

## CHAPTER 6

### RESEARCH FINDINGS

*“I’ve learned that the only surprise a box of cereal holds these days is the price  
Age 46*

*I’ve learned that college isn’t just about preparing for your future career, it is about finding out  
who you are right now.  
Age 23*

*I’ve learned that you cannot hide a piece of broccoli in a glass of milk.  
Age 8”*

(Brown 1997)

### 6.1 INTRODUCTION

The systematic exploration of literature on strategy and strategy-making enabled the development of a questionnaire as measuring instrument to investigate the research questions. The questionnaire was supplemented and enhanced by personal interviews with top management (including CEO’s and managers concerned with strategy) who also helped distribute questionnaires to respondents on different managerial levels in their organisations. The results of the empirical study are reported in this chapter.

The following sections describe the body of the data. The following descriptive statistics are presented in this chapter:

- Univariate and multivariate correlation analysis: describing the population
- A factor analysis: to establish relationships between variables contained in the data set.

The following inferential statistics are presented in this chapter:

- Non-parametric statistics for tests of differences: to test differences between groups of respondents and informants as well as between factors as measured against certain variables.
- Significance of relationships or differences: through the application of a multi-way analysis of variance (ANOVA) to test the spread of the data.
- The prediction value of independent variables were tested: through the application of linear discriminant analysis, logistic regression analysis and the Multivariate Adaptive Regression Splines (MARS) model.

## 6.2 EMPIRICAL FINDINGS: DESCRIPTIVE STATISTICS

The results of the empirical study will presented as a description of the sample in terms of: demographic information, univariate correlation analysis, multivariate correlation analysis and factor analysis.

### *6.2.1 Sample and response rate*

Twenty interviews were requested with CEO's or management concerned with strategy, 17 out of these (i.e. 85%) were granted. The CEO's/managers distributed about 10 questionnaires each in their organisations and 12 of these organisations (i.e. 71%) returned the distributed questionnaires. Questionnaires distributed in this way totaled 225 and 155 of these were returned. This constitutes a response rate of 69%. These 155 questionnaires were supplemented with 38 questionnaires from employees from other organisations, whom have been trained by University of Pretoria lecturers

from the department of Business Management or were on the department's database. Questionnaires were also completed for the CEO/managers interviewed and used in the Mann Whitney T-test detailed in sub-section 6.3.2. This brings the total of questionnaires to 210.

### *6.2.2 Demographics*

The demographic results are presented in the tables below.

*Table 6.1 Organisational size as indicated by respondents*

ORGANISATIONAL SIZE	Frequency (n)	Percentage (%)
Small	49	25
Large	144	75
<i>TOTAL</i>	<i>n=193</i>	<i>100</i>

With an average of 75% it is clear that the majority of respondents come from large organisations. Organisations are classified as large when they have 100 or more employees. Small organisations represent a grouped frequency distribution where, due to the low frequency, very small, small and medium organisations were grouped together.

*Table 6.2 Type of business as indicated by respondents*

TYPE OF BUSINESS	Frequency (n)	Percentage (%)
Private	167	87
Government and parastatal (and other)	26	13
<i>TOTAL</i>	<i>193</i>	<i>100</i>

Private organisations represent 87% of the respondents, and only 13% come from Government, parastatal and other. The latter category, namely “other” makes up 7.25% of the 13% and could include NGO’s and also a few small entrepreneurial organisations that participated (as part of the Department of Business Management database consulted). The respondents were requested to specify, but unfortunately none did.

**Table 6.3 Industry classification based on industry as indicated by respondents**

Stable industries			Unstable industries		
	Frequency	%		Frequency	%
Publications and Media	13	7	IT	21	11
Health	12	6	Telecommunications	15	8
Banking (including Finance)	34	18	Automotive	20	11
Insurance	19	10	Transport (air travel)	9	5
Petrochemical	20	11	Consulting	3	2
FMCG	2	1	Advertising and Marketing	3	2
Construction	3	2	<i>TOTAL</i>	<i>71</i>	<i>39</i>
Investment	7	4			
Other	8	4			
<i>TOTAL</i>	<i>118</i>	<i>63</i>			

Missing = 4

In total 24 industries were represented in the sample. Industries were grouped and divided into stable and unstable industries to enable testing of industry as a moderating factor when selecting a mode of strategy-making. In line with Brews and Hunt (1999) and Porter (1991) the following indicators of industry stability were used to group industries: Maturity of industry; speed of change; stability of technology and possibility to forecast changes in technology; availability of information for decision making in the

industry; frequency of new competitors entering into the market; rules of competition and current competitors either changing or well defined; influence of macro environment.

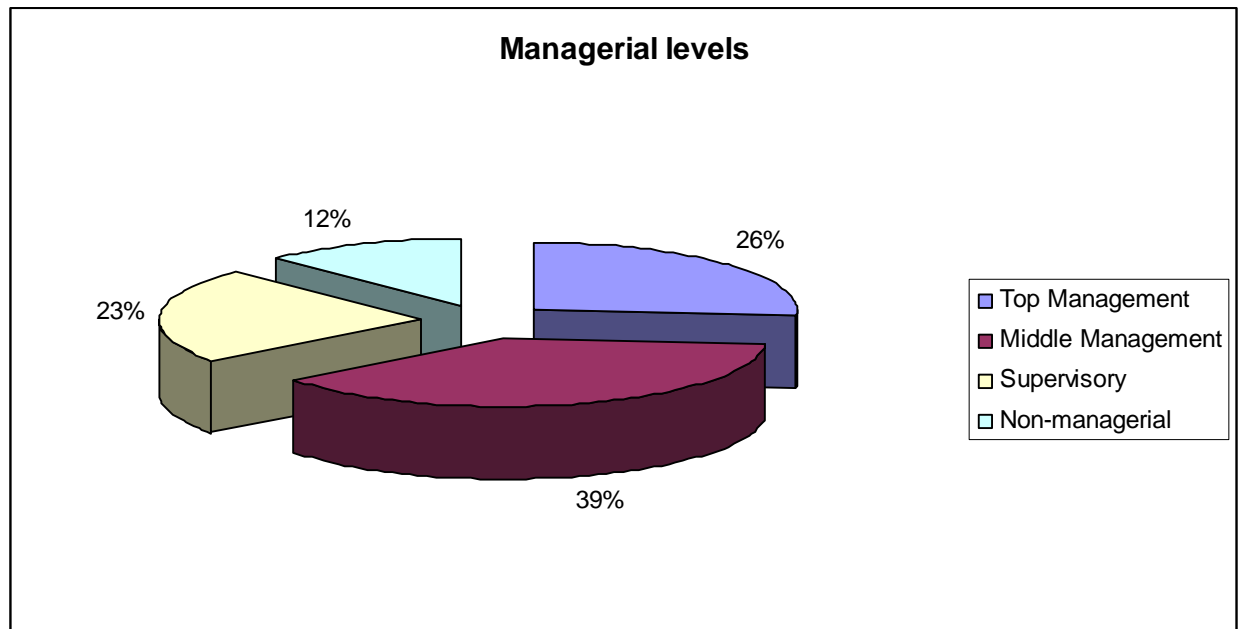
The grouping was also done with due consideration of the specific organisations included in the sample, for example Publication and Media includes a mature academic media publisher which would be considered a stable type of business.

*Table 6.4 Management level of respondents*

MANAGEMENT LEVEL	Frequency (n)	Percentage (%)
Top Management	51	26.42
Middle Management	74	38.34
Supervisory	44	22.80
Non-managerial	24	12.44
<i>TOTAL</i>	<i>193</i>	<i>100</i>

Top Management represents 26% of the sample, 38% are middle management, 23% lower level supervisory management and 12% non-managerial. The CEO's/managers that were interviewed and who distributed questionnaires in their organisations were requested to distribute questionnaires evenly among the different levels of management, but to employees that have some involvement in strategy-making on management or ground level. This could explain the higher percentage of management, especially middle management, who is typically responsible for making and

implementing strategy in organisations. Figure 6.1 below graphically depicts this distribution.



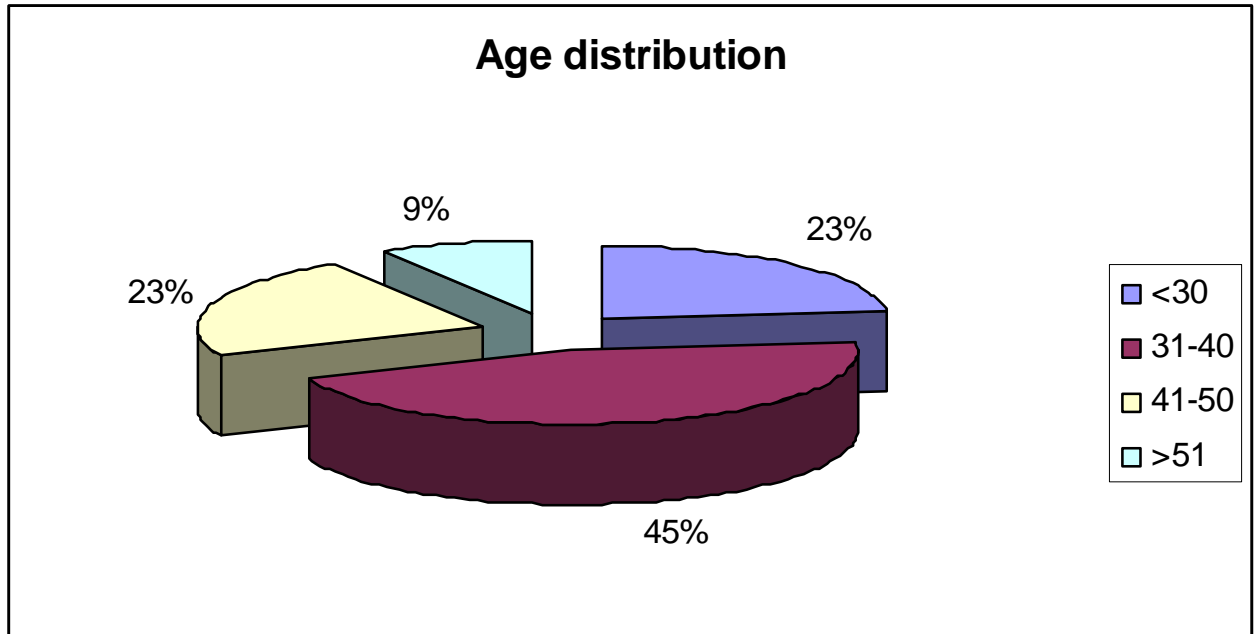
*Figure 6.1 Managerial levels of respondents*

*Table 6.5 Age distribution of respondents*

AGE (in years)	Frequency (n)	Percentage (%)
<30	43	23.37
31-40	83	45.11
41-50	42	22.82
>51	16	8.7
<i>TOTAL</i>	<i>184</i>	<i>100</i>

Missing = 9

Table 6.5 represents a grouped frequency distribution of age. The majority of respondents fall between the ages of 31 and 40 years. Figure 6.2 below graphically depicts this distribution.



*Figure 6.2 Age distribution of respondents*



**Table 6.6 Cross-tabulation with age and managerial level of respondents**

MANAGEMENT LEVEL AGE	20-30	31-40	41-50	>51	Chi-square <sup>1</sup> (X <sup>2</sup> )	P-value <sup>2</sup>	Cramer's V <sup>3</sup>
Top Management	11%	39%	35%	15%	32.98	0.0001	0.244
Middle Management	14%	56%	22.54%	7%			
Supervisory Management	33%	40%	21%	7%			
Non-managerial	58%	33%	4%	4%			
<b>TOTAL</b>	<b>23%</b>	<b>45%</b>	<b>23%</b>	<b>9%</b>			

A chi-square ( $\chi^2$ ) value of 32.98 and probability value of 0.0001 at 1% significance level indicate significant differences between the managerial levels compared to age.

Since the Chi-square statistic can only establish whether two variables are independent or not and does not show the strength of the association, the Cramer's V statistic is also presented above. While on its own, chi-square can only test independence, it can be modified so that (a) it is not influenced by sample size, and (b) its values fall in a range from 0 to 1 (where 0 indicates no association and 1 perfect association). Cramer's V represents

<sup>1</sup> Tests independence and association between variables (Diamantopoulos & Schlegelmilch, 2000:200)

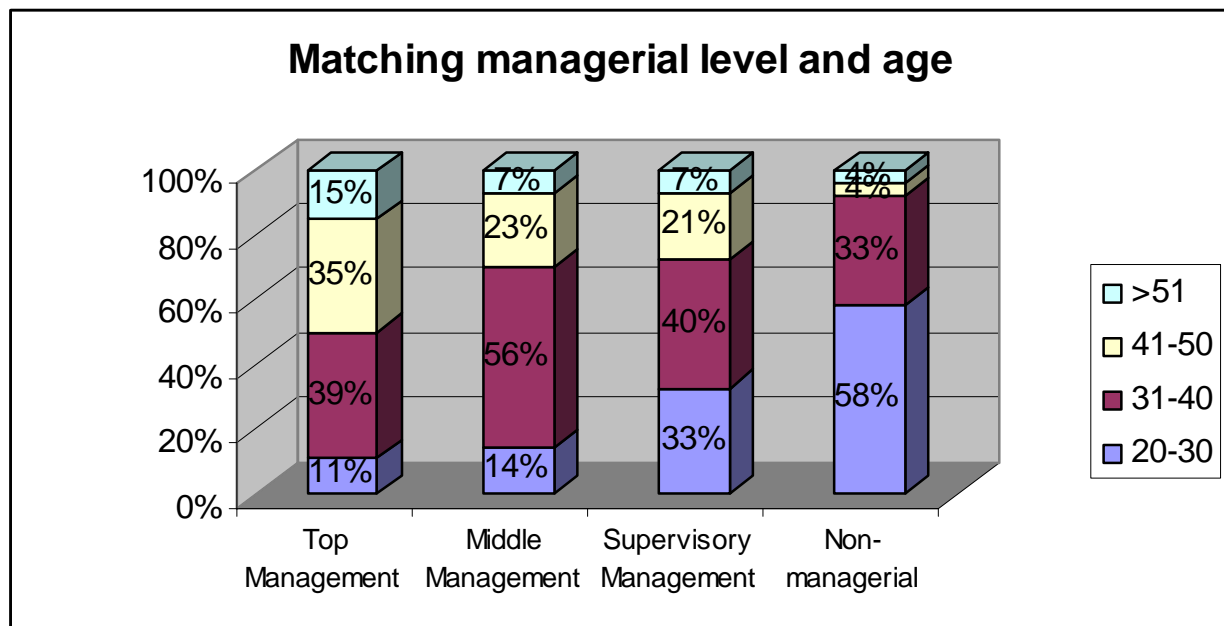
<sup>2</sup> Probability- provides information on the significant region of the results (Diamantopoulos & Schlegelmilch, 2000:146)

<sup>3</sup> Measures relative strength of association between different pairs of matched variables (Saunders *et al*, 2007:445)

such a chi-square adjustment. It can be interpreted as reflecting relationships of different magnitudes (Diamantopoulos & Schlegelmilch, 2000:200).

The Cramer's V value of 0.244 measures a low relative strength of association between different pairs of matched age and management level.

The majority of top management can be seen to be between the two age groups 31-40 and 41-50 (It must be noted that the majority of respondents were between the ages of 31-40, see figure 6.2). The majority of the middle management and supervisory level respondents fall between the ages of 31 and 40 (56% and 40% respectively). Non-managerial respondents are predominantly younger with 58% in the age group 20-30. Figure 6.3 below serves to illustrate the above table more graphically.



*Figure 6.3 Matching managerial level and age of respondents*

*Table 6.7 Highest level of education of respondents*

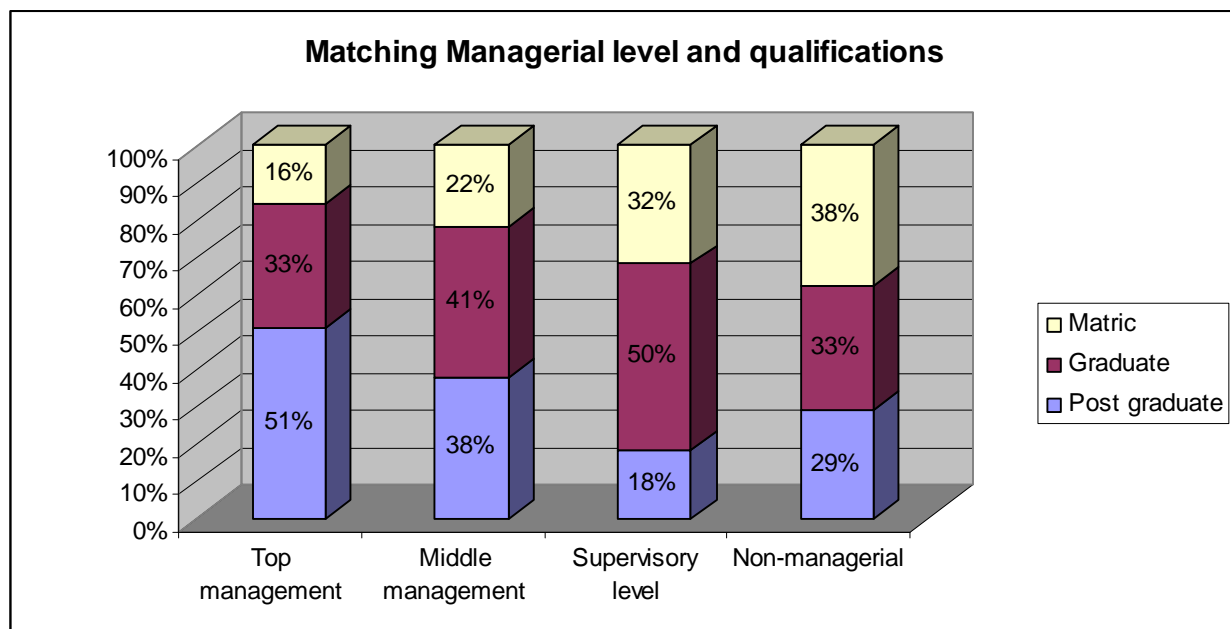
HIGHEST LEVEL OF EDUCATION	Frequency (n)	Percentage (%)
Post graduate level	69	35.75
National diploma/ degree	77	39.9
≤ Matric	47	24.35
<i>TOTAL</i>	<i>193</i>	<i>100</i>

The level of education among respondents are evenly distributed, with almost 36% of respondents qualified at post-graduate level, almost 40% with a three year degree or national diploma and 24% qualified on matric level or lower.

*Table 6.8 Cross-tabulation with education and managerial level of respondents*

QUALIFICATIONS MANAGEMENT LEVEL	Post graduate	Graduate	Matric	$\chi^2$	P-value	Cramer's V
Top management	51%	33%	16%	13.94	0.03	0.19
Middle management	38%	41%	22%			
Supervisory level	18%	50%	32%			
Non-managerial	29%	33%	38%			

A chi-square ( $\chi^2$ ) value of 13.94 and probability value of 0.03 at 5% significance level indicate significant differences between the managerial levels compared to education. The Cramer's V value of 0.19 measures a low relative strength of association between different pairs of matched qualifications and management level. The majority of top management can be seen to have post graduate qualifications, with only 16% on matric or lower. Middle management have slightly more (41%) graduate level qualifications than post graduate level qualifications (38%) and only 22% with matric or less. 50% of supervisory level employees have degrees and only 18% are qualified on a post graduate level. More non-managerial employees than supervisory level employees have post graduate qualifications (i.e. 29%). At this level the level of qualifications is more or less equally distributed. Figure 6.4 below serves to illustrate the above table more graphically.



*Figure 6.4 Matching managerial level and qualifications of respondents*

*Table 6.9 Formal training in strategy*

FORMAL TRAINING IN STRATEGY	Frequency (n)	Percentage (%)
Formal training in strategy	89	46
No formal training in strategy	104	54
<i>TOTAL</i>	<i>193</i>	<i>100</i>

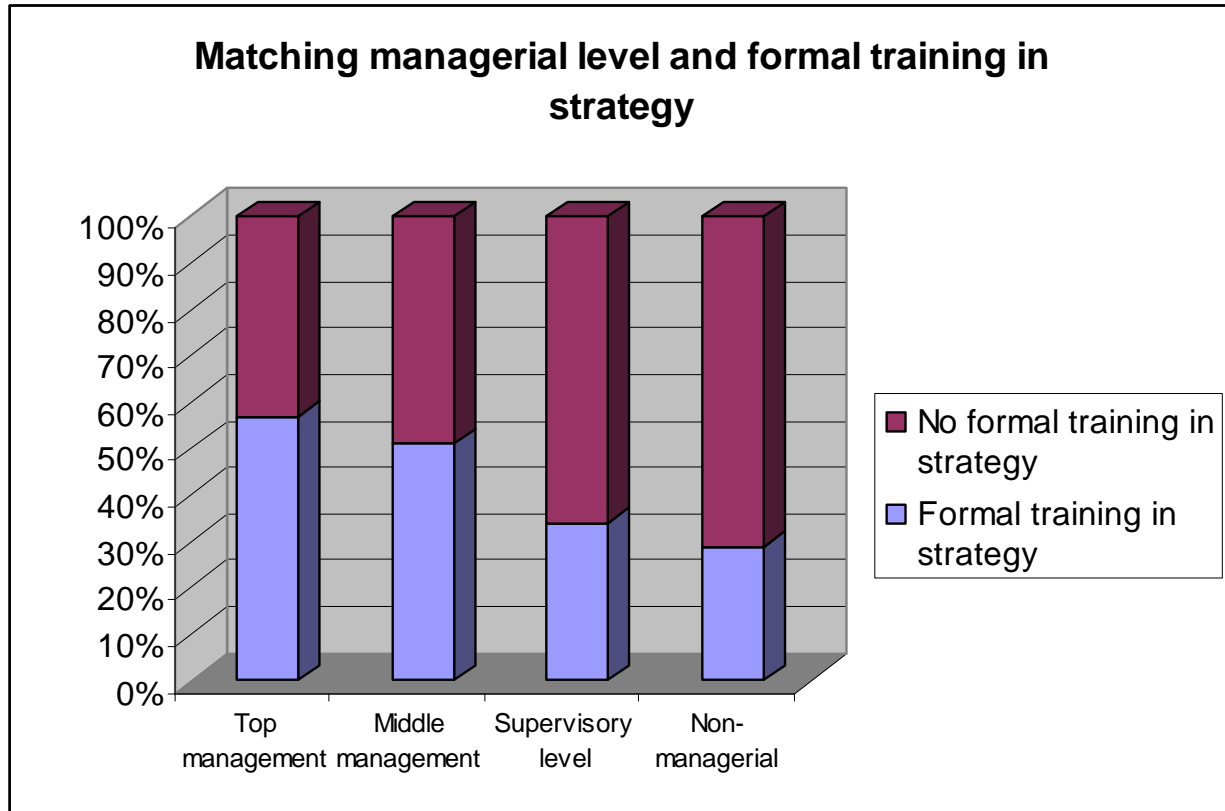
Almost 54% of respondents indicated that they were never formally trained in strategy.

Training options that respondents could choose from included: training as part of a degree or post graduate degree, part of a diploma or certificate and in-house training (see table 6.11).

*Table 6.10 Cross-tabulation with Managerial Level and Formal Training in Strategy*

MANAGEMENT LEVEL AND FORMAL STRATEGY TRAINING	Formal training in strategy	No formal training in strategy	$\chi^2$	P-value	Cramer's V
Top management	57%	43%	8.52	0.04	0.21
Middle management	51%	49%			
Supervisory level	34%	66%			
Non-managerial	29%	71%			

A chi-square ( $\chi^2$ ) value of 8.52 and probability value of 0.04 at 5% significance level indicate significant differences between the managerial levels compared to formal training in strategy. The Cramer's V value of 0.21 measures a low relative strength of association between different pairs of matched qualifications and management level. It can be seen that top management and middle management display more or less the same percentages of training versus no training in strategy, whereas supervisory and non managerial level employees display similar training percentages. The majority of top and middle management had formal training in strategy (57% and 51% respectively) where as the inverse is true for supervisory and non-managerial level employees (34% and 29% trained in strategy respectively). Figure 6.5 below serves to illustrate the above table more graphically.



*Figure 6.5 Matching managerial level and formal training in strategy of respondents*

*Table 6.11 Types of strategy training*

TYPES OF TRAINING	Frequency (n)	Percentage (%)
Part of degree/post degree	57	47
Part of diploma/ certificate	21	17
In-house training/ on the job training	43	36
<i>TOTAL</i>	<i>121</i>	<i>100</i>

Only respondents that indicated that they had any formal training in strategy were requested to complete the training options. Table 6.11 depicts options selected by respondents indicating that they had formal training in strategy.

The tabulated frequencies (table 6.11) represent grouped frequency distributions, which were grouped as follows:

Part of a degree/post degree:	A full subject as part of a degree programme
	A full subject as part of a post graduate degree programme
	A sub-unit of a subject as part of a degree programme
	A sub-unit of a subject as part of a post graduate programme
Part of diploma or certificate:	As part of a diploma or certificate programme
In-house training/on the job training:	In-house training at my organisation
	On the job training

Respondents who received training as part of a degree or post degree represent 47% of the sample. 36% of respondents indicated that they received in-house training or on the job training.



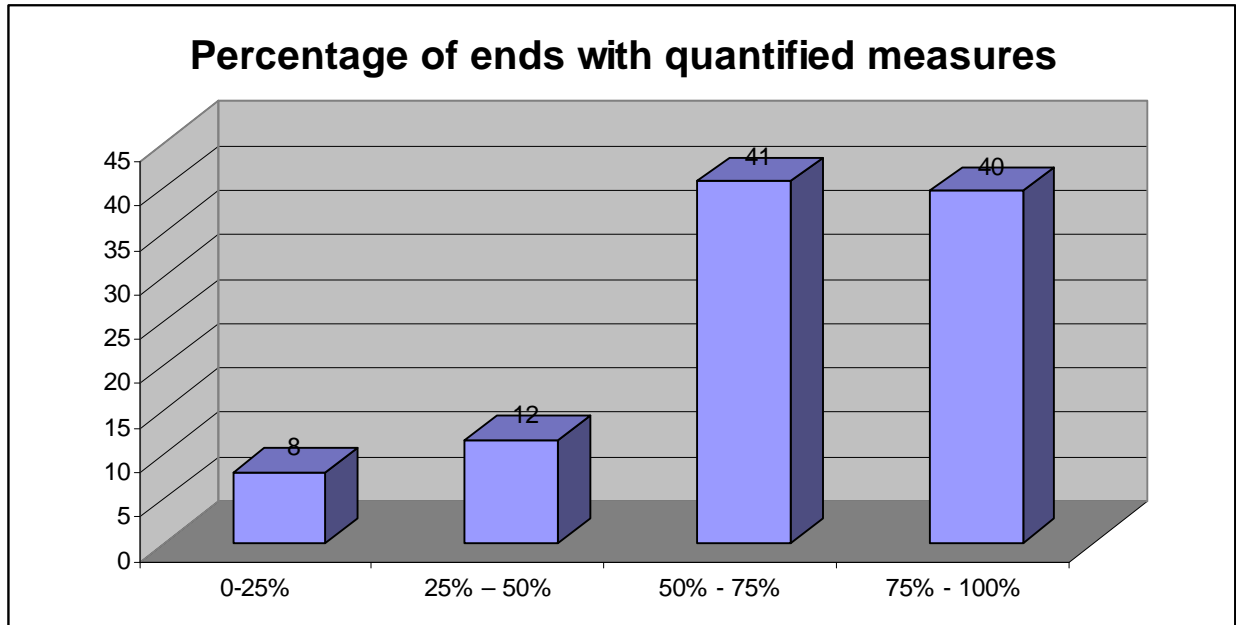
### ***6.2.3 Additional descriptive statistics***

The following findings relate to variables that did not form part of the factor analysis (presented in sub-section 6.2.4) due to either low factor loadings or because more than one option could be selected for the specific question, rendering the results in a number of variables.

***Table 6.12 Percentage of ends with quantified measures***

<b>PERCENTAGE OF <i>organisational ends</i> WITH QUANTIFIED MEASURES</b>	<b>Frequency</b>	<b>Percentage (%)</b>
0-25%	15	8
25% - 50%	22	12
50% - 75%	77	41
75% - 100%	75	40
<i>TOTAL</i>	<i>189</i>	<i>100</i>

Table 6.12 above shows that the large majority of respondents indicated 50% or more ends with quantified measures. Figure 6.6 depicts this more graphically.

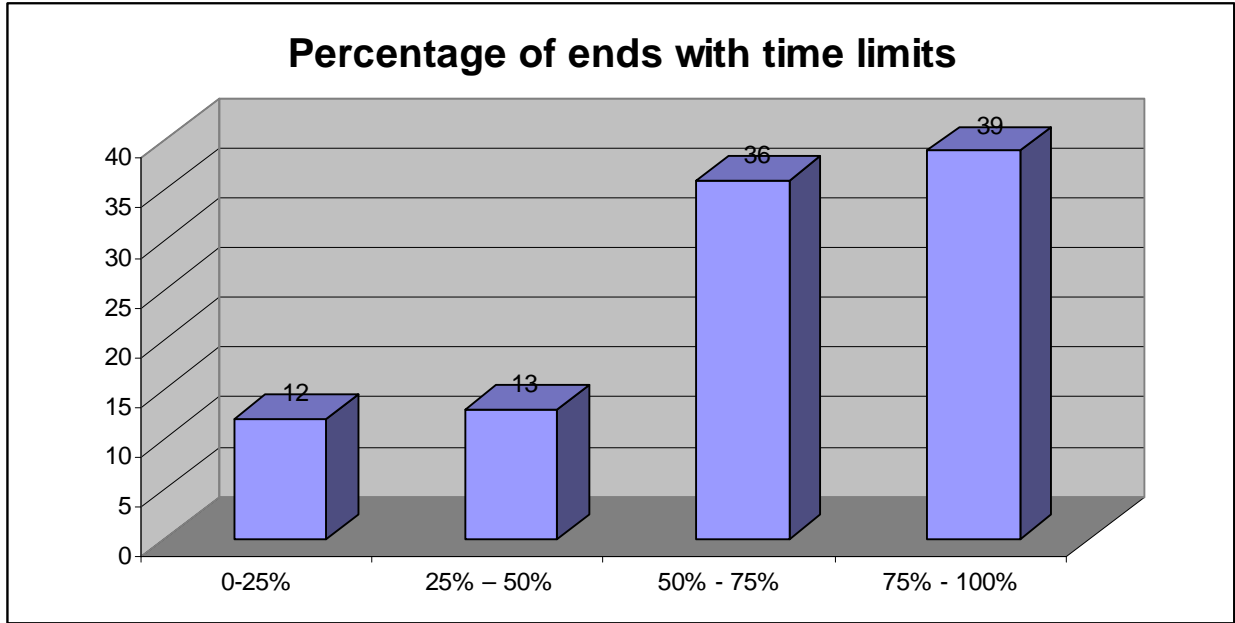


*Figure 6.6 Percentage of organisational ends with quantified measures*

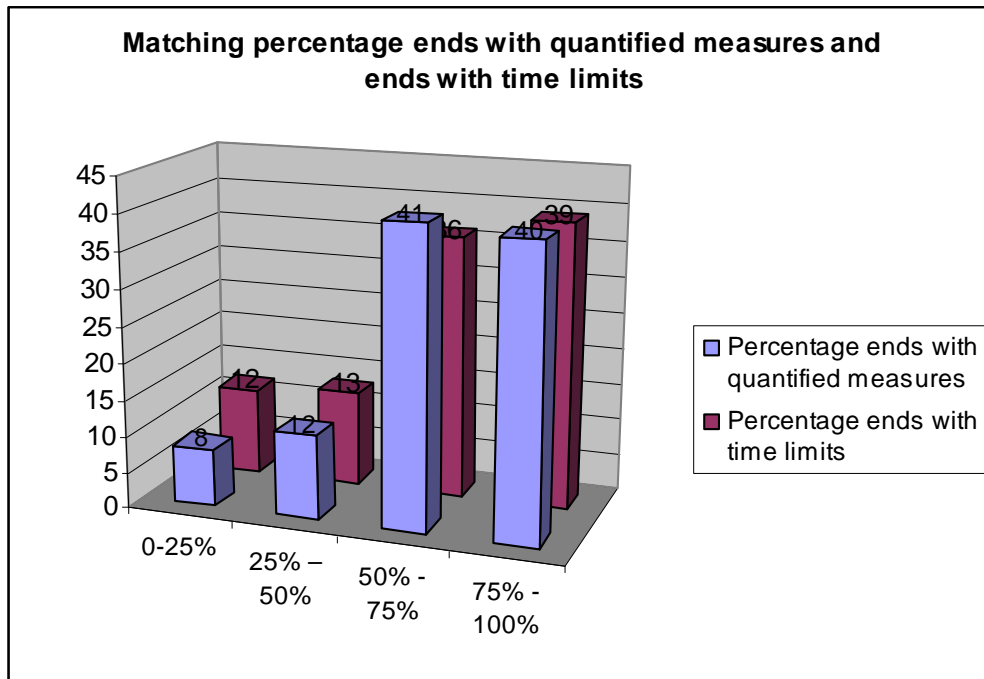
*Table 6.13 Percentage of ends with time limits*

PERCENTAGE OF <i>organisational ends</i> WITH TIME LIMITS	Frequency	Percentage (%)
0-25%	23	12
25% - 50%	25	13
50% - 75%	68	36
75% - 100%	73	39
<i>TOTAL</i>	<i>189</i>	<i>100</i>

Table 6.13 above shows that the large majority of respondents indicated 50% or more ends with time limits. Figure 6.7 depicts this more graphically.



*Figure 6.7 Percentage of organisational ends with time limits*



*Figure 6.8 Matching percentage ends with quantified measures and time limits*

*Table 6.14: Types of organisational ends*

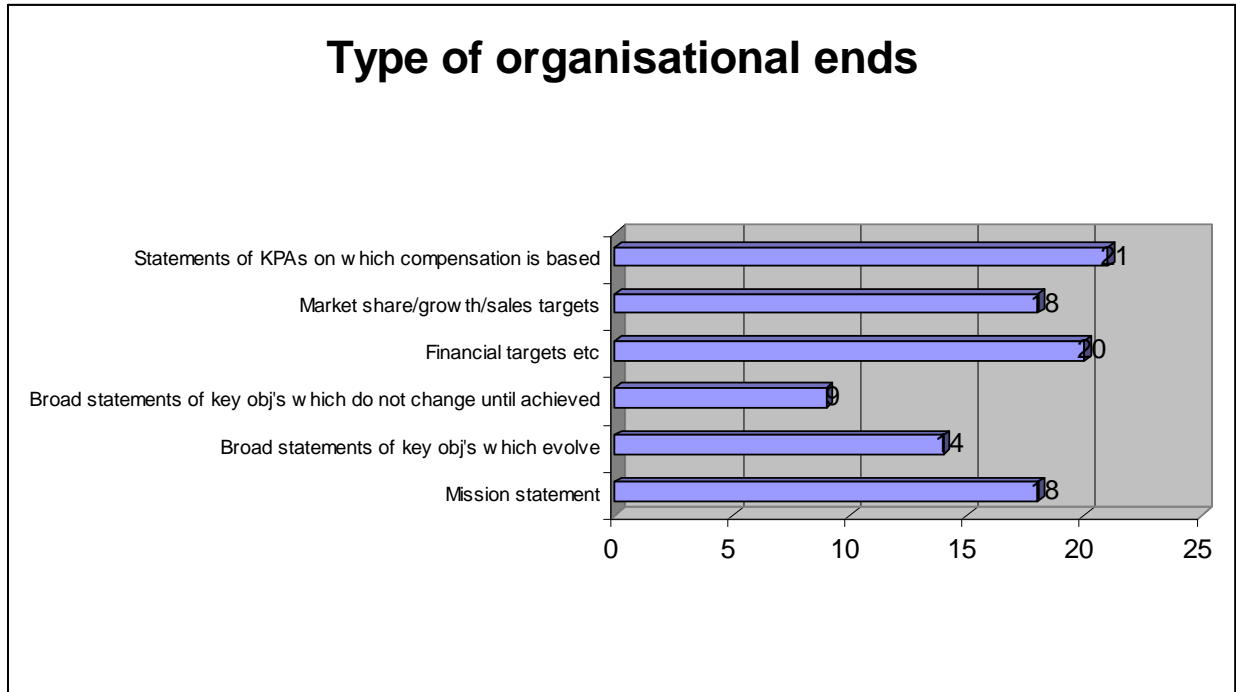
TYPES OF ENDS WHICH USUALLY ARE INCLUDED IN YOUR ORGANISATION'S STRATEGIC PLAN, OR USUALLY EMERGE FROM YOUR ORGANISATION'S STRATEGY FORMATION PROCESS		Frequency	Percentage (%)
1	A statement of your organisation's mission or fundamental purpose	88	18
2	Broad statements of key strategic objectives for the organisation, which tend to change/ evolve as circumstances warrant	70	14
3	Broad, enduring statements of key strategic objectives for the organisation over the foreseeable future, which emerge fully developed from the planning process, and tend not to change until achieved	44	9
4	Statements of specific financial targets to be achieved either annually, or over the foreseeable future, for example ROI targets, profitability targets, or other targets of financial performance	95	20
5	Statements of specific market share/sales growth targets for the organisation	87	18
6	Statements of specific key result areas/objectives for many/all functions/operations of the organisation, providing key measurements of vital organisational activities. Achievement of these key results/objectives is considered important, and part of employee compensation is based on such achievement organisation and formally documented in the strategy formation process, including a statement of firm mission/purpose, and specification of strategic objectives/goals for different areas of the organisation.	103	21
<i>TOTAL</i>		<i>n=487</i>	<i>100</i>

Table 6.14 above illustrates the types of ends usually included in the organisation's strategic plan or that usually emerge from the organisation's strategy-making process. More than one statement could be selected. Figure

6.9 shows the percentage of each indicated type of end. (See also Question B5: Appendix A).

The number of options selected for Question B5 is also presented as additional information in table 6.15 below. Option 2, which clearly supports an emergent approach to strategy-making, was selected as only option in 26% of the total 14% (as indicated in table 6.14) of responses. Seventy four percent of the total of 14% of responses represents option 2 in combination with other options.

Option 3, which clearly supports a rational approach to strategy-making, was selected as only option in 11% of the total of 9% (as indicated in table 6.14) of responses. Eighty nine percent of the total of 9% of responses represents option 3 in combination with other options.



*Figure 6.9 Types of organisational ends indicated*

*Table 6.15 Number of options selected for Question B5*

NUMBER OF OPTIONS SELECTED FOR QUESTION B5 (VARIABLES 20-25)	Frequency	Percentage (%)
One option selected	64	33.33
Two options selected	47	24.48
Three options selected	36	18.75
Four options selected	11	5.73
Five options selected	27	14.06
All options selected	7	3.65
<i>TOTAL</i>	<i>n=192</i>	<i>100</i>

Missing = 1

Table 6.15 above is related to question B5 of which the frequencies are given in table 6.14. Respondents could select more than one option. Since the number of options selected can indicate specificity of planning, the results of the number of options selected are presented in table 6.15 above. The selection of specific options relating to either the emergent or rational planning approach to strategy-making was discussed with the presentation of table 6.14.

#### ***6.2.4 Factor Analysis***

A factor analysis was done on the data to reduce the large number of variables contained in the questionnaires by means of a smaller set of composite variables (so called 'factors') and to aid in the substantive interpretation of the data (Diamantopoulos and Schlegelmilch 2005:216).

The factor analysis was performed on the 177 complete questionnaires (out of the 193 questionnaires returned) to test the homogeneity of underlying constructs. The factor analysis was done to ascertain if a resolute set of factors existed and to group the variables into meaningful composite constructs/factors/themes.

The original questionnaire scale items were regrouped and adjusted to four point scales to ease correlation and factor analysis. The initial factor analysis resulted in four factors, with one factor containing only two items which double loaded in another factor. According to Okpara and Wynn (2007:28) and Hair, Anderson, Tatham and Black (1998:111) an item must have at least a 0.50 factor loading to be included in a factor. For the purposes of the factor analysis the two items that double loaded or items that did not have a

Cronbach's Alpha coefficient of at least 0.50 were excluded. These items are reported on separately in section 6.2.3 above as part of the demographic description of the sample. The factor analysis finally resulted in the identification of three meaningful factors based on the Cronbach's Alpha coefficient scores (see table 6.15).

The factors emerging from the factor analysis are the following:

<b>Factor 1:</b>	Performance consensus
<b>Factor 2:</b>	Ends and means specificity
<b>Factor 3:</b>	Ends and means flexibility

**Factor 1** includes the same items as the original construct of "performance measures". "Performance consensus" seems an appropriate title as agreement among managers on effectiveness of the organisational strategies as well as organisational performance is more a matter of consensus than measurement. Parnell (2000:49) argues that if consensus is linked to performance then one may argue that some competitive strategies lend themselves to greater agreement among managers. For this reason, he suggests that future studies should consider the perceptions of multiple top and functional managers. For example, consensus may be high among segment controllers where everyone seems to understand the niche being targeted by the business, but be low among first movers where the essence of the strategy is not always well understood (Wooldridge & Floyd, 1990).

"Performance consensus" therefore aptly denotes the perceptions of respondents tested with the related items.



**Factor 2** includes items relating to ends *and* means specificity (and does not separate ends and means as in the original planned constructs). One item relating to specificity of ends loaded a Cronbach's Alpha coefficient of 0.27 for factor 1. However, as this constitutes a relatively low Cronbach's Alpha coefficient compared to the 0.51 Cronbach's Alpha coefficient computed for this item in factor 2, the item was included in the latter factor (see table 6.16). As mentioned in chapter 5 scale statements were constructed to capture differing properties of ends and means as characterized by the rational and emergent approaches to strategy-making. Brews and Hunt (1999:893) explained that:

Organisations with very specific ends would possess many, precisely quantified, formally documented, time-limited ends, ranging from a statement of firm mission to statements of specific market share/sales targets and other key result areas. Very specific means would be reflected in plans that set out exact plans and/or programs for implementation, describing in detail the actions and steps required for implementation. These specific means would be used to direct firm action and behavior and measure timely performance against plan. These would also be formally documented and distributed among firm members. Conversely, few broad ends that change and evolve as conditions dictate would characterize less specific ends, while unspecific means would be broad and unstructured, evolving as circumstances warrant and acting as loose guides only. Such unspecific ends and means would rarely be announced, and if so, in broad terms.

The fact that this factor includes items related to ends and means could show that respondents regard these as similar and do not distinguish between higher strategic objectives and more operational objectives. Specificity of ends could also imply specificity of means due to the approach to strategy-making followed.

**Factor 3** includes three scales testing the time frame of setting or adjusting ends and means, including mission and other fundamental statements, ends and means. The factor is called “ends and means flexibility”. Flexibility measures the flexibility of planning structures, tolerance for change and flexibility of planning time frame and stands in contrast with organisational rigidity.

Factor scores for the subsequent analyses were interpreted as follows:

- *Factor 1 (Performance Consensus):* Variables associated with this factor tested on a scale with the value 1 indicating the *least* Performance Consensus and value 4 indicating the *most* Performance Consensus.
- *Factor 2 (Ends and Means Specificity):* Variables associated with this factor tested on a scale with the value 1 indicating the *least* Ends and Means Specificity and value 4 indicating the *most* Ends and Means Specificity (in other words ranging from the emergent approach (scale value 1) to rational planning approach (scale value 4)).
- *Factor 3 (Ends and Means Flexibility):* Variables associated with this factor tested on a scale with the value 1 indicating the *most* Ends and Means Flexibility and value 4 indicating the *least* Ends and Means Flexibility (in other words ranging from the emergent approach (scale value 1) to rational planning approach (scale value 4)).

*Table 6.16 Rotated factor loadings and Cronbach's Alpha coefficient*

		Performance consensus	Ends and Means specificity	Ends and means flexibility
Variable number	Description of Variable	Factor 1	Factor 2	Factor 3
V41	Degree to which your organisation's 'means' provide effective competitive strategies to influence/direct the organisation's behaviour, and enable the organisation to effectively and successfully compete	0.78	0.00	0.00
V36	Overall effectiveness of your strategy formation and strategic planning processes	0.76	0.00	0.00
V39	Positive effects of your organisation's 'ends' and 'means' on overall firm competitiveness	0.75	0.00	0.00
V37	Degree of satisfaction among top management with your organisation's strategy formation/strategic planning processes	0.75	0.00	0.00
V40	Degree to which your organisation's 'ends' provide goals to effectively guide and stimulate the organisation's actions and behaviours	0.74	0.00	0.00
V38	Degree of satisfaction among all the organisation's members with your organisation's strategy formation/ strategic planning processes	0.73	0.00	0.00
V33	Overall profitability or financial performance compared to competitors	0.61	0.00	0.00
V35	Overall organisational performance/success compared to competitors	0.61	0.00	0.00
V26	Scale items measuring how organisations conduct strategic planning (including formulation and implementation)	0.00	0.86	0.00

V27	Scale items indicating what the strategic plan looks like	0.00	0.84	0.00
V29	Scale items measuring specificity of means (very unspecified; generally unspecified; generally specific; very specific)	0.00	0.70	0.00
V16	Scale items measuring how many ends and how formally they have been developed	0.00	0.64	0.00
V28	Scale items measuring how means are communicated to organisation members	0.00	0.63	0.00
V19	Scale items measuring specificity of ends (very unspecified; generally unspecified; generally specific; very specific)	0.27	0.51	0.00
V31	Scale items measuring how often the organisation's ends are changed or altered	0.00	0.00	0.91
V32	Scale items measuring how often the organisation's means are changed or altered	0.00	0.00	0.68
V30	Scale items measuring how often the organisation's mission/ fundamental business purpose is changed or altered	0.00	0.00	0.63

(Factor loadings less than 0.250 reported as 0.000)

The factor loadings were rearranged so that for each successive factor, loadings below 0.50 were replaced by 0.00 (except in the case of the factor that double loaded with 2.7 explained above).

*Table 6.17 Univariate statistics for Factor analysis*

	Performance consensus (Factor 1)	Ends and Means specificity (Factor 2)	Ends and means flexibility (Factor 3)
Number of items	8	6	3
Mean <sup>4</sup>	2.95	2.96	2.53
Median <sup>5</sup>	3	3	2.66
Mode <sup>6</sup>	3	3.5	2
Standard Deviation	0.58	0.69	0.93
Variance	0.33	0.48	0.87
Variance explained ( <i>total = 56%</i> )	31%	17%	8%
Cronbach's Alpha coefficient ( <i>All = 0.87</i> )	0.90	0.87	0.80
Eigen value	5.75	3.33	1.83
Squared multiple correlation	0.36	0.55	0.67
Canonical correlation	0.97	0.95	0.92

N=193

The overall Cronbach's Alpha coefficient value of 0.87 was obtained. Performance Consensus yielded a Cronbach's Alpha coefficient value of 0.90, Ends and Means Specificity 0.87 and Ends and Means Flexibility 0.80. Fifty

<sup>4</sup> A measure of central tendency; the arithmetic average (Zikmund, 2005:738)

<sup>5</sup> A measure of central tendency that is the midpoint; the value below which half the values in a sample fall (Zikmund, 2005:738)

<sup>6</sup> A measure of central tendency; the value that occurs most often (Zikmund, 2005:738)

six percent of the total variance has been explained by the factors. The means and modes for each of the factors have been shaded for ease of reference.

**Table 6.18 Factor Correlations for rotated factors**

	Performance consensus	Ends and Means specificity	Ends and means flexibility
Performance consensus	1.000		
Ends and Means specificity	0.186	1.000	
Ends and means flexibility	0.146	0.235	1.000

All three factors are weakly correlated and the factor structure was stable. As noted in table 6.17 these three factors explain 56% of the total variance.

### 6.3 EMPIRICAL FINDINGS: INFERENCE STATISTICS

The results of the empirical study are presented as inferences or judgments about the population based on the sample in terms of: non-parametric statistics for tests of differences, variance analysis, linear discriminant analysis, Multivariate Adaptive Regression Splines (MARS) and logistic regression analysis.

### 6.3.1 Multi-way Analysis of Variance (ANOVA)

Multi-way analysis of variance was performed to gain insight into the relationship between the various factors and the independent variables.

The ANOVA presented below relates to the big group of respondents who completed the questionnaires (called group 1; n=193) – group 1. The factor loadings have been transformed to adhere to the requirements of ANOVA. The results are tabulated below.

**Table 6.19 Multi-way ANOVA for Performance Consensus**

PERFORMANCE CONSENSUS (FACTOR 1)					
Independent Variables	Degrees of Freedom <sup>7</sup>	Sum of Squares	Mean Square	F Value <sup>8</sup>	Pr > F
Size of business	1	0.17	0.17	0.19	0.6622
Management Level	3	7.90	2.63	2.90	0.0369
Age	3	2.42	0.81	0.89	0.4487
Level of education	2	7.62	3.81	4.19	0.0168
Formal training in strategy	1	0.01	0.01	0.01	0.9301
Industry	1	2.99	2.99	3.28	0.0718

Shaded rows: Probability value < 0.05

Table 6.19 shows that Performance Consensus (factor 1) is influenced significantly by managerial level ( $p < 0.05$ ) and level of education ( $p < 0.05$ ). (See also tables 6.22 and 6.23 for exploration of the differences).

<sup>7</sup> The number of constraints or assumptions needed to calculate a statistical term (Zikmund, 2005:507).

<sup>8</sup> Represents differences between groups of data by comparing means (Saunders *et al*, 2007:448).

*Table 6.20 Multi-way ANOVA for Ends and Means Specificity*

ENDS AND MEANS SPECIFICITY (FACTOR 2)					
Independent Variables	Degrees of Freedom	Sum of Squares	Mean Square	F Value	Pr > F
Size of business	1	0.91	0.91	1.05	0.3069
Management Level	3	8.17	2.72	3.14	0.0268
Age	3	3.28	1.09	1.26	0.2891
Level of education	2	5.83	2.92	3.37	0.0368
Formal training in strategy	1	8.71	8.71	10.05	0.0018
Industry	1	0.27	0.27	0.32	0.5744

Shaded rows: Probability value < 0.05

Table 6.20 shows that Ends and Means Specificity (factor 2) is influenced significantly by managerial level ( $p < 0.05$ ), level of education ( $p < 0.05$ ) and formal training in strategy ( $p < 0.01$ ). (See also tables 6.24, 6.25 and 6.26 for exploration of the differences).



*Table 6.21 Multi-way ANOVA for Ends and Means Flexibility*

ENDS AND MEANS FLEXIBILITY (FACTOR 3)					
Independent Variables	Degrees of Freedom	Sum of Squares	Mean Square	F Value	Pr > F
Size of business	1	7.28	7.28	7.55	0.0066
Management Level	3	2.68	0.89	0.93	0.4287
Age	3	2.34	0.78	0.81	0.4902
Level of education	2	0.63	0.32	0.33	0.7212
Formal training in strategy	1	0.45	0.45	0.47	0.4947
Industry	1	0.63	0.63	0.65	0.4198

Shaded row: Probability value < 0.05

Table 6.19 shows that Ends and Means Flexibility (Factor 3) is influenced significantly by size of business ( $p < 0.01$ ). (See also tables 6.27 for exploration of the differences).

Variables that have a significant ( $p < 0.05$ /  $P < 0.01$ ) influence on the various factors were investigated further. These are presented in the tables below.

*Table 6.22 Performance Consensus (factor 1) as influenced by managerial level*

	PERFORMANCE CONSENSUS (FACTOR 1)	
MANAGERIAL LEVEL	Mean	Standard deviation
Top management	3.11 a	0.57
Middle management	2.91 ab	0.62
Supervisory level management	2.83 b	0.42
Non-managerial	3.07 a	0.62

All means with different alphabetic indicators differ significantly at  $p < 0.05$ .

Table 6.22 shows that for Performance Consensus (factor 1) supervisory level management scored significantly lower ( $p < 0.05$ ) than top management and non-managerial level employees.

*Table 6.23 Performance Consensus (factor 1) as influenced by level of education*

PERFORMANCE CONSENSUS (FACTOR 1)		
HIGHEST LEVEL OF EDUCATION	Mean	Standard deviation
Post graduate level	2.82 a	0.60
National diploma/ degree	3.02 b	0.55
≤ Matric	3.08 b	0.52

All means with different alphabetic indicators differ significantly at  $p < 0.05$ .

Table 6.23 shows that for Performance Consensus (factor 1) respondents with post graduate degrees scored significantly lower ( $p < 0.05$ ) than those without.

*Table 6.24 Ends and Means Specificity (Factor 2) as influenced by managerial level*

ENDS AND MEANS SPECIFICITY (FACTOR 2)		
MANAGERIAL LEVEL	Mean	Standard deviation
Top management	2.70 a	0.57
Middle management	3.10 b	0.62
Supervisory level management	2.98 ab	0.42
Non-managerial	3.13 b	0.62

All means with different alphabetic indicators differ significantly at  $p < 0.05$ .

Table 6.24 shows that for Ends and Means Specificity (factor 2) top management scored significantly lower ( $p < 0.05$ ) than middle management and non-managerial employees.

*Table 6.25 Ends and Means Specificity (Factor 2) as influenced by level of education*

ENDS AND MEANS SPECIFICITY (FACTOR 2)		
HIGHEST LEVEL OF EDUCATION	Mean	Standard deviation
Post graduate level	2.84a	0.67
National diploma/ degree	3.06b	0.70
≤ Matric	3.03b	0.67

All means with different alphabetic indicators differ significantly at  $p < 0.05$ .

Table 6.25 shows that for Ends and Means Specificity (factor 2) respondents with post graduate qualifications scored significantly lower ( $p < 0.05$ ) than those without.

***Table 6.26 Ends and Means Specificity (Factor 2) as influenced by formal training in strategy***

ENDS AND MEANS SPECIFICITY (FACTOR 2)		
FORMAL TRAINING IN STRATEGY	Mean	Standard deviation
YES	3.10	0.69
NO	2.87	0.67

All means differ significantly at  $p < 0.01$ .

Table 6.26 shows that for Ends and Means Specificity (factor 2) respondents with formal training in strategy scored significantly higher ( $p < 0.01$ ) than those without.

***Table 6.27 Ends and Means Flexibility (Factor 3) as influenced by organisational size***

ENDS AND MEANS FLEXIBILITY (FACTOR 3)		
SIZE OF ORGANISATION	Mean	Standard deviation
Large	2.83	0.94
Small	2.47	0.91

All means differ significantly at  $p < 0.01$ .

Table 6.27 shows that for Ends and Means Flexibility (factor 3) respondents from large organisations (more than 100 employees) scored significantly ( $p < 0.01$ ) higher than those from small organisations.

### ***6.3.2 Comparison between group 1 and group 2***

The following tables present a comparison between the two groups of respondents.

**Group 1:** Respondents to questionnaires (n=193). *Respondents* were defined in Chapter 5 as “those asked to express a personal opinion”.

**Group 2:** Interviewees (CEO’s and managers concerned with strategy) whose interviews have been translated and captured on questionnaires (n=17). Interviewees are regarded as *informants* and were defined in Chapter 5 as those asked to provide information about a situation to which they have privileged access.

The main set of data used in analyses is that of group 1, i.e. the respondents. Data from group 2, i.e. the informants, was only used to corroborate data from group 1.

A non-parametric Mann Whitney test has been applied to test ordinal data that are not normally distributed (as in the case of the smaller group 2).

*Table 6.28 Performance Consensus (factor 1) comparisons between Group 1 (respondents) and Group 2 (informants)*

PERFORMANCE CONSENSUS (FACTOR 1)	Respondents	Informants
	<i>Group 1</i>	<i>Group 2</i>
Mean	2.94	3.2
Standard deviation	0.57	0.56
Sample size	193	17
Mann-Whitney P Value	P = 0.11 (not significant)	

*Table 6.29 Ends and Means (factor 2) comparisons between Group 1 (respondents) and Group 2 (informants).*

ENDS AND MEANS SPECIFICITY (FACTOR 2)	Respondents	Informants
	<i>Group 1</i>	<i>Group 2</i>
Mean	2.96	2.71
Standard deviation	0.69	0.98
Sample size	193	17
Mann-Whitney P Value	P = 0.39 (not significant)	

***Table 6.30 Ends and Means Flexibility (factor 3) comparisons between Group 1 (respondents) and Group 2 (informants).***

ENDS AND MEANS FLEXIBILITY (FACTOR 3)	Respondents	Informants
	<i>Group 1</i>	<i>Group 2</i>
Mean	2.53	2.57
Standard deviation	0.93	0.87
Sample size	193	17
Mann-Whitney P Value	P = 0.97 (not significant)	

Table 6.28, table 6.29 and table 6.30 show that there is no difference between the scores of group 1 (respondents) or group 2 (informants) on any of the three factors. The distribution statistics of the two groups show that the informants corroborate the statistical findings related to the respondents.

### ***6.3.3 Multivariate statistics: Judging approach to strategy-making***

The following tables present comparisons between two extreme approach positions related to each factor.



*Table 6.31 The influence of term focus of the factors (group 1 – respondents)*

TERM FOCUS	Rather <i>long</i> term focus	Rather <i>short</i> term focus
<b>Performance Consensus</b>		
Mean	3.04	2.80
Standard Deviation	0.56	0.57
Number of responses	115	72
Test statistics		
Levene F for variability	0.88	
Pooled T (p value)	0.0061 (p<0.01)	
Mann-Whitney (P value)	0.0076 (p<0.01)	
<b>Ends and Means Specificity</b>	Rather <i>long</i> term focus	Rather <i>short</i> term focus
Mean	3.10	2.70
Standard Deviation	0.63	0.71
Number of responses	115	72
Test statistics		
Levene F for variability	1.96	
Pooled T (p value)	0.0001 (p<0.01)	
Mann-Whitney (P value)	0.01 (p<0.01)	

Ends and Means Flexibility	Rather <i>long</i> term focus	Rather <i>short</i> term focus
Mean	2.68	2.22
Standard Deviation	0.91	0.91
Number of responses	115	72
Test statistics		
Levene F for variability	0.00	
Pooled T (p value)	0.0009 (p<0.01)	
Mann-Whitney (P value)	0.0009 (p<0.01)	

Table 6.31 above shows that for group 1 (respondents) there is a significant difference ( $p < 0.01$ ) between long term focus and short term focus for all three factors.

Group 2 (informants) (not tabulated) showed significant differences ( $p < 0.01$ ) for Ends and Means specificity as well as for Ends and Means Flexibility when related to term focus. However, group two did not record a difference for Performance Consensus, with means of 3.2 and 3.06 for long term and short term focus respectively.

**Table 6.32 The influence of degree of risk taking on the factors (group 1 – respondents)**

<b>DEGREE OF RISK TAKING PREFERRED</b>	<i>Low</i> degree of risk taking preferred	<i>High</i> degree of risk taking preferred
<b>Performance Consensus</b>		
Mean	2.85	3.08
Standard Deviation	0.59	0.52
Number of responses	95	92
<b>Test statistics</b>		
Levene F for variability	1	
Pooled T (p value)	0.0059 (p<0.01)	
Mann-Whitney (P value)	0.0044 (p<0.01)	
<b>Ends and Means Specificity</b>	<i>Low</i> degree of risk taking preferred	<i>High</i> degree of risk taking preferred
Mean	2.97	2.92
Standard Deviation	0.68	0.71
Number of responses	95	92
<b>Test statistics</b>		
Levene F for variability	0.59	
Pooled T (p value)	0.6441 not significant	
Mann-Whitney (P value)	0.6954 not significant	



Ends and Means Flexibility	<i>Low</i> degree of risk taking preferred	<i>High</i> degree of risk taking preferred
Mean	2.58	2.43
Standard Deviation	1.01	0.86
Number of responses	95	92
Test statistics		
Levene F for variability	3.40	
Pooled T (p value)	0.2722 not significant	
Mann-Whitney (P value)	0.2759 not significant	

Table 6.32 above shows that for group 1 (respondents) there is a significant difference ( $p < 0.01$ ) between low versus high degree of risk taking preferred for only one factor, namely Performance Consensus. There is no difference between degrees of risk taking preferred (high versus low) for Ends and Means Specificity or Ends and Means flexibility.

Group 2 (informants) (not tabulated) did not show any differences for any of the three factors when related to degree of risk taking preferred.

**Table 6.33 The influence of comfort with predictability on the factors (group 1 – respondents)**

PREDICTABILITY	Comfort with <i>stability and predictability</i>	Comfort with <i>ambiguity and unpredictability</i>
<b>Performance Consensus</b>		
Mean	2.96	2.94
Standard Deviation	0.55	0.60
Number of responses	118	68
Test statistics		
Levene F for variability	2.05	
Pooled T (p value)	0.7975 not significant	
Mann-Whitney (P value)	0.9255 not significant	
<b>Ends and Means Specificity</b>	Comfort with <i>stability and predictability</i>	Comfort with <i>ambiguity and unpredictability</i>
Mean	3.07	2.72
Standard Deviation	0.66	0.70
Number of responses	118	68
Test statistics		
Levene F for variability	0.43	
Pooled T (p value)	0.0009 (p<0.01)	
Mann-Whitney (P value)	0.0011 (p<0.01)	

Ends and Means Flexibility	Comfort with <i>stability and predictability</i>	Comfort with <i>ambiguity and unpredictability</i>
Mean	2.68	2.20
Standard Deviation	0.96	0.82
Number of responses	118	68
Test statistics		
Levene F for variability	3.97	
Pooled T (p value)	0.0006 (p<0.01)	
Mann-Whitney (P value)	0.0010 (p<0.01)	

Table 6.33 above shows that for Group 1 (respondents) there are significant differences ( $p < 0.01$ ) between comfort with predictability versus unpredictability for Ends and Means Specificity and Ends and Means Flexibility. However, there is no difference recorded for Performance Consensus.

Group 2 (informants) (not tabulated) showed the same significant differences ( $p < 0.01$ ) for Ends and Means specificity as well as for Ends and Means Flexibility when related to comfort with predictability versus unpredictability. Like the results of group 1, no difference for Performance Consensus was recorded.

**Table 6.34 The influence of autonomous/cooperative behaviour on the factors (group 1 – respondents)**

<b>AUTONOMOUS, INDIVIDUAL BEHAVIOUR VERSUS COOPERATIVE, INTERDEPENDENT BEHAVIOUR</b>	<b>Primarily <i>autonomous or individual</i> behaviour preferred</b>	<b>Primarily <i>cooperative, interdependent</i> behaviour preferred</b>
<b>Performance Consensus</b>		
Mean	2.94	2.97
Standard Deviation	0.68	0.50
Number of responses	64	121
<b>Test statistics</b>		
Levene F for variability	11.68	
Pooled T (p value)	0.7070 not significant	
Mann-Whitney (P value)	0.9654 not significant	
<b>Ends and Means Specificity</b>	<b>Primarily <i>autonomous or individual</i> behaviour preferred</b>	<b>Primarily <i>cooperative, interdependent</i> behaviour preferred</b>
Mean	2.71	3.07
Standard Deviation	0.65	0.69
Number of responses	64	121
<b>Test statistics</b>		
Levene F for variability	0.00	
Pooled T (p value)	0.0007 (p<0.01)	

Mann-Whitney (P value)	0.0004 (p<0.01)	
<b>Ends and Means Flexibility</b>	<b>Primarily <i>autonomous</i> or <i>individual</i> behaviour preferred</b>	<b>Primarily <i>cooperative, interdependent</i> behaviour preferred</b>
Mean	2.39	2.56
Standard Deviation	0.99	0.95
Number of responses	64	121
Test statistics		
Levene F for variability	0.64	
Pooled T (p value)	0.2257 not significant	
Mann-Whitney (P value)	0.2217 not significant	

Table 6.34 above shows that for Group 1 (respondents) there is a significant difference (p<0.01) between primarily autonomous versus primarily cooperative behaviour for Ends and Means Specificity. No differences were recorded for Performance Consensus and Ends and Means Flexibility.

Group 2 (informants) (not tabulated) showed a significant difference (p<0.01) for Performance Consensus. However, group 2 did not record a difference for Ends and Means Specificity or Ends and Means Flexibility.



*Table 6.35 The influence of the CEO determining strategy/cooperation on the factors (group 1 – respondents)*

<b>ROLE OF CEO VERSUS EMPOWERMENT AND PARTICIPATION</b>	<b>The <i>CEO</i> determines strategy</b>	<b>High degree of <i>participation and empowerment</i></b>
<b>Performance Consensus</b>		
Mean	2.91	3.01
Standard Deviation	0.58	0.55
Number of responses	95	89
<b>Test statistics</b>		
Levene F for variability	1.62	
Pooled T (p value)	0.2498 not significant	
Mann-Whitney (P value)	0.2715 not significant	
<b>Ends and Means Specificity</b>	<b>The <i>CEO</i> determines strategy</b>	<b>High degree of <i>participation and empowerment</i></b>
Mean	2.75	3.15
Standard Deviation	0.68	0.65
Number of responses	95	89
<b>Test statistics</b>		
Levene F for variability	0.33	
Pooled T (p value)	0.0001 (p<0.01)	
Mann-Whitney (P value)	0.0001 (p<0.01)	

Ends and Means Flexibility	The <i>CEO</i> determines strategy	High degree of <i>participation and empowerment</i>
Mean	2.34	2.66
Standard Deviation	0.96	0.90
Number of responses	95	89
Test statistics		
Levene F for variability	0.42	
Pooled T (p value)	0.0228 (p<0.05)	
Mann-Whitney (P value)	0.0249 (p<0.05)	

Table 6.35 above shows that for Group 1 (respondents) there is a significant difference ( $p < 0.05$ ) for Ends and Means Specificity and Ends and Means Flexibility. No difference is recorded for Performance Consensus.

Group 2 (informants) (not tabulated) showed no differences for any of the factors.

#### ***6.3.4 Predicting dependent variables***

Discriminant analysis and logistic regression analysis were performed to determine how well the determined factors could predict certain variables.

#### ***6.3.4.1 Linear discriminant analysis***

Linear discriminant analysis was performed to determine how well the factors can predict the following:

- Overall profitability or financial performance as compared to current competitors (thus relative profitability based on individual perception)
- Overall organisational performance or success as compared to current competitors (thus relative organisational performance based on individual perception)

The following proviso's were applicable:

Low profitability = in the bottom 50% of the industry

High profitability = in the top 50% of the industry

Low organisational performance = in the bottom 50% of the industry

High organisational performance = in the top 50% of the industry

Performance Consensus (factor 1), Ends and means specificity (Factor 2), Ends and Means Flexibility (factor 3) were loaded as predictor variables (independent variables).

**Table 6.36 Classification matrix for relative profitability**

		Number of cases classified correctly		Actual number
	Percentage correctly predicted	Low profitability	High profitability	<i>Total</i>
Low profitability	79.5%	31	8	<i>39</i>
High profitability	85.9%	21	128	<i>149</i>
				<i>188</i>

Five observations were deleted due to missing values for the explanatory variables

Table 6.36 indicates that the model predicted 80% of low profitability correctly and 86% of high profitability. Performance Consensus (factor 1) and Ends and Means Specificity (factor 2) were used in the predictions. Ends and Means Flexibility (factor 3) proved inconclusive in its prediction value.

The following discriminant function was determined for relative profitability:

Low Profitability	=	10.05 X Factor 1 + 4.5 X Factor 2 - 18.12
High Profitability	=	15.28 X Factor 1 + 3.59 X Factor 2 - 28.84

**Table 6.37 Classification matrix for relative organisational performance**

		Number of cases classified correctly		Actual number
	Percentage correctly predicted	Low performance	High performance	<i>Total</i>
Low performance	88.9%	32	4	<i>36</i>
High performance	89.3	16	134	<i>150</i>
				<i>186</i>

Seven observations were deleted due to missing values for the explanatory variables

Table 6.37 indicates that the model predicted 89% of low organisational performance correctly and 89% of high organisational performance. Performance Consensus (factor 1) and Ends and Means Specificity (factor 2) were used in the predictions. Ends and Means Flexibility (factor 3) proved inconclusive in its prediction value.

The following discriminant function was determined for relative organisational performance:

Low Performance	=	9.65 X Factor 1 + 4.48 X Factor 2 – 17.66
High Profitability	=	15.96 X Factor 1 + 2.78 X Factor 2 – 28.56

#### **6.3.4.2 Multivariate Adaptive Regression Splines (MARS)**

The linear discriminant analysis above showed that certain factors have the ability to predict relative organisational performance and profitability. The Multivariate Adaptive Regression Splines (MARS) was consequently done to

determine circumstances (based on certain variable values) which would either improve or decrease relative financial and organisational performance. The variables that were used included:

- Organisational size;
- CEO involvement in strategy-making
- All three factors were also used as independent variables (i.e. Performance Consensus; Ends and Means Specificity and Ends and Means Flexibility).

The variables, Organisational Size and CEO involvement in strategy-making, were included in the MARS analysis to determine their influence on relative profitability, performance and overall performance in line with literature on moderating factors (Chapter 4). However, Industry was not included as an independent variable, due to the subjective categorization of industries (see table 6.3).

*Table 6.38 MARS regression results for relative Profitability*

MARS regression results					
RELATIVE PROFITABILITY	Degrees of Freedom	Sum of Squares	Mean Square	F Value	Pr > F
Model	8	102.41	12.8	48.87	<.0001
Error	173	45.31	0.26		
Corrected total	181	147.72			
Dependent Mean	3.17				
R-square <sup>9</sup>	0.6932				
Coefficient of variation	16.14				

Table 6.38 presents the MARS model descriptive statistics. The following findings are based on the MARS analysis for organisational profitability as compared to competitors (NOTE: the value given refers to the mean of the factor based on a four point scale):

1. A *decrease* in relative profitability is associated with Performance Consensus (factor 1) scores smaller than 3.375<sup>10</sup>
2. An *increase* in relative profitability is associated with Ends and Means Specificity (factor 2) scores greater than 3.33; but
3. A *greater increase* in relative profitability (than point 2 above) is associated with Ends and Means Specificity (factor 2) scores smaller than 3.33.

<sup>9</sup> Coefficient of determination

<sup>10</sup> The factor mean calculated for a four point scale.

4. An *even greater increase* in relative profitability (than point 2 and 3 above) is associated with Ends and Means Specificity (factor 2) smaller than 2.
5. A *still greater increase* in relative profitability (than point 2, 3 and 4 above) is associated with Ends and Means Specificity (factor 2) scores between 3.33 and 2.
6. A *decrease* in relative profitability is associated with Performance Consensus (factor 1) scores smaller than 3.375 AND Ends and Means Flexibility (factor 3) scores smaller than 2.33.
7. A *decrease* in relative profitability is associated with Ends and Means Specificity (factor 2) scores smaller than 3.33 AND Performance Consensus (factor 1) scores greater than 2.375.
8. An *increase* in relative profitability is associated with parastatals.

#### Summary of critical findings:

Relative profitability is positively related to high (above 3.33) *ends and means specificity* (associated with the rational planning approach to strategy-making). However, an even higher profitability is seen when ends and means specificity scores are lower (below 3.33) and even more so when the scores are very low (below 2) or fall within the mid-range (between 2 and 3.33) - these lower scores are associated with the emergent approach to strategy-making.

Relative profitability seems to be sensitive to *performance consensus*. As such if performance consensus is not relatively high (3.375 or above) relative profitability decreases, especially in combination with high *ends and means flexibility* (i.e. smaller than 2.33 where smaller values refer to high



flexibility and higher values to low flexibility). Even where performance consensus is above the average (above 2.375), profitability is decreased with relatively low *ends and means specificity*. In other words, the emergent approach (associated with high flexibility and low specificity of ends and means) seems to be sensitive to lower Performance Consensus when relative profitability is at stake.

**Table 6.39 MARS regression results for Relative Organisational Performance**

MARS regression results					
RELATIVE ORGANISATIONAL PERFORMANCE	Degrees of Freedom	Sum of Squares	Mean Square	F Value	Pr > F
Model	7	89.44	12.78	44.74	<.0001
Error	171	48.84	0.29		
Corrected total	178	138.28			
Dependent Mean	3.18				
R-square <sup>11</sup>	0.6468				
Coefficient of variation	16.81				

Table 6.39 represents the MARS model descriptive statistics. The following findings are based on the MARS analysis for organisational performance as compared to competitors (NOTE: the value given refers to the mean of the factor based on a four point scale):

<sup>11</sup> Coefficient of determination

1. A *decrease* in relative performance is associated with Ends and Means Specificity (factor 2) scores greater than 2.
2. An *increase* in relative performance is associated with Ends and Means Specificity (factor 2) scores smaller than 2.
3. An *increase* in relative performance is associated with Performance Consensus (factor 1) scores greater than 3.375 AND Ends and Means Specificity (factor 2) scores greater than 2.17.
4. A *decrease* in relative performance is associated with Performance Consensus (factor 1) scores between 3.375 and 2.625.
5. A *decrease* (although less than point 4 above) is associated with Performance Consensus (factor 1) scores above or below 3.375.
6. A *decrease* in relative performance is associated with small organisations.

**Summary of critical findings:**

Relative organisational performance is positively related to low (below 2) *ends and means specificity* (associated with the emergent approach to strategy-making), especially where performance consensus is also high (above 3.375).

Relative organisational performance seems to be sensitive to *performance consensus* in general, but specifically in the mid range between 2.625 and 3.375. Surprisingly, Performance Consensus (factor 1) seems to have a decreasing effect on relative performance, although not on relative profitability.

The finding relating to organisational size makes sense when it is interpreted with the MARS results for relative overall organisational performance discussed below (table 6.40) when it is linked to Performance Consensus scores (see discussion of critical findings below).

*Table 6.40 MARS analysis of variance for Relative Overall Organisational Performance*

MARS regression results					
COMBINATION: PROFITABILITY & PERFORMANCE	Degrees of Freedom	Sum of Squares	Mean Square	F Value	Pr > F
Model	7	377.34	53.91	63.07	<.0001
Error	174	148.77	0.86		
Corrected total	181	526.07			
Dependent Mean	6.36				
R-square <sup>12</sup>	0.7173				
Coefficient of variation	14.531				

Table 6.40 presents the MARS model descriptive statistics. The following findings are based on the MARS analysis for a combination of organisational profitability and profitability as compared to competitors (NOTE: the value given refers to the mean of the factor based on a four point scale):

1. A *decrease* in overall performance is associated with Performance Consensus (factor 1) scores smaller than 3.375<sup>13</sup>.

<sup>12</sup> Coefficient of determination

2. An *increase* in overall performance is associated with Ends and Means Specificity (factor 2) scores greater than 3.33; but
3. A higher *increase* (than point 2 above) in overall performance is associated with Ends and Means Specificity (factor 2) scores smaller than 3.33.
4. A *decrease* in overall performance is associated with Ends and Means Specificity (factor 2) scores smaller than 3.33 AND Performance Consensus (factor 1) scores greater or smaller than 2.5.
5. A *decrease* in overall performance is associated with Performance Consensus (factor 1) scores smaller than 3.375 in combinations with a small organisation.
6. An *increase* in overall performance is associated with Ends and Means Specificity (factor 2) scores between than 3.33 and 2.5.

#### **Summary of critical findings:**

Overall organisational performance is positively related to either high (above 3.33) or low *ends and means specificity*. However, performance increased with a greater margin where ends and means specificity is lower than 3.33 (associated with the emergent approach to strategy-making). Moreover, the highest margin of performance increase is associated with the range between 2.5 and 3.33 (could be associated with a combination of emergent and rational strategy-making approaches).

Overall performance seems to be sensitive to *performance consensus* in small organisations and where ends and means specificity is below 3.33. As such if performance consensus is not relatively high (3.375) in small

<sup>13</sup> The factor mean calculated for a four point scale.

organisations, overall performance decreases. Furthermore, if ends and means specificity is not relatively high (below 3.33) the combination with performance consensus below or above 2.5 decreases overall performance.

#### ***6.3.4.3 Logistic regression analysis***

Logistic regression analysis with the binary LOGIT model was performed to determine how well the following variables could predict performance on each of the factors (used as dependent variables):

- Organisational size
- Industry
- CEO involvement in strategy-making

The above three variables are used on the basis of literature indicating these as moderating factors (Chapter 4).

**Table 6.41 Logistic regression analysis**

ENDS AND MEANS FLEXIBILITY (factor 2) AND ORGANISTIONAL SIZE		Number of cases classified correctly		Actual number
	Percentage correctly predicted	High Flexibility	Low Flexibility	<i>Total</i>
High Flexibility	27.16%	22	59	<i>81</i>
Low Flexibility	79.46%	23	89	<i>112</i>
				<i>193</i>

Table 6.41 presents the prediction model based on the logistic regression analysis. Analysis of maximum likelihood estimates proved that only one variable showed a prediction value in terms of only one factor, this is: Organisational size had an impact on Ends and Means Flexibility (factor 3). The model showed that none of the other variables or factors had relationships worth reporting. Organisational size showed a Chi-square statistic of 0.0129 at the 5% level of significance. Only 27% of high flexibility cases were correctly predicted and 80% of low flexibility cases correctly predicted by organisational size.

The following estimated LOGIT regression function was determined for Ends and Means Flexibility (factor 3):

$$\ln(\text{odds to be in group 1-2}) = -0.5834 - 0.4938 \times VV1_{1-3} + 0.0547 \times VV3_{\text{stable}} + 0.0949 \times VV48_1$$

The above equation shows the regression function where VV1 refers to variable 1 (organisational size); VV3 (industry) and VV48 (CEO involvement

in strategy-making). Only organisational size is seen to contribute toward the prediction of Ends and Means Flexibility (factor 3). Industry and CEO involvement did not contribute towards the prediction of factor 2.

## **6.4 INTERVIEWS WITH INFORMANTS**

As described in chapter 5, seventeen interviews with Top management of various companies were held. Of these 17 top managers, nine were CEO's or MD's of their organisations, two were directors of their organisations and six were managers that were concerned with company strategy, for example one manager was responsible for the entire operational strategy, one was top manager concerned with one of the business units in the organisation, etc. The interviews were conducted in such a way that an open discussion was stimulated. The questionnaire was used by the interviewer to focus the discussion on issues critical to this study. Interview duration averaged an hour and a half of in depth and comprehensive discourse.

### ***6.4.1 Summary description of interviews***

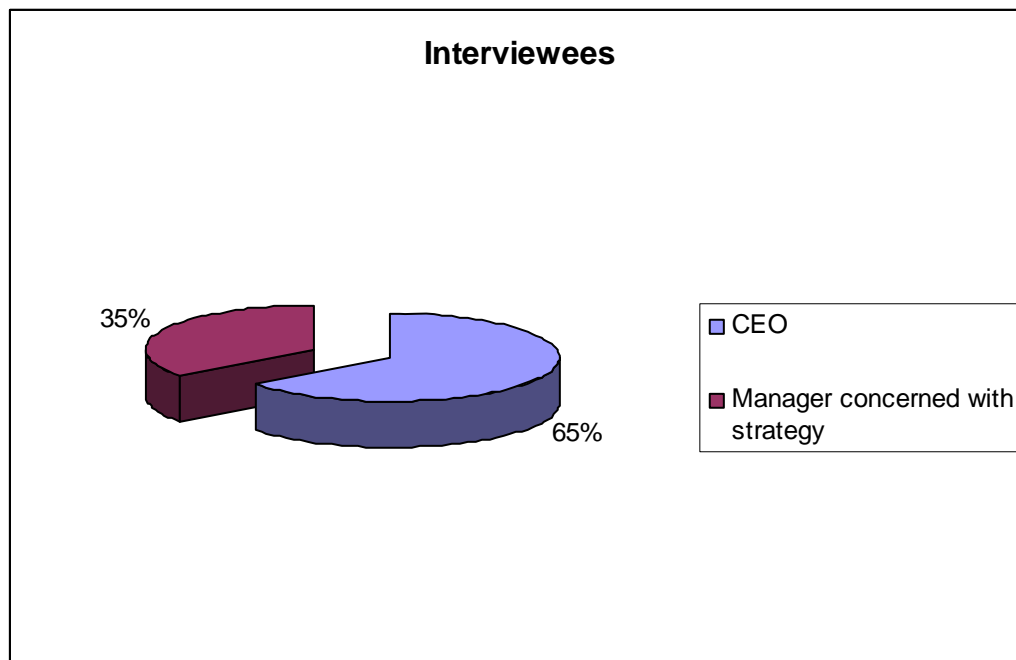
Table 6.42 summarises some of the salient issues that crystallized. The tabulated findings are also presented in pie charts following below to highlight the findings content.

Table 6.42 Results of interviews with CEO's/ managers concerned with strategy

Interviews	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	Average
Duration of interview (minutes)	60	60	45	45	40	90	60	120	60	60	90	45	120	30	60	45	30	62.4min
CEO (1 = YES; 0 = NO)	1	1	0	1	0	1	1	0	1	1	0	0	1	0	1	1	1	64.7%
Manager concerned with strategy	0	0	1	0	1	0	0	1	0	0	1	1	0	1	0	0	0	35.3%
Ideas/guidelines as ends	1	1	0	0	0	1	0	0	1	1	0	0	0	0	1	1	1	47.1%
Formal ends	0	0	1	1	1	0	1	1	0	0	1	1	1	1	0	0	0	52.9%
Formal means	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	94.1%
Emergent strategy	1	1	0	0	0	1	1	0	1	1	1	1	0	1	1	1	1	70.6%
Rational strategy	0	0	1	1	1	0	1	1	0	0	1	0	1	1	0	0	0	47.1%
Emergent Strategy approach intentional/ not haphazard	1	1	-	-	-	0	1	-	0	1	1	0	-	1	1	1	0	66.7%
Operations focus	1	0	1	0	1	0	1	1	0	0	1	0	1	1	1	1	0	58.8%
Product innovation focus	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	23.5%
Marketing and sales focus	1	1	0	1	0	1	1	0	1	1	0	1	0	0	0	0	1	52.9%
Large organisation	0	1	1	0	1	1	1	1	0	1	1	0	1	1	0	1	0	64.7%
Small organisation	1	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	1	35.3%
Growth	1	1	1	0	1	0	1	0	1	1	1	1	1	1	1	1	1	82.4%
Profit	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	94.1%
CEO academic knowledge about strategy	0	1	1	0	1	0	1	1	0	0	1	0	1	1	0	1	0	52.9%
Use of strategy-making and analysis tools	1	1	1	1	1	0	1	1	0	1	1	0	1	1	0	0	0	64.7%
Strategy based on financial targets	1	0	0	1	1	1	0	0	1	1	0	1	0	0	0	0	1	47.1%
Consultants used for strategy-making	0	0	0	0	1	0	1	1	0	1	1	0	0	0	0	0	0	29.4%

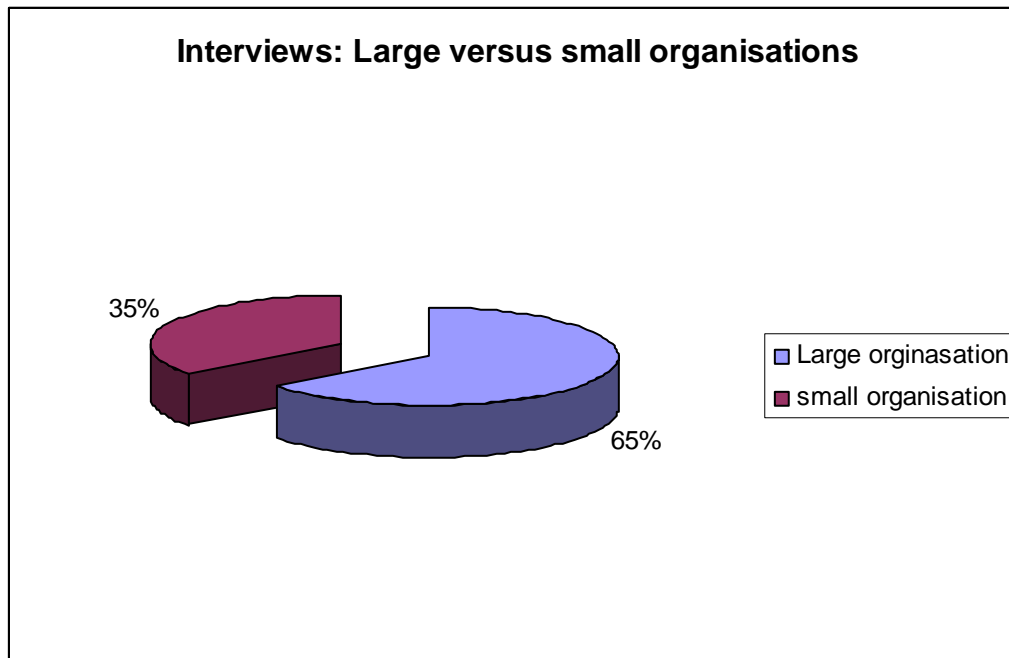


Figure 6.10 below shows the profile of the interviewees, of which 65% were CEO's of the respective organisations. The others were managers concerned with strategy who were strategically positioned in the organisation, such as head of a product segment, strategy advisor to the business unit top manager, head of strategy etc.



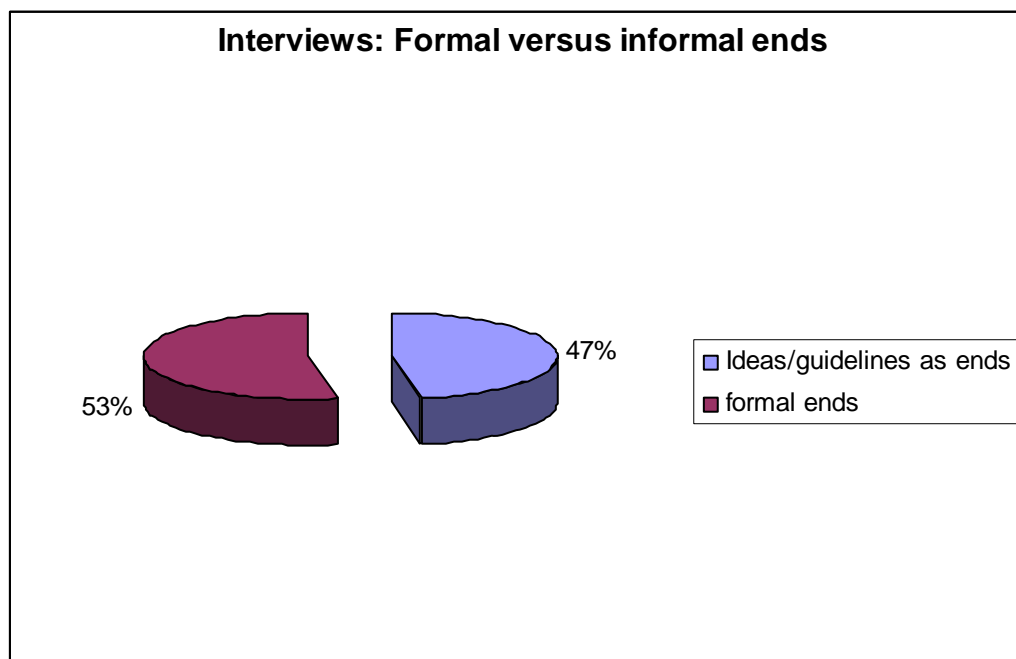
*Figure 6.10 Interviewee profile*

Figure 6.11 below shows that organisational size of the organisations concerned varied between organisations with fewer than 10 employees to organisations exceeding 30000 employees. 65% of the organisations concerned are classified as large organisations, in other words organisations with more than 100 employees.



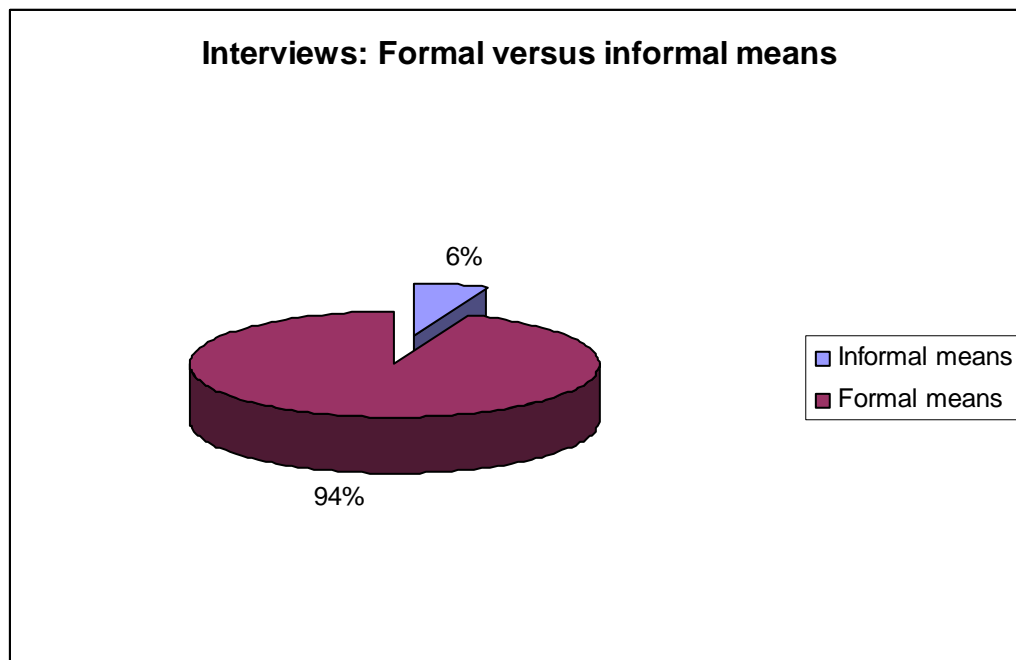
*Figure 6.11 Size of the organisations of the interviewees*

Figure 6.12 below shows that 53% of interviewees indicated that their organisations make use of formal ends, such as quantified objectives, mission and vision statements and articulated and formalized organisational priorities. The interviewees that indicated the use of ideas or guidelines, explained that certain 'pillars', values or strategic thrusts were used to focus organisational activities and effort. However, these were not quantified and although well explained to employees, left room for flexibility and interpretation.



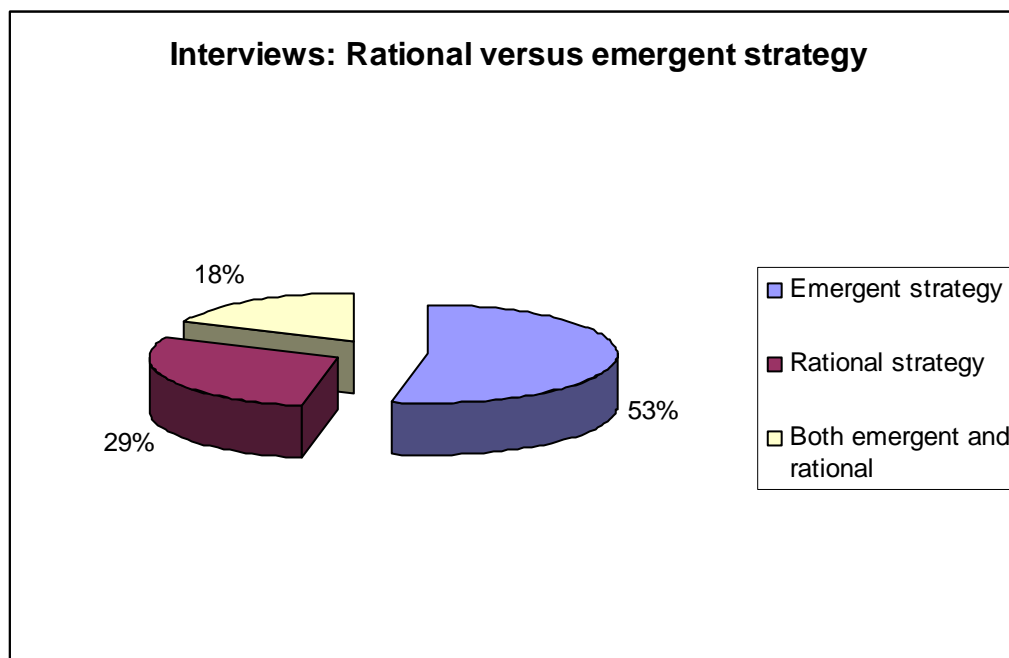
*Figure 6.12 Formal versus informal ends used*

Figure 6.13 below shows the majority of interviewees mentioned that their organisations make use of quantified means to achieve explicit (formalized and communicated) or implicit organisational objectives. Formal means included in all instances budgets and financial targets and in some cases financial ratio's, as well as performance management appraisals.



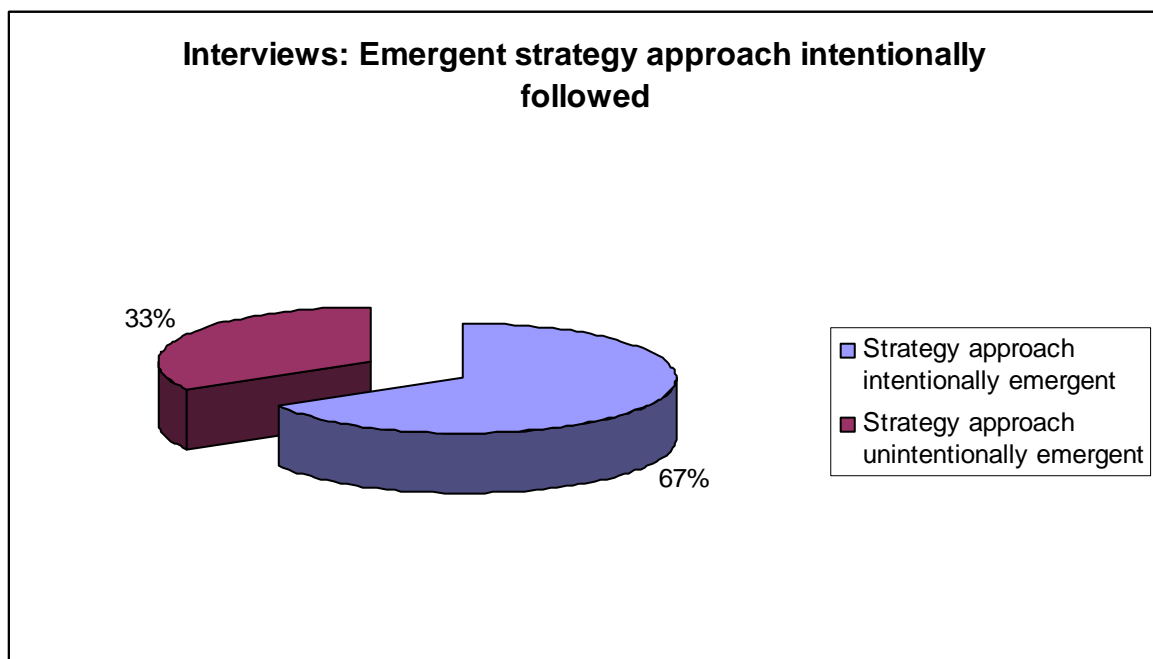
*Figure 6.13: Formal versus informal means used*

Figure 6.14 below illustrates the interviewees perception on the strategy approach followed in their organisations. Although the terms were briefly explained at the onset of the discussions, the interviewees did not explicitly categorised their strategy approaches as either emergent or rational. The classification was done by the interviewer who concluded from in depth discussion which approach was applicable. It can be seen from figure 6.14 below that 53% of the organisations concerned followed an exclusively emergent approach where the emphasis is on strategy that evolves from either implicit or explicit strategic direction. 29% of organisations concerned followed an exclusively rational approach to strategy-making and 18% followed both an emergent and rational approach to strategy-making. The last category contains organisations that use a formalized rational approach as the foundation for strategy, but allow for and even encourage changes to strategy in the course of operations.



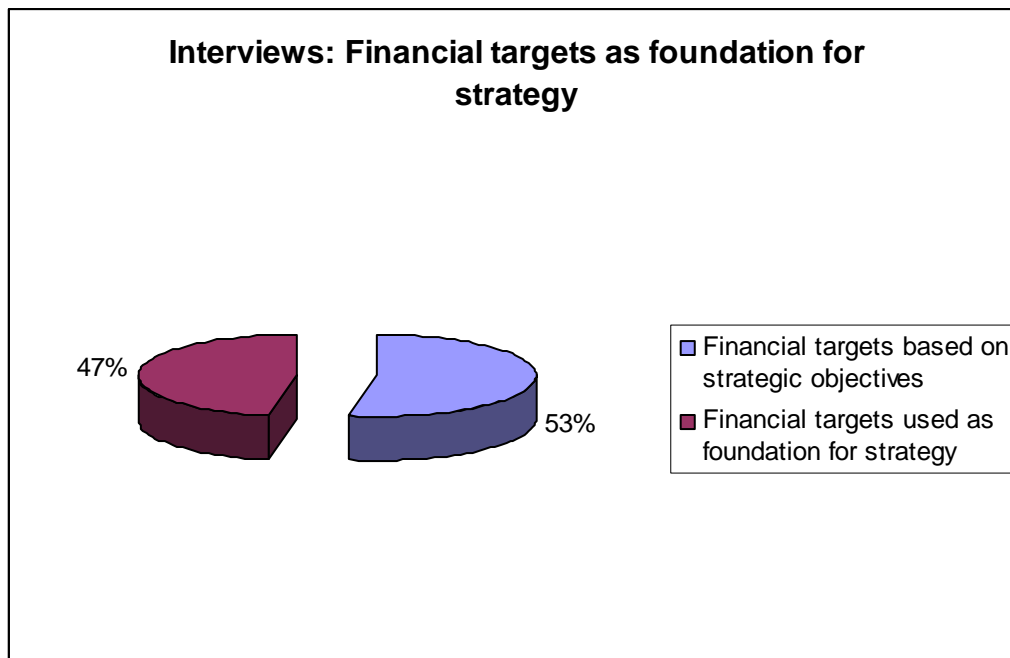
*Figure 6.14 Rational versus emergent strategy approach to strategy-making*

Figure 6.15 below depicts organisations that follow an emergent approach to strategy-making intentionally. In other words 67% of organisations concerned consciously decided to let strategy evolve in stead of following a rational approach. Discipline is typically built into strategy-making through deliberate means. Instances where the interviewer's perception was that interviewees did not consciously consider or thought through the strategy-making approach, but just let strategies emerge, account for 33% of the organisations concerned.



*Figure 6.15 Emergent strategy approach followed intentionally*

Figure 6.16 below depicts the distribution of interviewees that indicated that financial targets are the basis of their strategies. In the interviews it surfaced that 47% of the organisations concerned used means such as budget or financial targets as the basis for their strategies. 53% of interviewees start with their strategic objectives and base their financials and budgets on the established objectives or guidelines.



*Figure 6.16 Financial targets as foundation for strategy*

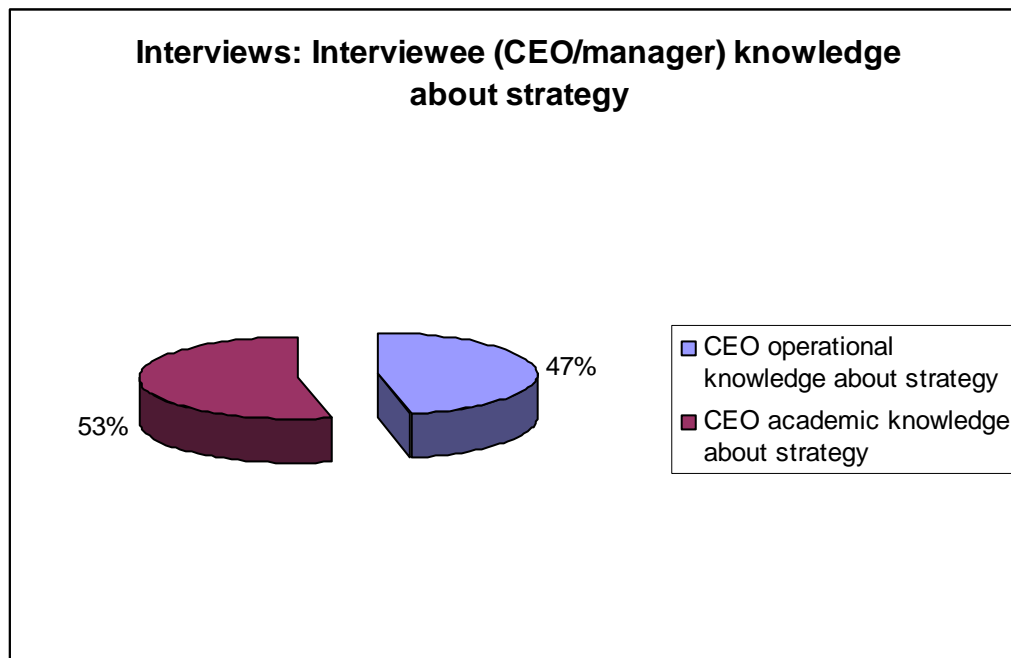
Figure 6.17 below shows that 29% of the organisations concerned made use of external strategy consultants to develop the organisational strategies. 71% of organisations develop strategies in-house through dedicated project teams, strategy departments of top management consensus.



*Figure 6.17 External consultants used for strategy-making*



Figure 6.18 below shows that 53% of the interviewees had academic knowledge on strategy-making. The other 47% had knowledge about how to manage their organisations, but not any prior education or academic knowledge on strategy.



*Figure 6.18 Interviewee academic knowledge about strategy*

#### **6.4.2 Other critical issues addressed in the interviews**

The above tables and graphs summarised some of the main issues that were addressed as part of the semi-structured interviews. There were, however, also issues addressed and mentioned that did not fall within the parameters of the structured questions since each interviewee explained his/her organisation's strategy in unique terms and examples. Other critical issues that emerged are the following:

- Strategy content varied from focus on establishing Black Economic Empowerment relations or networks to growing the organisation in terms of turnover, market share or profits.
- Financial targets formed the foundation of 47% of the organisations' strategy. This is opposed to situations where a strategic direction and objectives are set and financial targets established to ensure attainment of the strategic goals. In these instances (47%) the organisations only consider financial targets and not overarching strategic objectives and then work to achieve the financial targets on an annual basis. One informant (a CEO) mentioned that his employees "must make the budget, no matter what".
- In some instances communication of strategy was mentioned a barrier to strategy implementing. Where the emphasis was on confidentiality of strategy, it was mentioned that strategy was sometimes not operationalised as intended. Conversely, some organisations emphasized openness around their strategy - even to competition. One informant (a manager concerned with strategy) noted that the organisation sometimes "bargain" with competitors about their competitive position in areas where they have strong strategic intentions. Another interviewee (a manager concerned with strategy) indicated that the organisation prefers to be open about strategy in stead of strategy becoming a secret to the tune that organisational strategic intent vanished.
- In organisations that follow the emergent approach to strategy-making or a combination of emergent and rational approaches, specific means and ends are still in place to ensure implementation of strategy. The emergent approach was in most instances planned and well disciplined. As such, organisations follow strategic directives but consciously plan for emergence of strategies.

## 6.5 CHAPTER SUMMARY

In this chapter findings of the empirical study were presented in tabular format. Findings were organized in terms of the descriptive statistics (including the demographics and simple correlation analyses as well as the factor analysis). The factors that emerged from the factor analysis were used in the inferential statistical analyses, including ANOVA, discriminant analysis, logistic regression analysis as well as MARS regression analysis. Important statistical findings were presented highlighting significant relationships, and other critical statistical values such as means etc. The statistical analysis proved both existence and direction of relationships.

In the final chapter the most critical findings are used as basis for conclusions, recommendations and suggestions for further research. The limitations of this study are also addressed.



## CHAPTER 7 RESEARCH CONCLUSION

### 7.1 Introduction

### 7.2 Overview of the literature study

### 7.3 Research objectives and hypotheses revisited

#### 7.3.1 Primary research objective

#### 7.3.2 Secondary research objectives

#### 7.4.1.1 Factors within the construct of strategy-making

#### 7.4.1.2 Describing South African organisations in terms of the dominant strategy-making approach

#### 7.4.1.3 Describing internal organisational dynamics and strategy-making approaches

#### 7.4.1.4 Determining the influence of moderating factors

#### 7.4.1.5 Strategy-making approach and overall organisational performance

### 7.4 Conclusion

#### 7.4.1 Summary of main conclusions

#### 7.4.2 Limitations of the study

#### 7.4.3 Contribution of the study

#### 7.4.4 Suggestions for future research