

Data Analysis and Presentation

Introduction

The eighth and final phase of the research design involves the analysis and presentation of data generated during the earlier phases of field work.

The analysis and presentation of the data is grouped into four sections.

Section one is the reduction, summary and interpretation of the pilot-questionnaire data on "organisation" and "strategy".

Section two is the analysis of, and findings on, organisational types as generated by the main questionnaire.

Section three is the classification of SBUs by "organisation" and "strategy".

Finally, section four is the analysis of, and findings on, the "fit" between "organisation" and "strategy".

Reduction, Summary and Interpretation of Pilot-questionnaire Data on "Organisation" and "Strategy"

Correlation Matrices

Appendices 10 and 11 are tables showing the correlation matrices generated from the pilot questionnaire on "organisation" and "strategy". The data was generated using SAS version 5.14 and 5.16 on the University of the Witwatersrand IBM 3084 J.

Principal Components Analysis

Appendix 12 shows the principal components analysis of the pilot questionnaire data on "organisation". The default setting (Eigen value > 1) retained ten factors, representing some 75,8% of the total information in the correlation matrix. On interpreting the factor loadings, only six of these factors were seen to produce meaningful results. Six factors were therefore retained for the following stage of rotation.

Appendix 13 shows the principal components analysis on "strategy". The Eigen value > 1 criterion retained nine factors from the correlation matrix, representing some 93,1% of the total information. On inspection, all nine of these were retained and subjected to the rotation procedure.

Orthogonal Factor Rotation

Appendix 14 represents the rotated factor loadings for "organisation". The varimax rotation method was used. The six factors of "organisation", retained from the principal components analysis, were rotated to improve their interpretation. Five factors were retained.

Appendix 15 represents the rotated factor loadings for "strategy". Again, the varimax rotation method was used. The six factors on "strategy" were all retained.

Interpretation of the Factors Associated with "Organisation" and "Strategy"

The three-stage process of factor analysis enabled the reduction and summary of the initial research concepts and themes into the underlying factors which describe the research phenomena "organisation" and "strategy". These are presented below as Table 11.1.

Table 11.1: Interpretation of the Factors associated with "Organisation" and "Strategy"

"Organisation"	"Strategy"
1. The feelings held by members about the organisation, concerning its central thrust and most important values.	1. The product/markets served, and its selection process.
2. The nature and frequency of strategic change within the organisation.	2. The nature of the competitive conditions the organisation operates under.
3. The management/leadership style of the dominant coalition in the organisation.	3. The major competitive thrust of the organisation, that results in its competitive advantage.
4. The nature and style of decision-making in the organisation.	4. The nature, and range of applications, of the organisational technology.
5. The type of organisational structure and behaviour patterns of members.	5. The nature, and responsiveness, of the strategy formulation process.
	6. The nature, and efficacy, of the strategy implementation process.

Analysis of "Organisation" Data from Questionnaire

Data Capture

The "organisation" questionnaire requested respondents to rank the four statements associated with each of the five factors. In each case, they selected the statement that most accurately reflected their organisation, and then proceeded to rank the other three accordingly.

The data was thus collected by way of a set of ordinal scales. This had the advantage of making the questionnaire conceptually simple to complete and process, but the data required some conversion before meaningful analysis could take place.

Six hundred and ninety six responses were received from the 59 SBUs in the sample. After sorting the responses by SBU, they were numbered 1 to 696 and the raw scores were recorded. Appendix 16 is the data captured from these questionnaires.

Data Conversion

The data in Appendix 16 reflects ordinal-scaled judgements of "organisation" by the 696 respondents. In order to analyse and interpret the data meaningfully, it was converted into a set of interval-scales by way of a scaling model (Green and Tull, 1978, p.179).

Interval-scaled data allows the researcher to make statements about the relative differences between the various attributes being measured. It reflects the relative dominance of one organisational orientation over the others, and so allows for the classification of each SBU on the basis of the most dominant orientation.

The Thurstone Case V Scaling Model (Green and Tull, 1978, pp.180-187) was used to convert the ordinal-scaled data into interval-scales. The method is based on the concept of the discriminial processes in individuals, and is used to set up an interval scale on the basis of a series of rankings (Green and Tull, 1978, p.180).

The first stage of the Thurstone Scaling Model involved the construction of a matrix to reflect the preferences of the respondents for one attribute over another. These preferences were expressed as percentages, and reflected the number of times the one attribute was preferred over another. Preference matrices were constructed for the 59 SBUs, for each of the five factors. These preference matrices are reflected in Appendix 17.

For each of the proportional preferences in the matrices, Z-values were assigned from a standard table of Probability Values in a Cumulative Normal Distribution. These Z-values are reflected in Appendix 18. The Z-values were summarised, and the mean Z-value calculated for each column. The mean Z-values were converted to R-values by adding a constant which gives the least preferred item a scale value of zero.

The R-values reflect the interval scale values for the H(ierarchical), D(evelopmental), R(ational) and G(roup) orientations of each of the SBUs. Each set of interval scales reflects a unique profile for the corresponding SBU. These profiles are presented in Appendix 19.

Classification of SBUs by "Organisation" and "Strategy"

Classification by "Organisation"

The profiles produced by way of the "organisation" questionnaire were discussed with the SBU management. In each case, the profile of the particular SBU was presented and explained, and the data was compared to the findings of the pre-test. The concept of "standardising" the data was also explained and management was asked to comment on the findings for their SBU.

The organisational typology was then explained to the management in each organisation, and they were asked to classify their own organisations. This classification was compared to the profile of interval-scales produced by the analysis of the questionnaire.

As discussed in the previous research phase, these discussions enriched the data produced by the formal measuring instrument and allowed more meaningful classifications to be made. Through discussion and debate, an overall organisational classification was agreed and the process served to strengthen the interpretive perspective of organisations. In addition, by triangulating the measurement process, a more reliable and acceptable set of classifications was achieved. Table 11.2 presents the findings:

Table 11.2: Classification Of The 59 SBUs According To Their Organisational Orientation

Hierarchical Orientation	8	13.6%
Developmental Orientation	14	23.7%
Rational Orientation	26	44.1%
Group Orientation	11	18.6%
TOTAL	59	100.0%

Almost half the sample has been classified as a "Rational" organisation, with the other three orientations each forming much lower proportions.

Classification by "Strategy"

Each member of the external panel classified the 59 SBUs according to the information provided by the annual reports, press cuttings and other relevant documentation.

The inter-rater reliability amongst the panel members was 78,7%, and the panel typing, therefore, is considered reliable.

As in the case of the organisational orientation, these classifications were discussed with the management of the SBUs, and the final list of "strategy" classifications was produced. Table 11.3 below presents these classifications:

Table 11.3: Classification Of The 59 SBUs According To Their Strategic Orientation

Type I Strategy	10	16.9%
Type II Strategy	9	15.3%
Type III Strategy	22	37.3%
Type IV Strategy	18	30.5%
TOTAL	59	100.0%

The Strategic classifications display a dominance of the Type III Strategy.

Analysis of Fit Between "Organisation" and "Strategy"

Introduction

In order to analyse the degree to which the "organisational" orientation of the sample SBUs matched their "strategic" orientation, it was necessary to analyse the goodness of fit between the two classifications in Tables 11.2 and 11.3 above.

Siegel (1956) points out that the Chi-square test for independent samples is useful when the data is presented in frequencies, and the variables are in a nominal or ordinal scale. Indeed, Siegel (1956) adds that where the data is in nominal scales, as in the classification of Tables 11.2 and 11.3 above, the researcher has little option but to use this particular test.

In order to apply this test, the data is represented by way of a contingency matrix, and the research propositions, as well as the null hypothesis, are restated.

Comparing "Organisation" and "Strategy"

Table 11.4 below represents the contingency matrix for "organisation" and "strategy":

Table 11.4: Contingency Matrix for "Organisation" and "Strategy"

	Hierarchical	Develop- ment	Rational	Group	TOTAL
Type I Strategy	4	2	3	1	10
Type II Strategy	1	5	3	0	9
Type III Strategy	1	5	14	2	22
Type IV Strategy	2	2	6	8	18
TOTAL	8	14	26	11	59

The table above shows the classifications of the sample according to the typologies of "organisation" and "strategy". The shaded cells show the theoretical ideal fit between the two typologies, and represent the research propositions.

Testing the Research Propositions

The research propositions fall into two major categories. Proposition 1 concerns the integrated nature of the organisation, and focuses on the "fit" between specific

organisational and strategic orientations. Proposition 2 analyses the economic performance implications of this fit, and asserts that a better fit is likely to be associated with superior economic performance. These two propositions will be considered separately.

Proposition Relating to Fit

H₀: The proportion of SBUs with the four "strategic" orientations is the same across all four "organisational" orientations.

H₁: The proportion of SBUs with the four "strategic" orientations differs significantly across the four "organisational" orientations.

$$\begin{aligned}\text{Let } \alpha &= 0,01 \\ N &= 59 \\ df &= (k-1)(r-1) \\ &= 9\end{aligned}$$

$$\begin{aligned}\chi^2 &= \sum_{i=1}^r \sum_{j=1}^k \frac{(O_{ij} - E_{ij})^2}{E_{ij}} \\ &= 24,31\end{aligned}$$

where k = no of columns
 r = no of rows
 O_{ij} = observed no of cases in i th row of j th column
 E_{ij} = expected no of cases under H_0 in i th row of j th column

Since the χ^2 value is significant beyond the 0,01 level, the null hypothesis of no difference at $\alpha = 0,01$ is rejected.

Thus, H₁, the major research proposition may be accepted at the 0,01 level of significance.

Because the 16 cell contingency matrix in Table 11.4 above is sparsely populated in some cells, it is prudent to consider collapsing the matrix into 4 cells.

Inspection of the matrix reveals that the "Rational" organisational orientation and the "Type III" strategic orientation are the most popular. By considering these orientations, as well as their diametrically opposed counterparts, the following 2 x 2 contingency matrix may be constructed.

Table 11.5: 4 Cell Contingency Matrix for "Organisation" and "Strategy"

	Rational	Group	TOTAL
Type III Strategy	14	2	16
Type IV Strategy	6	8	14
	20	20	30

H₀: The proportion of SBUs with the two "strategic" orientations is the same across both "organisational" orientations.

H₁: The proportion of SBUs with the two "strategic" orientations differs significantly across the two "organisational" orientations.

$$\begin{aligned}
 \text{Let } \alpha &= 0,01 \\
 N &= 30 \\
 \text{df} &= 1 \\
 \chi^2 &= \sum_{i=1}^r \sum_{j=1}^k \frac{(O_{ij} - E_{ij})^2}{E_{ij}} \\
 &= 6,68
 \end{aligned}$$

χ^2 is significant beyond the 0,01 level. Consequently, the H₀ of no difference at $\alpha = 0,01$ may be rejected. H₁ is therefore accepted.

In both cases, the basic research proposition is accepted at the $\alpha = 0,01$ level. Type I, II, III and IV Strategies are therefore associated with Hierarchical, Developmental, Rational and Group organisational orientations for the 59 SBUs in the sample.

Propositions Relating to Economic Performance:

The second research proposition asserts that those organisations with internal consistency will out-perform those who are not internally consistent. The two measurement criteria are thus organisational performance and internal consistency.

The Index for organisational performance is based on the Business Times economic performance measure which was discussed in the sample design. From the 37 companies originally sampled, 59 SBUs were identified. These SBUs are made up as follows:

Table 11.6: Number Of SBUs Within Sample Companies

Company Type	No of Companies	No of SBUs
Companies with 1 SBU	23	23
Companies with 2 SBUs	9	18
Companies with 3 SBUs	3	9
Companies with 4 SBUs	1	4
Companies with 5 SBUs	1	5
TOTAL	37	59

In the case of the single SBU companies, economic performance was read directly off the sample frame (see Table 10.4, which presents the make-up of the sample). However, in the case of the multiple SBU companies, no such objective measures are available with respect to the specific industry/JSE sector. In these cases, the performance of the SBU was determined in discussions with the company CEO and senior management. As in the case of the original sample (Table 10.4), the SBUs were classified into one of three categories, i.e. above average performance, average performance, below average performance. The results of this classification are presented as Table 11.7:

Table 11.7: Classification of SBUs by Performance

Above average performance	24	40.7%
Average performance	22	37.7%
Below average performance	13	22.0%
TOTAL	59	100.0%

There is little doubt that the classifications above are subjective, and that the measure of SBU performance, particularly for the multi-SBU companies, is not as reliable and valid as that of "organisation" and "strategy". As a result, the analysis will proceed with caution, and any attempts to generalise will be tempered by the nature of the measuring instrument.

The Index for Internal consistency is based on the goodness of fit matrix presented above as Table 11.4. In this table, the SBUs are classified according to their "organisational" and "strategic" orientation. Internal consistency may be defined as the extent to which the "organisational" orientation matches the "strategic" orientation as posited by the first research proposition. These "matching" combinations are represented by the shaded cells in Table 11.4.

SBUs may be classified according to their degree of internal consistency by referring back to the original typology of organisational and strategic types. Figure 6.6 is reproduced below for this purpose:

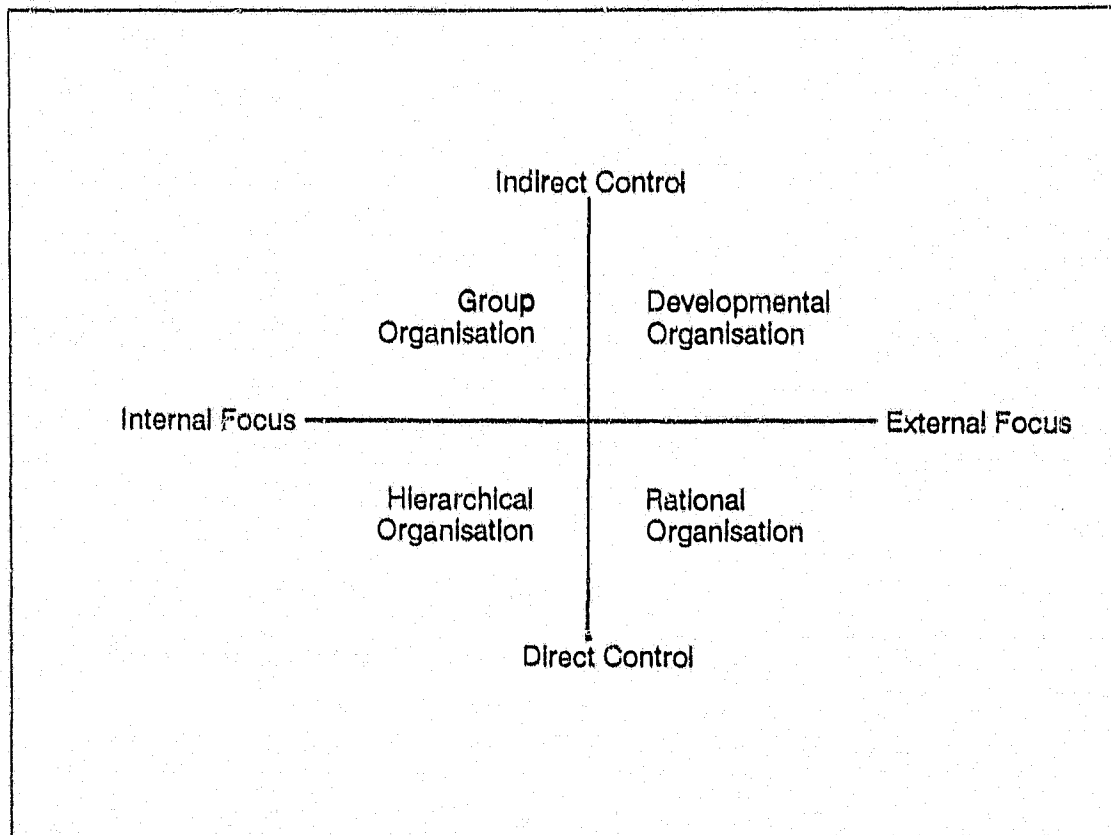


Figure 8.6: Model of Organisational Forms

In each case, the organisational form is matched with the appropriate strategy type. As a result, it is possible to identify three general categories of internal consistency.

1 Good fit:

where the organisational orientations are matched by the strategic orientations and types, ie:

Hierarchical organisation - Type I strategy

Developmental organisation - Type II strategy

Rational organisation - Type III strategy

Group organisation - Type IV strategy.

2 Some fit:

where the organisational orientations are matched by one of two strategic types which has at least one of the two basic continua in common, ie:

Hierarchical organisation	{ Type III strategy or Type IV strategy
Developmental organisation	{ Type III strategy or Type IV strategy
Rational organisation	{ Type I strategy or Type II strategy
Group organisation	{ Type I strategy or Type II strategy.

3 No fit:

where the organisational orientations are matched by strategic types which have neither of the two basic continua in common, i.e:

Hierarchical organisation - Type II strategy

Developmental organisation - Type I strategy

Rational organisation - Type IV strategy

Group organisation - Type III strategy.

Using this classification system, SBUs may be classified according to their degree of internal consistency. These classifications are read off the contingency matrix in Table 11.4, and presented below as Table 11.8.

Table 11.8: Classification of SBUs By Degree Of Internal Consistency

Good fit	31	52.5%
Some fit	17	28.8%
No fit	11	18.7%
TOTAL	59	100.00%

The classification for performance and internal consistency may be combined into a contingency matrix, presented below as Table 11.9.

Table 11.9: Contingency Matrix For SBU Performance And Internal Consistency

	Good fit	Some fit	No fit	TOTAL
Above average performance	18	4	2	24
Average performance	10	9	3	22
Below average performance	3	4	6	13
TOTAL	31	17	11	59

Two analyses may be carried out on the data presented in the matrix above. Firstly, a Chi-square analysis will reveal whether the data on Internal consistency is related to the data on organisational performance. Secondly, an analysis of variance will reveal whether Improved performance is related to higher degrees of internal consistency.

Chi-square Analysis

H₀: The proportion of SBUs with above average, average and below average performance is the same across all degrees of internal consistency.

H₂: The proportion of SBUs with above average, average and below average performance differs significantly, across the three degrees of internal consistency.

$$\begin{aligned}
 \text{Let } \alpha &= 0,01 \\
 N &= 59 \\
 df &= (k-1)(r-1) \\
 &= 4 \\
 \chi^2 &= \sum_{i=1}^r \sum_{j=1}^k \frac{(O_{ij} - E_{ij})^2}{E_{ij}} \\
 &= 13,99
 \end{aligned}$$

χ^2 is significant beyond the $\alpha = 0,01$ level. Consequently, the H_0 of no difference at $\alpha = 0,01$ may be rejected, and H_2 is accepted.

It may be asserted that organisational performance differs significantly with the degree of internal consistency.

Kruskal-Wallis One Way Analysis-of-Variance by Ranks (Siegel, 1956, pp.184-193):

The three performance classifications may be treated as a simple ranking system, with the SBUs in each classification tied for positions 1, 2 and 3 respectively. In terms of the Kruskal-Wallis ranking system (Siegel, 1956, p.188), the SBUs may be classified as follows:

Table 11.10 Comparing Internal Consistency with Performance

Ranking	Good Fit	Some Fit	No Fit	Performance
12.5	18	4	2	Above average
35.5	10	9	3	Average
53.0	3	4	6	Below average
$R_1 = 739.0 \quad R_2 = 581.5 \quad R_3 = 449.5$				

The rankings are somewhat peculiar because of the large number of tied rankings, i.e. 24 SBUs tied for first place, 22 for 2nd place, and 13 for 3rd place. (See method for ranking tied observations, Kruskal-Wallis Analysis of Variance, Siegel, 1956, p.188).

H_0 : There is no difference in the ranking of SBUs across the different degrees of internal consistency.

H_2 : There is a significant difference in the rankings of SBUs across the different degrees of internal consistency.

$$\text{Let } \alpha = 0,01$$

$$N = 59$$

$$df = k-1$$

$$= 2$$

$$H = \frac{12}{N(N+1)} \sum_{j=1}^k \frac{R_j^2}{n_j} - 3(N+1)$$

$$= 9,4$$

where
 k = number of samples
 N = total no of cases
 n_j = no of cases in j th sample
 R_j = sum of ranks in j th sample

Before considering the significance of $H = 9,4$ it is necessary to correct H for the tied rankings which occurred in the sample.

H is divided by:

$$\begin{aligned}
 1 - \frac{\sum T}{N^3 - N} &= 0,87 \\
 \text{Corrected } H &= \frac{9,4}{0,87} \\
 &= 10,80
 \end{aligned}$$

where $T = t^3 - t$ (where t = the no of tied observations in a tied group of scores)

$H = 10,80$ is significant beyond the 0,01 level. Consequently, H_0 may be rejected, and the research proposition H_2 is accepted. The rankings of the SBUs are therefore significantly affected by the degree of internal consistency, as measured in the contingency matrix above. Inspection of the rankings also reveals that the higher rankings are most often associated with greater degrees of internal consistency. To a lesser extent, the converse is also true, with a slightly higher proportion of below average performance being associated with low degrees of internal consistency.

This concludes the data analysis related to the research propositions, and a discussion of the results follows in the next chapter.

Chapter 12

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Discussion of Results

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Sampling

The two issues of major concern are the representativeness and potential bias of the sample.

Representativeness of Sample

The sample frame was constructed by eliminating some eight sectors recorded on the JSE. Most of these are mining and holding companies of some sort, and the sample can obviously not claim to be representative of these types of business. However, the remaining 21 sectors cover a whole range of manufacturing and commercial activities, including companies in the services sector. The main sample of 37 companies (59 SBUs) covers 17 of the 21 sectors in the sample frame, and is well represented across the three performance strata. Consequently, the sample appears reasonably representative of the sample frame which, in turn, is representative of industry and commerce listed on the JSE.

Bias in Sample

The degree of bias within the sample is somewhat more difficult to determine. During the discussions with SBU managers, it became obvious that they were particularly interested in the issues relating to organisational culture and strategy. Consequently, it is possible that the sample is biased in favour of those organisations whose dominant coalitions were better informed about, and more capable of managing, phenomena such as organisational assumptions and values. Out of the sample frame of 198 companies, the 37 who participated in the research programme may well represent a subset of senior management which has developed a better, and perhaps different, understanding of the concepts of organisation and strategy.

Although the original sample (see Table 10.4) reflects a relatively normal distribution of companies across the three performance strata, the classification of SBUs by way of their performance reveals a relatively high proportion of above-average performers. When viewed against the comments made on a potential bias in the sample, this might represent further evidence of a somewhat "superior" group of organisations and management teams.

In addition, respondents were all senior to middle level management in their respective organisations. Although it is believed that these managers make up a major proportion of the dominant coalition who strongly influence the organisational frame of reference, the findings cannot be completely representative of the whole organisation.

Consequently, the generalisations made from the research propositions should be treated with caution. There is some evidence to suggest that the sample represents a relatively high proportion of the more successful and effective organisations on the JSE.

Generation and Summary of Research Concepts and Themes

Generation of Concepts and Themes

The third, fourth and fifth phases of the research design involved the generation and fleshing out of the initial research concepts and themes. A wide range of techniques was used reflecting both functionalist and interpretive perspectives. These included a literature review, large numbers of interviews and discussions, workshops, content analysis and the construction and administration of a pilot questionnaire. It is believed that the triangulated, hybrid methodology of multiple operationism has succeeded in developing a rich understanding of the many concepts and themes related to organisations and their strategies.

Reduction and Summary Of Data

The reduction and summary of the data presented some problems. In the process of factor analysis, five and six key factors were identified for the research variables "organisation" and "strategy" respectively. The purpose of this reduction and summary

process was to develop coherent measuring instruments, relevant to, and understandable by, the target population. In order to achieve this, however, much of the data's richness and comprehensiveness may have been lost in favour of a relatively succinct and manageable measuring instrument. The principal component analysis and the subsequent rotation of the factor loadings, captured only part of the original data on "organisation" and "strategy". In the case of "organisation", 50.6% of the data is represented by the five factors, while the six factors of "strategy" reflect some 80% of that data.

While the "strategy" model may accurately determine strategic orientation, some caution may need to be exercised in interpreting the results of the "organisation" questionnaire. It is for this purpose that the classification of organisational orientation was not done by simply reading the recorded profile of each SBU.

On the other hand, the process of constructing typologies of organisational and strategic archetypes restored much of the holism back into the measuring instruments. Essentially a reflection of organisational gestalts, the use of typologies and archetypes is well suited to the measurement of organisations as integrated wholes. Overall, therefore, the generation and summary of the research concepts may be considered adequate for the purpose of making cautious generalisations in the process of theory building.

The Measuring Instruments and Classification Systems

"Organisation" and "Strategy"

The Measuring Instruments

Four measuring instruments were used in the classification systems for the purposes of this research. Probably the most important, were those constructed for the measurement and classification of organisational and strategic orientation.

The problems inherent in factor analysis and data reduction have been discussed above, and the fact that the "organisation" and "strategy" instruments do not represent all the initially generated data has been revealed. Nevertheless, in many respects, these two instruments are considered superior to those developed entirely from a researcher or theoretical perspective.

Much discussion in this dissertation has centred on the use of phenomenological approaches instead of the more traditional positivistic stances. In the case of the latter, researchers take the reality of organisations for granted. Often, research is based on the assumption that organisational participants and researchers share a common universe of discourse. It has been argued that positivism ignores the capacity of individuals and groups to make their own sense and meaning, or indeed, to define their own organisational reality.

From this perspective, the measuring instruments derived for the classification of organisational and strategic orientations, make an important contribution. They were developed by combining the Interpretive viewpoint (the viewpoint of the research participants), with the more traditional functionalist perspective (the viewpoint generated from the literature review).

The Classification Systems

The classification systems were designed to function using a variety of data sources. The organisational classification used a combination of objectively determined organisational profiles, interviews, self-typing by SBU management, and observer-typing by the researcher. The strategic classification used an external panel to present an objective opinion, as well as interviews, self-typing and researcher-typing. By triangulating the measurement and classification process, it is believed that the results obtained are reasonably valid for the target population. Overall, therefore, the measuring and classification systems used for the research phenomena "organisation" and "strategy" are considered valid.

Measuring "Internal Consistency" and "Performance"

Internal Consistency

The concept of organisational "internal consistency" has been used in many different contexts in various research programmes. In the case of this dissertation, its meaning is largely confined to the organisational archetypes which are developed as the major research focus. In terms of this, internal consistency refers to the consistency between organisational assumptions, values and beliefs, and physical manifestations. This has been operationalised, for research purposes, as organisational orientation on the one

hand, and strategic orientation on the other. Internal consistency, therefore, reflects the fit or match between organisational type and strategic type. As the testing of the research propositions revealed, the measurement of internal consistency was simply read off the basic contingency matrix in Table 11.4. The validity of the internal consistency measure is therefore entirely dependent upon the theoretical proposition of the organisation as an integrated whole, as well as the measurement and classification of organisational and strategic orientation. If the latter are considered acceptable and valid, the same conditions exist for internal consistency.

Organisational Performance

The organisation "performance" measure, on the other hand, does not reflect a similarly solid theoretical and methodological foundation. Firstly, as the discussion on the sampling revealed, no broad consensus exists on a measure of organisational performance. The research has accepted the Business Times' Index of economic performance which is outlined in Table 10.1. Secondly, only part of the sample of 59 SBUs was classified in terms of this economic performance index. For the single-SBU companies, the economic performance classification was simply read off the original sample frame. For the other SBUs, however, the performance classification was negotiated through discussions with the senior management of each SBU. This may represent a reason for the sample having a relatively large proportion of above average performers.

Nevertheless, this is viewed as the only viable means of classifying the SBUs according to performance. In addition, because the researcher contributed to these classifications, a degree of consistency exists in the standards applied to the classifications. Overall, therefore, the measure of organisational performance does not display the same degree of rigour and theoretical validity as the other measures of "organisation", "strategy" and "internal consistency". This does not mean, however, that the conclusions of the internal consistency/performance test are invalid. It simply means that the attempts at generalisation should be treated with some caution, as the discussion below reveals.

The Research Propositions

Testing the Theoretical Propositions

Phase 3 of the research design involved the generation of initial concepts from previous research and a review of the literature. These formed the broad framework within which more specific concepts and propositions were generated directly from the target population.

Proposition 1: Culture may be studied from a variety of perspectives, and

Proposition 2: Organisations may be viewed as cultures

These propositions were tested, albeit in an indirect manner, in the course of the research activities. The general proposition that organisation culture may be studied from a variety of perspectives found general support during the research process.

The functionalist viewpoint provided the broad concepts and themes to identify and analyse various organisational interdependencies. This well-researched and traditional perspective was combined with the relatively under-developed interpretive viewpoint which treats organisations as cultures. This integrated perspective provided valuable insights to managers with regard to their organisations.

Proposition 3: Organisational control systems are reflections of underlying assumptions and values, and

Proposition 4: Organisational structure is a manifestation of underlying assumptions and values

Once the first two propositions are accepted, the third and fourth propositions are logical extensions. Organisational control systems and structures were often seen as reflections of the underlying value systems and assumptions. Indeed, the results of the "organisation" questionnaire revealed orientation similar to those manifested by the visible structures and control mechanisms. In the discussions on the organisational profiles and the classification of the SBUs, the structure and control systems were often referred to as

symbols of the underlying values and assumptions of the organisation. These findings are seen to support propositions 3 and 4.

Proposition 5: Organisations do change, but their tendency is towards maintaining their current momentum

The fifth theoretical proposition relates to the tendency that organisations have towards momentum and the maintenance of a specific organisational form. When discussing the organisational and strategic classifications of the various SBUs with their management, many of them referred to the fact that their organisational forms were relatively enduring. By being able to easily recognise their own organisational profiles, as well as those of customers and competitors, it was obvious that the particular organisational archetypes had been relatively enduring over time. Clearly, this proposition is worthy of a longitudinal study amongst the target population in order to track the stability in organisational form. However, sufficient evidence exists from previous research, as well as the experiences of this research, to suggest that this proposition is valid.

Proposition 6: An understructure is evident in the social sciences

Proposition 6 refers to the evidence of an underlying structure which runs through much of the social sciences. This proposition is not tested directly, except in the review of literature which reveals its various manifestations. However, this proposition is central to the construction of the typology of organisational archetypes. In revealing these archetypes to organisational participants, it was found that the typology was capable of describing a wide range of organisational and strategic types. This suggests that the typology includes a comprehensive description of the range of organisational realities. In some way, this may be taken as partial evidence of the existence, as represented by the typology, of an understructure through the social sciences.

Proposition 7: Organisations may be presented as integrated wholes

Finally, the last proposition derived from the literature review suggests that organisations are best conceived of as integrated wholes. This proposition provides the "springboard" for the testing of the research propositions. It is also one of the theoretical propositions which was possible to test more directly in the target population. In the test for the performance implications of internal consistency, some 31 of the 59 SBUs were classified

as having a "good fit". Since this represents a match between organisational assumptions and values on the one hand, and physical manifestations (strategy) on the other, it is evidence of an integrated whole. Indeed, only 9 of the sample of 59 SBUs were recorded as having "no fit". Since some of these may well have been undergoing some form of organisational/strategic change at the time, the overall evidence supports the proposition that organisations may be conceived of as integrated wholes.

In conclusion, it must be emphasised that these propositions were derived from a review of the literature and prior research. None were formally subjected to testing in the target population. The integrated perspective adopted in this research does not deem that to be appropriate. However, they did form a valuable framework within which the research concepts and themes were generated and refined. It is from this perspective that they were "tested" in the target population.

Testing the Research Propositions

The specific research propositions of this dissertation relate to the concept of the organisation as an integrated whole, and the influence that this has on organisational performance.

Proposition 1: Organisational strategies will be consistent with the organisational context

Proposition 1 asserts that the organisational assumptions, values and beliefs will be consistent with the organisation's physical manifestations. This was operationalised by testing the match between organisational orientation and strategic orientation. In the 4 x 4 contingency matrix (Table 11.4), the Chi-square analysis indicates that the two sets of data are matched at the $\alpha = 0,01$ level of significance. Because the 4 x 4 matrix is underpopulated in certain cells, the matrix is collapsed and the test repeated. Again, the results are significant at the $\alpha = 0,01$ level. Coupled with the classification of the sample by internal consistency (Table 11.8), the general proposition that organisations are integrated wholes and display internal consistency may be accepted. Physical inspection reveals further that the specific propositions regarding the match between particular organisational orientations and strategic orientations may also be accepted at the $\alpha = 0,01$ level of significance. In both cases, this level of significance is regarded as

appropriate, given the somewhat small sample and the theory-building nature of the research.

Proposition 2: Internal Consistency Is Associated with Superior Performance

Proposition 2 concerns the possible effect that internal consistency may have on the performance of the organisation. No attempt, however, is made at implying causation and the proposition is tested to simply reflect an association between the phenomena of internal consistency and performance. Specifically, the proposition tests whether the combination of certain organisational and strategic orientations is associated with superior organisational performance. In the matrix (Table 11.9), where increasing internal consistency is measured against organisational performance, the Chi-square analysis indicates an association of the data at the $\alpha = 0,01$ level. This indicates that organisational performance is significantly associated with the degree of internal consistency. The Kruskal-Wallis One Way Analysis-of-Variance by Ranking (Table 11.10) confirms this association, and shows further that increased organisational performance is associated with higher degrees of internal consistency. This association is also shown to be significant at the $\alpha = 0,01$ level of significance. These two tests suggest an acceptance of the second research proposition and assert that increased degrees of internal consistency between organisational and strategic orientations will be associated with superior organisational performance.

Despite the acceptance of the two major research propositions, some caution must be exercised in generalising these findings beyond the sample. Firstly, there is a possibility of some bias in the sample. This probably relates to the well-informed nature of the SBU management, as well as to the high proportion of above-average performers. Secondly, the measure of "organisation" might not be as comprehensive as was originally intended because of the "loss" of data during the factor analysis procedure. Finally, the measure of organisational performance is at best subjective, and the internal consistency/performance test may not hold for other recognised measures of economic or organisational performance.

Despite the caution that should be exercised when generalising into the general population of organisations, these findings do show support for the general propositions of the research. They confirm that a cultural analysis of organisations and their strategies

produces useful and meaningful insights, and that the organisation may be conceived of as an integrated whole, or gestalt. They confirm that certain strategic orientations are associated with certain organisational orientations, and that the former are the physical manifestations of the latter. Finally, they confirm that organisational performance, as defined in the research design, is likely to suffer when internal consistency, for whatever reasons, does not exist.

These conclusions, and their implications for organisations and strategies, will be considered in more depth in the concluding chapter.

Chapter 13

Chapter 13

Conclusions

Conclusions

Introduction

The purpose of this final chapter is to place the theoretical discussions and research findings in a broader perspective, and also to indicate possible directions for future research. The chapter consists of four major sections.

Section one relates the findings of this research programme to previous research and literature in the area. It discusses the significance of the findings and their contribution to the knowledge in the field.

Section two discusses the findings within the perspective of the overall theoretical framework used in this dissertation. The integration of the material is outlined, and the congruence between the findings and the theory is noted.

Section three makes recommendations for the management of organisations in the light of the findings. Despite the tentative nature of some of the conclusions, a number of guidelines are presented which may contribute towards increasing the efficacy of South African business organisations.

Finally, section four identifies a number of possible directions for future research, and provides some suggestions on how to enhance research in this area.

Relating the Study to Previous Research in the Field

Two Broad Categories of Research

Much of the previous research in the area may be classified into two broad categories. The first category may be termed the theories of "fit", in which various researchers attempt

to identify combinations of organisational variables which produce effective organisational performance. This body of research includes such milestone studies as the Chandler thesis (Chandler, 1962), the McKinsey 7-S framework (Pascale and Athos, 1981), and the much popularised findings of Peters and Waterman (1982).

The second broad category includes those studies and writings which have used a paradigmatic or contextual approach to describe organisations and their strategies. This includes the work of Mitroff (1983), March and Simon (1957), Cyert and March (1963), Berger and Luckman (1966) and Weick (1979).

The findings of this research programme support and add to much of the above work. This will be discussed by taking the two broad categories in turn.

The "Fit" Theories

The theories of fit have made a major contribution to the understanding of organisations and their strategies. Operating mainly from a functionalist, systems perspective, they have methodically documented the various combinations of organisational variables and their influence on performance. The Chandler thesis (Chandler, 1962) insists that a given organisational strategy must be supported by a specific organisational structure, and that certain combinations (or "fits") produce better results than others. This milestone piece of research gave rise to a whole series of studies in different countries, where the measurement of the fit, and the analysis of its impact on organisational performance grew progressively more refined (Wrigley, 1970; Rumelt, 1972; Channon, 1973; Dyas, 1972; Pavan, 1973; Kono, 1984). This body of research argues in favour of a causal relationship from strategy to structure, but has been opposed on a number of occasions. The work of Thorelli (1977), Hall and Salas (1980) and Peters (1984) is of note here. They have argued in favour of a causal relationship from structure to strategy.

More recently, this argument has given way to the concept of interdependence between the major elements, and the development of the McKinsey 7-S framework (Pascale and Athos, 1981) and Leavitt's Diamond (Galbraith, 1982) has contributed greatly to an understanding of the nature of the organisational variables. The earlier work by Burns and Stalker (1961), Lawrence and Lorsch (1967) and Lorsch and Allen (1973) have also been instructive in identifying the nature of the interdependencies.

Throughout this literature, what has emerged is a realisation that certain "laws" govern the combinations of variables that interact within and between organisations. Miller and Friesen (1979), for example, note how organisations develop certain patterns of integration amongst these variables, and how these patterns are of a relatively enduring nature. Mintzberg (1985) points to the bureaucratic momentum which develops as organisations "bed down" their specific combination of organisational variables.

The research findings in this dissertation largely support the earlier work done in this broad research area. Viewed purely from a functionalist and systems perspective, the four categories of organisational forms (Hierarchical, Developmental, Rational and Group) are shown to be significantly associated with specific business-level strategies. In other words, the "fit" phenomenon is demonstrated between the research variables "organisation" and "strategy". This concept is consistent with the overall findings in the body of theory quoted above. However, the approach adopted by the research in this dissertation is somewhat different to that of much of the previous research, and this is a major factor in its contribution to knowledge.

Firstly, the research variables "organisation" and "strategy" were not variables in the same sense as those in the research quoted above. Instead, they were complex combinations of many phenomena. "Organisation" and "strategy" respectively, were operationalised from some 186 different research concepts and themes, originally generated from the target population. Indeed, "organisation" and "strategy" were almost two different views of the same phenomenon. By measuring organisational orientation largely from an internal perspective (the views of the organisational participants), and strategic orientation from an external perspective (the views of an external panel), the objective was to identify organisations as integrated wholes. By showing a fit between the two perspectives, this objective was largely achieved. Secondly, the research adopted a dual perspective in viewing organisations in their environments. By combining the perspective of the organisational participants with that of objective observers, an integrated perspective of organisations and their strategies was obtained. To the best of the researcher's knowledge, this has not been achieved to date in this category of research. Finally, the research succeeded in mobilising complex concepts such as organisational assumptions, values and beliefs in order to operationalise the research phenomena of "organisation" and "strategy". This is evidence of the contribution of an interpretive perspective, and it has significantly assisted in developing an integrated view of the organisation and its strategy.

The Paradigm/Context Theories

The central notion of the paradigm/context research, is that various aspects of the organisation form a social context, or paradigm, within which strategic behaviour takes place. The organisation, therefore, exercises an indirect form of control over decision-makers by framing their decisions and bounding their rationality (Cyert and March, 1959; Ramaprasad and Mitroff, 1984).

By and large, these theories are based on an interpretive perspective of organisations, which permits the definition of the organisational reality by the participants themselves. The original work by March and Simon (1957), Cyert and March (1959) and Berger and Luckman (1966) gave much of the impetus to this category of research by defining and explaining the concept and role of the organisational "frame of reference". Burgelman (1983) develops the notion further and identifies the concept of the "corporate context", which explains the relationship between the organisation and its strategic behaviour. Hambrick and Mason (1984) expand on this and also explain the strategic significance of "bounded rationality". The linkages between assumptions and decision-making are developed at a micro-level by the contributions of Mitroff (1983) and Ramaprasad and Mitroff (1984). The role of socialisation within organisations has been dealt with extensively (Buchanan, 1974; Pettigrew, 1979; Jones, 1983; Pascale, 1984, 1985; Ashforth, 1985). Its role in influencing the behaviour and decision-making of organisational members has been identified, and the extension of this notion to include organisational members "enacting" their environment has also been outlined (Weick, 1979).

The findings of this dissertation extend much of the above literature. The theoretical framework developed by the dissertation has explained, in detail, the relationship between the underlying organisational assumptions, values and beliefs (the organisational "context" or "paradigm") on the one hand, and specific manifestations, such as strategies, on the other. Four specific organisational contexts or paradigms have been identified (Hierarchical, Developmental, Rational and Group), and the research has shown how they are manifested in specific organisational strategies. In each case, the underlying assumptions, values and beliefs were shown to provide specific frames of reference for the formulation and implementation of organisational strategy.

Consequently, the contribution to knowledge to this area of literature is twofold. Firstly, the relationships between organisational contexts and realised strategies were identified and

described. Secondly, generic or "ideal type" organisational contexts were developed by noting the existence of an understructure within the social sciences. These four generic forms were extended to describe specific organisational strategies. The field-work revealed a relationship between these strategies in their realised forms and the generic organisational contexts. The major contribution, therefore, is in operationalising this broad theoretical framework and expressing it in organisationally relevant ways.

Relating the Research Findings to the Overall Theoretical Framework

An Integrated Perspective of Organisations and Their Strategies

The research methodology of multiple operationism and triangulation enabled the concept of culture to be mobilised in the analysis of organisations and strategies. This allowed a hybrid perspective of functionalism and interpretism to be used in an integrated perspective of organisations and strategies. Consistent with Boulding's (1956) notion that complete understanding of a social phenomenon only occurs when the phenomenon is simultaneously studied from all levels of the general social classification schema, organisations and their strategies were analysed from both a functionalist and an interpretive perspective.

The functionalist perspective revealed organisations as both linear mechanisms and adaptive organisms in their relationships with external, changing environments. The interpretive perspective, on the other hand, analysed the organisation as a creation of its members, and revealed the manner in which they enact their own environments. Only by integrating the two perspectives could a complete understanding of the organisation and its strategies be reached. This integrated approach, particularly with reference to strategies as outcomes of organisational behaviour, constitutes a contribution to the knowledge of organisations and their strategies.

Culture as a Metaphor to Analyse Organisation and Strategy

By adopting culture as a metaphor to analyse organisations, the Schein (1981, 1985) model was used to explore the organisation as a three-level construct of underlying assumptions, values and beliefs, and physical manifestations.

The research findings confirmed the validity of such an approach by identifying the relationship between specific organisational forms and manifested strategies. By measuring the concept of "organisation", an internal view of the organisational assumptions, values and beliefs was obtained. The measurement of "strategy", on the other hand, was an external view of the physical manifestations of the organisation. By revealing a significant relationship between the two phenomena, the validity of the three-level construct was confirmed, and an integrated perspective of the organisation obtained.

The internal view represented the perceptions of the organisational participants and so may be classified as an interpretive perspective, while the external view represented an objective, functionalist approach. This is further evidence of the validity of an integrated perspective.

A Multiple View of Organisation and Environment

As a consequence of the integrated perspective, a more complete understanding of the relationship between an organisation and its environment has emerged. Figure 7.9 reveals the range of different associations between these two phenomena.

Depending upon the relative size and bargaining power of the organisation, its competitors, and the nature of the environment itself, the organisation has three simultaneous sets of relationships with the environment. Firstly, there are situations in which the environment will largely determine the range of alternatives open to a particular organisation. In these cases, the environment is presented as an independently determined and formulated phenomenon to which the organisation has to respond and adapt. Secondly, there are situations where the environment, although still independently determined, can be selected. In terms of strategic choice, the organisation is able to

choose those parts of the environment it wishes to engage. Finally, the environment is presented as an outcome of strategic organisational behaviour. Through the process of interaction, the organisational members enact the environment and shape it according to their perceptions.

The typology of organisational archetypes shows support for this range of organisation-environment interfaces. The Hierarchical organisation, because of its defensive mode of strategy, usually perceives the environment as being independently determined and capable of shaping strategic options. The Rational and Group organisations also view the environment as being independently determined, but recognise the strategic choices open to them in deciding how and where to engage the environment. Whereas the Rational organisation does so on the basis of profitability, the Group organisation is more likely to use the criterion of compatible values and assumptions. Finally, the Developmental organisation, with its external orientation and highly developed shared frame of reference, is probably more capable of enactment and environmental creation than any other organisational form.

The discussion on archetypes in Chapter 8 revealed the Leibnitzian principle that everything is contained in everything else. Similarly, all organisations may be seen to contain elements of Hierarchical, Developmental, Rational and Group archetypes. As a result, all organisations may be said to enjoy a range of relationships with their environments, although, as with the tendency towards one specific organisational form, a particular organisation tends to be dominated by one type of relationship.

By revealing a range of organisational and strategic archetypes, it follows that the whole range of relationships between organisations and their environments exists. As a result, a multiple perspective of organisations in their environments is appropriate.

Structure and Control as Important Organisational Symbols

Both organisational structure and control were discussed in some detail. Structure was seen to reveal the preferred patterns of behaviour and interaction amongst members, while control was viewed as a manifestation of the desire to regulate, coordinate and integrate the organisation. Structure was viewed in terms of basic dimensions, and the relationships between these dimensions and specific organisational assumptions and values was explored. Control, on the other hand, was analysed in terms of two generic types, each representing opposing assumptions and values.

In identifying the four organisational archetypes, the research revealed the importance of these symbolic devices in helping to describe organisations. Although in themselves insufficient evidence of the overall organisational orientation, organisational structure and control contain many important clues about the underlying organisational assumptions and values. In terms of the basic model of culture adopted for this dissertation, they are important physical manifestations of the parts of the organisation that "lie below the surface".

The Hierarchical, Developmental, Rational and Group organisations each manifested clearly different symbols of structure and control. Once again, this confirms the general proposition of organisations as integrated wholes. The tendency towards internal consistency generally results in a congruent collection of symbols. Structure and control are of paramount importance in this set of symbols and reflect part of the underlying system of assumptions, values and beliefs.

Organisations Display a Tendency Towards Momentum

The concept of the organisation as an integrated whole introduces the notion that the organisation displays a natural tendency to resist change. A particular organisational form, as well as its strategic manifestations, are likely to endure in a relatively unchanging way.

The research revealed that organisational forms, or archetypes, maintain their internal consistency and gestalt through ongoing socialisation of members and the resultant organisational frame of reference. The latter ensures that the organisation displays considerable inertia.

Changing the organisation entails the destruction of the current frame of reference and its replacement by another. Findings from the target population indicated that the potential trauma of such a change engendered a general reluctance to change and often resulted in the organisation remaining unchanged. This phenomenon reinforces the notion of the trade-off between organisational efficiency and effectiveness. By retaining the existing frame of reference and organisational gestalt, increased efficiencies often result. This, however, is usually at the expense of the organisation's effectiveness in terms of its relationship with its environment. Redefining the organisational frame of reference and gestalt in response to a perceived need or opportunity in the environment, usually

Improves organisational effectiveness, but often at the expense of organisational efficiencies.

Recommendations for Managing Organisations in South Africa

Introduction

In the light of the theoretical framework and the specific research findings, a number of tentative conclusions may be drawn about understanding and managing organisations in South Africa. These are presented in five broad categories, each dealing with a specific aspect of the theoretical analysis and findings.

Managers Require Multiple Perspectives to Understand Their Organisation

Managers require a variety of perspectives in order to understand and effectively manage the organisation. In a sense, they should be able to "triangulate" their viewpoints of the organisation, in much the same way as the research design approached the study of "organisation" and "strategy". This expansion of their organisational perspective may take place in two ways.

Firstly, the organisation should be thought of as both having a culture and being a culture. In one sense, the organisation is a complex system made up of a number of interdependent variables. The organisational assumptions, values and beliefs are important variables within this system and they need to be fully understood so that their relationships with the other variables can be predicted, and hopefully, managed. Many of the frameworks developed by contemporary management consulting companies, such as McKinsey's 7-S paradigm and the Management Analysis Centre's Cultural Compatibility Grid are of potential assistance here.

However, the systems perspective produces only part of the picture, and the rest of the explanation lies in understanding the organisation as being a culture. This view has very different implications for an understanding of the organisation. Instead of the organisation being understood as a complex system of interrelated variables, the organisation should

also be conceived of as a subjective creation in the minds of its members. Underlying assumptions, values and beliefs now become the essence of the organisation, instead of only a part of it. Many of the variables, which were previously integral parts of the organisation-as-a-system, are now simply manifestations of these assumptions, values and beliefs.

The second method of expanding the understanding of the organisation is to view it at three different levels simultaneously. At the lowest level, the organisation is a linear mechanism which systematically manages the solution of problems. At the second level, it may be thought of as an adaptive organism, which is sensitive and responsive to the changing conditions in its environment. Finally, it is also the subjective creation of its members, and may therefore be "anything the members desire". This, in a sense, describes the complex and multiple set of relationships which the organisation has with its environment. The organisation is therefore required to simultaneously plan for, respond to, and actively create its environment.

The major implication of this multiple perspective is that an "integrated model" is required for the management of organisations. Rather than view the organisation as a system or a culture only, or manage the organisation-environment interface from one perspective only, managers should develop multiple views from each of the different perspectives. By combining these different views about the organisation and its relationships with the environment, a more realistic, and hopefully accurate, picture may emerge. Particularly in the turbulent and complex environments of the late 1980's, where organisations have multiple stakeholders with different interests, this integrated view is likely to provide an improved managerial perspective.

The Organisational Context Is a Powerful Shaper of Strategy

The organisational context may be thought of as the collective frame of reference shared by the members of the organisation. This frame of reference frames and bounds the perceptions, decision-making and actions of members and, in a sense, gives meaning to the whole organisation and its endeavours. The underlying assumptions, values and beliefs held by the members about the organisation and its activities, may be defined as the key components of this organisational frame of reference.

Furthermore, the underlying assumptions, values and beliefs are manifested by specific organisational symbols and manifestations. As far as the relationship between the organisation and its environment is concerned, the most important of these is the organisational strategy. Strategy, therefore, "emerges" out of the assumptions and values of the organisational members. In this way, the organisational context may be seen to actively shape and indirectly control the strategic behaviour of the organisation.

Through the process of member socialisation, the organisation develops and maintains a shared frame of reference amongst its employees. In turbulent, uncertain environments, the shared organisational frame of reference may be viewed as an important means of exercising control over the strategic direction of the organisation. By developing a shared set of organisational assumptions, values and beliefs, management is better able to "steer" the organisation towards its objectives while the conditions in the environment are continually shifting. Whereas more direct control mechanisms such as tight budgets and clearly defined objectives, obviously have their place in all organisations, their role in a turbulent environment may be likened to that of a detailed "map" in the middle of misty swamp. Of far greater use is the general "compass" provided by the shared assumptions, values and beliefs.

The use of the organisational context to direct the organisation during periods of change and instability is becoming accepted as an "alternative" management/leadership strategy. By developing a vision for the organisational future, the underlying assumptions, values and beliefs are mobilised to provide a powerful influence and control over the strategic direction of the organisation.

As far as management/leadership style is concerned, the indications are that managers' and leaders' time in developing a common set of assumptions and values, is well spent.

Managers Can Use the Organisational Context to Close the Gap Between Intended and Realised Strategy

A relatively common phenomenon is the so-called gap between what management intend the organisational strategy to be, and what actually emerges and manifests in the market place. As research has revealed, the realised strategy is a combination of the originally intended strategy, with that strategy which emerges "along the way".

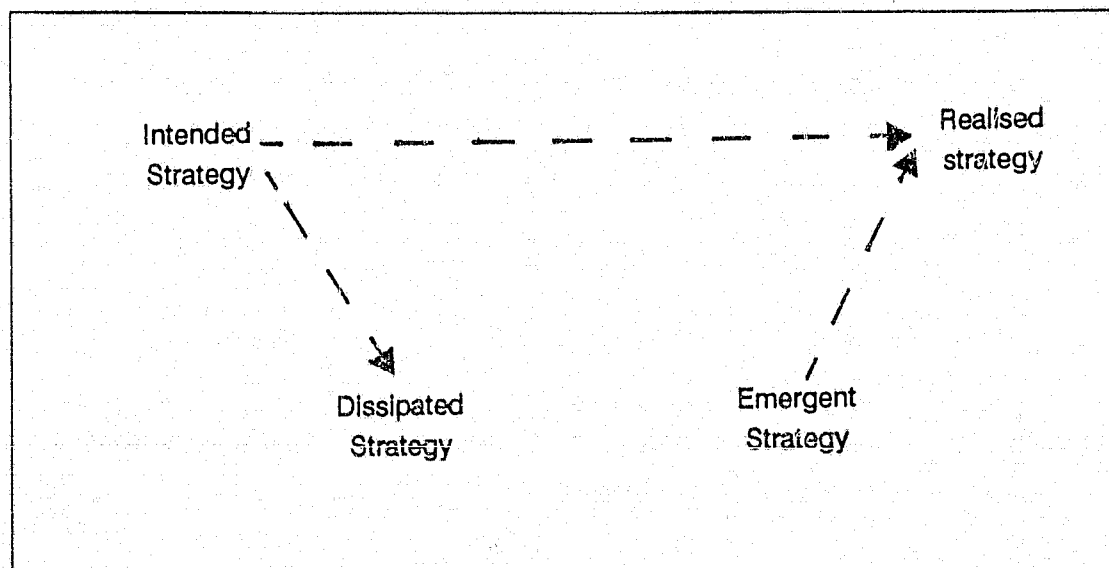


Figure 13.1 The Gap Between Intended and Realised Strategy

In organisations which do not have centralised decision-making and control systems the "emergent" component tends to dominate the make-up of the realised strategy. This means that the many activities and decisions which take place outside of the central locus of strategic decision-making contribute to the actual strategic direction of the organisation. Clearly, the organisation can regulate and control the activities and decisions of members through formal and explicit control systems, but their efficacy is limited in a turbulent and uncertain environment. The formal control system is often unable to "reach" into all corners of the organisation and anticipate every contingency, with the result that these decentralised activities and decisions usually contribute to an emergent, realised strategy which is far removed from management's original intention.

The implications of a gap between intended and realised strategies are thus two-fold. Firstly, the realised strategy that emerges may well have consequences and implications which are inconsistent with the overall organisational purpose. Secondly, management may well be "living in a different reality" to that of the rest of the organisation. Both have severe consequences for overall organisational performance.

By developing a shared frame of reference amongst a large proportion of organisational members, the organisation context can exercise its influence over strategy, even at decentralised loci of activities and decision-making. This may have the effect of bringing the emergent strategy closer to the intended strategy. The research findings tentatively suggest that improved organisational performance is associated with high degrees of internal consistency.

A well-developed organisational context, therefore, offers an alternative approach to ensure a smaller gap between intended and realised strategies. Managers are therefore encouraged to devote sufficient resources to building consensus on the underlying assumptions, values and beliefs in the organisation.

Changing the Strategy Means Changing the People

The development of the organisational context implies that the organisation "beds down" the various processes, activities and behaviours that constitute part of its everyday life. The tendency to habitualise and institutionalise behaviour is a natural human phenomenon and this contributes to the general inertia and resistance to change that characterise many organisations. Organisations may also be viewed as integrated wholes and gestalts, and this implies that they develop an enduring and resilient form and shape.

The concept of "cultural momentum" describes how the ongoing behaviour and physical manifestations of the organisation reinforce the basic underlying assumptions and values. The latter are the prime determinants of the behaviour in the first place, and so the organisation perpetuates its current form and frame of reference. As a result, managers are not always able to shift the direction of the organisation by simply changing elements of the strategy. Firstly, it is usually difficult to translate the intended strategy into realised strategy where the assumptions and values - the organisational context - do not support the new strategy. Secondly, as the research findings show, organisational performance can be expected to deteriorate where the organisational context is inconsistent with the organisational strategy.

Consequently, a change in organisational strategy implies a concomitant shift in the overall organisational context. A major component of the organisational context is the underlying assumptions, values and beliefs held by organisational members, thus the people in the organisation hold the key to successful strategic change. In order to achieve successful strategic change, therefore, managers have to alter the organisational frame of reference through a process of revolutionary change. This involves the destruction of the current organisational gestalt and its replacement by another.

Revolutionary change, in the sense described in this dissertation, means a paradigm shift in which individual organisational members are given the opportunity to question the validity of their current assumptions and values, and to test the appropriateness of a new

set in the light of new circumstances. If managers wish to alter the strategic direction of the organisation in a significant way, the individuals must be given the chance to question and test their basic assumptions and values. Because the organisational strategy flows out of the underlying assumptions and values, it is the people who need to undergo change in order to accomplish strategic change.

Ensure That Key Manifestations are Consistent With Assumptions, Values and Beliefs

Organisational structures and control are manifestations of underlying assumptions and values. In the ideal state they may be seen as natural expressions of these invisible assumptions and values. Amongst the various symbols and manifestations of the organisation, they have possibly the highest profile and are the most visible to management who is seeking to exercise its influence over the organisation.

Because they are relatively amenable to change, and have such apparent importance in the management of the organisation, the organisational structure and control systems are relatively frequently changed. Often, these changes are made to cope with immediate issues and problems, and with little regard for the underlying assumptions and values.

Structures and control embody many implicit assumptions and values and it is important to ensure that these are consistent with the overall frame of reference shared by the organisation. Clearly, this implies that managers should be aware of:

- the assumptions and values making up the organisational frame of reference
- the assumptions and values embodied in various structural forms and control systems.

An understanding of the organisational assumptions and values comes about through ongoing discussion and negotiation and the continual articulation of the organisational vision. The vision simply becomes a vehicle for mobilising and communicating the set of underlying assumptions and values in a convenient, shorthand manner. By continually communicating the vision, management performs a powerful integrating function in developing the overall organisational frame of reference.

An understanding of the assumptions and values embodied in organisational structures and control comes from an analysis of their underlying dimensions and constituent components. Structure, for example, varies along the dimensions of complexity,

formalisation, centralisation and uncertainty. Positions along the four continua represent various benefits and costs to the organisation under different conditions, and so embody certain assumptions about what the organisation considers important. Control, on the other hand, may be described by the focus of control, the processes of the control and the overall style with which the control system is implemented. By focussing on behaviour or output, or by choosing a position along the direct-indirect control continuum, a number of assumptions are made about conditions in the organisation. In addition, these choices also reflect some of the important values held about the human resource in the organisation and how this is to be utilised.

By matching the sets of assumptions and values of the organisation on the one hand, and the structural and control manifestations on the other, the manager is able to ensure a high degree of internal consistency within the organisation. This, as revealed earlier, is a major determinant of organisational performance.

Suggestions For Future Research

Introduction

The theoretical framework and research findings suggest a number of potential research agendas. These may be grouped into two broad categories. The first concerns the methodology and research design. By improving and modifying certain aspects of this design, the extent of the generalisations may be improved. The second category includes those efforts to extend the scope of the organisational and strategic issues studied. Obviously, this research has had to limit its focus on certain aspects of organisation and strategy, and valuable information may be gained by widening the definitions and concepts. These issues are discussed below.

Improving the Methodology and Research Design

Despite the complexity of the hybrid research design, a number of aspects may be improved to impact upon the generalisability of the research findings. These are the sample design, the measure of "organisation", and the measure of organisational performance.

A More Representative Sample

Perhaps because of the somewhat onerous demands made on participating companies, only 37 agreed to cooperate for the final stages of the research. This represents some 18,7% of the original sample frame of 198. While this may be acceptable for a theory building exercise of the nature just undertaken, it does not constitute a large enough sample to make significant generalisations to the general population of South African business organisations. The possible bias in above-average performance companies and SBUs should not be overlooked, in the sense that this may also limit some of the generalisations.

A larger, and perhaps more representative, sample may enable more meaningful generalisations to be made. This may be further enhanced by considering companies not listed on the JSE. The benefits are obvious, and it will be interesting to note the effect on the findings if the sample is also representative of smaller organisations.

Thus, an important avenue for future research is to test the basic research propositions in a larger and more widely representative target population.

An Improved Measure of "Organisation"

As discussed in the previous chapter, the process of reducing and summarising the data on "organisation" resulted in a loss of some of its richness and complexity. In addition, the lack of opportunity to thoroughly test the questionnaire meant scores could not be meaningfully standardised. These two issues, while not necessarily compromising the nature of the findings and conclusions in this research, are worthy of additional attention in order to increase the scope of this overall research programme.

Further research into the construction of an appropriate measuring instrument of "organisation" may include the following elements:

- collection of data from a more representative sample of a broader target population in order to generate the initial concepts and themes. These should include personnel from all levels in the organisation.
- fleshing out these concepts and themes by way of semi-structured interviews and pilot questionnaires.

- reducing and summarising the data so produced by using sophisticated techniques of factor analysis to reveal a larger range of important underlying factors.
- producing a second set of pilot questionnaires to test the relative validity of the different factors.
- constructing a measuring instrument which includes a high proportion of these underlying factors, and which reflects the different degrees of importance and validity of the different factors.

It is believed that such an instrument may be capable of more valid and reliable measurement, as well as the classification, of "organisation" type. Furthermore, extensive use of the instrument may allow the development of a large data bank of scores and facilitate the subsequent standardisation of the scores. This, in turn, may further enhance the validity and reliability of the measuring instrument.

An Improved Measure of Organisational Performance

The discussion of the results in the previous chapter reveals the potential shortcomings of the measure of organisational performance. Clearly, the validity of this measure impacts greatly on the acceptance or rejection of the internal consistency-performance proposition.

An opportunity exists to utilise some of the findings from the ongoing programme into organisational effectiveness (OE). The OE programme has revealed a number of dimensions along which organisational performance may be measured. Furthermore, the point is made that a particular stance reflects much of the underlying system of values held by the measurer. By constructing a measuring instrument which measures the major dimensions of flexibility - control, means - ends and organisation focus - people focus, the performance and effectiveness of the organisation may be measured in a more comprehensive manner. Such an instrument would also have the added advantage of being able to be weighted in terms of the major criteria valued by the researcher (functionalist perspective) or by the organisational members (interpretive perspective). Alternatively, by combining the results from all the dimensions, an integrated and more comprehensive measure may be obtained.

A comprehensive measuring instrument would make a considerable contribution to widening the scope of this research programme. By testing the associations between flexibility - control, means - ends and organisation focus - people focus on the one hand,

and internal consistency on the other, a more complete understanding of organisations and their workings may be obtained. For example, it may be found that increased internal consistency is associated with control at the expense of flexibility. Alternatively, reduced internal consistency may be correlated with a people focus, but not with a very high organisational focus. In other words, certain dimensions of organisational performance may be shown to improve under conditions of internal consistency, while others may well be detrimentally affected.

An improved and more comprehensive measure of organisational performance may enable a more detailed and revealing exploration of the effects of the organisational frame of reference and internal consistency on organisational performance. This avenue of research is considered worthwhile, and one which may well add to the body of knowledge in this research area.

Extending the Scope of the Issues Studied

Further research may well extend the scope of some of the issues discussed in this dissertation. Firstly, the "strength" of the organisational context may be analysed. Secondly, the performance of the organisational archetypes in their strategic environments may be considered. Finally, the origins of these different archetypes may be explored.

Considering the "Strength" of the Culture

Throughout this dissertation, reference has been made to the ability of the organisational frame of reference to shape the strategic behaviour of the organisation. Indeed, earlier in this chapter, it was suggested that increasing the proportion of members who shared the organisational assumptions and values may assist in closing the gap between intended and realised strategy. This approach presupposes that ongoing socialisation, education and training will increase the "strength" of the organisational context in its ability to shape strategic behaviour.

The strength of the organisational frame of reference may be assumed to be a function of two dimensions:

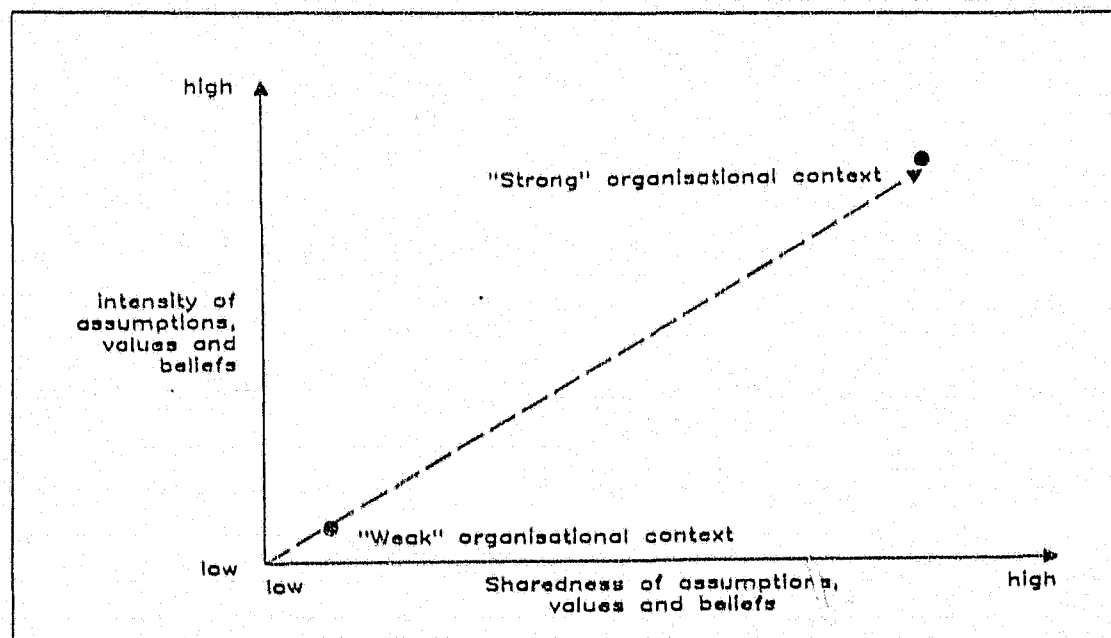


Figure 13.2: Strength of Organisational Context

Source: Adapted from: Robbins, S.P. Organisational Behaviour. Englewood Cliffs, N.J.: Prentice-Hall, 1986, p.433

The implications are that organisational performance will improve as the degree of sharedness and intensity of the assumptions and values increase. However, this particular relationship, as evidenced by Figure 13.2 above, has more than one component.

What is the impact on performance of high intensity and low sharedness? Or vice versa? How sensitive is organisational performance to different degrees of strength of the organisational context? The relationship between internal consistency and organisational performance may therefore be further explored from a number of different viewpoints.

Another factor associated with the strength and make-up of the organisational context relates to the typology of organisational and strategic archetypes. The nature of the underlying assumptions and values revealed for each of the four ideal types would indicate very different degrees of intensity and sharedness. How does the strength of the organisational context vary with organisation type? How do the dimensions of sharedness and intensity vary with organisation type? Research into these areas would greatly enhance the understanding of the four organisational forms.

Finally, the strength of the organisational context may be related to the size of the organisation and the locus of the analysis. How does the sharedness and intensity vary with organisations of different size? Does the organisational context decrease in strength

as the locus of measurement moves "down" the organisation? Does the organisational structure influence the degree of strength of the organisational context? A number of research directions are indicated here, both within and between organisations.

Operationalising the concept of the "strength" of the organisational context, and measuring it in the circumstances described above, may therefore be considered a viable and meaningful course of further research.

Considering the Organisational Archetypes in their Environments

Much support exists for the notion that organisational performance is largely dependent upon the manner in which the intended strategies are ultimately realised, rather than what these intended strategies are. Miles and Snow (1978, 1984), for example, quote evidence from both their own research and that of other researchers, to endorse this view. The findings in this research indicate that internal consistency is a major factor associated with organisational performance, and that matching the organisational context with the strategic intent assists in closing the gap between intended and realised strategies.

However, the four archetypal organisations produce internal consistency in different ways. The manner in which the organisational context shapes and spawns strategy differs between the various organisational forms. Are there factors inherent in this matching process which influence the organisational performance? Are there significant differences between the performance produced by a Hierarchical and a Developmental organisation? Or between a Rational and a Group organisation? By utilising a larger sample, as well as an improved measure of organisational performance, a more detailed analysis should be conducted into the performance characteristics of the various organisational archetypes.

Secondly, despite the view that the strategy implementation is more important than the strategy type in the determination of organisational performance, it remains worthwhile to examine the "appropriateness" of the different organisational archetypes in different environmental conditions. Much of the research in this area has tested the appropriateness of alternative strategies in given environmental conditions (see, for example, the PIMS (Buzzell, Gale and Sultan, 1975) findings), and it would be valuable to test these relationships in respect of complete organisational forms. Do certain organisational forms outperform others in given environmental conditions? Are certain organisational forms more commonly found in given environmental and industry conditions? These avenues of research would complement the pioneering work by

Thompson (1967), Lawrence and Lorsch (1967) and Lorsch and Allen (1973). In this respect, the research would augment the understanding of organisational structures and forms by adding the typology of strategic responses. In a sense, it would combine the milestone contributions of Lawrence and Lorsch (organisational forms) and Miles and Snow (strategic responses) into a coherent framework for the understanding of organisations and their strategies.

Analysing the Origins of the Different Organisational Forms

In the review of the literature, one of the perspectives used to describe cultures and organisations is the Interpretive perspective. In this approach the ongoing interaction between individuals produces a shared meaning and, ultimately, a shared frame of reference. In the research these shared frames of reference were developed to identify four generic forms of organisation. However, the question of the origins and determining factors of particular organisational forms has not yet been addressed.

From previous research, many clues exist as to the reasons for particular organisational forms and strategic responses. These reasons and determining factors include the history and experience of the organisation (Berger and Luckman, 1966), the conditions in the external environment (Burns and Stalker, 1961; Lawrence and Lorsch, 1967), the forces in the industry and competitive environment (Porter, 1980, 1985), the desired strategy of the organisation (Chandler, 1962) and the preferences of the organisation's founders and leaders (Schein, 1985).

Against this background of previous research, there is a need to establish the extent to which the above factors determine the four different archetypes. Do specific histories, leaders, industries and competitive forces give rise to different organisational forms? Do certain organisational experiences tend to produce a specific archetype? What are the links between founders/leaders and their organisations?

Research of this nature would contribute to the understanding of the various organisational forms, and would also give valuable insight into the nature of processes necessary to bring about organisational change.

Conclusions

Enhancements to the methodology and research design will have a positive impact on the generalisability of the findings. In the main, this will be achieved through broadening the sample base and improving the reliability and validity of the measuring instruments. This piece of research, in its own right, may thus be augmented.

By extending the scope of the research issues, however, an additional purpose will be served. The central notions and propositions advanced in this dissertation will be linked more closely with the existing literature. In this way, these notions and propositions will be enhanced and placed more completely in the context of the already formidable body of research on organisations and their strategies.

Appendix 1

Appendix 1

List of commonly used terms

Glossary of commonly used terms in the study of culture

Artifacts	Visible manifestations of the culture. These would include the ways and means of organising interpersonal behaviour (organisational structure), work flows (technology) and the various organisation symbols. Artifacts generally describe the culture's or organisation's constructed physical and social environment (Schein, 1985).
Assumptions	Assumptions represent beliefs that have achieved an extreme "taken-for-granted" status. They are generally unconscious and unquestioned by the individuals concerned. Assumptions reflect basic underlying beliefs about the nature of reality, and guide behaviour according to these. (See cognitive transformation.)
Attitudes	Attitudes reflect their set of understandings that individuals or group members have about a specific phenomenon or situation. Attitudes are composed of three elements, namely; an informational or knowledge component, an emotional or feeling component, and a behavioural component (Sathu, 1983).
Beliefs	Beliefs describe a sense of what "is". They describe relationships within the individual's sense of reality, and are generally based on experience. They usually guide the ends and means of organisations (Schein, 1985).
Cognitive transformation	The process whereby values are transformed into beliefs and assumptions. This occurs if the adherence or application of the value produces positive or desired results (or if the individual and/or group perceives it to produce a positive or desired result). As the values are shown to be "correct" and therefore to reflect reality, they are no longer doubted and begin to assume a taken-for-granted status. This marks their transition from values to beliefs. As the beliefs move into the unconscious, they assume the properties of assumptions (Schein, 1985).
Frame of reference	The standard or framework that serves as a reference point against which a particular phenomenon or property is judged. The assumptions, values and beliefs held about the nature of the world will form these reference points, and enable the individual to judge the specific phenomenon or property. A collective frame of reference refers to those standards or frameworks which are shared by members of a particular group.
Norms	Norms are the standards of expected behaviour, speech and "presentation of self". Values (and beliefs) will drive the norms in an organisation, but a distinction exists. While both have an "ought to" dimension, norms are more tactical and procedural than values (Sathu, 1983).

Appendix 1

Symbols	Symbols are any object, acts, events, qualities or relationships that serve as vehicles for conveying meaning. Generally, they achieve this by representing some other phenomenon. Examples would include calendar behaviour by managers (how they are seen to spend their time), which reports are emphasised, the agenda for meetings, physical settings of the organisation, public statements made by management and the nature of the staff organisation (Peters, 1978).
Values	Values describe a sense of what "ought" to be. They are generally based on convictions about the state of reality. They usually guide the ends and means of organisations (Schein, 1981). (See cognitive transformation.)

Appendix 2

**Letter to Chief Executives requesting their
participation in the research project**

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Graduate School of Business Administration

1 September 1985

Mr G Rutter
Otis Elevator Company
PO Box 2729
Johannesburg
2000

Dear Mr Rutter

We are writing to you to ask for your company's participation in a research project being conducted into the field of organisational culture and strategy. The study will focus on the relationships which exist between these variables, and the impact that they have on performance. We have enclosed a more detailed outline of the research and its objectives should you wish to read it.

The project consists of two stages. Stage 1 is a pilot stage which will involve a series of interviews and an in-company workshop. Participating companies will receive detailed findings and recommendations from this stage. Stage 2 involves the completion of a brief questionnaire by your senior management and yourself, and a follow-up discussion and interview. You may choose to participate in either of these two stages, or in both of them. We would obviously be grateful for as much participation as possible.

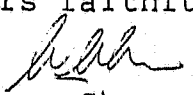
Complete confidentiality will be maintained, and neither you nor your company will be linked to the final conclusions in any way.

The project will be supervised by myself, and has the commitment and backing of the Wits Business School. I am a full-time member of the teaching faculty at the School, and would be happy to present the findings of the completed study to you and your management should you find them interesting.

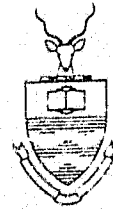
Because we are attempting to make the sample as representative as possible, we would appreciate your participation very much. If you are prepared to do so, please complete the enclosed reply-paid card and I will contact you to discuss your participation. In addition, if you would like to find out further details of the project, please contact me at the Wits Business School.

Thank you for your co-operation.

Yours faithfully,


Norman Chorn.

2 St David's Place
Parktown
2193 South Africa
Telegrams: Entark
☎ (011) 643-6641



Appendix 3

**Outline of research project sent to Chief
Executives**

RESEARCH PROJECT ON THE RELATIONSHIP BETWEEN
STRATEGY AND CULTURE IN ORGANISATIONS

Overview of Research:

This research has emerged out of a realisation of the growing importance of the so-called "soft side" of management; namely the contribution made by the organisation's human resources.

Although few managers have to be reminded of this, it is not always possible to get basic agreement on the management practices that can harness the potential of these resources in organisations. As we begin to understand the differences between the formulation and implementation of organisational strategy, the role of the organisation's culture becomes more apparent. In particular, the relationship which exists between the organisation's strategy and culture can be seen to have a profound effect on the performance of the company.

Clearly, certain combinations of culture and strategy are better suited to given strategic conditions than others. In other words, certain combinations produce superior economic performance.

The relationship between strategy and culture may be viewed in two distinct ways:

- a) Where strategy and culture are treated as variables within the organisation. In this case, they should be aligned in such a way as to create an optimal "fit". This will produce the important synergy within the organisation which in turn leads to improved economic performance.
- b) Where the culture produces a "frame of reference" for the strategic process, and thus has a major effect on the nature of the decision making and implementation processes. This, in turn, has great significance for the role of the CEO, particularly where change has to be introduced.

Methodology:

The project has approached 198 companies on the J.S.E. for their participation. In each case, information will be gathered according to the two stages mentioned in the introductory letter.

Stage 1 is the initial information gathering phase in the project where the research will attempt to identify the factors that management believe are important in the definition of the organisation's culture and strategy. During stage 2, this information will be used to identify the particular relationships that exist between the strategies and cultures of the participating companies. This information will be fed back to the participating companies at various stages, and the option exists for an individual company to have an in-company workshop where these findings and recommendations are presented.

Conclusions:

The research hopes to achieve a better understanding of the relationships between strategies and cultures, and how these influence the overall functioning of the organisation. This should lead to additional insights for the CEO who is concerned with improved organisational effectiveness, as well as better management of the change process.

Appendix 4

Reply-card for participating companies

We agree to participate in the "Strategy, Structure and Culture" research project. Please arrange to have the questionnaires sent to us.

Company Name:

Postal Address:

.....

.....

Person to contact:

Designation:

Telephone No.:

NORMAN CHORN,
UNIVERSITY OF THE WITWATERSRAND,
GRADUATE SCHOOL OF BUSINESS ADMINISTRATION,
P.O. BOX 31170,
BRAAMFONTEIN,
2017

Appendix 5

**List of publications and subject areas used in
the content analysis**

LIST OF PUBLICATIONS CONSULTED
FOR CONTENT ANALYSIS

Business Day
Rapport
Sunday Times
Sunday Tribune
Financial Mail
Pretoria News
Rand Daily Mail
Volksblad
The Star
The Sowetan
The Weekend Post
Sunday Express
The Citizen
Die Vaderland
Finance Week
City Press
The Argus
The Cape Times
Die Burger
The Friend
The Weekend Argus
The Sunday Tribune
The Natal Mercury
Finansies & Tegniek
The Herald
Die Beeld
Die Transvaler
Die Landbou Weekblad
Diamond Fields Advertiser
Volkshandel
The Evening Post
The Natal Witness
The Sunday Star

LIST OF TOPICS COVERED BY THE CONTENT ANALYSIS

(Note that these are the subject areas used by the
"Institute of Contemporary History" at the
University of the Orange Free State)

Names of participating companies, plus:

Directors
Management
Change
Productivity
Organising
Projects
Markets
Investments
Corporate philosophy
Product development
Shareholders
Labour
Negotiations
Strikes
Personalities
Employee benefits

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INSTITUUT VIR EETYSOSE GESKIEDENIS

Die Universiteit van die Oranje-Vrystaat



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01 11 9

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LABOUR DISPUTES

Highveld conflict

The wage dispute between two metal unions and the Highveld Steel and Vanadium Corporation led to a three-hour work stoppage on Wednesday after two meetings between the parties in the past week ended in deadlock.

According to union sources, workers at Highveld's five plants in Witbank failed to clock in as usual in the morning and began working only at 10am. This followed a mass meeting of workers on Tuesday night at which they "expressed great dissatisfaction with the company's attitude."

Highveld, a subsidiary of the Anglo American Corporation, is a member of the Steel and Engineering Industries Federation of SA (Seifsa). However, it has an "in-house" wage agreement which is negotiated outside the metal industry industrial council.

Tensions have been building up in the company's plants ever since the Metal and Allied Workers' Union (Mawu) and the SA Boilermakers' Society declared a dispute over this year's wage negotiations. A conciliation board subsequently failed to resolve the dispute. This opened the way for the union to call a legal strike.

In August, Mawu and the Boilermakers conducted an historic joint ballot to determine whether the workers wanted to strike. It was the first time that an emerging, mainly black, union had undertaken such action with a long established union. More than 91% of Mawu's members and almost 70% of the Boilermakers' membership voted to strike.

The two unions also conducted an unofficial poll in which nearly half the workers, who belong to neither union, also expressed support for strike action. A number of these workers belong to the conservative Amalgamated Engineering Union, Mineworkers' Union and the SA Iron, Steel and Allied Industries Union which restrict their membership to whites. Overall, 70% of the 5 000-strong workforce at Highveld Steel's four plants and its Mapoch mine at Witbank registered "yes" votes.

Despite the poll, however, negotiations between Mawu, the Boilermakers and the company were re-opened in a effort to avert the strike. Two meetings have been held since the poll. At both, the company refused to budge from its offer of 7%-13% increases. These are equivalent to the increases contained in the agreement negotiated at the metal industry industrial

council earlier this year, which both Mawu and the Boilermakers refused to sign.

After Friday's meeting, Mawu accused the company of failing to bargain in good faith and suggested that this could constitute an unfair labour practice.

In a statement issued this week Mawu said the company "was determined to provoke conflict." It said that management's refusal was aimed at preventing plant level negotiations. According to the union, Highveld chairman Les Boyd said the company would consider going back into the main industrial council agreement as there was no longer any reason for an "in-house" agreement.

Boilermakers' general secretary Ike van der Watt told the F.M. he hoped the stoppage would bring management back to the negotiating table.

Highveld director Reg Callanan described the stoppage as a "little disturbance," and subsequently declined to comment.

The dispute has developed into a major test of strength between the two unions and the company and could have important implications for the future of "in-house" wage agreements in the metal industry.

TREFWOOF

- 1 *Highveld*
- 2 *Boilermakers*
- 3 *Seifsa*
- 4 *Anglo American*
- 5 *SA Iron, Steel and Allied Industries Union*
- 6 *Amalgamated Engineering Union*
- 7 *Mineworkers' Union*
- 8 *SA Boilermakers' Society*
- 9 *Mawu*
- 10 *Highveld Steel and Vanadium Corporation*

Author Chorn N H

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