by providing clear organisational direction to

employees, and determining the boundaries of the external environment in which the firm operates (i.e., organisational domain decisions). Corporate strategy also establishes the resource governance and internal governance mechanisms required to achieve the organisational direction. A number of propositions were presented and each discussion was concluded with a research statement (refer to Table 3.1) theorising that corporate strategy and the corporate strategy attribute do contribute to firm performance.

Table 3.1. Summary of research statements

Research statement	
1	Strategic intent does contribute to persistent firm performance
2	Organisational domain does contribute to persistent firm performance
3	Internal governance does contribute to persistent firm performance
4	Resource governance does contribute to persistent firm performance
5	Corporate strategy does contribute to persistent firm performance

PART II: OPERATIONALISATION OF CORPORATE STRATEGY ATTRIBUTES

Chapter Two and the previous sections of this Chapter have sequentially provided theoretical, empirical, conceptual frameworks for corporate strategy and its role on firm performance. Corporate strategy is a firm-wide, multidimensional construct that may be divided into the critical four attributes of strategic intent, organisational domain, internal governance and resource governance. The purpose of Part II is to outline the operationalisation of these four attributes into observable and, therefore, measurable variables. The last part of this Chapter begins with a discussion of the operationalisation of firm performance. Each corporate strategy attribute is reduced to a number of essential contributory variables. The research statements presented in Part I are redefined to reflect the expected distinction between each of the firm performance categories, including subhypotheses related to excellence and quantity. The inferential statistics employed utilise both median (*Med*) and mean (*M*), but for the purposes of defining the hypotheses, *M* is used. Various potential influences on persistent firm performance are discussed. Thereafter, three potential confounds, namely, corporate level commitment to the status quo in organisations, historical endowments arising from pre-1980 corporate strategy decisions, and firm size (scale) are then discussed. A simple mathematical model proposing the effect of corporate strategy on PSFP incorporating all of these indices and each of the variables is then presented.

3.6 INTRODUCTION TO OPERATIONALISATION

Perfect measurement of corporate strategy does not exist. Therefore, indicators and proxies have been created to represent each of the various concepts involved. As noted in Chapter Two, limited empirical research has been presented on how corporate strategy may actually influence firm performance. Consequently, guidance is limited.

Managers possess incomplete information so cannot predict exactly which particular corporate strategy decisions will be successful (March & Simon, 1958). Furthermore, the common economic assumption of rational actors is also inaccurate as managers are constrained by bounded rationality (March & Simon, 1958; Quinn, 1980; Simon, 1976). It is assumed that firm decision makers assess the outcomes of their decisions within their cognitive limits (Child, 1997) and that they believe their decisions are of a high quality and thus, will positively contribute to PSFP. Therefore, when a decision is made, it is a “good” one, based on the “information” and “knowledge” possessed at the time. It can, therefore, be acknowledged that decision makers do not knowingly make inferior corporate strategy decisions.

The direct measurement of each of the four attributes of corporate strategy appears difficult as they are largely immeasurable and unobservable. Consequently, observable and measurable indicators and proxies need to be selected that reflect each of the phenomena under investigation. Godfrey and Hill (1995) stated that researchers need to “identify what the observable consequences of unobservable resources are likely to be, and then go out see whether such predictions have a correspondence in the empirical world” (p. 530). Therefore, testing the five research statements outlined in Part I of this Chapter involves accurately translating the conceptual framework presented into essential empirical variables and testable hypotheses. Popper (1959) suggested that it is important to rigorously ensure construct validity and, thus, limit any misinterpretations of the results and eliminate spurious findings. Measurements should then be selected on the basis of cogency to the attribute it is attempting to represent rather than on ease of use (Godfrey & Hill, 1995). It would appear that much of the prior research suffers from this “ease of use” syndrome.

Ideally, this research would have employed variables that directly measure corporate strategy decisions in a fine-grained and rich manner. However, the limitations imposed by data availability highlighted an alternative. The construct of corporate strategy was operationalised so that the hypotheses that follow could be tested in terms of their correspondence to observed

reality. The observed reality was then examined in a given sample of firms. Therefore, the measures used by this research are best interpreted as indicators and proxies of the *presence of corporate strategy*. These indicators of the presence of corporate strategy have been categorised into two types of measurements, namely, excellence and quantity. Measurements used to identify the existence of excellence were created for each of the following attributes that is, the five strategic intent variables, a variable representing synergy for organisational domain, and two resource leverage variables (refer to Figure 3.3). Directly determining excellence in internal governance was expected to be difficult due to the contextual nature of this attribute and

Figure 3.3. The proposed relationship between construct, attributes and concepts

Construct	CORPORATE STRATEGY			
Attributes	Strategic intent	Organisational domain	Internal governance	Resource governance
Concepts	<ul style="list-style-type: none"> ○ <i>Direction</i> ○ <i>Discovery</i> ○ <i>Destiny</i> 	<ul style="list-style-type: none"> ○ <i>Economies of scope</i> ○ <i>Synergy</i> ○ Product diversification ○ Vertical integration ○ Geographic diversification 	<ul style="list-style-type: none"> ○ Organisational design ○ Organisational structure ○ Control and compliance ○ Culture, beliefs, values, perception ○ Communication channels ○ Information and knowledge flows 	<ul style="list-style-type: none"> ○ <i>Leverage</i> ○ <i>Competencies</i>
Indicator variables	<ul style="list-style-type: none"> ○ <i>Alignment</i> ○ <i>Emotional connection</i> ○ <i>Futurity</i> ○ <i>Revealing the new and creativity</i> ○ <i>Stretch</i> ○ Changes in strategic intent ○ Statement of strategic direction 	<ul style="list-style-type: none"> ○ <i>Synergy</i> ○ Decrease in firm domain decisions ○ Firm domain decisions ○ Increase in firm domain decisions ○ Joint venture decisions 	<ul style="list-style-type: none"> ○ Changes in internal governance decisions ○ Existence of internal governance consequences 	<ul style="list-style-type: none"> ○ <i>Resource leverage</i> ○ <i>Mechanisms via which resource leverage is achieved</i> ○ Resource allocation decisions ○ Resource governance decisions

Key: Italics denote excellence

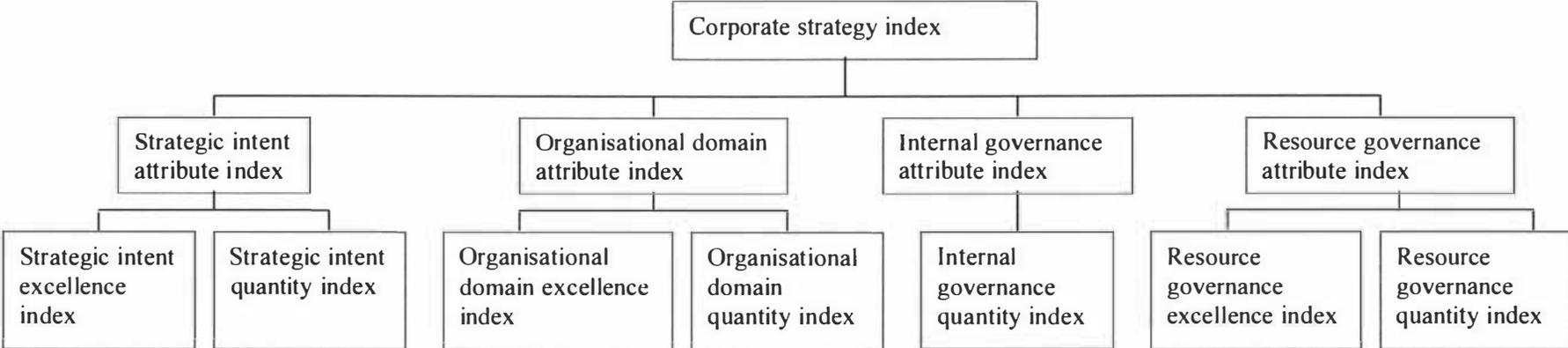
therefore, was not measured. In addition to positive indicators of excellence, firms may also display negative aspects of excellence whereby corporate decisions can be observed to reduce the overall measurement of excellence. To give a true reflection of the total dimension of excellence displayed within a firm, variables must be created to provide measurement of negative excellence. For example, statements that indicate a failure to achieve the expected synergies arising from a merger will be recorded as negative synergy (NSYN). The codebook lists various corporate decisions and the appropriate codes, including examples of both positive and negative excellence (refer to Appendix 1). The negative observations may then be subtracted from the positive observations to produce a net measurement of each excellence variable. A second set of indicators representing the rate of corporate strategy decisions must be created. These are termed quantity variables.

Table 3.2. Levels of data analysis and the associated variables and indices

LEVEL	NAME	QUANTITY	
1	Variables	18	7 strategic intent variables 5 organisational domain variables 2 internal governance variables 4 resource governance variables
2	Excellence indices	4	Strategic intent excellence Organisational domain excellence Resource governance excellence Corporate strategy excellence
3	Quantity indices	5	Strategic intent quantity Organisational domain quantity Internal governance quantity Resource governance quantity Corporate strategy quantity
4	Attribute indices	4	Strategic intent Organisational domain Internal governance Resource governance
5	Corporate strategy index	1	

Multidimensional indices (excellence and quantity) of the four corporate strategy attributes may then be created from the various indicator variables. The four attribute indices are combined to present a multidimensional index of corporate strategy evident within each firm. All of the five indices (four contributory, plus the corporate strategy index) measure each attribute or construct as a continuum that is, it is expected that all firms show some degree of the presence of corporate strategy decision making.

Figure 3.4. The relationship between the indices



The 18 variables representing corporate strategy are outlined below and are combined into the indices for the corporate strategy index, the four corporate strategy attributes and the nine quantity and excellence indices as per the formulae outlined in Section 3.12 (refer to Table 3.2 and Figure 3.4). Index creation was comprised of three stages firstly, nine multiple-item quantity and excellence indices secondly, five multiple-item indices representing the corporate strategy attributes and lastly, the corporate strategy index. Low coding scores represented low levels of an index, conversely, high coding scores represent high levels of a particular index.

3.7 OPERATIONALISING FIRM PERFORMANCE

It is often assumed that performance is relatively stable, predictable, determinable, and controllable (March & Sutton, 1997). Performance is a complicated and multidimensional construct. For example, as observed firm performance can be affected by both endogenous and exogenous factors, often influencing firm performance simultaneously. Consequently, the causal relationships between variables may obscure the individual influence of each variable. March and Sutton (1997) highlighted a number of difficulties evident in the measurement of firm performance. Firstly, that future performance may be a reflection of past performance, secondly, that firm performance can be reversed over time due to feedback mechanisms, and thirdly, that differences exist between short-term and long-term influences on firm performance. Despite these difficulties, firm performance can be defined in a number of ways. The universally employed definition in the literature is SCA whereby it is assumed that achieving SCA automatically results in firm performance. Commonly utilised proxies for SCA are BUP measures.

Although the majority of this research utilised an inappropriate dependent variable (BUP) to measure the impact of corporate effects, empirical evidence supports the existence of corporate effects. Furthermore, Godfrey and Hill (1995) noted that RBT refers to firms, rather than businesses in firms, possessing unique resources and thus, the unit of analysis should be at the firm level.

Table 3.3. Performance variable

Variable	Description	Calculation	Data source
SMP	Share market price	Daily closing SMP as at 31 December	Centre for Research in Security Prices

Any investigation into corporate strategy requires a firm-wide proxy for PSFP. This research utilised share market price (refer to Table 3.3). Other empirical research into aspects of

corporate strategy has also utilised SMP (e.g., Byerly, Lamont & Keasler, 2003). SMP was used to categorise the Fortune 1000 firms into one of three firm performance categories (refer to Section 4.3). SMP, simply, but importantly, represents the share market's valuation of the firm's future expected value. The share market evaluates present and future profitability and risk, and values the stock according to the firm's long-term performance potential (Hitt & Ireland, 1985). For example, "if capital markets are reasonably efficient, one would expect that a firm's share price on any given day would fully reflect the expansion value inherent in its resource base" (Montgomery, 1994, p. 173).

However, as with any proxy, limitations exist. First, "it can be affected by extraneous factors. Economic factors affect most stock prices in a systematic manner" (Hitt & Ireland, 1985, p. 280). The share market crash experienced in October 1987, where all SMPs fell, highlights the interconnectedness of global share price markets. From this global event, it can be observed that industries are also interconnected as the crash impacted all industries. Second, Porter (when interviewed by Argyres & McGahan, 2002, p. 47) stated that "it is interesting that we lost sight of profitability as the goal and substituted shareholder value measured by stock price. This has not only destroyed many companies but gave credence to a number of management ideas that are not robust." Third, it is assumed that the capital markets integrate all information available at a given point in time, and thus, SMP does not totally represent the true value of the firm, for instance, undisclosed developmental projects are not reflected by SMP. Fourth, SMP does not totally account for the value created by corporate strategy (e.g., when firms split shares). Fifth, the adoption of SMP assumes that firms cannot manipulate the SMP over the long-term, that is, the SMP is unbiased and a true reflection of the value of the firm over that period. Sixth, in an efficient market, the SMP reflects only anticipated changes in firm performance; in other words, unanticipated changes in firm performance are demonstrated in dramatic changes in SMP (Brickley & van Druenen, 1990). Seventh, movement in SMP may be determined by psychological factors rather than objective economic indicators or by the way economic indicators are interpreted by people. Lastly, there are difficulties in linking SMP changes to superior firm performance, for example, if the market accurately predicts poor firm performance, the SMP will not be dramatically affected (Brickley & van Druenen, 1990).

Despite each and all of these misgivings, SMP remains the only proxy for PSFP. SMP is a measure that encompasses the *entire* firm's performance. Traditional historical accounting measures are often used as a proxy for firm performance. Unfortunately, these measures are typically created at the business level and they do not necessarily reflect the entire resource base

of a firm. Primarily, SMP is a corporate level measure of firm performance. Furthermore, SMP reflects both historical and future based assessment of firm performance.

3.8 HYPOTHESIS FIVE: CORPORATE STRATEGY

Corporate strategy (CS) has been viewed as a factor that can be used to distinguish between the PSFP category and the other two firm performance categories, namely, persistent inferior firm performance (PIFP) and persistent average firm performance (PAFP). The research statement presented in Section 3.4.1 can be converted into a hypothesis:

Hypothesis 5. Corporate strategy can be utilised to distinguish between categories of firm performance that is, $H_5: M(\text{PIFP CS}) \neq M(\text{PAFP CS}) \neq M(\text{PSFP CS})$.

The null hypothesis states that a significant difference in corporate strategy does not exist between the three firm performance categories that is, $H_0: M(\text{PIFP CS}) = M(\text{PAFP CS}) = M(\text{PSFP CS})$.

To incorporate the notions of quantity (CSQ) and excellence (CSX) into corporate strategy, the primary hypothesis H_5 can be divided into the following two subhypotheses:

Hypothesis 5a. The rate of corporate strategy decisions can be utilised to distinguish between categories of firm performance that is, $H_{5a}: M(\text{PIFP CSQ}) \neq M(\text{PAFP CSQ}) \neq M(\text{PSFP CSQ})$.

Hypothesis 5b. Excellence in corporate strategy can be utilised to distinguish between categories of firm performance that is, $H_{5b}: M(\text{PIFP CSX}) \neq M(\text{PAFP CSX}) \neq M(\text{PSFP CSX})$.

To empirically test H_5 and the two subhypotheses, the four corporate strategy attribute scores were combined to create an index of corporate strategy for each firm. These are outlined below.

3.9 INDICATORS OF THE CORPORATE STRATEGY ATTRIBUTES

Empirical research has centred on measuring corporate strategy as a one-dimensional construct. In this sense, corporate strategy has been operationalised in terms of specific corporate strategies. The underdevelopment of the empirical verification of the construct of corporate strategy means that it has rarely been explicitly operationalised into its attributes. This section presents a brief discussion of the operationalisation of the four corporate strategy attributes into variables.

3.9.1 Strategic intent

This section presents the variables selected to test the strategic intent (SI) research statement presented in Section 3.3.1a.

Hypothesis 1. Strategic intent can be utilised to distinguish between categories of firm performance that is, $H_1: M(\text{PIFP SI}) \neq M(\text{PAFP SI}) \neq M(\text{PSFP SI})$.

The null hypothesis states that a significant difference in strategic intent did not exist between the three firm performance categories that is, $H_0: M(\text{PIFP SI}) = M(\text{PAFP SI}) = M(\text{PSFP SI})$.

To empirically test H_1 , the evidence of the *presence* of strategic intent decisions was measured by statements of strategic direction, modifications in strategic intent (as a proxy for the quantity of strategic intent decisions), and lastly, evidence of the existence of strategic intent (as proxies for excellence in strategic intent decisions). To incorporate the notions of quantity (SIQ) and excellence (SIX) into strategic intent, the primary hypothesis H_1 can be divided into the following two subhypotheses:

Hypothesis 1a. The rate of strategic intent decisions can be utilised to distinguish between categories of firm performance that is, $H_{1a}: M(\text{PIFP SIQ}) \neq M(\text{PAFP SIQ}) \neq M(\text{PSFP SIQ})$.

Hypothesis 1b. Excellence in strategic intent can be utilised to distinguish between categories of firm performance that is, $H_{1b}: M(\text{PIFP SIX}) \neq M(\text{PAFP SIX}) \neq M(\text{PSFP SIX})$.

Figure 3.5. Monroe's (2002) sense of direction variables

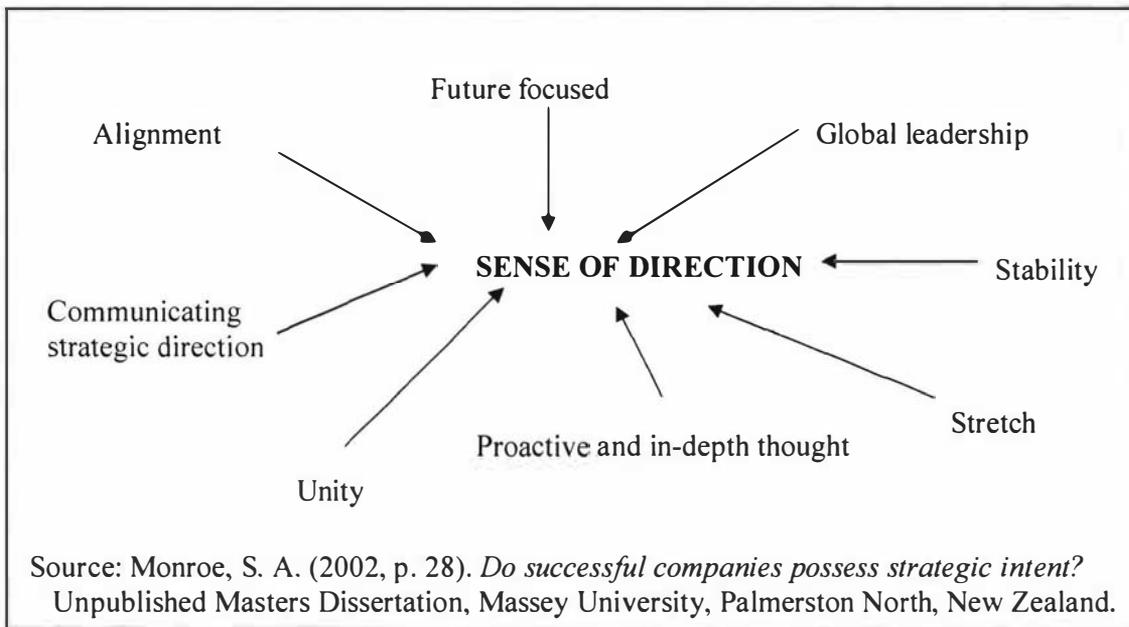
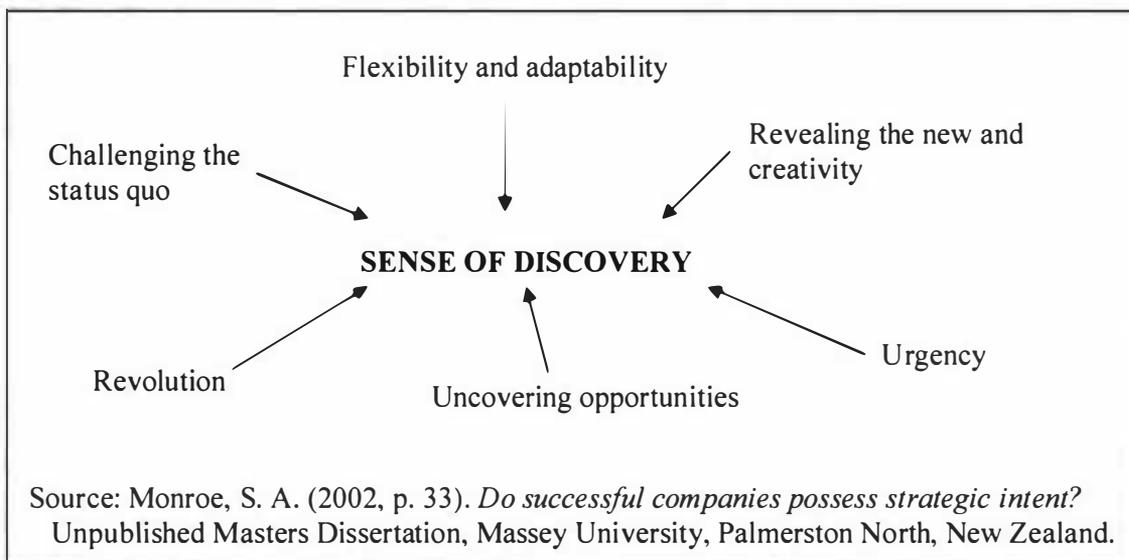


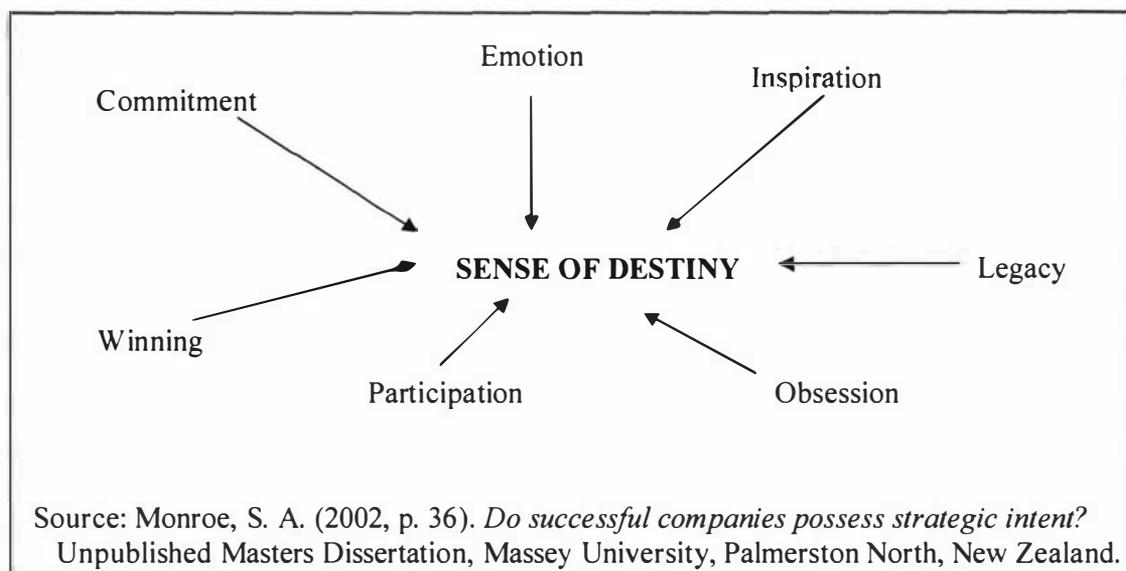
Figure 3.6. Monroe's (2002) sense of discovery variables



Various indicators of strategic intent have been employed by a small number of studies conducted to date. For example, Fawcett et al (1997) measured the alignment of strategic intent, which they operationalised as priorities and operational performance. Lyon, Lumpkin and Dess (2000) noted the need to validate the measures utilised to ensure that inappropriate data does not lead to invalid conclusions. Therefore, the indicators of strategic intent should correspond closely to the strategic intent construct. As noted in Section 3.3.1a, Hamel and Prahalad (1994) suggested that the three concepts of strategic intent include a sense of direction, a sense of

discovery, and a sense of destiny. However, the authors did not specifically provide a framework for analysing strategic intent within firms. Monroe (2002) operationalised Hamel and Prahalad's (1994) three concepts of strategic intent into a number of variables. This research adapted Monroe's (2002) earlier framework.

Figure 3.7. Monroe's (2002) sense of destiny variables



Each strategic intent concept, as outlined by Hamel and Prahalad (1994), was analysed to reveal 21 characteristic indicators providing an in-depth estimation of the degree of strategic intent evident in the sample firms (Monroe, 2002). Eight indicators for a sense of direction were devised (refer to Figure 3.5), six variables represented a sense of discovery (refer to Figure 3.6), and seven variables measured a sense of destiny (refer to Figure 3.7). Due to the inability to employ the previous data collection tool (i.e., CEO interviews), it was considered impossible, being dependent on third party reports, to measure all of the 21 variables. Therefore, five proxy variables that were deemed highly important to the construct of strategic intent were created (refer to Table 3.4).

To add to construct validity, the variables outlined in Table 3.4 incorporated aspects of other organisational direction concepts (i.e., mission and vision) that were found to positively correlate to PSFP. For example, employee commitment (e.g., Bontis & Dragonetti, 1999); alignment to performance evaluation systems (Bart et al, 2001; Fawcett et al, 1997); alignment with employee behaviour, specifically emotional connection and linkage to values (e.g., Bart et al, 2001); motivation (Collins & Porras, 1994; Testa, 1999; Wilson, 1992); intellectual stimulation and inspiration (Kirkpatrick & Locke, 1996); sense of focus and discipline (Clark & Morgan, 2001).

Table 3.4. Strategic intent variables

Variable	Description	Hypotheses	Indicators
Quantity of strategic intent decisions			
SIQ CSI	Changes in the stated strategic intent	H_{1a}	Announcements of changes in stated strategic direction.
Existence of excellence			
SIX ASI	Alignment	H_{1b}	Unity; integration; convergence to same strategic intent; focus; firm-wide ideology/interpretation system; firm systems and processes aligned to strategic intent (e.g., measurement systems and performance goals).
EMC	Emotional connection		Inspiration; legacy; winning; obsession; urgency; commitment; passion; compelling; enthusiasm; personal; positive; aspirational; vitality; motivation; participation; involvement.
FUT	Futurity		Future focused; foresight; stability; continuity; purposeful; shape emergence of firm and environment; competition is for the future; opportunity share; path breaking; supplies leadership within the firm and in its domain.
RNC	Revealing the new and creativity		Challenging the status quo; revolution; uncovering opportunities; flexibility; adaptability; enlarging the managerial frame; reinvention; regenerating; pre-empting; exploring, increasing choices available; continual improvement; imagination.
STR	Stretch		Goals beyond current resources and capabilities; seeks transformation of its domain; ambitious; seeks global leadership; created firm-wide tension; forward momentum; continual corporate challenges; current performance is inadequate.
Existence of strategic intent			
SSD	Statement of strategic direction		Announcements of strategic direction.
SI	Strategic intent index	H₁	A composite index comprised of the seven strategic intent variables.

The variable “emotional connection” encompasses a range of concepts which have been measured separately, for example, commitment and involvement. The previously employed measurements were derived from questionnaires and interviews (e.g., Kalleberg, Knoke, Marsden & Spaeth, 1996; Kanungo, 1982; Mowday & Steers, 1979; Warr, Cook & Wall, 1979) and thus, these measurements were inappropriate for use with secondary data. Measures of innovation can be employed to reflect the sense of discovery (Hitt et al, 1997). Again, data collection methods include survey questions (e.g., Lewis-Beck, 1977; Moch & Morse, 1977). Other proxies for innovation include determining the quantity of new product introductions, R&D intensity ratio, and the ratio of R&D expenditure to the firm’s total number of employees

(Hitt et al, 1997). However, the replicability of these measures was limited by the data source selected.

The five indicators selected to represent evidence of excellence in strategic intent were alignment, emotional connection, futurity, revealing the new and creativity, and stretch (refer to Table 3.4). In addition to identifying evidence of excellence in strategic intent, evidence was sought that, firstly, measured the existence of statements of strategic direction (this variable was not analysed in terms of excellence and quantity) and, secondly, identified modifications to strategic intent as evidence of the presence of strategic intent decisions. The variables were operationalised as outlined in Table 3.4.

3.9.2 Organisational domain

This section outlines the variables selected to empirically test the organisational domain (OD) research statement presented in Section 3.3.2a:

Hypothesis 2. Organisational domain can be utilised to distinguish between categories of firm performance that is, $H_2: M(\text{PIFP OD}) \neq M(\text{PAFP OD}) \neq M(\text{PSFP OD})$.

In comparison, the null hypothesis states that a significant difference in organisational domain does not exist between the three firm performance categories that is, $H_0: M(\text{PIFP OD}) = M(\text{PAFP OD}) = M(\text{PSFP OD})$.

To empirically test H_2 , this research identified evidence of the *presence* of organisational domain decisions (ODQ) by identifying changes or announcements of actual or potential changes, and evidence of excellence in organisational domain (ODX) that is, the existence of synergy. To incorporate the notions of excellence and quantity into organisational domain, the primary hypothesis H_2 can be divided into the following two subhypotheses:

Hypothesis 2a. The rate of organisational domain decisions can be utilised to distinguish between categories of firm performance that is, $H_{2a}: M(\text{PIFP ODQ}) \neq M(\text{PAFP ODQ}) \neq M(\text{PSFP ODQ})$.

Hypothesis 2b. Excellence in organisational domain can be utilised to distinguish between categories of firm performance that is, $H_{2b}: M(\text{PIFP ODX}) \neq M(\text{PAFP ODX}) \neq M(\text{PSFP ODX})$.

The following discussion outlines how the five organisational domain variables were selected. Organisational domain involves decisions regarding the expansion or decline in firm scope, range and diversity. As noted in Section 3.3.2a, organisational domain can be categorised into the implementation of three types of decisions, namely, product diversification, geographic diversification, and vertical integration. Data was collected that provided evidence that organisational domain decisions had been made, for example, announcements of acquisitions. These indicators contrast significantly to previous attempts to measure organisational domain. A discussion of previously employed measurements of organisational domain follows (also refer to Section 3.3.2a).

Product diversification changes have been evaluated quantitatively. Examples include changes in the number of segments served (e.g., Folta & Janney, 2004; Tallman, 1991), or the product count measures (e.g., the Herfindahl index). However, these counting measures possess a number of limitations such as, no weighting is employed which exaggerates the total diversification of a firm as usually the majority of firm sales are concentrated into a small number of product lines or segments (Mahoney, 1992). These measures are discussed further in the relatedness paragraphs.

A number of quantitative proxies have been utilised to represent changes of geographic diversification over time, namely, alterations in the number of country subsidiaries, ratio of foreign sales to total sales, and ratio of foreign assets to total assets (Geringer, Beamish & DaCosta, 1989; Mahoney, 1992; Tallman & Li, 1996). Hitt et al (1997) adjusted the entropy measure utilised for product diversification to geographical diversification. However, this proxy only measured geographic diversification in terms of four subjectively defined regions and these proxies did not reflect geographical movements within a single country.

Vertical integration has been a difficult concept to empirically measure without an in-depth knowledge of the sample firms. However, Davis and Duhaime (1992) measured vertical integration using Standard Industrial Classification (SIC) codes to classify each business into between-stage and within-stage types of vertical integration. Their measurement system has also been used, for example, by Peyrefitte and Golden (2004). Nevertheless, measurements based on

the commonly utilised SIC codes cannot capture internal relatedness such as those arising from vertical integration.

The excellence variables encompass the consequences of related diversification whereby related diversification is thought to create economies of scope and synergy (Hoskisson et al, 1993a). Economies of scope are a more static reflection of relatedness whereas synergy represents a dynamic view (Foss & Christensen, 2001). Economies of scope are thought to exist if relatedness is measured. Nevertheless, the concepts of production diversification, vertical integration and geographic diversification relate to industry, market, and product relatedness rather than measuring dynamic, longer term relatedness such as those arising from core competencies (Markides & Williamson, 1994).

Relatedness has also been assessed by a number of SIC-based measures and some are outlined below. A number of diversification proxies have been introduced based on the evaluation of firm activities in terms of researcher defined subjective classification categories usually of types of product diversification (e.g., Rumelt, 1974). In contrast, Farjoun (1998) devised a skill based approach whereby industries were grouped according to an assessment of underlying skills and expertise and concluded measures of relatedness were dependent on how it was measured (i.e., production based or knowledge based). However, the accuracy and replicability of these categorical measures is dependent on the researcher's in-depth knowledge of the sample firms and industries (i.e., introducing interrater error), for example, Rumelt's (1974) schema requires knowledge of the relatedness at all points in the value chain (Davis & Thomas, 1993).

Various quantitative continuous diversification measures based on SIC codes have been created such as the Herfindahl index (Montgomery, 1982), the concentric index (which is an adaptation of the Herfindahl index, Robins & Wiersema, 1995), and, lastly, other SIC-based assessment of product diversification. An example of these latter measures is the entropy measure (e.g., Farjoun, 1998; Hitt et al, 1997; Palepu, 1985; Robins & Wiersema, 1995; Stern & Henderson, 2004) which is calculated as the number of segments the firm operates in and weighs each segment according to its contribution to total sales (i.e., a weighted-average product count measure). Sambharya (2000) observed that a high correspondence existed between the continuous and categorical measures. These examples of SIC-based measures are easy to calculate, replicable, and possess a high degree of construct validity (Mahoney, 1992; Hoskisson, Hitt, Johnson & Moesel, 1993b; Farjoun, 1998).

All of the measures used to assess diversification possess a number of limitations. These limitations include, firstly, undue weight placed onto minor activities. Secondly, there is a degree of arbitrariness of SIC codes which do not account for the varying degrees of breadth within the SIC industry classifications (Rumelt, 1982). The historical development of the firm and the singularity of the firm's strategy are also neglected. Fourthly, measurement of diversification is undertaken at the product or industry level rather than the firm level (Farjoun, 1998; Foss & Christensen, 2001; Mahoney, 1992; Markides & Williamson, 1994); Lastly, SIC codes relate seemingly nonrelated industries, for example, the petroleum and nonelectrical machinery industries are equidistant from chemical industry (Gollop & Monahan, 1991).

Table 3.5. Organisational domain variables

Variable	Description	Hypotheses	Indicators
Quantity of organisational domain decisions			
ODQ		H_{2a}	
DFD	Decrease in firm domain decisions		Announcements of decisions relating to decreases in firm domain, including decreases in product and geographical diversification and vertical integration (e.g., divesture, disbanding operations).
FDD	Firm domain decisions		Announcements of decisions relating to firm domain (e.g., continuation of divestment or acquisition process).
IFD	Increase in firm domain decisions		Announcements of decisions relating to increases in firm domain, including increases in product and geographical diversification and vertical integration, (e.g., acquisitions, establishing new operations).
JV	Joint venture decisions		Announcements of decisions relating to joint ventures, including establishing or divesting joint ventures.
Existence of excellence			
ODX		H_{2b}	
SYN	Synergy		Joint development and sharing of teams (e.g., sales forces), production processes and facilities, computer systems, distribution systems; application of knowledge learned into other areas (e.g., shared R&D programmes), brand names, advertising, cross-selling; resource transference to partners.
OD	Organisational domain index	H₂	A composite index comprised of the five organisational domain variables.

The SIC-based measurements assume that two businesses with the same code must have interchangeable inputs, production and technological operations (rather than customers) that is, are synergistic (Markides & Williamson, 1996). The assumption regarding the connectedness of the SIC codes represents a proxy for relatedness which is in turn a proxy for synergy (Davis & Thomas, 1993). These measures assume that synergy is homogeneous across all business units

(arising from the assumption that industries are homogeneous within the SIC code levels). Dissynergies and core competencies are not measured, for example, the transference of learning into often vastly different products. Furthermore, these measures do not measure variations over time (Davis & Thomas, 1993; Hitt et al, 1997; Markides & Williamson, 1996; Robins & Wiersema, 1995). Both types of proxies for relatedness assume they are capturing strategic sources of competitive advantage.

The SIC-based proxies for organisational domain decisions are inappropriate for this research as they do not provide an indication of the *quantity* of organisational domain decisions. Therefore, four indicators of actual organisational domain decisions were created, namely, firm domain decisions, decreases and increases in firm domain decisions, and joint venture decisions. Due to the lack of access to Compustat, which provides the SIC-based data, the proxies of synergy as outlined above were unable to be utilised. Table 3.5 outlines how these indicators were measured. This research sought to evaluate whether the sample firms possessed and utilised synergy (note: for the purposes of this research, economies of scope were incorporated into the notion of synergy). Synergy was measured by identifying firstly, connections between different businesses, industries, resources and capabilities, and secondly, combinations of these connections to integrate various disparate resources so that they can be deployed throughout the firm (Dyer, Kale & Singh, 2004). Examples include shared R&D programmes and the transference of common branding values across various product ranges.

3.9.3 Internal governance

This section outlines the variables selected to empirically test the internal governance (IG) research statement presented in Section 3.3.2b:

Hypothesis 3. Internal governance can be utilised to distinguish between categories of firm performance that is, $H_3: M(\text{PIFP IG}) \neq M(\text{PAFP IG}) \neq M(\text{PSFP IG})$.

The null hypothesis states that a significant difference in internal governance does not exist between the three firm performance categories, that is, $H_0: M(\text{PIFP IG}) = M(\text{PAFP IG}) = M(\text{PSFP IG})$. However, as noted previously, the notion of excellence in internal governance is contextual. Therefore, excellence in internal governance will not be measured. To incorporate the notion of quantity into internal governance (IGQ), the following subhypothesis can be stated:

Hypothesis 3a. The rate of internal governance decisions can be utilised to distinguish between categories of firm performance that is, $H_{3a}: M(\text{PIFP IGQ}) \neq M(\text{PAFP IGQ}) \neq M(\text{PSFP IGQ})$.

To empirically test H_3 , evidence of the *presence* of internal governance decisions was identified by measuring modifications in organisational design, organisational structure, control and compliance mechanisms, and culture, value, belief, perceptions, and communication information and knowledge patterns. Internal governance involves decisions regarding the mechanisms by which corporate strategy is implemented. Internal governance also represents a variety of decisions at the corporate level regarding how the firm should be managed, organised and controlled.

Whittington (2002) argued that organisational structure has been marginalised as either a proxy variable or a peripheral variable to such factors as culture, control and change. Organisational structure has been operationalised in terms of assessing degrees of differentiation; for example, the number of levels within the hierarchy, and degrees of division of labour. Centralisation of authority for decision making has been assessed utilising such measures as the Aston Group Scale. Formalisation has been operationalised by measuring the degree of formal rules, policies and procedures used to guide employee behaviour (Alexander, 1991; Ettlie, Bridges & O'Keefe, 1984; Ezzamel & Watson, 1993; Habib & Victor, 1991; Love et al, 2002; Miller & Friesen, 1980; Weber, 1958). Measures for these concepts were collected from questionnaires and surveys, for example, Kalleberg et al (1996) interviewed managers to assess the level at which certain decisions were made. The individual measures of organisational structure as outlined above cannot be directly observed without access to the firm.

Organisational design has been assessed by prior empirical research in terms of typologies such as, Mintzberg's (1983) five configurations. Alternative methods of data collection available to this research meant that these previously employed indicators were unavailable. Instead, evidence of organisational design decisions included announcements of changes to the existing configuration of coordinating mechanisms, and lines of authority and responsibility (refer to Table 3.6).

Organisational structure has also been operationalised as broad classes, for example, M-form, H-form, and U-form. However, researchers have found that organisational structure is more complex as these pure forms are often difficult to uncover. In addition, as the majority of the

dataset commonly employed (i.e., large, diversified, older firms) encompasses variants of the M-form, a more finer-grained approach to organisational structure should be applied. For example, Pettigrew (1990) recommended measuring incremental, continuous adjustments to organisational structure rather than relying on measurement of dramatic transformations such as, from the U-form to the M-form. Hamilton and Shergill (1992) performed a review of the published literature and found that firms provided detailed explanations of major changes to their organisational structures. Therefore, this research sought to identify evidence of changing in the levels of hierarchy, for example, the establishment of functional or divisional reporting lines (refer to Table 3.6).

The third aspect of internal governance are the control and compliance mechanisms which have been operationalised in terms of measuring the effectiveness of financial reporting systems, performance appraisal and incentive processes, and monitoring and feedback systems. Evidence of control and compliance modifications included for example, alterations to reporting procedures, performance measurements, and incentive systems (refer to Table 3.6).

Table 3.6. Internal governance variables

Variable	Description	Hypotheses	Indicators
Quantity of internal governance decisions			
IGQ CIG	Changes in internal governance	H _{3a}	<p>Organisational design: Announcements of changes in configuration of coordinating mechanisms, lines of authority and responsibility; firm redesign.</p> <p>Organisational structure: Announcements of changes in levels of hierarchy, reporting lines, formalisation, centralisation/decentralisation, delegation, responsibilities; firm restructuring.</p> <p>Control and compliance: Announcements of changes in reporting, monitoring of incentive, budgetary, financial, and performance systems, processes and procedures; audits; enforced alignment.</p>
Existence of internal governance			
IGC	Existence of internal governance consequences		Announcements of changes in culture, values, beliefs, perceptions, and communication channels through which flows knowledge and information.
IG	Internal governance index	H ₃	A composite index comprised of the two internal governance variables.

A proxy was created to represent evidence that internal governance decisions were made (refer to

Table 3.6). This proxy encompassed the consequences of the above three concepts, that is, firms are able to use organisational design, organisational structure, and control and compliance mechanisms to influence culture, values, beliefs, perceptions, and communication channels through which flows knowledge and information. Knowledge codification processes and systems have been operationalised in terms of employee cohesiveness, proximity to external knowledge sources, access to experienced employees, access to supportive investments and resources, low interbusiness and intrabusiness unit rivalry, and the degree of experimentation allowed (Jaffee et al, 1993; Stuart & Podolny, 1996; Teece, Pisano & Shuen, 1997; Woodman, Sawyer & Griffin, 1993). Evidence was sought that identified modifications to firm culture, values, beliefs and perceptions, for example, changes in the firm's culture from an individualistic to a more team based culture. This variable was not analysed in terms of excellence and quantity.

3.9.4 Resource governance

This section outlines the variables selected to empirically test the resource governance (RG) research statement presented in Section 3.3.2c:

Hypothesis 4. Resource governance can be utilised to distinguish between categories of firm performance that is, $H_4: M(\text{PIFP RG}) \neq M(\text{PAFP RG}) \neq M(\text{PSFP RG})$.

In comparison, the null hypothesis states that a significant difference in resource governance does not exist between the three firm performance categories that is, $H_0: M(\text{PIFP RG}) = M(\text{PAFP RG}) = M(\text{PSFP RG})$.

To empirically test H_4 , this research identified evidence of the *presence* of resource governance decisions by measuring firstly, identifying changes or announcements of actual, prospective or potential future changes (RGQ) and secondly, evidence of excellence in resource governance (RGX) that is, the existence of resource leverage and resource leverage mechanisms. To incorporate the notions of excellence and quantity into resource governance, the primary hypothesis H_4 can be divided into the following two subhypotheses:

Hypothesis 4a. The rate of resource governance decisions can be utilised to distinguish between categories of firm performance that is, $H_{4a}: M(\text{PIFP RGQ}) \neq M(\text{PAFP RGQ}) \neq M(\text{PSFP RGQ})$.

Hypothesis 4b. Excellence in resource governance can be utilised to distinguish between categories of firm performance that is, $H_{4b}: M(\text{PIFP RGX}) \neq M(\text{PAFP RGX}) \neq M(\text{PSFP RGX})$.

As noted in Chapter Two, measuring resources and especially capabilities and core competencies is fraught with difficulties as many are unobservable and immeasurable (Barney et al, 2001). It has been recommended that researchers use indirect measurements to assess resources, for example, measuring observables that may highlight unobservables (Godfrey & Hill, 1995), or evaluate core competencies through financial measures such as liquidity and leverage (Lawless, Bergh & Wilsted, 1989). Assessing core competencies from the data sources available for this research was exceedingly difficult and consequently, yielded limited results. Therefore, the variable of core competency was not included.

Table 3.7. Resource governance variables

Variable	Description	Hypotheses	Indicators
Quantity of resource governance decisions			
RGQ		H_{4a}	
RAL	Resource allocation decisions		Announcements of resource allocation decisions (e.g., allocation between SBUs).
RGD	Resource governance decisions		Announcements of decisions regarding the collection, development, reconfiguration and deployment of resources (e.g., reducing debt, issuing firm shares, all financial offerings).
Existence of excellence			
RGX		H_{4b}	
RL	Resource leverage		Leverage of resources within the firm; increased productivity and efficiency.
RLM	Mechanisms via which resource leverage can be achieved		Exploitation of existing resources: Concentrating resources on objectives; efficient accumulation; creating more value by complementing; conserving resources; minimising time between expenditure and payback (recovery).
RG	Resource governance index	H₄	A composite index comprised of the four resource governance variables.

It has been recognised in Section 3.3.2c that the concepts of resource leverage and the mechanisms of resource leverage represent excellence in resource governance decisions (Hamel & Prahalad, 1994). Accordingly, this research sought to evaluate whether the sample firms possessed and utilised resource leverage and resource leverage mechanisms (refer to Table 3.7). Hamel and Prahalad (1994) observed that stretch goals require resource leverage whereby resource constraints are eventually overcome. They also argued that success can be attributed to

arriving at the future first, for less. However, Hamel and Prahalad (1994) noted that conventional accounting measures of performance such as, return on investment and ROA have been utilised to measure “excellence” in *resource allocation* and consequently, these measures do not provide a total reflection of resource governance. Furthermore, historical measures are calculated at the business level and do not incorporate a total assessment of the firm’s ability to leverage their resources.

The concept of *resource governance* is an even more abstract idea whereby firms should be concerned with accumulating, reconfiguring and deploying portfolios of resources rather than solely allocational efficiency. Leverage based efficiency gains should result from raising the numerator that is, productivity ratios (revenue and net profits) rather than from lowering the denominator (investment, net assets, capital employed and headcount), which indicates resource cutting (Hamel & Prahalad, 1994). Hamel and Prahalad (1994) suggested that excellence in resource governance occurs in firms if there is higher revenue over time and/or higher net profits over time with the same or higher investment over time and/or same or higher headcount over time. These four variables were not utilised as measures of resource governance as a relationship between them and PSFP exists independently from the construct of corporate strategy. Similarly, another proxy for excellent resource leverage advocated by Hamel and Prahalad (1994) is the ratio of a firm’s relative market share gain (or loss) to its relative share of investment or resources. This proxy was also considered inappropriate as it is a business level measurement. Instead, resource leverage was assessed by the measurement of indications of leveraging resources throughout the firm (refer to Table 3.7).

Hamel and Prahalad (1994) also identified five ways in which resource leverage could be achieved by firms through concentrating, accumulating, complementing, conserving, and resource recovery. These five mechanisms have been incorporated into the second resource governance excellence variable (refer to Table 3.7). In addition to identifying evidence of the existence of excellence in resource governance, evidence was sought that identified resource allocation and resource governance decisions as evidence of the presence of resource governance decisions (refer to Table 3.7).

3.10 THE NATURE OF THE ASSOCIATION BETWEEN THE FIRM PERFORMANCE CATEGORIES

The nature of the association between the firm performance categories and the various indices is predicted to be curvilinear, that is, the PIFP and PSFP categories were expected to possess lower scores in the index than the PAFP category. The exceptions to this prediction are the strategic intent attribute index and the four excellence indices. The nature of the relationship between the firm performance categories and these indices is predicted to be linear whereby the index increases as firm performance increases.

3.11 POTENTIAL CONFOUNDS

Firm performance is a multidimensional phenomenon. Many factors have been found to influence it, for example, Capon, Farley and Hoenig (1990) performed a meta-analysis on performance research and found that industry concentration, growth (assets and sales), market share, advertising intensity, R&D spending, and firm social responsibility all exhibited a positive relationship with firm performance. Incorporating all the variables which have found to influence PSFP may firstly, overshadow the effect of corporate strategy on PSFP (as previous research indicated corporate effects of between 0 and 46.3% of variance in BUP) and secondly, produced an unwieldy model. Consequently, it was decided to exclude measuring variables other than those included in the conceptualisation of corporate strategy as presented in Figure 3.3, and three potential confound variables (refer to Section 3.11.2). These potential confounds that were not selected are assumed to be captured by the error 'ε'. The various potential confounds that were considered but eliminated from the model are now briefly discussed. The five variables representing three potential confounds are then identified.

3.11.1 The potential confounds considered

The eight potential confounds that were considered as part of the model are discussed below.

a) Luck

Firms cannot adjust the amount of luck they experience. The notion of corporate strategy assumes that decision making is a deliberate process rather than one relying solely on luck or chance. As Barney (2000b, p. 299) noted, "even if the initial source of a firm's competitive

advantage is luck, a firm must still recognise and exploit that luck to gain competitive advantages ... there are still managerial implications of any 'luck' arguments." Consequently, luck is institutionalised by management and, therefore, embedded into the concept of corporate strategy. Porter (1985) treated luck in a similar manner in his definition of SCA. Furthermore, luck is accounted for in the use of "persistent" as if firm performance is persistent, any performance resulting from luck can be assumed to have been embedded in firm performance over time. Additionally, the four attributes of corporate strategy involve the measurement of a stream of consistent, deliberate decision making over a 25-year period. Therefore, in employing a long time frame for this research, it is expected that any event of luck (if it was actually luck) or the benefit arising from luck (if it was actually luck) is capitalised upon and subsequently embedded in the firm. In other words, as Collins (2001, p. 6) who investigated firms that displayed superior performance for at least 15 years noted "you can't just be lucky for 15 years."

b) Organisational learning

Knowledge and learning are important firm resources as they are thought to erode only slowly. Holbrook et al (2000, p. 1031) noted that "the critical role of top management in identifying what knowledge was critical to firm success, creating structures in which that knowledge could be secured, and then coordinating the flow of that knowledge across functions." Therefore, the major concepts of organisational learning have been incorporated into the attribute of strategic intent whereby the stated strategic intent creates the environment from which the firm can learn from both its members and the market. Furthermore, aspects of organisational learning are also captured by resource governance that is, recognition that employees and firm knowledge are resources that require governance, and internal governance that is, the mechanisms for institutionalising organisational learning are included in these attributes.

c) Corporate governance

Prior research has suggested that corporate governance may have an impact on PSFP. Corporate governance is comprised of two main components, namely, statutory compliance and strategic governance. Statutory compliance has not been incorporated into the model as all firms are legally required to conform to these regulations despite evidence of contrary behaviour. Therefore, corporate decisions regarding compliance cannot be a source of PSFP as they do not provide the basis for advantage over rivals (although one can argue that compliance can become a source of advantage if it is capability based).

Strategic governance is a separate issue. It is assumed for the purposes of this research that the major concepts of strategic governance have been incorporated into the attributes of strategic intent and to a lesser extent, organisational domain. In doing so, it is recognised that the board's primary role is in determining organisational direction (strategic intent) and selecting the best strategies to achieve that outcome. Moreover, sustained negligence with regards to strategic governance results in firm failure and consequently, these firms have been eliminated from the dataset. Although theoretically, some aspects of strategic governance should drive corporate strategy, it is important to note that corporate strategy is a separate construct to strategic governance.

d) Industry effects

Empirical evidence suggested that industry effects accounted for up to 62.8% variance in BUP and up to 56.0% of variance in firm performance (refer to Table 2.2). Industry effects on PSFP will not be controlled for in this research due to interdependence, in other words, although some strategic decisions can be dependent on the industries in which the firm operates, the firm decides via organisational domain decisions whether to enter, remain or exit a particular industry. Furthermore, to minimise the effect of industry, the PAFP and PIFP firms were selected from the same industry as the PSFP firms (refer to Section 4.4).

e) Government effects

Similarly, the effects of governmental changes (such as, regulatory controls) were not controlled for in this model as firms possess the ability (via organisational domain) to move in or out of a particular industry or market, if it is perceived that the governmental changes influenced the firm negatively.

f) Business effects

The empirical research outlined in Chapter Two has indicated that business effects exert a significant influence for up to 58.2% on variance in BUP and up to 65.7% of variance in firm performance (refer to Table 2.2). In the strategic hierarchy model employed in this research (refer to Figure 3.1), business effects are incorporated into competitive strategy and corporate strategy directs competitive strategy. Furthermore, corporate strategy, through its four attributes, provides the framework for SBU managers to manage their businesses. For example, organisational domain includes the decisions used to move in or out of businesses if the impact on the firm is perceived as negative.

g) Year

Year is often controlled for ensuring findings have not been determined by unspecified, time specific influences, for example, much of the corporate effects research presented in Section 2.9. These findings indicate that time has been estimated to exert a relatively small influence on both BUP and firm performance (0 to 4.6%, and 1.7 to 4.7% respectively). The influence of time on PSFP may be incorporated into all four attributes of corporate strategy. In other words, corporate strategy is a long-term concept whereby it represents an accumulation of patterns of decisions over time (Chakravarthy & White, 2002). Successfully altering organisational domain and internal governance decisions cannot be achieved in the short-term, due to the historical development, path dependency and fixed and embedded nature of resources. To overcome the effects of short-term annual variability, a 25-year time horizon was used.

h) Historical performance

Various authors (Levitt & March, 1988; March, 1991; Miller, 1993) contended that historical performance may influence future performance, for example, “successful firms generally lack the motivation to pursue new and more complex strategies” (Vera & Crossan, 2004, p. 234). Alternatively, in line with the conceptualisation of corporate strategy employed in this research, historical firm performance, theoretically, should have a small influence on PSFP as strategic intent, for example, advocates continually reinventing the status quo and creating continual temporary visions and advantages. Furthermore, strategic intent contends historical firm performance is an insufficient condition for future success – whether poor or successful firm performance. Hence, it was decided not to incorporate historical performance into the model developed for this research.

3.11.2 The potential confounds selected

Delaney and Huselid (1996, p. 965) noted that “it was not possible to gauge the potential impact of ... omitted variables on the results, we relied on the use of control variables to capture any relevant unmeasured organizational characteristics.” Therefore, five variables representing three potential confounds were added to the model employed (refer to Table 3.8).

Table 3.8. Potential confounds

Variable	Description	Hypotheses	Indicators
CLC	Corporate level commitment to the status quo	H ₆	Average length of corporate level decision maker tenure in position, measured in years (1995 - 2004) Average % of internal directors (1995 - 2004)
HE	Historical endowments	H ₇	Firm age (years since founding to 1980)
FS	Firm size	H ₈	Natural logarithm of total revenue in US dollars millions (at year end 2004) Natural logarithm of total assets in US dollars millions (at year end 2004)

a) Corporate level commitment to the status quo in organisations

Various literatures (i.e., organisational behaviour, psychology, decision making) predict that manager tenure is associated with commitment to retaining the status quo. This commitment to retaining the status quo can lead to organisational inertia and constraint due to lower complexity, ambiguity, uncertainty, and bounded rationality. Corporate level commitment to the status quo is thought to influence future decision making due to the following four factors: participation in corporate strategy (Fox & Staw, 1979; Hambrick, Geletkanycz & Fredrickson, 1993; Hambrick & Mason, 1984; Staw, 1981); firm beliefs, mental models, values, culture which reinforce particular corporate strategies (Katz, 1982; Prahalad & Bettis, 1986; Salancik & Pfeffer, 1977); defending, validating and justifying particular corporate strategy decisions (Downing, Judd & Brauer 1992; Staw, 1976); and involvement in strategy formulation and implementation (Fox & Staw, 1979).

Fischer and Pollock (2004) utilised average top management team tenure as a measure of the its experience working together and found that long periods of tenure corresponded to the creation of task routines and interpersonal relationships leading to managing discontinuities with greater effectiveness. However, other researchers found a positive relationship between lower average tenure and firm performance. They suggested that the increased diversity resulted in the adjustment of the previous belief systems (Tripas & Gavetti, 2000; Tushman & Rotenkopf, 1996).

To distinguish the PSFP category from the other two firm performance categories in terms of the corporate level commitment to the status quo (CLC), the following hypothesis is presented:

Hypothesis 6. Corporate level commitment to the status quo can be utilised to distinguish the PSFP category from other firm performance categories that is, $H_6: M(\text{PIFP CLC}) \neq M(\text{PAFP CLC}) \neq M(\text{PSFP CLC})$.

The null hypothesis states a significant difference in the corporate level commitment to status quo does not exist between the three firm performance categories that is, $H_0: M(\text{PIFP CLC}) = M(\text{PAFP CLC}) = M(\text{PSFP CLC})$.

This potential confound has been operationalised by two proxies, namely, the average length of corporate level decision makers tenure in position during the 1995 to 2004 period, and the percentage of internal directors during the 1995 to 2004 period (refer to Table 3.8).

b) Historical endowments arising from pre-1980 corporate strategy decisions

Firms do not “appear” with a full assemblage of structures, resources and knowledge. The results of historical corporate strategy decisions may be influential in terms of their impact (whether negatively or positively) on future corporate strategy decisions due to their fixedness, embeddedness, core rigidity and path dependency. According to RBT, “conditions under which resources are developed or acquired in one period have implications for the strategic advantages of firms in subsequent periods” (Barney, 2001b, p. 51). Furthermore, evolutionary theory suggests that organisational routines are history dependent (Nelson & Winter, 1982) in that if a firm chooses product diversification, different routines are created than if the firm chose geographic diversification.

Holbrook et al (2000) suggested that different firm backgrounds led to different decisions, for example, pursuing dissimilar goals. Maritan and Brush (2003) presented evidence that heterogeneous historical endowments (e.g., culture, beliefs and physical assets) influenced the success of the implementation of new processes and knowledge across the firm. Helfat and Lieberman (2002) found that prior firm experience influences both current and future core competency creation. Therefore, historical endowments can be assumed to affect PSFP, either negatively or positively.

As noted in Section 2.5, firms obtain resources via sharing, acquisition, accumulation or endowment. However, the importance of historical endowments on PSFP has been challenged by Hamel and Prahalad (1994). Their view is that the possession of inferior historical endowments should not be a limiting factor. They suggested that with the appropriate strategic

intent and strategic architecture, seemingly insignificant resources can be leveraged to achieve PSFP. They offered the perspective “that a firm must *unlearn* much of its past before it can find the future” (p. 25). Although Dosi, Nelson and Winter (2000) recognised the role of historical knowledge and experience in the development of existing core competencies, they argued that new core competencies are created through managerial intent. Moreover, Holbrook et al (2000) found that firms possessed capabilities (especially pre-existing knowledge and experience) that allowed them to adapt to change, which is consistent with dynamic capabilities perceptively presented by Teece et al (1997) and evolutionary learning approach proposed by Fujimoto (1999). Consequently, to distinguish the PSFP category from the other two firm performance categories in terms of historical endowments (HE), the following hypothesis is presented:

Hypothesis 7. Historical endowments can be utilised to distinguish the PSFP category from other firm performance categories that is, $H_7: M(\text{PIFP HE}) \neq M(\text{PAFP HE}) \neq M(\text{PSFP HE})$.

The null hypothesis states that a significant difference in historical endowments did not exist between the three firm performance categories that is, $H_0: M(\text{PIFP HE}) = M(\text{PAFP HE}) = M(\text{PSFP HE})$.

Firm age was selected to reflect historical endowments because generally “by virtue of size and longevity, established firms may hold larger and more developed stocks of individual resources and capabilities” (Helfat & Lieberman, 2002, p.734). A number of associations between firm age (refer to Table 3.8) and the four corporate strategy attributes are predicted to exist, for example, Chandler (1962) noted that firms undergo a standardised evolutionary path (e.g., U-form to M-form). Firms are thought to gain resources (whether appropriate or inappropriate) as they age, as expected by all of the strategic management paradigms. However, the older the firm, the greater is the likelihood of fixed mechanisms of internal governance. Age was also used by Alexander, 1991; Delaney and Huselid, 1996; Denis, Denis and Sarin, 1997; Folta and Janney, 2004; Gulati and Higgins, 2003; Stern and Henderson, 2004.

c) *Firm size*

Empirical evidence has suggested that firm size has a positive relationship with firm performance (Robins & Wiersema, 1995; Wernerfelt & Montgomery, 1988); simply put, large firms have more resources than smaller firms (Collins & Clark, 2003). Firm size is often utilised as an indicator of economies and diseconomies of scale and market power (Hitt et al, 1997).

Consequently, firm size is used as a control variable in order to remove whatever effects firm size may have on profitability (Spanos et al, 2004). Although, to some extent firm size is controlled because corporate strategy decisions alter firm size, this variable was included in the model. To distinguish the PSFP category from the other two firm performance categories in terms of firm size (FS), the following hypothesis is presented:

Hypothesis 8. Firm size can be utilised to distinguish the PSFP category from other firm performance categories that is, $H_8: M(\text{PIFP FS}) \neq M(\text{PAFP FS}) \neq M(\text{PSFP FS})$.

In comparison, the null hypothesis states that a significant difference in firm size does not exist between the three firm performance categories that is, $H_0: M(\text{PIFP FS}) = M(\text{PAFP FS}) = M(\text{PSFP FS})$.

Following previous research (e.g., Ahuja, Coff & Lee, 2005; Bowen & Wiersema, 2005; Spanos et al, 2004), firm size was operationalised as two variables: the natural logarithm of total assets and the natural logarithm of total revenue (measured in US dollar millions); refer to Table 3.8.

3.12 A MODEL MEASURING THE EFFECT OF CORPORATE STRATEGY ON PERSISTENT SUPERIOR FIRM PERFORMANCE

The conceptual model of corporate strategy, displayed in Figure 3.2, has been translated into a more refined model that succinctly exhibits the relationship between the variables and indices presented in the preceding Sections of this Chapter. Table 3.9 provides the abbreviations that have been used in the equations.

Equation 1 was formulated during the presentation of the corporate effects research in Chapter Two. Corporate strategy is predicted to contribute to PSFP and was represented as:

$$\text{PSFP} = f(\text{Corporate strategy. Among other things}). \quad (1)$$

In addition to corporate strategy, the three potential confound variables of the corporate level commitment to the status quo, historical endowments, and firm size are also expected to contribute to PSFP.

$$PSFP = f(\text{Corporate strategy}) + CLC + HE + FS + \epsilon. \quad (3)$$

Table 3.9. Abbreviations for the corporate strategy equations

Abbreviation	Description	Category	Attribute
CLC	Corporate level commitment to the status quo	Potential confound variable	
HE	Historical endowments	Potential confound variable	
FS	Firm size	Potential confound variable	
CS	Corporate strategy	Corporate strategy index	
SI	Strategic intent	Attribute index	
OD	Organisational domain	Attribute index	
IG	Internal governance	Attribute index	
RG	Resource governance	Attribute index	
SIX	Strategic intent excellence	Excellence index	Strategic intent
SIQ	Strategic intent quantity	Quantity index	Strategic intent
ODX	Organisational domain excellence	Excellence index	Organisational domain
ODQ	Organisational domain quantity	Quantity index	Organisational domain
IGQ	Internal governance quantity	Quantity index	Internal governance
RGX	Resource governance excellence	Excellence index	Resource governance
RGQ	Resource governance quantity	Quantity index	Resource governance
ASI	Alignment to strategic intent	Indicator of excellence	Strategic intent
EMC	Emotional connection	Indicator of excellence	Strategic intent
FUT	Futurity	Indicator of excellence	Strategic intent
RNC	Revealing the new and creativity	Indicator of excellence	Strategic intent
STR	Stretch	Indicator of excellence	Strategic intent
SYN	Synergy	Indicator of excellence	Organisational domain
RL	Resource leverage	Indicator of excellence	Resource governance
RLM	Resource leverage mechanism	Indicator of excellence	Resource governance
CSI	Change in strategic intent	Indicator of quantity	Strategic intent
DFD	Decrease in firm domain decision	Indicator of quantity	Organisational domain
FDD	Firm domain decision	Indicator of quantity	Organisational domain
IFD	Increase in firm domain decision	Indicator of quantity	Organisational domain
JV	Joint venture decision	Indicator of quantity	Organisational domain
CIG	Changes in internal governance	Indicator of quantity	Internal governance
RAL	Resource allocation decision	Indicator of quantity	Resource governance
RGD	Resource governance decision	Indicator of quantity	Resource governance
SSD	Statement of strategic direction		Strategic intent
IGC	Consequences of internal governance		Internal governance

Corporate strategy has been observed to comprise four attributes each of which are expected to contribute to PSFP.

$$PSFP = f(\text{Strategic intent. Organisational domain. Internal governance. Resource governance}) + CLC + HE + FS + \epsilon. \quad (4)$$

Expanding Equation 4, Equation 5 incorporates each of the four corporate strategy attribute indices:

$$PSFP = f(SI + OD + IG + RG) + CLC + HE + FS + \epsilon. \quad (5)$$

Equation 6 now incorporates the three excellence and each of the four quantity indices:

$$\begin{aligned} \text{PSFP} = & f(\text{SIX} + \text{SIQ} + \text{ODX} + \text{ODQ} + \text{IGQ} + \text{RGX} + \text{RGQ}) + \text{CLC} + \text{HE} + \text{FS} \\ & + \varepsilon. \end{aligned} \quad (6)$$

Expanding on Equation 6, Equation 7 includes the eight variables utilised as indicators of excellence:

$$\begin{aligned} \text{PSFP} = & f(\text{ASI} + \text{EMC} + \text{FUT} + \text{RNC} + \text{STR}) + (\text{SYN}) + (\text{RL} + \text{RLM}) + \text{CLC} + \text{HE} \\ & + \text{FS} + \varepsilon. \end{aligned} \quad (7)$$

Expanding on Equation 6, Equation 8 captures each of the eight variables utilised as indicators of quantity:

$$\begin{aligned} \text{PSFP} = & f(\text{CSI}) + (\text{DFD} + \text{FDD} + \text{IFD} + \text{JV}) + (\text{CIG}) + (\text{RAL} + \text{RGD}) + \text{CLC} + \text{HE} \\ & + \text{FS} + \varepsilon. \end{aligned} \quad (8)$$

Note that Equations 7 and 8 have not listed SSD and IGC as these two variables represent the *existence* of strategic intent and internal governance respectively.

The 18 variables utilised as indicators of the attributes (as outlined in Equations 7 and 8) are now presented as Equation 9:

$$\begin{aligned} \text{PSFP} = & f(\text{ASI} + \text{CSI} + \text{EMC} + \text{FUT} + \text{RNC} + \text{SSD} + \text{STR}) + (\text{DFD} + \text{FDD} + \text{IFD} \\ & + \text{JV} + \text{SYN}) + (\text{CIG} + \text{ICG}) + (\text{RAL} + \text{RGD} + \text{RL} + \text{RLM}) + \text{CLC} + \text{HE} + \text{FS} + \varepsilon. \end{aligned} \quad (9)$$

Alternatively, expanding upon Equation 2, Equation 10 incorporates the complete corporate strategy index:

$$\text{PSFP} = f\text{CS} + \text{CLC} + \text{HE} + \text{FS} + \varepsilon. \quad (10)$$

3.13 OPERATIONALISATION SUMMARY: PART II

The conceptual framework presented in Part I of this Chapter was utilised to provide the basis for operationalising the constructs of corporate strategy and persistent superior firm performance, and the four attributes of corporate strategy into a number of indicators and proxies. Share

market price was selected as a proxy of persistent superior firm performance as it was a firm-wide measure and was a reflection of both historical and future firm performance. Furthermore, the research sought to measure the rate of corporate strategy decision making which has not been conducted previously. Therefore, many of the previous employed indicators were inappropriate. It was necessary that the variables selected were closely aligned to the concepts of interest. The five research statements presented in Part I of this Chapter were transformed into five primary hypotheses which expressed that corporate strategy (and its attributes and firm performance) could be used to distinguish between the three firm performance categories. Corporate strategy has been observed to be a multidimensional concept representing both excellence and quantity. Consequently, the five hypotheses were redefined into subhypotheses which incorporated the notions of excellence and quantity in the corporate strategy attributes. Therefore, the measures used by this research are best interpreted as indicators of the *presence of corporate strategy*.

Measurements were used to identify the existence of excellence in the attributes, that is, five strategic intent variables, synergy, and two resource leverage variables (refer to Figure 3.3). In addition to positive indicators of excellence, firms may also display negative aspects of excellence whereby corporate decisions can reduce excellence. Accordingly, variables were created to provide measurement of negative excellence. The negative observations may then be subtracted from the positive observations to produce a net measurement of each excellence variable.

The second concept measuring corporate strategy involved the quantity of corporate strategy decisions made and was represented by one strategic intent, four organisational domain, one internal governance, and two resource governance variables. Therefore, in total, seven variables were selected to represent strategic intent, five variables for organisational domain, two internal governance variables, and four variables for resource governance. Consequently, corporate strategy can be measured through 18 variables. The 14 indices measure each attribute or construct as a continuum that is, it was expected that all firms showed some degree of the presence of corporate strategy decision making.

A number of potential confounds were considered and five variables representing three potential confounds were selected. The variables selected have been employed by other researchers. Lastly, a simple mathematical representation of the model measuring the effect of corporate strategy on firm performance was presented.

4.0 METHODOLOGY AND DATA

4.1 INTRODUCTION

Having identified and operationalised the four attributes that comprise corporate strategy, this research now seek to test the proposition that these corporate strategy attributes can be used to identify the PSFP category from the other two categories of firm performance. An outline of the methodological stages employed in this research as presented in Table 4.1. Due to the lack of theoretical discussion, empirical evidence and competing definitions of corporate strategy, it was important to integrate definitional and modelling components of research among the search for empirical evidence. Therefore, the inductive and deductive contributions are not as distinct as what could be expected from much research in business management.

Table 4.1. Outline of methodological stages

STAGE	STAGE NAME	SOURCE
1	Theoretical framework	Chapter Two (Part I)
2	Empirical evidence	Chapter Two (Part II)
3	Conceptual framework	Chapter Three (Part I)
4	Research statement formulation	Chapter Three (Part I)
5	Hypotheses formulation	Chapter Three (Part II)
6	Operationalisation	Chapter Three (Part II)
7	Selection of time frame	Section 4.2
8	Potential confound selection	Section 3.11.2
9	Potential confound data source selection	Section 4.12.1
10	Share market price data screening and firm performance category process	Section 4.3
11	Selection of persistent superior, average and inferior firm performance sample firms	Section 4.4
12	Data collection methodology: Content analysis	Section 4.5
13	Data source selected: The Wall Street Journal	Section 4.6
14	Data collection	
15	Entry of coding into the Access database	
16	Exported coding into Excel and formatted to represent a total score for each variable for each firm	
17	Missing data correction	Section 4.7.1
18	Index creation	Section 4.7.2
19	Outlier adjustment	Section 4.7.3
20	Exported to SPSS and R.2.2.1 statistical packages	
21	Preliminary statistics	Chapter Five (Part I)
22	Potential confound hypotheses testing (H_6 , H_7 , H_8)	Section 4.12.2
23	Corporate strategy index hypothesis (H_9) testing	Section 5.6
24	Corporate strategy attribute indices hypothesis (H_1 , H_2 , H_3 , H_4) testing	Chapter Five (Part II)
25	Quantity (H_{1a} , H_{2a} , H_{3a} , H_{4a} , H_{5a}) and excellence (H_{1b} , H_{2b} , H_{4b} , H_{5b}) indices sub-hypothesis testing	Chapter Five (Part III)

The purpose of this chapter is to describe the methodology employed to test the five hypotheses and nine subhypotheses presented in Chapter Three. The chapter is divided into 10 sequential sections: Time frame selection, SMP data, procedures utilised in the selection of the sample firms, data collection methodology incorporating content analysis, selection of data sources, data cleaning, techniques employed for statistical analysis, dataset summary, reliability and validity

(representing aspects of sound measurement) and lastly, potential confounds including data source selection, results and summary.

4.2 SELECTION OF THE TIME FRAME

As outlined in Chapter Three, corporate strategy is a long-term concept. Therefore, longer time horizons should be incorporated into the measurement of corporate strategy variables. For example, changes in organisational structure followed alterations to firm strategy in 77% of firms by greater than 10 years or more (Donaldson, 1987). Data was collected for each of the years from 1980 to 2004 inclusive. This time frame was selected as firstly, 1980 coincided with the data availability from the Wall Street Journal (WSJ) and secondly, 2004 provided a 25-year time horizon which incorporates the long-term aspects of corporate strategy. It should be recognised that the effect of any major corporate level changes on the performance of the firm over the 25 year measurement period are embedded in the nature of using longitudinal data, for example, the contribution of the CEO is institutionalised (whether partially or completely) into the performance of the firm.

4.3 SHARE MARKET PRICE

As noted in Section 3.7, the proxy for persistent superior firm performance employed was share market price as share market price is a corporate level measure. The share market price data was sourced from the Centre for Research in Security Prices of the University of Chicago (CRSP). The Centre for Research in Security Prices offers a number of share market information including the New York Stock Exchange. The Centre for Research in Security Prices was selected as it has been acknowledged as a superior source of share market price information. Furthermore, the Centre for Research in Security Prices provides continuous data for firms which have changed firm names, ticker symbols, Standard Industrial Classification codes codes, share classes, and share codes through the application of the Centre for Research in Security Prices's unique, permanent identifier number. Share market price "is price, dividend, shares, and volume data historically revised for split events to make data directly comparable at different times during the history of a security" (Centre for Research in Security Prices, 2003, p. 165). The "adjusted daily stock market price" provided the closing share market price as at 31 December from 1980 to 2003 for all US firms listed on the New York Stock Exchange.

The process for data screening used is now described in detail (refer to stages one to four of

Table 4.2). The 2003 CRSP listing of SMP was utilised as the base upon which to assemble the population of firms. All firms without a full set of SMPs from 1980 to 2003 were excluded from the dataset, namely, either due to incomplete filings or they did not conduct business in the capacity of that particular firm for the full 24-year period. Firms characterised by SMPs of less than or equal to zero were also removed (negative values represents the price that somebody will pay or sell a stock at a given point in time, not the SMP (Centre for Research in Security Prices, 2003). All non-US based firms were also eliminated from the dataset, leaving a population of 440 firms. These remaining firms would be classified during stages five to seven as depicted in Table 4.2, into three heterogeneous subpopulations, namely PSFP, PAFP, PIFP (refer to the following section for the methodology employed).

Table 4.2. Process to select the three firm performance subpopulations

Stage	Stage description	Number of firms	% of firms
1	CRSP download	6,700	
2	Removal of firms with incomplete data (i.e., # NA)	1,093	
3	Removal of firms with share market price of less than or equal to zero	1,026	
4	Removal of non-United States firms	440	
5	Subpopulation of PSFP firms	17	3.9
6	Subpopulation of PAFP firms	272	61.8
7	Subpopulation of PIFP firms	151	34.3

4.4 SELECTION OF SAMPLE FIRMS

Most research is unable to measure the entire population of interest due mostly to the prohibitive costs in so doing. Therefore, samples are selected to represent the population (Field, 2005). As the objective of this research involved the identification of the distinguishing corporate strategy characteristics of PSFP firms, two “control” categories were created to provide comparison. Levitas and Chi’s (2002) approach to sample selection has shaped the process adopted in this research. They advocated cross-sectional samples which test the distinctiveness of constructs. They suggested that samples of superior or inferior, in the absence of average performers, may result in incorrect conclusions because if a variable is found to be missing from inferior performers it could be presumed to be a source of PSFP. However, if this relationship had not been tested within averagely performing firms, an incomplete understanding of the phenomenon of interest may occur. Therefore, as recommended, samples will be drawn from three distinct subpopulations namely, PSFP, PAFP and PIFP.

Following the techniques used by Berson et al (2003) and Eisenhardt (1989), the actual sampling

procedure was: First, based on theoretical grounds, three heterogeneous subpopulations of firms (i.e., superior, average and inferior performers) were identified which were consistent with the conceptualisation of corporate strategy and its attributes. Samples were then randomly selected (where possible) from each of the three subpopulations.

The subpopulation of PSFP firms represents superior performance *relative* to averagely and inferior performing firms. The selection of the sample representing *persistent* performance over time was based on the Dow Jones Industrial Average (DJIA). DJIA was utilised as the reference standard as firstly, this index is commonly referred to and secondly, it covers a range of industries (23 as at April 2004). DJIA is a weighted index based on the SMP of 30 firms listed on the New York Stock Exchange and NASDAQ.

The DJIA reference standard value for each year was obtained from a list of the firms that comprised the DJIA from 3 July 1884 to 8 April 2004 (i.e., Pierce, 2004). A listing of the DJIA firms for each year from 1980 to 2003 as at 31 December was then reconstructed from that record. The SMPs for the 30 firms were obtained from CRSP for each year of the 24-year period. Lastly, the 30 SMPs were averaged representing the reference standard for each year. Of the 50 firms listed on the DJIA from 1980 to 2005 (adjusted for firm name changes), 18 firms were not listed in any of the three firm performance categories (as outlined in Section 4.3), nine firms (28%) were listed as PIFP, 21 firms (66%) were listed in the PAFP category and two firms (6%) were categorised as PSFP firms. Thus, the DJIA reference standard was not heavily weighted in terms of persistent, superior performing firms.

Superior firms were classified as firms possessing between 20 and 24 time periods above the reference standard (i.e., 17 firms representing 3.9% of the population of firms). Firms whose SMP never surpassed the reference standard were classified as inferior (i.e., 151 firms representing 34.3% of the population of firms). Those classified as PAFP equalled (approximately) the remainder of firms (i.e., 272 firms representing 61.8% of the population of firms) refer to Table 4.2.

Random sampling is considered ideal whereby all units in each subpopulation have an equal chance of being selected. Sampling variability is more predictable and results are typically considered more reliable with inferences possible (Short, Ketchen & Palmer, 2002). Sample size was restricted to five firms from each subpopulation due to the time involved in performing content analysis on the WSJ articles (on average, 120 hours per firm, equating to a total of 1,800

hours [the equivalent of 45 weeks] to produce the entire dataset). A simple random sample without replacement was performed. Each PSFP firm was individually numbered. The first five numbers drawn at random from a container constituted the sample. The sample of PSFP firms is displayed in Table 4.3. It can be contended that some of the firms selected operate in “regulated” industries where persistent performance could derive from non-competitive behaviour, that is, industry regulation may protect incumbent firms and limits entrants and, therefore, not really due to corporate strategy.

In addition to the PSFP sample, two samples representing PAFP and PIFP firms were also selected for comparison purposes and to better determine the impact of corporate strategy. PAFP and PIFP comparison firms were selected from the same industry as PSFP firms to reduce possible industry effects.

Table 4.3. Selection of persistent superior firm performance category sample firms

PSFP sample firms	Industry		Number of firms in industry
	Name	Ranking	
Union Pacific Corporation	Railroads	1 of 4	4
Northrop Grumman Corporation	Aerospace and defence	4 of 15	15
FPL Group, Incorporated	Utilities: gas and electric	11 of 54	54
Whirlpool Corporation	Electronics, electrical equipment	2 of 15	20
Amerada Hess Corporation	Home equipment, furnishings*	0 of 5	48
	Petroleum refining	7 of 13	
	Mining, crude oil production*	0 of 17	
	Energy*	0 of 18	

Key: * Broadened industry category

The Fortune 1000 (2004) firm listing was used to determine industry categorisation. The firms listed within the same Fortune 1000 industry category as the five PSFP firms were investigated to determine the performance category (i.e., PAFP or PIFP). If the firm was not listed among the 440 firms (after the data screening process listed on Table 4.2), they were eliminated. Firms that were subsidiaries of other firms were excluded (data source: Datamonitor reports and the Factiva company/markets Financial snapshot and profile reports). The number of WSJ articles available for coding should exceed 350 and exist over time from 1980 to 2004, otherwise the firm was eliminated (the exception was Masco Corporation [Masco]). The selection of a minimum of 350 WSJ articles was estimated to supply a number of observations that would provide a reasonable assessment of corporate strategy evident in the sample firms.

Table 4.4. Selection of persistent average firm performance category and persistent inferior firm performance category sample firms

PSFP sample firms	PAFP/PIFP	Comparison firms	Firms in category
Union Pacific Corporation	PAFP	CSX Corporation	1
	PIFP	Burlington Northern Santa Fe Corporation	1
Northrop Grumman Corporation	PAFP	Raytheon Company	8 #
	PIFP	GenCorp Incorporated	*Datamonitor competitor
FPL Group, Incorporated	PAFP	CMS Energy Corporation	4 #
	PIFP	Southern Company	1
Whirlpool Corporation	PAFP	Emerson Electric Company	2 #
	PIFP	Masco Corporation	* 198 articles
Amerada Hess Corporation	PAFP	Sunoco Incorporated	4 #
	PIFP	Duke Energy Corporation	* 3 rd industry

Key: * Additional procedures performed to arrive at PIFP firm as outlined below
 # Randomly sampled
 Industry information sourced from Fortune 1000 (2004)

As seen from Table 4.4, three firms were automatically identified as being the comparison firm (i.e., CSX Corporation [CSXC], Burlington Northern Santa Fe Corporation [BNSF], and Southern Company [Southern]) as per the criteria outlined above. Random sampling was performed to select four firms, namely, Raytheon Company (Raytheon), CMS Energy Corporation (CMS), Emerson Electric Company (Emerson), and Sunoco Company (Sunoco). Due to the lack of PIFP firms that met the above criteria, the following additional procedures were followed to obtain three firms, namely, GenCorp Incorporated (GenCorp), Masco, and Duke Energy Corporation (Duke), refer to Table 4.4:

- 1 The industry categorisations for PSFP firms Whirlpool Corporation (Whirlpool) and Amerada Hess Corporation (Amerada) were broadened to include similar industries to select Masco and Duke respectively
- 2 Selection of a firm with fewer than 350 WSJ articles that is, Masco
- 3 Included Top Competitors as listed in the Datamonitor report for PSFP firm Northrop Grumman Corporation (Northrop) to select GenCorp.

Although a number of the PIFP and PAFP sample firms were not randomly sampled, the three samples were not the subjects of researcher bias nor were they affected by the selection of other firms.

4.4.1 Sample error

The two forms of sampling error are bias and sampling variability (Cooper & Emory, 1995). Sampling bias “refers to systematic differences between the sample and the population that the

sample represents” (Henry, 1998, p. 107). Sampling bias may exist due to nonobservation bias as the population of firms only included US firms listed on New York Stock Exchange. Secondly, a size bias may be evident as the population consists of large firms. Lastly, survivor bias is present as the population only contains firms that survived from 1980 to 2004. The reason for excluding firms that had delisted from the New York Stock Exchange was because PSFP incorporates the concept of persistence and, secondly, the information on other firms would have been incomplete and only provided a partial representation of corporate strategy. Therefore, firms possessing all of these characteristics are overrepresented in the sample and external validity could be reduced. For example, every PIFP firm survived the 25-year time horizon and arguably, a set of even worse performing firms may exist, who because they declined or were acquired, ceased to be eligible of inclusion in the study.

Sampling variability refers to how well the sample estimates the population. It can be measured by the standard error whereby a large standard error relative to the sample mean indicates the sample may not be representative of the population. Furthermore, a large confidence interval suggests the sample does not estimate the population. Statistical Package for Social Science 13.0 for Windows (SPSS) provides analysis of the appropriate results from calculations on both bias and precision.

4.5 DATA COLLECTION TOOL: CONTENT ANALYSIS

The presence or absence of corporate strategy was assessed by measuring the incidence of each of the 18 variables (outlined in Equation 9, Chapter Three) evident in WSJ articles. The method used for determining incidence was content analysis. Content analysis is an empirically grounded method involving the systematic analysis of usually rich and flexible text via classification and evaluation (Krippendorff, 2004). Content analysis is a perceptual assessment by the researcher of the text. The text was assumed to provide a representation of corporate strategy in each of the sample firms. This component of the research followed the sociological tradition whereby text is considered a proxy for human experience, rather than the linguistic tradition whereby text is regarded as the object of analysis, for example, grammatical structures (Tesch, 1990). Of the two texts that are thought to exist in the sociological tradition, free-flowing text was applicable for this research. The text is reduced, via researcher interpretation, according to codes (Ryan & Bernard, 2003). The text was analysed in terms of what was stated rather than the various meanings that may be applied as “the most informative content analyses,

therefore, will be produced by analysts who choose their content categories with reference to an explicit theoretical framework” (Gunter, 2002. p. 222).

Content analysis was selected as the data reduction tool because direct observation was impossible. Hypotheses were then evaluated through inferences gained from the textual data rather than from direct observation (Krippendorff, 2004). Secondly, content analysis could be utilised to analyse actions not yet taken. Thirdly, content analysis could assess and reduce large quantities of freely available unstructured secondary data. Lastly, the act of measurement did not influence or distort the phenomena under investigation. Therefore, any sources of error or bias in comparison to alternative data collection methodologies were reduced (Krippendorff, 2004).

Some limitations of content analysis should be noted. Coding was based on the perceptions of the researcher and consequently, these interpretations may suffer from various distortions. Misinterpretation may also be compounded as a single data collection source was utilised (i.e., Wall Street Journal). However, a comparison sample of BusinessWeek and Dow Jones Business News articles was analysed and found to be analogous. The research sought to limit misinterpretation by using previous coding schema. Unfortunately, content analysis has only been previously employed on a limited scale in corporate strategy research. Thus, alternative coding schemas could not be utilised or compared. The strategic intent questionnaire employed in the interviews by Monroe (2002) was altered to provide the basis for a coding book. The coding book outlined a description of each code (identifiers of variables), including the boundaries of exclusion and inclusion (i.e., the codes did not overlap). The coding book used in this study is presented in Appendix 1. Secondly, the a priori creation of the coding book as the frame of reference, although reducing bias and inconsistent coding may have excluded some evidence of corporate strategy. This process then may result in the loss of some information from the analysis (Atkinson, 1992, p. 459 as cited in Silverman, 2003).

4.6 SELECTION OF THE DATA SOURCE FOR EXPLANATORY VARIABLES: THE WALL STREET JOURNAL

The data collection process focused on deriving the main elements of corporate strategy that emerged from the sample firms. Employing a historical methodology has been deemed advantageous when seeking to uncover firm strategic decisions (Helfat, 2000). Finkelstein and Hambrick (1996) noted that archival data sources are commonly utilised in strategic leadership

research as they are considered highly reliable. This research followed the technique used by Adner and Helfat (2003), and Brickley and van Drunen (1990) who utilised content analysis of WSJ to provide an evaluation of corporate strategy. A number of secondary data sources exhibiting the corporate strategy evident within major US firms were considered. Ideally *all* articles published on each firm should be analysed. But due to the laborious process this would involve, one principal data source was selected by these researchers in which to uncover the presence of corporate strategy (i.e., the WSJ). In both cases, the WSJ provided an accurate proxy for the record of corporate strategy decisions.

A search was performed within Factiva database (Dow Jones and Reuters) to identify all WSJ articles listed by firm name. All articles from 1980 to 2004 were collected for each of the 15 firms. Content analysis was performed on the 9,970 WSJ articles collected (examples of coding are presented in Appendix 2). The possible limitations and benefits of secondary data sources are now described.

4.6.1 The benefits of the Wall Street Journal

The WSJ was considered a more reliable data source than firm published reports as firstly, it is assumed that the reporters and editors in maintaining the reputation of WSJ as a leading business news source, would perform information triangulation to reduce potential bias and distortion. Secondly, WSJ is independent of the sample firms and, therefore, it is assumed would not be biased.

The use of secondary data sources was expected to provide a fair measurement of corporate strategy as firms often publicise their goals whereby firms utilise publicly disclosed data sources “presenting a preferred image of institutions and managing the impressions of external publics upon whom they depend for their existence” (Taylor & Bogdan, 1998, p. 130). Levitas and Chi (2002) noted that firms may also utilise publicly disclosed data sources to provide an indication of advantage to their competitors which may alter their competitors’ decisions in their favour. The data collected from secondary data sources is less likely to be contaminated as the original author is unaware of how the text will be analysed in comparison to other data collection methods such as interviews (Krippendorff, 2004).

The WSJ provided data on all the sample firms at the required unit of analysis that is, the firm level. Data obtained from one source could be coded in an identical manner. An initial assessment of the WSJ provided evidence that corporate strategy decisions were represented and

the quality of the information was of a high standard. The researcher managed inappropriate data by excluding it from analysis, that is, only relevant data was coded. The data management process also sought to exclude flawed data as any data that was revised or corrected by the WSJ was reflected in the recoding of the original article in light of these corrections.

4.6.2 Limitations of the data source

This data source may incorrectly estimate the level of corporate strategy evident in the sample firms. However, it is likely to represent a minimum level of corporate strategy. It should be noted that without access to principal agents within firms, it would be difficult to ascertain firstly, whether these decisions were carried out and secondly, the success of corporate strategy implementation. Text is a social construction which may represent different aspects of what is being measured. In other words, interpretation difficulties due to writer bias may exist as the published accounts may be inaccurate or distorted (i.e., firm information may be published with the aim of enhancing firm legitimacy and reputation). For example, firms knowingly make announcements either to explain, justify or instil confidence in their decisions (including those encompassing corporate strategy). Therefore, “the likely perspectives and motives of author and recipient need to be borne in mind” (Jeremy, 2002, p. 447). An additional limitation is that the text is interpreted, possibly creating new meanings beyond the context of which it was originally created. The articles are not necessarily coded from the viewpoint of the anticipated audience (Krippendorff, 2004). Despite these concerns, the WSJ articles were taken at face value in a process to similar to that used by Adner and Helfat (2003).

4.7 DATA CLEANING

The collected data went through three stages before it was analysed, namely, missing data due to an incomplete Factiva database, creation of the corporate strategy, attribute, excellence and quantity indices, and the presence of outliers in the dataset. Each coding was entered into the coding database in Microsoft Access, including article date, annual article number, the firm SBU the coding applied to, the description of the coding and, lastly, the code. A second review of the data was then performed to ensure the consistency of the coding. The coding of negative observations of excellence variables were also performed, and were subtracted from the positive measurement of excellence to calculate the overall score for each excellence variable. Frequencies were calculated for all 18 variables.

4.7.1 Missing data

Missing data analysis was performed at the variable level (refer to Table 4.5). Three firms were affected by missing articles for an entire year: GenCorp (2000 and 2003), Masco (1980 and 2000), and Raytheon (1998 and 1999). Therefore, missing data accounted for 8% of data for each firm or 1.6% of the entire dataset. A method of estimating this missing data was employed to provide a more complete set of data. Least squares regression utilised the 23 years of existing data for each firm to provide an estimation of missing years' data for each of the 18 variables. The missing values derived from the least squares regression were added to the 18 variables dataset. Regression predictions of the missing data provided an objective assessment. Tabachnick and Fidell (2001) identified a number of limitations to regression. These limitations include estimations "fit" with the existing data, secondly, the estimations are likely to be relatively close to the mean and, lastly, the estimations may be reflections of the mean if explanatory variable was not a good predictor of the dependent variable. However, a subjective comparison between the regression derived values and the existing 23 years of data for the 18 variables indicated the regression values were similar.

Table 4.5. Levels of data analysis and the associated variables and indices

LEVEL	NAME	QUANTITY	
1	Variables	18	7 strategic intent variables 5 organisational domain variables 2 internal governance variables 4 resource governance variables
2	Excellence indices	4	Strategic intent excellence Organisational domain excellence Resource governance excellence Corporate strategy excellence
3	Quantity indices	5	Strategic intent quantity Organisational domain quantity Internal governance quantity Resource governance quantity Corporate strategy quantity
4	Attribute indices	4	Strategic intent Organisational domain Internal governance Resource governance
5	Corporate strategy index	1	

4.7.2 Index creation

To reduce possible measurement error, a series of indices were created. Index creation was comprised of three stages: firstly, nine multiple-item quantity and excellence indices (levels 2 and 3 of Table 4.5 and outlined in Equation 6, Chapter Three). Secondly, four multiple-item indices representing each corporate strategy attribute were determined (level 4 of Table 4.5 and presented in Equation 5, Chapter Three). Thirdly, the calculation of the multiple-item corporate strategy index (level 5 of Table 4.5 and outlined in Equation 10, Chapter Three). The use of indices sought to incorporate the complex nature of corporate strategy and the need to accurately reflect this. Indices also assist in limiting distortion and misclassification, and increasing validity (Cooper & Emory, 1995).

The coding database was exported into Microsoft Excel spreadsheets. A number of stages were employed to create the various indices that would be used in the statistical analysis. Firstly, a comparison was made between the Access coding database and the Excel spreadsheet to ensure the data was exported accurately. Secondly, the coding results were aggregated into the 18 variables. The 18 variables were then combined into the various indices as per the formulae outlined in Chapter Three (refer to Figure 4.1 for presentation of the relationship between the three levels of indices). Low coding scores represented low amounts of an index; conversely high coding scores reflect high incidences of a particular index.

4.7.3 Outliers

A number of outliers were present in the indices which may distort statistical analysis resulting in Type I and II errors or reducing the generalisability of the sample (Tabachnick & Fidell, 2001). Outliers can also inflate the standard deviation and bias the mean (Field, 2005). Tabachnick and Fidell (2001) noted that outliers should be identified in terms of their grouping, that is, within each firm performance category. Outliers were defined as cases with values greater than 1.5 interquartile ranges as identified by the box plots derived from SPSS. The outlier analysis was conducted on the index levels for each firm. Due to the greater range of values evident at the variable level which produced distorted data, this level was not adjusted for outliers.

Figure 4.1. The relationship between the indices

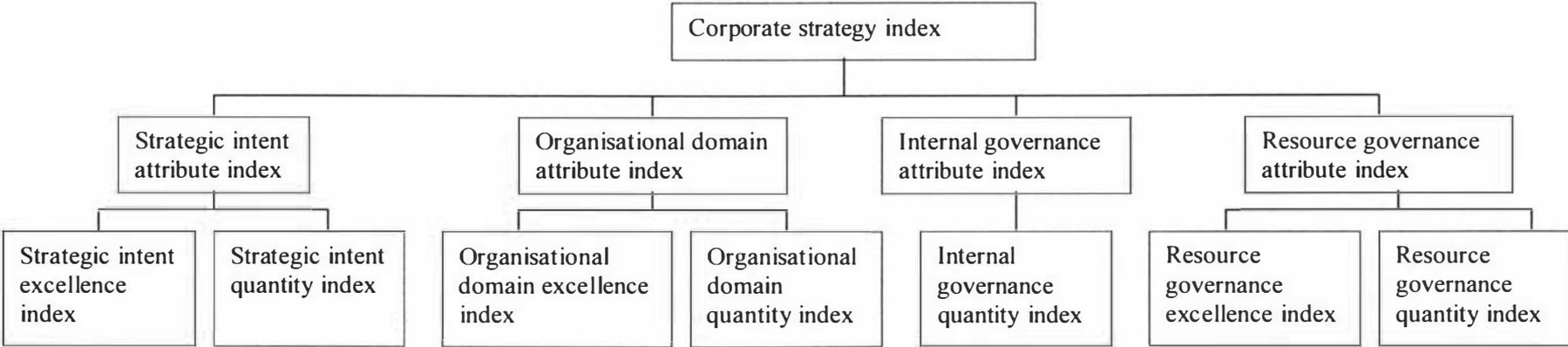


Table 4.6. Corporate strategy and attribute index outliers by firm

Firm	Strategic intent	Organisational domain	Internal governance	Resource governance	Corporate strategy
BNSF	198	222	276	348	1044
Duke	137	250	99	367	853
GenCorp	98	346	198	230	872
Masco	44	129	32	183	388
Southern	187	196	168	572	1123
CMS	158	255	137	536	1086
CSX	267	302	320	375	1264
Emerson	110	245	209	191	755
Raytheon	178	1144	382	416	2120
Sunoco	108	441	114	415	1078
Amerada	24	276	39	180	519
FPL	141	104	117	243	605
Northrop	267	455	266	336	1324
Union	172	253	212	238	875
Whirlpool	148	190	168	187	693

Key: Index outliers are in larger print

Table 4.6 presents the outliers as identified by SPSS box plots for each index by firm performance category. As all the cases are a legitimate part of the sample, the impact of the outliers should be reduced rather than eliminated from the dataset. A treatment of the dataset was then performed to eliminate outliers, namely, “next score plus or minus one” whereby Field (2005) suggested adding (for high outliers) or subtracting (for low outliers) one from the next score, of that firm performance category, to the outlier. In the case of Amerada, the original strategic intent index value of 24 (refer to Table 4.6) was replaced by one minus FPL Group, Incorporated’s (FPL) strategic intent index value, 141 resulting in the adjusted Amerada strategic intent index value of 140 (refer to Table 4.7). The corporate index strategy values for any firm that had an adjustment value due to an outlier were produced by adding the four attribute indices (including the adjusted value) for each firm. For example, in the case of Amerada the original corporate strategy index value of 519 was replaced by $140 + 276 + 180 + 39$ that is, the adjusted corporate strategy index value for Amerada is 635 (refer to Table 4.7). The corporate strategy indices for Emerson and Northrop were not adjusted utilising the treatment method. Instead, these corporate strategy index values were created from the sum of the four attribute index scores.

Table 4.7. Adjustments to corporate strategy and attribute index values by firm

Firm	Strategic intent	Organisational domain	Internal governance	Resource governance	Corporate strategy
BNSF	198	222	276	348	1044
Duke	137	250	99	367	853
GenCorp	98	251	198	230	777
Masco	97	283	70	402	852
Southern	187	196	168	572	1123
CMS	158	255	137	417	967
CSX	267	302	320	375	1264
Emerson	110	245	209	374	938
Raytheon	178	442	382	416	1418
Sunoco	108	441	114	415	1078
Amerada	140	276	39	180	635
FPL	141	104	117	243	605
Northrop	173	277	266	244	960
Union	172	253	212	238	875
Whirlpool	148	190	168	187	693

Key: Adjusted index outliers are in larger print

The Masco values were calculated differently as the outlier was corporate strategy, that is, the outlier corporate strategy value (388, refer to Table 4.6) was replaced by the next highest corporate strategy score in the PIFP category (853) minus one. Therefore, the adjusted Masco corporate strategy index value was 852 (refer to Table 4.7). The four attribute indices were then calculated by multiplying the adjusted corporate strategy index value by the original percentage of each attribute index that contributed to the corporate strategy index. For example, the calculation of the adjusted strategic intent index was 852 multiplied by the original strategic intent index divided by original corporate strategy index (i.e., 44 divided by 388). The adjusted attribute index value then retained the same proportion of each attribute index as the original data.

A different outlier treatment was applied to the excellence and quantity indices (at the firm level) as when the treatment as outlined above was conducted, the indices were distorted (due to the large range of values within PAFP category). Adjustments were only made to the excellence and quantity indices that were identified as outliers at the attribute index level (refer to Table 4.8).

The excellence and quantity indices were calculated so that the proportion between each index and the attribute index evident in the nonadjusted values was retained in the adjusted values (refer to Table 4.9). For Masco, the proportion between the nonadjusted strategic intent quantity

Table 4.8. Excellence and quantity index outliers

Firm	Indices								
	Strategic intent quantity	Strategic intent excellence	Organisational domain quantity	Organisational domain excellence	Internal governance quantity	Resource governance quantity	Resource governance excellence	Corporate strategy quantity	Corporate strategy excellence
BNSF	6	191	202	20	256	270	78	734	289
Duke	4	127	229	21	86	314	53	633	201
GenCorp	3	87	344	2	170	205	25	722	114
Masco	3	39	122	7	31	166	17	322	63
Southern	6	179	180	16	146	471	101	803	296
CMS	5	149	248	7	130	505	31	888	187
CSX	5	251	290	12	275	236	139	806	402
Emerson	1	106	235	10	193	153	38	582	154
Raytheon	6	165	1106	38	327	492	-76	1931	127
Sunoco	4	103	436	5	100	361	54	901	162
Amerada	7	16	275	1	23	163	17	468	34
FPL	3	136	98	6	103	212	31	416	173
Northrop	9	245	431	24	210	265	71	915	340
Union	5	161	232	21	167	179	59	583	241
Whirlpool	4	139	176	14	153	130	57	463	210

Key: Values requiring adjustment due to the classification of the attribute index as an outlier
Adjusted index outliers are in larger print

Note: Two variables were not included in the excellence and quantity indices (refer to Section 3.12)

Table 4.9. Adjustments to excellence and quantity index outliers

Firm	Indices								
	Strategic intent quantity	Strategic intent excellence	Organisational domain quantity	Organisational domain excellence	Internal governance quantity	Resource governance quantity	Resource governance excellence	Corporate strategy quantity	Corporate strategy excellence
BNSF	6	191	202	20	256	270	78	734	289
Duke	4	127	229	21	86	314	53	633	201
GenCorp	3	87	250	1	170	205	25	628	113
Masco	7	86	268	15	68	365	37	708	138
Southern	6	179	180	16	146	471	101	803	296
CMS	5	149	248	7	130	393	24	776	180
CSX	5	251	290	12	275	236	139	806	402
Emerson	1	106	235	10	193	300	74	729	190
Raytheon	6	165	427	15	327	492	-76	1252	104
Sunoco	4	103	436	5	100	361	54	901	162
Amerada	41	93	275	1	23	163	17	502	111
FPL	3	136	98	6	103	212	31	416	173
Northrop	6	159	262	15	210	192	52	670	226
Union	5	161	232	21	167	179	59	583	241
Whirlpool	4	139	176	14	153	130	57	463	210

Key: Values requiring adjustment due to the classification of the attribute index as an outlier
Adjusted index values are in larger print

Note: Two variables were not included in the excellence and quantity indices (refer to Section 3.12)

index and the nonadjusted strategic intent index is 6.8%. The proportion between the adjusted strategic intent quantity index and the adjusted strategic intent index is 7.2%, rounded to a whole number.

4.7.4 Data transformation

Due to the potential nonnormality and heterogeneous variances issues (refer to the following section), data transformation methods were applied to the dataset. The following data transformations were attempted (square-root, log10, reciprocal); however, they did not correct the data in any meaningful manner.

4.8 STATISTICAL ANALYSIS

Statistical analyses were selected on the basis of the best method to test each of the various hypotheses, using techniques that provided a comparison between the PSFP category and the other two firm performance categories. Statistical analysis of the dataset was primarily performed on SPSS. The Excel files were imported into SPSS and a comparison was then performed between the Excel and SPSS datasets to ensure accuracy. SPSS provides a series of statistical techniques which can test H_0 and alternative hypotheses via p -values. The excellence subhypotheses and the strategic intent attribute hypothesis (H_2) were expected to be directional and, thus, employ a one-tailed test.

Two interpretation errors may occur. A Type I error transpires if H_0 is incorrectly rejected, whereas, failure to reject H_0 when in fact the effect does not exist is termed a Type II error. To restrict the probability of committing a Type I error, the H_0 will be rejected if p is greater than or equal to 0.05. A Type II error is related to statistical power of the test performed and may exist due to the small sample size. The literature review in conjunction with the in-depth conceptual framework provided the basis for practical significance of any statistical significant distinction between the PSFP category from PAFP and PIFP categories in terms of levels two to five (refer to Table 4.5).

4.8.1 Descriptive statistics

Descriptive statistics were calculated for levels two to five, namely, the excellence, quantity, attribute, and corporate strategy indices (refer to Table 4.5) to provide a subjective indication of whether the three firm performance categories differed. Measurements of central tendency

(mean [M], 5% trimmed mean and median) and measurements of dispersal (standard deviation [s] and interquartile range) were calculated. Minimum and maximum values were also displayed. Lastly, skewness and kurtosis were calculated providing an estimation of whether the firm performance categories displayed normal distributions. Box plots provide a graphical representation of the distribution of the firm performance categories. They show the median, bottom and top quartiles, and the interquartile range.

4.8.2 Inferential statistics: Tests of heterogeneity for three samples

The hypotheses seek to determine whether the three firm performance subpopulations are distinct. If so, are the differences uncovered actual or due to chance. It should be noted that alternative inferential statistical techniques were not utilised in the data analysis (e.g., analysing the control variables with the corporate strategy and firm performance variables) as these techniques were considered to be inappropriate. For instance, longitudinal analysis was not conducted on this dataset for two reasons, namely, the difficulties in establishing when a corporate level decision began and finished, and secondly, determining a standard time measurement period (e.g., one year) would be difficult due to the long time periods involved in corporate level decisions. In addition, the financial year period of the sample firms varied. This factor is thought to have an impact on the timing of the rate of corporate level decision making that is, firms may make more decisions in the quarter before their year-end in preparation for both the preparation and presentation of year end accounts and the new financial year. The selected inferential statistical techniques then were selected as they could answer the research aim, that is, can corporate strategy be used to distinguish between the three firm performance categories.

The main assumptions for many statistical tests are now discussed. The results of the normal distribution and homogeneity of variance assumptions directed which statistical tests would be more appropriate for the data (in conjunction with the sample size). The statistical techniques used in this research are then reported.

a) *Assumptions of tests*

Assumption of independent observations

Observations should be independent of one another. Possible multicollinearity and heteroscedasticity issues can impact on commonly utilised statistical tests such as, ANOVA. Due to the method of data collection employed in this study, the behaviour of one firm cannot

influence other firms. The whole strategic management paradigm makes the assumption that firms are independent and yet in reality, some interaction is expected. However, as the variables were measured over 25 years, there is likely to be some aspect of nonindependence across the observations reported within each firm. Therefore, a violation of this assumption is not expected to greatly influence the results.

Testing for the assumption of normality

The six parametric tests employed in this study (i.e., discriminant analysis, one-way independent analysis of variance [ANOVA1], planned contrasts, Games-Howell [GH], Tamhane's T2 [T2], Dunnett's T3 [T3]) are reliant on the assumption of a normal distribution. A significant Kolmogorov-Smirnov test at the $p < .05$ level identified deviations from normality. The Kolmogorov-Smirnov test contrasts the sample to normally distributed scores with the same mean and standard deviation (Field, 2005). As the hypotheses for this research involves comparisons between the three firm performance categories, the statistics related to the distribution of the categories is of interest, rather than the overall distribution (Field, 2005).

Testing for assumption of homogeneity of variance

The assumption of homogeneity of variance underlies a number of the statistical tests employed in this study (except Brunner, Dettner and Munk heteroscedastic rank-based ANOVA test [BDM], ANOVA1 as reporting Welch's F , planned contrasts, GH, T2 and T3). Violation of this assumption could lead to increased Type I error. The small sample size means that utilising box plots as a means of assessing homogeneous variances is inappropriate (Freud & Wilson, 2003). Instead, the test utilised was Levene's test (this test is also robust to large nonnormality). H_0 for the Levene's test states that the difference between the variances within a category is zero. Therefore, a significant result at the $p < .05$ level indicates the variances are significantly different. Another test employed is the variance ratio which is calculated by dividing the largest variance in firm performance category by the smallest variance in firm performance category for each index. A violation of this assumption is recognised as occurring when the variance ratio is greater than two.

b) Is there a difference between the three firm performance categories?

Due to the possible violation of the last two assumptions discussed above, a number of inferential tests were performed to determine if the various results supported each other, providing confidence that the results to be interpreted are in fact valid. Discriminant analysis was utilised to determine whether the attribute indices could correctly classify the 15 firms into

the three firm performance categories. The following five tests were used to determine if the various indices differed between the three firm performance categories: Kruskal-Wallis one-way analysis of variance by ranks test (KW), Jonckheere-Terpstra test (JT) which is applicable only to directional hypotheses (i.e., the strategic intent attribute index and the excellence indices), BDM, and ANOVA1.

In addition, due to the small sample size, the dataset collected was inappropriate for the more restrictive assumptions (regarding the nature of the population) that many parametric statistical inferential tests possess (Pallant, 2005). In comparison, distribution-free statistics offered more general assumptions regarding the distribution of the population. However, as Gibbons and Chakraborti (1992, p. 5) noted, "in many cases the assumptions are sufficient, but not necessary, for the test's validity." Six parametric tests were performed, namely, discriminant analysis, ANOVA1, planned contrasts, GH, T2 and T3.

Gibbons and Chakraborti (1992, p. 6) also stated that "nonparametric tests are frequently almost as powerful, especially for small samples." The five distribution-free tests employed were KW, BDM, JT, Mann-Whitney (MW) and Siegel-Castellan critical difference test (SC). KW and MW have two assumptions namely random sampled scores are mutually independent, except the medians, and the two population's distributions are homogeneous (Hollander & Wolfe, 1999). However, authors appear to disagree on the second assumption, for example, Green and Salkind (2005, p. 385) noted that "if population distributions differ on characteristics other than their medians, the Mann-Whitney test does not evaluate whether the medians differ among populations, but whether the distributions themselves differ". In contrast, Pallant (2005, p. 291) argued that for MW "as the scores are converted to ranks, the actual distribution of the scores does not matter."

A number of limitations exist that may affect interpretation of the results. Utilising ranking rather than the magnitude of scores lowers the power to detect associations whereby a statistically insignificant result may occur even if a relationship was present that is, a Type II error (Pallant, 2005). However, it has been argued that "the information embodied in these actual magnitudes ... really relates to the underlying distribution, information which is not relevant for distribution-free tests" (Gibbons & Chakraborti, 1992, p. 5). In summary, the distribution-free techniques selected offer the ability to provide appropriate statistical analysis of the small sample; these techniques are also used to answer the hypotheses tested in this research.

Discriminant analysis

Discriminant analysis was performed on the attribute indices. The discriminant analysis model created discriminant functions (i.e., weightings) based on linear combinations of the predictor variables (i.e., two indices) from a sample of known group members (i.e., PIFP, PAFP, and PSFP). Discriminant analysis seeks to maximise the discriminating power by calculating discriminant functions which separates the firm performance categories.

Assumptions of independent, randomly selected cases, and mutually exclusive and collectively exhaustive group membership were fulfilled by this dataset. The power of discriminant analysis may be reduced if the data is heavily skewed. Violation of the assumption of linear relationships among pairs of predictors within each group “leads to reduced power rather than increased Type I error” (Tabachnick & Fidell, 2001, p. 463). The small sample size was acceptable (Tabachnick & Fidell, 2001) as five (the sample size of each group) is greater than two (the number of predictor variables entered into the model).

A number of models were performed to encompass the various combinations within the indices. Six models were conducted for the attribute indices (i.e., strategic intent versus organisational domain, strategic intent versus internal governance, strategic intent versus resource governance, organisational domain versus internal governance, organisational domain versus resource and internal governance versus resource). The independents together method, where all predictor variables are entered simultaneously, was selected as the appropriate method for entering the predictor variables. The model was appraised by how accurately it classified the 15 firms into the three firm performance categories, seeking to correctly classify the firms to better than chance that is, 33%. Cross-validation analyses which calculated the accuracy of predictions with a new sample, were also performed for each model. This analysis classified 14 firms, then the remaining firm, repeating the cycle until all the firms had been left out once.

Kruskal-Wallis one-way analysis of variance by ranks test

KW is an appropriate for testing the hypotheses (i.e., comparing between three samples) due to the small sample size (the parametric alternative is the one-way independent ANOVA). In addition, as the test utilises ranking, it retained the magnitude of the data, and therefore, was more powerful than parametric techniques which have been applied to nonparametric data. However, the power of this test may have been reduced due to the violations in the assumption of homogeneity of variance (Wilcox, 2003). KW was performed on the corporate strategy index,

the attribute indices (except strategic intent), the quantity indices, and the potential confound variables.

KW detects location differences (median) between the three firm performance categories. H_0 states that the samples from the three firm performance categories came “from the same population or from identical populations with the same median” (Siegel & Castellan, 1988, p. 206). An example of the hypotheses for the corporate strategy index is as follows:

$$H_0: \text{Mdn}(\text{PIFP CS}) = \text{Mdn}(\text{PAFP CS}) = \text{Mdn}(\text{PSFP CS})$$

$$H_5: \text{Mdn}(\text{PIFP CS}) \neq \text{Mdn}(\text{PAFP CS}) \neq \text{Mdn}(\text{PSFP CS}).$$

An adjustment is often made for tied observations. The dataset had one tied observation, that of internal governance (168) by Southern and Whirlpool. Unfortunately, SPSS does not have a function where an adjustment can be made for tied observations. However, Siegel and Castellan (1988, p. 210, italics in original) noted that “frequently, the effect of the correction is negligible. If no more than about 25 percent of the observations are involved in ties, the probability associated a *KW* computed without the correction for ties ... is rarely changed by more than 20 percent when the correction is made.” Therefore, as only 13 percent of observations are ties, the results were not expected to be significantly affected.

KW places all observations into a single array and ranks them. H is calculated from a formula sourced from Hollander and Wolfe (1999, p. 191). H_0 cannot be rejected if the medians for the three firm performance categories did not display a pattern. H_0 is tested against:

$$\text{Reject } H_0 \text{ if } H \geq 5.660 \text{ (} p = .059 \text{ and } n_1 = 5, n_2 = 5, n_3 = 5 \text{)}.$$

The critical value of 5.660 was derived from the KW H statistic table which was located in Hollander and Wolfe (1999, p. 641). A small value of H suggests that the ranks were distributed evenly between the three firm performance categories whereas a large H value provides evidence against H_0 .

In addition to applying the exact significance test (applicable due to the small sample size, Krauth, 1988), KW was also run utilising the Monte Carlo estimate of significance. If the confidence interval does not exceed $p = 0.05$ “it means that assuming this confidence interval is one of the 99 out of 100 that contains the true value of the significance of the test statistics, the

true value is less than .05. This gives us a lot of confidence that the significant effect is genuine” (Field, 2005, p. 548).

In addition to the limitation of distribution-free tests expressed previously, a significant KW does not indicate which firm performance category was different. KW only identifies that at least one of the firm performance categories was different from at least one of the other categories.

Jonckheere-Terpstra test: Test for ordered alternatives

The distribution-free JT test is similar to KW but determines whether a trend exists. JT can be utilised when hypothesising a priori an increasing or decreasing effect, that is, the five excellence subhypotheses and H_1 , for example,

$$H_0: Mdn(PIFP SI) = Mdn(PAFP SI) = Mdn(PSFP SI)$$

$$H_1: Mdn(PIFP SI) < Mdn(PAFP SI) < Mdn(PSFP SI).$$

H_0 is tested against:

$$\text{Reject } H_0 \text{ if } J \geq 54 \text{ (} p = .05 \text{ and } n_1 = 5, n_2 = 5, n_3 = 5 \text{)}.$$

The critical value of 54 was derived from the critical value for the J statistic table in Siegel and Castellan (1988, p. 359).

Brunner, Detter and Munk heteroscedastic rank-based ANOVA test

The heteroscedastic equivalent of KW, BDM was employed to account for the possible violation of homogeneity of variance assumption (Wilcox, 2003). The results of BDM can then be compared to the KW results in case the KW test suffered from lower power due to the possible violation of homogeneity of variance assumption (Wilcox, 2003). BDM was performed on the corporate strategy index, the attribute indices (except strategic intent), the quantity indices and lastly, the potential confound variables. In addition, BDM adjusts for tied values of which there is one (the internal governance attribute index). The statistical package, R.2.2.1 was utilised to calculate BDM. As with KW, H_0 states that the three firm performance categories did not differ for example,

$$H_0: Mdn(PIFP CS) = Mdn(PAFP CS) = Mdn(PSFP CS)$$

$$H_5: Mdn(PIFP CS) \neq Mdn(PAFP CS) \neq Mdn(PSFP CS).$$

One-way independent ANOVA

ANOVA1 involves comparison of variance among the means of the three firm performance categories to variances within the firm performance categories (the equivalent distribution-free test is the KW test). The ANOVA1 results can then be compared to the KW results in case the KW test suffered from lower power due to the possible violation of homogeneity of variance assumption. ANOVA1 was performed on the corporate strategy index, the attribute indices (except strategic intent), the quantity indices and, lastly, the potential confound variables. ANOVA1 determines if the means were derived from different populations that is, H_0 states that the mean of the three firm performance categories are equal. The ratio of these variances is represented by F . ANOVA1 offers a test for trends and this is relevant as it is expected that curvilinear associations exist for the H_2 , H_3 , H_4 , H_5 hypotheses and the quantity indices subhypotheses. An example of two hypotheses that were tested by ANOVA1 includes:

$$H_0: M(\text{PIFP CS}) = M(\text{PAFP CS}) = M(\text{PSFP CS})$$

$$H_5: M(\text{PIFP CS}) \neq M(\text{PAFP CS}) \neq M(\text{PSFP CS}).$$

The assumptions of ANOVA1 include first, independent observations (i.e., not correlated); second, normally distributed data (although ANOVA is robust to small violations of the normality assumption, Freund & Wilson, 2003); and, lastly, homogeneous variances (although ANOVA1 is robust to violations of homogeneity of variance when the samples sizes are equal, Field, 2005). ANOVA1 was appropriate to this dataset as adjustments inherent in the model account for possible violation of the homogeneity of variance assumption. In other words, reporting the Welch's F incorporates an alternative F statistic that accounts for the possible violation. A difference in sample means is reflected in a statistically significant Welch's F test. Moreover, the various post-hoc tests as discussed below also accommodate a violation in this assumption.

c) *Where does the difference between the three firm performance categories lie?*

If the KW and ANOVA1 tests were significant, further analysis using six inferential statistical techniques sought to answer the appropriate hypothesis, how did the significant index differ between the firm performance categories that is, could the PSFP category be distinguished from the non-PSFP categories. Post-hoc tests for KW namely, MW, and SC; and four post-hoc tests for ANOVA1, namely, planned contrasts, GH, T2, and T3 were performed. The following is an introduction into the six statistical tests.

Mann-Whitney tests: A post-hoc test for Kruskal-Wallis test

MW was performed on the corporate strategy index, the attribute indices (except strategic intent), the quantity indices and lastly, the potential confound variables if a significant result was obtained from KW (the equivalent parametric test is the independent *t*-test). MW was utilised to conduct pairwise comparisons between the three firm performance categories. MW calculates the ranked positions in scores of the two groups (Field, 2005). Three tests for each statistically significant index were performed: PIFP and PSFP; PIFP and PAFP; PAFP and PSFP. MW has two assumptions, namely, the two population's distributions are homogeneous, except the medians, and the random samples' scores are mutually independent.

As the alternative hypotheses are directional, for example, PIFP < PAFP, the one-tailed probability was reported. In addition, because the sample size is small the exact significance method will be reported. Note that a Bonferroni correction was employed to compensate for the effect of Type I errors to $p < .05$ that is, as three tests were performed, .05 was divided by three yielding a .0167 critical level of significance.

Siegel-Castellan critical difference test: A post-hoc test for Kruskal-Wallis test

SC was performed on the corporate strategy index, the attribute indices (except strategic intent), the quantity indices and lastly, the potential confound variables if a significant result was obtained from KW. The difference between the mean ranks of the three firm performance categories is compared to the critical difference (refer to the formula sourced from Siegel & Castellan, 1988, p. 213). If the difference between the mean ranks is equal to or larger than the critical difference value of 6.79, the difference is significant (Field, 2005).

Planned contrasts: A post-hoc test for ANOVA I

The planned contrasts were performed on the corporate strategy index, the attribute indices (except strategic intent), the quantity indices and lastly, the potential confound variables if a significant result was obtained from ANOVA I. The planned contrasts provide an indication of where the difference in means rests. These tests are more powerful than the post-hoc tests outlined below due to their need to make a rejection area adjustment. Due to the possible violation of the assumption of homogeneous variance, the ANOVA I pairwise contrasts were applicable to this dataset as they did not assume equal variances. Planned contrasts compared a priori predictions that a significant difference existed between the firm performance categories. The following contrasts were performed: PSFP and PIFP, PSFP and PAFP, PIFP and PAFP.

Games-Howell, Tamhane's T2 and Dunnett's T3 tests: Post-hoc tests for ANOVA1

The three post-hoc tests for ANOVA1 were performed on the corporate strategy index, the attribute indices (except strategic intent), the quantity indices and lastly, the potential confound variables if a significant result was obtained from ANOVA1. These post-hoc tests are pairwise comparisons which provide comparisons between the three firm performance categories (compensating for inflated Type I errors by employing the Bonferroni correction). Due to possible violation of the homogeneity of variance assumption, three post-hoc pairwise comparison tests were selected that made adjustments for this violation (Field, 2005; Wilcox, 2003): GH, T2, and T3. The tests “compare every group (as if conducting several *t*-tests) but to use a stricter acceptance criterion such that the family-wise error rate does not rise above .05” (Field, 2005, p. 325). T3 and GH control for family-wise error rate by utilising adjusted critical values. GH can be generous for small samples, T2 is conservative and a Type I error can be reduced by T3 (Field, 2005). These tests were performed so that comparison could provide evidence of consistency with the post-hoc KW test results.

d) Effect size

Calculating the effect size provides a standardised measure which allows to a more accurate determination of whether the results were important. An effect size of .1 (small) relates to explaining 1% of the total variance, .3 (moderate) corresponds to 9% of the total variance, and .5 (strong), representing 25% of the total variance (Cohen 1988, 1992 as cited in Field, 2005, p. 32).

The KW effect sizes (η^2) were calculated utilising a formula sourced from Green and Salkind (2005, p. 386). The effect sizes for MW (r) were calculated from an equation derived from Rosenthal (1991, p. 19 as cited in Field, 2005, p. 532). Field (2005, p. 556) also supplied the formula for calculating the JT effect size (r). In discriminant analysis, the canonical correlation can be utilised as a measure of the effect size (Green & Salkind, 2005, p. 300). The effect size for ANOVA1 (ω) and the planned contrasts (r) were calculated from formulae presented in Field (2005, pp. 357 - 358).

4.9 DATASET SUMMARY

The 9,970 WSJ articles collected from 1980 to 2004 were reviewed for content and categorised in terms of the nature of corporate strategy characteristics (i.e., the four attributes). Examples of

Table 4.10. The corporate strategy index and the attribute indices by firm performance categories

Firm	Strategic intent		Organisational domain		Internal governance		Resource governance		Corporate strategy
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count
BNSF	198	19.0	222	21.3	276	26.4	348	33.3	1044
Duke	137	16.1	250	29.3	99	11.6	367	43.0	853
GenCorp	98	12.6	251	32.3	198	25.5	230	29.6	777
Masco	97	11.4	283	33.2	70	8.2	402	47.2	852
Southern	187	16.7	196	17.5	168	15.0	572	50.8	1123
PIFP TOTAL	717	15.4	1202	25.9	811	17.4	1919	41.3	4649
PIFP MEAN	143.4		240.4		162.2		383.8		929.8
PIFP STANDARD DEVIATION	47.8		32.9		81.8		123.5		146.3
CMS	158	16.3	255	26.4	137	14.2	417	43.1	967
CSX	267	21.1	302	23.9	320	25.3	375	29.7	1264
Emerson	110	11.7	245	26.1	209	22.3	374	39.9	938
Raytheon	178	12.6	442	31.2	382	26.9	416	29.3	1418
Sunoco	108	10.0	441	40.9	114	10.6	415	38.5	1078
PAFP TOTAL	821	14.5	1685	29.7	1162	20.5	1997	35.3	5665
PAFP MEAN	164.2		337.0		232.4		399.4		1133.0
PAFP STANDARD DEVIATION	65.0		97.8		115.9		22.7		204.3
Amerada	140	22.0	276	43.6	39	6.1	180	28.3	635
FPL	141	23.3	104	17.2	117	19.3	243	40.2	605
Northrop	173	18.0	277	28.9	266	27.7	244	25.4	960
Union	172	19.7	253	28.9	212	24.2	238	27.2	875
Whirlpool	148	21.4	190	27.4	168	24.2	187	27.0	693
PSFP TOTAL	774	20.5	1100	29.2	802	21.3	1092	29.0	3768
PSFP MEAN	154.8		220.0		160.4		218.4		753.6
PSFP STANDARD DEVIATION	16.5		73.9		87.3		32.0		155.9
TOTAL	2312	16.4	3987	28.3	2775	19.7	5008	35.6	14082
Firm mean	154.1		265.8		185.0		333.9		938.8
Firm standard deviation	44.9		86.0		95.6		109.5		225.2
Firm performance mean	770.7		1329.0		925.0		1669.3		4694.0
Firm performance standard deviation	52.1		312.5		205.3		501.5		949.3

coding have been provided in Appendix 2. The results are summarised in Table 4.10. The final sample incorporated 14,082 codings of corporate level strategy by 15 firms ranging from 605 (FPL) to 1,418 (Raytheon). The corporate strategy index was characterised by a firm M of 938.8 ($s = 225.2$) and a firm performance M of 4,694.0 ($s = 949.3$). The greatest measurement of the corporate strategy index was evident in the PAFP category with 5,665 observations (40.2%), followed by the PIFP category (4,649, 33.0%), and, lastly, the PSFP category (3,768, 26.8%). The PSFP category possessed the greatest range of 355 whereby the minimum was 605 (FPL) and the maximum 960 (Northrop). The corporate strategy index observed in the PAFP firms ranged from 938 (Emerson) to 1,418 (Raytheon), and the PIFP category ranged from 777 (GenCorp) to 1,123 (Southern).

Overall, the strategic intent attribute index was measured 2,312 times with a firm M of 154.1 ($s = 44.9$) and a firm performance M of 770.7 ($s = 52.1$). The strategic intent index accounted for 16.4% of all corporate strategy observations. The PAFP category had the highest measurement of the strategic intent index evident within the three firm performance categories (821, 35.5%), followed by the PSFP category (774, 33.5%), and, lastly, the PIFP category (717, 31.0%). The PAFP category had the greatest range of 159 whereby the minimum was 108 (Sunoco) and the maximum was 267 (CSXC). The strategic intent attribute index measured in PIFP firms ranged from 97 (Masco) to 198 (BNSF), and PSFP firms ranged from 140 (Amerada) to 173 (Northrop).

The organisational domain attribute index was measured 3,987 times with a firm M of 265.8 ($s = 86.0$) and a firm performance M of 1,329.0 ($s = 312.5$). The organisational domain index accounted for 28.3% of all corporate strategy measurements. The most observations of the organisational domain attribute index was recorded by the PAFP category (1,685, 42.3%), followed by the PIFP category (1,202, 30.2%), and, finally, the PSFP category (1,100, 27.6%). The PAFP category was characterised by the greatest range of 197. The lowest observation of the organisational domain index displayed by a PAFP firm was Emerson (245) and Raytheon recorded the highest score (442). The organisational domain index measured in PIFP firms ranged from 196 (Southern) to 283 (Masco), whereas the PSFP category ranged from 104 (FPL) to 277 (Northrop).

The internal governance attribute index was measured 2,775 times with a M of 185.0 ($s = 95.6$) and a firm performance M of 925.0 ($s = 205.3$). The internal governance index accounted for 19.7% of all corporate strategy observations. The PAFP category was characterised by the highest measurement of the internal governance attribute index (1,162, 41.9%), followed by the

PIFP category (811, 29.2%), and, lastly, the PSFP category (802, 28.9%). The PAFP category possessed the greatest range of 268. The minimum was 114 (Sunoco) and the maximum was 382 (Raytheon). The internal governance attribute index observed in PIFP firms ranged from 70 (Masco) to 276 (BNSF), and the PSFP category ranged from 39 (Amerada) to 266 (Northrop).

The resource governance attribute index was recorded 5,008 times with a *M* of 333.9 (*s* = 109.5) and a firm performance *M* of 1,669.3 (*s* = 501.5). The resource governance index reflected 35.6% of all corporate strategy observations. The greatest measurement of resource governance evident within the three firm performance categories was PAFP (1,997, 39.9%), followed by PIFP (1,919, 38.3%), and, lastly, PSFP (1,092, 21.8%). PIFP possessed the greatest range of 342 whereby the minimum was 230 (GenCorp) and the maximum was 572 (Southern). Resource governance observed in PAFP firms ranged from 374 (Emerson) to 417 (CMS), and PSFP ranged from 180 (Amerada) to 244 (Northrop).

Table 4.11. Validity and reliability measurement methods

Sound measurement	Type	Measurement method	
Reliability	Stability	Test-retest (Cronbach's $\alpha > .8$)	
	Consistency	Use of indices Coding comparison between firms Employment of 25-year data collection period Cronbach's $\alpha > .5$	
	Robustness	Use of coding book	
Internal validity	Content validity	Connecting the theoretical and conceptual frameworks to the definitions, hypotheses and variables Expert panel review	
	Criterion-related validity	Concurrent	Classification analyses of discriminant analysis
		Predictive	Not applicable as this research does not forecast
	Construct validity	Convergent	Subjective analysis of descriptive statistics for patterns across firm performance categories
Discriminant		Not applicable as this research measures one construct	
External validity		Evaluation of theoretical and conceptual frameworks Expert panel review Use of large firms	

4.10 RELIABILITY

The confidence of the conclusions drawn depends on the reliability (i.e., dependability and accuracy) of the data, observations, and the instrument of measurement. Research should be reproducible and not reliant upon chance conditions (Kirk & Miller, 1986). Therefore, research procedures should accurately measure and produce data that represents the phenomena of interest. Reliability is necessary but insufficient to confirm validity. Reliability consists of three components, namely, stability, consistency and robustness. A brief introduction of each

component of reliability is now outlined. The measurement methods employed for each are outlined in Table 4.11.

4.10.1 Stability

Stability measures the variability of the measuring instrument; in other words, repeated observations of the same phenomena should give identical results (Koka & Prescott, 2002). Stability can be difficult to assess in content analysis due to the fact that coders are *interpreting* the text, that is, coders may misinterpret the text and the measuring instrument. Therefore, stability was assessed by a test-retest approach whereby once all the coding was completed, 5% of articles (producing 1,173 corporate strategy codings) were recoded and compared to the original coding. Cronbach's α should be above .80. The reliability statistics of Cronbach's α was .998, indicating a high level of consistency between the original coding and the recoding (12 errors or 1.05% error rate). In conclusion, the corporate strategy model measured produced relatively stable results, thus enhancing confidence in stability.

4.10.2 Consistency

Instrument reliability evaluates the consistency of measurements obtained from different raters, different samples, or from different points in time; in other words, the instrument is free of random error, noise, or bias (Hoskisson et al, 1993b). The conditions under which measurement occurred were standardised as the researcher was the only rater, thus interrater reliability was not a concern. The use of indices minimises the effect of incorrect coding. Consistency was strengthened by the coding process whereby the coding obtained from each firm was compared to the coding derived from other firms to ensure consistency of coding across the entire sample. Furthermore, data was collected from 25 time periods.

The four attribute indices contribute to the corporate strategy index. They measure aspects of the construct of corporate strategy and, therefore, a level of correlation is expected. Cronbach's α is inversely related to the amount of random error and ranges from zero to one. Cronbach's α could be utilised to calculate the reliability of the corporate strategy index and should be greater than .70. However, as this research is exploratory in nature, Cronbach's α needs only to be greater than .50 (Nunnally, 1967). The Cronbach's α for the four corporate strategy attribute indices was higher than the value of .50 (i.e., .531) indicating moderate support for the premise that the four attributes actually captured different dimensions of corporate strategy. Comparison between the Cronbach's α values obtained in this study with other empirical research could not

be performed due to the lack of empirical studies published in which the subconstructs of corporate strategy have been investigated.

4.10.3 Robustness

Robustness measures the degree to which the methodology produces the same results when measured at different times or conditions. The use of a coding book (refer to Appendix 1) for content analysis, firstly, standardised the conditions under which measurement occurred and, secondly, minimised external sources of variation. This ensured that the same coding methodology was employed across all of the 15 firms, regardless of what they may have published, or made available in the public domain of the WSJ.

Overall, reliability was enhanced by a number of measures employed throughout the research process. Therefore, the conclusions drawn in this study should be viewed with confidence as the reliability (i.e., dependability and accuracy) of the data, observations, and the instrument of measurement was supported. The research should be reproducible and was not reliant upon chance conditions

4.11 VALIDITY

The four corporate strategy attributes represented measurements of different aspects of the corporate strategy construct. Validity assesses, firstly, whether the measurement instrument employed actually measures corporate strategy and, secondly, whether the results can be generalised to broader situations. Validity has two components which will now be discussed, namely, internal and external validity (refer to Table 4.11).

4.11.1 Internal validity

Internal validity reflects whether the measurement instrument employed adequately measures corporate strategy. Internal validity is comprised of three aspects: content, criterion-related and construct validity. Each aspect of internal validity is outlined below.

a) Content validity

Content validity involves a qualitative assessment of the measurement tool used to capture the domain of the construct of interest. In other words, it is used to examine whether the 18 variables adequately represent corporate strategy (Hoskisson et al, 1993b). The unclear and

contradictory definitions of corporate strategy found in the literature may be a source of potential error raising the question as to whether an important aspect of corporate strategy may be missing from the conceptualisation employed by this research. Content validity was achieved by the inductive development of the theoretical and conceptual frameworks (outlined in Chapters Two and Three) and the subsequent deductive development of the definitions, research statements and hypotheses employed (outlined in Chapter Three).

The construct of corporate strategy and the four attributes were clearly defined. The variables were then operationalised directly from the four attributes. These narrow operationalisations were both fair and reasonable due to the deficiency of well-codified theory regarding corporate strategy. The main advantage of the indicators and proxies selected was that they incorporated both quantity and excellence aspects of corporate strategy, further enhancing construct validity. The excellence and quantity indices assisted in the development of more exact and valid measures, reducing possible misinterpretation due to coding misclassifications.

To further enhance content validity, an expert review of the theoretical and conceptual foundations was obtained. The panel comprised two chief financial officers, one CEO, one marketing director (all representing New Zealand firms with greater than \$1 billion dollars' annual turnover), a business consultant, a partner at one of the global top four accounting firms, a banking executive of a leading Australasian bank, a chief financial officer (Australia) for a top 100 New Zealand firm, and a general manager (South East Asia region) for a global packaging firm.

A series of unstructured interviews were conducted with each member of the expert panel. The panel was interviewed to determine how they, as practitioners, firstly, defined corporate strategy and, secondly, to determine what the attributes of corporate strategy were, both in terms of what they thought corporate strategy should be and from their employment experience. The results from the first stage of interviews were compared to and then incorporated into the definition of corporate strategy as employed by this research.

The second interview stage involved introducing the definition and conceptualisation of corporate strategy as outlined in Chapter Three. The expert panel reviewed the conceptualisation of corporate strategy employed in this research and concluded that, from their experience, it encompassed the complete range of corporate level decisions. Organisational direction, the most

“controversial” concept as outlined in Chapter Three, was viewed by the entire expert panel, to varying degrees, as an important component of corporate strategy.

It was not possible to directly measure the concepts due to the lack of direct access to the sample firms. To overcome this limitation, where possible, the attributes were operationalised so that they linked to extant variables; for instance, a number of the concepts behind the strategic intent variables have been used in the measurement of vision and mission statements, namely, futurity and emotional connection to employees. The expert panel then evaluated the above process. To further enhance content validity, their comments were incorporated into the conceptualisation framework and the operationalisation of variables. The expert panel recognised the difference in measuring aspects of excellence without direct access to firms. The various measures employed supported content validity.

b) Criterion-related validity

Criterion-related validity reflects the success of variables to predict or estimate an outcome. Criterion-related validity has two components, namely, predictive and concurrent validity. Predictive validity, the measurement of the accuracy of the instrument to forecast, was inappropriate for this research. Concurrent validity incorporates the ability of the measures to estimate an outcome. The original and cross-validated classification analyses evident within discriminant analysis provided an assessment of concurrent validity. The three statistically significant at $p < .05$ level attribute index models produced original classification results ranging from 66.7 to 80%. The cross-validated classification results ranged from 60.0 to 66.7%. Both classification results were substantially higher than the 33.3% probability of correctly classifying the 15 firms due to chance. Furthermore, for all three models and both classifications, 100% of the five PSFP firms were correctly classified. Thus, concurrent validity was supported.

c) Construct validity

Construct validity evaluates the appropriateness of the measurement instrument (i.e., operationalised variables) to measure corporate strategy and the attributes which they intend to measure. Thus, high construct validity ensures the mechanisms of measurement employed are sound, grounded or consistent with theory; in other words, the results were consistent with the conceptualisation of corporate strategy and the hypotheses proposed received empirical support. The two aspects of construct validity, convergent and discriminant validity, are outlined below.

Convergent validity involves assessing the construct of corporate strategy by the correlation between various different attribute indices. The lack of previous empirical research measuring the various attributes of corporate strategy prevented comparisons being made. If the different measurements are found to be in accordance with one another, the variables are seen to be measuring the same phenomenon (Andersson, Forsgren & Holm, 2002; Hoskisson et al, 1993b). However, the attributes represented different aspects of corporate strategy (i.e., the four attributes are not exactly measuring the same phenomenon), consequently factor analysis was inappropriate. T-tests were also inappropriate to this dataset due to the possible violation of the assumption of homogeneity of variance. Instead, descriptive statistics were analysed to determine if the four corporate strategy attribute indices displayed a similar pattern across each of the firm performance categories.

Construct validity was supported as the results were consistent with the conceptualisation of corporate strategy and the most of the hypotheses proposed received empirical support (although only four of the 14 hypotheses were statistically significant at the $p < .05$ level). Convergent validity was confirmed as the analysis of the descriptive statistics and indicated the corporate strategy attributes (except strategic intent as predicted) displayed the same curvilinear trend across the three firm performance categories (refer to Chapter Five).

Discriminant validity assesses whether the attributes are independent from each other. Discriminant validity is established when two constructs that are theoretically unrelated are found to be uncorrelated. However, it was not appropriate to measure discriminant validity because the corporate strategy attributes were predicted to be correlated to some extent.

4.11.2 External validity

External validity involves determining whether the results were representative of a larger population, that is, could the results be generalised across different time periods, contexts or to broader populations (e.g., non-US countries). The sample was representative of publicly listed firms and represents a large volume of the business activity in the US. Measuring corporate strategy from large US firms was a more valid option than measuring corporate strategy in small to medium enterprises as disagreement exists as to whether corporate strategy is actually evident within smaller firms. Much of the previous empirical research outlined in Chapter Two had primarily been undertaken on large US firms, therefore, the results obtained are able to be generalised within these boundaries.

Utilisation of alternative data collection methods (e.g., survey, interviews, in-depth case observation) would have produced the results derived from this study if they measured quantity and excellence of corporate strategy decisions over a *significant time period*. For the corporate level decision makers to recollect the quantity of corporate strategy decisions the firm made over this 25-year period would be difficult. A more accurate reflection of the construct of interest would be to attend board meetings as an observer or to review firm records (e.g., board meeting minutes). These alternative data collection methods would also need to occur over a significant period of time. Again, the lack of previous empirical research on the corporate strategy attributes meant that conducting an extensive assessment of external validity was difficult. Instead, evaluation of the theoretical and conceptual frameworks was performed. The expert panel as outlined in Section 4.11.1a was utilised for a review of the conceptualisation of corporate strategy.

Overall, both internal and external validity were enhanced by a number of measures employed throughout the research process. Careful attention was paid to the entire conceptualisation and operationalisation process so that the construct of corporate strategy was, wherever possible, closely aligned to the previous theoretical and empirical research. The measurement instrument employed actually measured corporate strategy and could be generalised to the population of large US firms, and, thus, supported validity.

4.12 POTENTIAL CONFOUND VARIABLES

4.12.1 Data source selection

A number of data sources were utilised for the five potential confound variables (refer to Table 4.12). These variables were all measured at the firm level.

a) Corporate level commitment to the status quo

Corporate level commitment to the status quo was operationalised by two variables, namely, the average length of corporate level decision maker tenure in position and the average percentage of internal directors, for the period 1995 to 2004. For the purposes of this research, the corporate level decision makers were comprised of directors, CEO, chief operating officer, chief financial officer and president (note that not all positions were filled in every year and one person could occupy more than one role). The average length of corporate level decision maker tenure in position was calculated by, firstly, determining the names of the individuals who occupied the

above roles over the 1995 - 2004 period, from annual reports and the AR/10-K Security and Exchange Commission filings (refer to Table 4.12). Secondly, using the same data sources, each individual's tenure in that position was calculated in years. Thirdly, all the tenure values were summed and divided by the total number of positions measured to arrive at an average value of corporate level decision maker tenure.

Table 4.12. Potential confound data sources

Potential confound	Indicators	Data source
Corporate level commitment to the status quo	Average length of corporate level decision maker tenure in position, measured in years (1995 - 2004)	Security and Exchange Commission filings: AR/10-K Annual reports
	Average % of internal directors (1995 - 2004)	Security and Exchange Commission filings: DEF14A Annual reports Firm websites
Historical endowments	Firm age (years since founding to 1980)	Firm websites Datamonitor reports Factiva financial snapshot and profile reports
Firm size	Natural logarithm of total revenue in US dollars millions (at year end 2004)	2004 annual reports For Duke: 2004 AR/10-K Security and Exchange Commission filing
	Natural logarithm of total assets in US dollars millions (at year end 2004)	2004 annual reports For Duke: 2004 AR/10-K Security and Exchange Commission filing

The percentage of internal directors was calculated using the following method: firstly, the names of the directors were obtained from, in order of importance, the firms' annual reports, DEF14A Security and Exchange Commission filings, and the firm's website for the period 1995 – 2004 (refer to Table 4.12). Secondly, these same data sources were also utilised to determine whether each director was an internal appointment. Thirdly, the number of internal directors was calculated. Lastly, the total number of internal directors was divided by the total number of directors and converted to a percentage.

b) Historical endowments arising from pre-1980 corporate strategy decisions

The year of founding for each firm was obtained from the firm's website and when the firm website was unable to supply this information (in the case of Amerada, CMS, and Southern), the Datamonitor report and the Factiva financial snapshot and profile reports were utilised (refer to Table 4.12). Where possible, the data derived from these three data sources was triangulated to increase accuracy. The year of founding was subtracted from the research starting year of 1980, leaving an absolute figure (years) to represent historical endowment.

c) *Firm size*

Firm size was operationalised as two variables, namely, the natural logarithm of total assets and the natural logarithm of total revenue at year end 2004 (measured in US dollar millions). The variables for each firm were sourced from the 2004 annual reports except for Duke which was sourced from the 2004 Security and Exchange Commission AR/10-K filing (refer to Table 4.12). Both values were converted to natural logarithms using SPSS.

4.12.2 Potential confound results

Three potential confounds were thought to impact on firm performance, namely, corporate level commitment to the status quo, historical endowments and firm size. The following hypotheses were tested:

$$H_0: Mdn(PIFP\ x) = Mdn(PAFP\ x) = Mdn(PSFP\ x)$$

$$H_6: Mdn(PIFP\ CLC) \neq Mdn(PAFP\ CLC) \neq Mdn(PSFP\ CLC)$$

$$H_7: Mdn(PIFP\ HE) \neq Mdn(PAFP\ HE) \neq Mdn(PSFP\ HE)$$

$$H_8: Mdn(PIFP\ FS) \neq Mdn(PAFP\ FS) \neq Mdn(PSFP\ FS).$$

Table 4.13. Kruskal-Wallis one-way ANOVA by ranks test and Brunner, Detter and Munk heteroscedastic rank-based ANOVA test results for the potential confound variables

Potential confound	Variable	Firm performance category	Kruskal-Wallis		BDM	
			Mean rank	H	Mean rank	F
Corporate level commitment to the status quo	Average length of corporate level decision maker tenure in position, measured in years (1995 - 2004)	PIFP	6	1.58	0.37	0.77
		PAFP	8.6	$p = .476$	0.54	$p = .535$
		PSFP	9.4		0.59	
	Average % of internal directors (1995 - 2004)	PIFP	8	0.02	0.50	0.01
		PAFP	7.8	$p = .998$	0.49	$p = .999$
		PSFP	8.2		0.51	
Historical endowments	Firm age (years since founding to 1980)	PIFP	7.6	2.48	0.47	1.30
		PAFP	10.4	$p = .307$	0.66	$p = .323$
		PSFP	6		0.37	
Firm size	Natural logarithm of total revenue in US dollars millions (at year end 2004)	PIFP	6.4	0.98	0.39	0.45
		PAFP	8.6	$p = .650$	0.54	$p = .720$
		PSFP	9		0.57	
	Natural logarithm of total assets in US dollars millions (at year end 2004)	PIFP	9	1.22	0.57	0.58
		PAFP	6.2	$p = .582$	0.38	$p = .619$
		PSFP	8.8		0.55	

KW and BDM analyses were performed on the five potential confounds variables to discover whether a difference in the medians between the three firm performance categories was present

in the dataset collected. The results are nonsignificant at the $p < .05$ level (refer to Table 4.13) and the effect sizes are small (ranging from 0 to .18). Thus, H_6 , H_7 and H_8 *cannot be accepted* as there is not a statistically significant difference at the $p < .05$ level in corporate level commitment to the status quo, historical endowments and firm size whereby none of the firm performance categories differed from another.

The following hypotheses were tested by ANOVA1:

$$H_0: M(\text{PIFP } x) = M(\text{PAFP } x) = M(\text{PSFP } x)$$

$$H_6: M(\text{PIFP CLC}) \neq M(\text{PAFP CLC}) \neq M(\text{PSFP CLC})$$

$$H_7: M(\text{PIFP HE}) \neq M(\text{PAFP HE}) \neq M(\text{PSFP HE})$$

$$H_8: M(\text{PIFP FS}) \neq M(\text{PAFP FS}) \neq M(\text{PSFP FS}).$$

As evident in the KW and BDM results, the ANOVA1 results are nonsignificant at the $p < .05$ level (refer to Table 4.14) and the effect sizes are small to moderate (ranging from .17 to .49). Thus, H_6 , H_7 and H_8 *cannot be accepted* as there is not a statistically significant difference at the $p < .05$ level in corporate level commitment to the status quo, historical endowments and firm size whereby none of the firm performance categories differed from another.

Table 4.14. One-way independent ANOVA test results for the potential confound variables

Potential confound	Variable	Welch's <i>F</i>	df	<i>p</i>
Corporate level commitment to the status quo	Average length of corporate level decision maker tenure in position, measured in years (1995 - 2004)	0.18	(2, 7.79)	0.840
	Average % of internal directors (1995 - 2004)	0.04	(2, 7.74)	0.965
Historical endowments	Firm age (years since founding to 1980)	0.75	(2, 7.92)	0.502
Firm size	Natural logarithm of total revenue in US dollars millions (at year end 2004)	0.36	(2, 6.89)	0.712
	Natural logarithm of total assets in US dollars millions (at year end 2004)	0.26	(2, 7.19)	0.778

4.12.3 Potential confound results summary

It was hypothesised that three potential confounds, namely, corporate level commitment to the status quo, historical endowments, and firm size, could be utilised to distinguish PSFP firms

from other firms. The results found that any difference between the three firm performance categories is statistically nonsignificant at the $p < .05$ level. H_0 could not be rejected. The homogeneity found suggests that these confound variables have the same impact on each of the three firm performance groups. Therefore, they do not appear to influence any of the other variables or firm performance. The potential confounds, then, will not be discussed further.

4.13 SUMMARY

This chapter presented the research methodology utilised for this research. Two factors, namely, the use of a secondary data source, and the predictions of the hypotheses directed the methodological approach employed. The approach employed was appropriate: As discussed in Chapter Three, every effort was made to encompass various conceptualisations of corporate strategy into an innovative, accumulated definition. The time frame for the study was outlined. The research population and sampling procedures were outlined whereby share market price was utilised to determine the three firm performance categories. A sample of 15 firms was constructed, comprising five firms per firm performance category. An appropriate secondary data source was selected to provide evidence of the presence of corporate strategy, namely, the Wall Street Journal. It was also acknowledged that secondary data may underestimate the level of corporate strategy evident in the sample firms. Content analysis and the data collection procedure was discussed. All the data was collected at the firm level. Data cleaning and outlier creation procedures were undertaken in the manner outlined in Section 4.7.

Lastly, a discussion of the various statistical analysis techniques employed was provided. Five inferential statistics, namely, discriminant analysis, Kruskal-Wallis one-way analysis of variance by ranks test, Jonckheere-Terpstra test, Brunner, Detter and Munk heteroscedastic rank-based ANOVA test, and one-way independent analysis of variance test were employed to assess whether a difference in the various indices is evident between the three firm performance categories. Six inferential statistical techniques, namely, Mann-Whitney test, Siegel-Castellan critical difference test, planned contrasts, Games-Howell test, Tamhane's T2 test, and Dunnett's T3 test were then conducted to assess where the difference between the three firm performance categories rested. The use of a variety of inferential statistics provided a profile of results in doing so, reinforcing the findings. Various statistical techniques, namely, Detter and Munk heteroscedastic rank-based ANOVA test, one-way independent analysis of variance test Welch's F , planned contrasts, Games-Howell test, Tamhane's T2 test, and Dunnett's T3 test were selected as they incorporate an adjustment for a possible violation of the assumption of

homogeneity of variance, and were robust to a possible minor violation in normality. Furthermore, distribution-free statistics were applicable to the small sample.

A summary of the dataset was presented. Thereafter, reliability and validity measures were introduced. Lastly, the data sources for the five potential confounds identified in Chapter Three were outlined. The results of the potential confound analysis were presented and indicated that none of the five potential confound variables could be used to distinguish between the three firm performance categories.

5.0 RESULTS

This Chapter is divided into three sequential parts: Part I presents the preliminary analysis results while Part II outlines the hypothesis testing result for the corporate strategy index and the four corporate strategy attribute indices. Lastly, Part III presents results of the tests on the excellence and quantity indices. To increase readability of the results presented in this Chapter, an explicit representation of the relationship between the various variables and indices is depicted in Figure 5.1 (also Section 4.7.2, and Table 4.5).

PART I: PRELIMINARY DATA ANALYSIS

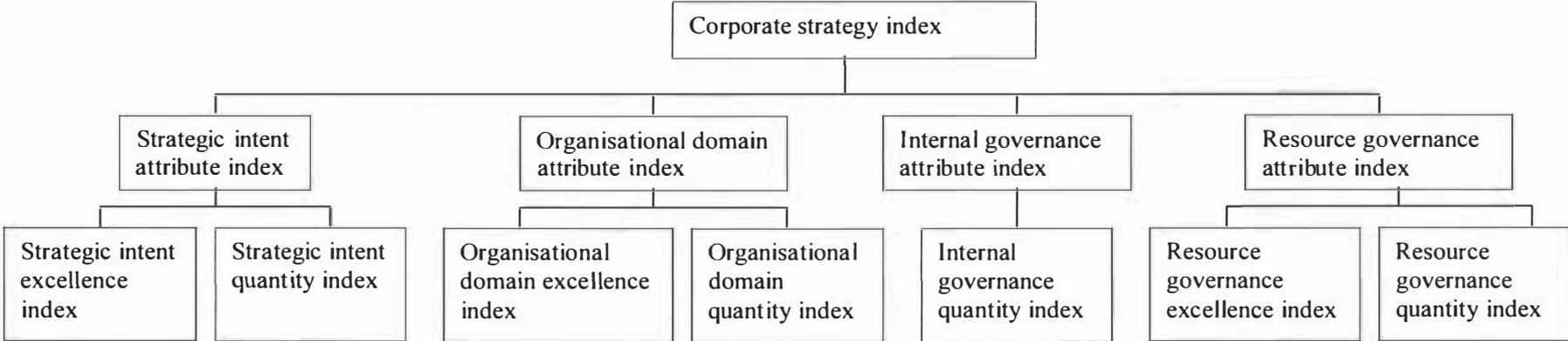
5.1 PRELIMINARY DATA ANALYSIS OVERVIEW

The results of the tests for the assumptions of normality and homogeneity of variance are presented. Thereafter, the preliminary analysis (i.e., descriptive statistics and box plots) of the five hypotheses are displayed (i.e., H_1 , H_2 , H_3 , H_4 and H_5). These hypotheses predict that the corporate strategy index and the attribute indices are able to distinguish the PSFP category from the non-PSFP categories. A curvilinear relationship between firm performance and the index is expected for all indices except the strategic intent attribute index.

5.2 TESTS FOR NORMALITY

The Kolmogorov-Smirnov test was used to determine whether the parametric test results should be interpreted with care. The normality tests for the corporate strategy attribute indices by firm performance category denotes that the resource governance index for the PAFP category indicates nonnormality as the result is significant ($D(5) = 0.354$, $p = .040$). Two tests of normality for the quantity and excellence indices by firm performance category are significant, again indicating nonnormality. Namely, the strategic intent quantity index for the PSFP category ($D(5) = 0.439$, $p = .002$), and the corporate strategy excellence index for the PAFP category ($D(5) = 0.362$, $p = .031$). It may, therefore, be considered that the dataset displays minor nonnormality and that this may influence the results of both discriminant analysis and ANOVA I. Nevertheless, it has been noted that both the discriminant analysis (Tabachnick & Fidell, 2001) and ANOVA I (Field, 2005) techniques are robust to violations of this assumption and, therefore, the results obtained can still be interpreted with confidence. To provide additional confidence in

Figure 5.1. The relationship between the indices



the findings, distribution-free statistical inferential techniques were also conducted to provide a more detailed profile of results.

5.3 TESTS FOR THE ASSUMPTION OF HOMOGENEITY OF VARIANCE

The assumption of homogeneity of variance underlies a number of the inferential statistical techniques employed in this study (except BDM, ANOVA1 [when reporting Welch's F], planned contrasts, GH, T2 and T3). The assumption of homogeneity of variance, as measured by the Levene's test, is violated by the organisational domain index ($F(2,12) = 5.575, p = .019$ based on mean). However, the variance ratio measure indicates all of the indices, except for the corporate strategy index, violate this assumption (i.e., ratio value of greater than two). The conflicting result highlights the difficulty in ascertaining a possible violation of this assumption. However, it may be concluded that a minor violation of the assumption of homogeneity of variance in the attribute indices exists.

Contradictory results are also evident in the quantity and excellence indices whereby the Levene's test reveals violations of the assumption of heterogeneity of variance for the following two indices: strategic intent quantity index ($F(2,12) = 5.382, p = .021$ based on mean); and organisational domain quantity index ($F(2,12) = 5.154, p = .024$ based on mean). However, the variance ratio indicates that all indices, but the organisational domain excellence and internal governance quantity indices, are heterogeneous. It is considered that there is a possible minor violation of the assumption of homogeneity of variance in the excellence and quantity indices. Nevertheless, the reason why the various statistical inferential techniques were selected is that they could inherently accommodate this *possible* minor violation. Therefore, any possible implications of the violation of the assumption of homogeneity of variance have been minimised and the results of this research remain to be interpreted with confidence.

5.4 EXPLORATORY DATA RESULTS

Various exploratory data analyses were performed (refer to Appendix 3). The exploratory analysis of the descriptive statistics and box plots for the corporate strategy index as measured by this research suggest that the PSFP category differs from the other firm performance categories supporting H_5 . The curvilinear relationship between firm performance and the corporate strategy index predicted is observed. The results of the descriptive statistics reveal that the PIFP category

possesses the lowest M strategic intent attribute index while the PAFP category the highest. The PSFP category then did not display the highest level of strategic intent index as predicted for this dataset. Instead, a curvilinear relationship between the strategic intent attribute index and firm performance is observed. The exploratory analysis of the box plots also suggests that the medians of the three firm performance categories are minimally different, thus suggesting limited support for H_1 .

The M plus or minus the standard error provide an indication that the firm performance categories could be distinguished on the basis of each of the other attribute indices. For the organisational domain and internal governance attribute indices, the PAFP category could be differentiated from both of the non-PAFP categories. For the resource governance attribute index, the PSFP category is discriminated from the other two categories. The descriptive statistics of the organisational domain, internal and resource governance attribute indices suggest support for H_2 , H_3 and H_4 . The M of the three firm performance categories are, therefore, heterogeneous and follow the curvilinear relationship hypothesised. The exploratory data analysis then indicates some support for four of the five hypotheses whereby the corporate strategy, organisational domain, internal governance and resource governance indices as measured in this research could be used to distinguish between the three firm performance categories.

PART II: HYPOTHESIS TESTING: BETWEEN-FIRM PERFORMANCE CATEGORIES

5.5 HYPOTHESIS TESTING OVERVIEW

A number of statistical tests were performed to analyse the level of group heterogeneity between the three firm performance categories for corporate strategy and each of the four corporate strategy attributes as measured by this research. These tests aim to determine if any of these indices could be utilised to distinguish the PSFP from the other two firm performance categories. The results for the five hypotheses outlined in Chapter Three will now be presented.

The results for each hypothesis are divided into two sections. The first section investigates whether any of the firm performance categories differ from any of the other firm performance categories. KW, BDM, and JT (where appropriate) are employed to analyse the difference between the medians for the firm performance categories. A corresponding parametric test was

also performed on the dataset, namely, ANOVA1 (Welch's F is reported due to possible violation of assumption of homogeneity of variance). The profile of results concur with the distribution-free tests.

The second section examines if the PSFP category could be distinguished from the non-PSFP category. When a statistically significant result is obtained from the Section 1 analyses, two distribution-free post-hoc tests were performed for KW: MW and SC. Four post-hoc tests for ANOVA1 are also performed: Planned contrasts, GH, T2, and T3. Discriminant analysis is utilised to differentiate between the three firm performance categories. The only statistically significant results relate to the resource governance attribute index and thus, are discussed in the resource governance section.

5.6 HYPOTHESIS TESTING: CORPORATE STRATEGY

H_5 hypothesises that corporate strategy could be used to distinguish the PSFP category from the non-PSFP categories. A curvilinear relationship between corporate strategy and firm performance is predicted, that is, the PIFP and PSFP categories are expected to possess lower corporate strategy than the PAFP category. A number of versions of H_5 are tested, depending on the test employed.

5.6.1 Did the corporate strategy index differ between the firm performance categories?

Three analyses were conducted to examine whether the corporate strategy index differs between firm performance categories: KW, BDM and ANOVA1. The results are outlined below.

a) *Kruskal-Wallis test*

KW identifies if at least one of the firm performance categories differs from at least one of the other categories in terms of corporate strategy. The following two hypotheses are tested by KW:

$$H_0: Mdn(PIFP CS) = Mdn(PAFP CS) = Mdn(PSFP CS)$$

$$H_5: Mdn(PIFP CS) \neq Mdn(PAFP CS) \neq Mdn(PSFP CS).$$

An inspection of Table 5.1 indicates that the PSFP category has the lowest corporate strategy index mean rank score (4.4), with the PAFP category reporting the highest corporate strategy

score (11.8). As the value of H is greater than the critical value of 5.660 (refer to Section 4.8.2b), H_0 could be rejected at the $p < .05$ level in favour of H_5 ($H(2) = 6.86, p = .024$). The Monte Carlo estimate of significance is .025 and the confidence interval for significance is .021 - .029. The confidence interval did not exceed .05 indicating that the significant effect is genuine (Field, 2005). The effect size ($\eta^2 = .49$) signified a strong relationship between the corporate strategy index and firm performance category. The results *support* H_5 , that is, there is a statistically significant ($p < .05$) difference in the corporate strategy index whereby at least one, or both of the firm performance categories differs from another.

Table 5.1. Kruskal-Wallis test for the corporate strategy index

Firm performance category	Mean rank	H
PIFP	7.8	6.86
PAFP	11.8	$p = .024$
PSFP	4.4	

Key: $df = 2$
 H significance: Exact significance
 Significant result highlighted in bold

b) Brunner, Detter and Munk heteroscedastic rank-based ANOVA method

BDM ascertains if at least one of the firm performance categories differs from at least one of the other categories in terms of the corporate strategy index (accounting for violation of homogeneity of variance assumption). The two hypotheses tested by BDM are the same as those displayed in the KW section. The BDM findings support the KW results as a significant difference between the three firm performance categories is found ($F = 5.765, p = .013$) and, thus, H_0 could be rejected at the $p < .05$ level in favour of H_5 . Furthermore, the average of ranks follow the same pattern as that displayed by the KW results (PSFP = .260, PIFP = .487, PAFP = .753). The results *support* H_5 , that is, there is a statistically significant difference at the $p < .05$ level in the corporate strategy index whereby at least one or both of the firm performance categories differs from another.

c) One-way independent ANOVA

ANOVA I compares the variance among the means of the three firm performance categories to variances within the firm performance categories (the results displayed do not assume equal variances). ANOVA I determines if the means are derived from different populations. The following two hypotheses were tested by ANOVA I:

$H_0: M(\text{PIFP CS}) = M(\text{PAFP CS}) = M(\text{PSFP CS})$

$H_5: M(\text{PIFP CS}) \neq M(\text{PAFP CS}) \neq M(\text{PSFP CS}).$

The ANOVA1 results support the KW and BDM findings as they reveal a significant effect of corporate strategy on firm performance (Welch's $F(2,7.87) = 5.11, p = .038, \omega = .71$) and, thus, H_0 could be rejected at the $p < .05$ level in favour of H_5 . Furthermore, a significant quadratic trend ($F(1,12) = 9.70, p = .009, \omega = .80$) is evident indicating that, as firm performance increases, the corporate strategy index increases and then declines; in other words, a curvilinear association may be observed. Therefore, the results *support* H_5 , that is, there is a statistically significant ($p < .05$) difference in the corporate strategy index whereby at least one or both of the firm performance categories differs from another.

5.6.2 Could the corporate strategy index be used to distinguish the PSFP category from the non-PSFP categories?

A number of analyses were employed to determine how the corporate strategy index differs between the three firm performance categories: MW, SC, planned contrasts, GH, T2 and T3.

a) *Mann-Whitney tests: A post-hoc test for the Kruskal-Wallis test*

Three exhaustive MW analyses were performed as a post-hoc test for KW, testing the difference in ranked position of the corporate strategy index between PIFP and PAFP, PIFP and PSFP and, lastly, PAFP and PSFP. The results for two comparisons are nonsignificant ($p < .0167$): PIFP and PAFP ($U = 5.00, p = .075$ one-tailed, $r = -.50$); and PIFP and PSFP ($U = 6.00, p = .111$ one-tailed, $r = -.43$); refer to Table 5.2.

Table 5.2. Mann-Whitney tests for the corporate strategy index: Post-hoc test for the Kruskal-Wallis test

Firm performance category	Mann-Whitney U	Significance	Effect size	Effect magnitude
PIFP PAFP	5.000	0.075	-0.50	moderate
PIFP PSFP	6.000	0.111	-0.43	moderate
PAFP PSFP	1.000	0.008	-0.76	strong

Key: Significance: Exact significance (one-tailed)
Significant result highlighted in bold

As evident in Table 5.2, MW yields one significant result ($p < .0167$) with a strong effect size suggesting that the mean ranks of the PAFP and PSFP categories are significantly different ($U = 1.00, p = .008$ one-tailed, $r = -.76$). This result supports the KW results (refer to Table 5.1) where an indication of how the firm performance categories differ is reflected in the difference in

the mean rank of the corporate strategy index whereby the PAFP category is characterised by higher levels of corporate strategy (11.8) than the PSFP category (4.4). Therefore, H_5 is *partially supported*, as the corporate strategy index could be used to distinguish the PSFP category from the PAFP category at the $p < .0167$ level.

b) *Siegel-Castellan critical difference test: A post-hoc test for the Kruskal-Wallis test*

SC reveals where the difference in ranked means of the corporate strategy index exist when making a comparison between PIFP and PAFP, PIFP and PSFP and lastly, PAFP and PSFP. The results are displayed in Table 5.3 and support the MW conclusion that for the corporate strategy index, the difference between the firm performance categories is due to the difference between the PAFP and PSFP categories. Therefore, H_5 is *partially supported* as the corporate strategy index could be used to distinguish the PSFP category from the PAFP category.

Table 5.3. Siegel-Castellan critical difference test for the corporate strategy index: Post-hoc test for the Kruskal-Wallis test

Firm performance category	Ru	Rv	Ru - Rv	Greater than critical difference
PIFP - PAFP	7.8	11.8	4	-2.79
PAFP - PSFP	11.8	4.4	7.4	0.61
PIFP - PSFP	7.8	4.4	3.4	-3.39

Key: Significant result highlighted in bold

c) *Planned contrasts: Post-hoc tests for one-way independent ANOVA*

The planned contrast test results support the findings derived from the above two post-hoc KW tests. The planned contrasts test indicate that the PSFP category significantly differs from the PAFP category ($t(7.48) = 3.30, p = .006$ (one-tailed), $r = .77$). Note that these results do not assume equal variances. Therefore, H_5 is *partially supported* as the corporate strategy index could be used to distinguish the PSFP category from the PAFP category at the $p < .05$ level.

d) *Pairwise comparison tests: Post-hoc tests for one-way independent ANOVA*

Three post-hoc pairwise comparison tests accounting for violation of the assumption of homogeneity of variance were performed. The GH, T2, and T3 results reveal that the PSFP category differs significantly from the PAFP category (mean difference = 379.4, $p = .028 - .035$). Therefore, H_5 is again *partially supported* as the corporate strategy index could be used to distinguish the PSFP category from the PAFP category at the $p < .05$ level.

5.7 HYPOTHESIS TESTING: STRATEGIC INTENT

H₁ hypothesises that strategic intent could be used to distinguish the PSFP category from the non-PSFP categories. It is predicted that strategic intent increases as firm performance increases, that is, it is expected that the PIFP category possesses a lower level of strategic intent than the PAFP and PSFP categories. The highest level of strategic intent is expected to occur in the PSFP category, that is,

$$H_0: \text{Mdn}(\text{PIFP SI}) = \text{Mdn}(\text{PAFP SI}) = \text{Mdn}(\text{PSFP SI})$$

$$H_1: \text{Mdn}(\text{PIFP SI}) < \text{Mdn}(\text{PAFP SI}) < \text{Mdn}(\text{PSFP SI}).$$

The JT results are nonsignificant ($J = 42.0, p = .340, z = 0.475, r = .12$). The positive value for z indicates that the medians of the strategic intent index increases as firm performance increases. However, since 42.0 is less than the critical value of 54.0, H₀ that the three medians are equal could not be rejected. Thus, H₁ *cannot be accepted* as there is not a statistically significant difference at the $p < .05$ level in the strategic intent attribute index in the data collected, whereby none of the firm performance categories differ (statistically) from another. The implications of this outcome are explored further in Chapter Six.

5.8 HYPOTHESIS TESTING: ORGANISATIONAL DOMAIN

H₂ hypothesises that organisational domain could distinguish the PSFP category from the non-PSFP categories. Three analyses were utilised to identify whether the organisational domain attribute index differs between firm performance categories: KW, BDM and ANOVA1. The following two hypotheses are tested by KW and BDM:

$$H_0: \text{Mdn}(\text{PIFP OD}) = \text{Mdn}(\text{PAFP OD}) = \text{Mdn}(\text{PSFP OD})$$

$$H_2: \text{Mdn}(\text{PIFP OD}) \neq \text{Mdn}(\text{PAFP OD}) \neq \text{Mdn}(\text{PSFP OD}).$$

The following two hypotheses are tested by ANOVA1:

$$H_0: M(\text{PIFP OD}) = M(\text{PAFP OD}) = M(\text{PSFP OD})$$

$$H_2: M(\text{PIFP OD}) \neq M(\text{PAFP OD}) \neq M(\text{PSFP OD}).$$

KW identified a statistically nonsignificant difference in the organisational domain index across the three firm performance categories ($H(2) = 3.84, p = .153$); refer to Appendix 4, Section 1.0. The BDM and ANOVA I results are also nonsignificant ($F = 2.268, p = .136$ and Welch's $F(2,6.62) = 2.31, p = .173, \omega = .59$ respectively). Consequently, H_0 cannot be rejected in favour of H_2 at the $p < .05$ level. H_2 *cannot be accepted* as there is again no statistically significant difference at $p < .05$ in the organisational domain attribute index.

5.9 HYPOTHESIS TESTING: INTERNAL GOVERNANCE

H_3 predicts that internal governance could distinguish the PSFP category from the non-PSFP categories. Three analyses were utilised to determine whether the internal governance attribute index differs between firm performance categories: KW, BDM and ANOVA I. The following two hypotheses are tested by KW and BDM:

$$H_0: Mdn(PIFP IG) = Mdn(PAFP IG) = Mdn(PSFP IG)$$

$$H_3: Mdn(PIFP IG) \neq Mdn(PAFP IG) \neq Mdn(PSFP IG).$$

The following two hypotheses are tested by ANOVA I:

$$H_0: M(PIFP IG) = M(PAFP IG) = M(PSFP IG)$$

$$H_3: M(PIFP IG) \neq M(PAFP IG) \neq M(PSFP IG).$$

KW found that there is not a statistically significant difference in the internal governance attribute index across the three firm performance categories ($H(2) = 1.24, p = .565$); refer to Appendix 4, Section 2.0. The BDM and ANOVA I results are also nonsignificant ($F = 0.582, p = .638$ and Welch's $F(2,7.86) = 0.68, p = .532, \omega = .14$ respectively). Consequently, H_0 again cannot be rejected in favour of H_3 . H_3 *cannot be accepted* as there is not a statistically significant difference at the level of $p < .05$ in the internal governance attribute index.

5.10 HYPOTHESIS TESTING: RESOURCE GOVERNANCE

H_4 hypothesises that resource governance could distinguish the PSFP category from the non-PSFP categories. The PIFP and PSFP categories are expected to possess lower resource governance than the PAFP category, that is, a curvilinear relationship.

5.10.1 Did the resource governance attribute index differ between the firm performance categories?

- a) *Kruskal-Wallis one-way analysis of variance by ranks, Brunner, Deitter and Munk heteroscedastic rank-based ANOVA and One-way independent ANOVA tests*

Three analyses were utilised to determine whether the resource governance attribute index differs between firm performance categories: KW, BDM and ANOVA1. The following two hypotheses are tested by KW and BDM:

$$H_0: Mdn(PIFP RG) = Mdn(PAFP RG) = Mdn(PSFP RG)$$

$$H_4: Mdn(PIFP RG) \neq Mdn(PAFP RG) \neq Mdn(PSFP RG).$$

The following two hypotheses are tested by ANOVA1:

$$H_0: M(PIFP RG) = M(PAFP RG) = M(PSFP RG)$$

$$H_4: M(PIFP RG) \neq M(PAFP RG) \neq M(PSFP RG).$$

The KW results identified a statistically significant difference in the resource governance index across the three firm performance categories ($H(2) = 8.24, p = .08$); refer to Appendix 4, Section 3.1. The results suggest that one of the firm performance categories differ from either one of, or both of, the other categories. The Monte Carlo estimate of significance is .009. The confidence interval for significance is .007 - .011 which did not exceed $p < 0.05$ indicating that the significant effect is genuine (Field, 2005). The effect size ($\eta^2 = .59$) signified a strong relationship between the resource governance index and firm performance category. The BDM results support the KW findings ($F = 8.583, p = .010$). The mean rank results for both KW and BDM tests are displayed in Appendix 4, Section 3.1.

ANOVA1 also reveals that a significant effect of the resource governance attribute index on firm performance exists (Welch's $F(2,6.97) = 48.72, p = .0001, \omega = .78$). There is a significant linear trend ($F(1,12) = 12.22, p = .004, \omega = .83$) indicating that as firm performance increases, the resource governance index increases proportionally. A significant quadratic trend ($F(1,12) = 5.78, p = .034, \omega = .70$) is also evident. Thus, the KW, BDM and ANOVA1 results *support* H_4 , that is, there was a statistically significant difference at $p < .05$ in the resource governance attribute index, meaning that at least one, if not two, firm performance categories differ from one another.

b) *Discriminant analysis*

Table 5.4. Discriminant analysis: Summary of results

Predictor variable 1	Predictor variable 2	Statistics
Strategic intent	Organisational domain	$\Lambda = .589, X^2(4, N = 15) = 6.093, p = .192$
Strategic intent	Resource governance	$\Lambda = .366, X^2(4, N = 15) = 11.544, p = .021$
Strategic intent	Internal governance	$\Lambda = .843, X^2(4, N = 15) = 1.963, p = .742$
Organisational domain	Resource governance	$\Lambda = .270, X^2(4, N = 15) = 15.071, p = .005$
Organisational domain	Internal governance	$\Lambda = .588, X^2(4, N = 15) = 6.111, p = .191$
Resource governance	Internal governance	$\Lambda = .353, X^2(4, N = 15) = 11.985, p = .017$

Key: Statistically significant results are in bold

For the purposes of this analysis, the attribute indices are referred to as predictor variables. Various combinations of the four predictors (i.e., attribute indices) were entered into six discriminant analysis analyses (termed models) to determine whether these predictors could correctly classify to which of the three firm performance categories the 15 firms belonged. The six discriminant models all yielded two discriminant functions. Even though it is expected that the discriminant model would have insufficient detection power (refer to Appendix 5, Section 1.0), the statistical significance ($p < .05$) of the three discriminant analysis models utilising the resource governance attribute index as one of the predictor variables, distinguishes between the three firm performance categories (refer to Table 5.4). Wilks' Lambda is significant for three of the combinations of predictor variables (bolded in Table 5.4), indicating that these predictors could sufficiently differentiate between firm performance categories whereby any combination of predictor variable with the resource governance attribute index is statistically significant at $p < .05$ (refer to Appendix 5, Section 2.0). The results for the three statistically significant discriminant models are now discussed.

Two functions are calculated of which Function 1 is statistically significant at $p < .05$ (refer to Appendix 5, Section 3.0). The eigenvalues for Function 1 explain between 89.3 and 97.6% of the total variance (refer to Appendix 5, Section 3.0). The effect sizes are strong and range from .78 to .82 (refer to Appendix 5, Section 3.0). In addition, eta square also explains between 61.4 and 66.6% of the total variability of values within the firm performance categories for Function 1 (refer to Appendix 5, Section 3.0). In all three models, resource governance is found to make the greatest contribution to Function 1 (refer to Appendix 5, Section 4.0). The group centroids suggest that Function 1 maximally differentiates the PSFP category from both the PAFP and PIFP categories (refer to Appendix 5, Section 5.0).

For the original classification analyses, the range of correctly assigned firms into the correct firm performance categories was between 66.7 and 80.0% (refer to Appendix 5, Section 6.0). In comparison, the cross-validated analyses produces lower classification accuracy, ranging from 60 to 66.7% of firms. These results compare favourably to the 33.3% probability of correctly classifying the firms due to chance. In both the original and cross-validated classification analyses of the three models, the five PSFP firms are correctly assigned. The casewise results and scatter plots of Functions 1 and 2 for the three models are displayed in Appendix 5, Section 7.0. The Box's M findings indicate that misclassification could result from heterogeneous within-group covariances for two of the three models (refer to Appendix 5, Section 8.0). However, the classification results did not support this conclusion as only a maximum of six of the 15 firms are classified into the PIFP category for any one classification analysis. The Kappa results also denote a moderate level of prediction accuracy (refer to Appendix 5, Section 9.0). Therefore, H_5 is *supported*, the resource governance attribute index could be used to distinguish the PSFP category from those of both PAFP and PIFP.

5.10.2 Could the resource governance attribute index be used to distinguish the PSFP category from the non-PSFP categories?

Five types of analysis were employed to determine how the resource governance attribute index differed between the three firm performance categories: MW, SC, the planned contrasts, the pairwise comparison tests of GH, T2 and T3, and discriminant analysis. MW found one significant result ($p < .0167$) with a strong effect size (refer to Appendix 4, Section 3.2) suggesting that the mean ranks of the PAFP and PSFP categories are significantly different ($U = 0.00$, $p = .004$ one-tailed, $r = -.83$). The SC results confirm that for the resource governance index, the difference between the firm performance categories is due to the difference between the PAFP and PSFP categories (refer to Appendix 4, Section 3.3). Again, the GH, T2, and T3 results reveal that the PSFP category differs significantly from the PAFP category (mean difference = 181.0, $p = .000$). Therefore, H_4 is *partially supported*, the resource governance attribute index could be used to distinguish the PSFP category from the PAFP category.

However, the planned contrasts indicate that PSFP significantly differs from both the PIFP and PAFP categories ($t(4.54) = 2.90$, $p = .019$ (one-tailed), $r = .81$; $t(7.22) = 10.30$, $p = .000$ (one-tailed), $r = .97$ respectively). Therefore, H_4 is *supported*: the resource governance attribute index could be used to distinguish the PSFP category from both the PIFP and PAFP categories at the $p < .05$ level.

5.11 HYPOTHESIS TESTING RESULTS SUMMARY: PART II

Concordant observational support increases the validity of the findings as the various statistical techniques employed produce the same findings. The corporate strategy index is identified as being heterogeneous in regards to firm performance and the association between the two variables is curvilinear in nature. The heterogeneous observations in the corporate strategy index across the three firm performance categories is due to the difference between the PSFP and PAFP categories, that is, the corporate strategy index could be used to distinguish the PSFP category from the PAFP category (refer to Table 5.5). Thus, H_5 is partially supported at the $p < .05$ level. To uncover which corporate strategy attribute could account for this heterogeneity in firm performance, analyses were subsequently performed on each attribute.

Regrettably, there is insufficient statistical evidence at the $p < .05$ level to accept the following hypotheses: The strategic intent (H_1), organisational domain (H_2), and internal governance (H_3) attribute indices (refer to Table 5.5). Therefore, these attributes could not be used to distinguish the PSFP category from the non-PSFP categories. However, there is a statistically significant difference in the resource governance attribute index across the three firm performance categories (refer to Table 5.5). The KW results are supported by BDM and ANOVA (both of which adjusted for the possible violation of the assumption of homogeneity of variance). Therefore, H_0 could be rejected in favour of H_4 at the $p < .05$ level. Furthermore, the significant effect is genuine and suggests a strong relationship between the resource governance index and the firm's performance category.

Table 5.5. Summary of hypothesis results

Index	Ability to distinguish between firm performance category	Distinguish between firm performance category	Hypothesis ($p < .05$ level) (Mann-Whitney $p < .167$ level)
Corporate strategy	Yes	PSFP - PAFP PSFP - PIFP	H_5 Supported Cannot be accepted
Strategic intent	No	NA	H_1 Cannot be accepted
Organisational domain	No	NA	H_2 Cannot be accepted
Internal governance	No	NA	H_3 Cannot be accepted
Resource governance	Yes	PSFP - PAFP PSFP - PIFP	H_4 Supported Supported *

Key: NA Not applicable

* Results found by the planned contrasts only

Five of the six post-hoc tests, which provide an indication of how the firm performance categories differ, yielded one significant result suggesting that the PAFP and PSFP categories are significantly different (at the $p < .05$ level except MW where $p < .0167$ level); refer to Table 5.5. The planned contrasts also found a difference between the PSFP and PIFP categories. Therefore, H_4 is partially supported indicating that the heterogeneity observed in the corporate strategy index could be attributed to the difference in the resource governance attribute index. In other words, the resource governance index could distinguish the PSFP category from the PAFP category.

Three statistically significant discriminant analysis models utilising the resource governance attribute index as one of the predictor variables did distinguish between the three firm performance categories. The resource governance index is a significant predictor itself. The only statistically significant function explains between 89.3 and 97.6% of the total variance. Function I explains between 61.4 and 66.6% of the total variability of values within the firm performance categories. The effect sizes are strong. The group centroids suggest that Function I maximally differentiates the PSFP category from the PAFP and PIFP categories. For the original classification analyses, the range of correctly assigned firms was between 66.7 and 80.0%. In comparison, the cross-validated analyses produced lower classification accuracy, ranging from 60 to 66.7% of firms. These results compare favourably to the 33.3% probability of correctly classifying the firms due to chance. The Kappa results signify a moderate level of prediction accuracy. In both the original and cross-validated classifications of the three models, all five PSFP firms are correctly assigned.

PART III: HYPOTHESIS TESTING: EXCELLENCE AND QUANTITY INDICES

5.12 EXCELLENCE AND QUANTITY OVERVIEW

The corporate strategy attributes are composed of a combination of indicators representing both excellence and quantity (refer to Chapters Three and Four). A number of statistical tests were performed to analyse the level of group heterogeneity between the three firm performance categories for each of the excellence and quantity indices. The results of testing the nine subhypotheses outlined in Chapter Three are presented as follows: The corporate strategy excellence index, the corporate strategy quantity index, and lastly, the tests of the quantity indices are then reported.

5.13 HYPOTHESIS TESTING: CORPORATE STRATEGY EXCELLENCE

H_{1b} , H_{2b} , H_{3b} , and H_{4b} predict that the excellence indices could also distinguish the PSFP category from the non-PSFP categories. The association between excellence indices and firm performance follows a linear relationship. The PSFP category is hypothesised to possess a higher incidence than the PIFP and PAFP categories.

5.13.1 Did the corporate strategy excellence index differ between the firm performance categories?

a) *Descriptive statistics*

Table 5.6. Descriptive statistics: The corporate strategy excellence index by firm performance category

Statistic	Firm performance category		
	PIFP	PAFP	PSFP
Mean	207.4	207.6	192.2
Mean standard error	37.6	50.8	23.2
Mean minus standard error	169.8	156.8	169.0
Mean plus standard error	245.0	258.4	215.4
5% trimmed mean	207.7	202.6	194.0
Median	201	180	210
Standard deviation	84.1	113.7	52.0
Minimum	113	104	111
Maximum	296	402	241
Skewness	0.0	1.7	-1.1
Skewness standard error	0.9	0.9	0.9
Kurtosis	-2.8	3.6	0.7
Kurtosis standard error	2.0	2.0	2.0

H_{5b} hypothesises that corporate strategy excellence could be used to distinguish the PSFP category from the non-PSFP categories. It is predicted that the incidence of corporate strategy excellence increases as firm performance increases, that is, it is expected that the PIFP category possesses the lowest incidence of corporate strategy excellence and the PSFP category would experience the highest incidence. This section presents the results for the following two subhypotheses:

$$H_0: M(\text{PIFP CSX}) = M(\text{PAFP CSX}) = M(\text{PSFP CSX})$$

$$H_{5b}: M(\text{PIFP CSX}) < M(\text{PAFP CSX}) < M(\text{PSFP CSX}).$$

The corporate strategy excellence index M for the PSFP category is not the highest as expected (refer to Table 5.6). In fact, the PSFP category records the lowest M for excellence ($M = 192.2$, $s = 52.0$). The difference between, firstly, the M and medians and, secondly, between the M and 5% trimmed M across the three firm performance categories are similar. The distribution of the PAFP category displays greater variability as reflected by the higher s (113.7) than is evident in the other two firm performance categories. The PSFP category displays the lowest variability. It also exhibits strong negative skewness. Negligible positive skewness is evident in the PIFP while the PAFP category displays strong positive skewness. The PIFP and PAFP categories exhibit strong kurtosis (PIFP was negative) whereas the PSFP category is characterised by moderate positive kurtosis (the box plot for the three firm performance categories are presented in Appendix 6, Section 1.0).

H_{5b} predicts that the corporate strategy excellence index could be used to distinguish the PSFP category from the non-PSFP categories. A curvilinear relationship between the corporate strategy excellence index and firm performance was not expected. However, the M differs only slightly between the three firm performance categories. The lack of a difference between the M plus or minus the standard error across the firm performance categories suggests that none of the three firm performance categories could be distinguished from the other firm performance categories. Thus, this test does not provide any statistically significant evidence that the M differs. The nature of the association between the corporate strategy excellence index and firm performance as predicted is not evident in the data collected; in other words, the corporate strategy excellence index M are similar (i.e., H_0 or H_{5b} cannot be rejected or accepted with any certain probability); H_{5b} is *not supported*.

b) *Jonckheere-Terpstra test*

The results of the JT test for corporate strategy excellence are presented in this section. The highest level of corporate strategy excellence is expected to occur in the PSFP category that is,

$$H_0: Mdn(PIFP CSX) = Mdn(PAFP CSX) = Mdn(PSFP CSX)$$

$$H_{5b}: Mdn(PIFP CSX) < Mdn(PAFP CSX) < Mdn(PSFP CSX).$$

The results are again nonsignificant ($J = 37.0$, $p = .500$, $z = -0.053$, $r = -.01$), suggesting that the H_0 that the three firm performance category medians are equal, and could not be rejected at $p < .05$. The negative value for z indicates that the medians decrease as firm performance increases. Thus, H_{5b} *cannot be accepted* as there is not a statistically significant difference at the $p < .05$

level in the corporate strategy excellence index in the data collected. None of the firm performance categories differ from another. Thus, the three excellence indices of strategic intent, organisational domain and resource governance will not be discussed (the JT results are displayed in Appendix 6, Section 2.0).

5.14 HYPOTHESIS TESTING: CORPORATE STRATEGY QUANTITY

H_{5a} predicts that the corporate strategy quantity index could distinguish the PSFP category from the non-PSFP categories. The association between the corporate strategy quantity index and firm performance is expected to follow a curvilinear relationship. The PIFP category is predicted to be characterised by a lower observation in the number of corporate strategy quantity index than the PAFP category. In addition, the PSFP category is also expected to possess a lower incidence of corporate strategy quantity than the PAFP category.

5.14.1 Did the corporate strategy quantity index differ between the firm performance categories?

a) *Descriptive statistics*

This section presents the results for tests on the following two subhypotheses:

$$H_0: M(\text{PIFP CSQ}) = M(\text{PAFP CSQ}) = M(\text{PSFP CSQ})$$

$$H_{5a}: M(\text{PIFP CSQ}) < M(\text{PAFP CSQ}) > M(\text{PSFP CSQ}).$$

An inspection of the statistics in Table 5.7 suggests that the corporate strategy quantity index reflects the curvilinear relationship as expected, that is $M_{\text{PIFP}} < M_{\text{PAFP}} > M_{\text{PSFP}}$. The lowest measurement of the corporate strategy quantity index is the PSFP category and the highest observation is recorded by the PAFP category. The difference between the M and the 5% trimmed M is minor across the firm performance categories except for the PAFP category. The largest difference between the M and the median is also reflected in the PAFP category. Large s scores are evident for the PAFP category ($s = 210.4$) and the PIFP category records the lowest s (73.3). Strong positive skewness and kurtosis characterise the PAFP category. The other two categories display moderate positive skewness and strong negative kurtosis.

H₀ proposes that the corporate strategy quantity index could not be used to distinguish the PSFP category from those of non-PSFP categories of firm performance. The M differs between the

three firm performance categories. A difference is also evident in the M plus or minus the standard error across the three firm performance categories suggesting that the PSFP category could be distinguished from both the non-PSFP categories. This provides some evidence that the M differs statistically. H_0 could then be rejected. The predicted curvilinear relationship between the corporate strategy quantity index and firm performance appears to be supported as the M rises and then decreases as firm performance increases (i.e., PIFP, PAFP, PSFP). The following analyses are able to calculate statistically significant results.

Table 5.7. Descriptive statistics: The corporate strategy quantity index by firm performance category

Statistic	Firm performance category		
	PIFP	PAFP	PSFP
Mean	701.2	892.8	526.8
Mean standard error	32.8	94.1	45.1
Mean minus standard error	668.4	798.7	481.7
Mean plus standard error	734.0	986.9	571.9
5% trimmed mean	699.6	881.9	525.0
Median	708	806	502
Standard deviation	73.3	210.4	100.8
Minimum	628	729	416
Maximum	803	1252	670
Skewness	0.4	1.8	0.6
Skewness standard error	0.9	0.9	0.9
Kurtosis	-1.1	3.2	-0.8
Kurtosis standard error	2.0	2.0	2.0

b) Statistical inferential tests

Three tests were conducted to examine whether the corporate strategy quantity index differs between firm performance categories: KW, BDM and ANOVA1. The following two subhypotheses are tested by KW and BDM:

$$H_0: Mdn(PIFP\ CSQ) = Mdn(PAFP\ CSQ) = Mdn(PSFP\ CSQ)$$

$$H_{5a}: Mdn(PIFP\ CSQ) \neq Mdn(PAFP\ CSQ) \neq Mdn(PSFP\ CSQ).$$

The following two hypotheses are tested by ANOVA1:

$$H_0: M(PIFP\ CSQ) = M(PAFP\ CSQ) = M(PSFP\ CSQ)$$

$$H_{5a}: M(PIFP\ CSQ) \neq M(PAFP\ CSQ) \neq M(PSFP\ CSQ).$$

The KW test found that the corporate strategy quantity index is statistically significant at the $p < .05$ level ($H(2) = 10.14, p = .001$); refer to Appendix 6, Section 3.1. The results suggest that one of the firm performance categories differs from either one of, or both of, the other categories. Thus, H_0 could be rejected in favour of H_{5a} at the $p < .05$ level. The effect size ($\eta^2 = .72$) is strong, indicating a large association between the corporate strategy quantity index and related firm performance category. Statistically significant BDM results at the $p < .05$ level are also obtained for the corporate strategy quantity index ($F = 15.762, p = .0002$).

ANOVA1 also reveals a statistically significant result (Welch's $F(2,6.23) = 10.82, p = .009, \omega = .74$). The corporate strategy quantity index displays a significant quadratic trend ($F(1,12) = 13.00, p = .004, \omega = .84$) signifying that, as firm performance increases, the corporate strategy quantity index increases and then declines; in other words, its incidence follows the expected curvilinear pattern. Therefore, the KW, BDM and ANOVA1 results *support* H_{5a} . There is a statistically significant ($p < .05$) difference in the corporate strategy quantity index as measured by this research whereby at least one of the firm performance categories differs from another.

5.14.2 Could the corporate strategy quantity index be used to distinguish the PSFP category from the non-PSFP categories?

The corporate strategy quantity index SC test results indicate that a difference in ranked means is evident between the PAFP – PSFP categories (refer to Appendix 6, Section 3.2). Thus, the difference between the firm performance categories is due to, at least in part, the differences between the PAFP and PSFP categories. Therefore, H_{5a} is *partially supported* as the corporate strategy quantity index could be used to distinguish the PSFP category from the PAFP category.

However, as evident from results presented in Appendix 6, Section 3.3, MW found two statistically significant ($p < .0167$) results (PIFP – PSFP $U = 2.000, p = .016$ one-tailed, $r = -.79$; and PAFP – PSFP $U = 0.000, p = .004$ one-tailed, $r = -.83$). Thus, the corporate strategy quantity index could be used to distinguish the PSFP category from both the PAFP and PIFP categories. In addition, both these combinations have strong effects. The planned contrasts also indicate that the PSFP category significantly differs from both the PIFP and PAFP categories ($t(7.31) = 3.13, p = .008$ (one-tailed), $r = .76$; $t(5.74) = 3.51, p = .007$ (one-tailed), $r = .83$ respectively). However, the PIFP category does not differ from the PAFP category. Again, the three post-hoc pairwise comparison tests accounting for violation of the assumption of homogeneous variance reveal that the PSFP category differs significantly from both the PAFP category (mean difference = 366.0, p ranges from .031 to .040) and the PIFP category (mean difference = 174.7,

p ranges from .037 to .046). Therefore, H_{5a} is *supported* as the corporate strategy quantity index could be used to distinguish the PSFP category from both the non-PSFP categories at the $p < .05$ level. To uncover if any of the quantity indices could account for this distinction between the PSFP category and both the non-PSFP categories, further analysis was conducted to test four subhypotheses, namely, H_{1a} , H_{2a} , H_{3a} , and H_{4a} .

5.15 HYPOTHESIS TESTING: QUANTITY INDICES

H_{1a} , H_{2a} , H_{3a} , and H_{4a} predict that the quantity indices could also distinguish the PSFP category from the non-PSFP categories. The association between quantity indices and firm performance also follows a curvilinear relationship. The PAFP category is hypothesised to possess a lower incidence than the PIFP and PSFP categories.

5.15.1 Did the quantity indices differ between the firm performance categories?

a) *Descriptive statistics*

This section presents the descriptive statistics results for the following two subhypotheses:

$$H_0: M(\text{PIFP } x) = M(\text{PAFP } x) = M(\text{PSFP } x)$$

$$H_{xa}: M(\text{PIFP } x) < M(\text{PAFP } x) > M(\text{PSFP } x).$$

An inspection of the statistics in Table 5.8 suggests that the M for the strategic intent quantity index did not conform to expectations as the M decreases and then rises as firm performance increases. The M of the PSFP category is distorted by an outlier (reflected in the larger skewness and kurtosis). However, the remaining quantity indices reflect the curvilinear relationship as expected, that is, $M_{\text{PIFP}} < M_{\text{PAFP}} > M_{\text{PSFP}}$. The lowest measurement of the quantity indices is the PSFP category and the highest observation is recorded by the PAFP category (except for the strategic intent quantity index). The difference between the M and the 5% trimmed M is minor across the quantity indices. Large differences between the M and the median are evident in the following quantity indices: Organisational domain, internal governance and, lastly, resource governance. Large standard deviation scores are evident across the various quantity indices especially for the PAFP category (except the strategic intent quantity index). The PSFP category records an especially high standard deviation for the strategic intent quantity index. Strong skewness and kurtosis characterises the strategic intent quantity index for the PAFP and

Table 5.8. Descriptive statistics: The quantity indices by firm performance category

Statistic	Strategic intent quantity			Organisational domain quantity			Internal governance quantity			Resource governance quantity		
	PIFP	PAFP	PSFP	PIFP	PAFP	PSFP	PIFP	PAFP	PSFP	PIFP	PAFP	PSFP
Mean	5.2	4.2	11.8	225.8	327.2	208.6	145.2	205.0	131.2	325.0	356.4	175.2
Mean standard error	0.7	0.9	7.3	15.9	43.6	32.5	33.4	42.8	32.0	45.0	43.3	13.9
Mean minus standard error	4.5	3.3	4.5	209.9	283.6	176.1	111.8	162.2	99.2	280.0	313.1	161.3
Mean plus standard error	5.9	5.1	19.1	241.7	370.8	241.1	178.6	247.8	163.2	370.0	399.7	189.1
5% trimmed mean	5.2	4.3	10.7	226.0	326.3	211.1	143.3	204.1	132.8	323.6	355.6	175.7
Median	6	5	5	229	290	232	146	193	153	314	361	179
Standard deviation	1.6	1.9	16.4	35.5	97.4	72.6	74.8	95.6	71.5	100.6	96.7	31.0
Minimum	3	1	3	180	235	98	68	100	23	205	236	130
Maximum	7	6	41	268	436	275	256	327	210	471	492	212
Skewness	-0.5	-1.5	2.2	-0.2	0.4	-1.0	0.7	0.3	-0.9	0.5	0.3	-0.6
Skewness standard error	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Kurtosis	-1.7	2.6	4.9	-1.5	-3.1	0.0	0.0	-2.0	0.5	0.2	0.0	0.3
Kurtosis standard error	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

PSFP categories (the PIFP category displayed strong negative kurtosis). The PAFP category records strong kurtosis for the following quantity indices: strategic intent, organisational domain, internal governance (also refer to Appendix 6, Section 4.1 for the box plots of the three firm performance categories).

H_0 proposes that the quantity indices could not be used to distinguish the PSFP category from the non-PSFP categories. The M differs between the three firm performance categories across the four quantity indices. The lack of a difference between the M plus or minus the standard error across the firm performance categories for the strategic intent and internal governance quantity indices suggests that the three firm performance categories could not be distinguished from the other firm performance categories. For the organisational domain quantity index, the PAFP category could be distinguished from the other two firm performance categories. The PSFP category could be distinguished from both the non-PSFP categories in terms of the resource governance quantity index. These results provide some evidence that the M differs statistically in terms of the organisational domain and resource governance quantity indices. H_0 could then be rejected. The prediction of a curvilinear relationship between the quantity indices and firm performance may be supported as the M rises and then decreases as firm performance increases (i.e., PIFP, PAFP, PSFP) except for the strategic intent quantity index. This prediction is not supported here as the relationship between it and firm performance represents a “U-shaped” association. The following analyses were able to calculate statistically significant results.

b) *Statistical inferential tests*

Three tests were conducted to examine whether the quantity indices differ between firm performance categories: KW, BDM and ANOVA1. The following two hypotheses are tested by KW and BDM:

$$H_0: Mdn(PIFP\ x) = Mdn(PAFP\ x) = Mdn(PSFP\ x)$$

$$H_{xa}: Mdn(PIFP\ x) \neq Mdn(PAFP\ x) \neq Mdn(PSFP\ x).$$

The following two hypotheses are tested by ANOVA1:

$$H_0: M(PIFP\ x) = M(PAFP\ x) = M(PSFP\ x)$$

$$H_{xa}: M(PIFP\ x) \neq M(PAFP\ x) \neq M(PSFP\ x).$$

The KW tests yielded one statistically significant difference for the quantity indices across the three firm performance categories (refer to Appendix 6, Section 4.2), that is, the resource governance quantity index ($H(2) = 8.82, p = .005$). The high values for the resource governance quantity index also suggest that the ranks are not distributed evenly between the three firm performance categories. Thus, H_0 could be rejected in favour of H_{4a} at the $p < .05$ level as one of the firm performance categories differs from either one of, or both of, the other categories. The Monte Carlo estimate of significance for the resource governance quantity index is .006. The confidence interval for significance ranges from .004 to .007 and did not exceed .05, indicating that the significant effects are genuine (Field, 2005) and not the result of the other factors. The effect size ($\eta^2 = .63$) is strong, indicating a large association between the resource governance quantity index and firm performance category. Supporting the KW results, a statistically significant result ($p < .05$) for the resource governance index is also obtained from the BDM test ($F = 10.216, p = .002$). Refer to Appendix 6, Section 4.3 for the rest of the quantity index results.

ANOVA1 also identifies a statistically significant result for the resource governance quantity index (Welch's $F(2,6.23) = 10.82, p = .009, \omega = .74$); refer to Appendix 6, Section 4.4. The resource governance quantity index displays a significant quadratic trend ($F(1,12) = 5.53, p = .037, \omega = .69$) signifying that as firm performance increases, the resource governance quantity index increases and then declines, that is, a curvilinear association. A significant linear trend ($F(1,12) = 8.24, p = .014, \omega = .77$) is also evident. Therefore, the KW, BDM and ANOVA1 results *support* H_{4a} , that is, that at least one of the firm performance categories differs from another in terms of the resource governance quantity index at the $p < .05$ level.

5.15.2 Could the resource governance quantity index be used to distinguish the PSFP category from the non-PSFP categories?

Three types of analysis were employed to determine how the quantity indices differ between the three firm performance categories: MW, SC, and post-hoc ANOVA1 tests. The SC results indicate that the resource governance quantity index provides a difference in ranked means, evident between PAFP – PSFP (refer to Appendix 6, Section 4.5), although the difference between PIFP – PSFP is close to the critical difference. Therefore, the difference between the firm performance categories is due to the difference between the PAFP and PSFP categories. Again, the three post-hoc pairwise comparison tests accounting for violation of the assumption of homogeneous variance reveal that the PSFP category differs significantly from the PAFP category (mean difference = 181.2, p ranges from .025 to .033). Therefore, H_{4a} is *partially*

supported as the resource governance quantity index could be used to distinguish the PSFP category from the PAFP category at the $p < .05$ level.

MW yields two statistically significant ($p < .0167$) results (PIFP – PSFP $U = 1.000, p = .008$ one-tailed, $r = -.76$; and PAFP – PSFP $U = 0.000, p = .004$ one-tailed, $r = -.83$); refer to Appendix 6, Section 4.6. Thus, the resource governance quantity index could be used to distinguish the PSFP category from both the non-PSFP categories. In addition, both these combinations have strong effects. The planned contrasts support the MW tests as they indicate that the PSFP category significantly differs from both the PAFP and PIFP categories ($t(4.81) = 3.99, p = .006$ (one-tailed), $r = .88$; $t(4.75) = 3.18, p = .013$ (one-tailed), $r = .83$ respectively). In addition, the PIFP category did not differ from the PAFP category. Therefore, H_{4a} is *supported* as the resource governance quantity index could be used to distinguish the PSFP category from both the non-PSFP categories at the $p < .05$ level.

5.16 EXCELLENCE AND QUANTITY INDICES RESULTS SUMMARY: PART III

Table 5.9. Summary of excellence and quantity hypothesis results

Index	Ability to distinguish between firm performance category	Distinguish between firm performance category	Hypothesis ($p < .05$ level) (Mann-Whitney $p < .167$ level)
Corporate strategy quantity	Yes	PSFP - PAFP PSFP - PIFP	H_{5a} Supported Supported *
Strategic intent quantity	No	NA	H_{1a} Cannot be accepted
Organisational domain quantity	No	NA	H_{2a} Cannot be accepted
Internal governance quantity	No	NA	H_{3a} Cannot be accepted
Resource governance quantity	Yes	PSFP - PAFP PSFP - PIFP	H_{4a} Supported Supported #
Corporate strategy excellence	No	NA	H_{5b} Cannot be accepted
Strategic intent excellence	No	NA	H_{1b} Cannot be accepted
Organisational domain excellence	No	NA	H_{2b} Cannot be accepted
Resource governance excellence	No	NA	H_{4b} Cannot be accepted

Key: NA Not applicable

* Results found by all the tests except for the Siegel-Castellan critical difference test

Results found by all the tests except for the Siegel-Castellan critical difference, Games-Howell, Tamhane's T2 and Dunnett's T3 tests

The examination of corporate strategy is operationalised in terms of quantity and excellence indices. It is hypothesised that the corporate strategy excellence index increases as firm

performance increases. However, the corporate strategy excellence index is not found to distinguish between the categories. The results from this dataset did not support this proposition at the $p < .05$ level (i.e., the subhypotheses H_{1b} , H_{2b} , H_{4b} , and H_{5b}); refer to Table 5.9.

By contrast, the KW, BDM and ANOVA1 results found that the corporate strategy quantity index is statistically significant at the $p < .05$ level indicating that one of the firm performance categories differs from at least one of the other firm performance categories. H_0 could then be rejected in favour of H_{5a} , at $p < .05$. The Monte Carlo confidence interval for significance also indicates that the significant effect is genuine. The effect sizes are strong, suggesting a large association between the corporate strategy quantity index and firm performance category. A series of post-hoc tests for KW and ANOVA1 were conducted with the aim of identifying if the PSFP category could be distinguished from the non-PSFP categories. The MW tests and the four post-hoc ANOVA1 tests suggest that the PSFP category can be distinguished from both the non-PSFP categories. Therefore, further analysis was conducted to determine if any of the quantity indices could be the source of the difference between the firm performance categories.

The KW, BDM and ANOVA1 results produced a statistically significant result for the resource governance quantity index indicating that one of the firm performance categories differs from at least one of the other categories. The MW tests and the planned contrasts test found statistically significant results suggesting that the PSFP category could be distinguished from both the PIFP and PAFP firm performance categories. As the parametric tests are more powerful and account for the possible violation of the homogeneity of variance assumption, they provide the basis of discussion in the following Chapter. In conclusion, the resource governance quantity index is found to be the source of corporate strategy heterogeneity and could distinguish between the PSFP category and both of the other two firm performance categories.

5.17 CHAPTER SUMMARY

Three different results were presented in this chapter, namely, the preliminary results; hypothesis testing for the corporate strategy index and the four corporate strategy attribute indices; and, lastly, hypothesis testing for the excellence and quantity indices. The results found that the rate of resource governance decision making could be used to distinguish the persistent superior firm performance category from the other two firm performance categories.

6.0 DISCUSSION

6.1 INTRODUCTION

This research focused on the impacts corporate strategy and its attributes have on persistent firm performance. The primary objective of this research was to determine if there are elements of corporate strategy that may be used to distinguish the PSFP category from the other two categories of firm performance. The statistically significant association between the rate of resource governance decisions and persistent firm performance suggests that the current predominant theory in strategic management, namely, RBT should be modified to accommodate the heterogeneity identified. This research extends RBT as it ties the corporate level decision making skill involving resource governance into a valuable, rare, inimitable, nonsubstitutable resource that firms possess, develop and then deploy. The corporate level decision making skill theory presented here is based on the decision making literature which has not, to date, been significantly incorporated into RBT.

This Chapter provides a discussion of the results presented in the proceeding Chapter and the literature reviewed in Chapters Two and Three. The identifiable pattern evident within the dataset are identified and discussed. This is followed by a discussion of whether the results correspond to the conceptual framework presented in Chapter Three. Thereafter, the theoretical implications of the apparent importance of the incidence of resource governance decisions on persistent firm performance are examined relative to the endogenous perspectives of firm performance, namely, core competency theory, and corporate level skill in decision making. Empirical, conceptual and operational implications for strategic intent, organisational domain, internal governance, resource governance and corporate strategy are presented. The implications for the field of strategic management are then discussed. Lastly, implications for practitioners are presented.

6.2 IDENTIFIABLE PATTERNS IN THE DATASET

Two conclusions may be drawn from the results outlined in Chapter Five; namely, that the firm performance categories were heterogeneous in terms of corporate strategy and, secondly, the distinction between the PSFP category and the lesser categories of firm performance can be, at least, attributed to the rate of resource governance decisions (refer to Table 6.1). The profile of results are equivalent, providing confidence in the findings, that is, the same curvilinear trend

existed across corporate strategy and attributes test results (refer to Figures 6.1 to 6.5). This section discusses the nature of the relationship between corporate strategy and persistent firm performance as outlined in the five main hypotheses presented in Chapter Three (refer to Table 6.1).

A key aspect of much strategic management research is to uncover performance heterogeneity resulting from various factors endogenous to the firm. The three firm performance categories differ in many aspects not measured by this study. Corporate strategy is one component of the corporate effects measured in the prior empirical studies reviewed in Chapter Two (refer to Equation 1). Although corporate effects were found to have a somewhat lower impact on the variance in BUP and firm performance (46.3% and 3.7% respectively), it can be argued that the study of the effect of corporate strategy on persistent firm performance remains of value to firms.

Table 6.1. Hypothesis summary

Index	Ability to distinguish between the firm performance categories	Firm performance category distinction	Hypothesis ($p < .05$ level) (Mann-Whitney test $p < .167$ level)
Corporate strategy	Yes	PSFP - PAFP PSFP - PIFP	H ₅ Supported Cannot be accepted
Strategic intent	No	NA	H ₁ Cannot be accepted
Organisational domain	No	NA	H ₂ Cannot be accepted
Internal governance	No	NA	H ₃ Cannot be accepted
Resource governance	Yes	PSFP - PAFP PSFP - PIFP	H ₄ Supported Supported *
Corporate strategy quantity	Yes	PSFP - PAFP PSFP - PIFP	H _{5a} Supported Supported #
Strategic intent quantity	No	NA	H _{1a} Cannot be accepted
Organisational domain quantity	No	NA	H _{2a} Cannot be accepted
Internal governance quantity	No	NA	H _{3a} Cannot be accepted
Resource governance quantity	Yes	PSFP - PAFP PSFP - PIFP	H _{4a} Supported Supported !
Corporate strategy excellence	No	NA	H _{5b} Cannot be accepted
Strategic intent excellence	No	NA	H _{1b} Cannot be accepted
Organisational domain excellence	No	NA	H _{2b} Cannot be accepted
Resource governance excellence	No	NA	H _{4b} Cannot be accepted

Key: NA Not applicable

* Results found by the planned contrast tests only

Results found by all the tests except for the Siegel-Castellan critical difference test

! Results found by all the tests except for the Siegel-Castellan critical difference, Games-Howell, Tamhane's T2 and Dunnett's T3 tests

The notion of performance heterogeneity was proposed as an appropriate means of defining firms into three firm performance categories: PIFP, PAFP, and PSFP. The underlying

Figure 6.1. Strategic intent by firm performance category

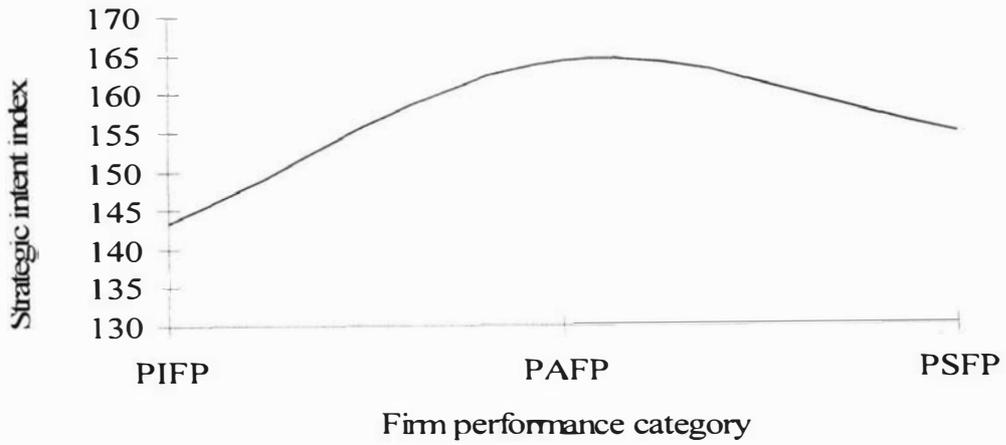


Figure 6.2. Organisational domain by firm performance category

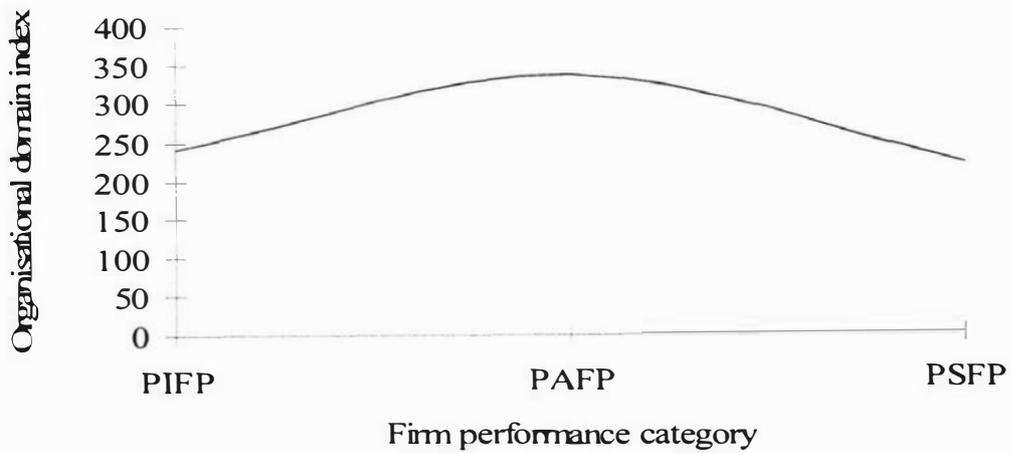


Figure 6.3. Internal governance by firm performance category

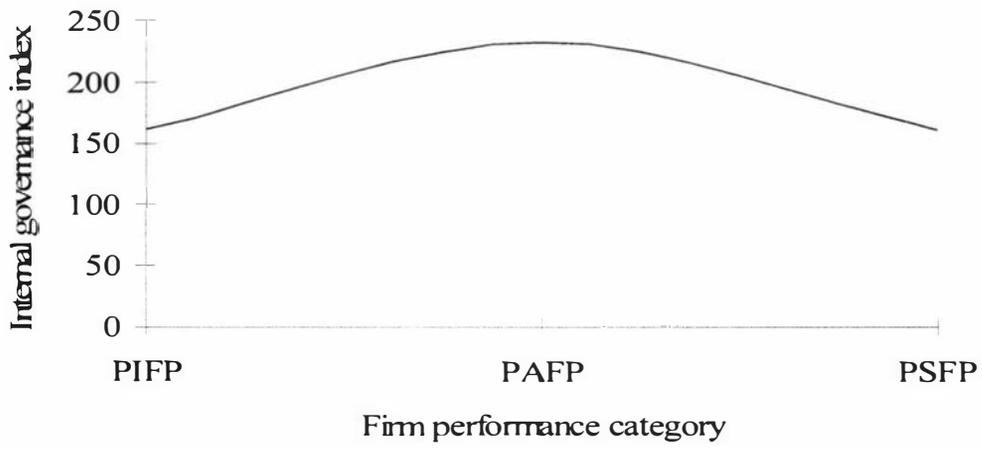


Figure 6.4. Resource governance by firm performance category

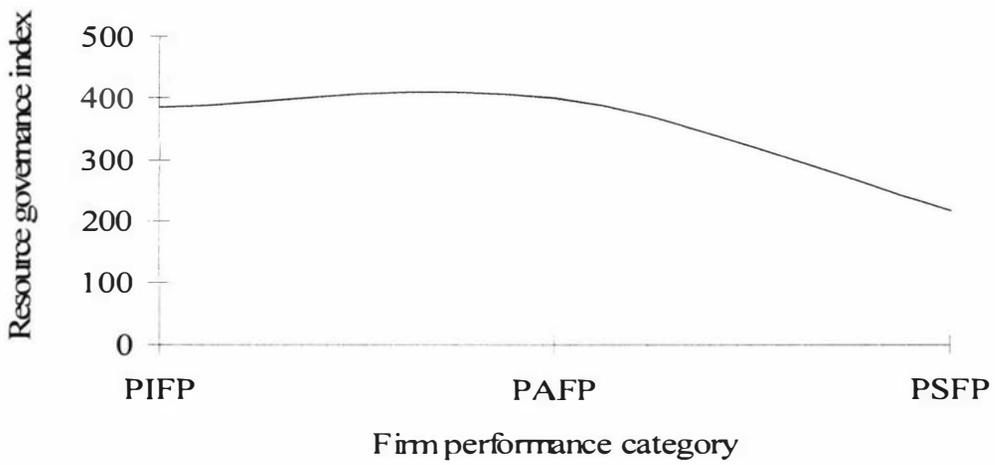


Figure 6.5. Corporate strategy by firm performance category

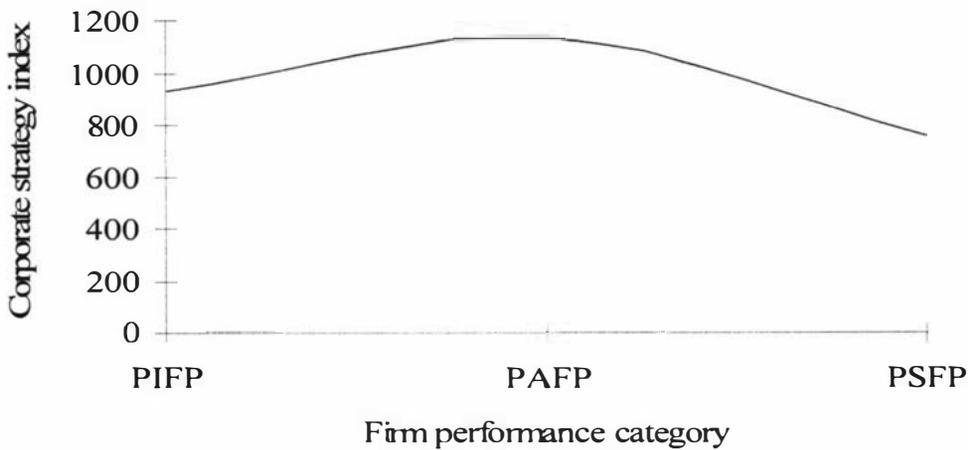


Table 6.2. Mean and standard deviation: Corporate strategy and its attributes indices by firm performance category

Index	Firm performance category	Mean	Standard deviation
Strategic intent	PIFP	143.4	47.8
	PAFP	164.2	65.0
	PSFP	154.8	16.5
Organisational domain	PIFP	240.4	32.9
	PAFP	337.0	97.8
	PSFP	220.0	73.9
Internal governance	PIFP	162.2	81.8
	PAFP	232.4	115.9
	PSFP	160.4	87.3
Resource governance	PIFP	383.8	123.5
	PAFP	399.4	22.7
	PSFP	218.4	32.0
CORPORATE STRATEGY	PIFP	929.8	146.3
	PAFP	1133.0	204.3
	PSFP	753.6	155.9

proposition of this research was that corporate strategy could be utilised to distinguish the PSFP category from the other firm performance categories. Table 6.2 provides a summary of the descriptive statistics presented in Chapter Five. The first important contribution that this research provides is that corporate strategy was heterogeneous across firstly, firm performance categories and, secondly, firms. An identifiable pattern in the sample firms was present across four of the five indices measured (the exception being strategic intent), namely, the PSFP category measured the lowest mean followed by the PIFP and then PAFP categories (refer to Figures 6.1 to 6.5). This repeatedly observed curvilinear association suggests that the PSFP firms in the sample made a low rate of appropriate *and* correct decisions, that is, superior corporate strategy decisions. PSFP firms are also likely to, firstly, recognise flawed decisions

and, secondly, make rapid amendments to rectify any imperfect decisions. In comparison, it appears that PAFP firms make numerous corporate strategy decisions indicating “hitting” but also “missing” superior outcomes. Lastly, PIFP firms make lesser quantities of but inferior, corporate strategy decisions. Possible explanations for these results are discussed throughout this chapter.

Each attribute index (except internal governance) was comprised of excellence and quantity indices. Three notable observations can be concluded from the quantity indices (although not statistically significant at the $p < .05$ level except for resource governance); refer to Tables 6.1 and 6.3. Firstly, the PSFP category possessed the highest level of *M* strategic intent decisions. Secondly, the PSFP category recorded lower levels of resource governance decisions than either the PIFP or PAFP categories. Lastly, the same curvilinear relationship between the quantity indices and persistent firm performance as displayed by the corporate strategy attribute indices was evident across the quantity indices excluding strategic intent.

Table 6.3. Mean and standard deviation: Quantity and excellence indices by firm performance category

Index	Firm performance category	Mean	Standard deviation
Strategic intent: excellence	PIFP	134.0	49.6
	PAFP	154.8	60.1
	PSFP	137.6	27.4
Organisational domain: excellence	PIFP	14.6	8.0
	PAFP	9.8	4.0
	PSFP	11.4	7.9
Resource governance: excellence	PIFP	58.8	30.8
	PAFP	43.0	78.8
	PSFP	43.2	18.4
Corporate strategy: excellence	PIFP	207.4	84.1
	PAFP	207.6	113.7
	PSFP	192.2	52.0
Strategic intent: quantity	PIFP	5.2	1.6
	PAFP	4.2	1.9
	PSFP	11.8	16.4
Organisational domain: quantity	PIFP	225.8	35.5
	PAFP	327.2	97.4
	PSFP	208.6	72.6
Internal governance: quantity	PIFP	145.2	74.8
	PAFP	205.0	95.6
	PSFP	131.2	71.5
Resource governance: quantity	PIFP	325.0	100.6
	PAFP	356.4	96.7
	PSFP	175.2	31.0
Corporate strategy: quantity	PIFP	701.2	73.3
	PAFP	892.8	210.4
	PSFP	526.8	100.8

Surprisingly, the excellence indices were relatively homogeneous across the three firm performance categories for this dataset and the expected linear relationship between each excellence index and firm performance was not evident (refer to Tables 6.1 and 6.3). For this dataset, the PSFP category could not be distinguished from the other two firm categories of performance. This lack of distinction may be due to the difficulties inherent in measuring complex internally located variables from secondary data and if so, rendering further discussion of little value.

In summary, six valuable findings were observed in this dataset. Firstly, all four corporate strategy attributes (also both excellence and quantity indices) as calculated by this research were measured, in varying degrees, across all 15 firms. Secondly, heterogeneity in three of the four attributes (the exception was for the PIFP and PSFP categories in regards to internal governance) and the four quantity indices existed across the three firm performance categories. Thirdly, the PAFP category recorded the highest incidence of all the four attributes and the corporate strategy index. Fourthly, the same curvilinear association with persistent firm performance was found to exist across the four attribute indices. Fifthly, the PSFP category could be distinguished statistically (at the $p < .05$ level) from both the other firm performance categories on the basis of the *rate* of resource governance decisions. Lastly, the rate of resource governance decision heterogeneity was not due to the difference between the PAFP and PIFP categories.

6.2.1 Factors to consider when interpreting the statistically nonsignificant results

Speculating on why the attributes of strategic intent, organisational domain and internal governance were not statistically significant at the $p < .05$ level and resource governance was significant (refer to Table 6.1) is difficult without conducting a further in-depth investigation of each sample firm. There are several reasons to interpret the statistically nonsignificant results with caution. Firstly, the minor violation of the homogeneity of variance assumption for the indices may have reduced the power of KW to find an effect if one existed (i.e., Type II error). A violation of the assumption of linear relationships for discriminant analysis may also have reduced the power of the test rather than increasing Type I error (Tabachnick & Fidell, 2001).

One issue possibly involves the inability of the research methodology employed to comprehensively measure the entire construct of corporate strategy. As the frequency of organisational domain and resource governance decision observations was similar, it was expected that organisational domain should have been as measurable as resource governance

(represented by 28.3% and 35.6% of corporate strategy observations respectively, refer to Table 4.10). However, the lower measurements recorded by both strategic intent and internal governance (represented by 16.4% and 19.7% of corporate strategy measurements respectively, refer to Table 4.10) may provide an explanation into why these results were nonsignificant at the $p < .05$ level.

The nonsignificant findings may be due to the difficulty in accurately assessing any of the eight excellence based variables (especially relevant to strategic intent which possessed five of the eight variables) inherent in the methodology used in this research. For instance, as evident with organisational domain, the measurement of synergy was difficult due to its nature (i.e., lack of transparency and complexity). The same issue, to a lesser extent, would have arisen from employing a questionnaire methodology. Accurate measurements of these variables may have been observed had access been gained to both long-term and all-levels of decision making in the firm. A conclusion of a lack of a strategic intent, organisational domain or internal governance effect on persistent firm performance due to the nonsignificant results cannot be made as alternative explanations for these findings may exist.

6.3 DISTINCTION BETWEEN THE PSFP VERSUS THE NON-PSFP FIRM PERFORMANCE CATEGORIES: THEORETICAL EXPLANATIONS

The rate of resource governance decisions was found to be the source of firm performance heterogeneity at the $p < .05$ level and could be used to distinguish the PSFP category from both the PAFP and PIFP categories (refer to Table 6.1). This section outlines four alternative explanations that may account for this finding. Four alternative theories could be formulated to explain, firstly, why the PSFP category was characterised by a lower incidence of resource governance decisions than the PAFP category and, secondly, the frequency of resource governance decisions observed in both the PIFP and PSFP categories were similar and, yet, performance differs. The four alternative explanations presented are: chance, spuriousness, core competency theory, and, lastly, corporate level skill in resource governance decision making (spuriousness was introduced in Chapter Three and the last two alternatives were introduced in Chapter Two).

Both the core competency and corporate level decision making skill theories contribute to RBT as they involve the resources a firm possesses. The significant association between the

frequency of resource governance decisions and persistent firm performance suggested the theory should be modified to accommodate the heterogeneity found. This research extends and contributes to the current RBT knowledge as it specifically ties the corporate level decision making skill involved in the rate of resource governance decisions into a valuable, rare, inimitable, nonsubstitutable resource firms can possess, develop and deploy.

6.3.1 Alternative explanation 1: Chance

The ability of this dataset to distinguish the PSFP category in terms of the rate of resource governance decisions may be due to chance. Denrell (2004, p. 923) suggested that “chance events can result in sustained interfirm profitability differences.” It should be acknowledged that the results found may be due to chance as the sample size was small. However, the effects of chance should be limited as measurements of the impact of corporate strategy and its attributes on persistent firm performance were determined from data drawn over a 25-year period. In addition to the subjective analysis of the descriptive statistics and the box plots, a series of inferential statistical techniques were employed that incorporated the possible rejection of five hypotheses and the nine subhypotheses via the use of statistical significance (i.e., at the $p < .05$ level; refer to Table 6.1). Therefore, any possible effects of chance are expected to be limited.

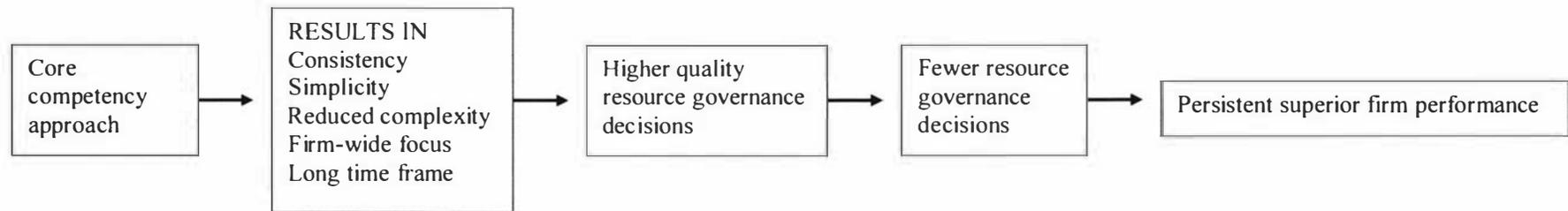
6.3.2 Alternative explanation 2: Spuriousness

Spuriousness involves the likelihood that a third variable is influencing the association between the incidence of resource governance decisions and persistent firm performance. To account for possible spuriousness, five variables were analysed comprising three potential confounds, namely, corporate level commitment to the status quo, historical endowment and firm size. The analysis of these variables found that nonsignificant (at the $p < .05$ level) homogeneity existed across the firm performance categories. Therefore, and as noted in Section 4.12, these three potential confounds did not influence the association between the rate of resource governance decisions and persistent firm performance.

6.3.3 Alternative explanation 3: Core competencies

If the assumption is made that resource governance relates to the development and utilisation of core competencies, a view presented by Prahalad and Hamel (1990), and Hamel and Prahalad (1994), then core competency theory can be employed to account for why, firstly, PSFP firms made lower quantities of resource governance decisions than PAFP firms and, secondly, similar numbers of resource governance decisions were observed in both PIFP and PSFP firms and, yet,

Figure 6.6. Theoretical model of the association between the adoption of the core competency approach and the rate of resource governance decisions



NB: The model is depicted in linear form as it is anticipated that it evolves from left to right (PSFP) over time

Table 6.4. Characteristics of core competencies across the firm performance categories

Attribute	Firm performance category		
	PIFP	PAFP	PSFP
Concentration on core competencies			
Nature of core competencies possessed	All are probably latent May possess industry-wide core competencies Likely to have arisen more by chance	Some are probably latent May possess industry-wide core competencies Likely to have arisen more by chance	Appear transparent Core competencies are longer lasting Produce more valuable core competencies
Adoption of core competency approach	May not employ	Partially	Yes
Characteristics of core competency programme	Focus on brand or market competition SBU view Imprisonment of core competency within SBUs	Do not concentrate on developing and deploying SBU view Imprisonment of core competency within a single SBU Do not concentrate on things that really matter Increased complexity from creation of many core competencies Deployment and leverage into inappropriate areas Over-deployment May erode in value due to misuse May erode in value due to lack of reinvestment	Focus on future markets and industries Firm-wide view
Management perception of core competencies	Focus on resource allocation Financial resources are the most important resources	Do not fully understand nature of core competency	Recognise that resources are potentially valuable Resources more than physical and financial Cycle of core competency creation Possess superior resourcefulness
Foresight			
Core competency selection	Misidentify future opportunities Misidentify required competencies Misdeploy core competencies (if identified) Nonexistent or poor	Not clearly defined Attempt to accumulate many core competencies Sometimes poor Need to rectify plans or create new plans	Is clear and consistent Focus on accumulation, deployment of right core competency Tightly targeted approach aligned to firm aims Broad enough to adapt to emergence of opportunities Proficient in developing and utilising

Attribute	Firm performance category		
	PIFP	PAFP	PSFP
Decision making consistency and effectiveness Core competency utilisation Alignment of decision making When faced with better prepared competitors	Consistent but ineffective decisions Seldom consider beyond financial resources Continuation of multiple failures Audacious, but poorly conceived Decision immobilisation Partial or incomplete To an incorrect path Indecision	Decision inconsistency Cycle of high and low periods of decision making Cycle of commitment and undercommitment Sometimes partial Competing expected opportunity paths Decision relating to SBU targets React with rapid, ineffective, poorly planned decisions	Consistent refinement of previously effective decisions Fully leveraged for maximum exploitation Yes Firm-wide target Continues along broad firm-wide target
Implementation plans Plans adjustment Lessons learnt Cost of development and deployment	Either not created or are inferior Fragmented into SBUs Core competencies unable to be accessed, integrated or deployed Inferiority of plans not identified Not fed back No or limited development	Need to continually create implementation plans Continual readjustment due to incomplete understanding or focusing on too many competencies Sometimes Varies	Carefully constructed implementation plans Integrate disparate skills and technologies Employees will have the tools required When required as further insight is gained -> lowering risk and uncertainty Are accommodated in future plans Maximise ratio of learning over investment -> lowering costs

the performance outcomes were vastly different (refer to Figure 6.6). Hamel and Prahalad introduced core competency theory as a corporate strategy approach to the management of firms.

The implications of this research supports Hamel and Prahalad's views that, firstly, resource governance is an important aspect of firm performance and, secondly, core competency theory could be utilised as a tool or management philosophy for the management of the resources a firm develops, possesses and utilises. Core competencies are an intertwining collection of abilities, learning and technologies which may reside in more than one SBU. Core competency theory argues that core competencies provide the basis for corporate level decisions as they are the critical to firm survival. The influence of core competencies, via fewer resource governance decisions, on persistent firm performance has been conceptualised in Figure 6.6.

Core competency approach, as introduced in Chapter Two, can provide an explanation of the curvilinear association between the incidence of resource governance decisions and persistent firm performance. Four key aspects of the core competency approach will be discussed: concentration on latent core competencies; foresight to firstly recognise that core competencies are important and, secondly, to identify the most appropriate core competencies for future success; decision making consistency and effectiveness; and, lastly, core competency implementation (refer to Table 6.4).

a) Concentration on latent core competencies

Core competency theory suggests that PSFP firms concentrate only on the things that *really* contribute to PSFP. PSFP firms are observed to make fewer resource governance decisions than PAFP firms. It is predicted that PSFP firms recognise that resources possess potential value and that "resources" encompasses more than physical or financial resources: Human resources and embedded, causally ambiguous resources are also significant components of core competencies. Core competencies may then be transparent to PSFP firms whereas other firms may not correctly identify the core competencies they possess. It is also envisaged that PSFP firms produce more *valuable* core competencies. These successful core competencies are inherently longer lasting, further enhancing firm performance. In contrast, non-PSFP firms may not understand the nature or extent of core competencies, for different reasons, which will be outlined below, producing the observed heterogeneity in the incidence of resource governance decisions.

Rather than relying on the richness of resources, PSFP firms may possess superior resourcefulness (through creativity). Continual performance outcomes, which may be evident

within PSFP firms, can be created from a cycle of new core competency creation from leveraging existing core competencies (Danneels, 2002). This cycle ensures the maximum and most appropriate use of resources PSFP firms possess, which consequently requires fewer resource governance decisions. It is expected that PAFP and PIFP firms may possess core competencies, although they may only be industry-wide capabilities or that their core competencies are latent at best. Hamel and Prahalad (1994) claimed that firm success arises from a shift from the conventional portfolio approach to the management of firm resources, to one involving core competency development and leverage. This transition of approach does not appear to have occurred within PIFP firms.

Core competency theory suggests that while PAFP firms may possess core competencies they do not concentrate on developing and deploying them. In these firms, core competencies are likely to have arisen more by chance than from a sustained effort. It is proposed that PAFP firms pay attention to many things rather than concentrating on the things that really contribute to PSFP and in doing so, make more resource governance decisions. Alternatively, if PAFP firms are utilising the core competency approach, increased complexity may occur whereby they could make many resource governance decisions to, firstly, create many core competencies and, secondly, they attempt to apply the core competency across the entire firm rather than deploying the core competency into appropriate areas. Instead, PAFP firms may make many attempts to leverage imprisoned core competencies across the firm as measured by the higher number of resource governance decisions. PAFP firms may also seek to gain relatively quick returns on their core competencies and, therefore, are continually redeploying the core competency from opportunity to opportunity, thus increasing the rate of resource governance decisions. The character of these decisions indicates it is likely that PAFP firms do not fully understand either the nature of the core competencies or the requirements of the core competency approach. Consequently, the core competency may erode in value due to its misuse and from the lack of reinvestment.

Causal ambiguity indicates that firms are unable to fully understand the relationship between resources and SCA and, therefore, cannot leverage the advantage (King & Zeithaml, 2001). The lack of clarity regarding either the core competency approach or the core competencies that may exist in firms, may be apparent in both PIFP and PAFP firms. Similarly, Prahalad and Hamel (1990) argued that the value of such advantages recedes if these resources are not identified, used, or transferred. Their view may indicate that these factors have a negative influence on the performance outcomes for both PIFP and PAFP firms.

The first aspect of core competency theory that may explain why PIFP firms make fewer numbers of resource governance decisions centres on the suggestion that PIFP firms may not employ a core competency approach at all. It is reasonable to conclude that instead of recognising the importance of corporate strategy, PIFP firms focus on competitive strategy (products and markets) rather than core competence building and, thus, makes fewer corporate level decisions. Core competency theory argues that PIFP firms focus on resource allocation (i.e., allocation of resources across business units) and, thus, only one of two aspects of resource governance were evident in the data set measured resulting in lower rates of resource governance decisions. Secondly, even if PIFP firms utilise the core competency approach, focus is on competition for brand share or product share, not the competition for future markets and industries; in other words, corporate strategy. It is also envisaged that a firm-wide view may be lacking whereby the core competency is imprisoned within a single SBU. Therefore, resource governance decisions at the corporate level are not made.

As suggested by Hamel and Prahalad (1994), PIFP firms are likely not to possess core competencies, but if they do, the core competencies will be latent. Therefore, these latent core competencies may have arisen irrespective of any corporate strategy decision that may have been made by PIFP firms. This supports the view that PIFP firm decision making is often inappropriate and insufficient and why PIFP were observed to make fewer resource governance decisions.

b) Foresight

PSFP firms appear to be more proficient in developing and utilising the foresight required for the successful accumulation and deployment of the “right” core competencies. It is expected that fewer decisions are made as industry foresight is clear, consistent, based on solid foundations and broad enough to adapt to the final emergence of the opportunities: “How do we learn about the future faster than competitors, while making fewer and small irrevocable commitments?” (Hamel & Prahalad, 1994, p. 136). Therefore, PSFP firms may possess a tightly targeted approach aligned to the firm’s aims.

In comparison to PSFP firms, foresight is not as clearly defined for PAFP firms and, thus, these firms attempt to accumulate many core competencies to cover all possible opportunities. Consequently, many resource governance decisions are made as the firm regularly readjusts its core competency plans in response to environmental changes. It is proposed that poor selection of core competencies resulting from inferior foresight may also result in increased resource

governance decision making. An argument can explain this observation as PAFP firms in responding to the inappropriateness of the current core competency plans will make a large number of resource governance decisions in an attempt to either rectify the current core competency plans or alternatively, create new core competency plans.

Core competency theory suggests a lack of foresight exists within PIFP firms whereby the lack of core competency development reduces the number of resource governance decisions. It is expected that PIFP firms are unable to successfully identify and deploy any of the core competencies, even if they are apparent, that exist within their firms and, consequently, resource governance decisions are not made.

c) *Decision making consistency and effectiveness*

Core competency evolution requires consistent decision making over long periods of time (Leonard-Barton, 1992). As PSFP firms seem to have correctly identified the scope of the future opportunities, the resource governance decisions made are only those refining effective decisions previously made, again resulting in a lower rate of resource governance decision making. Zucker's (1977) view that repeated decision making can result in the institutionalisation of core competencies indicates that PSFP firms consistent decision making may further enhance their core competencies through the routinisation of core competency knowledge. This knowledge would then assist the gaining of optimal use without having to make numerous resource governance decisions. The institutionalisation of core competencies can assist in the collection of knowledge from multiple sources which further increases the understanding of the core competency (Leonard-Barton, 1992).

Core competency theory suggests that the higher rate of resource governance decision making evident within PAFP firms may be due to decision inconsistency. It is reasonable to conclude that decision inconsistency can lead to competing expected opportunity paths and, thus, alterations to resource governance decisions may continually occur as competition for future paths are contested within PAFP firms. As unclear goals exist, senior managers may be committed to the goals of their division instead of firm-wide goals. Consequently, it appears likely that more resource governance decisions are then made as the importance or dominance of one manager wanes and the alternative goals of another manager gains precedence.

If faced with competitors that appear more prepared for the future, it is proposed that PAFP firms may react with rapid, ineffective and poorly planned decisions. Hamel and Prahalad (1994)

noted that many firms initially overcommit and start with “a great leap into the unknown and find themselves hurtling over a cliff” (p. 136). They suggest that undercommitment then follows. This argument serves to explain why the decision making in PAFP firms is likely to be cyclic where a flurry of resource governance decisions are made, followed by a lull, and once realisation of an error occurs, they are again behind their rivals. This is then followed by another outbreak of intensive decision making.

It is proposed that PIFP firms make consistent, but relatively ineffective, decisions relating to incorrectly identified future opportunities. The opportunities prepared for are inappropriate, too late, misdirected, or even irrelevant. As PIFP firms think that they are on the correct path, it is envisaged that they do not alter the decisions they have previously made. Core competency theory suggests that PIFP firms are characterised by the continuation of multiple failures resulting from inappropriate resources and choices. Worse still, PIFP firms may consider that their financial resources are the only resources of importance. It is expected that PIFP firms, therefore, make inefficient decisions as they seldom appear to consider aspects beyond their immediate financial resources. Core competency theory suggests that PIFP may also result from audacious, but poorly conceived resource governance decisions. “Certainly the reason laggards end up as laggards is not because they failed to make ‘strategic investments’” (Hamel & Prahalad, 1994, p. 312). It is proposed that decision immobilisation may occur when the firm displays ignorance of the nature of identified core competencies, if in fact analysis got this far. The absence of core competency integration knowledge could then result in the movement of the firm away from its core competencies. Consequently, fewer resource governance decisions are made and core competency utilisation is at best only partial or incomplete.

d) Implementation plans

The implementation of a core competency plan is an important aspect to the success of the core competency approach. Readjustment of the integration of disparate skills and technologies is required to release the core competency’s potential. Core competency theory suggests that PSFP firms’ employees, in addition to understanding and being challenged by the goals of the firm, will have the tools required to successfully execute the carefully constructed implementation plans. PSFP firms then appear to be able to integrate disparate skills and technologies acquired to achieve the stated firm-wide aims. It is reasonable to conclude that risk and uncertainty is reduced as further insight is gained, therefore, fewer resource governance decisions are necessary as the core competency plans are adjusted when required. The lessons learnt throughout the formulation and implementation phases are expected to be accommodated into future core

competency plans that exist beyond those currently employed. This again has the effect of reducing the number of resource governance decisions made. Core competency theory suggests that PSFP firms are able to maximise the ratio of learning over investment (Hamel & Prahalad, 1994) and, consequently, these firms are able to develop and deploy their core competencies at a lower cost than others.

Core competency theory suggests that PAFP firms make additional resource governance decisions in an attempt to continually readjust their core competency implementation plans. This may be due to their focus on too many core competencies, or the incomplete understanding of the core competency. In this account, core competencies are thought to be partially or wholly imprisoned within SBUs and that the high incidence of resource governance decisions may be due to the attempts to develop or leverage them across the firm. However, due to the expected incomplete understanding of the nature of the core competencies they possess, PAFP firms make many resource governance decisions. It is anticipated that PAFP firms may realise that the current implementation plan is ineffective and make yet more decisions to correct it or to create yet another implementation plan. In addition, new implementation plans are rapidly created in response to competitors.

However, core competency theory suggests that even if PIFP firms possess core competencies, they may be fragmented into SBUs and are unable to be accessed, integrated and deployed and are, therefore, imprisoned within business units. Partial or incomplete utilisation may also result if the core competencies are identified but understanding remains incomplete. The resulting core competency plan may be inferior. It is proposed that PIFP firms do not appear to create future core competency implementation plans; rather they concentrate on the current inferior plan, resulting in lower resource governance decisions.

e) Summary

Core competency theory suggests that the explanation of why the incidence of resource governance decisions was similar for both PIFP and PSFP firms may centre on, firstly, the lack of foresight evident within PIFP firms to develop core competencies. It is expected that PIFP firms do not appear to recognise the importance of core competencies; subsequently they may not seek to apply the core competency approach (refer to Table 6.4 and Figure 6.6). It is reasonable to conclude that for PIFP firms, the core competency approach is a difficult concept to grasp so these firms have not attempted to fully embed the approach into their firms. However, even if PIFP firms adopt the core competency approach, there appears to be issues

with both the incorrectness of the foresight applied whereby the incorrect core competencies are focused on and, secondly, a lack in understanding of the core competencies may exist within these firms. Instead, it can be argued that their perception of what is important is more focused on competitive pressures. There is some indirect evidence that suggests that PIFP firms do not necessarily have the capacity to adopt the core competency approach.

What was observed for PAFP firms appears to indicate that they may have comprehended the core competency concept and yet for a number of reasons (e.g., it could be argued that PAFP firms are somewhat impatient - perhaps they are driven by short-term goals and objectives, or they could be attempting to respond to competitive pressures), they do not seem to have persevered with the approach long enough as they are simply making too many decisions. The core competency concept then has not been embedded into PAFP firms.

Heterogeneity may also exist across the three firm performance categories in terms of the appropriateness of resource governance decisions made (i.e., decision making consistency and effectiveness). It is reasonable to conclude that PAFP firms are characterised by a cycle of decision making involving some successful decisions but many inferior decisions. In comparison, PIFP firms are likely to possess the opposite characteristics than those evident within PSFP firms, namely, decision making is both inconsistent and ineffective.

Lastly, it is proposed that heterogeneous quality exists in terms of core competency implementation plans between the three firm performance categories. Again for PSFP firms, it is proposed that their implementation plans are superior in quality in comparison to the other two firm performance categories. Both PIFP and PAFP firms appear to be characterised by inferior implementation plans (although some implementation plans evident within PAFP firms may be appropriate) due to partial or limited understanding of both the core competency approach and the nature of their core competencies.

Overall, core competency theory suggests that the PSFP category may be the only firm performance category in which firms fully and comprehensively employ Hamel and Prahalad's (1990, 1994) core competency approach. The findings suggest that PSFP firms conform to Hamel and Prahalad's (1990, 1994) view of corporate level management; in other words, it is likely that PSFP firms have embedded the core competency approach into their firms which results in reduced levels of resource governance decision making (as depicted in Figure 6.6).

A relationship was observed between the core competency view of the firm and PSFP. However, this is a supposition as core competencies were not specifically measured in this research. This observation can only be confirmed when research into multiple firms is undertaken to determine the actual existence of core competencies.

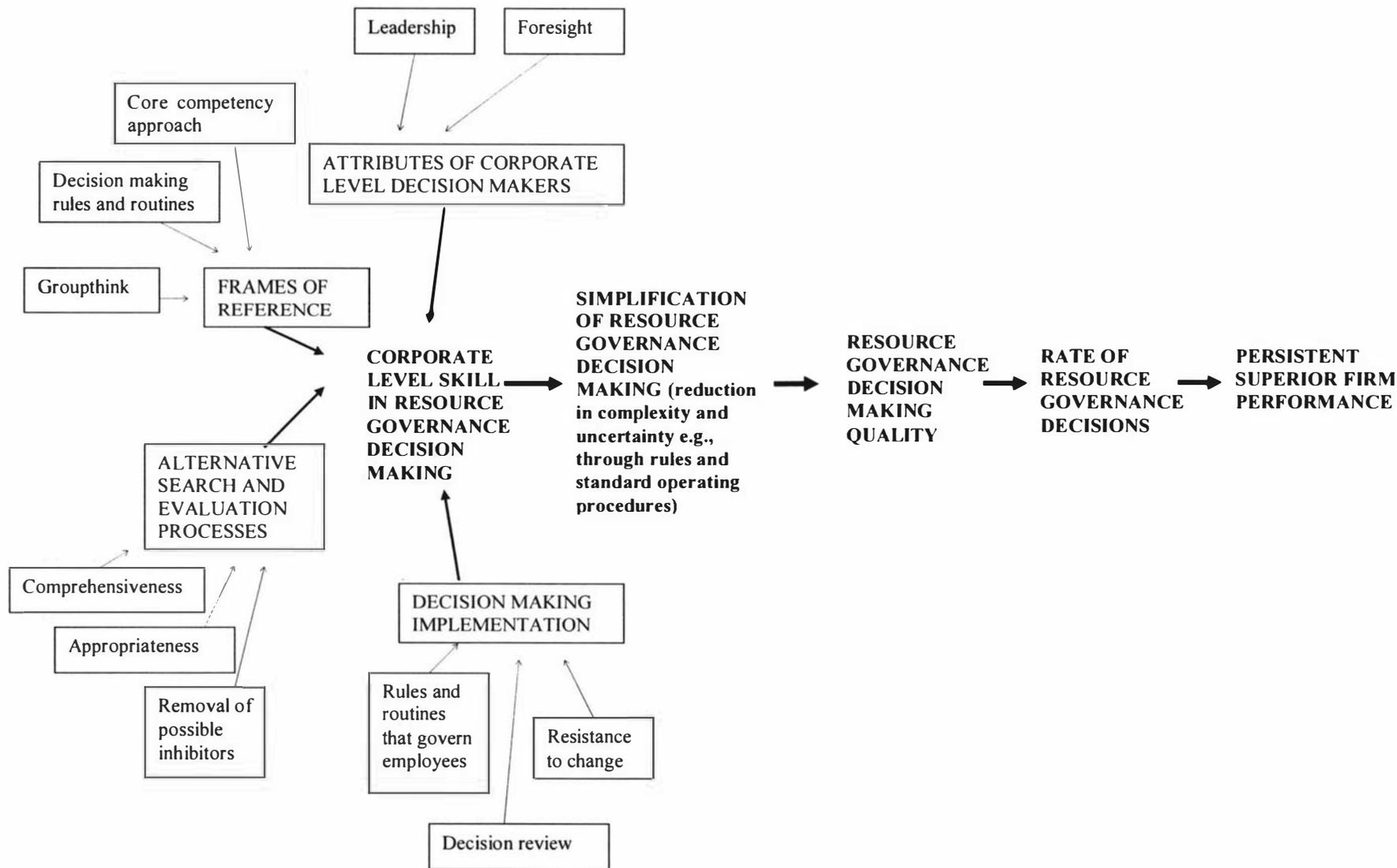
Embedding the core competency approach into firms requires viewing the firm as a portfolio of core competencies. As Hamel and Prahalad (1994) suggested, existing and potential core competencies need to be, firstly identified and, secondly, acquired or created and developed. The core competency can then be deployed throughout the entire firm. And, lastly, to ensure core competencies can be used over time, they must be protected. Therefore, the adoption of the core competency approach requires a firm-wide change in philosophy, that is, in the way the firm is viewed by all its employees.

In summary, persistent superior performance outcomes can arise from the adoption of the core competency approach within firms. It appears that the success of core competencies is due to the comprehensiveness of the understanding of the nature of the core competencies required and possessed. This would then impact on the volume of resource governance decisions undertaken within firms, whereby those that have incorporated the core competency approach (i.e., PSFP firms) are directed by this framework. Therefore, it may be deduced that the resource governance decisions made are the right ones, at the right time. Successful deployment and leveraging of core competencies across the entire firm may then result. It is reasonable to conclude that PSFP firms display this understanding, partial understanding may be evident in PAFP, and PIFP firms are characterised by a limited or a lack of understanding of the core competency approach.

6.3.4 Alternative explanation 4: The role of corporate level resource governance decision making skill

Corporate level skill in resource governance decision making has been advanced as a fourth explanation for the distinction between the PSFP category and the other two firm performance categories. The scope of this discussion is limited to relevant aspects of corporate level skill in resource governance decision making at the corporate level which includes the top management team and the board of directors. Skill in corporate level decision making is a resource which is historically embedded as it can increase over time, developing idiosyncratic characteristics which are unique, difficult to imitate and substitute and, thus, could distinguish persistent superior firm performance. Strategic management predicts that PSFP results from better managed firms.

Figure 6.7. Theoretical model of the association between corporate level decision making skill and the rate of resource governance decisions



NB: The model is depicted in linear form as it is anticipated that it evolves from left to right (PSFP) over time

“One of the first [core] competencies identified was general management capability. This led to the proposition that firms with “high quality” general managers will outperform their rivals. Clearly, effective leadership is important to organizational performance” (Harrison, 2003, p. 9). For example, Spanos et al (2004) presented empirical evidence suggesting that managerial capabilities and strategy positively influence SCA. Corporate level skill in resource governance decision making has been conceptualised in Figure 6.7. Strategic choices possess different characteristics than other firm decisions, namely, they are generally important to firm survival, future orientated, complex, highly uncertain, and often nonrecurring (Mintzberg, Raisinghani & Theoret, 1976).

Two areas of corporate level decision making skill exist which may explain the heterogeneity of the rate of resource governance decisions. Firstly, the decision making frameworks employed within firms are heterogeneous. Decision making frameworks are influenced both by the decision makers’ attributes and frames of reference. Secondly, research has indicated that quality decisions arise from a superior decision making processes (Jones et al, 1992; Jones et al, 1994; Nutt, 1992; Rodrigues & Hickson, 1995). The decision making process involves a number of steps: setting objectives, searching for alternatives, evaluating alternatives, making the decision, implementing the decision and, lastly, evaluating of the success of the decision. Therefore, the second component to be discussed centres on the decision making process employed within firms, specifically, the search and evaluation of alternative processes and implementation of the decision which may provide an explanation for the heterogeneity in the incidence of resource governance decision making observed. The four aspects of corporate level skill in resource governance decision making are discussed separately below.

a) PSFP versus PIFP and PAFP: Heterogeneous decision maker attributes

Although decisions are made throughout the firm, corporate level decision makers are expected to have a predominant influence on firm outcomes. It is proposed that heterogeneous ability produces heterogeneous decisions as corporate level decision makers interpret the environment and make judgements reflecting their different skills and limitations: Superior managerial ability is a rare resource. The two heterogeneous corporate level decision maker attributes that will be discussed here are superior foresight and leadership (refer to Figure 6.7). The different aspects of foresight and leadership examined in this section are presented in Table 6.5.

Hamel and Prahalad (1994) asserted that successful companies transform and reinvent industries by altering the rules of engagement, redrawing industry boundaries, discovering “white spaces,”

Table 6.5. Characteristics of attributes of corporate level decision makers across the firm performance categories

Attributes	Firm performance category		
	PIFP	PAFP	PSFP
Foresight			
Time frame	Day-to-day	Seek to circumvent long-term preparation	Long-term
Determinants of success	Don't identify or if do, incorrectly identify	Some are correctly identified	Able to identify
Focus	Reacting to competitors	Reacting to competitors	Aligned to determinants for success
Opportunities	Missed or inappropriate	As many as possible	When aligned to firm goals
Inappropriate arenas	Yes	Sometimes	Decisions made as to what not to do
Action	Inaction due to indecision	React to everything	Action when required
Incorrect decisions	Continue and even commit more resources to	Continue and even commit more resources to	Stop
Decision characteristics	Heroic, ill-conceived	"Shot gun" or "next big thing" approaches Can be unconventional and precarious or risky	Well considered
Timeliness of decisions	Poor	Mixture of poor and reactionary	Optimal
Reduce complexity	Poor as seek optimised solutions	Poor as many decisions made	Right decisions are self-evident
Perception of corporate strategy	Irrelevant, incomplete understanding	Don't have time for	On which all decisions should be based on
Acquisition of required resources	No	Sometimes	Yes
Leadership			
Clear direction set	Yes but inappropriate	Many directions followed	Yes and appropriate
United behind direction	Disunity	Disunity	Yes
Utilise political structure effectively	Conflict among managers	Conflict among managers	Yes
Focus on achieving	Personal goals	Personal goals	Firm-wide goals
Delegation	Poor resulting in micro-management	Poor	Optimal
Ability to appoint skilled managers	Poor	Sometimes	Yes

and creating new industries: all corporate strategy initiatives. A number of examples exist within the PSFP firms sampled where these firms demonstrated the ability to focus on the long-term and appear to be able to correctly identify the determinants of success.

In 1983, Amerada was distinguished from the rest of the oil industry as it did not focus on oil exploration. Instead, Amerada acquired gasoline stations while their competitors sold or closed their operations. Amerada was also observed in 1983 to be altering the rules of engagement as they pioneered many now common practices within gasoline marketing. In December 1990, FPL was reported to be planning the first US test-burn of orimulsion (a potential fuel source for electricity generation). Many aspects of Northrop's B2 Stealth fighter programme created new industries (e.g., revolutionary advances in design, manufacturing, processes and materials). Northrop was observed taking pride in transferring techniques from other industries and successfully applying them, which they then used to alter the rules of engagement. Stealth's design discarded convention by creating new concepts for the military aircraft industry. It was noted in 1984 that Northrop was considered a maverick in its industry. Union Pacific Corporation (Union) broke with its industry in 1988 when they formally endorsed the need for rail regulation which was expected to have a significant effect on the boundaries of the rail industry. Lastly, Whirlpool's 1996 global expansion was at contrast to its industry as its competitors were retrenching back into the US. Their development of a new type of wiring was also viewed as critical to the creation of futuristic housing in 1986.

A number of authors have noted that the successful use of resources results not from having superior resources but from corporate level decision makers. Firstly, superior corporate level decision makers are thought to possess superior foresight to identify which resources are required to achieve their goals and, secondly, knowing how to use whatever limited resources are available (Ahuja et al, 2005; Alchian & Demsetz, 1972; Amit & Schoemaker, 1993; Hamel & Prahalad, 1994). The corporate level skill decision making perspective argues that corporate level decision makers of PIFP firms may not possess the correct skills to, firstly, identify the determinants for success and, secondly, concentrate on those determinants. Opportunities can, therefore, be missed, or inappropriate ones are followed. It is proposed instead, that heroic, ill-conceived resource governance decisions occur whereby PIFP firms erroneously perceive that they have correctly identified opportunities. In Brockner's (1992) account, inappropriate persistence and commitment may occur even when the potential failure of a decision is known by the decision maker. In contrast to PSFP firms, PIFP corporate level decision makers then may commit additional resources to decisions that are failing (Kisfalvi, 2000; Staw & Fox,

1977), reinforcing the failure. Previous empirical evidence indicates that success can result in extremes, either commitment to past decisions (e.g., which limits the decision making in PIFP firms) or undertaking new and more risky decisions (e.g., which may explain why PAFP firms make more decisions) (Miller, 1994).

Fewer resource governance decisions as evident in PIFP firms could also result from the inaction of corporate level decision makers due to uncertainty, the lack of knowledge, and the fear of the unknown. But while there is an optimal time of decision making (Bronner, 1982), the timeliness of resource governance decisions can be an important determinant of success. It is reasonable to conclude that decision making in PIFP and PAFP (either poor or reactionary) firms lack timeliness, whereby decisions are being made too late or too early in comparison to decision making in PSFP firms. This perspective suggests that the absence of corporate level decisions by PIFP firm decision makers is due to their lack foresight. For example, in 1991 BNSF was viewed as lagging behind their competitors in reaching local agreements regarding work rules. This lack of foresight resulted in employee strikes in the following years which influenced, ultimately, persistent firm performance. Corporate strategy could have then been neglected as they perceived these decisions had a negligible impact on persistent firm performance in comparison to the more “vital” and “urgent” competitive strategy decisions - a universal view advanced in the strategic management literature. Again, because of BNSF’s lack of foresight in reaching the local agreements, the corporate level decision makers spent a large amount of time responding to, firstly, employee dissension and, secondly, the need to quickly organise agreements.

It is expected that PIFP and PAFP corporate level decision makers believe they are facing an immediate challenge with respect to the firm’s inability to compete with competitors. The only way, they believe, that can address this issue is via competitive strategy. PIFP corporate level decision makers are then focused on “day-to-day” issues and perceive that they do not have the time to address long-term strategy. This explanation supports Laverty’s (2004) findings that short-term focus can be systematic within firms. The results reported here suggest that these corporate level decision makers do not appear to understand that the appropriate competitive strategy should flow from corporate strategy.

The corporate level skill perspective also argues that PAFP corporate level decision makers make many resource governance decisions as they also lack the foresight to, firstly, identify the determinants for success and, secondly, concentrate on those determinants. PAFP corporate

level decision makers are reacting to the environment and are, therefore, continually adjusting their resource governance decisions. Consequently, the focus of PAFP corporate level decision makers is predicted to be spread across a wide range of possible opportunities, some of which are correctly identified, that is, they apply what may be regarded as a “shotgun” approach to decision making. Alternatively, it is envisaged that PAFP firms are continually looking for the “next big thing” or a single crucial moment. In other words, they are aiming to circumvent the long-term preparation required for successful decisions. In this account, PAFP corporate level decision makers appear to be prepared to either make decisions that involve precarious ventures or make more unconventional decisions despite the earlier caveat that decision making is expected to be rational.

The corporate level decision making skill perspective proposes that corporate level decision makers in PSFP firms develop the foresight to acquire the resources necessary for the successful fulfilment of their goals and are then no longer required to make adjustments to previously made decisions. Some firms are then more qualified to take advantage of these corporate level opportunities through the skill and knowledge of the decision maker pool available to a firm. Booth and Philips (1996) found that the presence of a clear focus was required for continuous success. In comparison to the other two firm performance categories, it is expected that PSFP corporate level decision makers are more aligned in terms of their focus. This view is supported by Brocklesby and Campbell-Hunt (2004) who argued that successful firms are characterised by coherence: “a process of mutual co-adjustment that is guided by mutual benefit and support” (p. 145). They are able to make better, and a lesser number of decisions as all aspects of the decision making process are aligned. Therefore, PSFP corporate level decision makers are not anticipated to be distracted by unimportant and largely irrelevant decisions, for example, decisions are made regarding activities that the firm will not do. Decisions are also made to discontinue inappropriate and unsuccessful activities promptly (Collins, 2001).

The corporate level skill perspective also argues that a deficiency of leadership skills is evident within PAFP firms. Rather than concentrating on the most appropriate core competency, it is proposed that this lack of leadership means that the firm follows numerous opportunities and alternatives, increasing the complexity of the decision making process (Hirokawa, 1990) and, consequently, a greater number of resource governance decisions are made. The lack of leadership skills expected from PAFP corporate level decision makers results in a choice to follow many opportunities and alternatives, again increasing the frequency of resource governance decisions.

PIFP and PAFP corporate level decision makers may be more focused on achieving personal goals (e.g., empire building or the predilection for the excitement of mergers and acquisitions) rather than concentrating on ambition for the firm. The corporate level skill perspective suggests that a deficiency of leadership skills exists within both PIFP and PAFP firms which affects the ability to unite behind a common purpose. This anticipated disunity can manifest in different ways, for example, disunity between PIFP corporate level decision makers may result in lower rates of resource governance decisions as the internal “battle” for resources leads to indecision. Disunity evident from the lack of leadership may also result in many opportunity paths being followed by PAFP firms, again increasing their rate of resource governance decision making.

The lack of leadership skills is expected to be manifest in additional ways, for example, lower levels of observed resource governance decisions may also result from the inability of PIFP corporate level decision makers to delegate lower level decisions to appropriate employees, and consequently, dereliction of corporate strategy decisions may occur. In this account, the corporate level decision makers, therefore, remain distracted as they micromanage their employees. Corporate level skill also incorporates the ability to select superior nonexecutive management. This perspective then contends that PIFP corporate level decision makers either do not have confidence in their employee’s capabilities to delegate effectively, they lack the skills to recruit appropriate subordinates, or they seek subordinates who do not challenge their current decision making ability. Collins (2001) argued that the most important aspect that enables the transition from good-to-great firms, is the ability to place the right people in the right roles. PAFP firms, however, seem to employ “skilled” staff only sometimes.

In summary, it is proposed that PIFP corporate level decision makers, when contrasted with PSFP corporate level decision makers, simplify resource governance decision making in response to complexity and uncertainty to such an extent that opportunities are missed or unsuitable decisions are made. In comparison, PSFP corporate level decision makers are expected to be able to successfully simplify resource governance decision making by providing clear and universal boundaries for decision making practices through mechanisms such as leadership and foresight. However, the level of foresight and leadership evident in PAFP firms results in resource governance decisions of varying quality.

Table 6.6. Characteristics of frames of references across the firm performance categories

Frames of reference	Firm performance category		
	PIFP	PAFP	PSFP
Characteristics			
Precision	Exact, producing incorrect and inappropriate decisions	Low	Beyond path dependency
Appropriateness	No, inappropriate or outdated	Varied	Innovative and unconventional
Resource allocation success	Low levels	Good	Exact, producing correct and appropriate decisions
Simplify decision making	Excessive, producing inappropriate decisions	No	Yes
Levels of complexity and uncertainty	Reduced, producing inappropriate decisions	High	Beyond allocation to resource governance
Decision making rules and routines			
Effectiveness	Low	Varied	High
Perception of decision making process	Reactionary	Reactionary	Continual, long-term cycle
Decisions based on	Competitive pressure Personal and political influences Inappropriate persistence and commitment	Mixture of competitive pressure and firm goals Personal and political influences	Foundations of previously successful decisions Alignment with firm-wide goals
Codification of past success	No	No or partial	Comprehensive
Incorporate organisational learning	No	Partial	Fully integrated
Groupthink	Strong impact	Moderate impact	Limited impact
Utilised core competency approach	Not usually	Partially	Comprehensive understanding of

b) *PSFP versus PIFP and PAFP: Heterogeneous frame of references*

The frames of reference employed by decision makers create distinct boundaries which corporate level decision makers use to guide decision making (Streib, 1992). Frames of reference are also influenced by perceptions, values, and culture, and are, therefore, heterogeneous across firms (Ebert & Mitchell, 1975). A summary of the key aspects of frames of reference considered in this section are displayed in Table 6.6.

Corporate level decision makers have limited cognitive power and consequently make accommodations when making decisions. Janis (1989) suggested four methods corporate level decision makers employ to reduce complexity when making decisions: satisficing, rules, making small adjustments to previous decisions and, lastly, breaking down issues into components. In this account, these methods can be a source of difference between PSFP and the other firm performance categories; for example, instead of satisficing, PIFP decision makers seek only maximised outcomes.

Rules and routines provide the basis for knowledge collection (Szulanski, 1996). They then can be utilised as frames of reference as a means of increasing reliability and predictability and reducing uncertainty of decision making (Sutcliffe & McNamara, 2001). Sutcliffe and McNamara (2001, p. 485) noted that “different decision procedures lead to different choices. Moreover, different procedures lead to different outcomes.” Their research suggested that PSFP firms are characterised by superior routines and rules which enable superior decisions and, conversely, for PIFP firms, their inferior procedures produce inferior performance outcomes. The varying effectiveness of PAFP firms’ decision making suggests that the rules and routines evident within these firms are also of varying quality. Alternatively, PAFP decision makers may not adhere to these routines and complexity is increased. This suggests that the corporate level decision making within PSFP firms is based on the foundations of previously successful decisions which align with firm-wide goals. Decision making is viewed as a continual, long-term cycle. In comparison, the corporate level decision making process within both PIFP and PAFP firms is perceived as reactionary, focusing on competitive pressures and sometimes in PAFP firms, political and personal influences are expected to play a major role in decision making.

The corporate level decision making skill perspective suggests that PSFP managers possess more precise and appropriate frames of reference than corporate level decision makers of the other two firm performance categories and that this lowers the rate of resource governance decision

making. PIFP firm decision makers are predicted to possess exact but inappropriate frames of reference. Inappropriate frames of reference, in conjunction with excessive simplification, produces lower rates of resource governance decision making. However, for PAFP firms, the high levels of resource governance decision making can be explained by the lack of precision and varying appropriateness of the frames of reference. Consequently, decision making simplification is reduced and complexity is high. It was observed that decision making by PSFP corporate level decision makers extended beyond resource allocation to the universal understanding of the firm's resources: resource governance. It is reasonable, therefore, to conclude that PSFP corporate level decision makers may see value where others cannot. It is also likely that they are not constrained by past experience whereby these decision makers are able to move beyond the path dependencies that may restrict the frames of references of lesser skilled decision makers, for example, through the use of innovative and unconventional frames of reference.

The corporate level skill in resource governance decision making perspective suggests that firms tend to replicate past decision making processes since they represent the familiar and may have been successful in past. For example, BNSF acquired firms (e.g., in 1987 they acquired Santa Fe Corporation and 12 trucking firms in 1994) without fully integrating them into the existing operations which resulted in major service issues. Various extensive employee reduction programmes were also implemented prior to and following the Santa Fe Corporation acquisition (involving 43,000 employees from 1980 to 1987, 7,000 employees from 1994 to 1996 respectively). BNSF was also observed to implement an aggressive cost-cutting programme in 1996. Although the lack of integration has been an issue since 1987, BNSF continued to eliminate both employees and costs as these actions were perceived as being successful in the past. These three factors were viewed to be the cause of the widespread service issues the firm experienced during 1997. The inferior prior decision making evident in PIFP firms may intensify the capacity for poor future decision making as suggested by RBTs proposition of path dependency. In addition, frames of reference can influence inappropriate persistence and commitment (Whyte, 1986) where inferior decisions made by PIFP decision makers result in the perception of choices as being between various losses rather than gains.

Organisational learning is expected to largely be lost in PIFP firms. Previous successful decisions are not replicated and inferior decisions are because PIFP firms do not seem to review and codify their decision making. However, it is proposed that PSFP firms comprehensively codify both successful and unsuccessful decisions so that these decisions can either be duplicated

or limit the chance of repetition respectively. The corporate level skill perspective suggests that PAFP firms do not codify prior decision making, or do partially, due to the complexity of their decision making processes, treating each uniquely with all of the difficulties in so doing.

In this account, PSFP corporate level decision makers also appear able to limit the impact of groupthink (Janis, 1989) as they actively seek alternatives beyond their current thinking. They are predicted to collect and incorporate organisational learning obtained throughout the firm into firm routines and practices. This information is then available and integrated into the subsequent decision making processes. Whereas, the corporate level skill perspective suggests that PIFP firm decision making is constrained by conformity to group norms, whereby new ideas or alternative frames of reference are perceived as nonconformist. It is expected that communication is structured so that dissidents are “converted” to the group norms. The perception of the environment is then shaped by these inferior frames of reference. Consequently, critical thinking within PIFP firms is reduced and blind spots increase eventually, resulting in inferior decision making.

Brown and Eisenhardt (1998) noted that PIFP may occur when decision makers are unable to adapt their frames of reference. This provides an interesting insight whereby PIFP corporate level decision makers may retain outdated frames of reference. As these outdated frames of reference are used by decision makers to guide decision making, it is proposed that PIFP firms are likely to, firstly, make inferior decisions and, secondly, repeat past inferior decisions. Loyalty to a decision and the decision making process is liable to be unquestioned even if the decision is failing. Similarly, the corporate level decision making skill perspective suggests a partial form of groupthink can also occur within PAFP firms, but more on the basis of loyalty to the various independently acting groups which seem to characterise PAFP firms. It is proposed that as these independent groups compete for ascendancy, they maintain loyalty to their particular chosen direction even if the decision is inferior. These independent groups do not like to have their underlying assumptions, perceptions and views challenged and superseded.

c) *PSFP versus PIFP and PAFP: Heterogeneous alternative search and evaluation processes*

The second component of corporate level skill perspective involves decision making processes of which search for alternatives is one aspect. This aspect includes the search for information on which the firm bases its various alternative opportunities. The other main aspect is decision making implementation which will be discussed shortly. The aspects of search for alternatives

Table 6.7. Characteristics of search and evaluation of alternatives across the firm performance categories

Alternative search and evaluation	Firm performance category		
	PIFP	PAFP	PSFP
Search process			
Quality	Concise yet irrelevant Misdirected and incomplete	Overly comprehensive and complex Varied	Concise and relevant Astute, comprehensive and appropriate Timely, cost effective
Inhibited by firm structure or processes	Yes	Sometimes	No
Information gathered	Inappropriate and imprecise	Varied	Accurate and relevant
Impact of perception	Restricting	Seeking many alternatives	Focused
Quantity of alternatives identified	Fewer, inappropriate	Many, some of which are appropriate	Many, appropriate
Evaluation of alternatives			
Impact of perception	Biased and restricted	Plunge from crisis to crisis	True reflection of reality
Responsibility for	Dominated by single decision maker No responsibility (laissez-faire)	Many individually directed decision makers	Corporate level decision making team
Dialogue and debate	Limited	Limited as no guiding firm-wide goal	Intensive
Reflection of reality	Low	Contingent on alternative	High
How decision made	Laissez-faire or Made by a dominant decision maker	Focus on single solution or Many decisions as no guiding firm-wide goal	Right answer self-evident

that are discussed here include the appropriateness and comprehensiveness of the search process, and the removal of possible inhibitors. A summary of these aspects is presented in Table 6.7.

Corporate level decision making skill perspective indicates that PSFP firms' conduct a more astute search process which is well-structured in comparison to lesser performing firms and because the search process is appropriate and comprehensive, fewer inaccuracies occur (Janis, 1989) and therefore, fewer resource governance decisions need to be made. The search for alternatives by PSFP firms may not be inhibited by firm structure or processes. It is proposed that PSFP firms may also recognise the importance of the corporate level decisions to the firm's performance and accordingly ensure that the search process is comprehensive and valid (Hambrick, 1982). Information gathered by PSFP firms from the search process may be more appropriate, timely and cost effective and the analyses performed on this information appears to be superior in comparison to lower performing firms. Researchers have noted skill factors (such as cognitive framework, interpretation) influence the search for alternatives (Hambrick, 1982; Milliken, 1990). PSFP firm decision makers are then expected to provide a focused and true reflection of reality. PSFP corporate level decision makers are envisaged to possess more effective decision making rules and routines that they utilise to search for and evaluate alternatives, and implement their decisions. Fewer resource governance decisions are then made as the error rate is minimised. PSFP recognise the requirement to make the right decisions and that this outcome is a continual process. Brocklesby and Campbell-Hunt (2004) also found that dialogue was an important factor in determining the paths successful firms choose to follow. It is reasonable then to conclude that open discussion is encouraged in PSFP firms. As a result of the higher level of skill in regards to the search for alternatives displayed by PSFP firms, lower quantities of resource governance decisions are then required.

In this account, inferior decision making skills may arise from a number of situations, for example, gathering inappropriate or imprecise information on which to base decisions. If corporate level decision makers perceive the search process has uncovered all possible alternatives, it is proposed that they will usually only consider those alternatives. Consequently, it appears that the restricted search processes within PIFP firms may lead to the identification of fewer opportunities and thus, PIFP corporate level decision makers appear to consider only a limited number of alternatives in comparison to PSFP firms. The corporate level skill perspective argues that the cognitive limitations of PIFP corporate level decision makers (e.g., biases and information overload) may constrain the search for alternatives. These factors may also negatively influence the analysis of the information gathered whereby inappropriate or

imprecise information is gathered. PIFP firms, in comparison to PSFP firms, appear to simplify the search for alternatives to such an extent that opportunities are missed or unsuitable decisions are made. Overall, fewer resource governance decisions may be made as a result of the inferior search processes evident within PIFP firms. In comparison, the corporate level skill in decision making perspective proposes that the search processes evident within PAFP firms are characterised by varying quality. It is expected that PAFP firms, due to their unfocused approach to resource governance, may attempt to pursue as many opportunities as possible, which some are inferior. In conjunction with this, and because the information gathered is of varying quality, the search process within PAFP firms appears to be overly comprehensive and complex.

The evaluation of alternatives is the next step in the decision making process. PIFP firms appear to be characterised by biased appraisal, or the lack of consideration for possible eventualities. The lack of resource governance decisions made by PIFP firms suggests that decision evaluation including dialogue and debate is limited. For example, decision making may be either dominated by one decision maker or laissez-faire approach may have been adopted, both of which lowers the incidence of resource governance decision making. In contrast, PSFP firms appear to know what is successful as they make the right resource governance decisions at the right time. It is proposed that the information gathered and the intensive debate that follows produces a truer reflection of the reality PSFP firms find themselves in. Collins (2001) found that in good-to-great firms, the right decision became obvious. Whereas, the corporate level decision making skill perspective suggests that PAFP firms appear to be characterised by complexity resulting from many individuals making numerous resource governance decisions due to the lack of a guiding firm-wide goal. It is likely that limited evaluation of alternatives may then occur as the various groups within PAFP firms are responding to their own agenda and perceptions of the future. PAFP firms may also seek a single solution to their current problem and, thus, the evaluation process employed applied is tightly confined. One or both situations are expected to be evident within PAFP firms, therefore leading to higher rates of resource governance decisions as they plunge from crisis to crisis.

d) PSFP versus PIFP and PAFP: Heterogeneous implementation

Miller (2002) noted that firms fail to achieve ROI for about 70% of change initiatives. By extension, this suggests that various corporate strategy decisions formulated are not successfully implemented and, as such, may provide an explanation of heterogeneous firm performance. Three aspects of decision implementation will be discussed below: the integration of routine and

Table 6.8. Characteristics of decision implementation across the firm performance categories

Decision implementation	Firm performance category		
	PIFP	PAFP	PSFP
Characteristics			
Quality	Poor	Contingent on decision	Optimal
Quantity of decisions made that are implemented	Low	High	All decisions made are implemented
Integration of routines and rules			
Effectiveness	Low	Varied	Optimal
Employees directed by	Yes	No	Yes
Estimation of resistance to change	Underestimated	Contingent on decision maker	Accounted for in evaluation process
Communication prior to implementation	Limited	Contingent on decision maker	Extensive
Decision review			
	No	No	Comprehensive
	Limited as few decisions are implemented	Too busy with decision making	Perceived as critical to future success Feedback knowledge gained into future decisions

rules, estimation of resistance to change and, lastly, decision review, and are presented in Table 6.8.

Decision implementation issues can also be a source for lower quantities of resource governance decisions as nondecision makers appear to control a large part of the outcome. The corporate level decision making skill perspective suggests that PSFP firms appear to be able to limit possible negative impacts of their decisions by adequately incorporating knowledge into the decision making process so that risk is reduced (Hamel & Prahalad, 1994). The knowledge and skills acquired across the firm (i.e., learning) are then incorporated into the routines of the firm (Nelson & Winter, 1982). This appears to reduce the number of decisions required through the mechanism of corporate strategy. Instead, employee actions seem to be directed by these effective routines. It is proposed that PSFP firms also ensure that the decision is understood by the implementers (Trull, 1966).

The lower incidence of resource governance decisions in PIFP firms may be explained by the existence of laissez-faire leadership. As decision implementation is usually performed by noncorporate level employees, it is expected that they are reliant on the framework provided from the corporate level. If this framework is substandard (a characteristic of laissez-faire leadership), the effectiveness of decision implementation is inferior. PIFP firms also appear to be characterised by lower levels of managerial skill (resulting from corporate level decision makers' inability to identify and recruit appropriate managerial skill). Consequently, these managers appear to be indecisive and wait for direction from corporate level decision makers which never eventuates. Inferior or nonexistent decision implementation evident in PIFP firms may result in added indecision at the corporate level, further reducing the number of resource governance decisions made. On the other hand, it is anticipated that the lack of leadership evident within PAFP firms leads to the implementation of numerous corporate level decisions (increasing complexity) and as successful implementation is contingent on the ability of managers, many decisions are poorly implemented leading to additional resource governance decisions in an attempt to rectify the failing implementations.

Inferior decisions are argued to result from the apparent underestimation of the effects of change, due to employee resistance which may characterise PIFP firms and, to some extent, is evident in PAFP firms (Harrison, 1999). By way of contrast, in PSFP firms, "effective decision makers devise plans to carry out their decisions. They anticipate the likely setbacks and are ready with countermeasures" (Wheeler & Janis, 1980, p. 9). PSFP corporate level decision makers also

seem to fully understand that their decisions can limit any endogenous conflicts of interest that may reduce the success of implementation. It is proposed that corporate level decision makers who possess superior skills are then more likely to communicate the decision before it is implemented ensuring less resistance. Research has found that the firm-wide coherence to the decisions evident within successful firms supports firm-wide action (Brocklesby & Campbell-Hunt, 2004). Again, the application of their superior corporate level skill represents a lower rate of resource governance decisions made.

The last stage of the decision making process is reviewing the success of the entire decision (March & Olsen, 1979). As noted in the previous sections, decision review is critical to understanding why previous decisions fail or succeed. The corporate level decision making skill perspective suggests that PSFP firms appear to conduct a comprehensive review process and utilise the knowledge gained in future decisions. In addition, the decisions could be reviewed against appropriate criteria whereby it is expected that PSFP firms concentrate on other more future focused measures, for example, core competency development, rather than solely on profit. In comparison, it is likely that as PAFP firms are implementing many resource governance decisions, they do not conduct decision evaluation. Lastly, as the corporate level skill perspective argues that the lower skill-set of the PIFP decision makers translates to indecision, many PIFP firms' resource governance decisions do not appear to be implemented and are, therefore, not reviewed. This may account for the lower frequencies of resource governance decisions observed in PIFP firms.

e) PSFP versus PIFP and PAFP: Summary

Although this research did not specifically investigate the skill of corporate level decision makers of the 15 sample firms, the results do suggest that variations in corporate level decision making skill provides a plausible explanation for the heterogeneity observed in the incidence of resource governance decisions across the different categories of persistent firm performance. The corporate level decision makers may be regarded as a "black box" but both previous theoretical thought and empirical evidence have suggested ways in which decision making can vary and impact on persistent firm performance. The four aspects involving both decision maker attributes and decision making processes discussed here are reasonably thought to be distributed heterogeneously across firms.

The corporate level skill perspective suggests that both framework and process aspects of decision making involve asymmetries in corporate level decision making skill (refer to Figure

6.7). In this account, PSFP firm corporate level decision makers may possess superior decision making frameworks and processes than the corporate level decision makers in the other two firm performance categories and consequently will need to make fewer resource governance decisions to achieve better outcomes. In other words, “successful [firms] “outdecide” their competitors in at least three ways: They make better decisions; they make decisions faster; and they implement decisions more” (McLaughlin, 1995, p. 443). This perspective also suggests that corporate level decision makers in PIFP firms make fewer resource governance decisions due to their inferior decision making skills. For example, GenCorp was observed to make a number of decisions to dispose of their radio and television stations, often at a loss.

A sample firm was selected from each of the three subpopulations that is, from within the same industry. The PIFP and PSFP firms made similar rates of resource governance decision making and yet achieved different levels of firm performance. Performance failure may occur as a result of inferior decision making frameworks and processes. This same perspective proposes that corporate level skill in resource governance decision making evident within PAFP firms varies. Some decisions in PAFP firms are of superior quality whereas many are of inferior quality. Consequently, revision is required to rectify the inferior resource governance decisions increasing the number of resource governance decisions made by PAFP firms.

Relative to the PSFP firms, PAFP firms appear to be characterised by some superiorly skilled corporate level decision makers but also a large number of corporate level decision makers with inferior resource governance abilities. The apparent lack of leadership within PAFP firms has profound effects on the formulation of firm-wide direction and ensuring that this direction is adhered to throughout the firm. Instead, various PAFP corporate level decision makers possess competing goals, increasing the complexity of the decision making process (refer to Table 6.9). In contrast, the corporate level decision making skill perspective argues that relative to PSFP firms, PIFP firms are characterised by corporate level decision makers with inferior corporate level skill. In this account, inferior corporate level abilities results in poor or laissez-faire leadership and, consequently, lower quantities of resource governance decisions appear to be made due to either indecision or the selection of inferior firm goals. These corporate level decision makers are apparently constrained by their inferior skills and are, thus, unable or unwilling to identify and remove the constraints of inferiority from their decisions.

Lastly, lower rates of resource governance decisions observed within PSFP firms can be attributed to the superior managerial skill evident within this category. In this account, superior

Table 6.9. Outcomes of heterogeneous corporate level decision making skill in resource governance

Firm performance category	Simplification of resource governance decision making	Rate of resource governance decisions	Resource governance decision making quality	Achievement of PSFP	<i>Resource governance decision making characteristic</i>
PIFP	High, but inappropriate	Low	Inferior	No	<i>Inappropriate</i>
PAFP	Low	High	Varied	No	<i>Unnecessarily complex</i>
PSFP	High, and appropriate	Low	Superior	Yes	<i>Precise and correct</i>

corporate level skill leads to the correct identification of appropriate opportunities, and the correct decisions become self-evident to corporate level decision makers with superior skills.

Superior corporate level skill ensures the integration of feedback and learning from previous decision making into future decisions (Argyris, 1991). PAFP firms seem to be characterised by greater complexity (due to inferior leadership and foresight) which consequently increases the number of decisions made. PAFP firms, therefore, appear to make more resource governance decisions as in addition to making some successful decisions, they make many poor ones. At a later stage, PAFP firms are expected to recognise inferior decisions and make corresponding adjustments.

The heterogeneity displayed across the three firm performance categories in terms of corporate level skill in resource governance decision making produces different outcomes (refer to Figure 6.7). These outcomes are summarised in Table 6.9. The heterogeneous aspects of corporate level skill theory as outlined above influences the simplification of the resource governance decision making evident within the firm. The degree of decision making simplification then influences heterogeneity in the rate of resource governance decisions. It appears as though both PIFP and PSFP firms attempt to simplify their resource governance decision making, whereas complexity is a characteristic of PAFP firms. In contrast, the decision making process within PAFP firms may not be formalised which lowers the quality of decisions. In this account, the complexity that may be evident in PAFP firms produces a high rate of varying quality resource governance decisions. Overall, due to the high frequency of resource governance decisions of varying quality, PAFP is achieved rather than PSFP. In comparison, although resource governance decision making in PIFP firms is simplified, it is inappropriately so, thus producing low rates of inferior quality resource governance decisions. The inferior quality resource governance decisions evident within PIFP firms results in persistent inferior firm performance.

The alternative case of superior quality resource governance decisions exists within PSFP firms whereby the decision making is appropriately simplified producing low rates of quality resource governance decisions. Factors which are thought to produce quality decisions include foresight, leadership, appropriate decision making frames of references and processes, and timeliness. These quality resource governance decisions produce PSFP. This would suggest that improvements in these aspects of both PIFP and PAFP firms' corporate level decision making could result if these firms altered their decision making skill to the characteristics evident in the corporate level decision makers of PSFP firms (refer to Tables 6.5 to 6.8).

Valuable contributions have been gained from viewing firms of heterogeneous performance through the corporate level decision making skill theoretical perspective. The corporate level decision making skill perspective suggests the importance of *how* resources are utilised (refer to Table 6.9). In this account, that ability is contingent on the corporate level decision maker. In other words, decision making skill at the corporate level is unique, difficult to imitate and substitute and, thus, could distinguish PSFP. These results appear to support the view that corporate level skill in resource governance decision making is unique. Poorly constructed or inappropriate corporate strategy can greatly impact on PSFP.

Non-PSFP firms could then, theoretically, increase the capacity to produce excellent decision making over time. However, the unique characteristics, as argued by resource based theory, of the corporate level decision making skill evident within PSFP firms suggests that this resource may be difficult for non-PSFP firms to imitate. This indicates that the critical resource shortage in PIFP and PAFP firms may not be overcome by substitution but rather can only be surmounted by decisions regarding innovation and other mechanisms that can lead to successful outcomes (i.e., improving the corporate level decision making within firms). This perspective supports Collins's (2004) view of what is required to improve organisational performance.

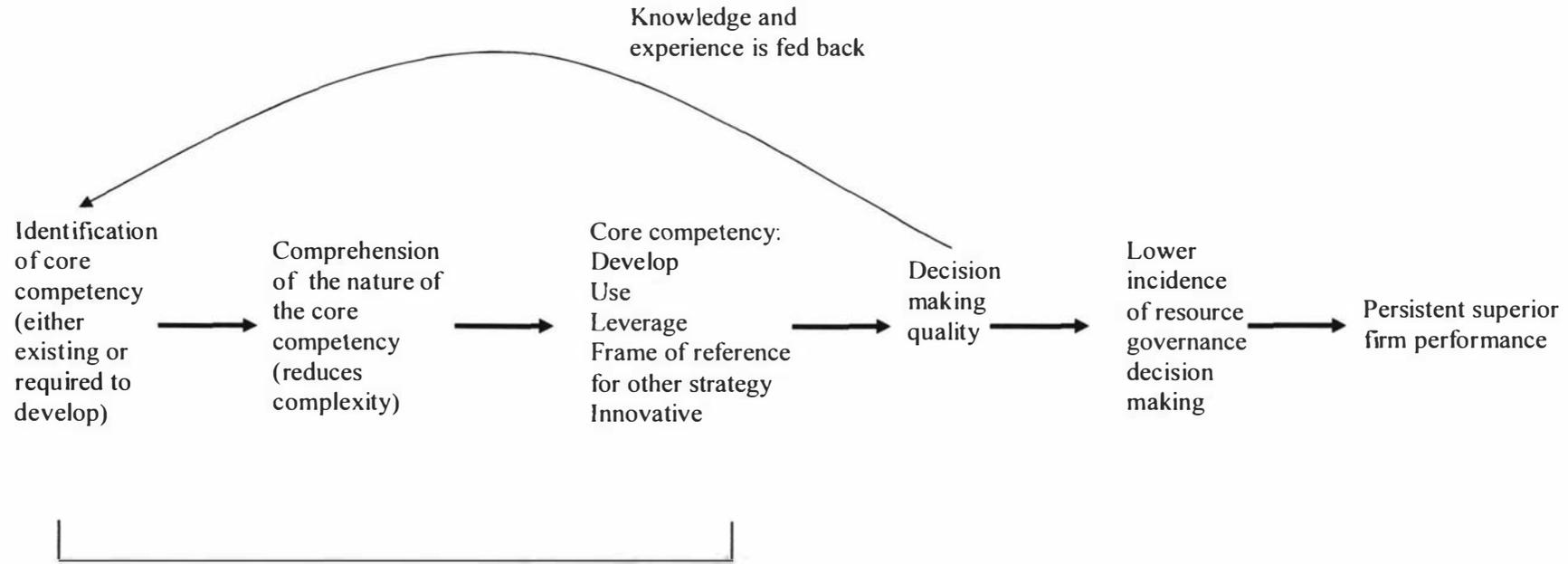
6.4 THEORETICAL IMPLICATIONS

Currently, the concept of corporate strategy has not been incorporated into either IO or "pure" RBT theories due to their primary focus of achieving SCA. Accordingly, these theories do not explain the heterogeneity displayed across the three firm performance categories, specifically the curvilinear association between the rate of resource governance decisions and persistent firm performance (refer to Figures 6.1 and 6.5). Two modestly employed contributions to RBT offer an explanation of the findings of this research, namely, core competency theory and the corporate level decision making skill perspective.

6.4.1 Theoretical implications: Core competency theory

Although to date, core competency has been a difficult concept to empirically measure, the results suggest that core competencies do exist and that firms should be concerned with the appropriateness of decisions they make on them. This research extends core competency theory by providing evidence that the resource governance decisions made by PSFP firms are both correct and appropriate when compared to the same or similar decisions made by PIFP and

Figure 6.8. Theoretical model of the association between corporate level decision making skill and the rate of resource governance decisions incorporating the core competency approach



Corporate level decision making skill:

- Attributes of corporate level decision makers
- Frames of reference
- Alternative search and evaluation processes
- Decision making implementation

NB: The model is depicted in linear form as it is anticipated that it evolves from left to right (PSFP) over time

PAFP firms. As suggested by Hamel and Prahalad (1994), for a firm to obtain the full magnitude of a resource's value, a governance rather than allocation perspective is required. The results evident in this dataset suggest that both resource generation, of which the resource governance variable is a part (in addition to resource leverage and resource leverage mechanisms variables) and resource deployment (comprised of both resource governance and resource allocation variables) are important.

Corporate level skill in resource governance decisions of which the core competency approach advocated by core competency theory is an antecedent variable to the relationship between the rate of resource governance decisions and subsequent persistent firm performance (refer to Figure 6.8). As Penrose (1959, p. 86) noted "no firm ever perceives the complete range of services available from any resource, because the range of services recognised is for the most part confirmed by the management's existing ideas as to possible combinations." Heterogeneity in resource governance decisions occurs as a result of variation in decision maker behaviour or responses. The importance of corporate level skill is further suggested by the homogeneity displayed by the potential confound variables across the three firm performance categories. The homogeneity of corporate level commitment to the status quo variables suggests that the *skills* managers bring to firms are more important than extant experience within a firm. Furthermore, the homogeneity of historical endowments provides an indication of the importance in *how* resources are used rather than what resources are possessed by the firm. In other words, resource governance decisions made regarding the acquisition and deployment of resources may be a differentiating factor on the basis of corporate level skill. Although the in-depth analysis of the decision making attributes of corporate level decision makers in the sample firms was beyond the scope of this research, it remains an intriguing postulate to explore.

These two components of resource governance reinforce the comprehensiveness of the universal understanding of the firm's resources required by corporate level decision makers as specified by the core competency theory. It can be argued that core competency theory is reliant on corporate level skill in resource governance decisions in identifying, developing and deploying core competencies. In addition, PIFP and PAFP firms may not fully understand the relationship between resources and SCA (e.g., due to causal ambiguity). Therefore, they cannot necessarily leverage the source of advantage (King & Zeithaml, 2001). Similarly, Prahalad and Hamel (1990) argued that the value of competitive advantages can recede if such resources are not identified, used or transferred.

Linking back to Hamel and Prahalad's research, the core competency view of the world definitely involves a corporate level role. As the core competency approach involves a firm-wide focus, long time frame views and significant investment, it is beyond the capacity of a SBU to implement successfully. SBUs may actually imprison firm core competencies. Core competencies are then of strategic importance. Core competencies if they are to be leveraged over a number of industries, demand a corporate view of the firm. The core competency view is, therefore, actually foreign to the SBU view of the world and while there is some linkage between SCA and the possession of a core competency, the core competency approach is unique to corporate strategy and not to competitive strategy. The core competency view of the world then has a role in the value created by corporate strategy because it is foreign to the business unit view of the world. While there is cross-linkage between SCA and having a core competency, the core competency theory advocates a firm-wide view, that is, it is a corporate level concept not a business unit mechanism. This explains why PIFP and PAFP firms appear to concentrate on business unit loyalty and focus, rather than a firm-wide focus.

The expected characteristics of both PIFP and PAFP firms outlined above suggest that their apparent predominant focus on the day-to-day, the perception that competitive strategy is the mechanism to achieve performance, and the possible loyalty to SBUs, have led to a restricted firm-wide approach. Therefore, the synergistic governance of the entire firm is a corporate responsibility. The core competency approach shows how corporate strategy can add value to a firm. Corporate strategy then plays a critical role in the adoption of such a concept within firms. Core competency theory is a different way of viewing a firm. Core competency approach may be a more superior approach to achieving PSFP, although it appears the PIFP firms do not necessarily have the capacity to do so.

The relationship between a firm-wide guiding system, namely, the corporate level decision making skill approach and persistent firm performance has been established and similarities exist with Collins and Porras's (1994) view of core ideology that they found in visionary companies. It can then be argued that both PIFP and PAFP firms appear to lack this sustained component of the firm that does not change. A similar concept the Collins and Porras's core ideology is the construct of strategic intent as advanced by Hamel and Prahalad (1989, 1994) as a corporate level mechanism that unifies the firm. In contrast, for PSFP firms, governance is embedded into the internal structure of the firm. These factors are predicted to have contributed to both the high level of resource governance decision making and the inability to achieve the expected performance outcomes.

The competency approach increases decision making quality as it may provide a common basis for firm-wide communication and interaction (Orlitzky & Hirokawa, 2001). The implications of the core competency approach in terms of the corporate level decision making for PIFP and PAFP firms involves utilising the core competency approach to enhance and improve their decision making in order to achieve better performance outcomes. There are ways in which decision making can be improved within firms simply by the introduction and use of the more appropriate decision making processes (i.e., the core competency approach). Hamel and Prahalad's (1994) core competency view of the firm governance should be embedded into PIFP and PAFP firms which will assist in increasing the production of superior corporate level decision making and, thus, for PAFP firms, reducing the overall incidence of resource governance decision making. Therefore, persistent firm performance is not the rate of decision making over time; rather it is a function of the excellence in decision making over time.

Some relationship between the core competency view of the firm and PSFP appears to have been observed. This is a supposition as core competencies were not specifically measured in this piece of research. This observation cannot be confirmed unless future research into multiple organisations was undertaken where the researcher was actually entrenched into the firms and determined the existence of core competencies. However, the argument made previously in Chapter Two contended that this is inherently difficult to achieve due to the embedded and causally ambiguous nature of core competencies at the moment.

Core competency theory, although it employs the appropriate unit of analysis, does not provide a comprehensive explanation of the curvilinear relationship between persistent firm performance and the frequency of resource governance decisions. Instead, core competency theory considers skills are embedded in the firm rather than at the corporate level decision making level. Furthermore, this theory incorporates a number of noncorporate strategy level decisions which were not measured in this piece of research and, thus, the association observed in this dataset cannot be attributed solely to core competency theory.

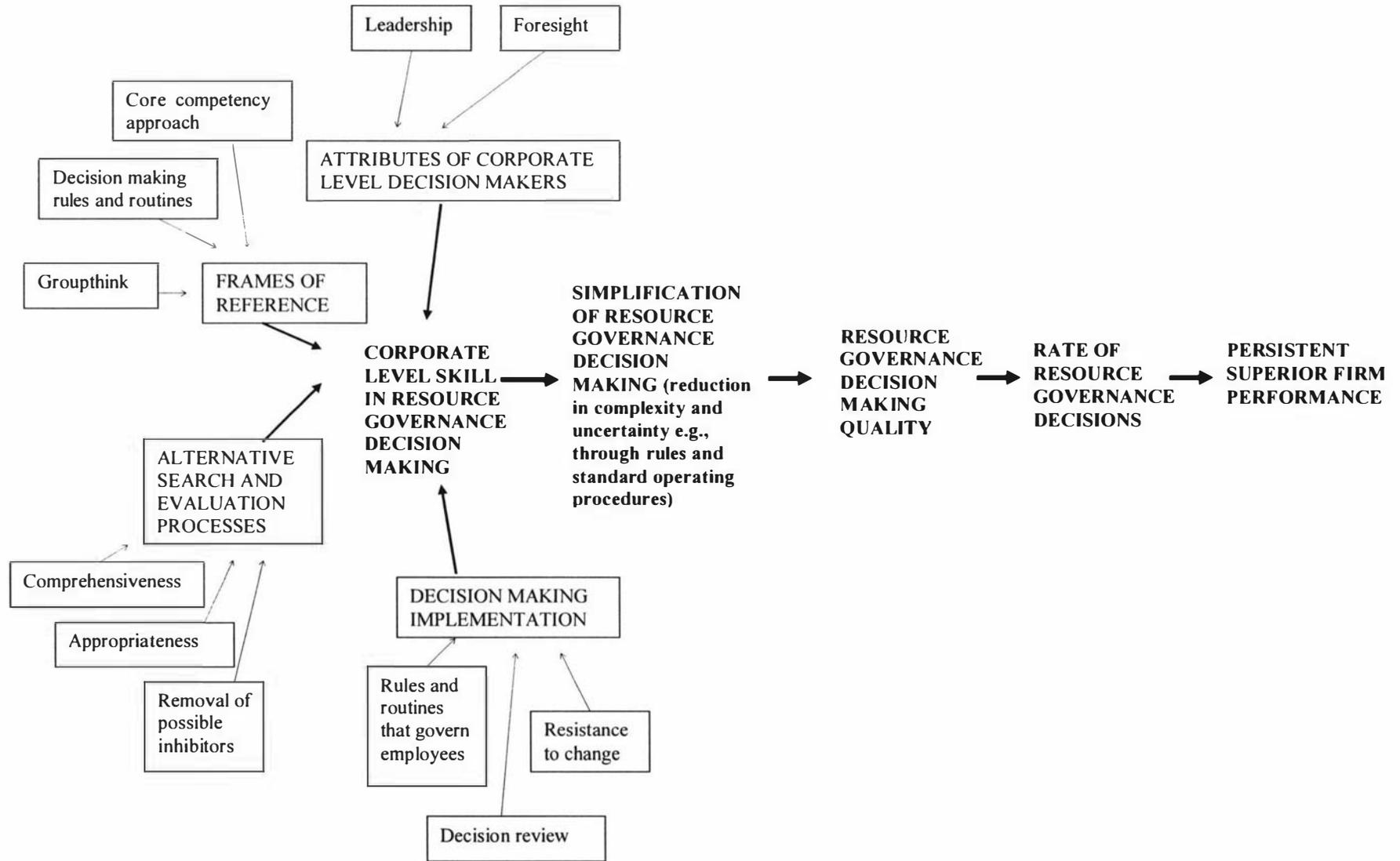
6.4.2 Theoretical implications: Corporate level decision making skill

Persistent firm performance has been found to be distinguished on the basis of corporate strategy specifically, the rate of resource governance decisions. This result suggests that an association between corporate strategy and persistent firm performance exists. It should also be noted that, although outside the scope of this piece of research, reverse causality (i.e., the notion that firm

performance can influence corporate strategy) and reciprocal causality (e.g., corporate strategy and firm performance move together as the firm changes) may provide additional clarity to the understanding of the corporate strategy-firm performance association. The aim of this research was to determine whether corporate strategy actually contributes to persistent firm performance, not to provide an in-depth analysis of the decision making practices of corporate level decision makers. However, previous evidence has been presented which suggests that decision makers have a significant role on firm performance (Hrebiniak & Joyce, 1985). It is then reasonable to conclude that corporate level decision making skill is a component of resource governance decision making (particularly in using the core competency approach as a frame of reference). Furthermore, it has been noted, in addition to firm core competencies, the notion of personal competencies may exist; in other words, the skills evident in individuals or small groups (Turner & Crawford, 1994). If this view is extended, it would appear that corporate level decision making skill is not solely embedded into the routines of a firm, which suggests that if the skilled individual left the firm, the quality of corporate level decision making would reduce (unless replaced by a superior corporate level decision maker). This raises questions for future research: is the corporate level decision making skill institutionalised into firms or does it represent a personal competency? And if the quality of corporate level decision making is found to be due to personal competencies, can it be codified? However, as the firm performance of the sample firms was persistent over time, this indicates that these skills may be more firm specific than individual specific.

This research went beyond upper echelon theory as although the behavioural aspect of decision making was deemed important (i.e., corporate level decision making skill), this research measured one specific set of decisions, namely, corporate strategy, rather than concentrating on either the demographic or psychometric characteristics of the decision makers. This perspective then provides insight into why corporate level decision making skill may assist in explaining the association between persistent firm performance and the frequency of resource governance decisions measured. However, inconsistent empirical evidence has been presented suggesting that corporate level decision making may not have a significant impact on firm performance (Hannon & Freeman, 1977; Lieberman & O'Connor, 1972). Empirical evidence appears to support the phenomenon of corporate level decision making skill as a superior explanation for the observed heterogeneity in the rate of resource governance decisions than the other alternative explanations.

Figure 6.9. Theoretical model of the association between corporate level decision making skill and the rate of resource governance decisions



NB: The model is depicted in linear form as it is anticipated that it evolves from left to right (PSFP) over time

Corporate level decision makers do control, to a large extent, the corporate strategy decision making process. Asymmetries in corporate level skill exist across firms and the reasons associated with heterogeneous decision making have been explored. Heterogeneous firm performance can be attributed to the skill of the corporate level decision maker in resource governance decision making within PSFP firms, whereby the skill corporate level decision makers utilise allows decision making processes to be simple (but not simplifying assumptions) and, thus, more effective as possible (refer to Figure 6.9). Simplicity reduces the complexity and uncertainty that firms face. Consequently, the quality of decision making within PSFP firms is higher, which results in a lower rate of resource governance decisions. The relationship between different types of resource governance decisions and persistent firm performance is an additional avenue of research that needs to be explored. The premise behind the corporate level decision making skill perspective model (refer to Figure 6.9) is that PSFP corporate level decision makers are parsimonious corporate strategy decision makers who are able to simplify their decision making in such a manner that fewer, more appropriate decisions are made. There is a certain parsimony or clarity of thought “driven” by corporate strategy that enables this to occur. Hamel and Prahalad (1989, 1994) argued that an important aspect of the value of strategic intent, as a corporate level construct, is the provision of clarity and alignment. These attributes then provide the drive to achieve the stated strategic intent. This research supports this notion as it was noted in Chapter Three, the importance of corporate strategy as a mechanism for providing a consistent, firm-wide frame of reference or dominant logic for all employee decision making. For example, competitive strategy should be derived from the stated corporate strategy. Therefore, in PSFP firms’ corporate strategy does matter.

In comparison, PIFP firms, although they make a similar rate of decisions to PSFP firms, they are either not making corporate level decisions (e.g., adopting a laissez-faire approach to corporate decision making) or if they are, the decisions made are inappropriate leading to inferior firm performance. The results suggest that although the level of corporate level decision making is similar, the characteristics of these decisions are likely to be different between firm performance categories, that is, the *quality* of the corporate level decisions made within PIFP firms is lower than that evident in PSFP firms. This can provide an explanation into why although PIFP firms make a similar number of resource governance decisions, their performance is inferior. Therefore, in PIFP firms corporate level decision makers perceive corporate strategy does not matter.

For PAFP firms, it can be proposed that corporate strategy matters, sometimes. The model also suggests that PAFP firms possess lower corporate level decision making skills in resource governance, meaning that, again like PIFP firms, they make higher rates of incorrect decisions. However, unlike PIFP firms, the corporate level decision makers within PAFP firms may recognise that they have made an inferior decision and make additional decisions to correct it. As corporate strategy is expected to provide the basis for all organisational actions, the implicit assumption is that poorly constructed or inappropriate corporate strategy can greatly impact PSFP.

Overall, the corporate level decision making skill perspective indicates that firms may increase the skill capacity of decision makers. Perhaps transformation from PIFP to PSFP may be achieved via an inflection point, in other words, the acquisition of superior corporate level decision making rather than increasing the rate of corporate level decision making. The characteristics of decisions made at the corporate level by both PIFP and PAFP firms, then, could be altered to increase the quality and appropriateness. This perspective also advocates that performance can shift from PAFP to PSFP through the same mechanism, although the impact of skilled corporate level decision makers would alter difference aspects of corporate level decision making. In other words, for PIFP firms, superior corporate level decision making would assist in the identification of correct goals and opportunities whereas in PAFP firms, skilled corporate level decision makers could reduce the complexity apparent in these firms by aligning SBU goals to firm-wide goals. Backward inflection points could also potentially occur whereby PSFP firms may hire inferior corporate level decision makers which could influence firm performance from PSFP to PAFP or more drastically from PSFP to PIFP.

These results contest arguments that corporate strategy has a limited impact on PSFP. Instead, the findings of this research suggest that corporate strategy, through the corporate level decision making skill evident in resource governance decisions, may provide a firm with the ability to achieve simplicity in their corporate strategy decision making which leads to successful performance outcomes. Furthermore, the curvilinear association between the frequency of corporate strategy decisions and persistent firm performance may indicate a point where fewer, but superior decisions result in greater firm performance. The results, therefore, suggest that PSFP arises from not necessarily the possession of resources, but how these resources are used.

On the basis of the theoretical, conceptual and empirical observations that have arisen from this research, the following propositions can be advanced:

- Proposition 6. The shift in firm performance from PIFP to PSFP can be largely achieved through more appropriate corporate level decision making as opposed to more appropriate resources.
- Proposition 7. The inflection point hypothesis suggests that PIFP and PAFP firms can transition to successful performance outcomes on the basis of a critical change in the capacity of the firm's corporate level decision making.
- Proposition 8. Corporate level decision making skill can be institutionalised and embedded into firms, that is, it is more firm specific than individual specific.

Research should be broadened to investigate whether corporate level decision making is an individual-level or firm-level phenomenon. Work conducted under this research stream could answer if skill is embedded or institutionalised into the firm, or does it reside solely in individuals? And is this phenomenon of corporate level decision making skill heterogeneously distributed across PIFP, PAFP and PSFP firms?

Overall, this perspective views that the quality of corporate level decision making has a significant impact on persistent firm performance whereby the skills these decision makers employ within their firms can result in superior firm performance. In other words, it is apparent that there are some aspects of "command" evident and these can explain, at least in part, the heterogeneity of firm performance that exists. However, this research does not support the omnipotent leader view of persistent firm performance as this would then suggest that corporate strategy arises *solely* from an individual. This research observed that PSFP corporate level decision makers, as a whole, possess superior corporate level decision making skill. In addition, changes in corporate level decision makers were observed in all the sample firms (except Mr Manoogian who was a director and CEO of Masco for 40 and 19 years respectively) suggesting that the dominance of a single corporate level decision maker did not totally control the corporate strategy of the firm. The results would also suggest that the dominance of one individual possessing inferior corporate level decision making skills could have a dramatic effect on the performance of that firm. However, determining if the skill of a dominant corporate level decision maker is responsible for the performance outcomes of a firm is a question for future research; in other words, does the skill of individual corporate level decision makers matter, and,

if so, to what extent (for example, are any of the four influences on corporate level decision making discussed here more important than the others)?

6.5 EMPIRICAL, CONCEPTUAL AND OPERATIONAL IMPLICATIONS

This research followed the boundaries of hypothetico-deductive science, which introduced decision making required by science, namely, precision was controlled by $p < .05$. However, a number of implications for the conceptual literature, in terms of, firstly, both the definition of corporate strategy and its attributes and the conceptual framework; secondly, the operationalisation of corporate strategy at its attributes can be advanced and, lastly, empirical implications, in other words, the association with persistent firm performance.

6.5.1 Strategic intent

a) Conceptual implications for strategic intent

Although this research did not uncover a statistically significant relationship between strategic intent and firm performance, some implications to the conceptualisations of both strategic intent, and especially the construct of organisational direction, could be advanced. The inclusion of organisational direction into the conceptual framework of corporate strategy has provided precision to the conflicting definitions of corporate strategy previously employed. Organisational direction was recognised as a corporate level decision and consequently, remains a significant and vital component of corporate strategy.

The use of strategic intent as the mechanism of organisational direction added to the understanding of the importance of strategic intent and the difficulties inherent in measuring it without direct access to the firm. Nevertheless, this research was able to clearly articulate the deconstruction of Hamel and Prahalad's (1989, 1994) concept of strategic intent (i.e., senses of direction, discovery and destiny) into a concise conceptual model of its components (i.e., five indicators, refer to Section 3.9.1). These five key indicators provide the most important aspects that appear foundational to the construct of strategic intent, and possibly to the various alternative measures of organisational direction. Furthermore, strategic intent, as measured in this research, encompassed both quantity and excellence aspects of strategic direction which enhanced construct validity.

This research also suggests that like the construct of corporate strategy, the construct of organisational direction has been fragmented into various separate concepts (e.g., mission, purpose or vision) resulting in imperfect cumulative knowledge. Integrating the existing organisational direction constructs appears to have been limited. It is recommended that the field should converge towards a common definition of organisational direction rather than advancing further, often contradictory concepts. In other words, the use of strategic intent as the most valid concept of organisational direction may provide a step towards a commonly employed measure as it appears to incorporate the other concepts. It is proposed that the conceptual model employed here could provide the basis for further empirical investigations into the measurement of strategic intent.

b) Implications for the operationalisation of strategic intent

Much research to date has focused on measurements of, firstly, the possession of statements of organisational direction and, secondly, the characteristics, actual or ideal, of those statements (e.g., Ireland & Hitt, 1992; Klemm et al, 1991). The organisational direction literature is extended as an alternative way of measuring organisational direction was utilised, namely, measuring the presence of strategic intent by means of changes in strategic intent and indicators representing excellence in strategic intent, *in addition* to statements of strategic direction. Secondly, this research measured firm-wide strategic intent in a generally more complete and embedded manner in comparison to the other concepts of organisational direction previously employed. This research then has enhanced the clarity of the conceptual framework of the construct of strategic intent. The operationalisation of strategic intent into clearly measurable indicators provides a further foundation for the continued empirical measurement of the to date lowly measured construct of strategic intent. An avenue for future research has been highlighted whereby these indicators of strategic intent could be utilised when a researcher is able to gain access into firms.

c) Empirical implications: The relationship between strategic intent and firm performance

Strategic intent was thought to be a prerequisite for superior firm performance due to its impact on, for example, human capital, communication, firm legitimacy and identity and controlling firm-wide decision making, and that if missing, underperformance would result (Ambrosini & Bowman, 2003; Bontis & Dragonetti, 1999; Fawcett et al, 1997; Finlay, 2000; Hamel & Prahalad, 1994; Love et al, 2002; Westley, 1990). Instead of the expected linear association, a curvilinear relationship was found to exist in this dataset, (refer to Figure 6.1). Due to the

nonsignificant results, this dataset could not support or reject the prior empirical research that concluded strategic intent impacts on persistent firm performance (whether positively or negatively). While the results did not confirm this conclusion, in a linear fashion, they did provide evidence that the level of strategic intent evident within superior firms varied as identified by Monroe (2002). Strategic intent may be an attribute of corporate strategy but it appears to have a minor influence on persistent firm performance.

6.5.2 Organisational domain

a) Conceptual implications for organisational domain

To date, organisational domain has either been conceptualised on the basis of the expected outcome of organisational domain decisions, namely, synergy or alternatively, in terms of specific organisational domain decisions (e.g., diversification or downsizing). The conceptualisation employed in this research attempts to move from the predominant focus on diversification to a more complete approach to organisational domain decisions. This research offers a novel approach to the concept of organisational domain as it recognised the importance of all organisational domain decisions and thus sought to conceptualise organisational domain in its entirety. The incorporation of both quantity and excellence aspects of organisational domain enhanced construct validity. The results (although not statistically significant at the $p < .05$ level) seem to suggest that the rate of organisational domain decisions could distinguish between categories of persistent firm performance. Further research in the area of organisational domain would be well advised to focus on all organisational domain decisions rather than concentrating on a specific decision. This avenue of research could uncover underlying aspects of organisational domain decisions that could be a source of performance heterogeneity.

b) Implications for the operationalisation of organisational domain

This research broke new ground as it operationalised organisational domain decisions in a broader manner than that previously employed. In other words, it was possible to observe the presence of organisational domain decisions by measuring decisions regarding decreases and increases in organisational domain, and joint venture decisions (refer to Section 3.9.2). This research then measured actual organisational domain decisions, that is, directly measured the phenomena of interest. Therefore, an alternative, more specific measure of organisational domain decisions was introduced in comparison to much previous research which relied on proxies of relatedness which is a proxy for synergy (i.e., measurement of an outcome rather than organisational domain decisions per se), primarily involving numerical reporting data. The

second area of previous organisational domain research has focused on the measurement of specific organisational domain decisions. As all organisational domain decisions were empirically measured, irrespective of any specific type of organisational domain decisions, an extension has been made to the research stream. Again, this provides a more complete representation of organisational domain than generally has been previously presented.

c) *Empirical implications: The relationship between organisational domain and firm performance*

As noted in Chapters Two and Three, organisational domain was expected to impact on firm performance due to the effects of synergy and economies of scope that arose from the management of resources across the firm. To date, the evidence that has been presented appears contradictory (e.g., Bowman et al, 1999; Christensen & Montgomery, 1981; Delmas & Tokat, 2005; Grant & Jammine, 1988; Hitt et al, 1997; Lecraw, 1984; Michel & Shaked, 1984; Rumelt, 1974, 1982). However, other research found that both diversification and geographical expansion experienced a curvilinear relationship with performance (Grant & Jammine, 1988; Hitt et al, 1997; Lu & Beamish, 2004; Misangyi et al, 2006; Palich et al, 2000). Therefore, the curvilinear relationship between organisational domain and persistent firm performance (refer to Figure 6.2) found (although statistically nonsignificant at the $p < .05$ level) appears to provide some support for this empirical evidence. Their work is then extended as it was found that the incidence of organisational domain *decisions* as measured here reached a point where additional decisions impacted negatively on performance. However, the nonsignificant result may support the view that determining where the firm operates has a limited effect on persistent firm performance. This result then suggests validation of the main conclusion of the corporate effects research stream, namely, that industry effects are minor to corporate effects. Organisational domain may be an attribute of corporate strategy but it appears to have only a minor influence on persistent firm performance.

6.5.3 Internal governance

a) *Conceptual implications for internal governance*

The conceptualisation of internal governance employed in alternative pieces of research generally viewed internal governance as representing a number of distinct constructs, that is, research on organisational design is usually performed separately of organisational structure. Hamel and Prahalad (1994) introduced the term “strategic architecture” as an entire internal governance system. However, this concept of internal governance provides a more high level

view of internal governance and appears not to have been incorporated into the conceptual literature on internal governance. In addition, the concept of strategic architecture does not focus on internal governance decisions as such.

Some literature has measured the changes in internal governance as did this research (e.g., the observed movement from the U-form to M-form structures, Chandler, 1962; Mayer & Whittington, 1999), although the previous research did not focus on the presence of internal governance decisions. Having said that, the findings that the rate of internal governance decisions may be a source of distinction between firms (although not statistically significant at the $p < .05$ level) provide support for the view that changes to a firm's internal governance mechanism should be a considered process rather than a reactionary or overmanipulated one. It also provides some indirect evidence of the view that successful internal governance involves aspects of fit and congruency within the firm's environment (Burns & Stalker, 1961; Lawrence & Lorsch, 1967; Woodward, 1965) whereby once fit is achieved, more internal governance decisions are not required, and are, in fact, detrimental to the achievement of successful performance outcomes. Instead, success can be attributed to the fewer adjustments in internal governance.

b) Implications for the operationalisation of internal governance

The method of operationalising internal governance here was distinct from much previous research which focused on determining what the internal governance mechanism of a particular firm was at a given point in time, for instance, specifically measuring aspects of organisational design or structure (e.g., Child & McGrath, 2001; Miller & Friesen, 1980). Instead, this research measured, firstly, changes in internal governance decisions and, secondly, the consequences of internal governance. Actual internal governance decisions were measured, thereby introducing an alternative, more specific measure of internal governance decisions in comparison to much previous research presented. Furthermore, this research extends prior research as it measured internal governance in its entirety (as currently defined), not just one aspect of internal governance.

c) Empirical implications: The relationship between internal governance and firm performance

Although, internal governance has been viewed as being heterogeneous across firms, and thus, could provide a mechanism for delivering PSFP, the prior empirical research suggests that internal governance is contextual and, thus, successful internal governance is dependent on each

firm's situation. This has made it difficult to compare the previously presented research findings to the results obtained from this piece of research. However, this research does reveal that the frequency of internal governance decisions appears to reach a point where additional decisions impacted negatively on persistent performance (refer to Figure 6.3). The curvilinear phenomenon does provide some indirect evidence supporting Barney et al's (2001) contention that PSFP results from heterogeneity in the ability of firms to implement mechanisms of internal governance. Internal governance may be an attribute of corporate strategy but it appears to have a minor influence on persistent firm performance.

6.5.4 Resource governance

a) Conceptual implications for resource governance

Important conceptual implications have been advanced by this research as, firstly, resource governance although theoretically defined, has not generally, to date, been conceptually defined or operationalised. This research provides an exploratory step towards both. Hamel and Prahalad (1994) view of resource governance was followed as they conceptualised resource governance as a construct that was beyond the concept of resource allocation. Resource allocation has been conceptually viewed as an important aspect of corporate level decisions and has often been closely connected to organisational domain. Resource allocation usually perceives of a resource as having only one use: a resource can only be used a limited number of times. Resource allocation then considers that resources "somehow" exist within firms and that they should be allocated to the "best" use. However, resource governance views a resource as having the potential to have multiple uses over time, for example, core competencies and resource leverage. Resource governance, therefore, encompasses the entire lifespan of a resource, namely, resource creation, acquisition, development, review and protection.

The statistically significant results regarding heterogeneity in resource governance provides support for the importance of resource governance on persistent firm performance and, secondly, that resources are governed differently across categories of firm performance. It is reasonable to conclude that the possession of superior resources may be a lesser factor in persistent firm performance than *how* those resources are actually governed. Therefore, resource governance matters.

b) Implications for the operationalisation of resource governance

As noted above, resource governance has only been operationalised on a limited basis to date.

Hamel and Prahalad's (1994) view of resource governance was used as the foundation for the operationalisation of resource governance. This research then measured actual resource governance decisions, that is, directly measured the phenomena of interest. Consequently, this research introduced an alternative, more specific measure of resource governance decisions in comparison to much previous research which had generally measured resource allocation.

c) *Empirical implications: The relationship between resource governance and firm performance*

Although the majority of theoretical discussion and empirical research has focused on resource governance centred on resource allocation, it was suggested that resource governance encompassed more, namely, the creation, accumulation, protection and leverage of resources (Hamel & Prahalad, 1994). PSFP can result from the continual rebuilding and superior utilisation, exploitation and renewal of resources (Hamel & Prahalad, 1994; Harrison et al, 1993). The core competency and corporate level decision making skill theories, as discussed above, provide some evidence in support of this research stream. Interestingly, it was revealed that the PSFP category made significantly fewer resource governance decisions than both the lower firm performance categories (refer to Figure 6.4).

Of the four corporate strategy attributes, this research advanced a unique contribution whereby it provided empirical evidence that resource governance had the greatest impact on persistent firm performance on the dataset collected, indicating that it is the most important underlying attribute of corporate strategy of those measured and or advanced by theory to date. The other important contribution to knowledge is that the incidence of resource governance decision making can be used to distinguish the PSFP category from both the PAFP and PIFP categories. It would be well advised for future research to further the characteristics of superior resource governance decision makers and determine whether these specific decision making characteristics impact of firm performance singularly or as a whole. And are these characteristics embedded into the firm or are they eliminated if the superior corporate level decision maker is absent?

6.5.5 Corporate strategy

a) *Conceptual implications for corporate strategy*

As demonstrated in Chapter Three, corporate strategy has become a ubiquitous concept. The conceptual model presented in this research views corporate strategy as a series of deliberate strategic choices made at the corporate level of a firm, encompassing four attributes. A number

of authors argued that corporate strategy is only relevant to multiple business or diversified firms (e.g., Beard & Dess, 1981; Bergh, 2001; Bourgeois, 1980; Campbell & Faulkner, 2003; Chaffee, 1985; Ghemawat & Ricart I Costa, 1993; Grant, 2002a; Hitt & Ireland, 1985; Porter, 1991; Stalk et al, 1992). Evidence was found that corporate strategy existed in all 15 of the firms sampled including those firms operating within one industry (i.e., Amerada, BNSF, CMS, Masco, Northrop, Raytheon, Union Pacific and Whirlpool). The definition of corporate strategy employed in this research, that corporate strategy is a level of strategy that is important to all firms, now appears to be supported.

The construct of corporate strategy employed in this research focused on an appropriate unit of analysis, namely, corporate strategy is a firm-wide construct. Corporate strategy is beyond SBUs. It should unite the firm into a firm-wide framework. Corporate strategy considers the characteristics of the entire firm and the environmental impacts across the entire firm. Clearly, additional research is required that measures the influence of corporate strategy on *firm-wide* performance.

One of the objectives of this research was to identify the attributes of corporate strategy. Every effort was made to encompass various conceptualisations of corporate strategy into an innovative, accumulated definition, namely, that corporate strategy was comprised of strategic intent, organisational domain, internal governance and resource governance. Due to the three statistically nonsignificant at the $p < .05$ level results for strategic intent, organisational domain and internal governance, it was difficult to conclusively state whether corporate strategy is a unidimensional construct (comprising of only the statistically significant resource governance) or a multidimensional construct (comprising all four corporate strategy attributes).

The seeming importance of resource governance decisions may indicate that the construct of corporate strategy may be more complex than initially contemplated, involving both microelements and macroelements. Resource governance decisions may correspond to a macro element within the construct of corporate strategy (i.e., core competencies) whereas the statistically nonsignificant attributes might actually relate to a more microlevel of corporate strategy. This may provide an explanation for the nonsignificant results obtained for strategic intent, organisational domain and internal governance.

Alternatively, the complexity of the corporate strategy construct may involve levels of importance across the four attributes whereby all the attributes are important, but a hierarchy

may exist. For example, the results support the importance of resource governance decisions in comparison to the other attributes. Nevertheless, an ordering of importance may also exist for strategic intent, organisational domain and internal governance. Unfortunately, relatively little is known about the relationship between the four attributes. However, theory suggests that they should be interconnected and aligned. Further research would greatly assist in the understanding of the construct of corporate strategy and how it impacts on persistent firm performance. The findings that the rate of resource governance decisions had a significant impact on firm performance heterogeneity advances the construct definition and the conceptual framework of corporate strategy. Resource governance was then an important mechanism by which *corporate strategy* influences persistent firm performance. In addition, all four of the attributes displayed the same curvilinear phenomenon which suggests that the same principle may underlie the entire corporate strategy construct. In other words, success is not about increasing the number of corporate strategy decisions, rather firm performance can be attributed to the quality of corporate strategy decisions.

b) Implications for the operationalisation of corporate strategy

As noted in Chapter Two, the prevailing theoretical paradigms of IO and RBT (except for the core competency and skill in corporate level decision making theories) related to SCA did not incorporate either firm performance or corporate strategy. Corporate strategy has, consequently, received less attention from empirical researchers in regards to its impact on firm performance. Although prior research suggested that corporate strategy had a minor effect on BUP, limited research had been conducted utilising firm-wide measures of firm performance. A starting point with respect to measuring the actual incidence of corporate strategy within firms has been provided. As the statistically significant results do indicate support for a relationship between corporate strategy and persistent firm performance, clearly further empirical research should be conducted.

c) Empirical implications: The relationship between corporate strategy and firm performance

A predominant assumption within the strategic management literature suggests that PSFP can be attributed to corporate strategy which is formulated and chosen by the corporate level decision makers. This view contrasts with the main assumption evident within the empirical literature presented in Chapter Two, namely, decisions made at the corporate level have a limited impact on both business unit and firm performance. This assumption is unwarranted when one considers the influence of corporate strategy evident in all firms in reality which may

significantly influence both business unit performance and the firm as a whole. These decisions are corporate strategy decisions. Consequently, persistent superior firm performance may result from more than just products, markets, or industries. Corporate strategy has been found to matter.

6.6 IMPLICATIONS FOR THE FIELD OF STRATEGIC MANAGEMENT

The strategic management literature should be revised to recognise the importance of corporate strategy, in addition to the dominant view that competitive strategy impacts on firm performance. A clear distinction should then be made regarding the use of the term corporate strategy. As noted in Chapter Three, clarity in the use of the term “corporate strategy” would assist in the recognition that it is an important component of organisational strategy. Corporate strategy is then distinct from all the strategy employed within a firm.

Therefore, it is proposed that the definition of corporate strategy should be a clearly defined construct like competitive strategy, for example, like the definitions outlined in Chapter Three. The second important contribution of these findings is the apparent support for the inclusion of the four attributes as representing corporate strategy, that is, all four attributes were observed in all firms of the sample. Thus, this research supports the prior theoretical views of, for example, Andrews, 1971; Bower, 1982; Chandler, 1962; Lynch, 2003; Nelson, 1991, who argued organisational direction is also a component of corporate strategy. A universally accepted definition would encourage, firstly, greater theoretical discussion on the role of corporate strategy in firm performance (e.g., the underlying mechanism, possible universal “laws” of superior corporate strategy) and, secondly, further empirical research into the construct of corporate strategy.

Only corporate level decisions were measured in this piece of research. There is then evidence that important decisions that could be the source of firm performance heterogeneity *are* made at the corporate level, not the business level. In other words, the decisions measured here represented corporate strategy decisions, not decisions related to competitive strategy.

Corporate strategy has been found to account for some firm performance heterogeneity. Corporate strategy is, therefore, important and it matters, especially to PSFP firms. More specifically, corporate strategy does actually contribute to firm performance whereby corporate

level resource governance decision making is critical and does matter to PSFP. Therefore, corporate strategy should also be more fully incorporated into strategic management.

A fresh and unique approach to firm performance, namely, the construct of PSFP has been presented. PSFP is rare and correspondingly difficult to achieve (e.g., Wiggins & Ruefli, 2002) suggesting SCP's view is incorrect (i.e., competitive positioning which considers strategy as duplicating competitors' strategy or employing generic strategies). Recognition should also be made that SCA may be only one mechanism for achieving PSFP. The current view prevalent within the strategic management literature is that once a firm achieves SCA, it automatically achieves performance outcomes. This research proposes that, in addition to achieving SCA, other factors, such as corporate strategy, can also result in PSFP. Clearly, future research could focus beyond SCA, onto the achievement of PSFP, namely, are there additional ways of achieving PSFP beyond solely SCA? Is there a relationship between functional strategy and PSFP, separate from the relationship between functional strategy and SCA?

The rareness of PSFP may indicate that superior corporate level decision making skill is also rare. This points the way for future research; for example, investigating the *role* of corporate level decision makers. For PSFP firms, corporate level decision makers appear to minimise uncertainty, conflict, complexity, ambiguity, risk and bias. This suggests that relevant aspects of the decision making literature should be incorporated into the prevailing strategic management paradigm, namely, resource based theory, to a greater extent than it has been to date.

In summary, strategic management seeks to understand the nature of organisational performance. The heterogeneity of firm performance has been observed to be caused from a trait which sits within the firm, namely, the corporate level decision making skill. It can then be expected that the performance of firms can alter over time. The implication for strategic management's aim of discovering factors to enhance firm performance is the possible ability of firms to shift the firm performance, in other words, from PIFP to PSFP or from PAFP to PSFP. However, the PAFP firms appear to be stuck in a "busy-ness" paradigm and, therefore, it may be more difficult for these firms to transform to PSFP.

6.7 IMPLICATIONS FOR PRACTITIONERS

From the perspective of people who create, adopt and use corporate strategy, the statistically nonsignificant results still provide important and relevant contributions to knowledge. For

practitioners, these results suggest that although the incidence of strategic intent, organisational domain and especially, internal governance, was similar for both the PIFP and PSFP categories, a difference exists in persistent firm performance (refer to Figures 6.1 - 6.3). This pattern suggests that the same underlying principle may exist across the entire corporate strategy construct, namely, persistent firm performance is dependent on the corporate level decision making skill evident within firms. If this principle is extended, it is reasonable to conclude that firms may be able to directly transition from inferior to superior firms.

The phenomenon of the movement of firms from inferior to superior firm performance was also established by Collins (2001). Collins analysed annual series data which was gathered using a large research team. While being relatively weak from a methodological perspective, Collins observed that the PIFP firms he studied, over time became better than averagely performing. The process that was then adopted involved a direct shift from PIFP to PSFP (almost omitting PAFP as a transitional stage). Therefore, this piece of research can be viewed as extending Collins's observation as it is reasonable to conclude that this outcome ought to be achieved (refer to Proposition 7 on page 250). It may not be a matter of following the curvilinear phenomenon observed from PIFP to PAFP and then PSFP, as firms should be able to implement the right (i.e., quality) sort of decisions in order to achieve this outcome.

Some commonality of the categories of performance appears to exist between both pieces of research. Unsurprisingly, considering the selection techniques utilised by Collins, none of the firms that comprise the sample of 15 firms for this research were identified by Collins as good-to-great firms (by the criteria Collins employed, it was expected that these firms would have been classed as PIFP). Three of the sample firms employed in this research were considered but eliminated from his dataset due to either incomplete CRSP data before 1975 (CSXC) or their rise in performance was not sustained (Masco and Raytheon). This indicated that Collins expected to find some movement in performance displayed by these three firms. None of Collins's 11 good-to-great firms were included in the PSFP category. Two were not included in the download of CRSP data (Fanny Mae and Phillip Morris), three were categorised as PIFP firms (Circuit City, Kroger and Walgreens) and, lastly, six firms were classed as PAFP firms (Abbott Labs, Gillette, Nucor, Pitney Bowes and Wells Fargo). Of his 11 direct comparison and six unsustained firms, only three (one PIFP and 2 PAFP firms) were included in the population of firms as determined by this research (10 were not included in the download of CRSP data and the remaining four were characterised by incomplete SMP data).

6.7.1 Implications for PIFP firms

Some key implications for the PIFP category are now discussed. The PIFP firms may possess admirable elements as they survived during a period in which (although it outside the scope of this research) many other firms were acquired or dissolved. It should then be recognised that the performance of the PIFP firms is relative to the other two firm performance categories. All four of the attributes displayed the same curvilinear phenomenon which suggests that the same principle may underlie the entire corporate strategy construct, namely, it appears that merely increasing the incidence of corporate strategy decision making evident within a PIFP firm could *only* result in increased firm performance to the PAFP level.

However, the curvilinear phenomenon observed in this research suggests that a PIFP firm may choose to achieve the PSFP outcome as it may not be a matter of becoming a PAFP firm before becoming a PSFP firm. The curvilinear nature of the phenomena observed appears to involve inflection points. In other words, it appears as though PIFP firms can transition to PSFP without having to go through the PAFP stage. This is in contrast to other research which suggests firms step from stage to stage; for example, Gluck, Kaufman and Walleck (1982) observed that firms move through stages as their strategic management skill increases.

Through the concept of inflection points, it can be argued that firms can transition directly from PIFP to PSFP (i.e., improvement in firm performance) in a relatively short time frame (i.e., the process is not gradual) without the anguish of PAFP stage. An inflection point can be created when a PIFP firm, for example, can achieve transition to PSFP by increasing the corporate level decision making *skill* evident within their firms. This increased corporate level decision making skill for PIFP firms, then broadens the decision making frames of reference and assists in the identification of appropriate firm-wide aims, thus, producing quality resource governance decision making. An example of an inflection point is the appointment of a new CEO, who then replaces the top management team with new recruits. This influx of corporate level decision making skill increases the *capacity for precise and correct decision making*.

The PIFP firm could then place the right sort of decisions in play in order to achieve that outcome. First, PIFP firms should recognise the importance of corporate strategy on persistent firm performance. Second, PIFP firms, instead of increasing the incidence of their corporate strategy decision making, should focus on making quality corporate strategy decisions. In other words, for PIFP firms, it is about making about the same number of decisions as PSFP firms do,

and like the PSFP firms, ensuring that these decisions are significantly better in terms of quality. The corporate level decision making skill perspective contends that increasing the capacity of PIFP firms to make quality corporate strategy decisions can influence the movement to the PSFP category. This can be achieved by either hiring appropriate quality corporate level decision makers or formulating and implementing quality decision making mechanisms (which is a slower method). However, PIFP firms should be careful not to introduce complexity into their corporate level decision making practices.

6.7.2 Implications for PAFP firms

For PAFP firms, the process to achieve PSFP could be viewed as more difficult as the curvilinear association observed in this research seems to indicate that PAFP firms should decrease the incidence of corporate strategy decision making. However, difficulties may exist in separating inferior decisions from superior decisions due to, firstly, the lack of managerial time available due to the perceived need to react to the environment and to continue to make decisions. Secondly, further difficulties may also exist due to the need to rapidly develop a comprehensive and appropriate decision evaluation and review processes and, lastly, the perceived lack of priority of corporate level strategy and a firm-wide approach. If PAFP firms attempt to increase the decision making activity at the corporate level, the curvilinear relationship found suggests that it will not result in improved firm performance. Instead, the higher rate of corporate level decision making may result in similar performance outcomes that they are currently experiencing.

Again like PIFP firms, PSFP could result if the PAFP firms obtained access to quality corporate strategy decision makers who could then alter the corporate level decision making process so that, firstly, complexity is reduced, secondly, changing the focus from the SBU to a firm-wide approach, and, lastly, increasing the quality of corporate level decision making. An inflection point may also be created whereby a PAFP firm can achieve transition to PSFP by means of increasing the corporate level decision making skill evident within their firms. This increased corporate level decision making skill, for PAFP firms, broadens the decision making frames of reference and assists in the identification of appropriate firm-wide aims, thus, producing quality resource governance decision making. Again, this influx of corporate level decision making skill increases the *capacity for precise and correct decision making*.

6.7.3 Implications for PSFP firms

The key implications for the PSFP category mainly centre on recognising a key number of aspects of their corporate level decision making process. Recognition should include ensuring that decision making simplicity, not complexity, is an important aspect of their corporate level decision making success, and that a firm-wide philosophy or focus is important to PSFP. Any poor corporate level decisions should continue to be fed back into the review process. PSFP corporate level decision makers should be aware that a poor recruitment choice may greatly impact on the quality of corporate level decision making, for example, by creating a backward inflection point which could result in performance outcomes moving from PSFP to either PAFP or PIFP.

Alternatively, PSFP firms could establish that their corporate level decision making skills are embedded into the firm so that if these valuable skills are no longer available to the firm (e.g., if the skilled corporate level decision maker/s left the firm), the quality of decision making is not affected. In a similar vein, Collins and Porras's (1994) work also suggests that the core (i.e., philosophies and strategic direction) should be able to exist over a long time period. Investment to increase and develop the decision making skill at all levels within the firm should be encouraged so that the skill level of lower decision making levels are producing quality decisions. This talent pool then becomes available for corporate level decision making when required. Overall, PSFP firms should continue to focus on producing quality, not quantity corporate level decisions.

For practitioners, the curvilinear association displayed in Figures 6.1 to 6.5 suggests that both PIFP and PAFP firms, *instead* of increasing the incidence of corporate strategy, should focus on increasing the *quality* of corporate strategy evident within their firms. In other words, for a PIFP or PAFP firm to become a persistent superior performing firm, requires *less*, but higher quality corporate strategy decision making. It is then expected that PIFP firms could successfully transition into the PSFP category without enduring the PAFP stage. This association also suggests that that it may be relatively easy to shift a firm from the PIFP category to the PSFP category – providing of course there is a complete change in the top management team - in comparison to the changes required for PAFP firms to produce PSFP. The curvilinear relationship established suggests that a hypothesis for future research could involve investigating the shift from performance from PIFP to PSFP, largely through use of more appropriate decision making as opposed to more appropriate resources.

6.8 SUMMARY

The aim of this research was to investigate the nature of corporate strategy and its role on persistent firm performance. Even though the methodology employed represented a minimum level of corporate strategy, the results established the presence of corporate strategy and, further, suggested corporate strategy was not a rare phenomenon particular to only a certain firm performance category. In fact, all the 15 firms sampled recorded significant levels of corporate strategy decisions over the 25-year period including those operating in a singular industry (contradictory to the assumptions underlying the corporate effects research).

The results offered a number of contributions to the understanding of corporate strategy and firm performance. Firstly, were the three firm performance categories different in terms of corporate strategy and, if so, its attributes? Corporate strategy does significantly differ across the three firm performance categories. Secondly, in terms of a corporate strategy, which firm performance categories differ? The persistent superior firm performance category differed from both the persistent inferior and persistent average firm performance categories in terms of resource governance whereas the persistent inferior and persistent average firm performance categories were found not to differ. Closer examination revealed that the persistent superior firm performance category differed from both the persistent inferior and persistent average firm performance categories in terms of the rate of resource governance decisions. As this was the only significant attribute of corporate strategy (at the $p < .05$ level), this suggests that the other three attributes did not have a significant impact on corporate strategy and its relationship to firm performance.

Support for the two statistically significant hypotheses is suggested by a fit with the theoretical expectations, namely, heterogeneous corporate level decision making skill. Strategic management predicts that higher firm performance results from better managed companies, that is, through the mechanisms such as corporate strategy. The statistically significant quantity of resource governance results indicated support for the resource based theory, in other words, the successful firms use resources in a superior manner (lower excess or unutilised resources). The closeness of the inferior and superior firms suggests that the successful firms are consistently making superior resource based decisions. The lower frequency of resource governance decisions by the persistent inferior performing firms may be due to poor opportunity identification, failure to respond to opportunities, and indecision. In comparison, the superior firms appear to possess the skill and ability (through firm systems, processes, programmes) to

simplify their decision making processes, and, thus in doing so they reduce the number of corporate strategy decisions actually made. The persistent average firm performance category was characterised by a larger number of corporate strategy decisions highlighting a hit-and-miss approach to the relationship between resource governance decision making and subsequent performance.

7 CONCLUSION

7.1 CHAPTER INTRODUCTION

The seemingly limited theoretical thought on corporate strategy has resulted in a predominantly normative literature that lacks a strong theoretical framework. This research attempted to bridge these gaps by, firstly, focusing on corporate strategy research at the firm level; secondly, clearly defining corporate strategy and its attributes; and, thirdly, identifying that the incidence of resource governance decisions can be used to distinguish persistent superior firm performance from both the persistent average and persistent inferior categories of firm performance.

A framework that can be utilised to study the complex relationship between firm performance and each of the four attributes, namely, strategic intent, organisational domain, internal governance, and resource governance was compiled. This framework included the development of 14 hypotheses (five main hypotheses and nine subhypotheses) and the operationalisation of 18 variables for empirical verification. An empirical study of 15 United States Fortune 1000 firms was conducted to test the hypotheses developed in the research framework. Content analysis of 9,970 Wall Street Journal articles from 1980 to 2004 was performed. A total of 14,082 codings of corporate strategy were analysed with the use of SPSS and R.2.2.1. A number of inferential statistical techniques were employed to increase confidence of the findings.

The aim of this research was to determine if corporate strategy could be used to distinguish the persistent superior firm performance category from the other two firm performance categories. These tests provided several interesting results from which a number of conclusions may be drawn. Of the 14 hypotheses presented, four were found to be statistically significant at the $p < .05$ level for the data collected, namely, H_5 and H_{5a} regarding corporate strategy, and H_4 and H_{4a} regarding resource governance. A discussion of the contribution to theory now follows. The remainder of this chapter presents a number of limitations to the research and implications including possible future research avenues. Recommendations for practitioners are then provided.

7.2 THE THEORY AND RESULTS

Determining the factors which result in persistent superior firm performance has long been a goal of the field of strategic management. Previous empirical research has uncovered evidence that corporate effects resulting from phenomena such as corporate strategy, have accounted for up to 46.3% of business unit performance. However, the continued focus of strategic management literature on sustainable competitive advantage has led to the embeddedness of a number of weaknesses in terms of corporate strategy. For example, both the conceptual and theoretical foundations of strategic management are centred on achieving sustainable competitive advantage from a single business unit. The conceptual framework and theory that was built and tested in this research makes an important contribution to the field of corporate strategy. Corporate strategy has been mostly limited to research using large multivariate analysis of variance techniques; the management of multiple business firms; specific corporate strategies; and, lastly, normative models. This study broadens this extant research and suggests that firms achieving persistent superior firm performance are characterised by superior corporate level resource governance decision making. The research also initiated two uncommon avenues of enquiry: firstly, a focus on corporate strategy rather than on competitive strategy and, secondly, persistent superior firm performance rather than focus on the dominant sustainable competitive advantage.

The aim of this research was to make a contribution to the knowledge of corporate strategy by determining whether corporate strategy actually contributes to persistent firm performance. The first contribution made is a clearly defined conceptualisation of firm performance, that is, persistent superior firm performance is a corporate level alternative to sustainable competitive advantage. Secondly, the conceptual framework developed in this study defines, for the first time, corporate strategy and its attributes, specifically, the four attributes of strategic intent, organisational domain, internal governance, and resource governance. Thirdly, previous treatments of corporate strategy have been challenged, in other words, corporate strategy is not only relevant to multiple business firms. Corporate strategy is also more than a specific strategy. Fourthly, this research argued and empirically demonstrated that corporate strategy is, in fact, important to persistent firm performance and could be used to distinguish between categories of firm performance.

Resource governance is the most important attribute of corporate strategy. In other words, the frequency of resource governance decisions could be used to distinguish the persistent superior firm performance category from both the other two firm performance categories. Therefore, the

results suggest that the aim of strategic management research should be widened to include both the importance of corporate strategy on the achievement of persistent superior firm performance and the importance of superior resource governance decisions on the achievement of persistent superior firm performance.

7.2.1 The corporate level decision making skill perspective

Corporate strategy is expected to provide the basis for all organisational actions. Therefore, it has been assumed that poorly constructed or inappropriate corporate strategy impacts on firm performance. In other words, corporate strategy is unique, difficult to imitate and substitute, and, ultimately, firm specific. The results of this study indicated that corporate level decisions made by persistent superior performing firms are superior to those made by both persistent average and inferior performing firms. The asymmetries in corporate level skill that exist across firms are predicted to have a significant impact on the quality of the corporate level decisions as corporate level decision makers do control, to a large extent, the corporate strategy decision making process. Although the search for theoretical insight has only begun, the corporate level decision making skill perspective presented here offers a theory to explain this finding.

Support for the two statistically significant hypotheses for corporate strategy and resource governance is suggested by a fit with the theoretical expectations, namely, heterogeneous corporate level decision making skill. Strategic management does predict that persistent superior firm performance results from better managed companies, that is, through the mechanisms such as corporate strategy. The statistically significant resource governance results indicates some support for the resource based theory, in other words, successful firms use resources in a superior manner (lower excess or unutilised resources). The closeness of the sample means for the persistent inferior and persistent superior firm performance categories suggests that the successful firms are making superior resource based decisions. The lower frequency of resource governance decisions made by the inferior firms may be due, for example, to poor opportunity identification, failure to respond to opportunities, and indecision. Decisions, if they are made at all, appear to be inappropriate leading to inferior firm performance. Therefore, the inferior firms' corporate level decision makers seem to consider that corporate strategy does not actually matter.

The possession and utilisation of superior corporate level decision making skill allows decision making processes to be simple (but not simplifying assumptions) and more effective. This simplicity then reduces the complexity and uncertainty the firm faces, which increases the

quality of decision making which results in a lower rate of resource governance decisions. Successful firms may also utilise tools, such as the core competency approach, to provide a consistent firm-wide philosophy or direction on which, at least, all corporate level decisions are then based. Superior firms appear to possess the skill and ability (either through individual corporate level decision making skill or embedded or institutionalised into firm systems, processes, programmes) to simplify their decision making processes and subsequently reduce the number of corporate strategy decisions made. This then suggests that if the skilled individual left the firm, the quality of corporate level decision making would reduce (unless replaced by an equally superior corporate level decision maker). Therefore, in successful firms corporate strategy matters.

The firms in the persistent average firm performance category were characterised by engaging in a larger number of corporate strategy decisions highlighting hit-or-missed opportunities. Some good opportunities are fulfilled and some bad opportunities are also undertaken. As these firms make higher rates of incorrect (e.g., poorly constructed or inappropriate) decisions, average performing firms appear to possess lower overall corporate level decision making skills relative to successful firms. However, unlike inferior firms, they may recognise the inferior decision and make additional decisions for correction. It can be proposed that for average firms corporate strategy sometimes matters.

Less successful firms could then increase their capacity to produce excellent decision making over time. However, resource based theory argues that the unique characteristics of the corporate level decision making skill evident within excellent firms are difficult to imitate. This suggests that the critical resource shortage in nonsuccessful firms may not be overcome by substitution but rather can only be surmounted by decisions regarding innovation or by improving the skill of the current corporate level decision makers within these firms. In these firms corporate strategy does not yet matter.

However, the curvilinear association found suggests that changes in performance outcomes may be achieved via an inflection point, in other words, through the acquisition of superior corporate level decision making skill. While there is a difficulty in establishing the point when unsuccessful firms can become a successful firm, firm performance can, theoretically, transform from either inferior or average firm performance to successful performance outcomes. This transformation may occur through an increase in superior corporate level decision making skill (although the impact would alter difference aspects of corporate level decision making in inferior

and averagely performing firms). Backward inflection points could also potentially occur whereby successful firms, for example, may hire inferior corporate level decision makers which could influence firm performance from superior performance to either lower categories of firm performance.

The arguments that corporate strategy has a limited impact on firm performance have been challenged. Instead, corporate strategy, through the corporate level decision making skill evident in resource governance decisions, may be achieved through appropriate simplicity in a firm's corporate strategy decision making which then leads to successful performance outcomes. The curvilinear association between persistent firm performance and the incidence of corporate strategy decisions may also point towards an instant where fewer, but superior decisions result in greater firm performance. Persistent superior firm performance arises from not necessarily the possession of resources, but how these resources are used. This research then endorses Hamel and Prahalad's (1994) view of the world which has *not* been empirically tested. In other words, corporate strategy does matter to firm performance and can be used to distinguish the persistent superior firm performance category from the nonpersistent superior firm performance categories on the basis of the incidence of resource governance decisions.

7.3 LIMITATIONS: EXOGENOUS TO THE RESULTS

This research was constrained by a number of limitations. Obtaining data from a secondary data source could have restricted the measurement of corporate strategy actually evident in the sample collected; for example, unobservable corporate strategy decisions may have been made but not recorded in Wall Street Journal. This suggests that the phenomenon of corporate strategy may have been "undermeasured". Furthermore, the Wall Street Journal articles do not necessarily represent the phenomenon under study as they were not constructed with the aim of accurately representing corporate strategy. The capacity to replicate this type of research methodology is limited to perhaps the United Kingdom as the Financial Times is the only other credible source of data.

The small sample size, in addition to limiting the type of statistical analysis that could be utilised, may result in "lower power" to correctly detect the associations hypothesised, that is, a Type II error may have been committed. A larger sample may have revealed the phenomenon of corporate strategy to a greater extent than was observed in this research. Even though the sample was confined to United States firms, the findings could be generalisable to large corporate firms

from other countries as most of the firms sampled were multinational in nature. However, the results may only have limited generalisability to medium and small firms.

Undoubtedly other important factors may influence the incidence of corporate level decision making that were not investigated in this study. These factors may play an intervening or moderating role whereby the nature of corporate level decision making is significantly impacted. The results of this research should then be regarded as an important first step in the understanding of the role of corporate strategy on firm performance.

The final area of concern was the limited corporate strategy literature available which could provide comparisons with research utilising similar data sources and research methodologies. The various constructs, some of which had only been addressed in a limited manner to date, were complex, namely, Hamel and Prahalad's (1989, 1994) strategic intent. Thus, the research conducted was ambitious in terms of its aim and, while important, should be considered exploratory in nature given that it has not been undertaken anywhere else.

7.4 DIRECTIONS FOR FUTURE RESEARCH

Each of the limitations provides important research opportunities. In a perfect world, long-term and wide-ranging access to the sample firms could provide a more accurate observation of the corporate strategy attributes evident within the three firm performance categories. Ideally, data could have been collected *in situ* via in-depth interviews and long-term (25-year) observation of the top management team (that is, the people making the corporate strategy decisions). The scope of future work could be increased whereby additional modes of measurement could be added to those indicators measured here providing additional construct validity. It would be interesting to compare the data collected from an expanded sample, in terms of size and beyond the United States Fortune 1000 firms. An expanded dataset would also provide some interesting comparisons and may uncover additional important patterns. For example, are the characteristics observed in large, publicly listed firms evident within smaller organisations, private firms and governmental agencies?

This research sought to determine the causal relationship between corporate strategy and firm performance. But does a reverse causality, however minor, exist whereby successful firm performance increases the superiority of corporate level decisions (e.g., are successful firms more able to recruit superior corporate level decision makers)? Accordingly, future research into

the uncovering aspects of the relationship between corporate strategy and firm performance would greatly assist in the understanding of the nature of corporate strategy.

Many intervening variables may alter the relationship between the rate of resource governance decisions made and persistent firm performance. Some of these were discussed in Chapter Three (e.g., luck and historical firm performance). These potential sources of covariance would be a logical area for further research. Any intervening variables found to be statistically significant may also assist in eliminating alternative explanations. Demonstrating cause-effect relationships as hypothesised may include adding further variables into the model. Such tools of analysis would include multivariate analysis. The employment of alternative techniques would also enhance the robustness of these findings.

By considering all four attributes together, additional insight was gained into the previously poorly defined notion of corporate strategy. This approach may provide the basis for additional future research and theoretical discussion whereby the notion of corporate strategy is clarified within the strategic management community. Building on the conceptualisation of corporate strategy employed in this research would limit the already fragmented and contradictory concept of what corporate strategy is and increase the theoretical impact of corporate strategy on persistent firm performance.

It is notable that resource governance was the statistically significant corporate strategy attribute. This suggests that aspects of the resource based theory may be a useful source of explanation. Resource based theory should, therefore, be developed beyond the dominant logic of sustainable competitive advantage and business level strategy. Secondly, this research highlighted the importance of the quality of corporate level decision making in successful firms. Important aspects of the decision making literature could be further developed and incorporated into resource based theory. As resource based theory has not specifically developed theoretical insight into resource governance decision making, the search for theoretical insight may have only begun. Furthermore, future empirical research could centre on the nature of resource governance in successful firms, for example, how do these decisions impact positively on firm performance (i.e., involving in-depth qualitative research methods). The specific nature of resource governance was not directly observed and must remain somewhat speculative. For example, the relationship between different types of resource governance decisions and firm performance is an additional avenue of research that needs to be explored. Many important questions remain unanswered and some include: is heterogeneity due to the resource governance

decision formulation or resource governance decision implementation? Although aspects of all the corporate strategy attributes are in both formulation and implementation, resource governance is currently thought to sit mainly in the strategy implementation arena.

The possibility that corporate level decision making skill solely rests at the level of the individual raises a number of questions for future research: does the skill of individual corporate level decision makers matter, or is success due to the skill level of a group of corporate level decision makers? If the group is found to be the main source of corporate level decision making skill, do groups exchange quantity for quality as suggested by Orlitzky and Hirokawa (2001)? Is corporate level decision making skill institutionalised into firms or does it represent a personal competency? Further, if corporate level decision making skill is found to signify a personal competency, can specific aspects of corporate level decision making skill be identified? And if so, what extent (for example, are any of the four influences on corporate level decision making discussed here more important than the others)? It is also reasonable to ask if these possibly identifiable skills could be embedded into firms.

7.5 RECOMMENDATIONS FOR PRACTITIONERS

This study offers a number of implications for business practice. First, academics and tertiary institutions will be well advised to include these following factors in their strategic management courses. Firstly, conceptualising corporate strategy as comprising four attributes, namely, strategic intent, organisational domain, internal governance and resource governance. Secondly, the concept of persistent superior firm performance should be presented as an important construct distinct from sustainable competitive advantage. Lastly, the quality of resource governance decisions distinguishes persistent superior firm performance firms from both persistent average firm performance and persistent inferior firm performance firms.

In order for persistent superior performing firms to maintain performance they must continue to acknowledge the role of quality resource governance decision making. They should also ensure persistent superior firm performance is regarded as a continual process and long-term concept. Secondly, successful firms should ensure that their corporate level decision making skills are embedded into the firm so that if these decision makers are no longer available to the firm, the quality of decision making is not affected. Lastly, the continued recruitment and development of superior corporate level decision makers (including developing the internal talent pool) would maintain the capacity of precise and excellence in corporate level decision making. Overall,

excellent firms should continue to focus on producing quality, not quantity corporate level decisions.

If persistent averaging performing firms attempt to increase the decision making activity at the corporate level, in a vain attempt to increase the rate of superior decisions, the higher rate of corporate level decision making is likely to result in a continuation of the performance outcomes they are currently experiencing. Instead, it is recommended that average firms should acknowledge the need to reduce the complexity in the resource governance decision making processes (i.e., Keep It Simple Stupid). Secondly, a unifying firm-wide goal would be created to eliminate the internal competition, for example, focusing on the core competency approach to resource development may assist in both a unifying goal and the start of a firm-wide philosophy that does not change over time. This would assist in reducing complexity. Thirdly, the codification and institutionalisation of decision making processes and rules, that is, capturing organisational learning, could also reduce complexity and increase the quality of resource governance decision making. It is important for average performing firms to capture both their successful and inferior corporate level decisions so that, lastly, the recruitment of superior corporate level decision makers would increase the capacity of precision and excellence in corporate level decision making.

Persistent inferior performing firms should recognise that increasing performance outcomes is about making about the same number of decisions as excellent firms do and, like the excellent firms, ensuring that these decisions are substantially better in terms of quality. Therefore, for inferior firms, the most important recommendation involves ensuring the right people are employed in the right roles throughout the firm, that is, increasing the decision making capacity of superior skilled managers will provide the necessary foresight and leadership within the firm. The correct identification of opportunities and firm-wide goals will greatly assist in the achievement of superior corporate level decision making. Inferior firms could also increase their quality of decision making by the codification of decision making processes and rules. However, inferior firms should be vigilant not to introduce complexity into their corporate level decision making practices.

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APPENDIX 1: CODING BOOK

Code specific references to any of the 18 variables or eight negative variables when mentioned in the Wall Street Journal articles

CORPORATE DECISION	REASONING	CODE
Movement of internal people into similar roles	Change in lines of authority or responsibility Protection of resources	CIG, RLM
Movement of internal people into new roles	Change in lines of authority or responsibility Enlarging mental models or frames of reference Protection of resources	CIG, RNC, RLM
Movement of internal people into new divisions or departments or units	Change in lines of authority or responsibility Enlarging mental models or frames of reference Protection of resources	CIG, RNC, RLM
Position will not be filled	Change in lines of authority or responsibility	CIG
Retain target management team during acquisition	Protection of resources	RLM
External appointments (including merger partners)	Change in lines of authority or responsibility Enlarging mental models or frames of reference	CIG, RNC
Appointment of consultants		Not coded
Appointment into acting roles	Change in lines of authority or responsibility	CIG
Increases or reductions in board numbers	Already coded in director (unless increase or decrease is policy change)	Not coded
Moving employees to other positions rather than eliminating them	Protection of resources	RLM Not coded: increased hiring
Increased hiring		Not coded
Dismissed employee	Change in lines of authority or responsibility	CIG
Separation pay for redundancy and salaries		Not coded
Reorganisation into new units or departments or divisions	Changes in organisational design	CIG (only code once irrespective of number of new units as one decision)
Restructuring	Changes in organisational structure	CIG (code each separately e.g., decentralisation, enhance accountability, spans of control, authority)
Moving corporate offices to new location	Change in organisational design	CIG
Firm or unit name change	Change in organisational design	CIG
Change in auditors	Change in control and compliance	CIG
Advertising spend	Decision to allocate resources	RAL
Review or change in advertising agents	Change in control and compliance	CIG
Accounting methods	Example of control and compliance	CIG
Anti-takeover measures	An example of board policy changes Change in control and compliance Protection of resources	CIG, RLM
Lobbying	Conserving, protecting or enlarging resources	RLM

CORPORATE DECISION	REASONING	CODE
Comments supporting management, strong management etc	Protection of resources	RLM
Management issues, poor management, creditability	Resources not protected	NRLM
Firm statements about being largest, biggest etc (including intent)	Aspirational	EMC, STR
Alignment of decisions to strategic direction	Unity, convergence to same strategic direction	ASI (only code specific references to alignment to strategic direction)
Innovations implemented before competitors	Challenge the status quo, pre-empting and shaping emergence, path breaking, competition for the future	RNC, FUT
Strike, labour action or disputes		NEMC Not coded: single person issues or nationwide strikes Not coded: severance pay
Agreements to eliminate employees or voluntary separation agreements or early retirement etc	Resources not leveraged	NRI.
Conciliatory approach to unions		EMC
Expansion of operations (including potential) within existing locations, product range, vertical integration	Increases firm boundaries or domain	IFD, RAL Expansion of previously coded operations (e.g., expansion of existing plant code) as RAL.
Reduction of operations (including potential) within existing locations, product range, vertical integration	Decreases firm boundaries or domain	DFD
Closure of plants (not sale)		DFD (for each closure) Code closing of petrol stations as one DFD
Temporary plant closures	Inefficiency	Not coded Not coded: short-term closures of plants
Merger or takeover or acquisition talks	Coding intent	IFD, RAL.
Paid additional money for acquisition		FDD, RAL.
Completed tender offer		FDD
Starting acquisition process	(in addition to above coding if preliminary talks specifically mentioned)	IFD, RAL.
Increase interest in firm as part of acquisition		IFD, RAL. (for each increase)
Consideration of takeover bid for firm		FDD
Spin-off division, unit or department	Decreases firm boundaries or domain	DFD Further decisions continuing or discontinuing or completed with spin-off are coded as FDD Not coded: spinning off of properties
Sold e.g., 26 oil fields to one buyer	Coding number of transactions	DFD (only once)
Sold e.g., 9 transactions to 8 buyers	Coding number of transactions	DFD (code e.g., 9 times)
Merger (including raising bid)		IFD, RAL (and other coding if reasons etc mentioned)
Merger issues	Failure to integrate firm	NSYN Only code reasons for merger issues, not 'merger issues' or 'service issues' separately

CORPORATE DECISION	REASONING	CODE
Alliances or operating agreements	Decision on what firm will do, what it has others do	JV
Existing joint venture (coding original interest)	Decision on what firm will do, what it has others do	JV
Formed new joint venture (or intention to create joint venture)	Decision on what firm will do, what it has others do	JV, RAL
Increased interest in existing joint venture		IFD, RAL
Decisions to operate or manage joint venture	Decision on what firm will do, what it has others do	FDD Not coded RAL as already coded in original JV coding
Decreased interest in joint venture	Decreases firm boundaries or domain	DFD
Joint venture or spin-off decisions (after joint venture established)	Assume decisions not specifically made by sample firm	Not coded
Joint venture created to acquire stake in another firm	Increases firm boundaries or domain	JV, RAL
Sales of joint venture interest or assets to an internal unit		RGD Not coded: transfers between two units
Joint venture benefits to sample firm by utilising resources of venture partner	Leveraging firm resources for benefit of joint venture	RL
Benefits to sample firm by utilising resources within firm (including majority interest companies)		SYN
Allowed installation of cable along route or system		FDD IGC, RL (if enhances own communications)
Signed lease agreements	Decision on what firm will do, what it has others do Other firm managing, not sample firm	FDD, RAL (if money is mentioned) Code RL if mentioned
Contract or agreement with suppliers		RAL Code awarding contracts i.e., contractor as FDD only
Contract selling electrical power to others	Decision on what firm will do, what it has others do	IFD (and FUT if relevant etc) Don't code RAL as power is regarded as product
Contract won or bidding on (no other firms mentioned)	Decision on what firm will do, what it has others do	IFD, RAL
Military contract	Decision on what firm will do, what it has others do	IFD Code joint venture as JV, RAL (including co-producing with non-US military)
Leading contract team or with partners	Decision on what firm will do, what it has others do Resources include more than money	JV, RAL
Awarding subcontract to other firms	Decision on what firm will do, what it has others do	FDD
Firm is subcontractor to another firm	Decision on what firm will do, what it has others do	FDD
Contract to operate, manage or maintain (e.g., power plant)	(note coding of JV different)	IFD, RAL Code part of initial contract as FDD Code old agreements as FDD
Signed long-term (>10 yrs) agreement		FUT (and other codes if mentioned e.g., RL)
Outsourcing agreement		DFD (or FDD if not in firms scope), RGD (and other codes if mentioned e.g., FUT, RL, NRL)

CORPORATE DECISION	REASONING	CODE
Seeking, expectation or bidding to acquire firms		RAL, IFD
Increased acquisition bid		RAL, FDD
Extending acquisition offer		FDD
Seeking to acquire land or oil rights etc in bidding actions		RAL, IFD (and JV if joint venture) Code intent as well
Tendered shares when attempting a buy-out		FDD (assumed accepted by firm)
Moving product lines to different locations (shifting within firm e.g., location or joint venture)	Change in lines of authority or responsibility	CIG
Increase productivity		RL
Increasing efficiency		RL
Price reduction or increases		RGD
Expense or cost reduction programmes	Changes in control and compliance	CIG (coding programme aspect – have to specifically mention ‘programme’)
Inefficiencies or errors		NRL
Lawsuits against firm	Inefficiency or errors	NRL. (code only lawsuits filed post 1980)
Settlement of lawsuits against firm		RLM (and RAL if quoted money) Not coded: fines that arise from regulatory commissions Not coded: if decision are not made by firm
Lawsuits taken by firm	Protection of resources	RLM
Settlement of lawsuits taken by firm	Protection of resources	RLM
Individual employee salary, bonus packages		Not coded
Cost cutting	Not specific	Not coded
Capital spending or investment into firm units sourced from financial issues, offerings or stock proceeds		RAL (code each allocation) NRL (if mentioned reduction in capital spending) Not coded: increases in capital spending as RL unless mentions improvements in efficiency
Cuts in capital spending		NRL, RAL. (and RGD if reason why)
All financial offerings		RGD
All financial offerings over 10 years		FUT, RGD
Decisions to cancel, postpone or alter financial offerings		RGD
Mention of usage or proceeds of bonds, bank borrowings etc		RAL (for each allocation decision)
Acquiring other firms offerings		RGD
Resource upgrading e.g., plant	Protection of resources	RLM (and RAL if mentioned)
Redemption of stock, debentures or notes		RGD Code proceeds to be used for redemption or dividend payments on offerings as RGD Not coded: FUT
Issuing series stock		RGD (and FUT if > 10yrs) (also code each allocation decision for proceeds RAL)

CORPORATE DECISION	REASONING	CODE
Sold tax credits		RGD
Issuing firm shares		RGD (and RAL for each allocation of proceeds mentioned)
Repurchasing firm shares		RGD (and RAL for each proceeds of decisions to repurchase shares and RLM is specifically mentions protection) Not coded: interest rate shares e.g., series shares
Intent to repurchase firm shares	Protection of resources	RLM
Adjusted purchase price for acquisitions		RGD
Quarterly dividend (including suspension decisions)		RGD (if specified why reduced code RAL) Do not retro-code unless specifically stated that quarterly dividend has been maintained or paid since X
Firm stock split		RGD
Listing or delisting on stock exchange		RGD
Requested, raised prices or rates (including belonging to price-setting agreements or organisations)		RGD (if specified allocation decisions code RAL) (if appealing government decisions or responding to competitors code RLM)
Reducing debt		RGD
Debt retirement or refinancing programmes		RGD
Debt rates		RGD (only code debt announcements by firm) Not coded: mentions by other firms e.g., rating firms
Restating earnings		RGD
External financial downgrades or upgrades		Code only reasons for downgrade

ASSUMPTIONS:

- All appointment announcements have been made at the corporate level
- All resource allocation announcements have been made by at the corporate level
- All project allocation announcements have been made by at the corporate level

FURTHER CODING RULES:

- All joint ventures are FDD and RL (leveraging from external relationships) although not coded unless specifically mentioned
- Every acquisition, divestment, or joint venture involves CIG but is not coded
- Prior contracts (that may have been created, existed during sample period) are not coded
- Decisions in which the sample firm does not have majority (controlling) interest are not coded
- Speculation by other parties on what decisions will or will not be made by the sample firms are not coded
- Researcher assumptions or deductions are not coded that is, only code those decisions mentioned specifically in the articles

APPENDIX 2: EXAMPLES OF ARTICLE CODING

These articles are direct quotes from the Wall Street Journal.

Masco files \$300 million of debt, two million shares

26 November 1982

Taylor, Mich. -- Masco corp. ~~said it filed~~ a shelf registration statement with the SEC covering as much as \$300 million of senior or subordinated debt securities and two million shares of common. The company said it wasn't any present plans to offer these securities, but may do so, during a two-year period under the rules of the registration. Masco said proceeds from any offering will be used for general corporate purposes. If the securities are offered, Masco said the underwriters may include Smith Barney, Harris Upham & co.

Document j000000020020326debq0182j

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Whirlpool names E. A. Ballif a corporate vice president

17 February 1982

Whirlpool corp. has named E.A. Ballif, vice president, research and engineering, to the new position of corporate vice president, research and engineering. Ballif, previously responsible for research activities at the corporate research center, will be responsible for all of Whirlpool's research, advanced development and product engineering functions.

Document j000000020020326de2h00urv

CIG

Emerson Electric acquisition

17 October 1986

ST. LOUIS -- Emerson Electric Co. said it completed its previously announced acquisition of closely held Copeland Corp. from Cope-Pam Holding Co. Terms weren't disclosed. Emerson makes electrical and electronic parts, and Copeland manufactures compressors for air-conditioners. Cope-Pam is an affiliate of Pittsburgh-based Hillman Co.

Document j000000020011119diah00rw0

FDD

GenCorp withdraws proposals to holders, citing tender offer

25 March 1987

AKRON, Ohio -- GenCorp Inc., citing the \$2.23 billion tender offer made for the company last week, said it has withdrawn three proposals that were to be presented to the annual meeting Tuesday. The proposals "could distract energy and attention from the real task at hand -- to respond to the tender offer . . .," said GenCorp, a major tire manufacturer with interests in broadcasting, soft-drink bottling and other businesses. But the company said that rights from a previously announced "poison pill" distribution will begin to trade separately from GenCorp common on April 3. The rights would enable GenCorp holders, under certain conditions, including a hostile takeover, to purchase shares in GenCorp or the surviving company for half price.

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Two of the proposals being withdrawn -- one to establish staggered terms for board

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members and another to eliminate cumulative voting -- are traditional anti-takeover measures. The company said the third proposal, to increase the number of authorized common shares to 100 million from 35 million, was made "with a view toward a possible stock split and dividend increase." GenCorp said its board is continuing to evaluate the \$100-a-share offer made by a partnership of Wagner & Brown, a Midland, Texas, oil and gas concern, and AFG Industries Inc., an Irvine, Calif., glass manufacturer and distributor. The partnership owns 2.2 million, or 9.8%, of GenCorp's about 22.3 million shares outstanding.

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Directors previously asked shareholders to hold off tendering their shares until Tuesday to give the board a chance to evaluate the offer. The tender offer is scheduled to expire at 12:01 a.m. EST on April 15 unless extended. The AFG-Wagner & Brown partnership conditioned the offer on the withdrawal of the proposals and has filed suit to block them and the poison pill. GenCorp adopted the rights plan and made the holder proposals well before the partnership launched its tender offer. In Irvine, a spokesman for the partnership said the partners were gratified with GenCorp's withdrawal of the proposals. He said the partners have agreed to cancel a court hearing scheduled for Friday on the proposals, but he added that they plan to "vigorously pursue" their legal challenge to GenCorp's "poison pill -- if not redeemed."

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Document j000000020011118dj3p00829

Grumman gets Navy contract

6 October 1989

FDD

Raytheon Co. received a \$10.6 million Air Force contract for C-12F aircraft support. Document j000000020011116dla600qqw

Working in aerospace -- A special report ---

A special news report on people and their jobs in offices, fields and factories

5 June 1990

... ACS's Graybeard division, a job shop for former aerospace technicians, has 2,300 resumes. THE CHECKOFF: Machinists at Lockheed's soon-to-be-shuttered, 62-year-old factory in Burbank, Calif., staged a rally last weekend to keep their jobs. Boeing says that for each job created outside the US by its "foreign sourcing," 20 domestic jobs are spawned. . . . Northrop holds job fairs to recruit workers for its B-2 Stealth bomber project, saying, "You just might wind up making history."

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Document j000000020011115dm6500ebm

Phillips Petroleum well test

12 June 1991

BARTLESVILLE, Okla. -- Phillips Petroleum Co., as operator for a two-group consortium, said an appraisal well in the Kilda trend in the United Kingdom sector of the central North Sea tested at a rate of 13 million cubic feet of natural gas a day and 1,000 barrels of condensate a day through a 48/64-inch choke. Participants in the well include Fina Inc.; Agip Ltd.; Chevron Corp.; Amerada Hess Corp.; and Conoco Ltd., a unit of Du Pont Co. Document j000000020011109dn6c00h41

JV

Underwriters for Suncor's IPO add sweeteners as analysts fret over long-term prospects 20 February 1992

TORONTO -- At a time when the Canadian oil business is awash in red ink, marketing a new stock offering by one of the industry's only profitable companies would seem to be a snap. So why are the underwriters adding sweeteners to Suncor's planned initial offering? Analysts see clouds on the horizon for the company, which owns and operates gasoline stations in Canada under the Sunoco name. In the stock offering, which could raise 600 million Canadian dollars (US\$505 million), as much as 45% of Suncor will be sold to the public by the company's two owners: Sun Co., Radnor, Pa., and the Ontario government. Short of cash? Not to worry. Investors will pay only half the purchase price up front; the rest is due a year later. This so-called installment receipt plan will allow investors to begin collecting Suncor's annual dividend of C\$1.04 a share, a yield of perhaps 4.5%, on money they haven't even invested yet. Such "invest now, pay later" tactics have been cropping up more frequently in Canadian stock offerings of late. Often, though not always, the technique has been used for initial offerings of state-owned companies with uncertain prospects.

The Suncor underwriting group will be led by Toronto investment dealer Wood Gundy. People close to the group say the shares could be priced at about C\$23. That would be about four times cash flow -- a discount to other large companies, currently trading at about five times cash flow. Yet the underwriters are far from complacent. They have been stepping up their marketing activities, even going so far as to throw a cocktail party-cum-corporate presentation for oil industry analysts complete with miniature quiches and grilled beef-on-a-stick. "The underwriters don't seem to be ignoring anything that will make this look even more attractive," says Fred Pynn, a portfolio manager for Bissett & Associates, an institutional investment concern in Calgary.

The hoopla might seem unnecessary. Suncor has streamlined its oil refining and marketing operations, a process competitors are only just beginning. Its Alberta site that mines and upgrades bitumen, a very thick and heavy crude oil, is profitable, if costly. "This company was uniquely profitable in 1991," says Philip Dodge, a Dillon Read analyst in New York. Profit was C\$77 million, or C\$1.42 a share. Meanwhile Imperial Oil, Shell Canada and Petro-Canada have posted or are expected to report operating losses. But, looking ahead, some analysts call Suncor less attractive than other companies with spottier results.

Suncor's offering document tells the tale. About two-thirds of cash flow, and more than half of 1991 earnings, came from Suncor's oil sands operations: the extraction of thick, sticky bitumen and its upgrading into top-quality synthetic crude. But, as Suncor concedes, bitumen reserves will be exhausted in little more than a decade. Now Suncor needs a partner willing to chip in as much as C\$250 million to develop an alternate source of bitumen. It is embarking on this quest just as many oil companies are shying away from major capital ventures. "There can be no assurances that an economically viable option will be developed," the offering document says. "What Sun is doing is selling a rich dividend along with some maturing assets," says Eleanor Barker, an analyst with Sanwa McCarthy Securities in Toronto. Without a flow of upgraded crude from the oil sands, she says, Suncor's Sarnia refinery could be closed. "More than C\$17 a share is a heavy price to pay for assets with a 10-year lifespan." Astute management has turned Suncor's chronically underperforming

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crude oil refining and gasoline marketing operations into some of the country's strongest. But while its new president, Richard George, a Sun Co. veteran, has two to three years to resolve the oil sands dilemma, other issues loom. One is the royalty paid by Suncor to Alberta on oil and gas produced on certain lands. In 1991, the company forked over C\$10 million to the provincial treasury; the royalty rate soars this year to 5% from 2%.

More than half of Suncor's conventional output is natural gas, for which prices are depressed. A drop in crude oil prices could hurt profitability of the bitumen operations, which make synthetic crude for about C\$15 a barrel. Last year, the company was profitable with oil prices of around US\$21.50, notes Jim Doak, an analyst with First Marathon Securities in Toronto. But Mr. Doak said lower oil prices this year could result in Suncor's earnings dropping by as much as 50%. With rivals such as Petro-Canada striving mightily to slim down, Suncor could face stiff competition for investor dollars. Mr. Pynn says he is intrigued by Shell Canada. Like Suncor, it faces no major refinery-closing costs, and it has a massive natural gas project coming onstream. Mr. Dodge of Dillon Read says Petro-Canada stock, trading below asset value, has ample room to climb as the company slims down. Given the hunger among pension funds for new places to park cash, the Suncor issue is unlikely to be a flop. But some think pressure from big investors could produce a price of about C\$20 a share, compared with the range of C\$23 to C\$25 bandied about by underwriters. Document j000000020011107do2k003bt

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Business briefs
30 December 1993

Duke Energy Corp., a unit of Duke Power Co., will open a Hong Kong office in January to concentrate on electric-power opportunities in the Pacific Rim and China. Document j000000020011031dpcu00xs9

IFD, RAL
RNC

Redemption notices
2 January 1996

The following is a listing of securities called for partial or complete redemption during the week ended Dec. 29, 1995. The notices are taken from advertisements appearing in editions of The Wall Street Journal, and are not meant to be definitive. Inquiries regarding specific issues should be directed to the paying agent or, if none is listed, the issuer...

RGD

FLORIDA POWER & LIGHT CO. will redeem, on Jan. 26, 1996, the following preferred stock: 600,000 outstanding shares of its 7.28%, Series F, and 400,000 of its 7.40%, Series G. Document j000000020011014ds120002c

Business Brief -- CMS ENERGY CORP.: Bank One energy accounts to be managed under pact
5 October 1999

CMS Energy Corp. will manage the multimillion-dollar national energy accounts for Bank One Corp., the nation's fifth-largest bank holding company. Terms weren't disclosed. Under the five-year agreement, CMS, a Dearborn, Mich., energy company, will be Chicago-based Bank One's one-stop energy management-services firm,

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providing electricity and natural gas and consolidating bills for electric, gas, water and sewer for Bank One's 3,200 facilities in 34 states and the District of Columbia. Bank One said the deal is expected to lower the bank's energy costs. CMS said Bank One will pay CMS management and bill-processing transaction fees and other fees based on incentives for CMS to cut the bank's energy costs. ~~The Bank One deal is CMS's largest energy-marketing deal to date. It is the latest in a series of pacts being forged between large power and natural gas companies and industrial customers.~~ NRNC
Document j000000020010828dva500rve

Georgia Power hit with bias suit
28 July 2000

Southern Co.'s Georgia Power Co. unit, a big Atlanta-based electric utility, was hit with a race-discrimination suit by part of the legal team that brought a similar bias suit against Coca-Cola Co. The new suit, filed in Superior Court in Fulton County, Ga., alleges that Georgia Power discriminates against African-Americans in hiring and promotions. The suit, which seeks class-action status for about 2,000 workers, was filed on behalf of three Georgia Power employees by lawyers from the law firm Bondurant, Mixson & Elmore LLP, one of two firms involved in the class action against Coca-Cola. Parties in that suit have reached a tentative settlement. NRL

A major contention of the Georgia Power lawsuit is that blacks are underrepresented at senior levels of management. For example, the complaint alleges that although African-Americans accounted for about 19% of Georgia Power's work force as of December 1998, only 22 of the company's top 408 employees were black; and only 83 of 1,602 African-American workers held managerial or supervisory level positions. The suit also says black workers were subjected to insults, hostility and harassment on the job. NEMC NEMC

David M. Ratcliffe, Georgia Power's president and CEO, said in an interview that he was disappointed by the legal action but promised to probe the allegations. "I intend to thoroughly investigate every single one of the allegations," he said. "To the extent that I can validate there is any wrongdoing, we will deal with that and the individuals involved." Mr. Ratcliffe said he learned two weeks ago a group of African-American workers were considering a suit. He said he hadn't read it and couldn't comment on any of its allegations, but said the company is committed to hiring and promoting minorities. He added that three of the company's 21 senior executives were black, and that three of its 11 board members are black. Mr. Ratcliffe also said the company was committed to sensitivity training and that he created a diversity advisory council two days ago made up of senior Georgia Power executives and board members. "If these activities are occurring, we've got to do a better job of training and teaching our folks how to deal with different kinds of people," Mr. Ratcliffe said. NEMC CIG CIG IGC
Document j000000020010807dw7s0018c

Union Pacific blames 35% drop in net on economy, high fuel costs, weather
19 January 2001

Union Pacific Corp. said fourth-quarter net income fell 35%, reflecting a slowing economy, higher fuel costs, severe winter weather and a one-time charge. The nation's largest railroad company reported fourth-quarter net income of \$157 million, or 63 cents a diluted share, compared with \$242 million, or 95 cents a share, a year earlier. Excluding a charge of \$72 million for reducing the work force, earnings

in the latest fourth quarter were \$229 million, or 90 cents a share.

That was in line with the First Call/Thomson Financial analysts' consensus estimate. Last month, Union Pacific, Omaha, Neb., said it planned to cut about 2,000 jobs from its work force of 50,000 and expected fourth-quarter earnings, excluding the one-time charge, to range between 87 cents and 90 cents a diluted share. Fourth-quarter revenue rose 3.4% to \$2.95 billion from \$2.86 billion. As of 4 p.m. in New York Stock Exchange composite trading, Union Pacific fell six cents to \$52.56.

Richard Davidson, Union Pacific's chairman, president and chief executive, said fourth-quarter results were hurt by snow in Chicago and ice storms that damaged signal systems in Texas and Arkansas. Shipments of automobiles, lumber, chemicals and steel slowed. But demand for coal remained strong, and there was a pickup in export grain. Fuel prices "remained high and have become more volatile," he said.

Union Pacific's trucking unit, Overnite Transportation Co., had operating income of \$16.5 million in the fourth quarter compared with an operating loss of \$13.7 million a year earlier. Overnite cited new service offerings, delivery reliability and freight growth for the improved results, despite a continued strike by the Teamsters union. Mr. Davidson said Union Pacific plans to boost productivity by retiring older freight cars and locomotives and replacing steel coal cars with lighter aluminium models that can haul extra coal. Union Pacific plans to reduce capital expenditures this year to between \$1.6 billion and \$1.9 billion from about \$2 billion last year. RL
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Mr. Davidson said he is optimistic that first-quarter results will "come close to where we were in the first quarter last year." Union Pacific reported first-quarter 2000 net income of \$185 million, or 74 cents a share, on revenue of \$2.91 billion. Ike Evans, president of Union Pacific Railroad Co., said new freight services will help the company offset the economic slowdown.

Document j000000020010711dx1j002ky

Stocks Ex-Dividend Aug. 21

20 August 2002

Company	Amount	RL
CSX Corp	.10	

Document j000000020020820dy8k00009

Transportation brief -- Burlington Northern Santa Fe Corp.: Net rises 25% on higher prices and record freight volume

28 July 2004

Record freight volume and higher average prices pushed net income at Burlington Northern Santa Fe Corp. up 25% to \$249 million in the second quarter. The Fort Worth, Texas, railroad operator earned 67 cents a share, compared with net income in the year-earlier period of \$200 million, or 54 cents a share. Strong demand from the construction and building industries and the petroleum and chemical sectors helped increase revenue 17% to \$2.69 billion from \$2.29 billion. The company said its operating ratio, a measure of performance in the railroad sector, fell to 80.7% from 81.8% a year earlier. A lower ratio means greater efficiency at generating profit. Burlington Northern, which says it is experiencing the strongest demand in years, is RL
RL

hiring about 2,300 people this year to meet anticipated 2004 and 2005 activity. Chief Executive Matt Rose said the company will experience tough comparisons in the fourth quarter due to the increase in demand that began in the last quarter of 2003.
Document J000000020040728e07s0000e

APPENDIX 3: EXPLORATORY DATA ANALYSIS

1.0 EXPLORATORY DATA ANALYSIS: CORPORATE STRATEGY

H₅ hypothesises that the corporate strategy index could be used to distinguish the PSFP category from that of the other two, PAFP and PIFP, categories. It is predicted that a curvilinear relationship exists between corporate strategy and firm performance, that is, the PIFP and PSFP categories are expected to possess lower incidences of corporate strategy, as measured in this research, than the PAFP category. A series of descriptive tests were conducted as a form of exploratory data analysis. This section presents a discussion of the tests of the following two hypotheses:

$$H_0: M(\text{PIFP CS}) = M(\text{PAFP CS}) = M(\text{PSFP CS})$$

$$H_5: M(\text{PIFP CS}) \neq M(\text{PAFP CS}) \neq M(\text{PSFP CS}).$$

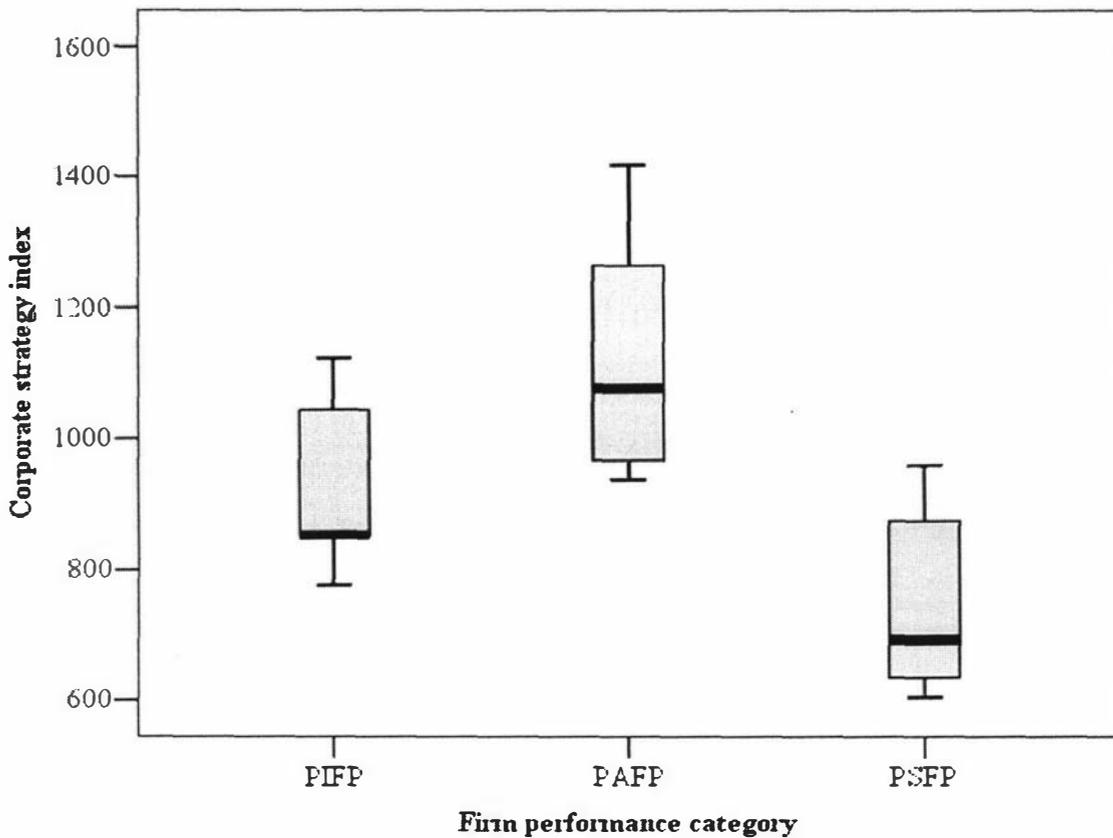
Table A3.1. Descriptive statistics: The corporate strategy index by firm performance category

Statistic	Firm performance category		
	PIFP	PAFP	PSFP
Mean	929.8	1133.0	753.6
Mean standard error	65.4	91.4	69.7
Mean minus standard error	864.4	1041.6	683.9
Mean plus standard error	995.2	1224.4	823.3
5% trimmed mean	927.6	1128.0	750.4
Median	853.0	1078.0	693.0
Standard deviation	146.3	204.3	155.9
Minimum	777	938	605
Maximum	1123	1418	960
Interquartile range	269	389	298
Skewness	0.6	0.6	0.6
Skewness standard error	0.9	0.9	0.9
Kurtosis	-2.1	-1.5	-2.2
Kurtosis standard error	2.0	2.0	2.0

The statistics in Table A3.1 suggest that the 5% trimmed M is close to the M (i.e., lower than a difference of six) for each of the firm performance categories. A comparison between the M and

median for the PAFP category is smaller than the difference for the PSFP and PIFP categories. The distribution of the PAFP category displays greater variability as reflected by the higher s than is evident in the other two firm performance categories. All three firm performance categories are moderately positively skewed and all firm performance categories displayed strong negative kurtosis.

Figure A3.1. Box plots of the corporate strategy index by firm performance category



H_0 proposes that the corporate strategy index does not differ across the three firm performance categories. On average, the PSFP category measures 753.6 ($s = 155.9$) corporate strategy compared to the PIFP category which possesses a M of 929.8 ($s = 146.3$) and 1,133.0 ($s = 204.3$) for the PAFP category. The difference between the M plus or minus the standard error across the firm performance categories suggests that all three firm performance categories could be distinguished from the other firm performance categories providing some evidence that the M differed statistically. Consequently, H_0 could be rejected as the corporate strategy index differs across the three categories. The predicted curvilinear relationship between corporate strategy and firm performance appears to be supported as the corporate strategy index M rises and then decreases as firm performance increases (i.e., PIFP, PAFP, PSFP).

Reviewing the distributions of the firm performance categories using the box plots presented in Figure A3.1 provides a descriptive view of how the firm performance categories differ in regards to the corporate strategy index (Field, 2005). The interquartile range indicates that 50% of the firm performance categories firms are spread over a similar range. Both the top and bottom quartiles of the PIFP category are similar whereas the PAFP and PSFP categories are characterised by smaller bottom quartiles and larger top quartiles indicating that a small number of larger scores distorted these distributions. The median for the three firm performance categories are different, especially between the PSFP category and the other two firm performance categories. The medians for the PIFP and PSFP categories are positioned lower on the interquartile box. In conclusion, the PSFP category is distinct from the other two firm performance categories as the distribution of the corporate strategy index scores is generally lower than the PIFP and PAFP categories.

2.0 EXPLORATORY DATA ANALYSIS: STRATEGIC INTENT

H_1 hypothesises that the strategic intent attribute index could distinguish the PSFP category from the non-PSFP categories. It is also predicted that the strategic intent index increases as firm performance increases, that is, it is expected that the PIFP category possesses the lowest level of strategic intent. The highest level of the strategic intent index is expected to occur in the PSFP category. This section tests the following two hypotheses:

$$H_0: M(\text{PIFP SI}) = M(\text{PAFP SI}) = M(\text{PSFP SI})$$

$$H_1: M(\text{PIFP SI}) \neq M(\text{PAFP SI}) \neq M(\text{PSFP SI}).$$

Table A3.2 reports the descriptive statistics for the strategic intent attribute index. The 5% trimmed M is close to the M (i.e., lower than a difference of three) for each of the firm performance categories. A comparison between the M and median for the PIFP, PAFP and PSFP categories indicates that the difference is slight. The PSFP categories possess a lower s in comparison to the other two firm performance categories and, thus, lower variability. All three firm performance categories are positively skewed. The level of skewness is greater for the PAFP category than the PIFP and PSFP categories. All three categories display strong kurtosis, with the PAFP category characterised by positive kurtosis.

H_0 proposes that the strategic intent attribute index is homogeneous across the three firm performance categories. On average, the PIFP category measures 143.4 ($s = 47.8$) strategic intent compared to the PSFP category which possesses a M of 154.8 ($s = 16.5$) and 164.2 ($s = 65.0$) for the PAFP category. The lack of a difference between the M plus or minus the standard error across the three firm performance categories suggests that none of the firm performance categories could be distinguished from the other firm performance categories. Consequently, H_0 could not be rejected as the strategic intent attribute index is relatively homogeneous across the three firm performance categories.

Table A3.2. Descriptive statistics: The strategic intent attribute index by firm performance category

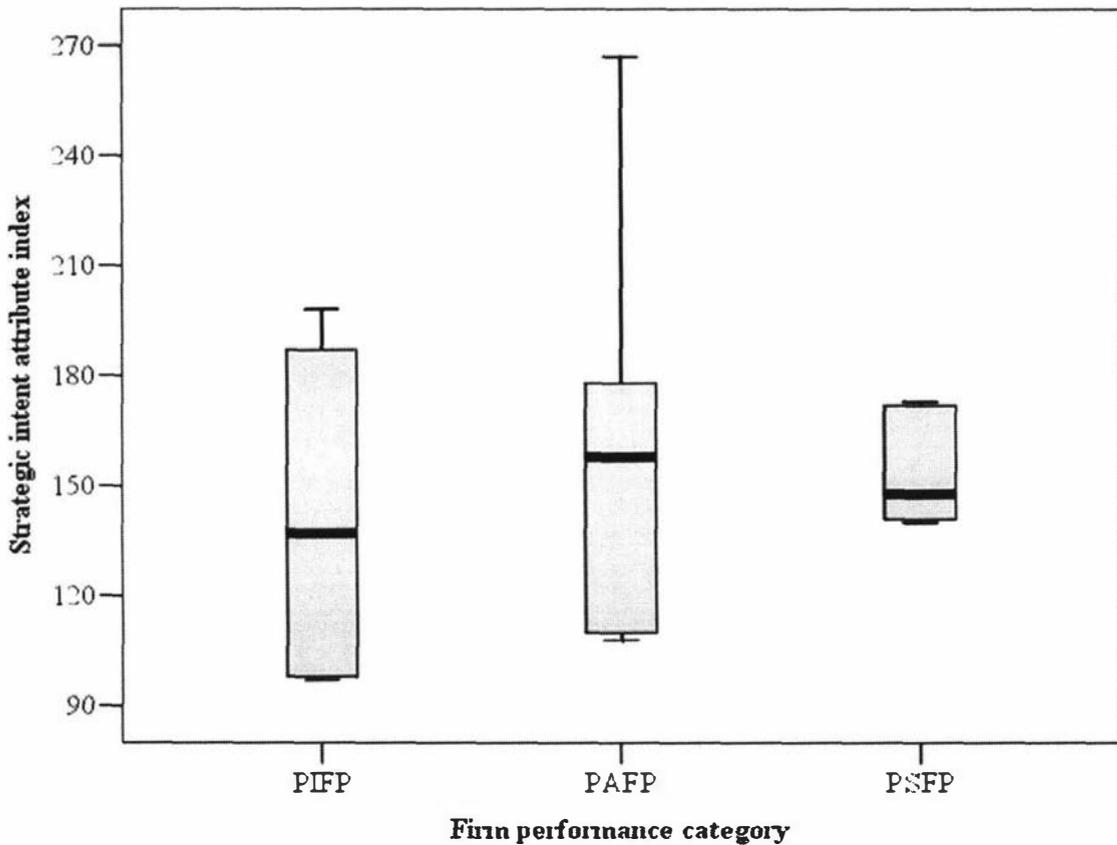
Statistic	Firm performance category		
	PIFP	PAFP	PSFP
Mean	143.4	164.2	154.8
Mean standard error	21.4	29.1	7.4
Mean minus standard error	122.0	135.1	147.4
Mean plus standard error	164.8	193.3	162.2
5% trimmed mean	142.9	161.6	154.6
Median	137.0	158.0	148.0
Standard deviation	47.8	65.0	16.5
Minimum	97	108	140
Maximum	198	267	173
Interquartile range	95	114	32
Skewness	0.2	1.1	0.5
Skewness standard error	0.9	0.9	0.9
Kurtosis	-2.9	1.1	-3.2
Kurtosis standard error	2.0	2.0	2.0

It is expected that higher measurements of the strategic intent attribute index led to higher firm performance. However, a curvilinear relationship exists between the strategic intent index and firm performance that is, the M rises and then decreases as firm performance increases (i.e., PIFP, PAFP and PSFP), thus, suggesting that the relationship between the strategic intent attribute index and firm performance is of a different nature than that predicted.

The interquartile range indicates that 50% of the PSFP category is spread over a smaller range than the other two firm performance categories (refer to Figure A3.2). The larger boxes evident in both the PIFP and PAFP categories denote a greater variability of scores. The bottom quartile for all three firm performance categories is small. For the PIFP and (especially the) PAFP categories, the top quartiles are larger indicating distortion due to higher scores. The medians for

the three firm performance categories are different. In conclusion, the PSFP category is only distinct from the non-PSFP categories in terms of the lower variability of the strategic intent attribute index scores.

Figure A3.2. Box plots of the strategic intent attribute index by firm performance category



3.0 EXPLORATORY DATA ANALYSIS: ORGANISATIONAL DOMAIN

H₂ hypothesises that the organisational domain attribute index could distinguish the PSFP category from the non-PSFP categories. A curvilinear relationship between the organisational domain index and firm performance is predicted, that is, the PIFP and PSFP categories are expected to possess lower organisational domain than the PAFP category. This section tests the following two hypotheses:

$$H_0: M(\text{PIFP OD}) = M(\text{PAFP OD}) = M(\text{PSFP OD})$$

$$H_2: M(\text{PIFP OD}) \neq M(\text{PAFP OD}) \neq M(\text{PSFP OD}).$$

The 5% trimmed M is close to the M (i.e., lower than a difference of four) for each of the firm performance categories (refer to Table A3.3). A comparison between the M and median for the PIFP category is smaller than the difference for the PSFP and PAFP categories. Although the PIFP and PSFP categories are characterised by a similar M , the PIFP category displays a much smaller s . The PAFP category is positively skewed whereas the PIFP and PSFP categories scores are clustered towards the high values and the level of skewness is higher for the PSFP category. The PAFP category displays strong kurtosis, while the PSFP category is characterised by positive kurtosis.

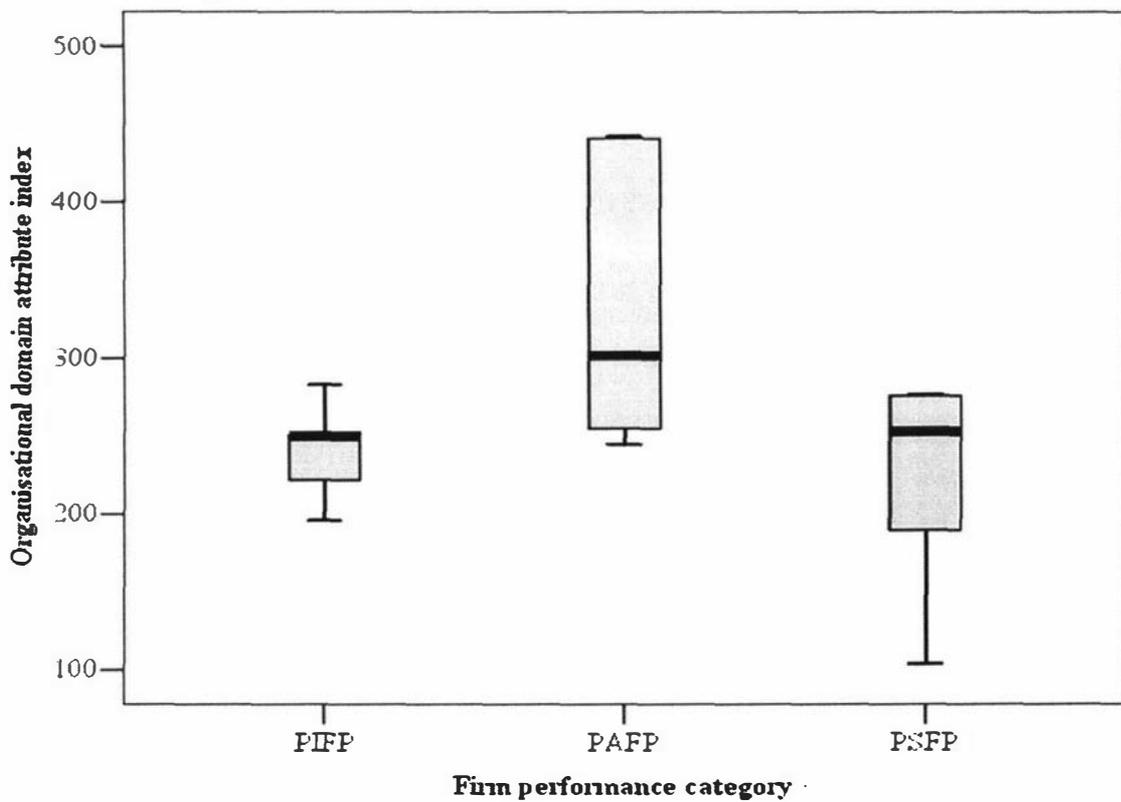
Table A3.3. Descriptive statistics: The organisational domain attribute index by firm performance category

Statistic	Firm performance category		
	PIFP	PAFP	PSFP
Mean	240.4	337.0	220.0
Mean standard error	14.7	43.7	33.0
Mean minus standard error	225.7	293.3	187.0
Mean plus standard error	255.1	380.7	253.0
5% trimmed mean	240.5	336.3	223.3
Median	250.0	302.0	253.0
Standard deviation	32.9	97.8	73.9
Minimum	196	245	104
Maximum	283	442	277
Interquartile range	58	192	130
Skewness	-0.2	0.4	-1.2
Skewness standard error	0.9	0.9	0.9
Kurtosis	-0.2	-3.1	0.5
Kurtosis standard error	2.0	2.0	2.0

H_0 proposes that the organisational domain attribute index is homogeneous across the three firm performance categories. On average, the PSFP category measures 220.0 ($s = 73.9$) organisational domain compared to the PIFP category which possesses a M of 240.4 ($s = 32.9$) and 337.0 ($s = 97.8$) for the PAFP category. The difference between the M plus or minus the standard error across the three firm performance categories suggests that only the PAFP category could be distinguished from the PIFP and PSFP categories and, therefore, provides some evidence that the M differed statistically. H_0 could be rejected as the organisational domain attribute index is heterogeneous. The curvilinear relationship between the organisational domain index and firm performance predicted appears to be supported as the organisational domain index M rises and then decreases as firm performance increases (i.e., PIFP, PAFP, PSFP).

The interquartile range indicates that 50% of the PIFP category is spread over a smaller range than the other two firm performance categories denoting less variability of scores (refer to Figure A3.3). The top quartiles of the PAFP and PSFP categories are almost nonexistent. The PSFP category is also characterised by a larger bottom quartile indicating lower scores distorting the distribution. The median for the three firm performance categories are heterogeneous. The median of the PIFP category is located at the top of interquartile range. In conclusion, the PSFP category could be distinguished from the other firm performance categories as it possesses lower organisational domain attribute index scores than the non-PSFP categories.

Figure A3.3. Box plots of the organisational domain attribute index by firm performance category



4.0 EXPLORATORY DATA ANALYSIS: INTERNAL GOVERNANCE

H₃ hypothesises that the internal governance attribute index could distinguish the PSFP category from the non-PSFP categories. A curvilinear relationship between the internal governance index and firm performance is predicted, that is, the PIFP and PSFP categories are expected to possess lower internal governance than the PAFP category. This section tests the following two hypotheses:

$$H_0: M(\text{PIFP IG}) = M(\text{PAFP IG}) = M(\text{PSFP IG})$$

$$H_3: M(\text{PIFP IG}) \neq M(\text{PAFP IG}) \neq M(\text{PSFP IG}).$$

The statistics in Table A3.4 shows that the 5% trimmed M is close to the M (i.e., lower than a difference of two) for each of the firm performance categories. A comparison between the M and median for the PIFP and PSFP categories is smaller than the difference for the PAFP category. The s for the PAFP category is higher than the other two firm performance categories. The PIFP and PAFP categories are positively skewed whereas the PSFP category scores are clustered towards the high values. The level of skewness is moderate for all firm performance categories. All firm performance categories display negative kurtosis, with the PAFP category displaying stronger kurtosis.

Table A3.4. Descriptive statistics: The internal governance attribute index by firm performance category

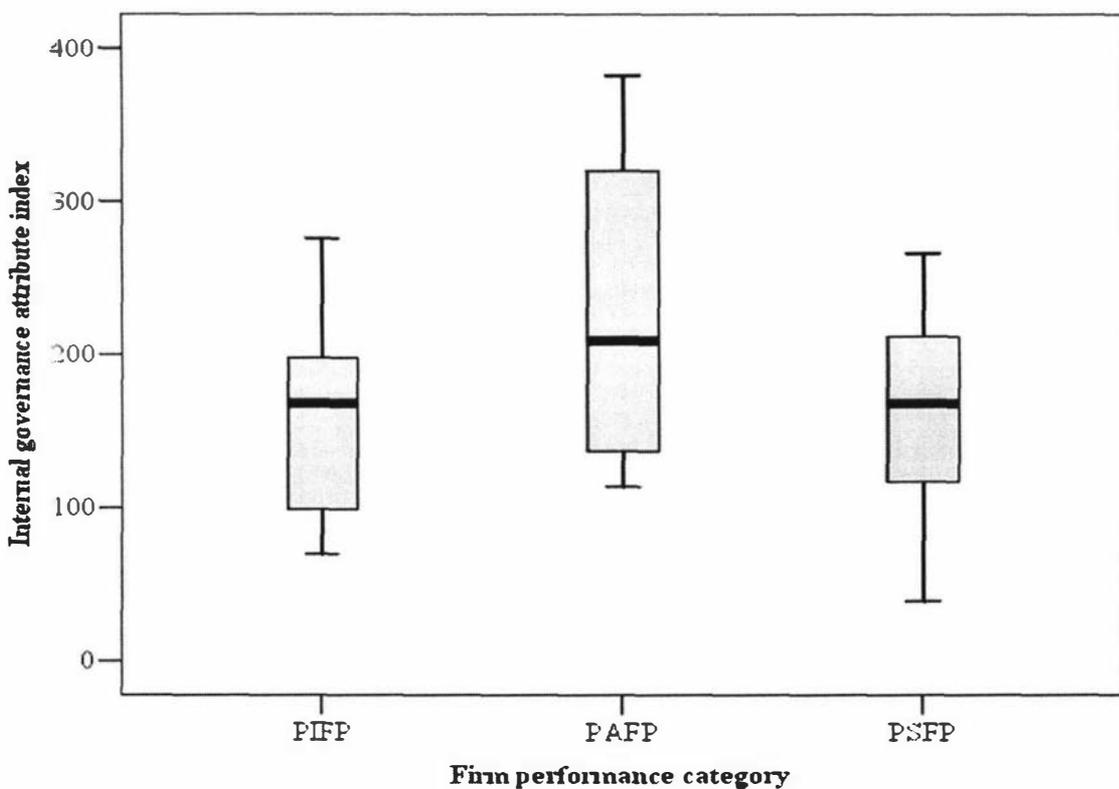
Statistic	Firm performance category		
	PIFP	PAFP	PSFP
Mean	162.2	232.4	160.4
Mean standard error	36.6	51.8	39.0
Mean minus standard error	125.6	180.6	121.4
Mean plus standard error	198.8	284.2	199.4
5% trimmed mean	161.0	230.7	161.3
Median	168.0	209.0	168.0
Standard deviation	81.8	115.9	87.3
Minimum	70	114	39
Maximum	276	382	266
Interquartile range	153	226	161
Skewness	0.4	0.4	-0.3
Skewness standard error	0.9	0.9	0.9
Kurtosis	-0.8	-2.2	-0.4
Kurtosis standard error	2.0	2.0	2.0

H_0 proposes that the internal governance attribute index did not differ across the three firm performance categories. On average, the PSFP category measures 160.4 ($s = 87.3$) internal governance index compared to the PIFP category which possesses a M of 162.2 ($s = 81.8$) and 232.4 ($s = 115.9$) for the PAFP category. A comparison between the M plus or minus the standard error for each firm performance category suggests that only the PAFP category could be distinguished from the non-PAFP categories. Thus, this test does provide some evidence that the M differed statistically. H_0 could then be rejected as the internal governance index differs. A curvilinear relationship between the internal governance attribute index and firm performance is

also predicted and appears to be supported as the internal governance index M rises and then decreases as firm performance increases (i.e., PIFP, PAFP, PSFP).

The interquartile range indicates that 50% of the PAFP category is spread over a larger range than the PIFP and PSFP categories (refer to Figure A3.4). The bottom quartile is larger for the PSFP category in comparison to the other firm performance categories indicating lower scores distorted the distribution. The median for the PAFP category is higher than the PIFP and PSFP categories. In conclusion, the PSFP could not be distinguished from the PIFP category.

Figure A3.4. Box plots of the internal governance attribute index by firm performance category



5.0 EXPLORATORY DATA ANALYSIS: RESOURCE GOVERNANCE

H_4 hypothesises that the resource governance attribute index could distinguish the PSFP category from the other two firm performance categories. It is predicted that a curvilinear relationship exists between the resource governance index and firm performance, that is, the PIFP and PSFP categories are expected to possess lower resource governance than the PAFP category. This section tests the following two hypotheses:

$$H_0: M(\text{PIFP RG}) = M(\text{PAFP RG}) = M(\text{PSFP RG})$$

$$H_4: M(\text{PIFP RG}) \neq M(\text{PAFP RG}) \neq M(\text{PSFP RG}).$$

Table A3.5 indicates that the 5% trimmed M is close to the M (i.e., lower than a difference of two) for each of the three firm performance categories. The comparisons between the M and medians are similar. The s for the PIFP category is much higher than for the other two firm performance categories. The PIFP category is positively skewed whereas the PAFP and PSFP categories scores are negatively skewed. The level of skewness is moderate for all firm performance categories. All three firm performance categories display strong kurtosis, with the PAFP and PSFP categories characterised by negative kurtosis.

Table A3.5. Descriptive statistics: The resource governance attribute index by firm performance category

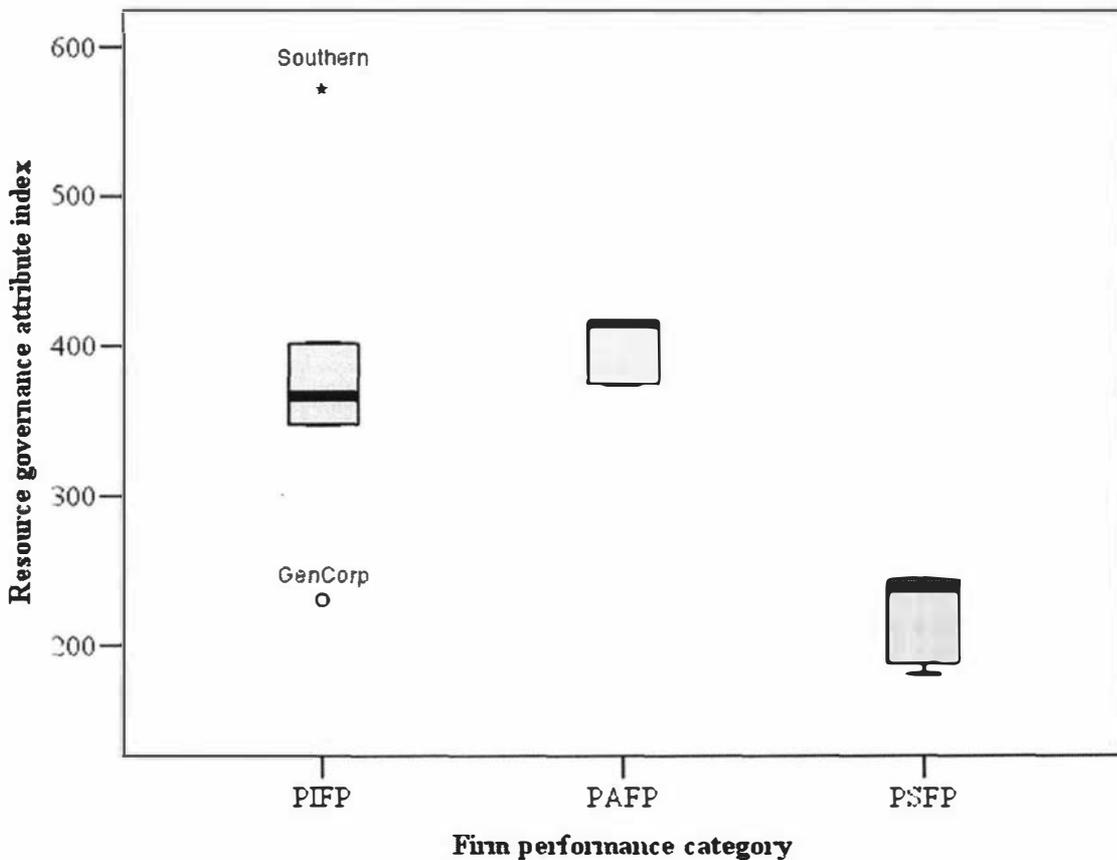
Statistic	Firm performance category		
	PIFP	PAFP	PSFP
Mean	383.8	399.4	218.4
Mean standard error	55.2	10.2	14.3
Mean minus standard error	328.6	389.2	204.1
Mean plus standard error	439.0	409.6	232.7
5% trimmed mean	381.9	399.8	219.1
Median	367.0	415.0	238.0
Standard deviation	123.5	22.7	32.0
Minimum	230	374	180
Maximum	572	417	244
Interquartile range	198	42	60
Skewness	0.7	-0.6	-0.6
Skewness standard error	0.9	0.9	0.9
Kurtosis	1.8	-3.3	-3.1
Kurtosis standard error	2.0	2.0	2.0

H_0 proposes that resource governance homogeneity across the three firm performance categories. On average, the PSFP category measures 218.4 ($s = 32.0$) resource governance attribute index as measured by this research compared to the PIFP category which possesses a M of 383.8 ($s = 123.5$) and the PAFP category records a M of 399.4 ($s = 22.7$). The difference between the M plus or minus the standard error across the firm performance categories suggests that the PSFP category could be distinguished from the other two firm performance categories. Thus, this test provides some evidence that the M differed statistically. H_0 could then be rejected as the resource governance attribute index differs across the three firm performance categories. The predicted curvilinear relationship between the resource governance attribute index and firm

performance appears to be supported as the resource governance attribute index M rises and then decreases as firm performance increases (i.e., PIFP, PAFP, PSFP).

The interquartile range indicates that 50% of firms are spread over a similar range denoting analogous variability of scores (refer to Figure A3.5). The medians for the PIFP and PAFP categories are similar, whereas the PSFP category is characterised by a lower median. The PIFP category is significantly skewed by two outliers (Southern and GenCorp). In conclusion, the PSFP category could be distinguished from the non-PSFP categories as it is characterised by a substantially lower incidence of resource governance attribute index scores than the other firm performance categories.

Figure A3.5. Box plots of the resource governance attribute index by firm performance category



APPENDIX 4: HYPOTHESIS TESTING RESULTS

1.0 ORGANISATIONAL DOMAIN

Table A4.1. Kruskal-Wallis test for the organisational domain attribute index

Firm performance category	Mean rank	<i>H</i>
PIFP	6.4	3.84
PAFP	11.2	$p = .153$
PSFP	6.4	

Key: $df = 2$
H significance: Exact significance

An inspection of the mean ranks for the three firm performance categories displayed on Table A4.1 suggest that the PAFP category has the highest organisational domain score (11.2), with the PIFP and PSFP categories reporting the same organisational domain index score (6.4). The effect size is .27 indicating a moderate relationship between the organisational domain attribute index and firm performance category. Although the ANOVA1 results are nonsignificant, a significant quadratic trend is revealed ($F(1,12) = 7.08, p = .021, \omega = .74$) indicating that as firm performance increases, organisational domain increases and then declines that is, a curvilinear association.

2.0 INTERNAL GOVERNANCE

Table A4.2. Kruskal-Wallis test for the internal governance attribute index

Firm performance category	Mean rank	<i>H</i>
PIFP	6.9	1.24
PAFP	9.8	$p = .565$
PSFP	7.3	

Key: $df = 2$
H significance: Exact significance

The mean ranks for the three firm performance categories displayed in Table A4.2 suggest that the PAFP category has the highest internal governance index score (9.8), with the PIFP category reporting the lowest internal governance index score (6.9). The low value of *H* suggests that the ranks are distributed evenly between the three firm performance categories. The effect size is

.09 indicating a slight relationship between the internal governance attribute index and firm performance category.

3.0 RESOURCE GOVERNANCE

3.1 Kruskal-Wallis test

Table A4.3. Kruskal-Wallis test for the resource governance attribute index

Firm performance category	Mean rank	<i>H</i>
PIFP	8.8	8.24
PAFP	11.6	<i>p</i> = 0.08
PSFP	3.6	

Key: *df* = 2
H significance: Exact significance
 Statistically significant results are in bold

An inspection of the mean ranks for the three firm performance categories presented in Table A4.3 suggest that the PAFP category has the highest resource governance attribute index score (11.6), with the PSFP category reporting the lowest resource governance index score (3.6). The BDM test found that the average of ranks followed the same pattern as that displayed by the KW results (PSFP = .207, PIFP = .553, PAFP = .740).

3.2 Mann-Whitney tests: A post-hoc test for the Kruskal-Wallis test

Table A4.4. Mann-Whitney tests for the resource governance attribute index: Post-hoc test for the Kruskal-Wallis test

Firm performance category	Mann-Whitney <i>U</i>	Significance	Effect size	Effect magnitude
PIFP PAFP	7.000	0.155	-0.36	moderate
PIFP PSFP	3.000	0.028	-0.63	strong
PAFP PSFP	0.000	0.004	-0.83	strong

Key: Significance: Exact significance (1-tailed)
 Significant result highlighted in bold

Three MW tests were performed as a post-hoc test for KW, whereby three pairwise comparisons were conducted (i.e., PIFP and PAFP, PIFP and PSFP and lastly, PAFP and PSFP) refer to Table A4.4. The results for two comparisons are nonsignificant ($p < .0167$): PIFP and PAFP ($U = 7.00$, $p = .155$ one-tailed, $r = -.36$); and PIFP and PSFP ($U = 3.00$, $p = .028$ one-tailed, $r = -.63$). As seen from Table 4.3, an indication of how the firm performance categories differ is reflected in the difference in the mean rank of the resource governance attribute index: The PSFP category

(3.6) is lower (and therefore is characterised by a larger number of lower resource governance scores) than the PAFP category (11.6).

3.3 Siegel-Castellan critical difference test: A post-hoc test for the Kruskal-Wallis test

A SC test was performed as an additional post-hoc test for KW. This test highlights where the difference in ranked means of the resource governance attribute index existed when comparing between PIFP and PAFP, PIFP and PSFP and lastly, PAFP and PSFP. The results are set forth in Table A4.5.

Table A4.5. Siegel-Castellan critical difference test for the resource governance attribute index: Post-hoc test for the Kruskal-Wallis test

Firm performance category	Ru	Rv	Ru - Rv	Greater than critical difference
PIFP - PAFP	8.8	11.6	2.8	-3.99
PAFP - PSFP	11.6	3.6	8	1.21
PIFP - PSFP	8.8	3.6	5.2	-1.59

Key: Significant result highlighted in bold

APPENDIX 5: DISCRIMINANT ANALYSIS RESULTS

1.0 POSSIBLE INSUFFICIENT DETECTION POWER

The nonsignificance at the $p < .05$ level of the results outlined in Table 5.4 may have arisen from two factors: the nonlinear relationship between predictor variables; and secondly, the small sample size. The predictions of curvilinear relationship between the attribute indices and firm performance discussed previously may reduce the power of discriminant analysis to detect effects as discriminant functions are linear combinations of predictor variables. Furthermore, discriminant analysis may be of insufficient power to detect differentiation between the three firm performance categories due to the small sample size employed in this research. Although discriminant analysis has been previously utilised for smaller datasets (e.g., Fottler, 1977 nine variables with a sample of 48; McNamara, Deephouse & Luce, 2003 sample of 30 banks; Sueyoshi & Hwang, 2004 illustrative sample of 30 firms; Lee, 2004 sample of 71 independent retail store owners), additional significant at the $p < .05$ level results may have been derived if the sample size is increased to a minimum of 30 firms. The magnitude of resources required to obtain a larger dataset is beyond those available to the researcher (i.e., would require a minimum of 15 months to gather the data).

2.0 PRELIMINARY STATISTICS

Table A5.1. Discriminant analysis: Test of equality of group means

Model	Predictor variable	Wilks' lambda	F	Sig.
1 SI v RG	Strategic intent	0.962	0.240	0.790
	Resource governance	0.400	8.990	0.004
2 OD v RG	Organisational domain	0.623	3.638	0.058
	Resource governance	0.400	8.990	0.004
3 RG v IG	Resource governance	0.400	8.990	0.004
	Internal governance	0.868	0.911	0.428

Key: Statistically significant results are in bold
 df1 = 2
 df2 = 12

The test of equality of group means presented in Table A5.1, is utilised to test the following hypotheses:

H_0 : $M(\text{PIFP predictor variable}) = M(\text{PAFP predictor variable}) = M(\text{PSFP predictor variable})$

H_1 : $M(\text{PIFP predictor variable}) \neq M(\text{PAFP predictor variable}) \neq M(\text{PSFP predictor variable})$.

Wilks' Lambda suggests that H_0 could only be rejected for the resource governance attribute index. Thus, for all three models the resource governance index is a significant predictor by itself at the $p < .05$ level.

3.0 SIGNIFICANCE TESTS AND STRENGTH OF RELATIONSHIP STATISTICS

Table A5.2. Discriminant analysis: Eigenvalues

Model	Function	Eigenvalue	% of variance	Cumulative %	Canonical correlation	Eta square %
1 SI v RG	1	1.624	97.6	97.6	0.787	61.9
	2	0.040	2.4	100.0	0.196	3.8
2 OD v RG	1	1.994	89.3	89.3	0.816	66.6
	2	0.239	10.7	100.0	0.439	19.3
3 RG v IG	1	1.590	94.4	94.4	0.784	61.5
	2	0.095	5.6	100.0	0.294	8.6

Key: First two canonical discriminant functions were used in the analysis
 SI Strategic intent
 RG Resource governance
 OD Organisational domain
 IG Internal governance

Two orthogonal discriminant functions are calculated (refer to Table A5.2). Higher eigenvalues for all the first functions indicates that although the values are homogenous within each firm performance category, the values are heterogeneous between the firm performance categories (Norusis, 2005). In each of the three models, Function 1 provides the maximum separation between the firm performance categories. Function 1 explains between 89.3 and 97.6% of the total variance while Function 2 accounts for between 2.4 and 10.7% of total variance.

In every model, the canonical correlation values of Function 1 are close to one and are significantly larger than Function 2. Thus, the differences between firm performance categories generally explain the variability in the discriminant scores. The canonical correlation can be utilised as a measurement of effect size (Green & Salkind, 2005). For Function 1, the effect

sizes are strong and ranges from .78 to .82. The effect sizes displayed by Function 2 are low to moderate in magnitude and ranges from .20 to .44. The eta square explains between 61.5 and 66.6%, and 3.8 and 19.3% of the variability of values within the firm performance categories for Functions 1 and 2 respectively (Green & Salkind, 2005).

Wilks' Lambda calculates the ratio of within-group to the total sum of squares as a measure of differences between the firm performance categories in terms of the predictor variables (refer to Table A5.3). The Wilks' Lambda results are utilised to test the following hypotheses:

H_0 : (PIFP average discriminant scores) = (PAFP average discriminant scores) = (PSFP average discriminant scores)

H_1 : (PIFP average discriminant scores) \neq (PAFP average discriminant scores) \neq (PSFP average discriminant scores).

Table A5.3. Discriminant analysis: Wilks' lambda

Model	Test of function(s)	Wilks' lambda	Chi-square	Sig.
1 SI v RG	1 through 2	0.366	11.544	0.021
	2	0.962	0.451	0.502
2 OD v RG	1 through 2	0.270	15.071	0.005
	2	0.807	2.462	0.117
3 RG v IG	1 through 2	0.353	11.985	0.017
	2	0.914	1.040	0.308

Key: Statistically significant discriminant analyses are bold
 df for Function 1 = 4
 df for Function 2 = 1
 SI Strategic intent
 RG Resource governance
 OD Organisational domain
 IG Internal governance

As demonstrated by Function 1 of the three models, Wilks' Lambda is close to zero and thus, the firm performance category means are not equal (Norusis, 2005). With 4 df, X^2 had to be larger than 9.49 at $p < .05$ two-tailed level. Therefore, for each model the first discriminant function differentiates the firm performance categories significantly (refer to column four of Table A5.3). Thus, H_0 could be rejected. In comparison, for Function 2 with 1 df, X^2 had to be greater than 3.84 at $p < .05$ two-tailed level and as the Wilks' Lambda is not greater, the second discriminant function for each model does not differentiate the firm performance categories significantly. Consequently, only Function 1 of each of the models should be interpreted.

4.0 DISCRIMINANT ANALYSIS COEFFICIENTS

Table A5.4 provides an indication of which predictor variable make the greatest contribution to Function 1. For each of the models, the resource governance attribute index is the most heavily weighted on the first and statistically significant discriminant function. The resource governance index (and the organisational domain attribute index in the second model) displays a comparatively large positive relationship to Function 1. In the first model, the strategic intent attribute index is characterised by a negative association for Function 1.

Table A5.4. Discriminant analysis: Standardised canonical discriminant function coefficients

Model	Predictor variable	Function 1
1 SI v RG	Strategic intent	-0.293
	Resource governance	1.041
2 OD v RG	Organisational domain	0.533
	Resource governance	0.892
3 RG v IG	Resource governance	0.982
	Internal governance	0.248

5.0 GROUP CENTROIDS

Table A5.5. Discriminant analysis: Functions at group centroids

Model	Firm performance category	Function 1
1 SI v RG	PIFP	0.761
	PAFP	0.850
	PSFP	-1.611
2 OD v RG	PIFP	0.411
	PAFP	1.300
	PSFP	-1.711
3 RG v IG	PIFP	0.597
	PAFP	0.983
	PSFP	-1.579

Key: Unstandardised canonical discriminant functions evaluated at group means

The group centroids as presented in Table A5.5 measures the mean scores by firm performance category. For Function 1 in each of the three models, the PSFP category records the lowest M , followed by the PIFP and PAFP categories. This suggests Function 1 maximally differentiates the PSFP category from both the PAFP and PIFP categories.

6.0 GROUP CLASSIFICATIONS

Table A5.6. Discriminant analysis: Classification results

Model				Predicted group membership			Total
				PIFP	PAFP	PSFP	
1 SI v RG	Original	Count	PIFP	2	2	1	5
			PAFP	2	3	0	5
			PSFP	0	0	5	5
		%	PIFP	40.0	40.0	20.0	100.0
			PAFP	40.0	60.0	0	100.0
			PSFP	0	0	100.0	100.0
	Cross-validated	Count	PIFP	2	2	1	5
			PAFP	2	2	1	5
			PSFP	0	0	5	5
		%	PIFP	40.0	40.0	20.0	100.0
			PAFP	40.0	40.0	20.0	100.0
			PSFP	0	0	100.0	100.0
2 OD v RG	Original	Count	PIFP	4	0	1	5
			PAFP	2	3	0	5
			PSFP	0	0	5	5
		%	PIFP	80.0	0	20.0	100.0
			PAFP	40.0	60.0	0	100.0
			PSFP	0	0	100.0	100.0
	Cross-validated	Count	PIFP	2	2	1	5
			PAFP	2	3	0	5
			PSFP	0	0	5	5
		%	PIFP	40.0	40.0	20.0	100.0
			PAFP	40.0	60.0	0	100.0
			PSFP	0	0	100.0	100.0
3 RG v IG	Original	Count	PIFP	2	2	1	5
			PAFP	2	3	0	5
			PSFP	0	0	5	5
		%	PIFP	40.0	40.0	20.0	100.0
			PAFP	40.0	60.0	0	100.0
			PSFP	0	0	100.0	100.0
	Cross-validated	Count	PIFP	2	2	1	5
			PAFP	3	2	0	5
			PSFP	0	0	5	5
		%	PIFP	40.0	40.0	20.0	100.0
			PAFP	60.0	40.0	0	100.0
			PSFP	0	0	100.0	100.0

Table A5.6 presents the classification results. Reviewing the original results for the SI v RG Model, this model correctly classifies 5 (100%) of the firms assigned as PSFP, 3 (60%) of the PAFP firms, and 2 (40%) of PIFP firms. Overall, 66.7% of firms are correctly classified into the appropriate firm performance categories. For the cross-validated analysis, the percentage of

correctly classified firms declines for the PAFP category (2, 40%). Overall, 60% of firms are correctly assigned. A moderate level of accuracy is achieved by both classification analyses.

The OD v RG Model correctly classifies 5 (100%) of the firms categorised as PSFP, 3 (60%) of PAFP firms, and 4 (80%) of PIFP firms. Overall, 80.0% of firms are correctly classified into the appropriate firm performance categories thus, achieving a high level of accuracy. The cross-validated analysis produces lower classification accuracy for PIFP firms (2, 40%). Overall, 66.7% of firms are correctly assigned thus, producing a moderate level of accuracy.

Lastly, the RG v IG Model correctly categorises 5 (100%) of the PSFP firms, 3 (60%) of PAFP firms, and 2 (40%) of PIFP firms. Overall, 66.7% of firms are correctly assigned into the appropriate firm performance categories. The cross-validated analysis produces lower classification accuracy for PAFP firms, 2 (40%). Overall, 60.0% of firms are correctly categorised. Both classification analyses indicate a moderate level of accuracy.

In summary, these results compare favourably to the 33.3% probability of correctly classifying the firms due to chance. In both the original and cross-validated classification analyses of the three models, the five PSFP firms are correctly assigned.

7.0 CASEWISE RESULTS AND THE SCATTER PLOTS OF FUNCTIONS 1 AND 2 FOR THE THREE MODELS

An inspection of Table A5.7 indicates the following original classifications are incorrectly classified in Model 1: One PIFP firm is classified into the PSFP category (GenCorp); two PIFP firms are categorised into the PAFP category (Southern and BNSF); two PAFP firms are assigned into the PIFP category (Emerson and Sunoco). If the cross-validated classifications are reviewed, an additional firm is incorrectly categorised into the PSFP category (CSXC).

The posterior probability of the highest group (the sixth column of Table A5.7, original classification) provides an indication of the probability that each firm had been correctly assigned to the predicted firm performance category (Norusis, 2005). The higher posterior probabilities evident in those firms classified as PSFP firms ranges from .720 (GenCorp) to .964 (Amerada), increasing confidence in those classifications. In comparison, PIFP and PAFP

categories posterior probabilities are lower: the PIFP category ranges from .519 (Duke) to .612 (Masco); the PAFP category ranges from .472 (BNSF) to .626 (Southern).

The higher values of Mahalanobis distance (column seven of Table A5.7, original classification) evident in Southern (5.352) and CSXC (5.609), both assigned to the PAFP category suggest that these firms are different from the other firms classified into the PAFP category. In comparison, the firms categorised into the PSFP category display lower Mahalanobis distance values ranging from .177 (Whirlpool) to .294 (Amerada) and thus, these firms are analogous. The only non-PSFP firm to be classified into the PSFP category possesses a higher value (1.685 GenCorp) suggesting that it is different to the other PSFP firms.

Table A5.7. Casewise results: Strategic intent versus resource governance model

Model	Firm	Actual group	Predicted group	Highest group		Discriminant scores			
				P (G = g)	D = d)	Squared Mahalanobis*	Function 1	Function 2	
SI v RG	Original	Masco	PIFP	PIFP	0.612	1.240	1.300	-1.197	
		Southern	PIFP	PAFP	0.626	5.352	3.111	0.703	
		GenCorp	PIFP	PSFP	0.720	1.685	-1.100	-1.185	
		Duke	PIFP	PIFP	0.519	0.056	0.567	-0.358	
		BNSF	PIFP	PAFP	0.472	1.354	-0.074	0.923	
		Emerson	PAFP	PIFP	0.584	0.498	0.830	-0.925	
		CMS	PAFP	PAFP	0.511	0.097	1.133	0.086	
		Raytheon	PAFP	PAFP	0.550	0.106	0.996	0.506	
		Sunoco	PAFP	PIFP	0.587	0.977	1.413	-0.965	
		CSX	PAFP	PAFP	0.583	5.609	-0.123	2.374	
		Whirlpool	PSFP	PSFP	0.961	0.177	-2.006	-0.136	
		FPL	PSFP	PSFP	0.769	0.266	-1.184	-0.281	
		Northrop	PSFP	PSFP	0.841	0.207	-1.367	0.392	
		Amerada	PSFP	PSFP	0.964	0.294	-2.054	-0.305	
		Union	PSFP	PSFP	0.864	0.159	-1.444	0.371	
		Cross validated	Masco	PIFP	PIFP	0.527	2.039		
			Southern	PIFP	PAFP	0.998	14.381		
	GenCorp		PIFP	PSFP	0.976	1.551			
	Duke		PIFP	PIFP	0.507	0.081			
	BNSF		PIFP	PAFP	0.541	1.543			
	Emerson		PAFP	PIFP	0.668	0.527			
	CMS		PAFP	PAFP	0.501	0.140			
	Raytheon		PAFP	PAFP	0.536	0.153			
	Sunoco		PAFP	PIFP	0.716	1.075			
	CSX		PAFP	PSFP	0.949	10.238			

Key: * Distance to the centroid

As outlined in Table A5.8, the following original classifications are incorrectly categorised in the OD versus RG Model: One PIFP firm is assigned into the PSFP category (GenCorp); two PAFP firms are classified into the PIFP category (Emerson and CMS). If the cross-validated

classifications are reviewed, two additional firms are incorrectly categorised into the PAFP category (Masco and Southern).

The higher posterior probabilities (original classification) evident in PSFP firms ranges from .743 (Northrop) to .974 (Whirlpool) increasing the conviction of those classifications. In comparison, the PIFP category posterior probabilities are lower, ranging from .506 (Masco) to .716 (Southern). Two of the three PAFP firms' posterior probabilities are close (Raytheon and Sunoco) whereas the value for CSXC is relatively lower (.527).

Table A5.8. Casewise results: Organisational domain versus resource governance model

Model	Firm	Actual group	Predicted group	Highest group		Squared Mahalanobis*	Discriminant scores	
				P (G = g)	D = d)		Function 1	Function 2
OD v RG	Original	Masco	PIFP	PIFP	0.506	0.424	0.938	-0.219
		Southern	PIFP	PIFP	0.716	6.486	2.333	-2.273
		GenCorp	PIFP	PSFP	0.856	0.216	-1.347	0.466
		Duke	PIFP	PIFP	0.640	0.063	0.280	-0.387
		BNSF	PIFP	PIFP	0.666	0.315	-0.150	-0.595
		Emerson	PAFP	PIFP	0.659	0.020	0.327	-0.488
		CMS	PAFP	PIFP	0.615	0.253	0.913	-0.636
		Raytheon	PAFP	PAFP	0.948	2.172	2.262	1.540
		Sunoco	PAFP	PAFP	0.947	2.124	2.243	1.535
		CSX	PAFP	PAFP	0.527	0.364	0.754	0.167
		Whirlpool	PSFP	PSFP	0.974	0.376	-2.303	0.022
		FPL	PSFP	PSFP	0.927	2.545	-2.261	-1.320
		Northrop	PSFP	PSFP	0.743	0.773	-0.990	0.682
		Amerada	PSFP	PSFP	0.956	0.787	-1.761	1.063
		Union	PSFP	PSFP	0.820	0.294	-1.237	0.440
	Cross validated	Masco	PIFP	PAFP	0.503	0.518		
		Southern	PIFP	PAFP	0.987	20.045		
		GenCorp	PIFP	PSFP	0.988	0.216		
		Duke	PIFP	PIFP	0.615	0.091		
		BNSF	PIFP	PIFP	0.628	0.466		
		Emerson	PAFP	PIFP	0.757	0.018		
		CMS	PAFP	PIFP	0.700	0.235		
		Raytheon	PAFP	PAFP	0.939	4.022		
		Sunoco	PAFP	PAFP	0.937	3.906		
		CSX	PAFP	PAFP	0.496	0.541		
		Whirlpool	PSFP	PSFP	0.965	0.560		
		FPL	PSFP	PSFP	0.809	4.961		
Northrop	PSFP	PSFP	0.672	1.204				
Amerada	PSFP	PSFP	0.932	1.228				
Union	PSFP	PSFP	0.784	0.434				

Key: * Distance to the centroid

The highest Mahalanobis distance value (original classification) is evident in Southern (6.486). Two firms assigned to the PAFP category (Raytheon = 2.172 and Sunoco = 2.124) and one PSFP firm (FPL = 2.545) are also characterised by higher values. These firms are then different from the other firms of the same classification.

As set forth in Table A5.9, the following original classifications are incorrectly categorised with

the RG versus IG Model: One PIFP firm is assigned into the PSFP category (GenCorp); two PIFP firms are classified into the PAFP category (Southern and BNSF); two PAFP firms are classified into the PIFP category (CMS and Sunoco). If the cross-validated classifications are reviewed, an additional firm is incorrectly categorised into the PIFP category (Emerson).

The higher posterior probabilities (original classification) evident in PSFP firms ranges from .696 (Northrop) to .974 (Amerada), increasing the support for those classifications. In comparison, the PIFP category posterior probabilities are lower ranging from .583 (CMS) to .692 (Masco). The PAFP category ranges from .482 (Emerson) to .815 (Raytheon).

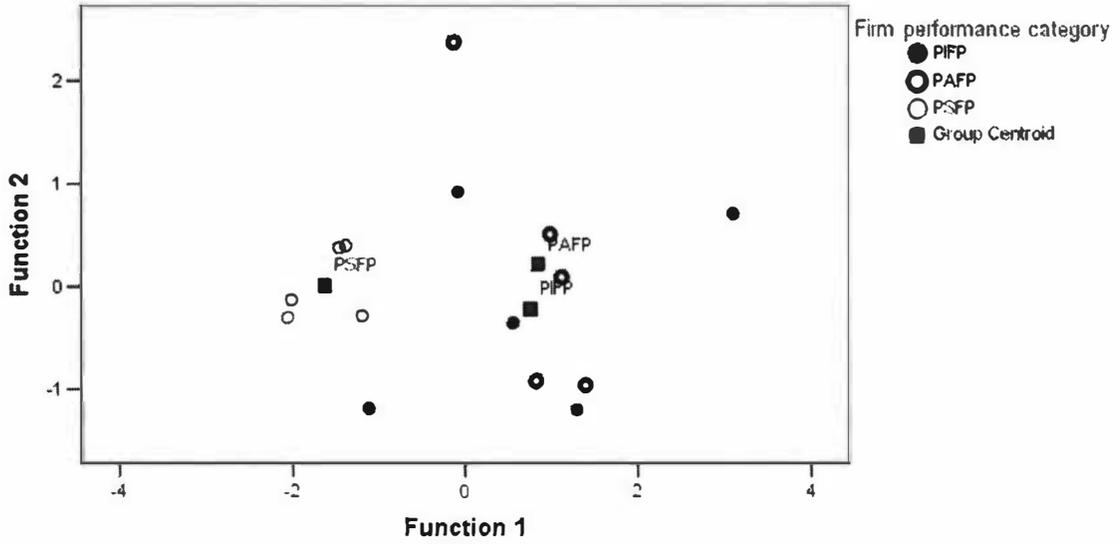
Table A5.9. Casewise results: Resource governance versus internal governance model

Model	Firm	Actual group	Predicted group	Highest group		Squared Mahalanobis*	Discriminant scores	
				P (G = g)	D = d)		Function 1	Function 2
RG v IG	Original	Masco	PIFP	PIFP	0.692	0.956	0.598	-1.339
		Southern	PIFP	PAFP	0.592	5.623	3.083	-0.795
		GenCorp	PIFP	PSFP	0.831	0.184	-1.330	0.403
		Duke	PIFP	PIFP	0.631	0.500	0.213	-0.954
		BNSF	PIFP	PAFP	0.568	0.646	0.420	0.881
		Emerson	PAFP	PAFP	0.482	0.184	0.589	0.137
		CMS	PAFP	PIFP	0.583	0.254	0.968	-0.702
		Raytheon	PAFP	PAFP	0.815	2.513	1.587	1.772
		Sunoco	PAFP	PIFP	0.623	0.404	0.882	-0.929
		CSX	PAFP	PAFP	0.692	0.907	0.889	1.254
		Whirlpool	PSFP	PSFP	0.954	0.179	-1.972	0.213
		FPL	PSFP	PSFP	0.818	0.297	-1.369	-0.448
		Northrop	PSFP	PSFP	0.696	1.367	-0.971	1.053
		Amerada	PSFP	PSFP	0.974	1.932	-2.397	-1.070
		Union	PSFP	PSFP	0.783	0.373	-1.189	0.524
	Cross validated	Masco	PIFP	PIFP	0.627	1.521		
		Southern	PIFP	PAFP	0.998	14.366		
		GenCorp	PIFP	PSFP	0.980	0.177		
		Duke	PIFP	PIFP	0.582	0.755		
		BNSF	PIFP	PAFP	0.657	0.668		
		Emerson	PAFP	PIFP	0.475	0.228		
		CMS	PAFP	PIFP	0.648	0.245		
		Raytheon	PAFP	PAFP	0.725	4.877		
		Sunoco	PAFP	PIFP	0.725	0.422		
		CSX	PAFP	PAFP	0.628	1.435		
		Whirlpool	PSFP	PSFP	0.940	0.262		
		FPL	PSFP	PSFP	0.778	0.439		
Northrop	PSFP	PSFP	0.550	2.283				
Amerada	PSFP	PSFP	0.958	3.465				
Union	PSFP	PSFP	0.737	0.555				

Key: * Distance to the centroid

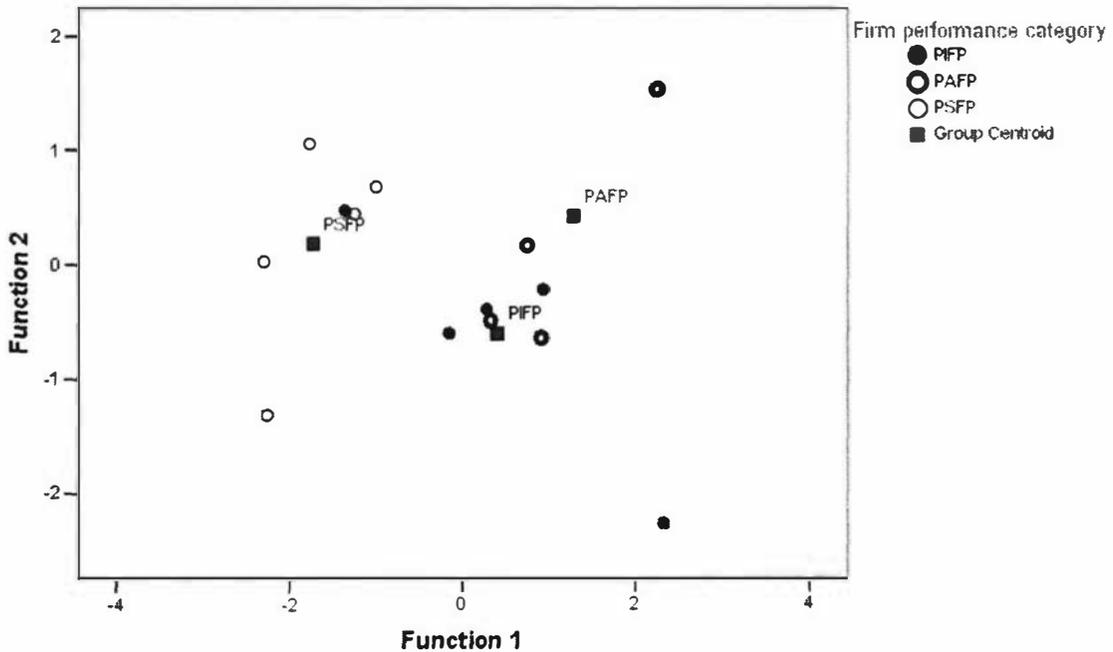
The higher values of Mahalanobis distance (original classification) evident in Southern (5.623) and Raytheon (2.513), both assigned into the PAFP category suggest that these firms are different from the other firms classified into the PAFP category. In addition, two PSFP firms are characterised by larger values (Amerada = 1.932 and Northrop = 1.367) intimating that they differ from the other PSFP firms.

Figure A5.1. Function 1 versus Function 2 scatter plot: Strategic intent versus resource governance model



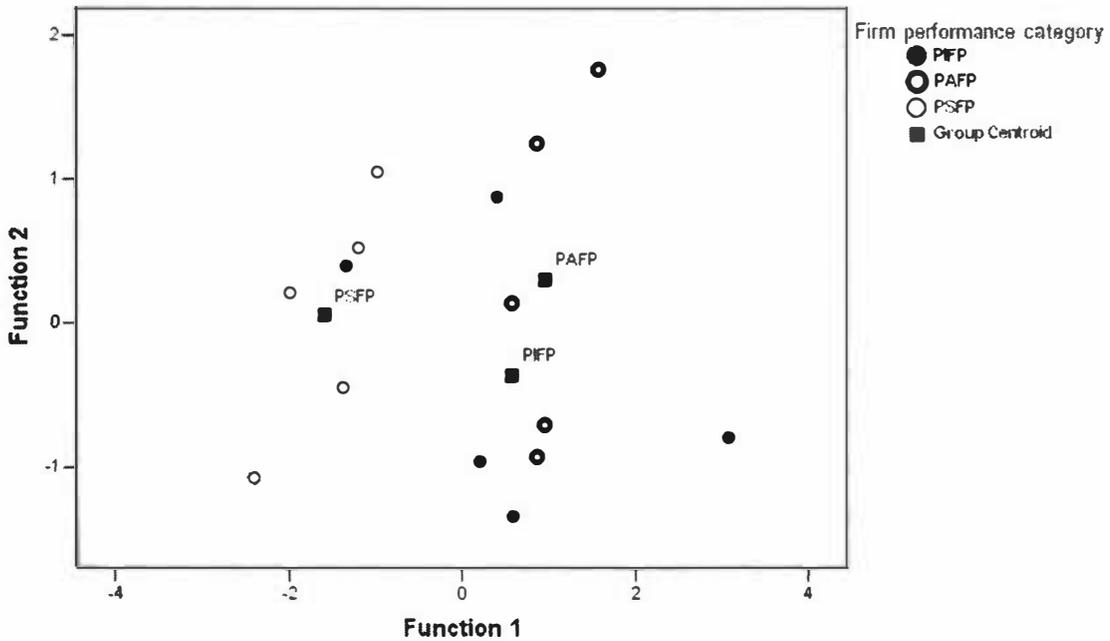
Tables A5.7 to A5.9 displayed the Function 1 and 2 calculations which have been plotted on Figures A5.1 to A5.3. For Model 1, the PSFP firms appear to be densely centred close to the group centroid whereas the firms of the other two firm performance categories are more scattered from the group centroids (refer to Figure A5.1). The PIFP and PAFP categories group centroids are closely located.

Figure A5.2. Function 1 versus Function 2 scatter plot: Organisational domain versus resource governance model



For Model 2, the group centroids of the three firm performance categories are more dispersed than those displayed in Model 1 (refer to Figure A5.2). The five PSFP firms appeared to be separately located whereas the firms of the other two firm performance categories are located more closely together.

Figure A5.3. Function 1 versus Function 2 scatter plot: Resource governance versus internal governance model



For Model 3, the group centroids of the three firm performance categories are located similarly to Model 2 (refer to Figure A5.3). The five PSFP firms appear to be separately located although more stretched out when compared to Model 2, whereas the firms of the other two firm performance categories are located together.

8.0 BOX'S M RESULTS

As the sample size is small, misclassification of firms could result if the within-group covariance is not homogeneous (Cramer, 2003). H_0 that the population variance-covariance matrices are equal could be rejected for Models 1 and 2 (refer to Table A5.10). For Model 3, the Box's M is not significant at the $p < .05$ level indicating that unequal or large differences in the within-group covariance matrices did not have a significant effect on the classification model. Furthermore, a subjective review for the three firm performance categories shows that the log determinants are heterogeneous. Heterogeneous covariance matrices could increase the possibility that the firms

will be classified into the category with more variability (Tabachnick & Fidell, 2001). As seen from Table A3.5, the PIFP category displayed the highest variability in the resource governance attribute index ($s = 123.5$ in comparison to the PAFP category $s = 22.7$ and the PSFP category $s = 32.0$). Heterogeneous covariance does not appear to have had a significant impact on the classification as for Model 1 as only four of out the 15 firms of the original and cross-validated classification analyses are classified into the PIFP category. For Model 2, only six of out the 15 firms of the original classification analysis are classified into the PIFP category and four in the cross-validated analysis. Only four firms are classified as into the PIFP category in the original classification analysis of Model 3 and five firms in the cross-validated analysis.

Table A5.10. Discriminant analysis: Box's M results

Model	Box M	Significance	Firm performance category	Log determinants*
1 SI v RG	20.740	0.016	PIFP	17.037
			PAFP	14.489
			PSFP	12.106
2 OD v RG	19.377	0.023	PIFP	16.279
			PAFP	15.013
			PSFP	15.495
3 RG v IG	15.336	0.071	PIFP	18.388
			PAFP	15.692
			PSFP	15.363

Key: df= 6

* The natural logarithm of determinants are those of the group covariance matrices

9.0 ACCURACY OF CLASSIFICATIONS

Table A5.11. Discriminant analysis: Kappa

Model	Value	Asymp. Std. Error*	Approx. T#	Approx. Sig.
1 SI v RG	0.500	0.1773	2.757	0.006
2 OD v RG	0.700	0.1514	3.913	0.000
3 RG v IG	0.500	0.1773	2.757	0.006

Key: * Not assuming H_0

Using the asymptotic standard error assuming H_0

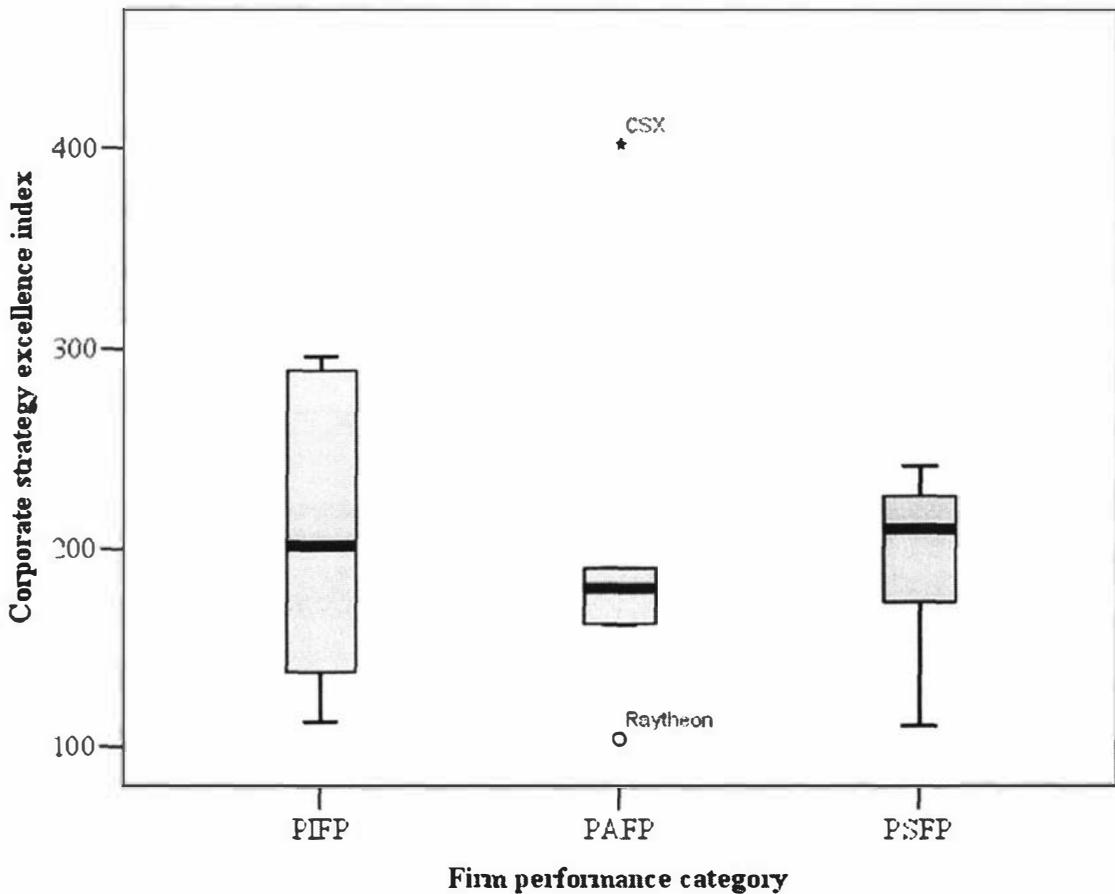
Kappa coefficients are calculated to measure the precision of the firm performance category classification (refer to Table A5.11). A Kappa value of greater than zero specifies that the prediction is better than chance (Green & Salkind, 2005). The results indicate a moderate level of prediction accuracy (Kappa ranged from .500 to .700).

APPENDIX 6: EXCELLENCE AND QUANTITY RESULTS

1.0 CORPORATE STRATEGY EXCELLENCE INDEX

The box plots for the corporate strategy excellence index indicate that the PAFP category is characterised by a smaller distribution than that of the other firm performance categories (refer to Figure A6.1). The upper quartile of all three firm performance categories is minimal. The bottom quartile for the PSFP category is larger than the non-PSFP categories. The box plot of the PIFP category is larger than the other firm performance categories.

Figure A6.1. Box plots for the corporate strategy excellence index



The corporate strategy excellence index box plots show that even though the PAFP category is characterised by two outliers (Raytheon and CSXC), the interquartile range is small in comparison to the PIFP and PSFP categories (although the PAFP is left with only three other

firms). In conclusion, the PSFP category could be only slightly distinguished from the non-PSFP categories.

2.0 EXCELLENCE INDICES

Table A6.1. Jonckheere-Terpstra test for the corporate strategy quantity index

Excellence index	Observed Jonckheere	Significance	z score	Effect size
Strategic intent	39.000	0.459	0.158	0.040
Organisational domain	28.500	0.180	-0.957	-0.250
Resource governance	31.000	0.267	-0.687	-0.180

3.0 CORPORATE STRATEGY QUANTITY INDEX

3.1 Kruskal-Wallis test

Table A6.2. Kruskal-Wallis test for the corporate strategy quantity index

Index	<i>H</i>	Exact significance	Monte carlo 99% lower Significance*	99% upper bound	Effect size	Effect magnitude
Corporate strategy quantity	10.140	0.001	0.001	0.002	0.72	strong

Key: $df = 2$
 * based on 10,000 sampled tables with starting seed 2,000,000
 Significant results are highlighted in bold

The Monte Carlo estimate of significance was .001 (refer to Table A6.2). The confidence interval for significance for the corporate strategy quantity index ranges from .000 to .002 and did not exceed .05 indicating that the significant effect is genuine (Field, 2005). The high values for the corporate strategy quantity index suggest that the ranks are not distributed evenly between the three firm performance categories.

3.2 Siegel-Castellan critical difference test: A post-hoc test for Kruskal-Wallis test

Table A6.3. Siegel-Castellan critical difference test for the corporate strategy quantity index

Firm performance category	<i>Ru</i>	<i>Rv</i>	<i>Ru - Rv</i>	Greater than critical difference
PIFP - PAFP	8.2	12.4	4.2	-2.59
PAFP - PSFP	12.4	3.4	9	2.21
PIFP - PSFP	8.2	3.4	4.8	-1.99

Key: Significant results are highlighted in bold

3.3 Mann-Whitney tests: A post-hoc test for Kruskal-Wallis test

Three MW tests were performed on the corporate strategy quantity index using the exhaustive three pairwise comparisons (i.e., PIFP and PAFP, PIFP and PSFP, PAFP and PSFP) refer to Table A6.4.

Table A6.4. Mann-Whitney tests for the corporate strategy quantity index

Firm performance category	Mann-Whitney U	Significance	Effect size	Effect magnitude
PIFP PAFP	3.000	0.028	-0.63	strong
PIFP PSFP	2.000	0.016	-0.69	strong
PAFP PSFP	0.000	0.004	-0.83	strong

Key: Significance: Exact (1-tailed)
Significant results highlighted in bold

4.0 QUANTITY INDICES

4.1 BOX PLOTS

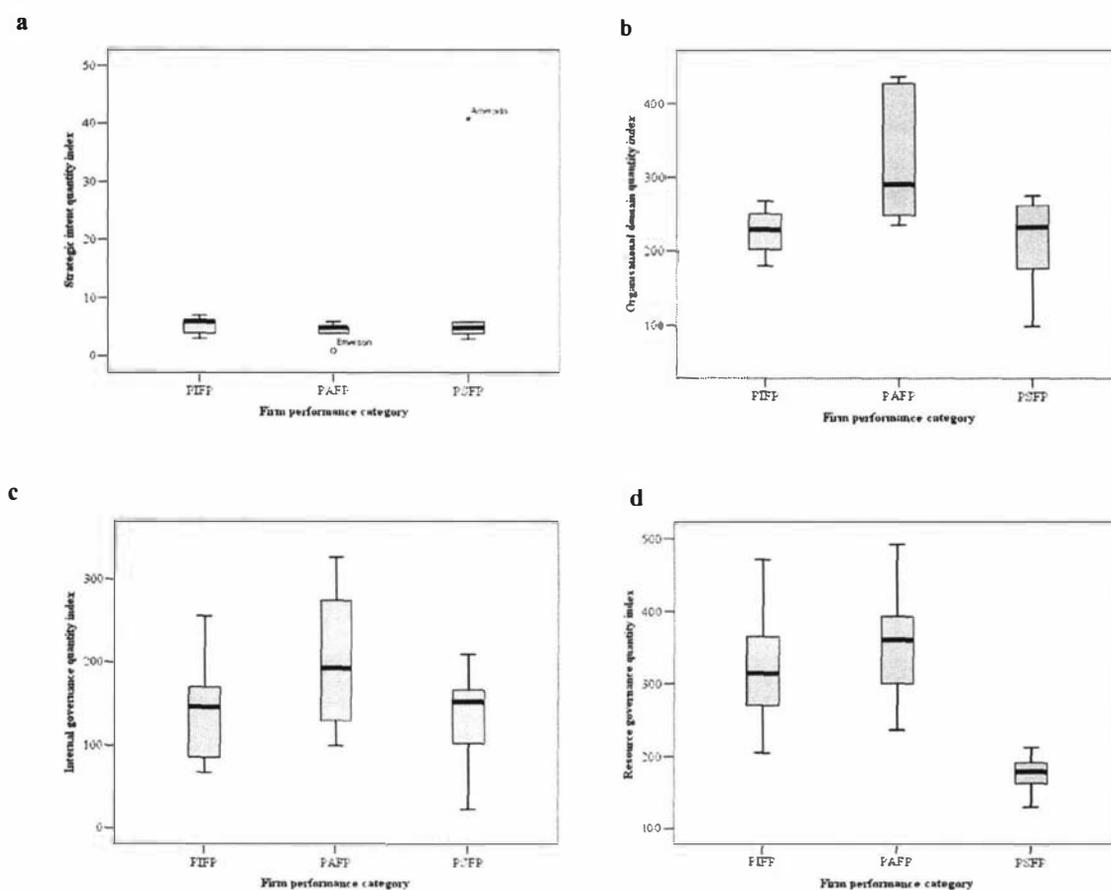
The box plots presented in Figure A6.2 provide a graphical demonstration of the descriptive statistics outlined in Section 5.15.1a and Table 5.8. The PSFP category illustrates a distinct difference in the resource governance quantity index in comparison to the other two firm performance categories. This difference is also reflected in the corporate strategy quantity index box plots.

The box plots for the strategic intent quantity index indicate that the three firm performance category distributions are similar (refer to Figure A6.2a). The medians for the PAFP and PSFP categories are distorted by outliers (Emerson and Amerada respectively). The organisational domain quantity index box plot for the PIFP and PAFP categories display a relatively normal distribution (although the median was lower and the distribution is more disperse for the PAFP category). For the PSFP category, the median is higher in the box plot due to the presence of higher scores (refer to Figure A6.2b). The PSFP category is characterised by a greater bottom quartile.

The box plots for internal governance quantity index for the PAFP category display a relatively normal distribution although the distribution is more disperse (refer to Figure A6.2c). The median is higher for the PIFP category reflecting a higher score which also influences the larger upper quartile. In comparison, although the median for the PSFP category is higher in the box

plot, a lower score produces a large bottom quartile. The box plots for resource governance quantity index illustrate the homogeneous nature of the PIFP and PAFP distributions (refer to Figure A6.2d). In contrast, the interquartile range evident in the PSFP category is more compact and it's box plot is clearly distinct from the non-PSFP categories. In conclusion, the box plots suggest that the resource governance quantity index could be used to distinguish the PSFP category from the other firm performance categories.

Figure A6.2. Box plots of the quantity indices



4.2 Kruskal-Wallis test

Table A6.5. Kruskal-Wallis test for the quantity indices

Quantity index	<i>H</i>	Exact significance	Monte carlo 99% lower bound	99% upper bound	Effect size	Effect magnitude
Strategic intent	0.688	0.735	0.725	0.737	0.05	low
Organisational domain	4.340	0.118	0.114	0.122	0.31	moderate
Resource governance	8.820	0.005	0.006	0.007	0.63	strong
Internal governance	1.500	0.505	0.495	0.508	0.11	low
Corporate strategy	10.140	0.001	0.001	0.002	0.72	strong

Key: *df* = 2

* based on 10,000 sampled tables with starting seed 2,000,000

Significant results are highlighted in bold

4.3 Brunner, Detter and Munk heteroscedastic rank-based ANOVA test

Table A6.6. Brunner, Detter and Munk heteroscedastic rank-based ANOVA method for the quantity indices

Index	F	Average of ranks			Significance
		PIFP	PAFP	PSFP	
Strategic intent quantity	0.310	0.560	0.413	0.527	0.814
Organisational domain quantity	2.700	0.393	0.727	0.380	0.099
Internal governance quantity	2.979	0.433	0.633	0.433	0.558
Resource governance quantity	10.216	0.620	0.700	0.180	0.002

Key: Significant results highlighted in bold

The ranks for the corporate strategy quantity index obtained from BDM were for the PAFP, PIFP and PSFP categories, 0.193, .513 and .793 respectively.

4.4 One-way independent ANOVA test

Table A6.7. One-way independent ANOVA test for the quantity indices

Index	Welch's F	df1	df2	Significance
Strategic intent quantity	0.78	2	7.08	0.496
Organisational domain quantity	2.48	2	6.79	0.155
Internal governance quantity	0.92	2	7.89	0.437
Resource governance quantity	10.82	2	6.23	0.009

Key: Significant results highlighted in bold

Although the organisational domain quantity index is nonsignificant (Welch's $F(2,6.79) = 2.48$, $p = .155$, $\omega = .60$), a significant quadratic trend ($F(1,12) = 7.55$, $p = .018$, $\omega = .75$) exists indicating that as firm performance increases the organisational domain quantity index also increases and then declines that is, the presence of a curvilinear association is established.

4.5 Siegel-Castellan critical difference test: A post-hoc test for Kruskal-Wallis test

Table A6.8. Siegel-Castellan critical difference test for the resource governance index

Firm performance category	Ru	Rv	Ru - Rv	Greater than critical difference
PIFP - PAFP	9.8	11	1.2	-5.59
PAFP - PSFP	11	3.2	7.8	1.01
PIFP - PSFP	9.8	3.2	6.6	-0.19

Key: Significant results highlighted in bold

4.6 Mann-Whitney tests: A post-hoc test for Kruskal-Wallis test

Three MW tests were performed for the resource governance quantity index whereby three exhaustive pairwise comparisons are conducted (i.e., PIFP and PAFP, PIFP and PSFP, PAFP and PSFP) refer to Table A6.9.

Table A6.9. Mann-Whitney tests for the resource governance quantity index

Firm performance category	Mann-Whitney U	Significance	Effect size	Effect magnitude
PIFP PAFP	10.000	0.345	-0.17	low
PIFP PSFP	1.000	0.008	-0.76	strong
PAFP PSFP	0.000	0.004	-0.83	strong

Key: Significance: Exact (1-tailed)
Significant results highlighted in bold