

plot of SPEC vs AOS and divided into quadrants by inspection, taking into account natural clusters and the median of the data.

- c) Discriminant analysis is then applied to the data by constructing a SAS data set with the following variables

IDEN - a variable that identifies the SBU

AOS - the advantages of scale rating described above

SPEC - the industry specific rating described above

QUAD - a variable with integer values ranging from 1 to 4 depending on to which quadrant the SBU is initially assigned.

(Later the variables MKTSH (market share) and ROI will have to be added to the data set to facilitate correlation analysis.)

- d) The discriminant analysis is then done using the SAS procedure "Proc Discrim" with Class = QUAD, ID = IDEN, Var =

IS, AOS. It would also be necessary to specify an output data set to capture the posterior probabilities of the observation being correctly assigned. If some observations were unassigned initially (due to being too close to a border) then these can be classified by using the "Testdata" option and adding the observations.

- e) Finally regression analysis can be done using "Proc Reg" and the slopes of the regression lines compared using a t-test.

8.5 TEST OF QUESTIONNAIRE

The only relevant test of the questionnaire and the research methodology is to apply the questionnaire to a sample for which the relevant information is known. In this case, the only such sample is from the businesses in the same industry as the SBUs in the initial study, discussed in chapter 6.

The initial study was done on SBUs in the paper industry and came to the following main conclusions (Chapter 6 section 6.5):

- a) Efficiency of storing and stock holding is a key success factor.
- b) Advantages of scale is important.

- c) The ability to succeed in the KSF is dependent on resources which are specific to the industry.

To test the methodology a questionnaire similar to the one in Appendix VII was applied to 5 businesses in the same industry as those in the pilot study. The results were as follows:

Identified similar KSFs	:	100% of business
Average AOS scored	:	80%
Average SPEC scored	:	53,4%

The average score for SPEC is perhaps lower than desired, but in the view of the researcher, this accurately represents the views of management in the industry. The fact that the resources required to succeed in the KSF are specific to the industry is not widely appreciated by managers in the industry. Therefore the lower score for IS reflects not so much a weakness in the research methodology, but a slight difference in perception between the managers of the industry and the results of the initial study. In all other respects the research methodology produced results that would have been expected from the initial study. Although this is clearly not a rigorous statistical test of the methodology it is the only test possible under the circumstances and has produced results which show that in one industry at least, it worked adequately.

CHAPTER 9 ANALYSIS OF RESULTS

9.1 INTRODUCTION

The application of the questionnaire to the target SBUs presented problems of three types.

1. Some SBUs had been sold to other holding companies and could not be traced. (9 SBUs)
2. Some SBUs had been closed down. (7 SBUs)
3. Some SBUs existed in their original form but refused to be interviewed. (15 SBUs)

The net result was that 59 out of a possible 90 SBUs were interviewed and the results used in the analysis below. Appendix VIII includes a list of the key success factors (KSFs) that were identified by the managers in the interview. In most cases, the person interviewed was either the CEO or a person reporting to the CEO. (In some cases the person interviewed was the chairman or CEO's boss.) Where this was not possible, head office strategic planners or industry analysts were used.

CEOs	38
2ICs	11
Other	8
Chairman	2
Total	59

Table 9.1 - Breakdown of respondents

The field work took approximately 9 months to complete.

9.2 INITIAL ANALYSIS

The raw data was first inspected graphically for obvious clusters or groupings. Figure 9.1 shows the plot of the two new variables measured by the questionnaire viz Advantage of Scale (AOS) and Specificity (SPEC). In both cases the scores shown are the weighted average scores for each key success factor (KSF) that was identified (a full description of the method is given in Chapter 8).

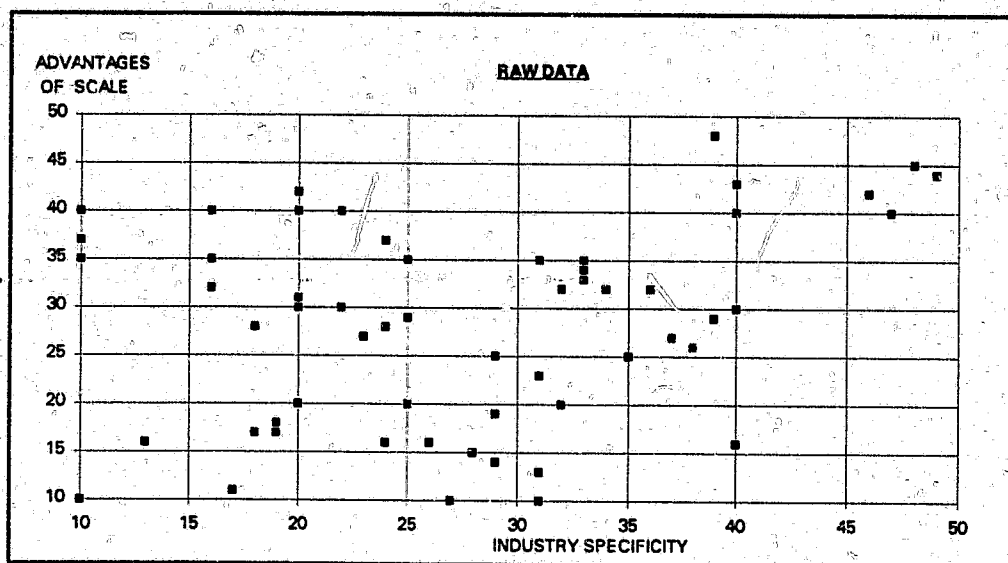


Fig 9.1
Advantage of scale vs specificity : raw data

Firstly, a crude division of the data into quadrants was done by using the mid-point of the scale. By inspection of figure 9.1 the following points were noted:

1. There is a reasonably even spread of the data

over the two variables under consideration. Except for quadrant 3 each quadrant has some points close to its extreme edges.

2. The number of points in each quadrant range from 9 to 21 (see table 9.2).

AOS	HI	Quad 1 N = 14	Quad 2 N = 15
	LO	Quad 4 N = 21	Quad 3 N = 9
		LO	HI
		SPEC	

Table 9.2
Number of observations in each quadrant

A regression analysis was done on each quadrant to test whether the hypotheses proposed in chapter 7 were supported by the data. For convenience of testing, the hypotheses were restated in a slightly different (but equivalent) form as shown below.

- i) There is a positive correlation between market share and profitability in quadrant 2.
- ii) The slope of the regression line is greatest in quadrant 2.
- iii) There is no statistically significant correlation between market share and

profitability in quadrants 3 and 4.

- iv) The strength of the correlation between market share and profitability declines in the following order:

Quad 2 - strongest

Quad 1

Quad 3 & 4 - weakest (zero)

In order to apply statistical methods to the testing procedure the hypotheses were interpreted as follows:

- 1) A student t-test (H_0 : slope = 0) applied to the slope of the line in quad 2 will be rejected at the 5% level.

- 2) (weak) The slopes for the regression lines in the quadrants will be calculated and directly compared and ranked.

- 2) (strong) The slopes for the regression lines will be calculated and the 95% confidence interval for the slopes calculated and the intervals compared, and will not overlap.

- 3) (a) A student t-test (H_0 : slope = 0) will be accepted for quad 3.

- (b) r^2 will be low (less than 0,2) for quad 3.

- 4) r^2 will be calculated for each quadrant and will decline in the following order:

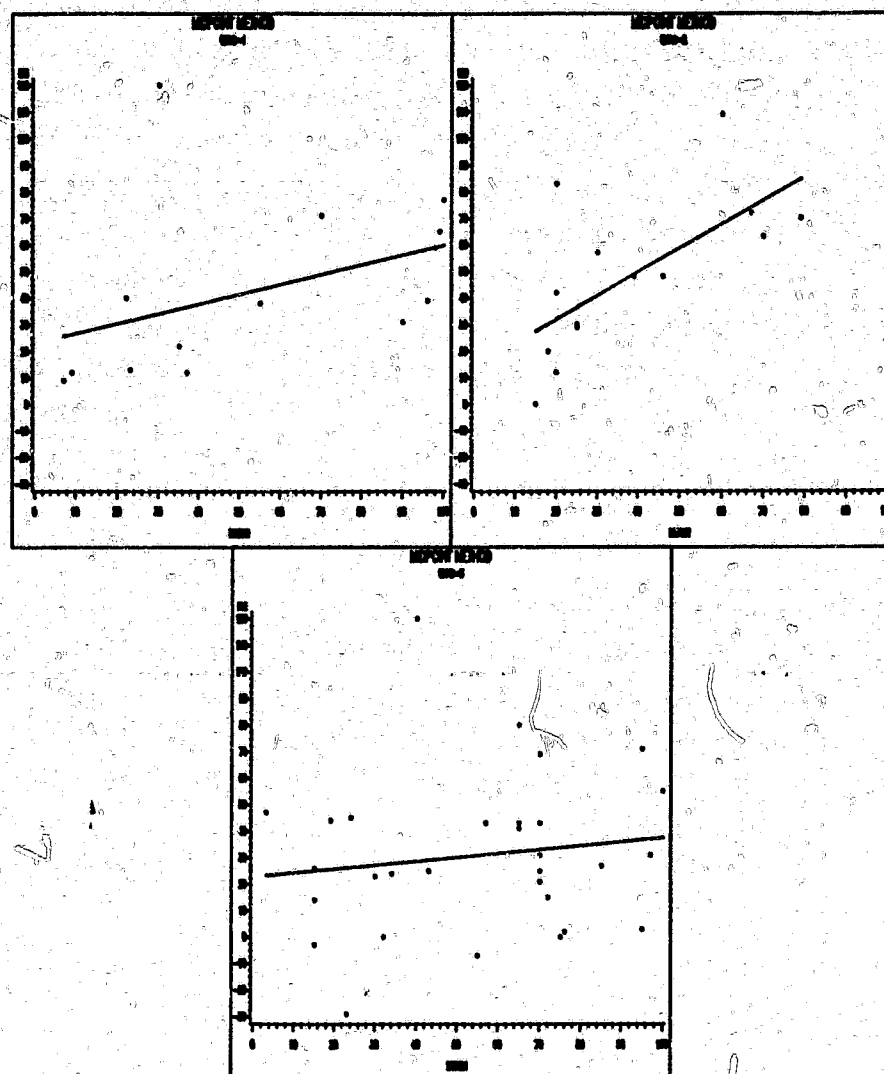
Quad 2 - highest
Quad 1
Quad 3 & 4 - lowest
(less than 0,2)

The major problem in analysing the data is the low number of data points in each quadrant (especially quad 3 where there were only 9 points). It was therefore decided to combine quadrants 3 and 4 into one quadrant (3') and to do the analysis on the basis of 3 "quadrants" i.e.

Quad 1 N = 14	Quad 2 N = 15
Quad 3' N = 30	

Table 9.3 - Revised Quadrants

By doing this, the problem of too few data points in each quadrant is somewhat alleviated, and there is no loss of power of the test since the hypotheses always group quadrants 3 and 4 together. The regression analysis was therefore done using 3 quadrants (hereafter referred to simply as quads 1, 2 and 3) and the results are graphically presented in fig 9.2.



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Fig 9.2
Regression analysis using scale
mid-points to define quadrants

9.3 ASSIGNMENT OF OBSERVATIONS INTO QUADRANTS

The method used to define the groupings of observations into "quadrants" is not theoretically obvious nor is it trivial. A number of methods suggest themselves but there is no clear cut theoretical justification for using any method over any other method. The methods for which a sound theoretical justification exists are described below and, for the sake of rigour, it was decided that the regression analysis should be done for all methods.

9.3.1 Scale mid-point

This is the method that was used in the initial analysis in section 9.2 and is justified on the basis that it represents an absolute measure based on the question put to the respondent and his/her response on a Likert scale.

9.3.2 Median

A refinement on the above method is to split the data into 4 groups based on the median of each of the two variables (Advantage of scale (AOS) and Specificity (SPEC)). The basic justification of this approach is that since there is no reason to assume otherwise the data may be assumed to be randomly spread across the two variables. It is therefore

reasonable to suppose that 50% of the data would be "high" and 50% "low".

9.3.3 Cluster analysis

Cluster analysis is a widely used (Dess & Davis (1984), Galbraith & Schendel (1983), Hambrick (1983), Woo & Cooper (1981)) and well accepted method of categorizing observations based on naturally occurring groupings. The basic assumption is that the data can be divided into discrete groups based on the value of the clustering variables (AOS and SPEC). Before proceeding with the analysis the clustering variables were standardised to avoid domination by any single variable. The number of clusters was set at 3 which effectively forces the analytic method to assign the observations into 3 groups, but does not specify any other attribute that the groupings should have (eg. number of observations per group).

9.3.4 Discriminant function analysis

Discriminant function analysis is ideally suited to the task of assigning observations into pre-defined groupings. The analysis is normally split into two parts.

Firstly, a data set of observations with known groupings is analyzed and in doing so the attributes of the groupings in terms of the other variables are defined. Then, a second data set can be analyzed and the discriminant analysis will assign the observations of the second data set into one of the groupings defined by the first data set. In our case, the applicability of discriminant analysis is severely restricted by the absence of the first data set which defines the groupings. To alleviate this problem the data was split into two data sets as shown in figure 9.3

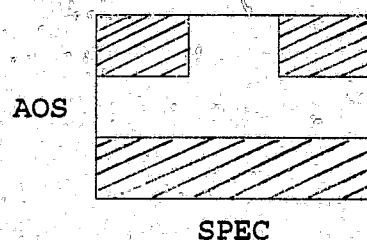


Figure 9.3A

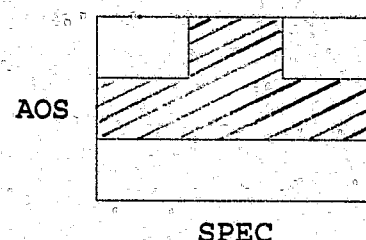


Figure 9.3B

Fig 9.3 A & B : Conceptual Example of Split Data for Discriminant Function Analysis

The data set represented by the shaded area in figure 9.3A was used as the initial data set to define the quadrants. Then the data set represented by the shaded area in figure 9.3B was assigned to the quadrants using discriminant function analysis.

9.4 RESULTS

The results of the analysis are summarised below for the various hypotheses.

9.4.1 Hypothesis H1

The hypothesis H_0 : Slope = 0 was tested with a t-test and the probability that the correlation is due to a random process for quad 2 is given below for the different methods.

Method	Probability
Midpoint	0,007
Median	0,004
Cluster	0,044
Discriminant	0,002

Table 9.4 - Quad 2 : t-test Probability

Clearly with all methods of group definition the hypothesis H_0 : Slope = 0 can be rejected at the 5% level for quad 2.

9.4.2 Hypothesis H2(weak)

The slope of the regression lines for the three quadrants are given in table 9.5. The rank order for the slope is given in table 9.6.

	Midpoint	Median	Cluster	Discriminant
Quad 1	0,368	0,386	0,298	0,143
2	0,893	0,862	0,497	0,605
3	0,147	0,099	-0,050	0,075

Table 9.5 - Slope of correlation line

	Midpoint	Median	Cluster	Discriminant
Quad 1	2	2	2	2
2	1	1	1	1
3	3	3	3	3

Table 9.6 - Rank order of slope

An analysis of the stronger form of this hypothesis is given in Appendix IX.

9.4.3 Hypothesis H3(a)

For quadrant 3 the probability of the correlation being random in nature is given by table 9.7.

Method	Probability
Midpoint	0,462
Median	0,608
Cluster	0,846
Discriminant	0,715

Table 9.7 - Quad 3 : T-test Probability

9.4.3 Hypothesis H3(b)

For quadrant 3 the value of r^2 , the correlation coefficient is given in table 9.8.

	Midpoint	Median	Cluster	Discriminant
Quad 1	0,172	0,174	0,110	0,023
2	0,445	0,461	0,219	0,425
3	0,019	0,010	0,002	0,006

Table 9.8 - r^2 Correlation Coefficient

9.4.4 Hypothesis H4

The rank order of the r-squared is given in Table 9.9

	Midpoint	Median	Cluster	Discriminant
Quad 1	2	2	2	2
2	1	1	1	1
3	3	3	3	3

Table 9.9 Rank Order of r^2

1. The classification of the data into quadrants using the various methods is shown graphically in figures 9.4 through to 9.7. The regression analyses of market share and profitability for the various categorisation methods are shown graphically in figures 9.8 through to 9.11. Although these figures are difficult to read they have the advantage that all 3 quadrants are plotted the same size, using the same scale and all on the same page. This allows a visual comparison to be easily and accurately made. Larger scale (readable) individual graphs are presented in Appendix IX along with other analytical detail.

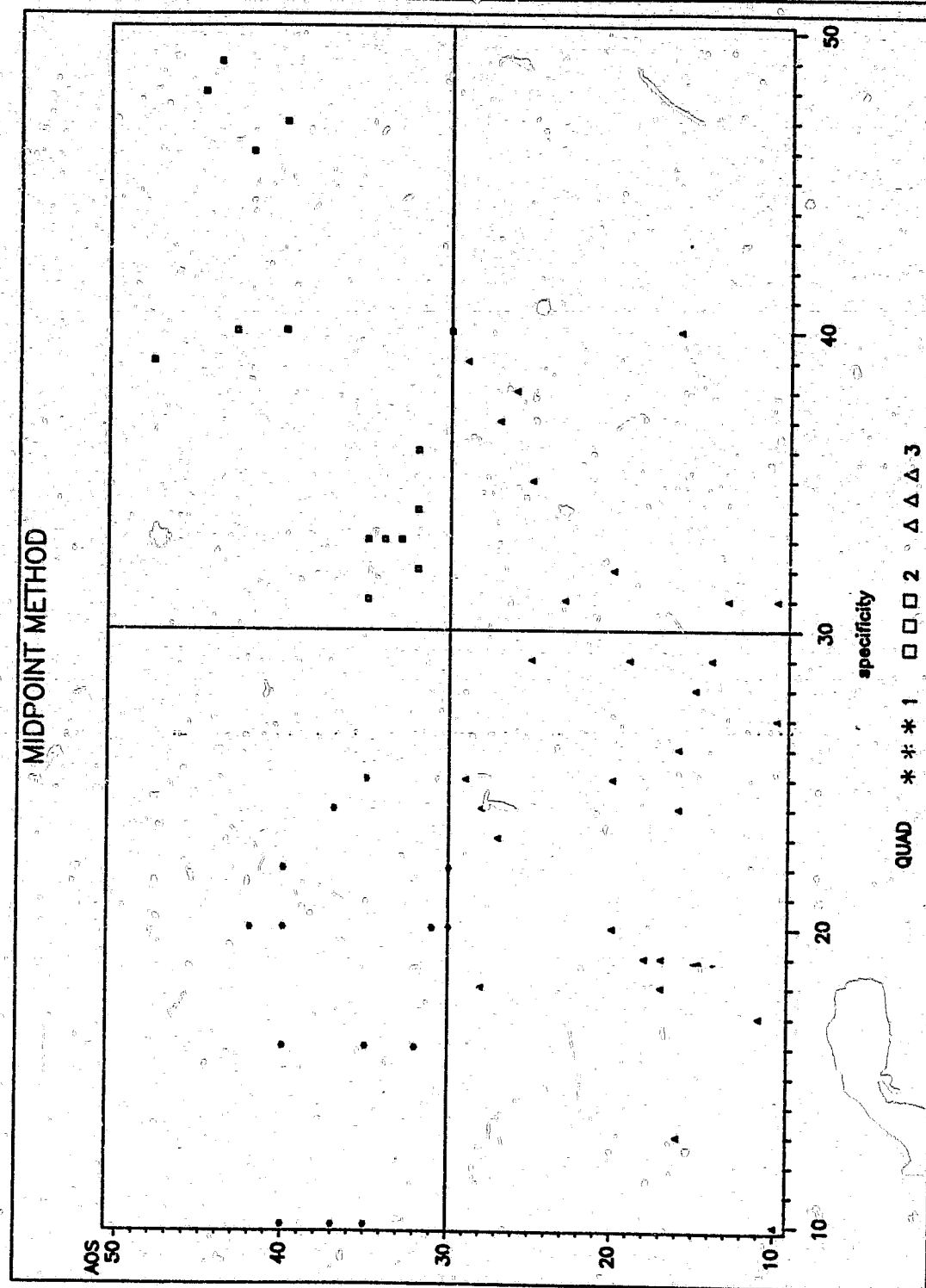
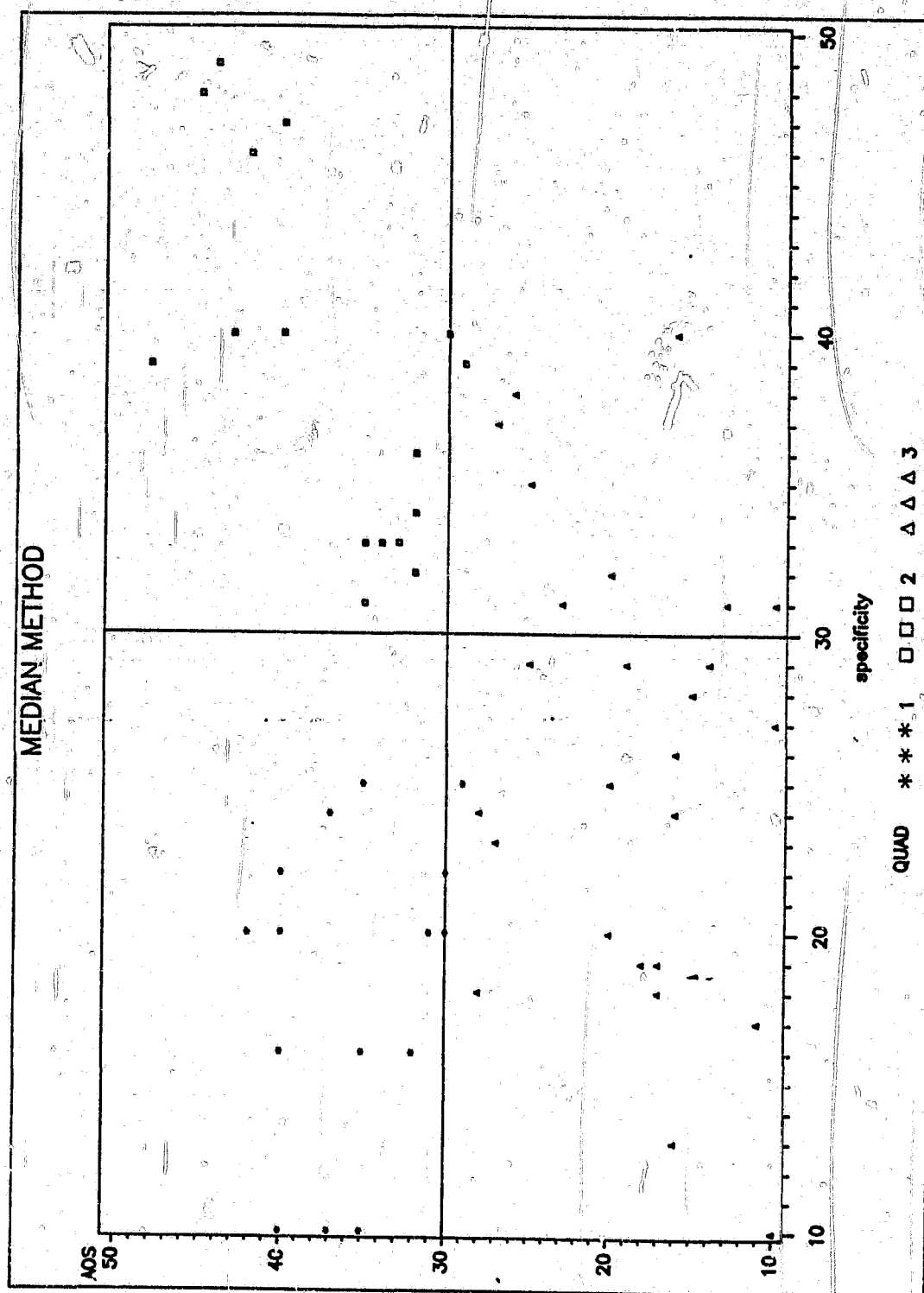
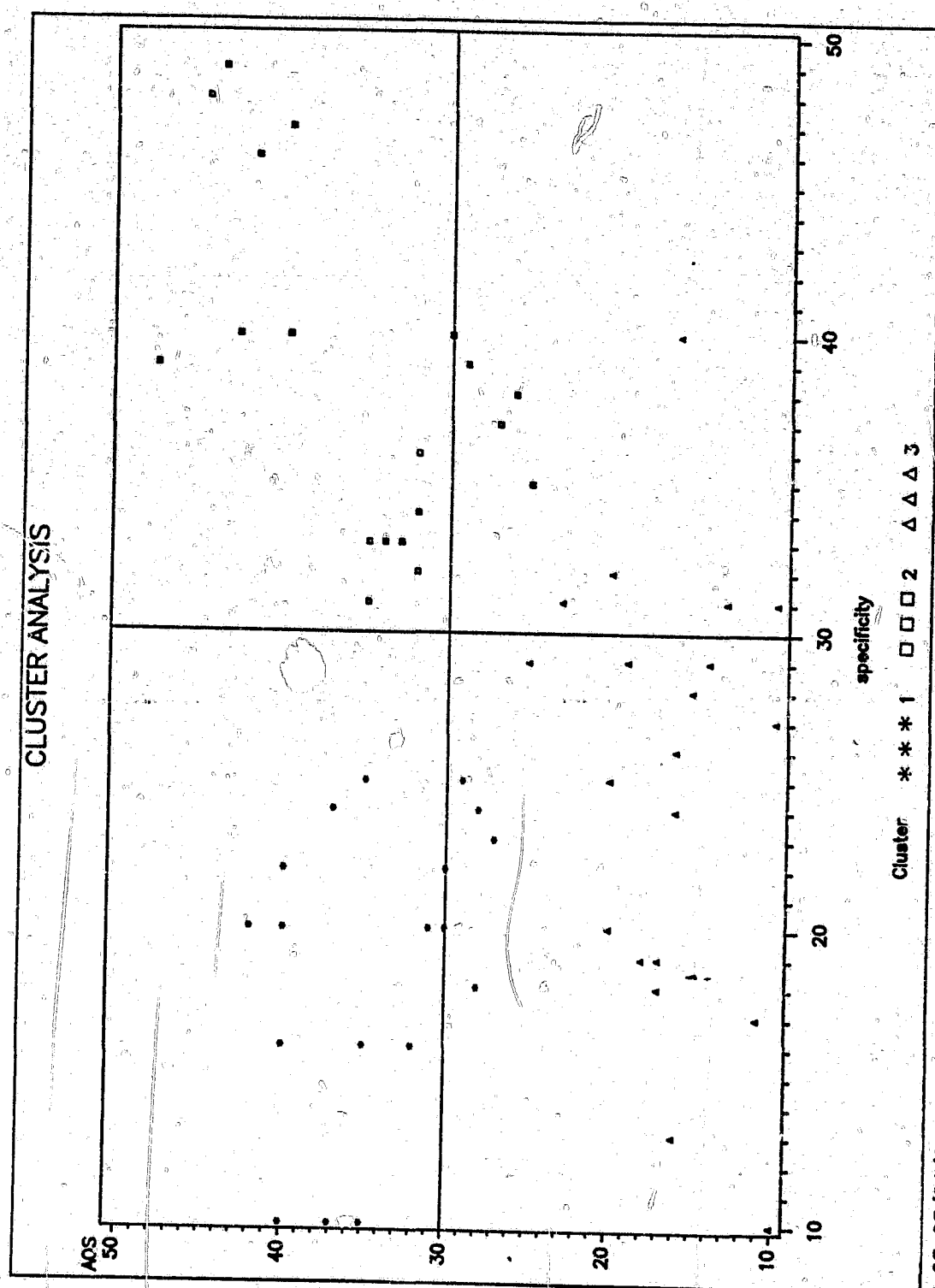


Fig 9.4 Categorisation : Midpoint Method



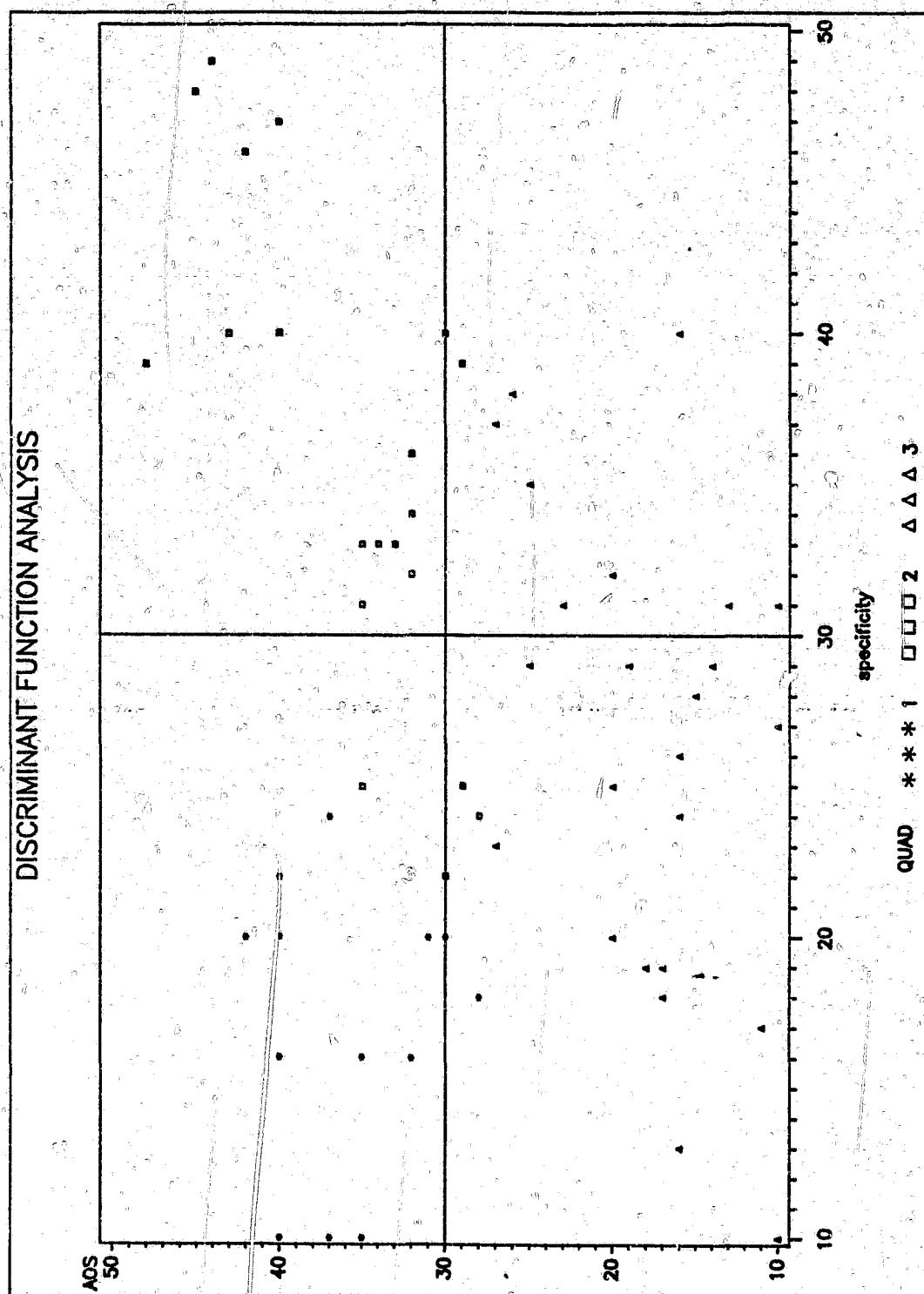
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Fig 9.5 Categorisation : Median Method



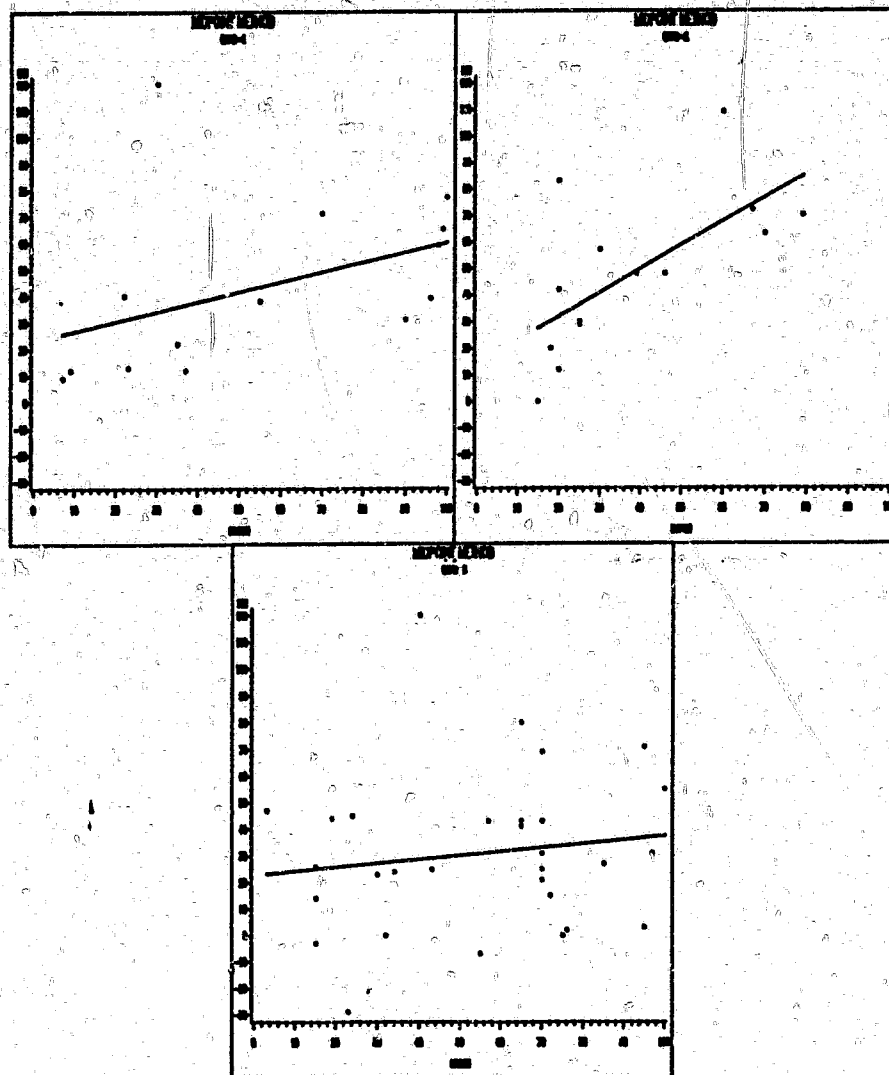
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Fig 9.6 Categorisation : Cluster Method



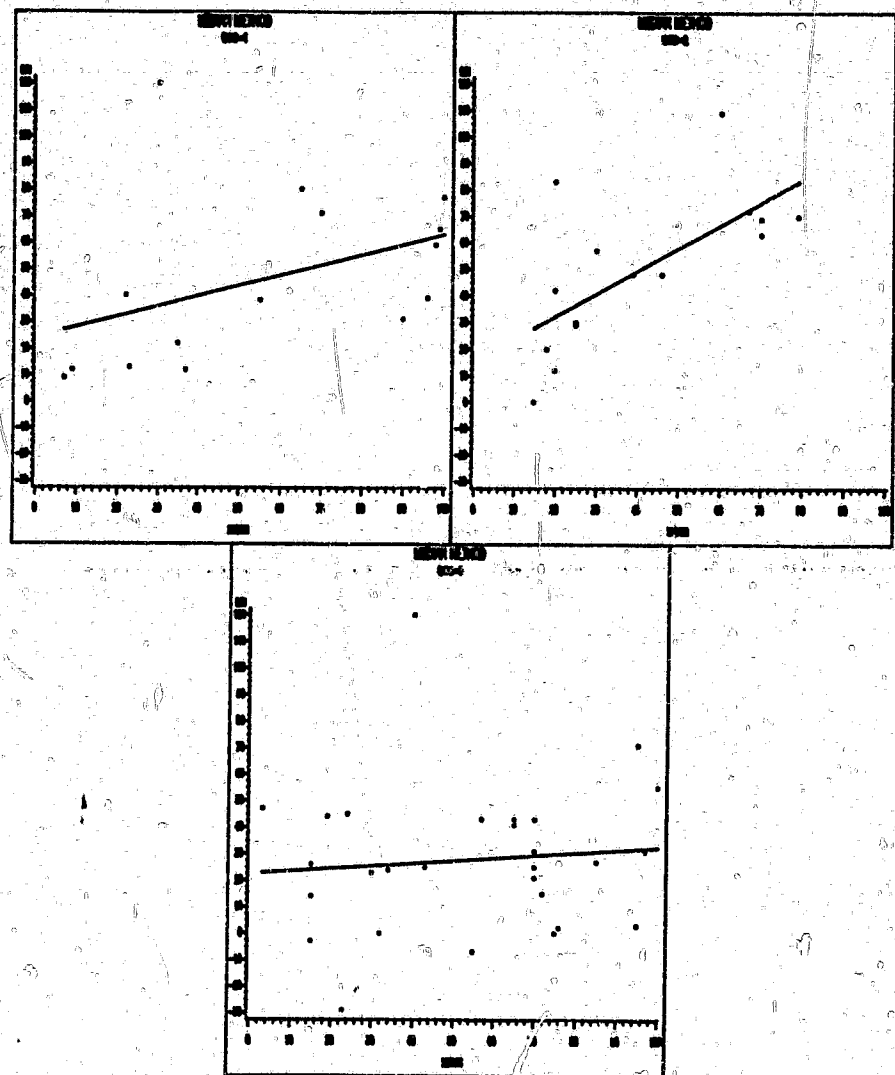
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Fig 9.7 Categorisation : Discriminant Function Method



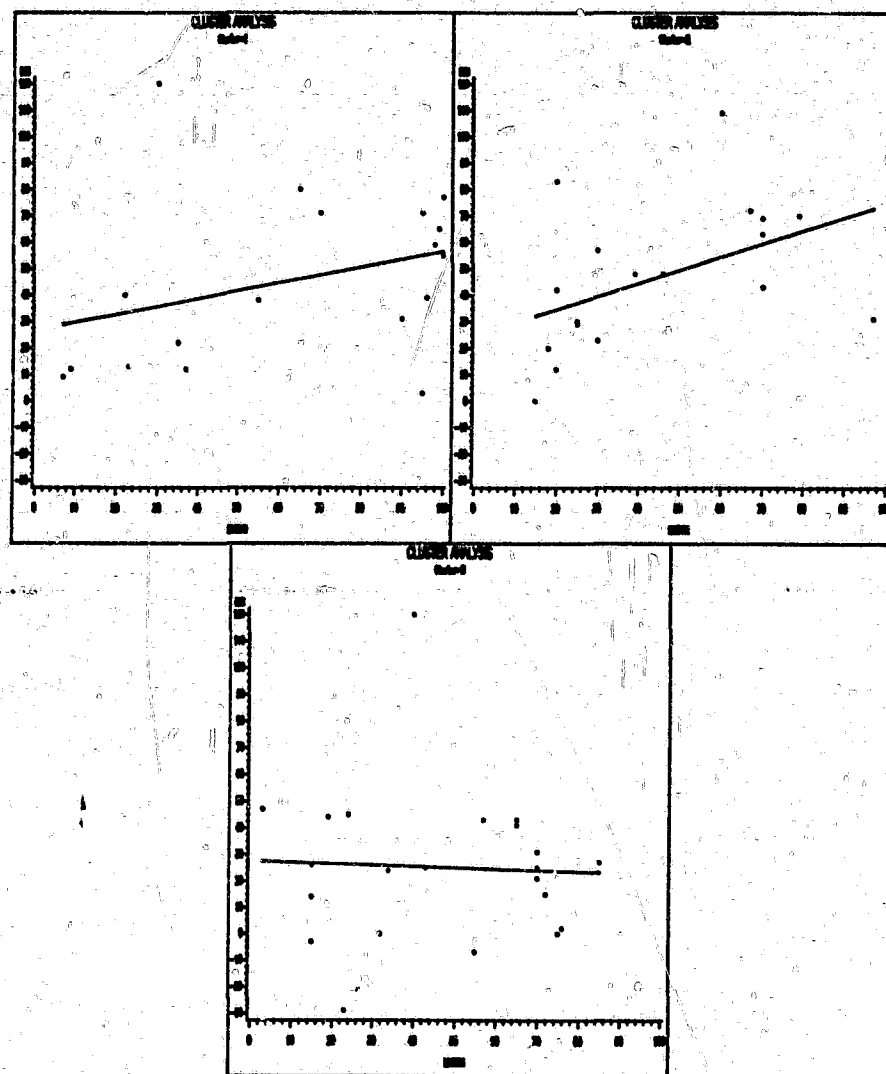
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Fig 9.8 Regression of Market Share and Profitability
Midpoint categorisation



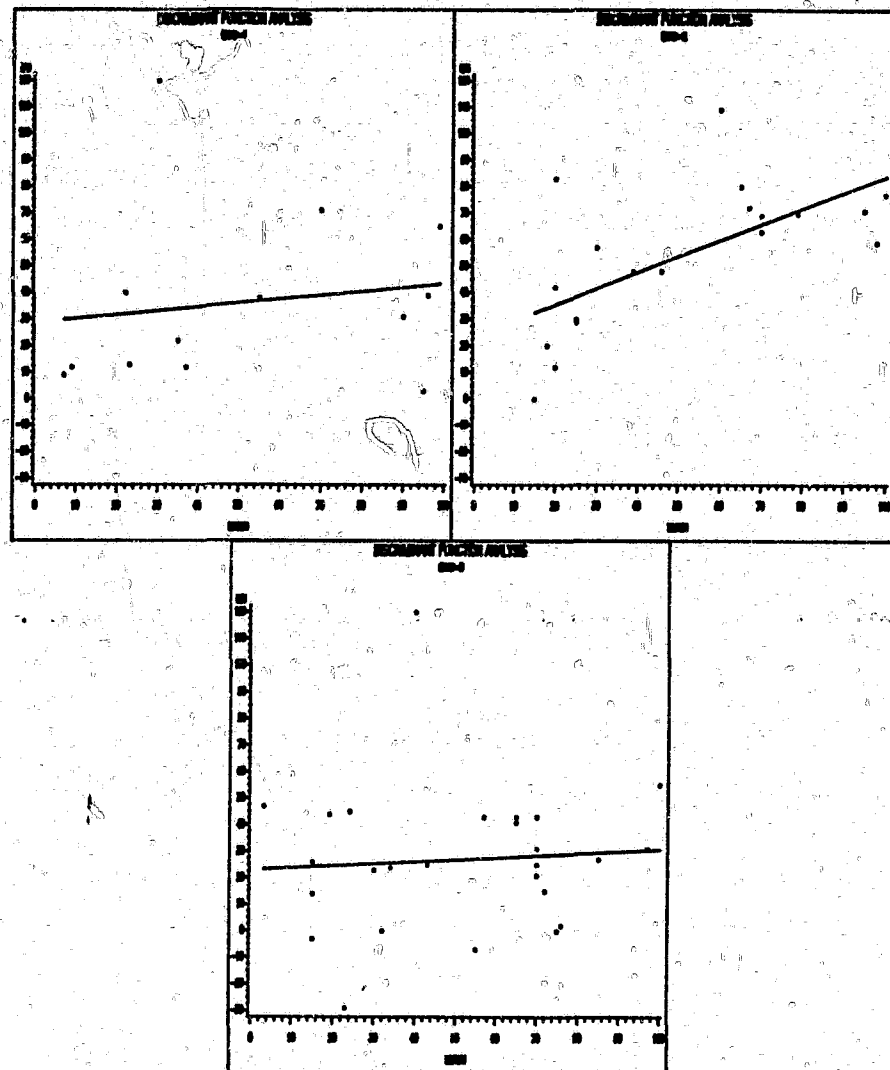
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Fig 9.9 Regression of Market Share and Profitability :
Median categorisation



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Fig 9.10 Regression of Market Share and Profitability :
Cluster categorisation



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Fig 9.11 Regression of Market Share and Profitability :
Discriminant Function Categorisation

9.5 DISCUSSION

The method used for assigning observations to groups clearly makes a difference to the correlation being measured. Inspection of tables 9.5 and 9.8 shows how the parameters vary dependent on the method used. Probably the most significant reason for this apparently large variation in the parameters is the low number of observations in each quadrant. (See Table 9.10.)

	Midpoint	Median	Cluster	Discriminant
Quad 1	14	15	18	13
2	15	16	19	20
3	30	28	22	26

Table 9.10
Number of observations in each group

The regression in quadrants 1 and 2 have between 13 and 20 observations, depending on the method used.

With these small numbers the addition of a single point can make a substantial difference to the correlation coefficient.

9.6 CONCLUSION ON TESTING OF HYPOTHESES

From the foregoing results the following conclusions can be drawn:

- H1 The student t-test scores in Table 9.4 clearly indicates that H_0 (slope = 0) can be rejected at the 5% level for all categorisation methods.

H2 Table 9.6 shows that the rank order of the slope of the regression line is highest in quad 2 and lowest in quad 3 as predicted by the theory. (The strong form of this hypothesis - that the 95% confidence limits would not overlap - was not supported due to the power of the methodology being insufficient. See Appendix IX for details).

H3a Table 9.7 shows that H_0 (slope = 0) cannot be rejected as predicted.

H3b Table 9.8 shows r^2 of less than 0.020.

H3 Table 9.9 clearly shows the value of r^2 declines in the predicted order.

All the above hypotheses can therefore be accepted except for the strong form of H2 which is not conclusively supported due to lack of power of the methodology. However, within the power of the methodology, all the hypotheses are supported.

CHAPTER 10 DISCUSSION

10.1 INTRODUCTION

In chapter 9 the hypotheses developed as part of the generalized theory were tested and found to support the theory. This chapter discusses the theory in more depth and relates it to other theoretical concepts.

10.2 EXTENSION OF THEORY

Since the theory as proposed in chapter 6 has been proved, some logical extensions can be made which add colour and depth to the framework.

Firstly, the observation can be made that the concept of Strategic Business Units (SBUs) can only be used in industries with a high degree of specificity. This observation applies equally to Industrial Organisation (IO) theory which assumes that the industry is the appropriate unit of analysis. The results of the research show (Table 9.2) that 24 out of 59 (41%) of the businesses interviewed were high on industry specificity while the remaining 59% were low. This implies that in more than half the cases in this sample, strategic planning done on SBU level would not have been appropriate. Furthermore, in the 59% of businesses low on specificity the relationship between market share and profitability would not be expected to

follow the usual correlation because the market share being measured may bear no resemblance to the relative size of the organisation at the decisive point. Therefore, in terms of strategic planning concepts the categorisation shown in figure 10.1 is appropriate.

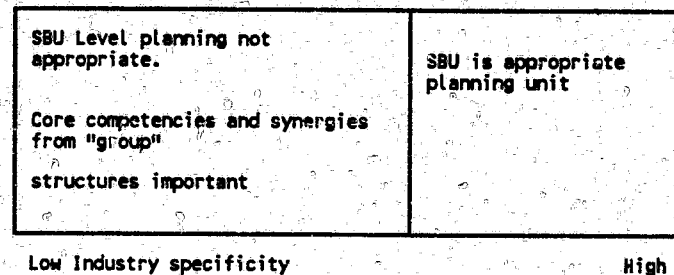


Fig 10.1 Appropriate Strategic Planning Unit

As shown in fig 10.1, SBUs are not appropriate in open industries where key success factors are shared with other industries and SBUs. A most striking example of a corporation with SBUs in these types of industries is Cannon, as cited by Prahalad and Hamel (1990). Fig 10.2 gives an illustration of the number of SBUs sharing similar key success factors.

Core Competencies at Canon			
	Precision Mechanics	Fine Optics	Micro-electronics
Basic camera	■	■	
Compact fashion camera	■	■	
Electronic camera	■	■	
EOS autofocus camera	■	■	■
Video still camera	■	■	■
Laser beam printer	■	■	■
Color video printer	■		■
Bubble jet printer	■		■
Basic fax	■		■
Laser fax	■		■
Calculator			■
Plain paper copier	■	■	■
Battery PPC	■	■	■
Color copier	■	■	■
Laser copier	■	■	■
Color laser copier	■	■	■
NAVI	■	■	■
Still video system	■	■	■
Laser imager	■	■	■
Cell analyzer	■	■	■
Mask aligners	■		■
Stepper aligners	■		■
Excimer laser aligners	■	■	■

Every Canon product is the result of at least one core competency.

Fig 10.2 Shared competencies
(Source: Prahalad and Hamel, 1990, p90)

As pointed out by Prahalad & Hamel under these conditions strategic planning in SBUs is not appropriate and the concept of core competencies is recommended.

Secondly, it is interesting to note that advantages of scale were judged to be significant in 29 of the 59 SBUs researched (Table 9.2). This means that for approximately half the sample researched, size relative to competitors was important. Conversely, for the other half of the sample, size (and therefore market share) was relatively unimportant.

This leads to a categorisation of businesses as shown in fig 10.3.

AOS	High	1 Core competencies and pooled resources across SBUs important.	2 SBUs where market share is critically important.
	Low	4 Other factors important.	3 SBUs where specialist skills are important
		Low	High

Fig 10.3 Strategic categorisation of business

Quadrant 1 These are businesses where advantages of scale are important but key factors are not specific to SBUs. These businesses fit perfectly the profile of businesses described by Prahalad and Hamel (1990) in their article on "The Core Competence

of the Corporation".

Quadrant 2 These are businesses in isolated industries (high on specificity) where advantages of scale are important. The appropriate structure is autonomous SBUs where market share is a critically important factor. (Typical of Buzzell et al, 1975).

Quadrant 3 These are businesses in isolated industries where advantages of scale are not important. Autonomous SBUs with specialist skills would be the appropriate structure. Market share is not important and low share companies could earn high profits depending on the quality of the specialist skills employed.

Quadrant 4 These are businesses in open industries (low on industry specificity) where advantages of scale are not important. The performance of these businesses is dependent on factors which are shared over more than one industry, however pooling resources to obtain core competencies is not critical because there are no advantages of scale. Therefore structure and the unit of strategic analysis (as described by Prahalad and Hamel, 1990) is not as critical for these SBUs as compared to SBUs in quadrant 1. Largely speaking performance by SBUs in this quadrant depends on factors other than the above.

10.3 A DIFFERENT PARADIGM

The generalized theory, the research methodology and the above discussion depends on a paradigm which has not been explicitly stated and which is different to other strategy paradigms. The basic paradigm assumed by the theory is shown in fig 10.4.

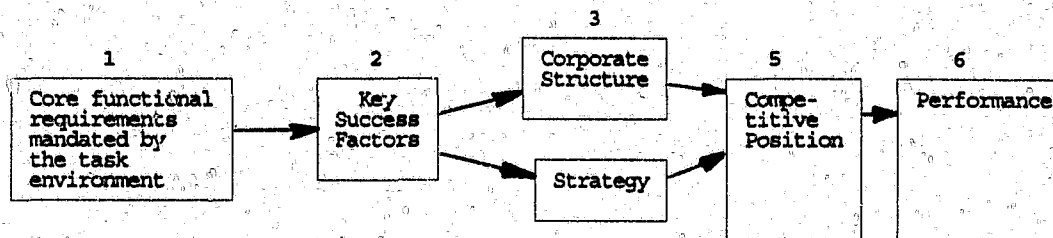


Fig 10.4 Basic Paradigm

The above paradigm assumes that there is a basic need which must be met within a task environment. This results in core functional needs (1) which dictate the key success factors (2) of the businesses operating in that market. The nature of the KSFs dictate corporate structure (3) and strategy (4). Corporate structure includes the decision of whether to operate as autonomous SBUs, grouped SBUs, shared competencies etc. Strategy includes R & D expenditure, growth targets, sales expenditure, quality etc. The appropriateness of the corporate structure and the chosen strategy jointly dictate competitive position (5) and hence performance (6).

The basic paradigm (which was substantiated in the research process) can be extended to

include the dynamic discontinuances as presented by Hamel and Prahalad (1989) and (1991) and Prahalad and Hamel (1990). This is shown in fig 10.5.

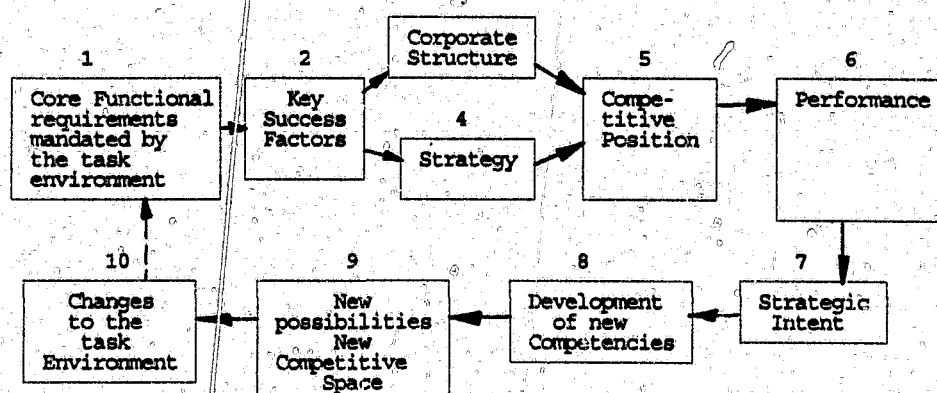


Fig 10.5 Extended Paradigm

10.4 IMPLICATIONS FOR STRATEGY FORMULATION

The results of the research have three main implications for strategy formulation. Firstly, it implies that the entire field of Industrial Organisation may only be applicable to the subset of businesses that exist in isolated industries. Secondly, it implies that the theories of "Strategic Intent" and "Core Competencies" developed by Hamel and Prahalad are only applicable to the subset of businesses which exist in open industries. In a sense these are opposing paradigms and the results of this research suggests a contingency approach where depending on the degree of industry specificity, each approach is either applicable or not applicable. If this is the case then an understanding of

requirements for applicability of the various theories is clearly of critical practical importance for a manager engaged in strategy formulation.

It may be argued that in the field of Industrial Organisation the limitations implied by this research could be circumvented by defining the business (and hence the industry) broadly enough so that specificity is ensured.

This argument has some merit and certainly (as pointed out by Abell, 1980) defining the business correctly is one of the most important strategic decisions made by management. However, to assume that this approach nullifies all the problems relating to specificity is too simplistic. Firstly, the connection with other industries may occur at different points in the value chain and may share resources with different industries. As a hypothetical example, an SBU that is in the business of purchasing, canning and marketing nuts for snacks may have a production line which is very similar to a fruit canning production line and a distribution and branding requirement in common with the potato chip industry (snacks). The fruit canning industry is largely aimed at the export market and does not have a widely developed distribution network or brand name in the local snacks market; the potato chip industry does not have canning technology. Therefore in this hypothetical example the canned nut industry

is an open industry connected to two other industries and it is not just a matter of correct definition to define it as an isolated industry.

Secondly, certain factors are common to the manufacturing operation of a number of different industries and exist in abundance in certain countries and not in others. For example the ability to do simple repetitive jobs cheaply and with high quality is a requirement of the electronics industry at large. Pacific rim countries have used this ability in their people to foster successful electronics industries. The actual products and industries served are wide and varied but all rely on the same basic skill. Again, this is not a matter of correct definition of SBU or industry, but is an example of an open industry.

The final implication for strategy formulation relates to the basic paradigm which has emerged from the research process. This dictates that strategy formulation should start off with a clear understanding of the core requirements of the market, the basic need which must be fulfilled, and the task environment within which the company must operate. This is not a new concept as much of the strategic planning literature recommends environmental scanning as a starting place for strategy formulation. In fact none of the elements in the paradigm in fig 10.4 are new or unique; what is different is the way that the nature of the

key success factors in a business affect the desired structure i.e. open industries should ideally be structured with groupings of SBUs according to core competencies whereas isolated industries could have individual autonomous SBUs. This clearly has implications for the broader process of strategy formulation.

With regard to the relative strength of the market share/profitability correlation between industries (research question b), this clearly is different for different industries. The essence of the theory developed in chapter 7 dictates that industries will be different and in section 7.3 a framework is given for predicting differences. (Chapter 10, p225 gives a summary of the categorisation of industries according to the strength of the relationship). For instance, the paper industry in the initial investigation, is an example of an industry which is high on advantages of scale, and high on specificity, and therefore a strong causal relationship between market share and profitability could be expected to exist. However, in a related industry, the flexible packaging industry, both specificity and advantages of scale were found to be low, and therefore no causal relationship would be expected.

10.5

LIMITATIONS OF THE RESEARCH

The major limitation of the research

concerns the sample size and representation. In chapter 6 a generalized theory is formulated and then the theory is tested by researching a sample of 59 SBUs. Firstly, the sample size could, ideally, have been bigger. Secondly, the sample was not systematically chosen to be representative of South African industry at large but was confined to a relatively few industries. The sample available for this research was just adequate for testing the hypotheses, but was not large enough (or representative enough) to be able to make any inference regarding the percentage of businesses likely to fall into each of the quadrants. Therefore the principles relating to the theory were proved, but for practical purposes the probability of an SBU falling in a particular quadrant would have been useful. (It is not proposed that this would have been useful for strategy formulation purposes, but would have given the relative sizes of the quadrants in fig 10.3 which would have been of value in assessing the usefulness of the theoretic framework proposed). Lastly, the time period over which the data was initially collected (for the data base) and then re-interviewed, for the fine grained studies, was great (between 5 and 8 years) and could have given rise to specific problems and variances.

A second (and probably lesser) limitation relates to the methodology. In administering the questionnaire a semi-structured process was adopted in order to

determine the KSFs and rate them with regard to specificity and AOS. In some cases much probing and questioning was required in order to establish the real KSFs and rate them. Clearly this could lead to interviewer bias. However, as pointed out in chapter 7, a rating scale was provided in order to minimise this bias, but some subjectivity is inevitable.

10.6 FUTURE STUDIES

Future studies should ideally have access to a larger representative sample. This would enable the repeatability of the results of this research to be checked and would also enable the probability of falling in a particular quadrant to be ascertained. More interestingly, future studies could focus on the assertions made in section 10.2 where the theory was extended. Specifically the framework proposed in fig 10.3 could be tested directly. Possible research questions include:

1. Do businesses in open industries structure according to core competencies or grouped resources? If so, do they perform better than businesses that structure as SBUs?
2. Do businesses in isolated industries structure as autonomous SBUs? Is there a relationship between the amount of autonomy given to an SBU and the performance of the business in isolated

industries? Is this different to the relationship in open industries?

10.7

CONSISTENCY WITH LITERATURE

The basic theory put forward in this report is new and different to any theory previously developed. However the theory developed here is consistent with most of the concepts and theories that exist in the literature and, in the view of this researcher, can be shown to fit in to the existing body of knowledge without major contradictions arising. What follows is a brief review of some of the major works reviewed in Chapter 2 with reference as to how the concepts developed in this research fit into the literature concerned.

a) Correlation between market share and profitability

The works of Shepherd (1972), Buzzell et al (1975) Gale and Branch (1982), Ravenscroft (1983), Fruhan (1972) Hambrick & MacMillan (1982) Schoeffler et al (1974), Smirlock (1985) and many other researchers found a positive correlation between market share and profitability. Although the correlation was present in all of the above samples, the strength of the correlation varied. If one assumes that, in general, any sample will consist of businesses with varying specificity and advantage of scale, then one would expect a

correlation of varying strength. If the sample were high on specificity and advantage of scale, a strong correlation would result. The strength of the correlation would depend on the proportion of the sample with high specificity and advantage of scale but in most cases some discernable correlation could be expected to result.

b) Contingency theories

Contingency approaches have been used by many authors (e.g. Galbraith and Schendel, 1983; Hambrick 1983a; 1983b; Woo & Cooper, 1981; 1982 Phillips, Chang & Buzzell, 1983) and are becoming more popular. The theoretical framework developed in this research supports a contingency approach especially if the correlation between market share and profitability is being investigated. The factors used as the contingency variable are clearly of critical importance if meaningful results are to be obtained. The theory developed in this research suggests that industry specificity and the existence of advantages of scale are two key contingency variables. However other contingency variables, while not distinguishing exactly along the above lines, could act as a proxy for these variables. For example, Phillips et al (1983) used the six business types in the PIMS data base as the contingency

variable. While these categories are fairly broad, they at least attempt to group like businesses together. Presumably these businesses have similar KSFs and similar values for specificity and advantages of scale (at least more similar than if all the businesses had been lumped together into one data base). If this is the case, one could expect a correlation between market share and profitability of varying strength across the different businesses. This in fact occurred in the analysis of Phillips et al (1983) although they found that all businesses showed a positive correlation between market share and profitability. This is surprising since one would expect that some of the businesses would show no significant correlation. One possible explanation for this is that the sample that was considered by Phillips et al was drawn from only manufacturing industries and it is possible that some advantage of scale exists in all the business categories considered. Another (more likely) explanation is that the business classification considered by Phillips et al was still so broad that within each type there existed enough SBUs high on specificity and advantage of scale so that a significant correlation resulted.

- c. Included variables in cross-sectional models

Table 2.3 in Chapter 2 gives an example of 8 cross-sectional models with widely differing explanatory factors. Again the same argument as stated in (b) above can be applied to these models. The included variables in a particular sample tend to lump businesses together with like KSFs and hence specificity and advantages of scale. However, because specificity and advantages of scale are not measured directly, but only indirectly via other variables, the inclusion or exclusion of specific variables could result in vastly different results being obtained when the correlation between market share and profitability is analysed. This was noted to be the case in section 2.3.

d) Successful low share companies

Many authors have pointed out that low market share businesses can be successful or that high market share companies need not be successful. (e.g. Fruhan, 1972; Hamermesh, Anderson and Harris, 1978, Woo and Cooper, 1981; 1982; Woo, 1983; 1984; Hambrick and MacMillan, 1982). Clearly this concept is consistent with the theoretical framework developed in this research. If SBUs are low on the advantage to scale dimension in all key success factors then there is no inherent reason why high market share companies should be more successful than low market share

companies. Under these conditions success could be expected to depend much more on other factors (like quality of management) which have nothing to do with relative size.

10.8 CONTRIBUTION TO KNOWLEDGE

In the view of the author, this research has made a substantial contribution to knowledge in the following specific areas.

- a) The theoretical framework developed in Chapter 7 is totally new and represents a different and unique way of viewing the market share profitability debate. Also, causality has been shown to exist between market share and profitability under certain conditions (see section 10.9 below).

This contribution is substantial in that it proposes a contingency approach which distinguishes between fundamentally different situations and results in a clearer understanding of the mechanism involved.

- b) The theory also makes a contribution to the strategy field in general as discussed in the extended theory in section 10.2. This contribution is unique and substantial in that it explores the area of applicability of concepts like core competencies and SBUs which are fundamental building blocks in

the strategy field.

- c) The hybrid methodology used which consisted of a coarse grained statistical analysis of PIMS type data followed by a fine-grained study is unique (as far as the author knows).
- d) The paradigm developed in section 10.3 is new and different to existing paradigms.
- e) The methodology of using key success factors to quantify a parameter and to get a more objective measure is new.

10.9 CAUSALITY VERSUS SPURIOUS CORRELATION

The simple fact that two variables are correlated does not necessarily mean that there is a direct causal connection between the two. The relationship could be caused by a third underlying variable which affects both variables and causes the correlation. This is shown diagrammatically in the simple path diagram below and is known as a spurious correlation. For example, Buzzell, Gale and Sultan (1975, p98) quote "quality of management" as an underlying factor which could account for the correlation between market share and profitability. i.e. good management make correct decisions which result in high profitability and growth in the business (high market share); bad management make poor decisions which result in low profitability and a decline in the

business (low market share).

Market Share

ROI

Quality of
Management

Fig 10.6 Spurious Correlation

A spurious effect is not to be confused with an indirect effect. When two variables are correlated they could be causally linked via a third (or fourth) variable. For example, Woo (1987, p149) quotes brand name recognition as a possible mechanism and profitability.

Market Share

ROI

Brand
Recognition

Price

Figure 10.7 Indirect causal effect

In the example above, it is hypothesised that high market share causes increased brand recognition (due to increased visibility and ability to spend on promotion) which causes higher prices to be obtained which causes higher profitability. There is therefore a causal link from market share to ROI albeit via two other variables.

To ascertain whether the correlations obtained in chapter 9 are spurious or whether they imply causality it is necessary to review the methodology which led to the correlations. This can be summarised as follows:

1. In chapter 7 a theoretical argument was put forward predicting a causal link between market share and profitability under certain conditions (and no causal link under other conditions). This is a theoretical argument based of inductive logic using the insights gained from the preceeding statistical analysis (Chapter 5) and the initial investigation (Chapter 6). In summary the theory suggests the following;

Advantages of Scale	High	1 Weak causal relationship between market share and profitability	2 Strong causal relationship between market share and profitability
	Low	4 No causal relationship between market share and profitability	3 No causal relationship between market share and profitability
		Low	High
		Specificity	

Fig 10.8 Summary of Theory
(Repeat of Fig 7.5 p183)

- where advantages of scale (AOS) and specificity (SPEC) are high (quadrant 2), a strong causal relationship between market share and profitability can be expected (and therefore a strong correlation).

- where advantages of scale (AOS) is high and specificity (SPEC) is low (quadrant 1), a weaker causal relationship between market share and profitability can be expected (and therefore a weaker correlation).

- where advantages of scale (AOS) is low, irrespective of specificity (quadrants 3&4), no causal relationship between market share and profitability can be expected

(and therefore no correlation).

2. In chapter 8, the conditions (AOS and SPEC) were measured and the correlation between market share and profitability calculated (under the conditions specified in chapter 7).
3. The results in chapter 9 showed that where the theory had predicted a strong causal link, the data showed a strong correlation. Where the theory had predicted no causal link, the data had shown no correlation.

For example (using the median method):

- in quadrant 2, where the theory suggested a strong correlation, the slope of the regression line was found to be 0.862
- in quadrant 1, where the theory suggested a weaker correlation, the slope of the regression line was found to be 0.386
- in quadrants 3&4, where the theory suggested no correlation, the slope of the regression line was found to be 0.099 (Table 9.5 p209)

Also, the probability of the correlation being due to a random process was 0.004 in quadrant 2 (where the theory suggested a strong correlation) and 0.608 for quadrant 3&4 (where the theory suggested no correlation).

To add to this, the values obtained for the correlation coefficients (r-squared) also supports the theory. ie:

- in quadrant 2 an r-squared of 0.461 was obtained
- in quadrant 1 an r-squared of 0.174 was obtained
- in quadrant 3&4 an r-squared of 0.010 was obtained

(Table 9.8 p210)

4. This was taken (in chapter 10) to have proved the theory that was proposed in chapter 7. Therefore, because the theory can now be assumed to be true, under the conditions proposed, a causal link (direct or indirect) can be taken to exist between market share and profitability and therefore the correlation cannot be spurious. The logic for the above statement can be summarised as follows:

The theory was used to predict the strength of correlations under specific conditions.

↓

The conditions were measured and the correlations calculated.

↓

The measured results matched the predicted results.

↓

Therefore the original theory must have been correct.

↓

Therefore there must be a causal relationship between market share and profitability (in quadrant 2) because this is the essence of what the theory states.

↓

Therefore the correlation measured between market share and profitability (in quadrant 2) cannot be spurious and must be the result of the underlying causal relationship.

This is not to say that all the correlations obtained in the analysis were causal in origin. Clearly, the correlation obtained in quadrant 1 could be at least partly due to spurious variables. Also, any correlation obtained in quadrant 3 or 4 would be totally spurious. However, the above argument proves conclusively that in quadrant 2, there is a causal relationship between market share and profitability.

10.10 CONCLUSION

It may be argued that the theoretical framework developed in Chapter 7 is a tautology. If the key success factors are specific to the industry and are subject to advantages of scale then there will by definition be a causal link between market share and profitability. Whether one believes this to be the case or not, the value of this research lies in that it has demonstrated that the theory is practically applicable i.e. that managers, if asked the right questions, were able to identify KSFs and rate specificity and advantage of scale to the extent that the SBU was categorised in the correct quadrant. This shows that the same procedure could be used within a firm for strategy formulation purposes with a high probability of success.

This is not meant to imply that a strategic form of "painting by numbers" is advocated for strategy formulation i.e. management is asked a standard set of questions and

according to the results obtained the SBU is classified into a particular quadrant where a standard strategy is applicable. On the contrary, what is implied is that there is no magical profit increase brought about by increased market share. In each case the KSFs need to be understood by management and the implications of specificity and advantage of scale explored and understood. Only then can strategies be formulated with respect to market share. If there are increased profits to be obtained by increasing market share management should understand the exact mechanism at play and how to exploit it. These mechanisms are likely to be different in every industry and therefore the detail of the strategy would be different, however the concept and theory developed in this research is believed to be generally applicable.

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APPENDIX I

BACKGROUND TO PIMS

Appendix 1 : BACKGROUND TO PIMS

The PIMS data base has been widely used for research in the strategy area and is often quoted in the literature. (PIMS stands for Profit Impact of Marketing Strategy). Background to the PIMS project is given by Abell (1979, p272).

"To find better ways to explain and predict operating performance, the PIMS project was initiated in 1960 as an internal project at the General Electric Company (G.E.). After several years of intensive research and testing, a computer-based regression model was constructed that "explained" a substantial part of the variation in return-on-investment (ROI). The model used as input, data from a fairly large number of G.E. businesses in diverse markets and industries. (Such models are called "cross-sectional.") The model identified those factors that related most strongly to ROI and provided an indication of their relative role as explanatory variables.

Development of the model continued throughout the 1960s and early 1970s, first at G.E. and then later at the Harvard Business School and the Marketing Science Institute. At this stage the data base was enlarged to include many corporations in addition to G.E.. In

1975, the Strategic Planning Institute, a non-profit corporation governed by the member companies, was formed to manage the PIMS project. In 1977, membership included more than 150 companies operating more than 1,000 businesses, drawn mostly from the *Fortune 500* list. These companies contribute data on one or more of their businesses to the data pool and in return receive a variety of useful strategic planning information on each business submitted.

Among the most important questions which PIMS addresses are:

- What factors explain differences in typical levels of ROI and cash flow among various kinds of businesses?
- What rate of ROI and cash flow is "normal" or "PAR" in a given type of business, under given market conditions, and using a given strategy?
- How will ROI and other measures of performance, in a specific business, be affected by a change in the strategy employed?
- What are promising directions to explore to improve the performance of a given business?

Answers to these questions are useful to management both in establishing overall objectives for a business and in identifying specific ways to reach them. Consequently

PIMS contributes to several stages of the strategic planning process outlined in Chapter 1. In addition, PIMS can be used to help forecast profits; to help make effective allocations of capital, manpower, and other scarce resources; to measure managerial performance (by comparing "expected" with "actual" profit results); and to appraise new business opportunities."

According to Buzzell and Gale (1987, pVII) the PIMS data base had grown to include around 3000 businesses in 1987.

The validity of the PIMS approach has been questioned (and defended) by many authors. A number of authors (e.g. Prescott et al, 1986,) object to the analytical method employed by researchers rather than the database itself. Specifically, "uncritical pooling" of non-homogeneous data has been heavily criticised (Prescott et al 1986, p388). Other authors are critical of the PIMS approach in general (e.g. Lubatkin & Pitts, 1985) and believe a more focused approach is beneficial, i.e.

"while the PIMS model may provide good competitive information, industry-specific models may be able to provide better information".

(Lubatkin & Pitts, 1985, p91)

Other authors have a more balanced view (e.g. Day, 1983; Kehoe 1983) and believe that while some of the claims made by certain PIMS protagonists may be out of line, the PIMS data base does make a useful contribution to strategy. In one study where the measurement error and reliability of PIMS data was tested, the results were found to be good.

"On balance, however, the high reliabilities and low measurement error components observed across measures and samples are consistent with the hypothesis that stable traits underlie the relative competitive strategy measures and that a high degree of correspondence exists between the measures and the concepts they represent".

(Phillips, Change & Buzzell, 1983, p37)

Although the PIMS approach is not perfect it is an objective attempt to measure strategic variables in a standardised manner, and has therefore been used as a basis for measurement in this study.

Appendix II

PIMS DATA CAPTURE SHEETS

PIMS**DATA FORM***The LIMITED INFORMATION MODEL*

DATE _____

FROM _____

BUS NO. _____

COMPETITIVE POSITION & ACTION	PIMS MEAN	STANDARD DEVIATION	DATA FOR THIS BUSINESS
1. % MARKET SHARE	23.6	17.1	_____
2. % RELATIVE MARKET SHARE	61.7	62.1	_____
3. RELATIVE-PRODUCT QUALITY	25.9	28.7	_____
4. RELATIVE PRICE	103.5	7.1	_____
5. % EMPLOYEES UNIONIZED	48.3	32.9	_____
6. % NEW PRODUCT SALES/SALES	11.9	17.5	_____
7. % R&D EXPENSES/SALES	2.4	2.5	_____
8. % MARKETING EXPENSES/SALES	10.8	9.2	_____
CAPITAL & PRODUCTION STRUCTURE			
9. % INVESTMENT SALES	56.1	28.1	_____
10. % INVESTMENT/VALUE ADDED	96.7	40.5	_____
11. % FIXED CAPITAL INTENSITY	52.3	34.7	_____
12. % VERTICAL INTEGRATION	58.8	13.8	_____
13. VALUE ADDED/EMPLOYEES (\$1000)	30.0	18.0	_____
14. % CAPACITY UTILIZATION	79.6	16.0	_____
MARKET ENVIRONMENT			
15. REAL MARKET GROWTH RATE	8.2	9.9	_____
16. % SHARE OF 4 LARGEST FIRMS	56.5	26.2	_____
17. % OF CUSTOMERS = 50% SALES	12.2	10.3	_____
18. PURCHASE AMOUNT-IMMED. CUSTS.	5.2	1.2	_____

FOR PAGE 3:

_____ (\$)SALES (IF UNAVAILABLE ENTER 1000.0)

_____ (%)ACTUAL ROI

_____ FORECAST REAL MARKET GROWTH RATE (%/YEAR)

_____ FORECAST SELLING PRICE GROWTH RATE (%/YEAR)

STANDARD MOVES _____OR: _____CUSTOM MOVES:
20% OVER 5 YEARSOVER _____ YEARS
%DOWN %BUILDMARKET SHARE _____
INVESTMENT/VALUE ADDED _____

SPI

LIM

WORKSHEET

This worksheet is a data-gathering aid for the PIMS Limited Information Model. The circled numbers to the right correspond to line numbers on the LIM Data Form. For definition of terms used in the model, refer to *The Limited Information Report* manual, page 26.

MARKET SHARES (Lines 1-5)

1. This business _____% **(1)**
2. Largest competitor _____%
3. Second largest competitor _____%
4. Third largest competitor _____%
5. Share of three largest competitors (2 + 3 + 4) _____%
6. Relative market share
(1 + 5) x 100 _____% **(2)**
7. Industry concentration (share of the four largest producers in the served market; include this business if it is among the four largest) _____% **(16)**

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RELATIVE PRODUCT QUALITY (Lines 8-11)

8. Percentage of sales from: superior products _____%
equivalent products _____%
9. Inferior products _____%
(8 + 9 + 10 = 100 %)
10. Relative product quality (8 - 10) _____% **(3)**
12. Relative price (price parity with competition = 100) _____% **(4)**
13. New products (introduced in the last three years) as a percentage of total sales _____% **(6)**
14. Percentage of immediate customers that account for 50% of this business sales _____% **(17)**
15. Immediate customer purchase amount Index _____% **(18)**

Index	Typical Purchase Amount
1	\$0 - 1
2	\$1 - 10
3	\$10 - 100
4	\$100 - 1,000
5	\$1,000 - 10,000
6	\$10,000 - 100,000
7	\$100,000 - 1 million
8	\$1 - 10 million
9	Over \$10 million

INCOME STATEMENT

	\$000	% OF SALES
16. Sales	\$ _____	100 %
17. Purchases	\$ _____	_____
18. Value Added (16 - 17)	\$ _____	_____ %
19. Manufacturing and Distribution	_____	_____
20. Depreciation	_____	_____
21. Total Marketing	_____	_____
22. R&D (Process and Product)	_____	_____
23. Administrative and Other Expenses	_____	_____
24. Pretax Income (before interest charges)	\$ _____	_____ %

BALANCE SHEET

(Enter average for the year)

	\$000	% OF SALES
25. Working Capital*	\$ _____	_____ %
26. Gross Plant & Equipment	_____	_____
27. Net Plant & Equipment	_____	_____
28. Other Assets	_____	_____
29. Investment (25 + 27 + 28)	\$ _____	_____ %

*Accounts Receivable and Inventories, less Current Liabilities

30. Investment / Value Added (29 + 18)	_____ %	(10)
31. Number of employees (hourly, salaried and full time equivalent)	_____	
32. Value added per employee (18 + 31; in \$000)	\$ _____	(13)
33. Percent of total employees unionized	_____ %	(5)
34. Capacity utilization	_____ %	(14)
35. Real growth of served market over the last 3-5 years	_____ %	(15)

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Appendix III INITIAL ANALYSIS**Initial Analysis and Graphs of the PIMS (SA) Data Base**

This appendix contains a graphical overview of the initial analysis that was performed on the data. To begin, descriptive charts are presented and thereafter all variables are plotted against ROI. (In some cases this was inappropriate as seen from the graphs, but this was an exploratory analysis and is presented as such).

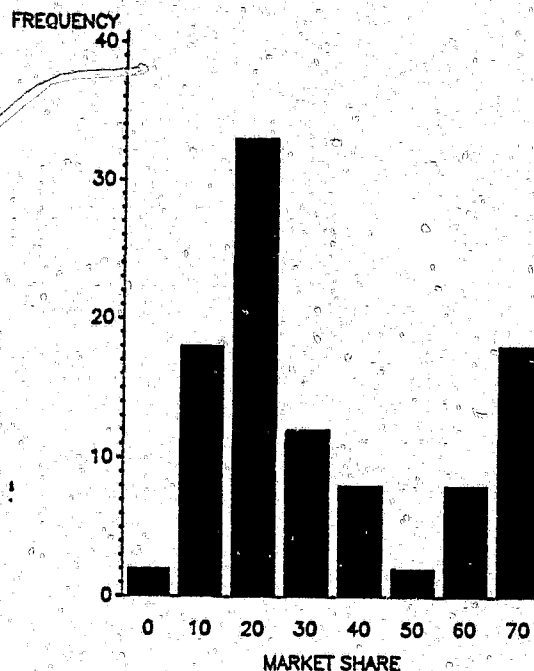
The appendix takes the following form:

Fig A3.01 to A3.18 are frequency charts of all variables in the data base using the modified data (as described in Chapter 5). The definition of the variables are the same as the PIMS definitions as described in Chapter 5.

Fig A3.19 to A3.35 are plots of all variables against ROI with a linear trend added and a 95% confidence limit.

Fig A3.36 a, b and c are charts of market share vs profitability using different interval midpoints.

Exhibit A3.37 gives regression information for the relationship between profitability and market share.

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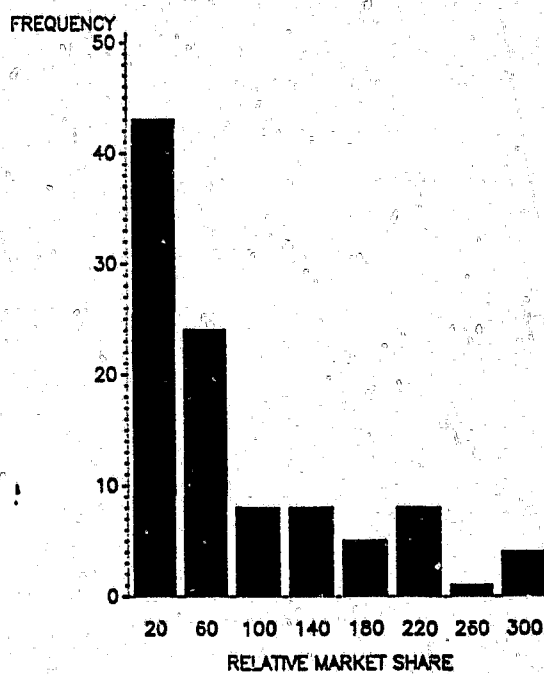
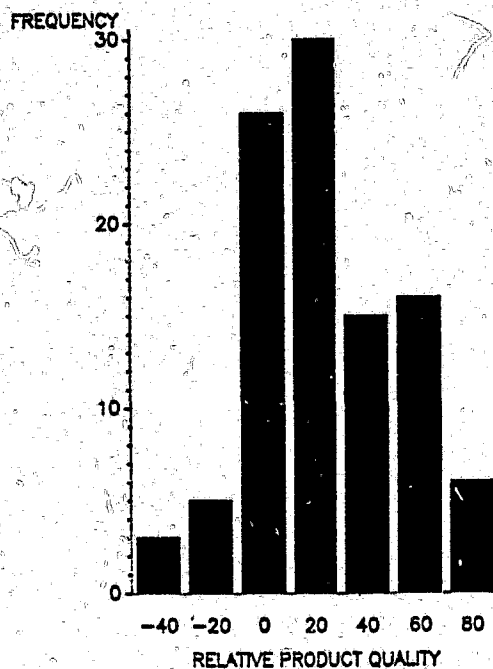
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Fig A3.01 & .02

Frequency Distribution of Market
Share and Relative Market Share

PIMS (SA) DATA
FREQUENCY DISTRIBUTION OF DATA



PIMS (SA) DATA
FREQUENCY DISTRIBUTION OF DATA

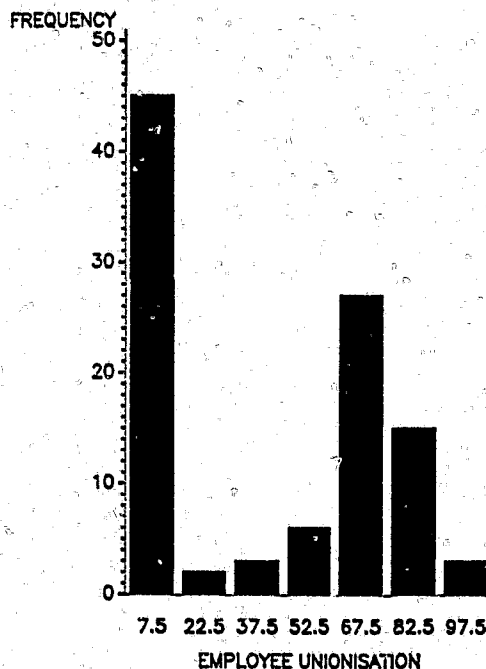
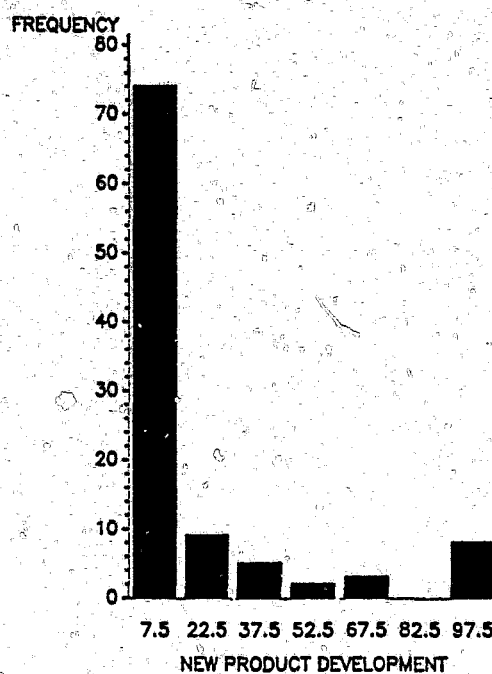


Fig 3.03 & .04 Frequency Distribution of Relative Product Quality & Employee Unionisation

PIMS (SA) DATA
FREQUENCY DISTRIBUTION OF DATA



PIMS (SA) DATA
FREQUENCY DISTRIBUTION OF DATA

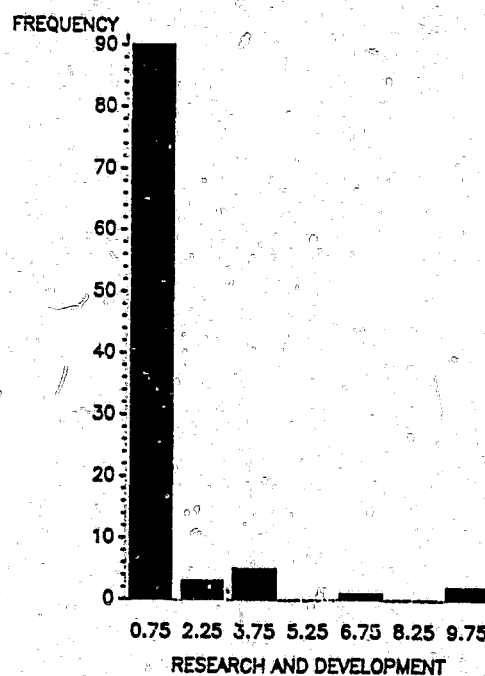
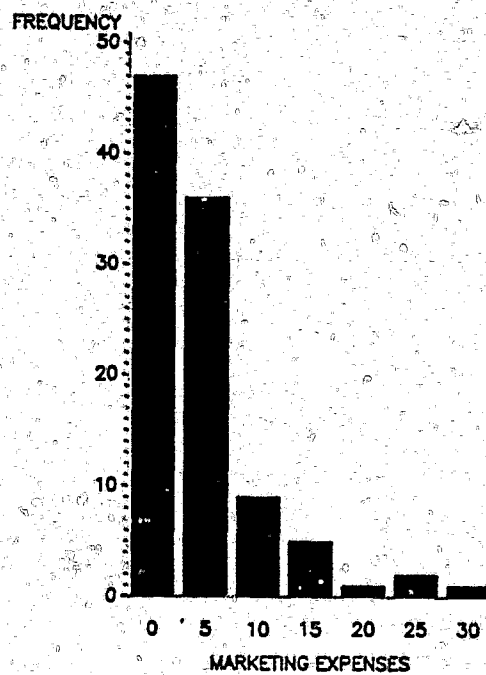


Fig A3.05 & .06

Frequency Distribution of New
Products/Sales and R&D/Sales

PIMS (SA) DATA
FREQUENCY DISTRIBUTION OF DATA



PIMS (SA) DATA
FREQUENCY DISTRIBUTION OF DATA

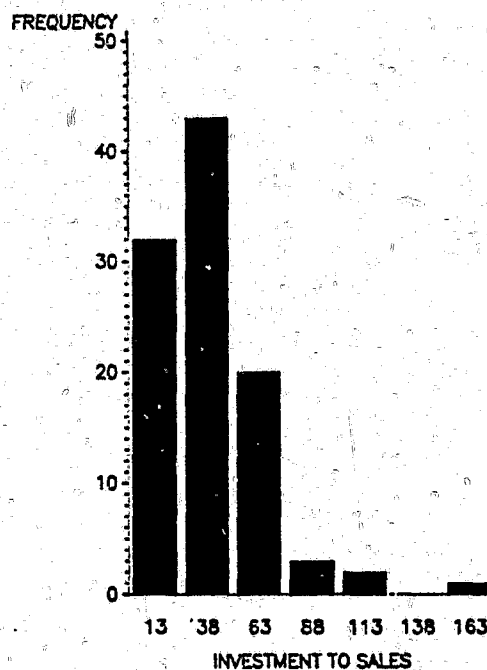
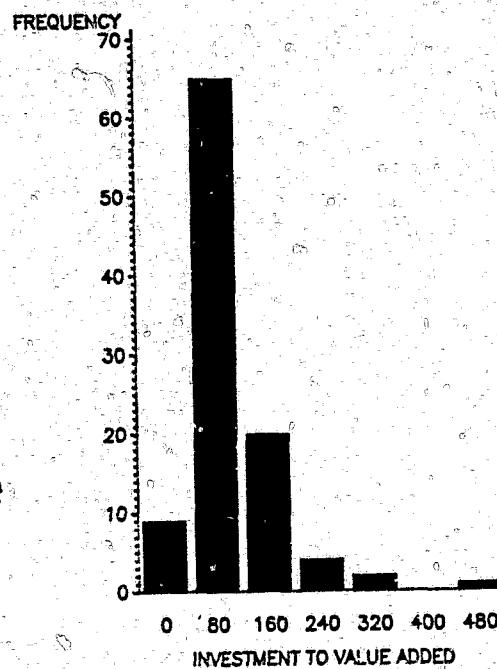


Fig A3.07 & .08

Frequency Distribution of Marketing
Expenses/Sales & Investment/Sales

PIMS (SA) DATA
FREQUENCY DISTRIBUTION OF DATA



PIMS (SA) DATA
FREQUENCY DISTRIBUTION OF DATA

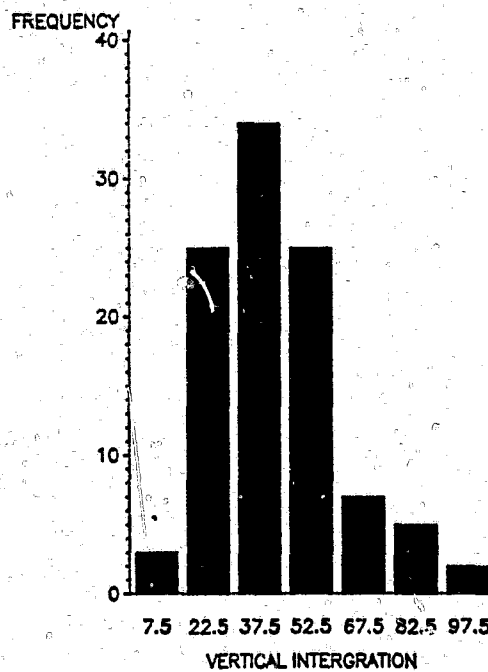
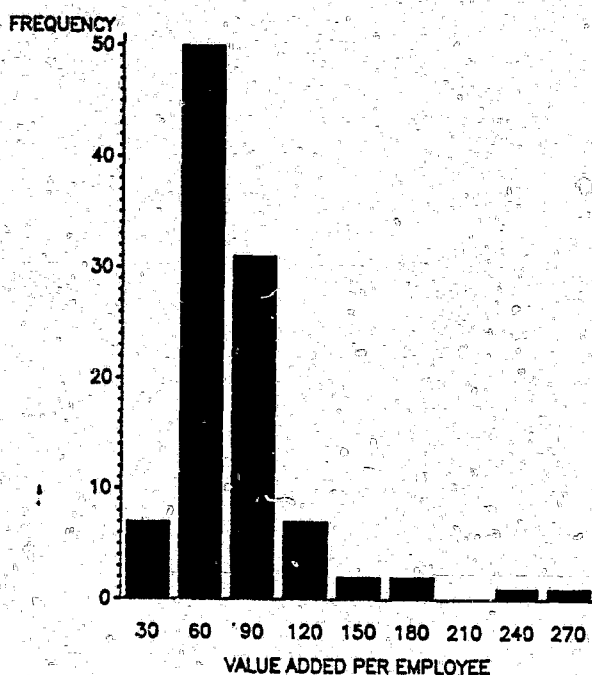


Fig A3.9 & 10 Frequency Distribution of Investment to Value Added & Vertical Intergration

PIMS (SA) DATA
FREQUENCY DISTRIBUTION OF DATA



PIMS (SA) DATA
FREQUENCY DISTRIBUTION OF DATA

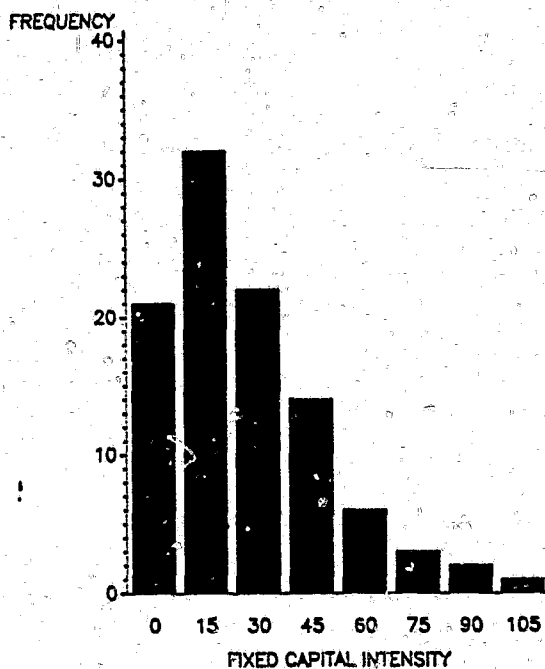
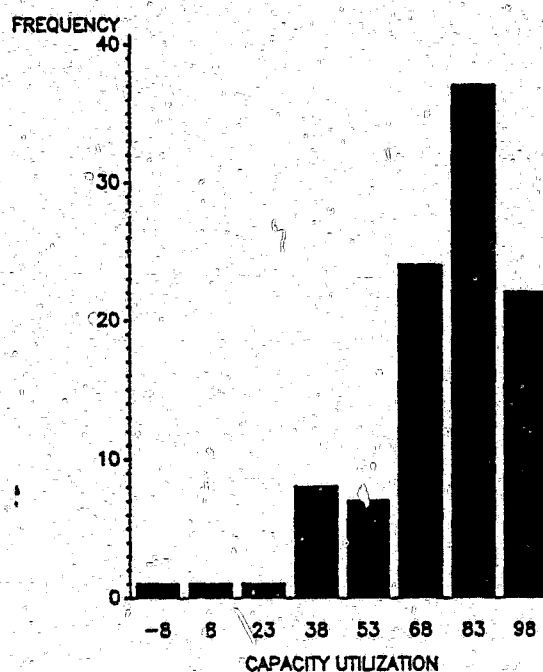


Fig A3.11 & 12 Frequency Distribution of Value Added per Employee & Fixed Capital Intensity

PIMS (SA) DATA
FREQUENCY DISTRIBUTION OF DATA



PIMS (SA) DATA
FREQUENCY DISTRIBUTION OF DATA

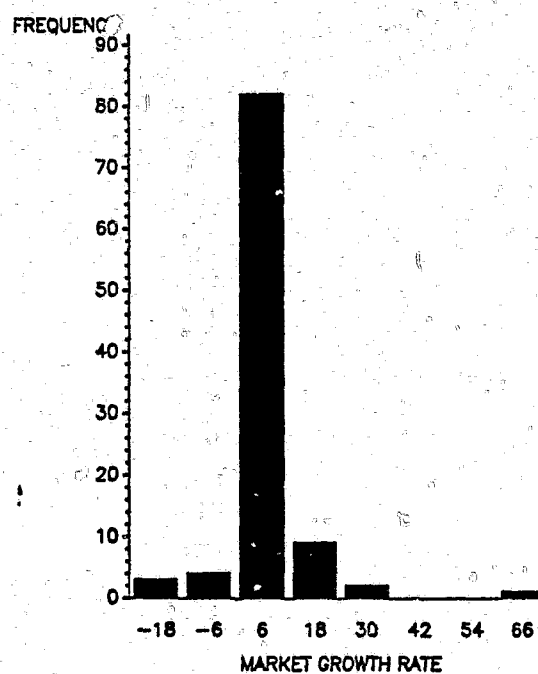
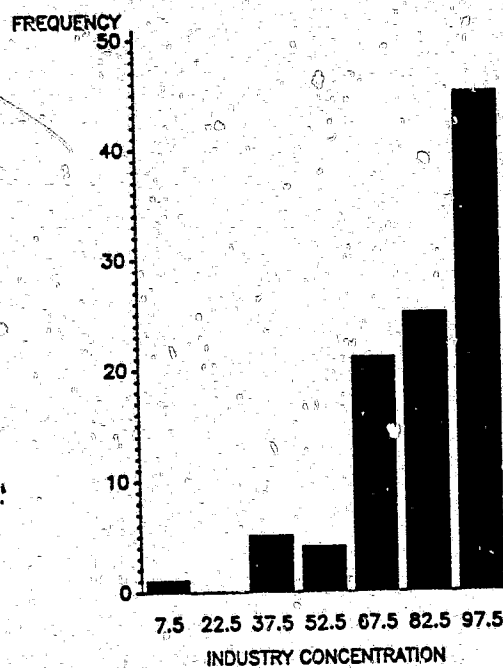


Fig A3.13 & 14 Frequency Distribution of Capacity Utilization & Market Growth

PIMS (SA) DATA
FREQUENCY DISTRIBUTION OF DATA



PIMS (SA) DATA
FREQUENCY DISTRIBUTION OF DATA

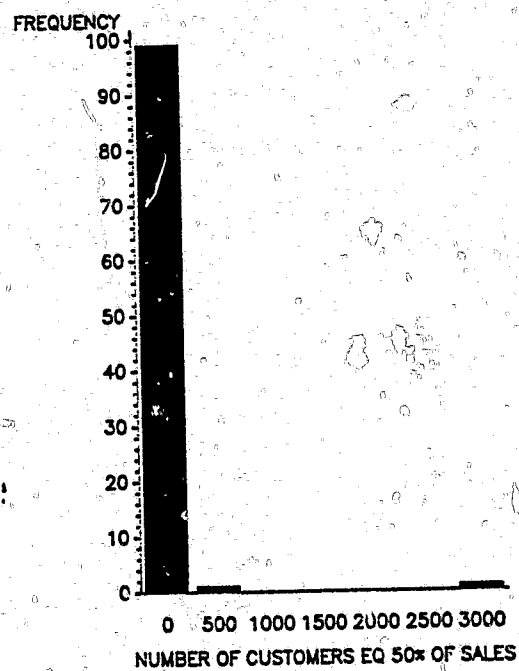
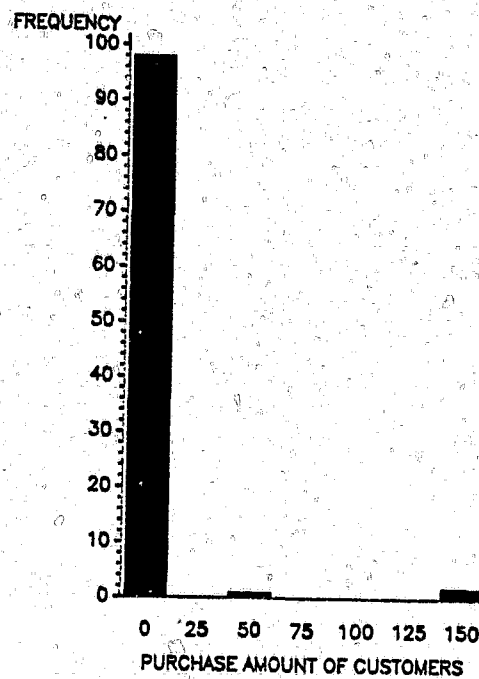


Fig A3.15 & 16 Frequency Distribution of Industry & Customer Concentration

PIMS (SA) DATA
FREQUENCY DISTRIBUTION OF DATA



PIMS (SA) DATA
FREQUENCY DISTRIBUTION OF DATA

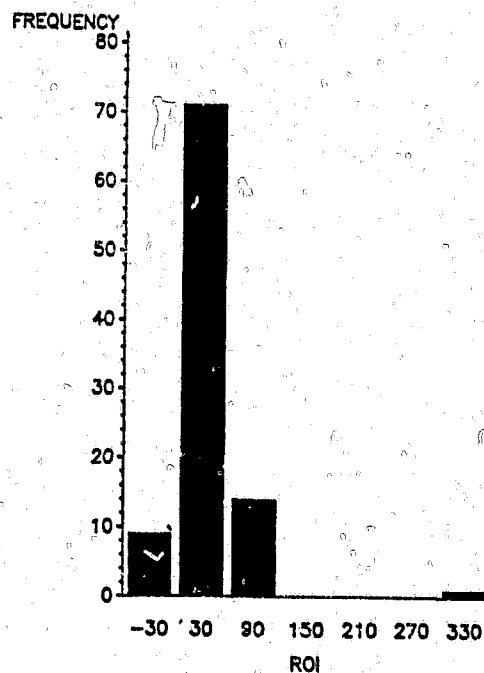
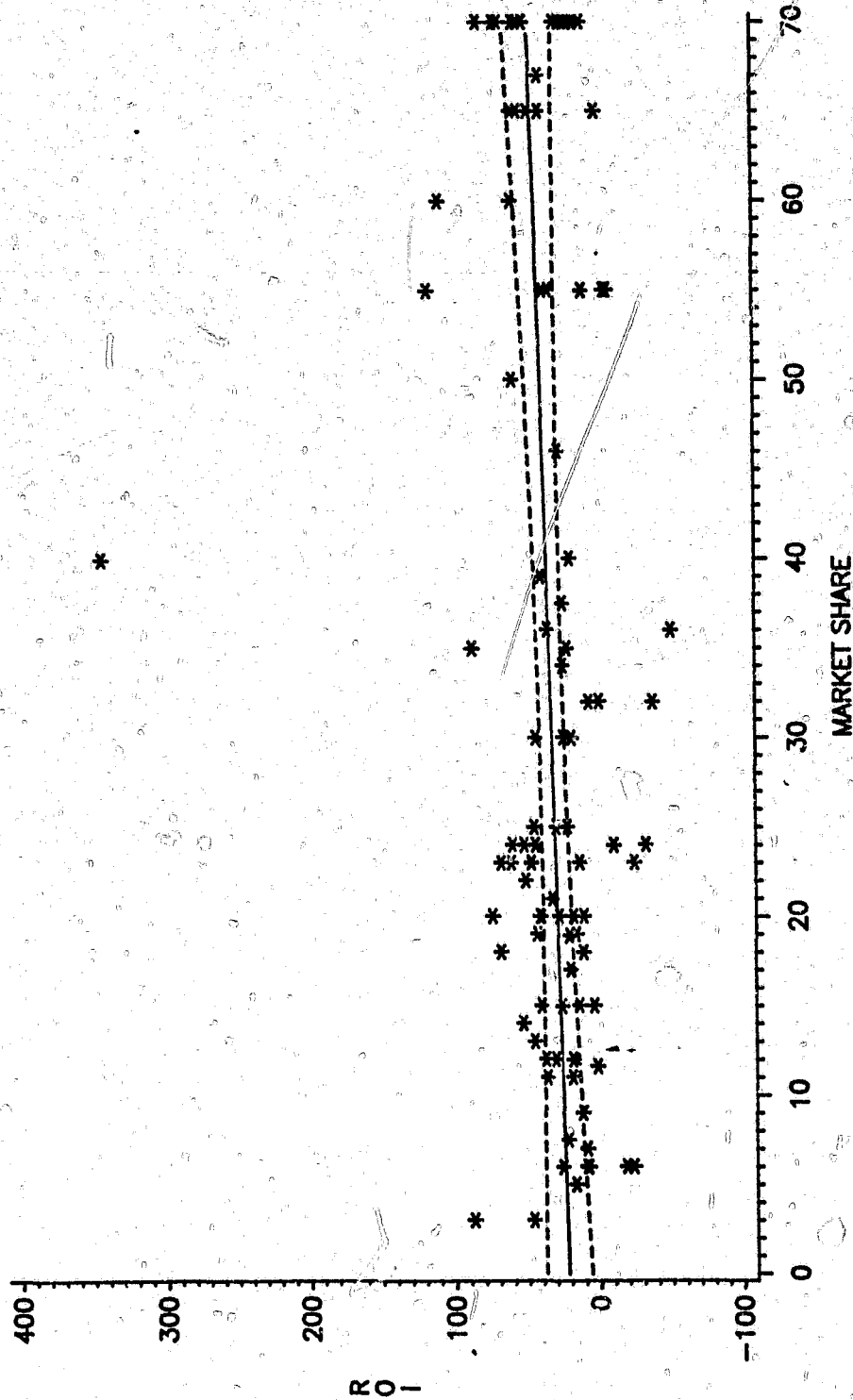


Fig A3.17 & 18

Frequency Distribution of Purchase
Amount & Return on Investment

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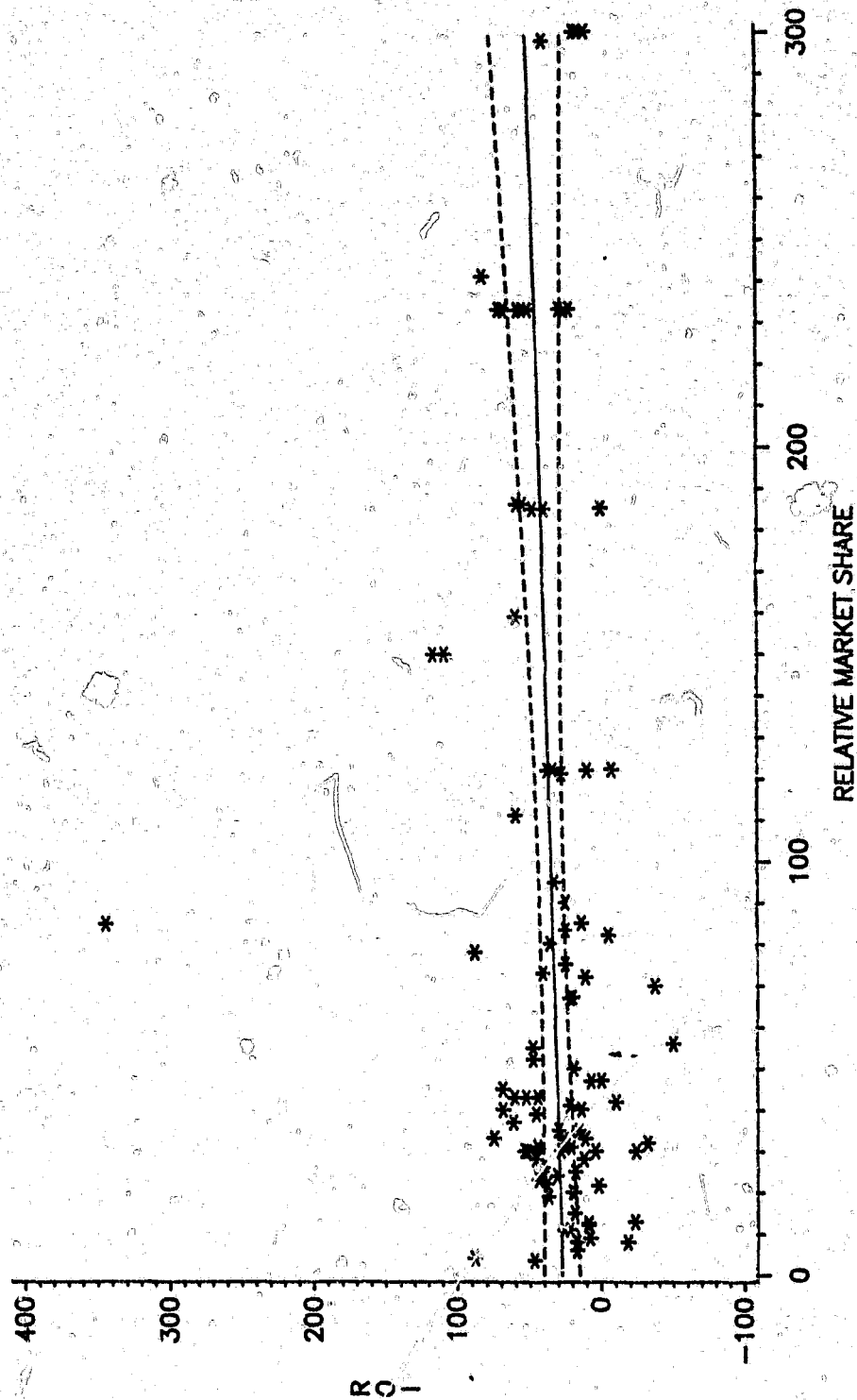


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Fig A3.19

Plot of Market Share vs ROI

PIMS (SA) DATA MODIFIED DATA PLOTTED

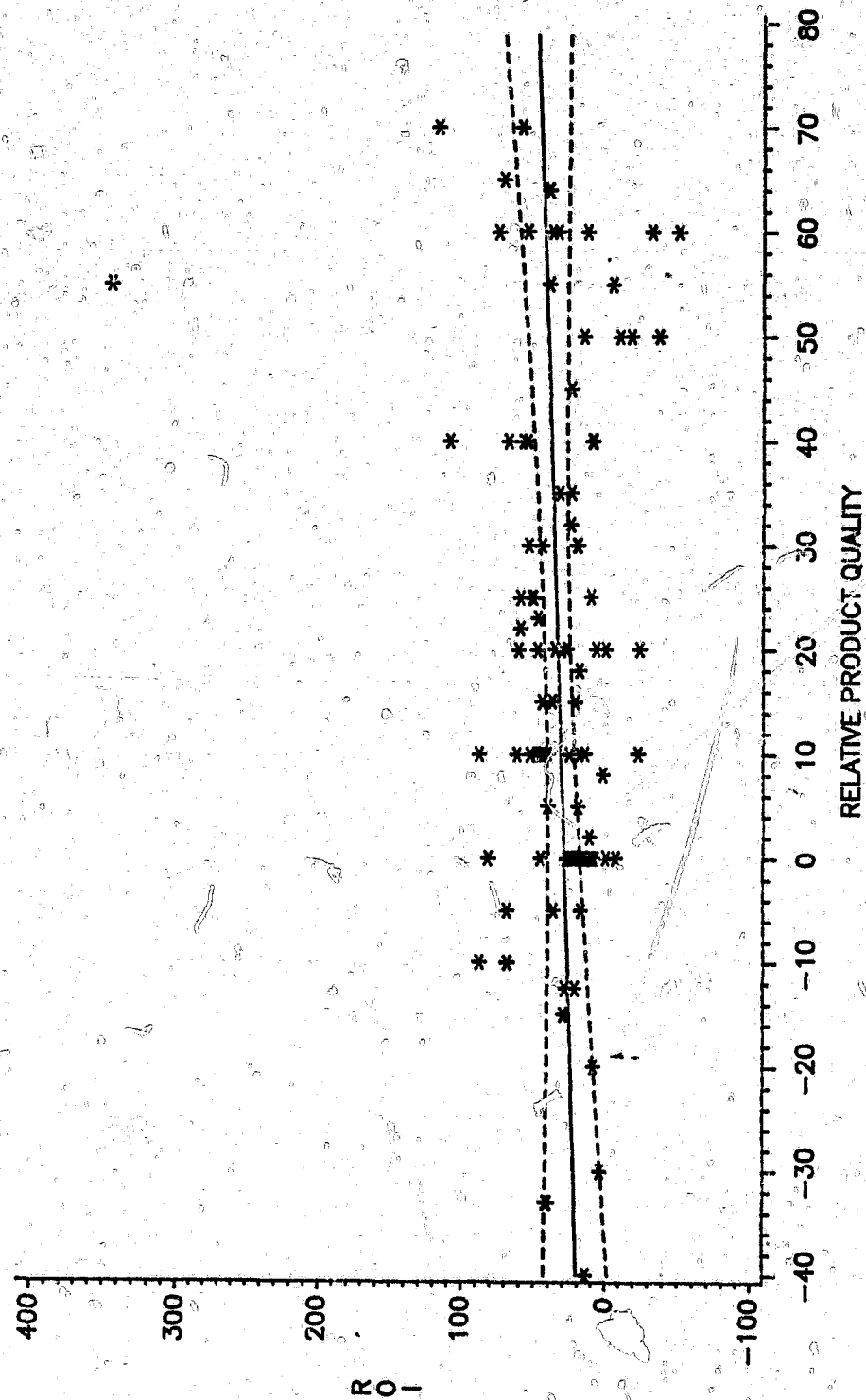


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Fig A3.20

Plot of Relative Market Share vs ROI

PIMS (SA) DATA MODIFIED DATA PLOTTED



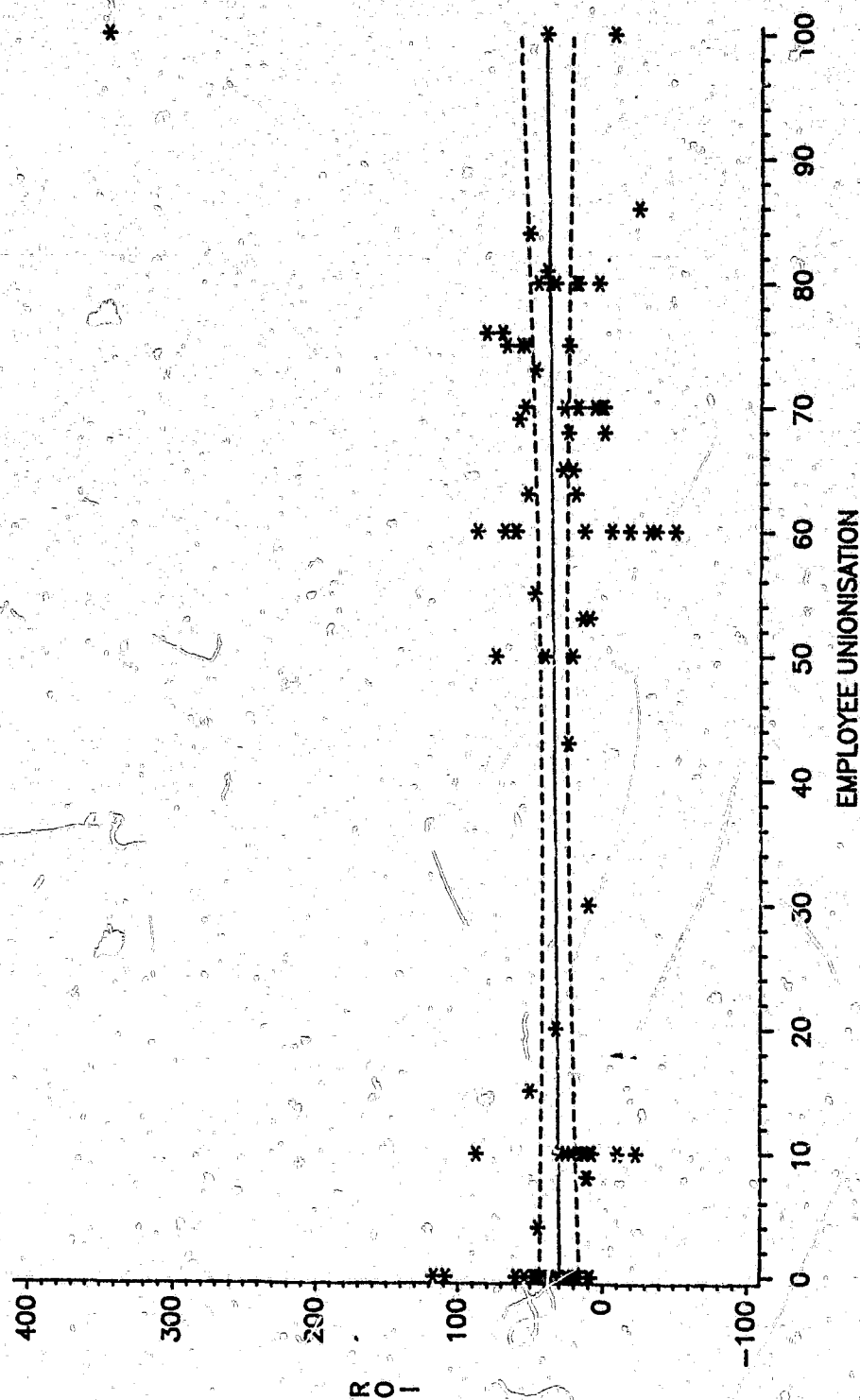
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Fig A3.21

Plot of Relative Product Quality vs ROI

PIMS (SA) DATA

MODIFIED DATA PLOTTED



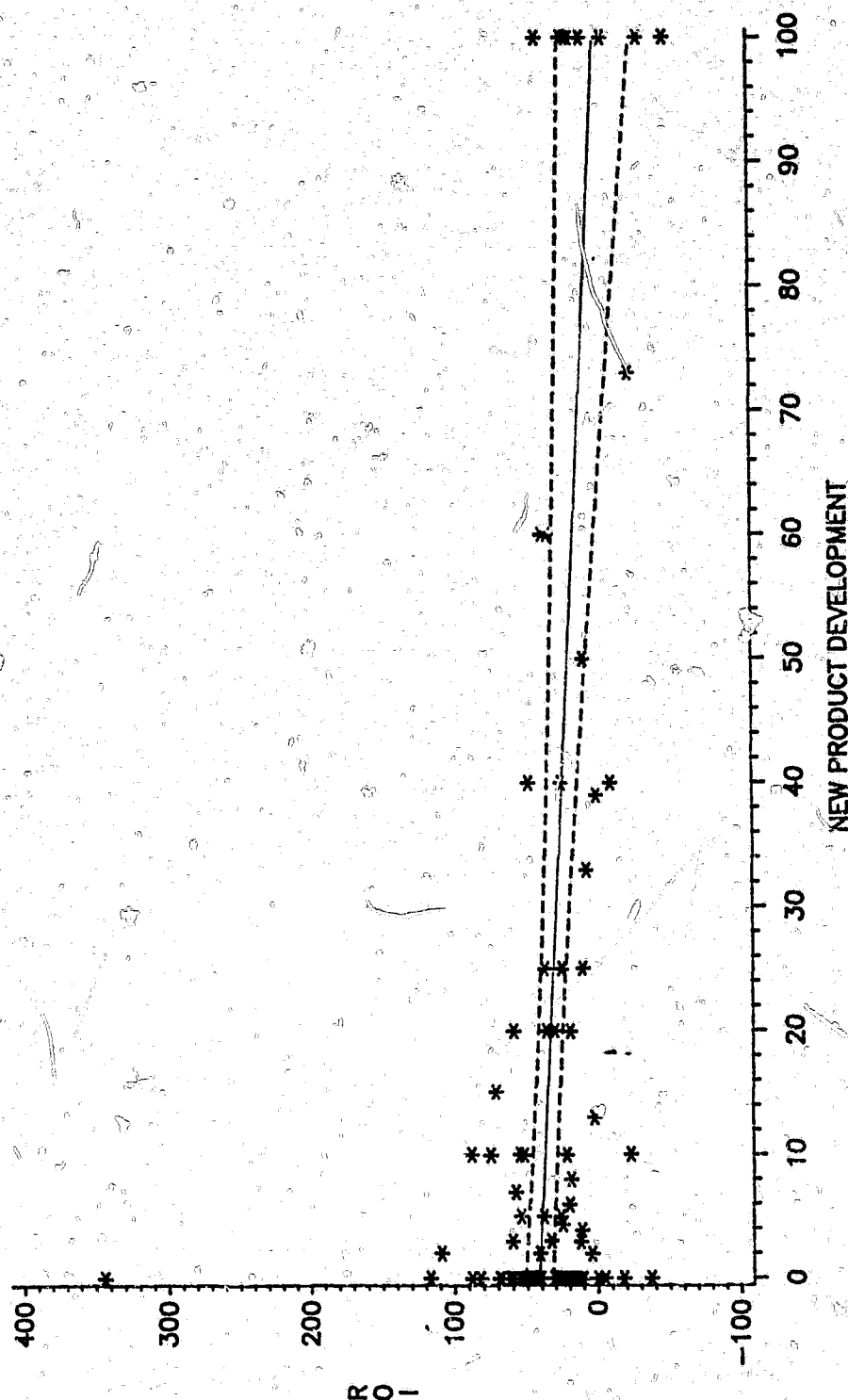
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Fig A3.22

Plot of Employee Unionisation vs ROI

PIMS (SA) DATA

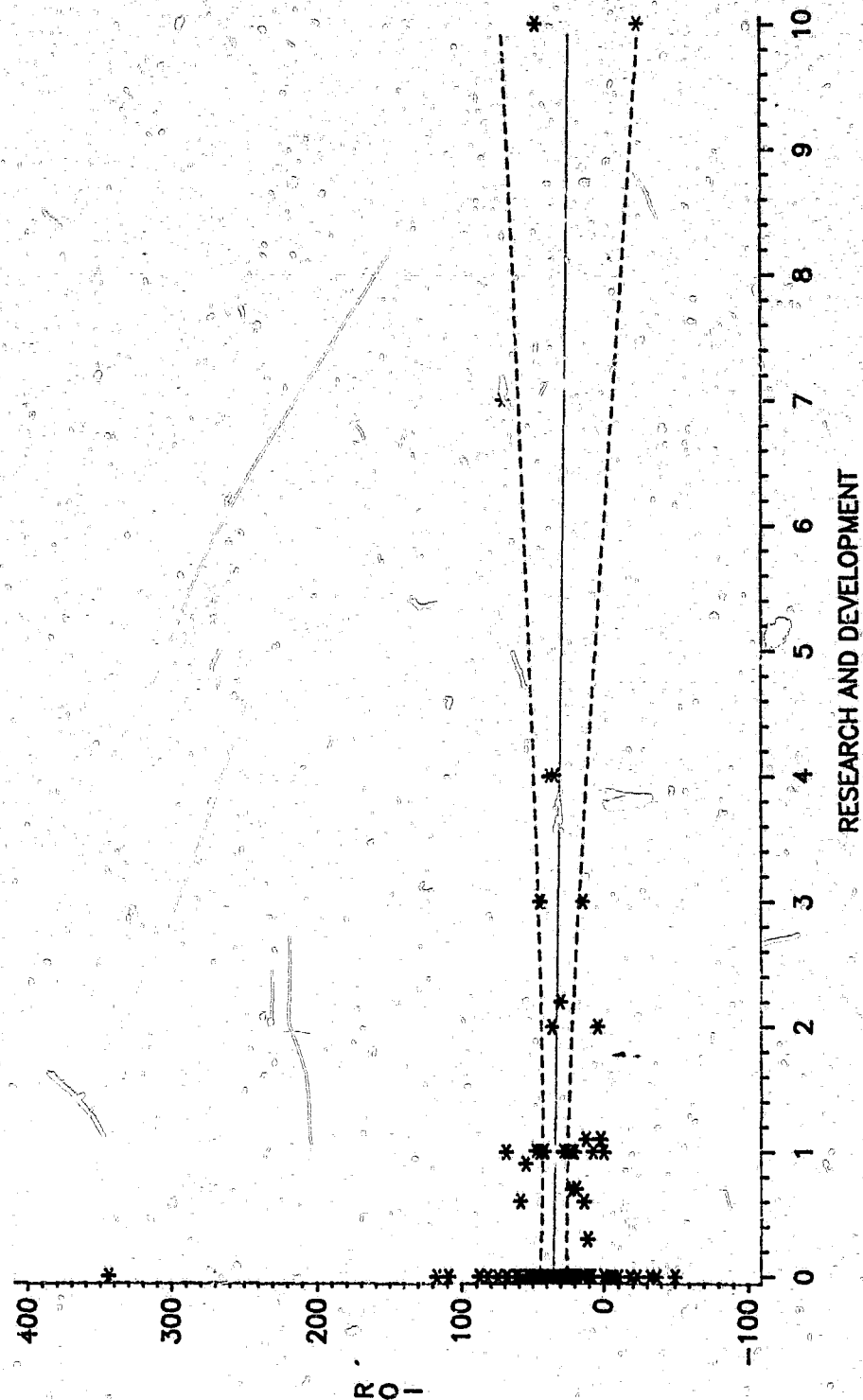
MODIFIED DATA PLOTTED



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Fig A3.23 Plot of New Products/Sales

PIMS (SA) DATA MODIFIED DATA PLOTTED



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Fig A3.24

Plot of R&D/Sales

PIMS (SA) DATA

MODIFIED DATA PLOTTED

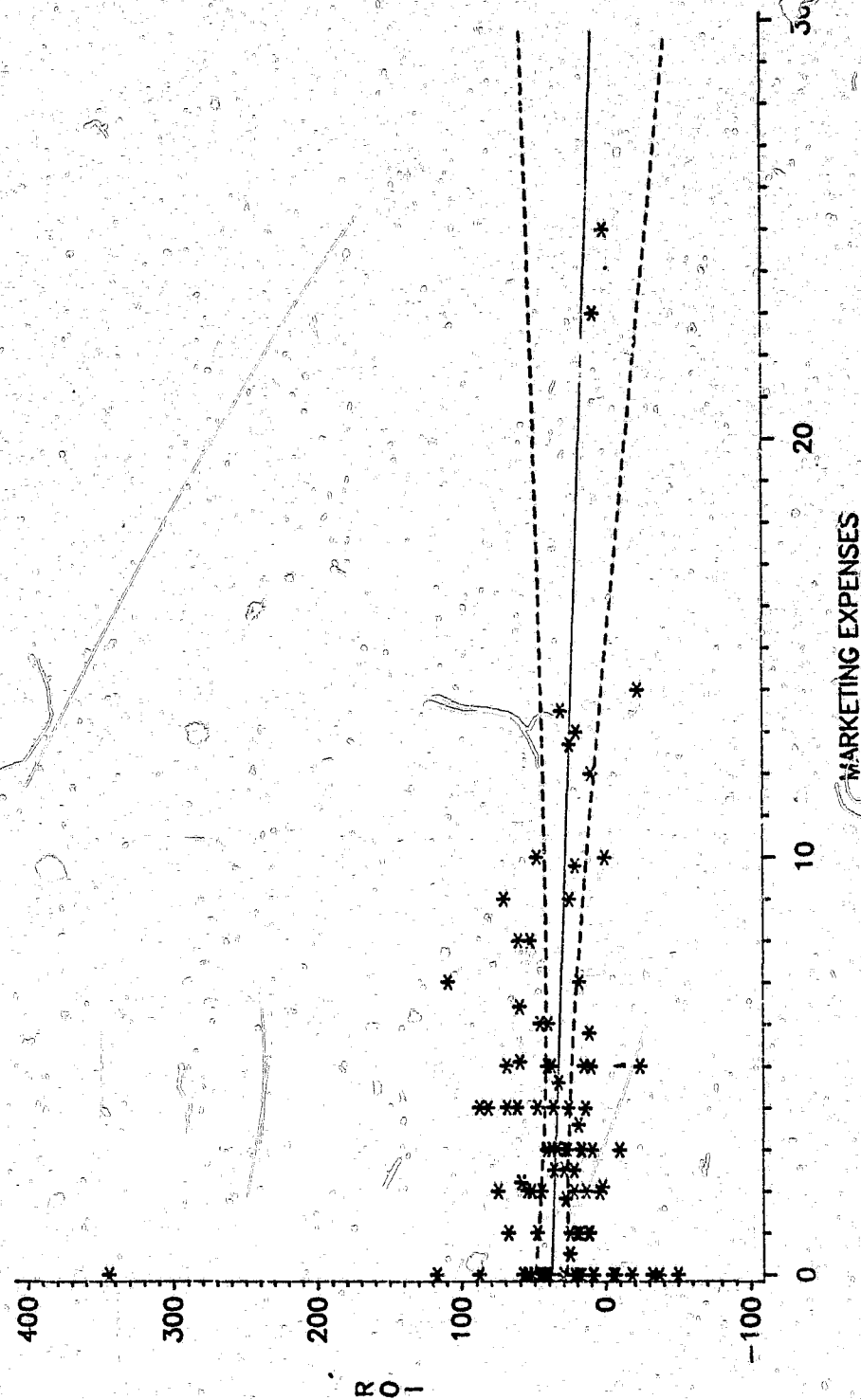
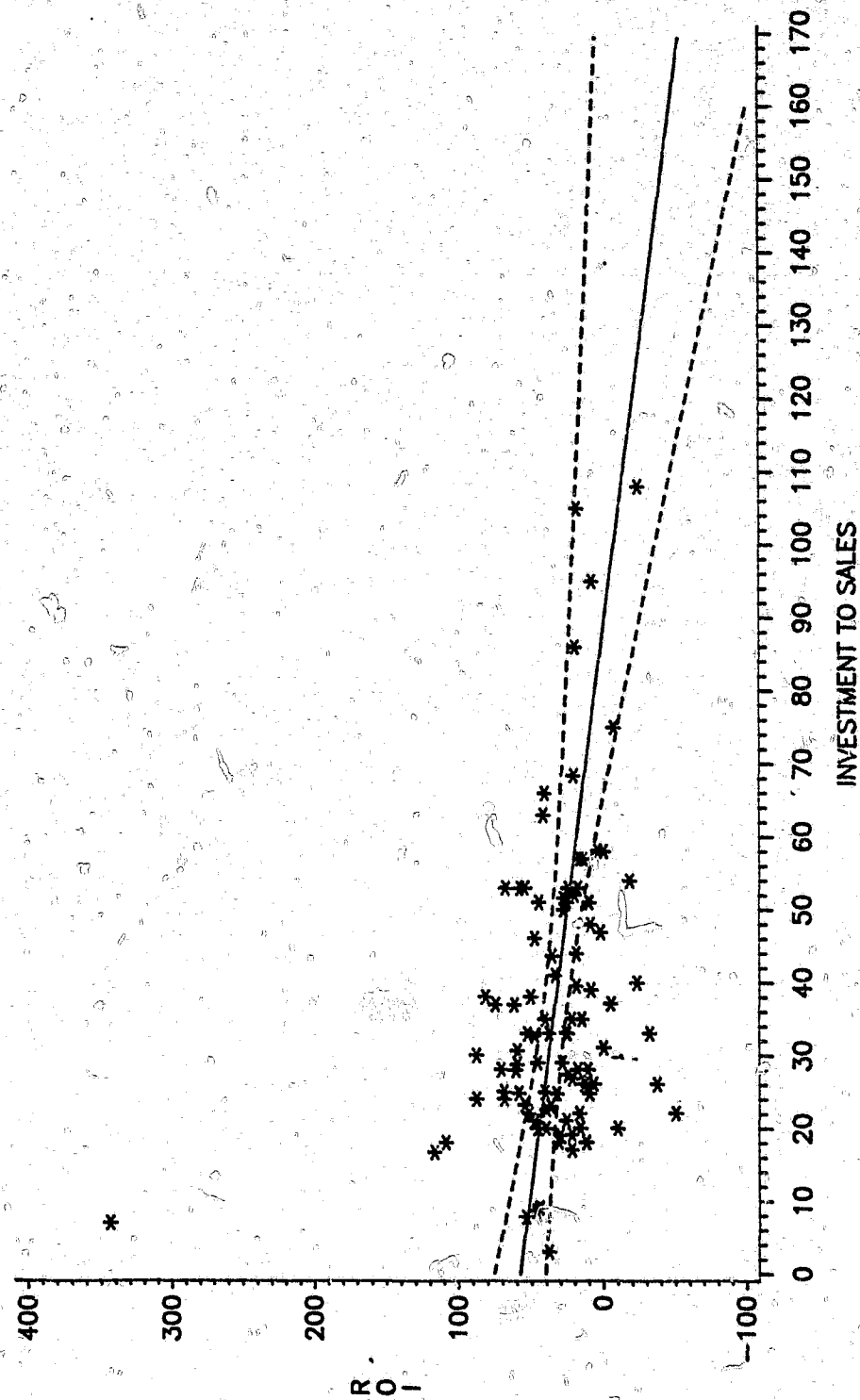


Fig A3.25

Plot of Marketing Expenses/Sales

PIMS (SA) DATA MODIFIED DATA PLOTTED

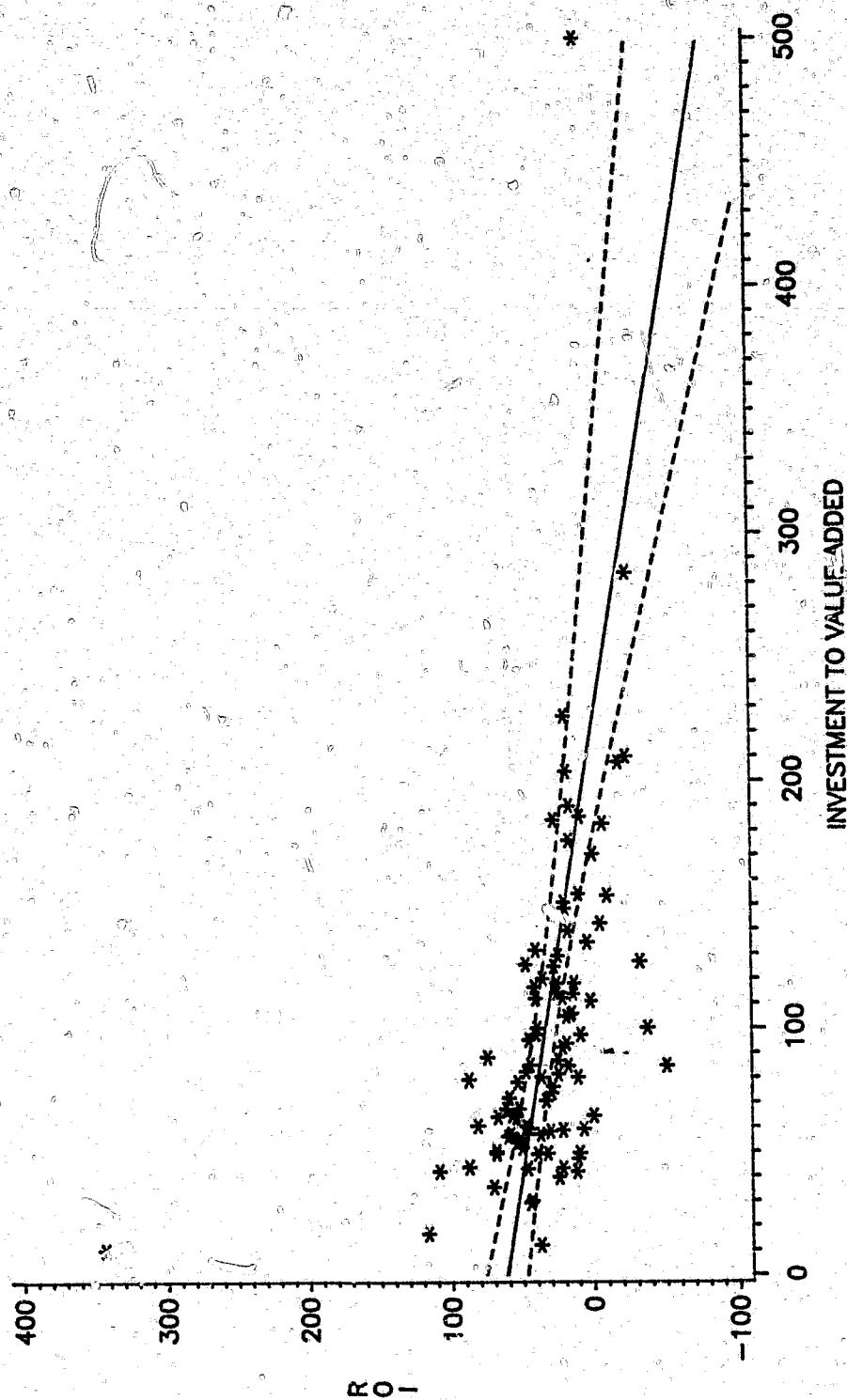


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Fig A3.26

Plot of Investment/Sales

PIMS (SA) DATA MODIFIED DATA PLOTTED

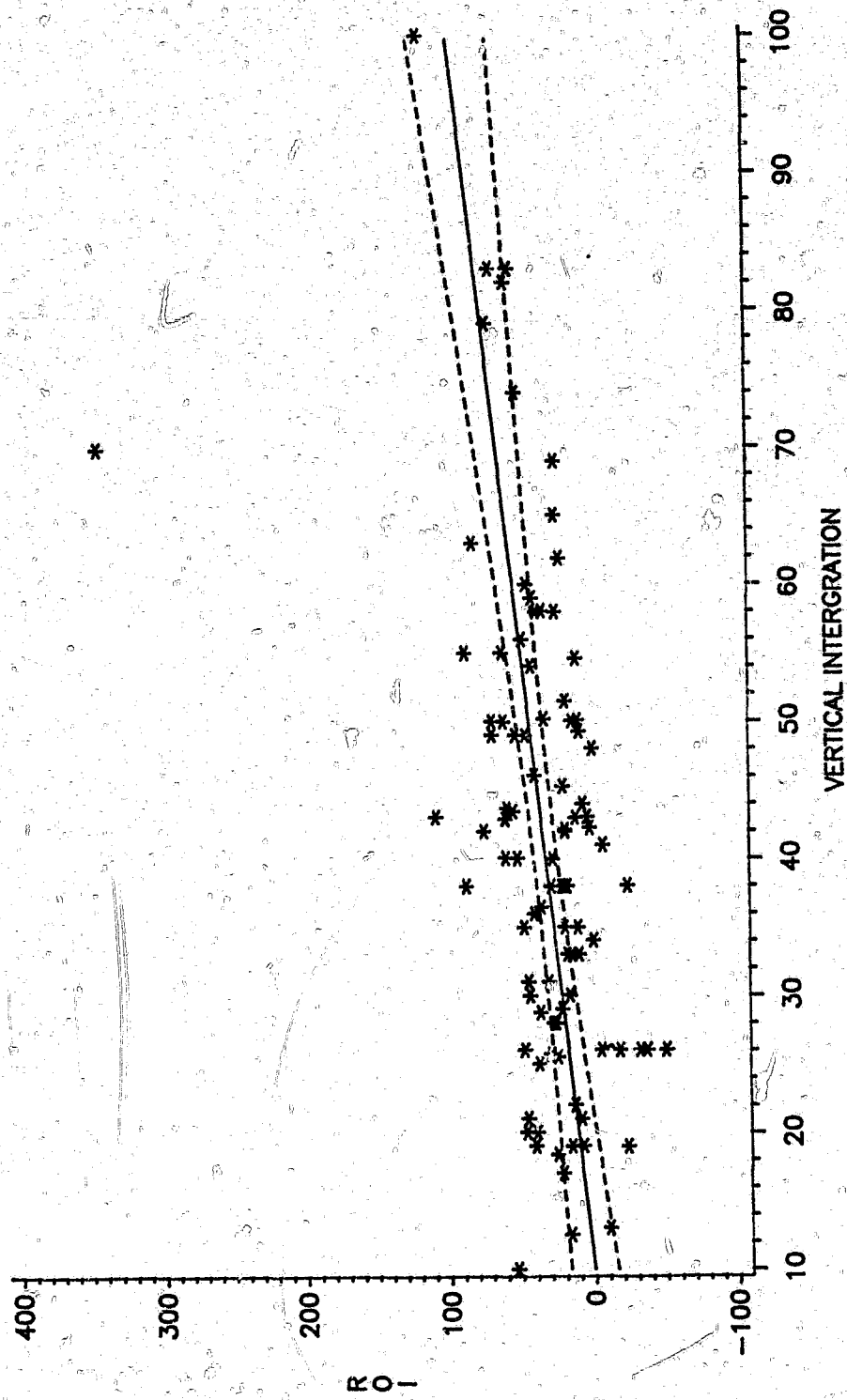


SAS 6.06 07/01/94 08:22:10 02806D PIMSPL2 74

Fig A3.27

Plot of Investment/Value Added

PIMS (SA) DATA
MODIFIED DATA PLOTTED

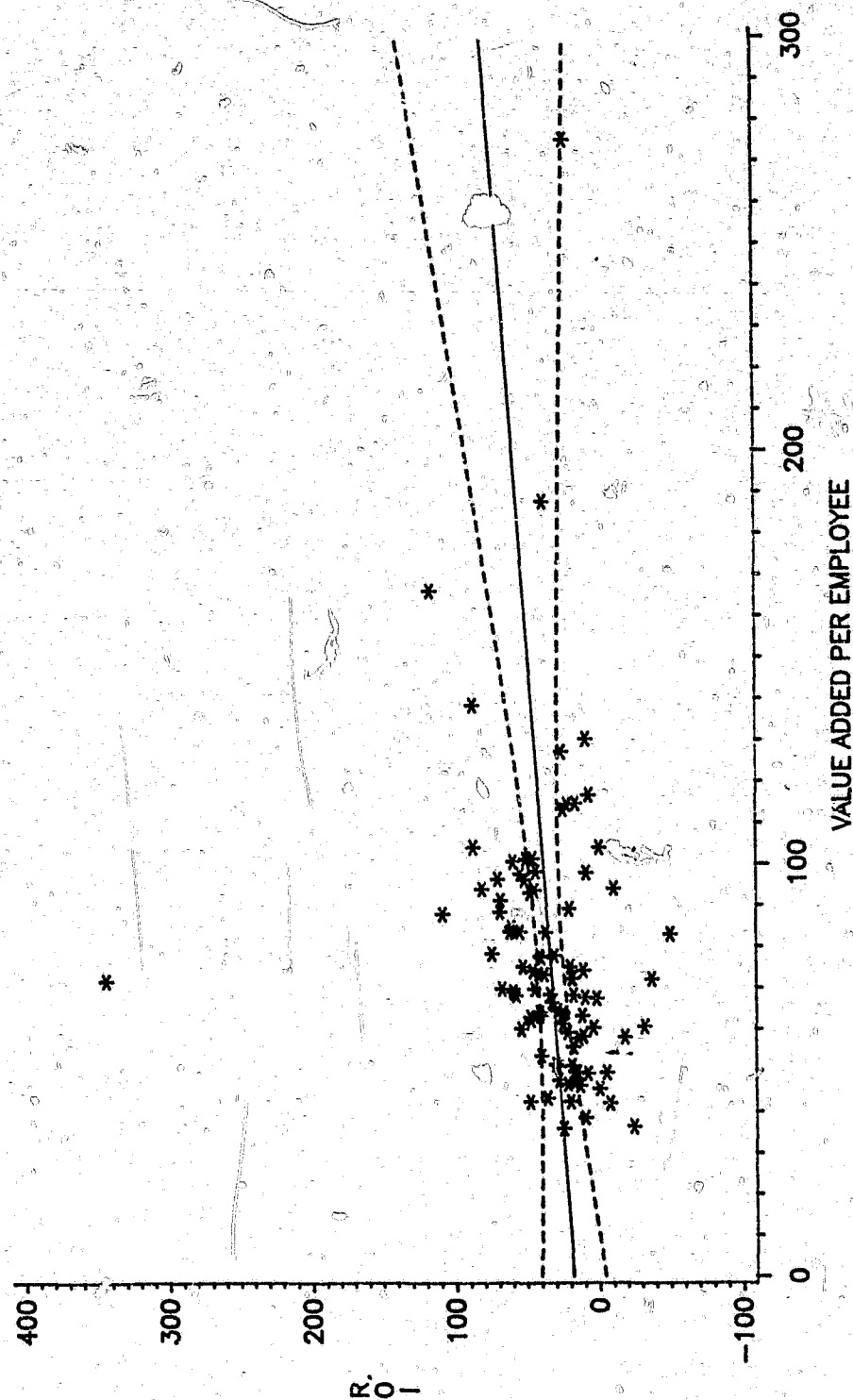


SAS 6.06 07/01/94 08:22:17 02806D PIMSPL2 74

Fig A3.28

Plot of Vertical Integration

PIMS (SA) DATA MODIFIED DATA PLOTTED



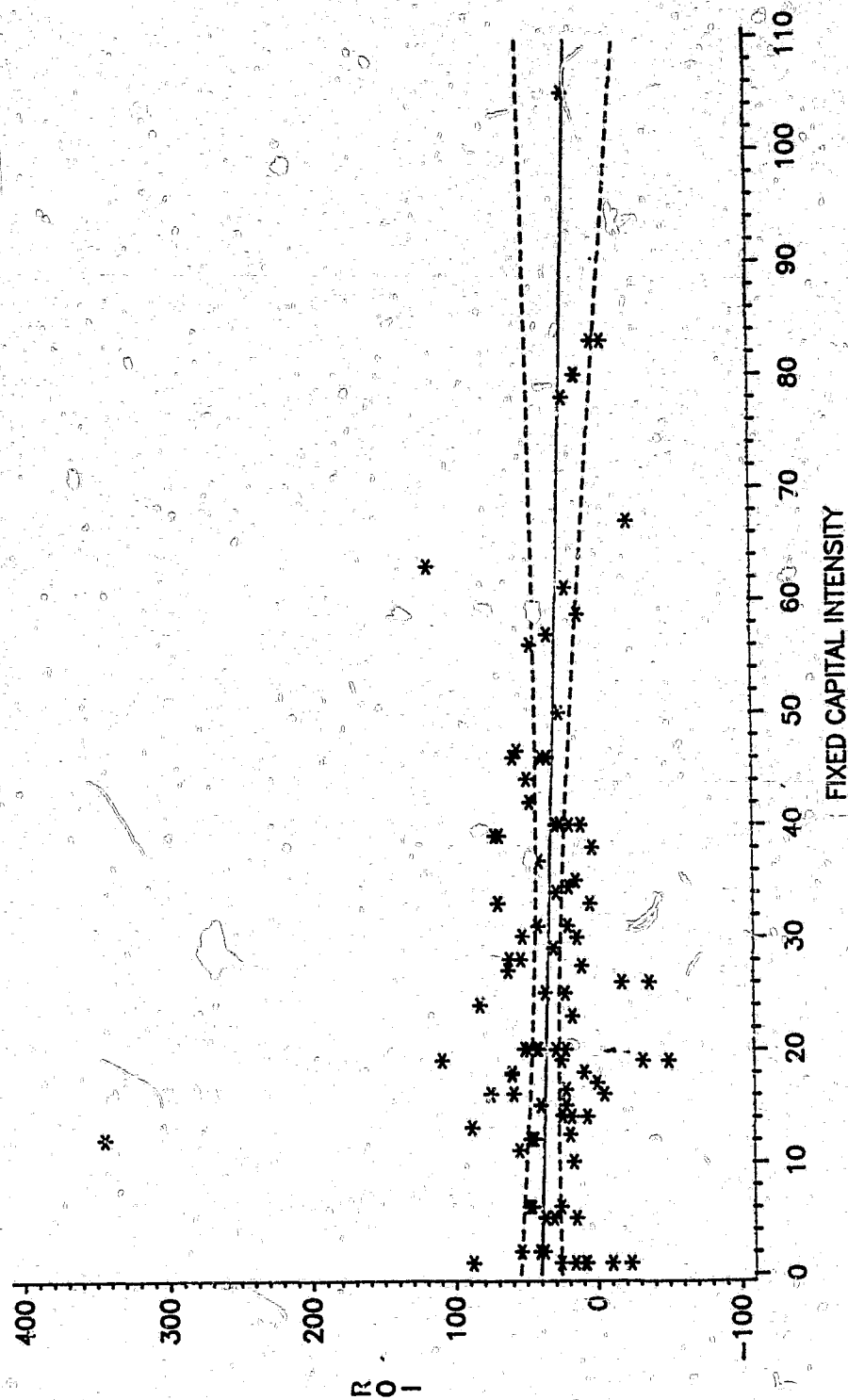
SAS 6.06 07/01/94 08:22:25 C280GED PIMSPL2 74

Fig A3.29

Plot of Value Added per Employee

PIMS (SA) DATA

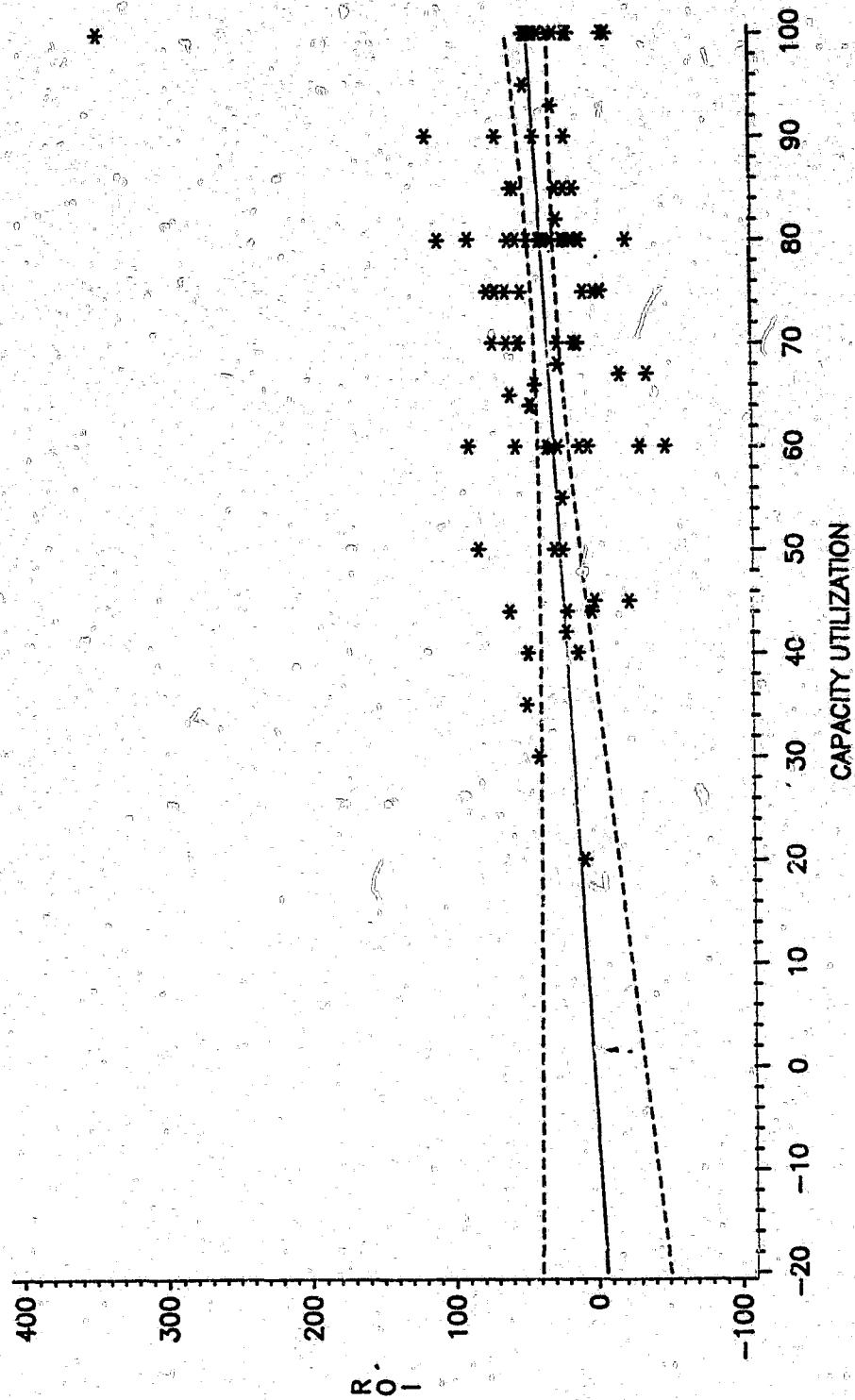
MODIFIED DATA PLOTTED



SAS 6.05 07/01/94 08:22:31 02806D PIMSPL2 74

Fig A3.30 Plot of Fixed Capital Intensity

PIMS (SA) DATA
MODIFIED DATA PLOTTED



SAS 6.06 07/01/94 08:22:37 02806G PIMSPL2 74

Fig A3.31

Plot of Capacity Utilization

PIMS (SA) DATA MODIFIED DATA PLOTTED

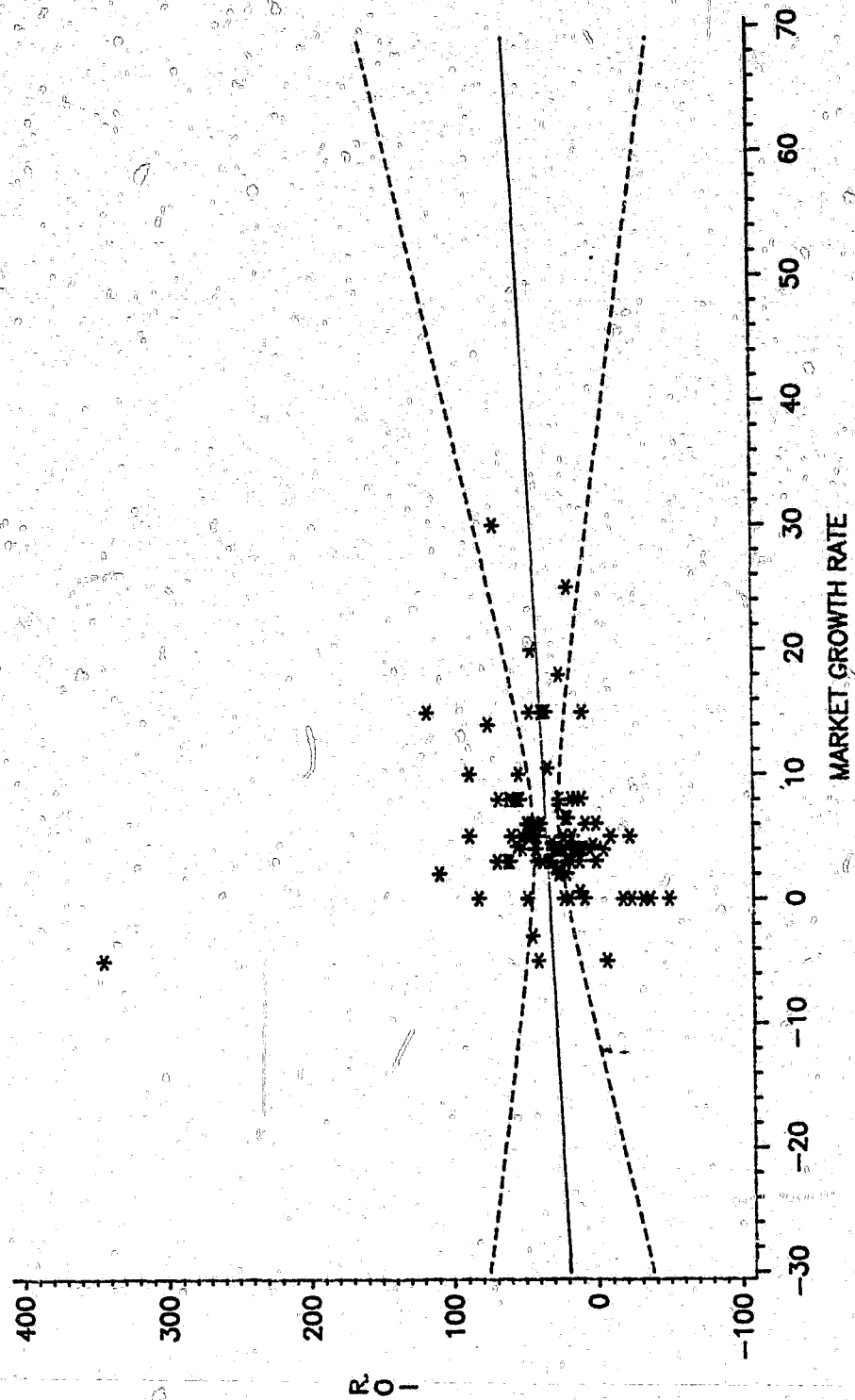
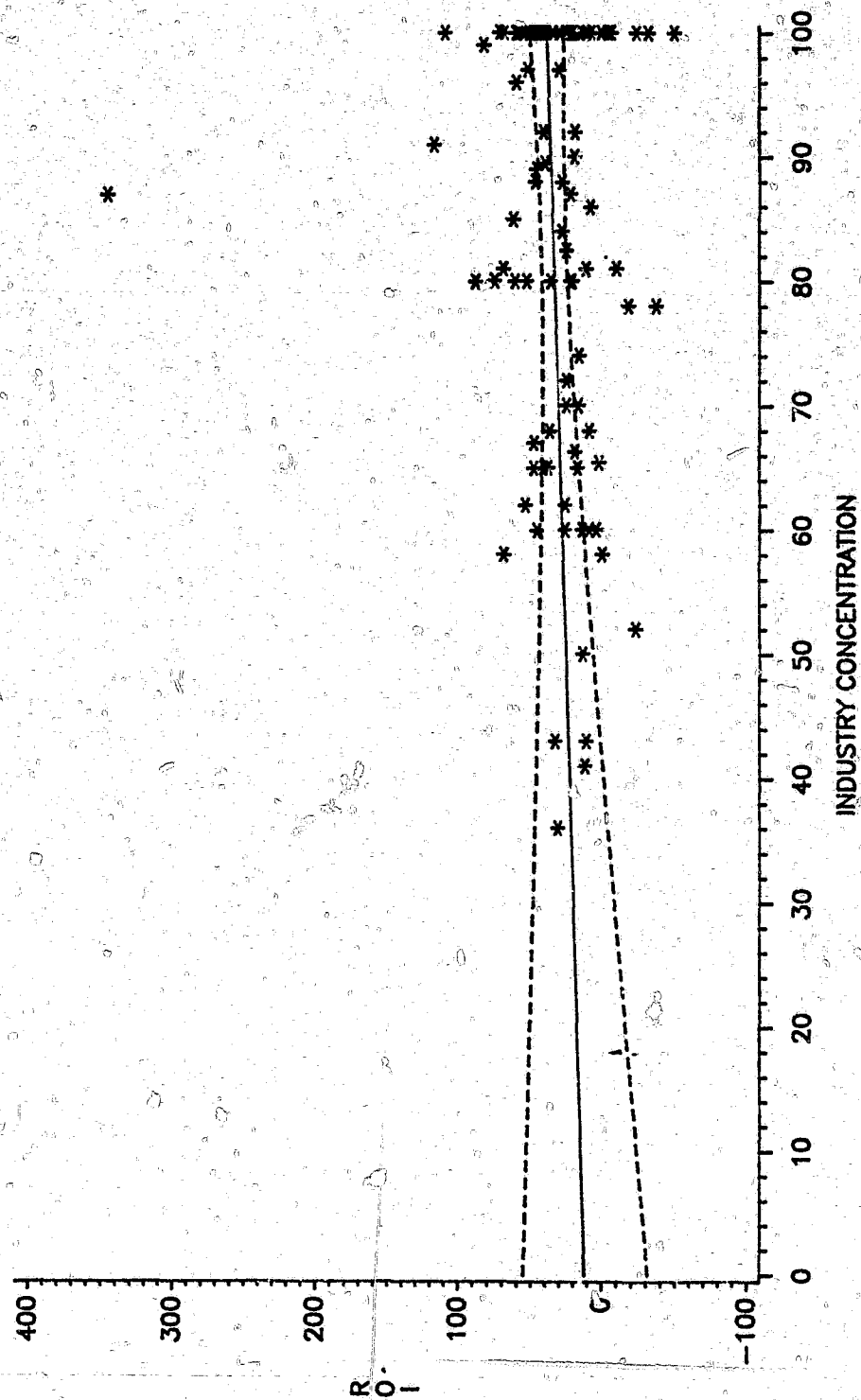


Fig A3.32

Plot of Market Growth

PIMS (SA) DATA

MODIFIED DATA PLOTTED

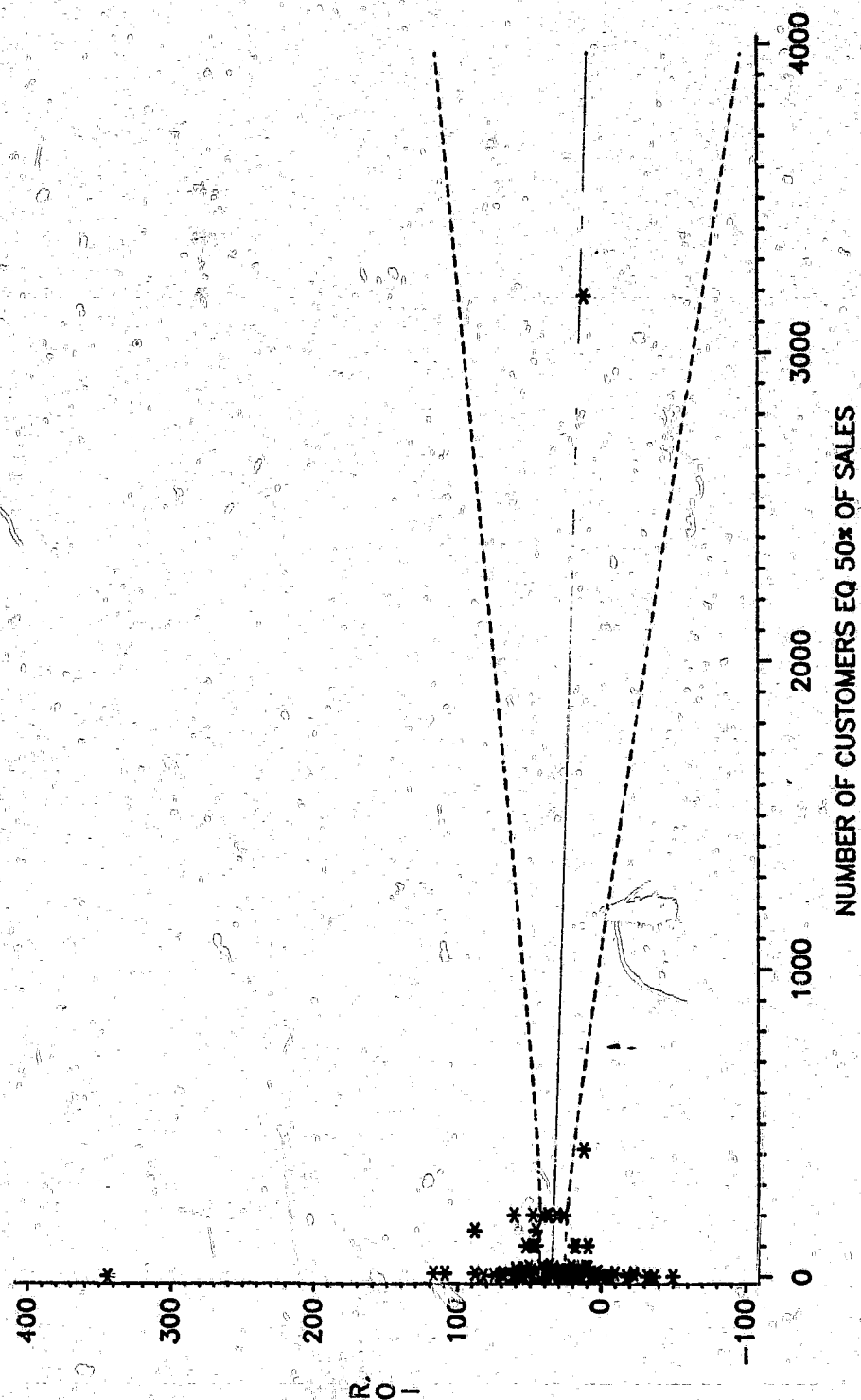


SAS 6.06 07/01/94 08:22:47 02806G PIMSPL2 74

Fig A3.33

Plot of Industry Concentration

PIMS (SA) DATA MODIFIED DATA PLOTTED



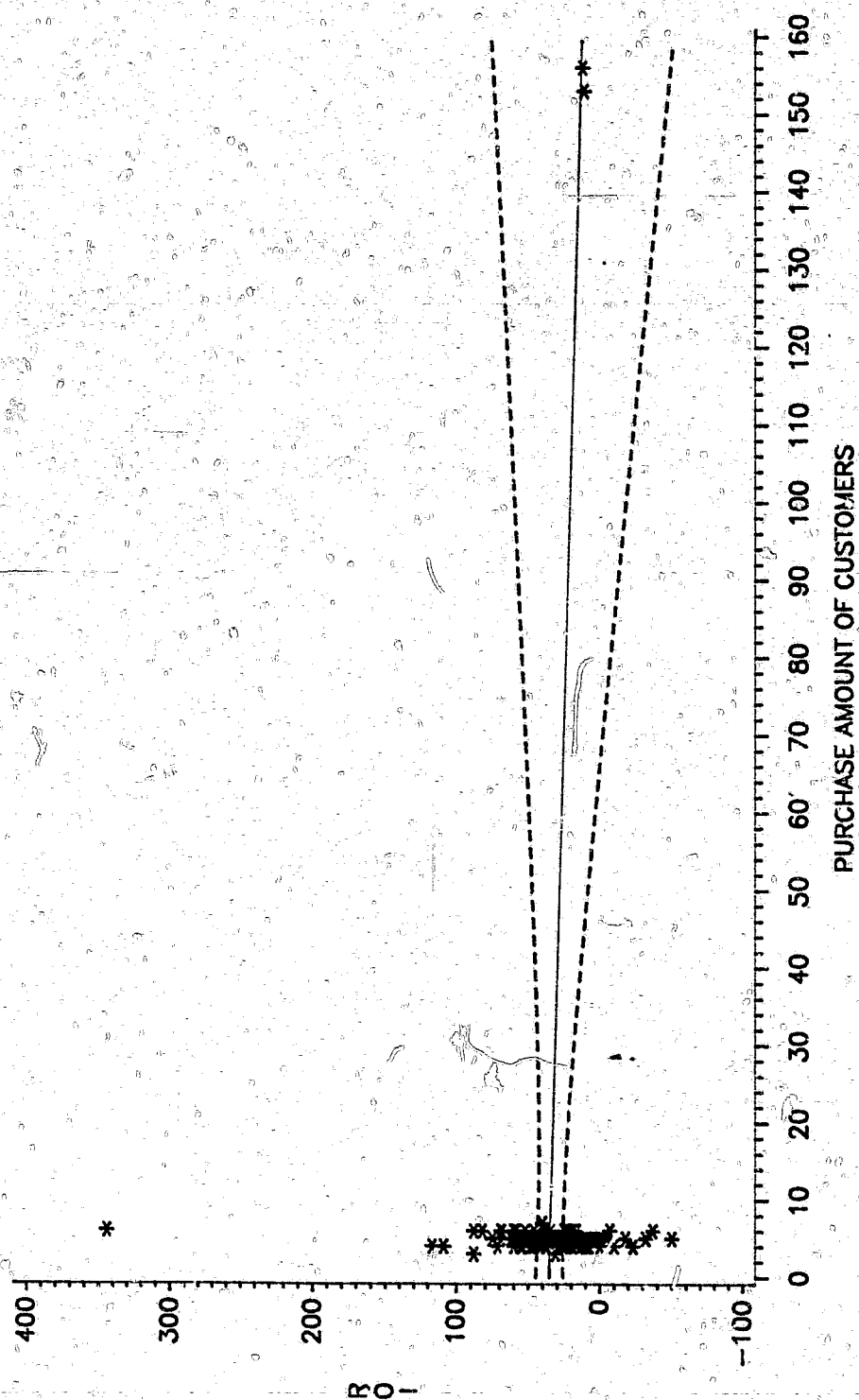
NUMBER OF CUSTOMERS EQ 50% OF SALES

SAS 6.06 07/01/94 08:22:51 02806ED PIMSPL2 74

Fig A3.34

Plot of Customer Concentration

PIMS (SA) DATA
MODIFIED DATA PLOTTED

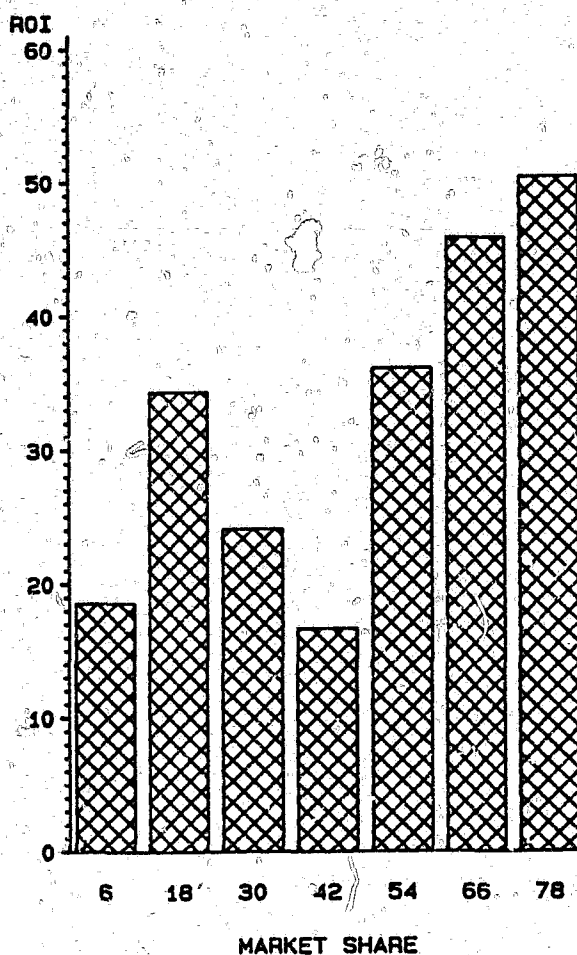


SAS 6.06 07/01/94 08:22:54 02806G PIMSPL2 74

Fig A3.35

Plot of Purchase Amount vs ROI

MARKET SHARE VS PROFITABILITY



SAS 6.06 23/12/93 21:03:44 02806ED CHT4 74

Fig A3.36a

Chart of Market Share vs ROI

Author Edwards G N

Name of thesis Market share, profitability and implications for strategy formulation 1994

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