

https://dspace.org/

Market share, profitability and implications for strategy formulation

Edwards, Graham Neil

2015-03-11
http://hdl.handle.net/10539/17225

Downloaded from a DSpace repository. https://dspace.org/

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).

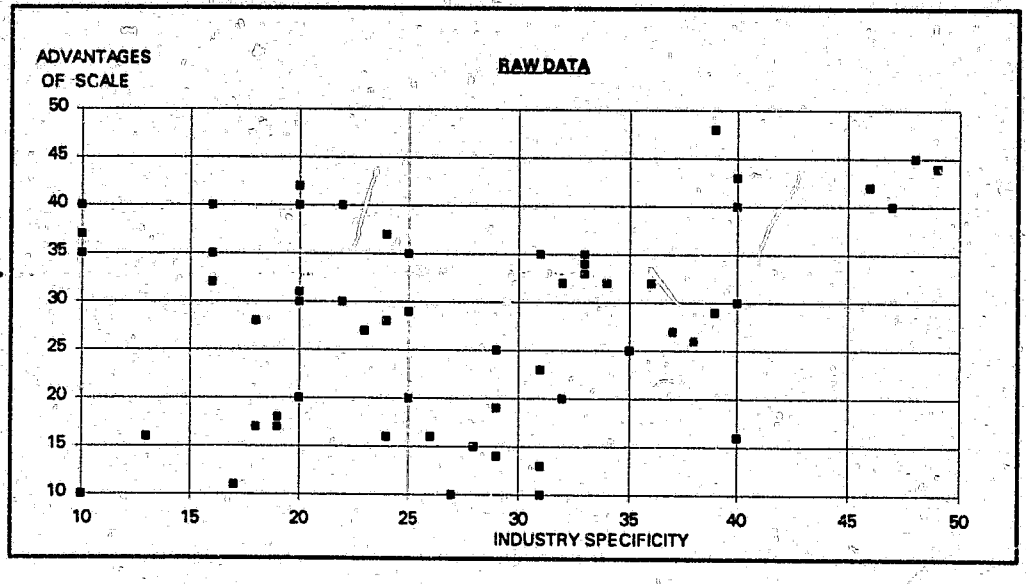


Fig 9.1
Advantage of scale vs specificity : raw data

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).

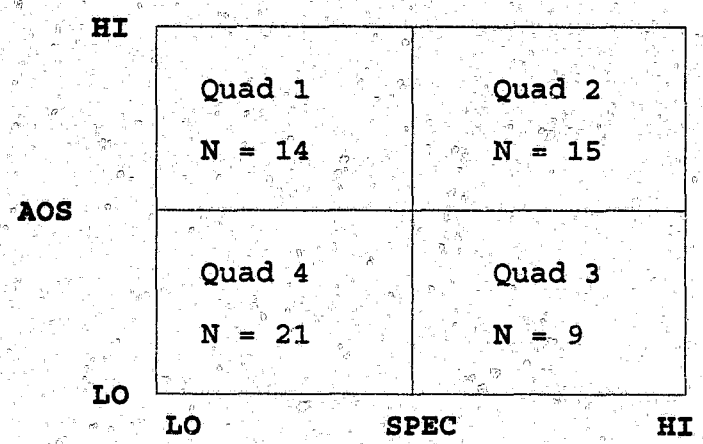


Table 9.2
Number of observations in each quadrant

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 (Ho : 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 (Ho : 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:

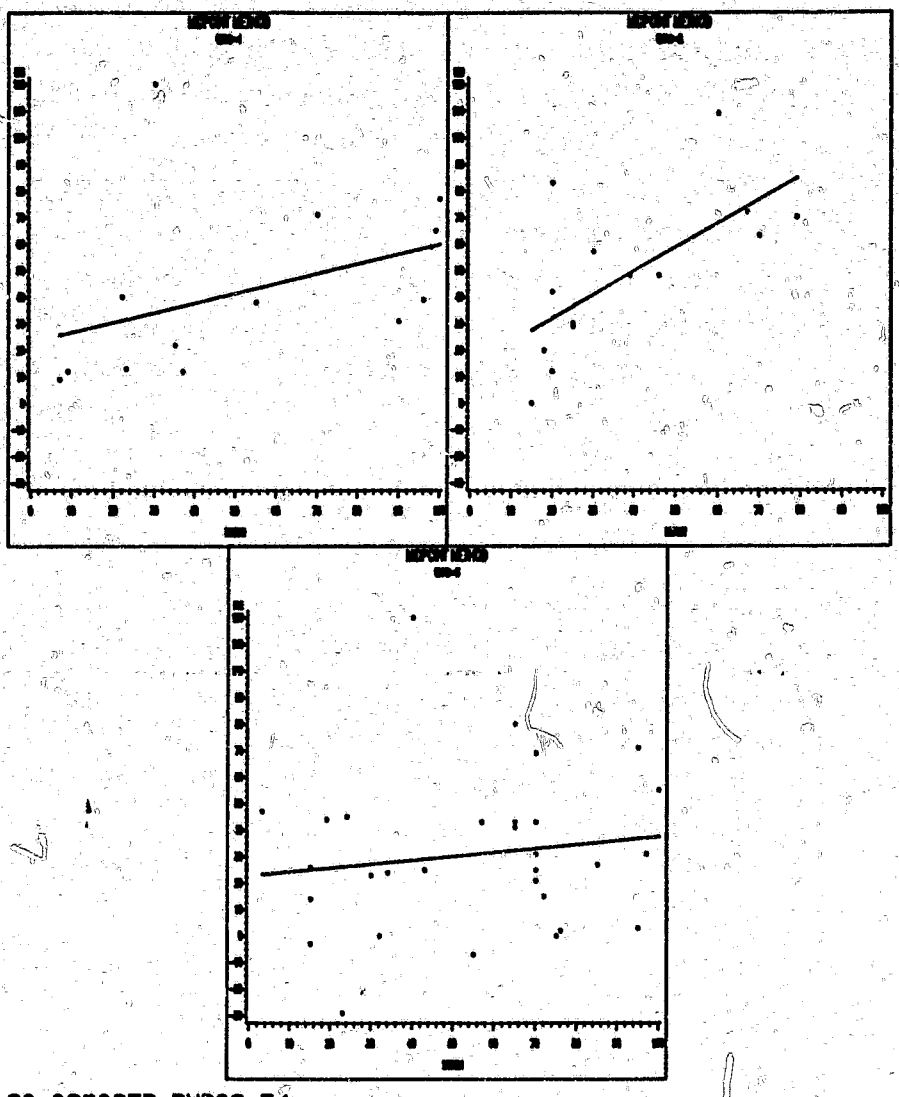
Quad 2 - highest
Quad 1
Quad 3 & 4 - lowest
(less than 0,2)

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.



SAS 6.06 06/01/94 13:49:20 0280GED PHD06 74

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

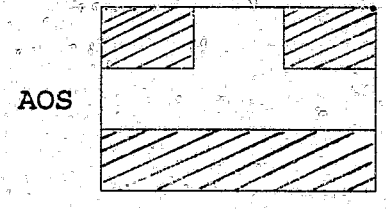


Figure 9.3A

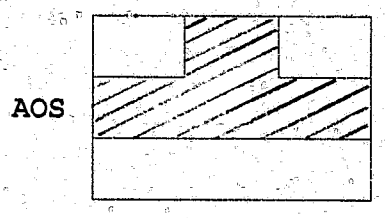


Figure 9.3B

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 Ho : 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 Ho : 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.

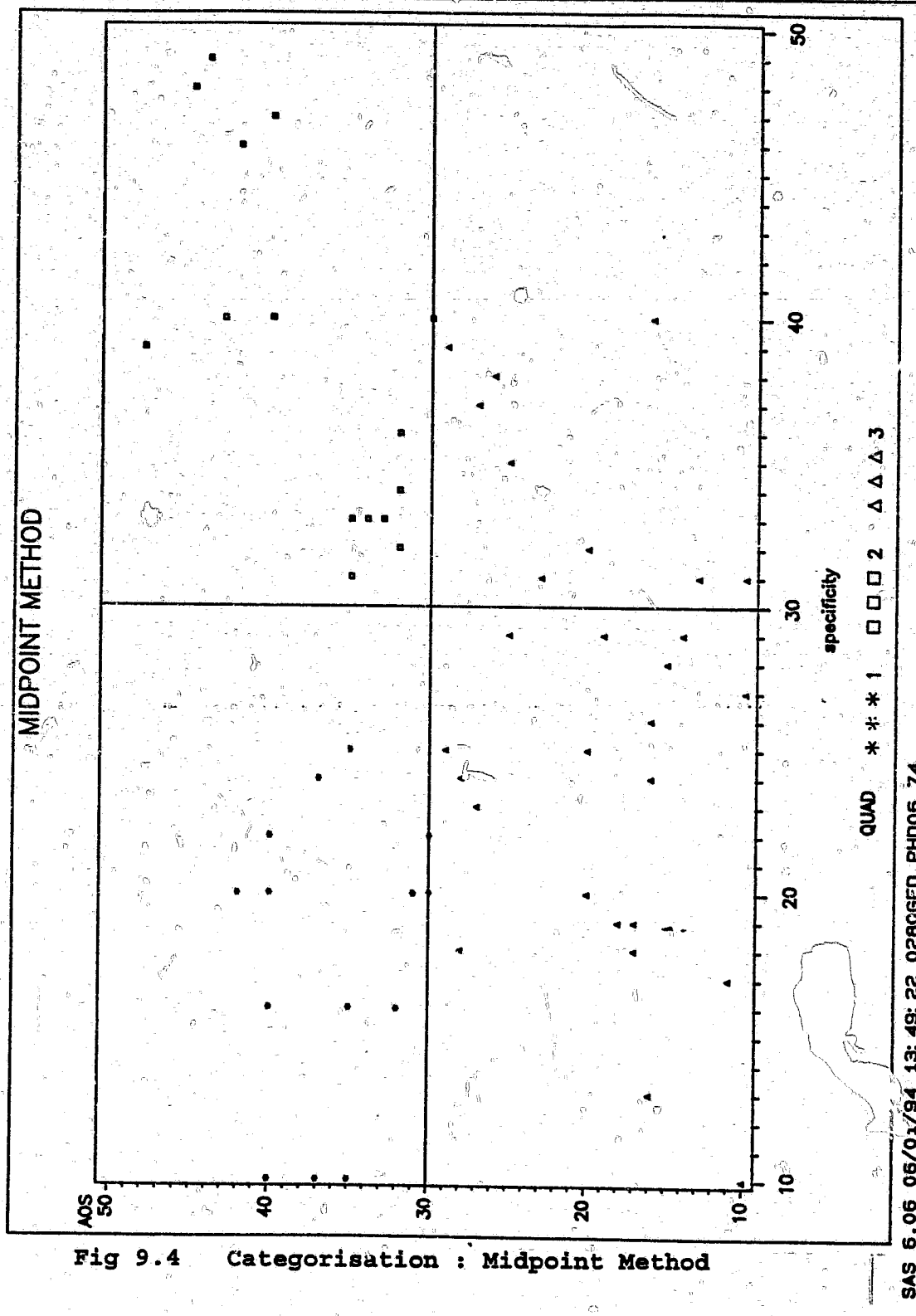


Fig 9.4 Categorisation : Midpoint Method

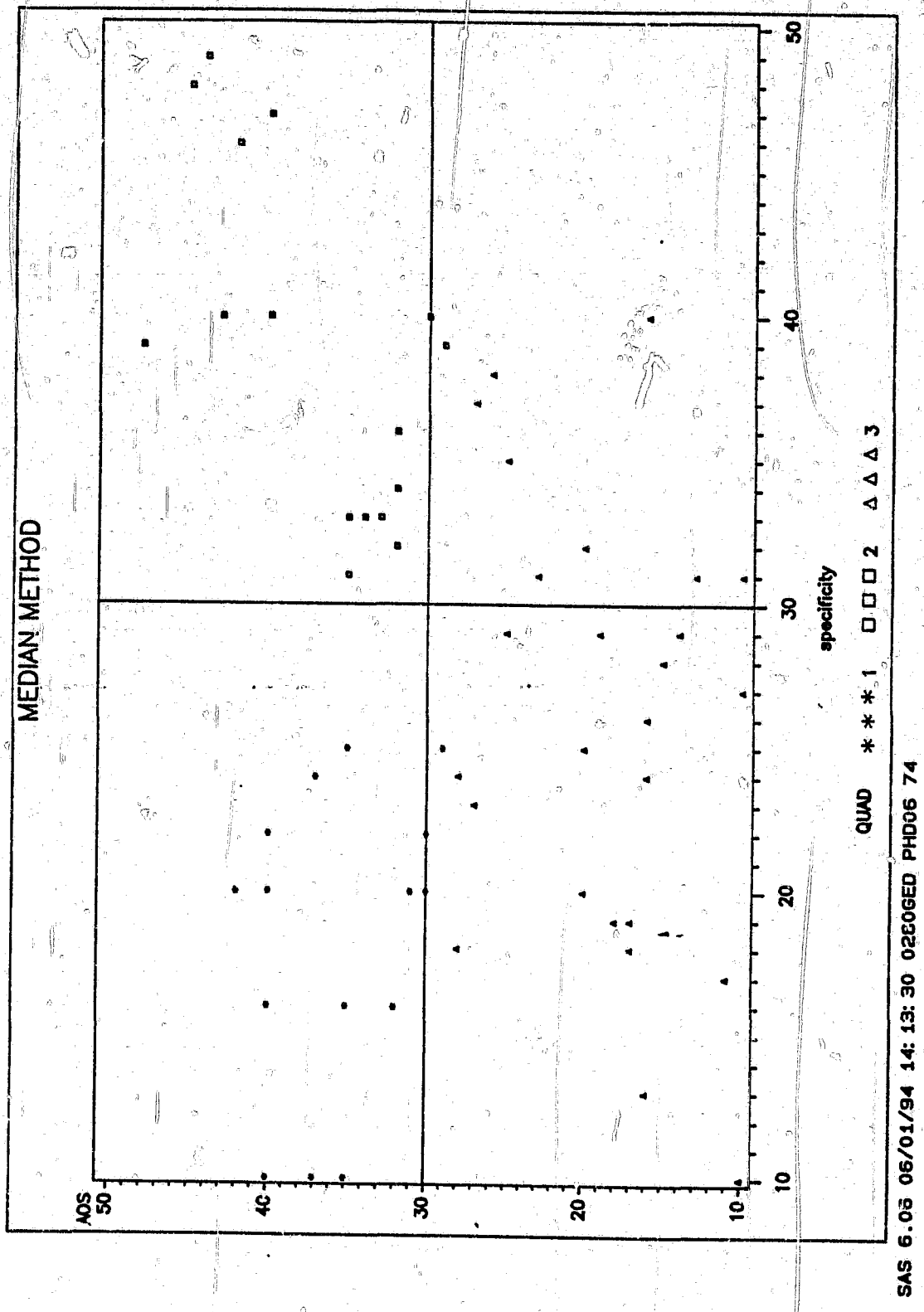


Fig 9.5 Categorisation : Median Method

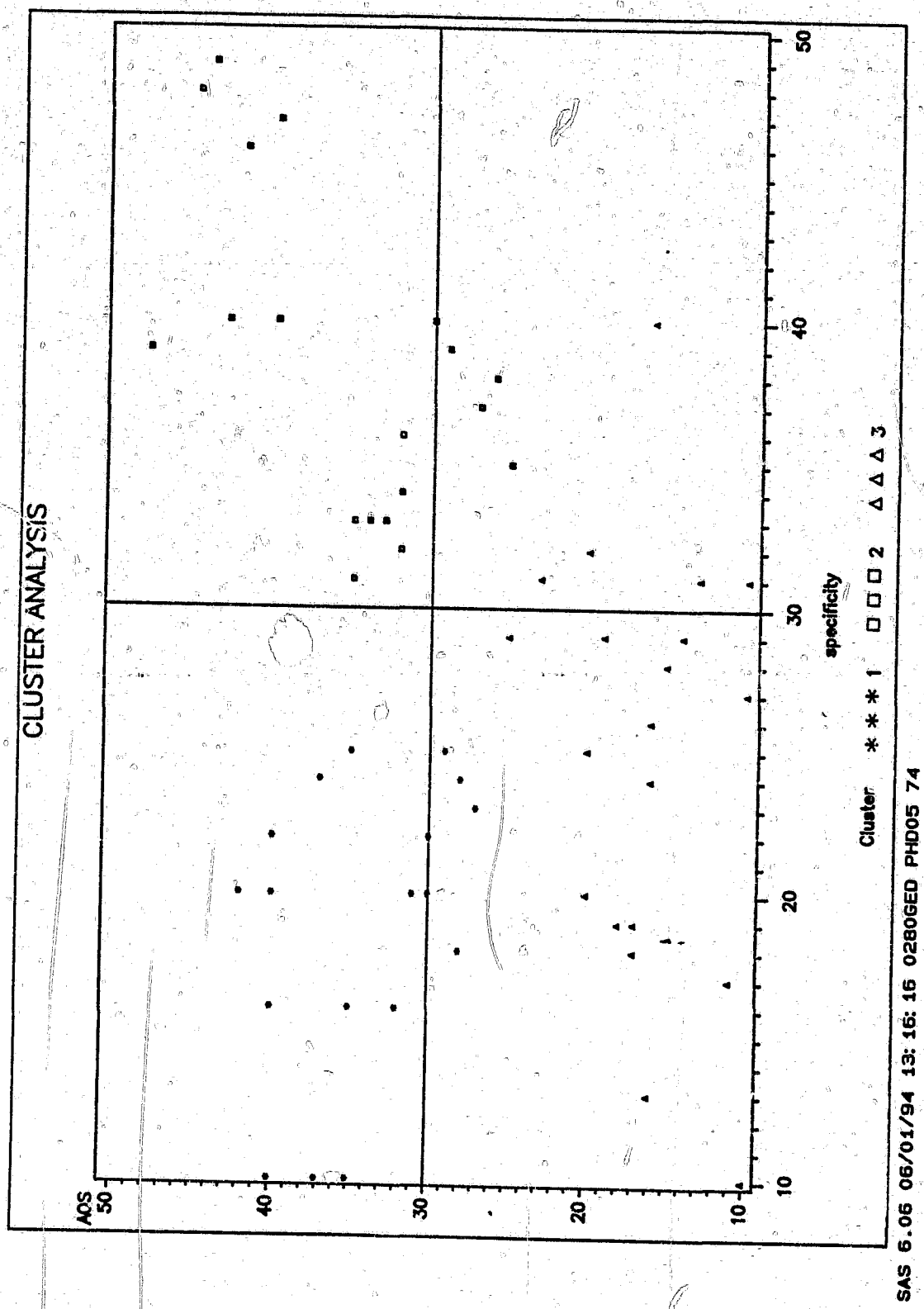


Fig 9.6 Categorisation : Cluster Method

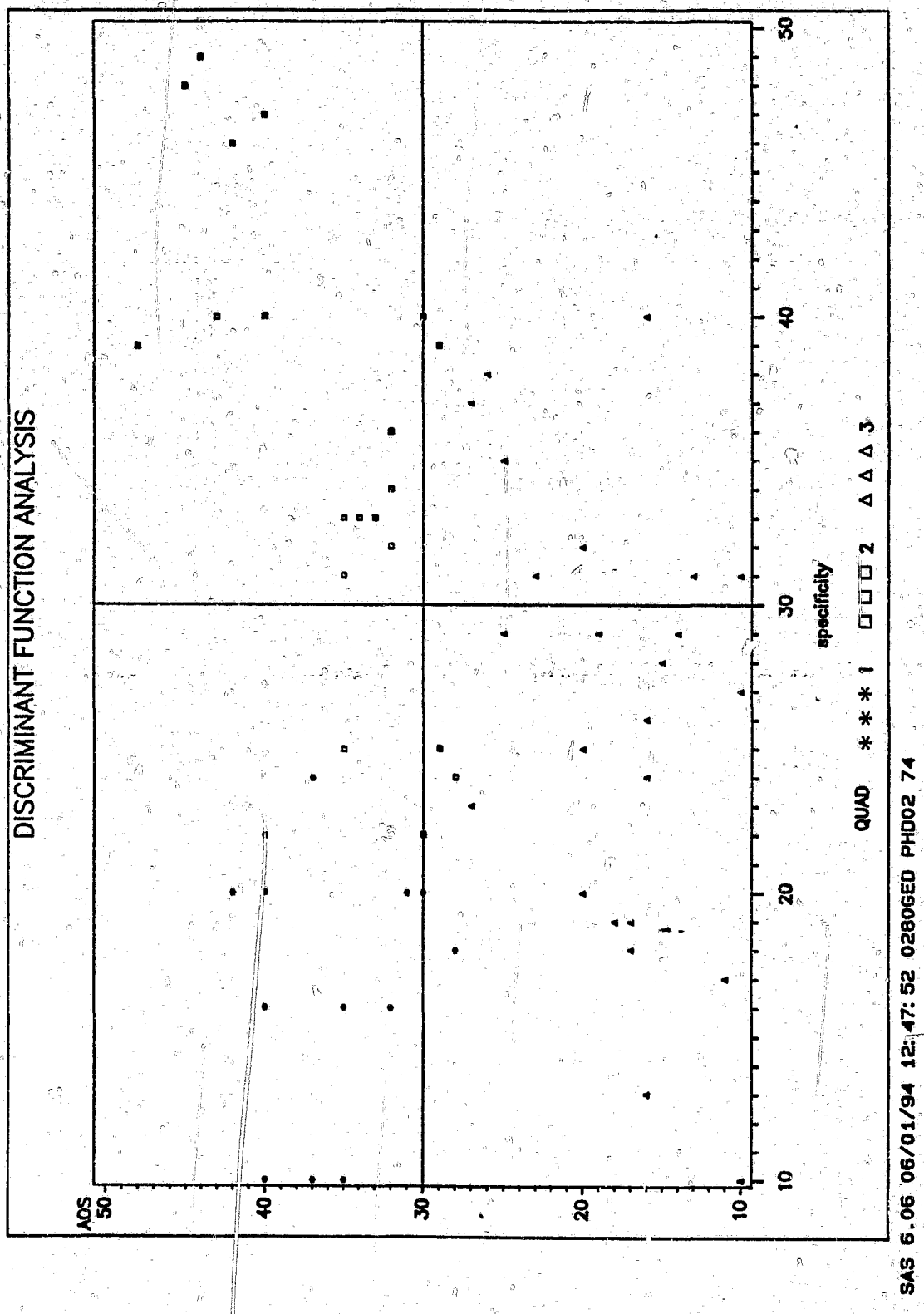
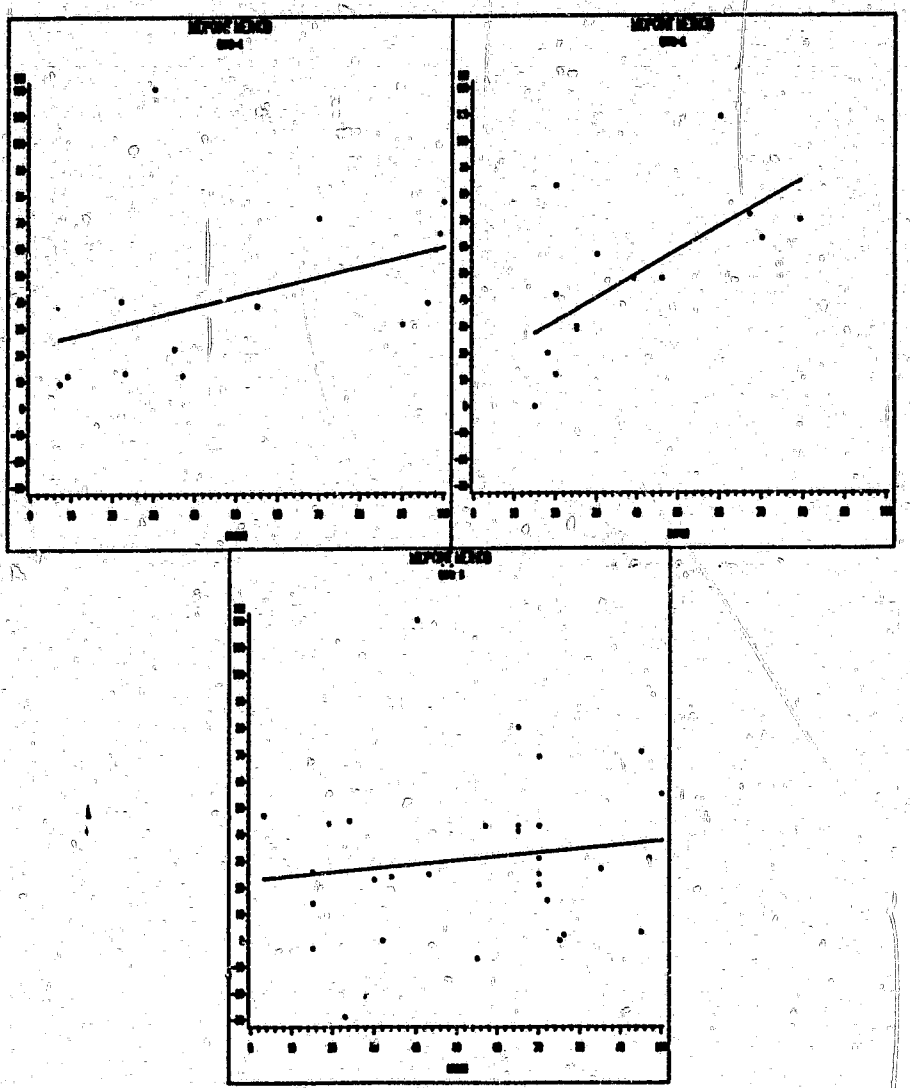
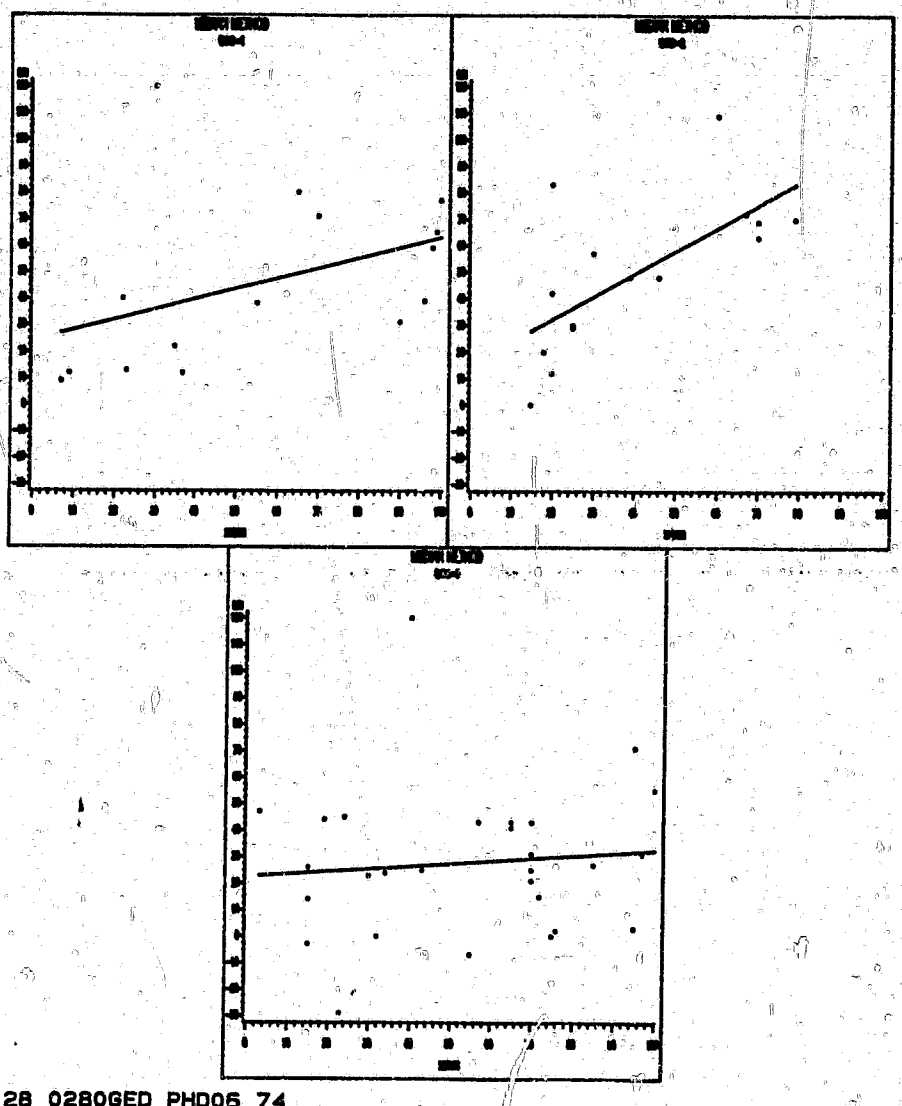


Fig 9.7 Categorisation : Discriminant Function Method



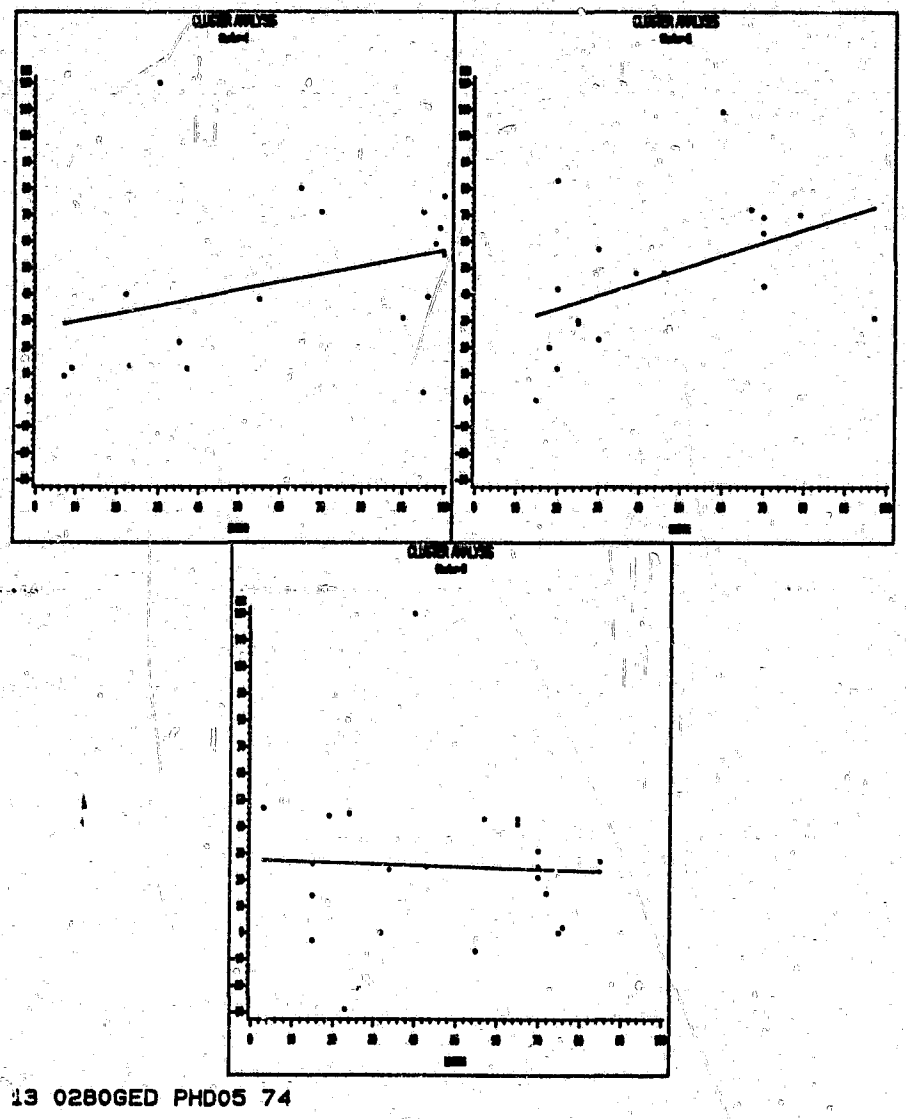
SAS 6.06 06/01/94 13:49:20 0280GED PHD06 74

Fig 9.8 Regression of Market Share and Profitability
Midpoint categorisation



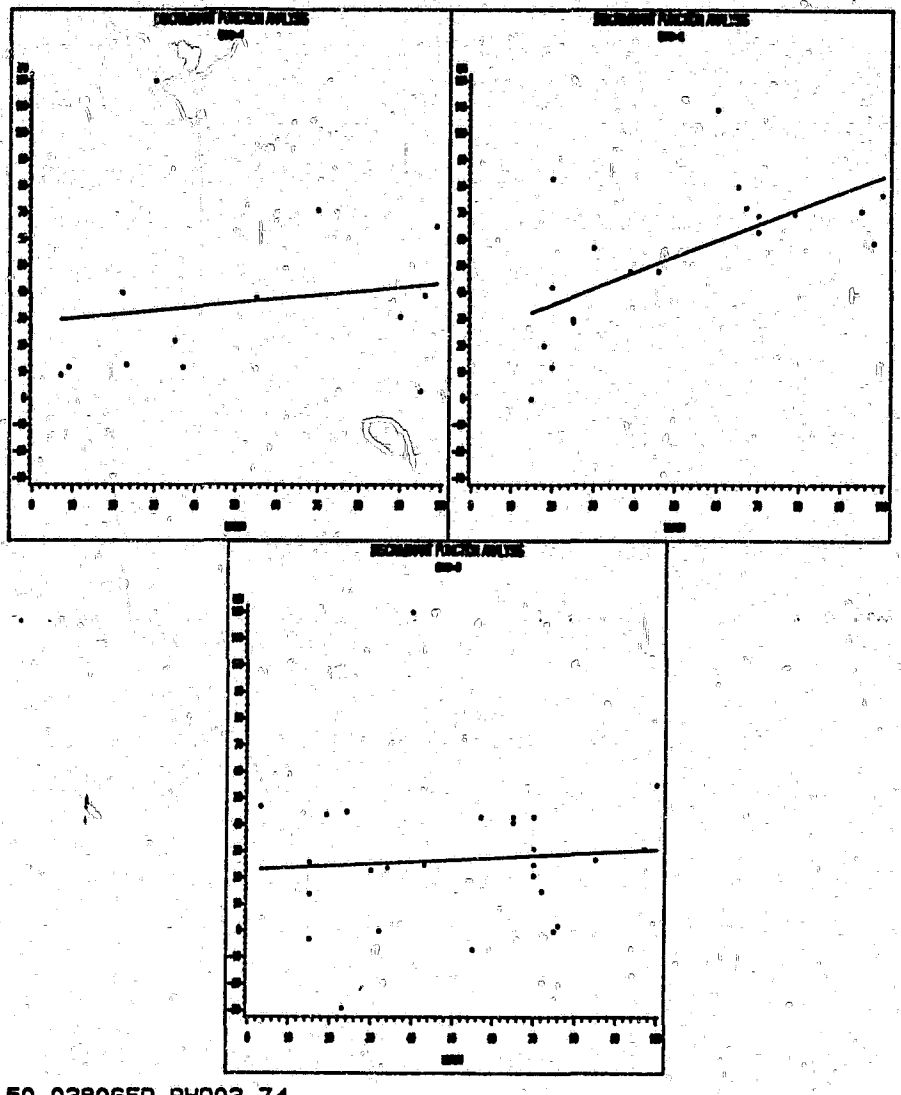
SAS 6.06 06/01/94 14: 13: 28 0280GED PHD06 74

Fig 9.9 Regression of Market Share and Profitability : Median categorisation



SAS 6.06 06/01/94 13: 16: 13 0280GED PHD05 74

Fig 9.10 Regression of Market Share and Profitability : Cluster categorisation



SAS 6.06 06/01/94 12:47:50 0280GED PHD02 74

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 Ho (slope = o) 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 Ho (slope = o) cannot be rejected as predicted.

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

H4 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.

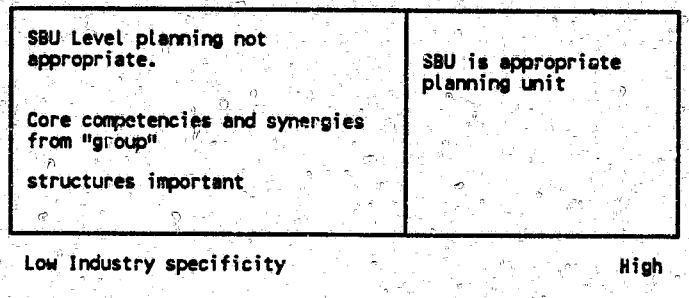


Fig 10.1 Appropriate Strategic Planning Unit

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.

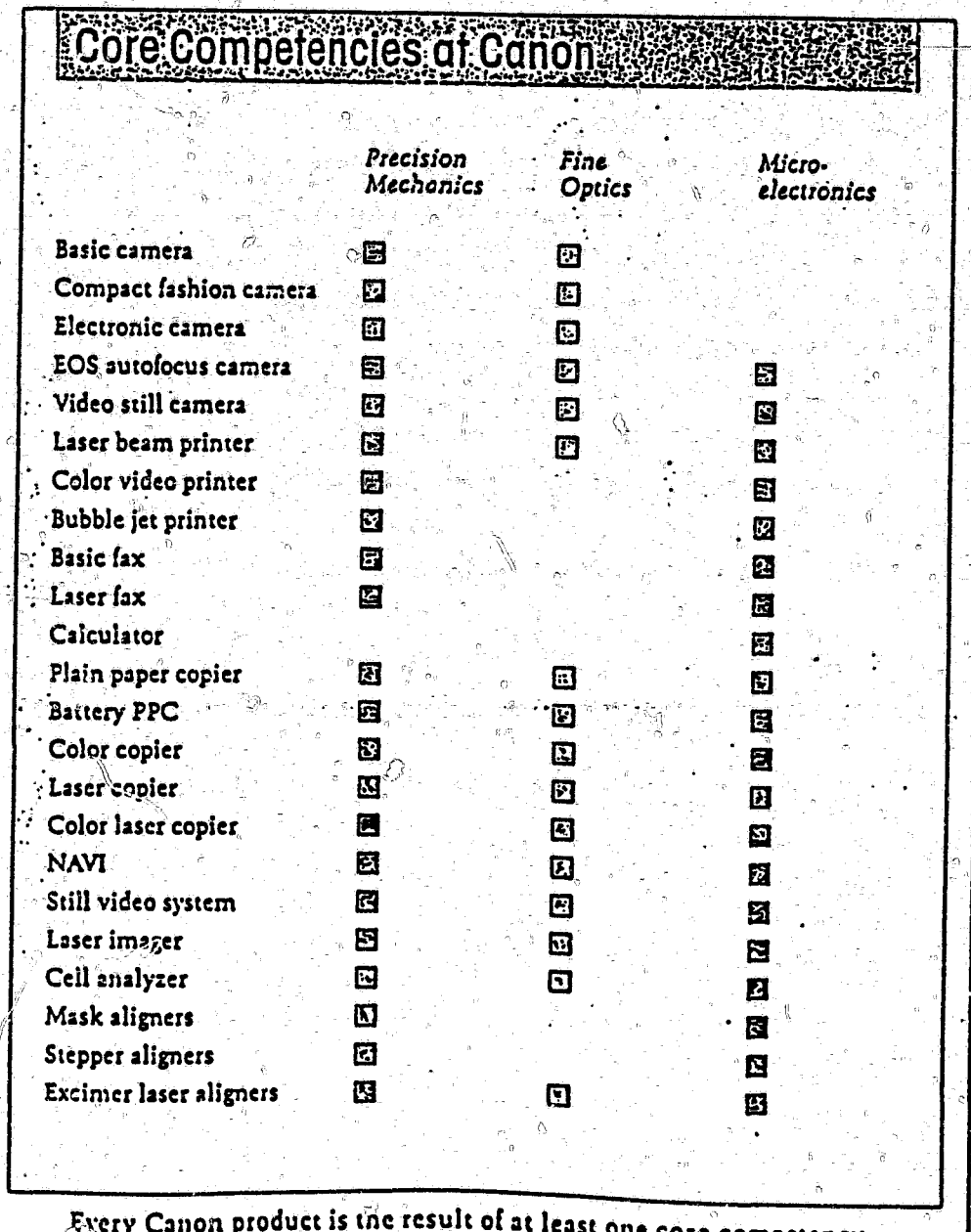


Fig 10.2 Shared competencies
(Source: Prahalad and Hamel, 1990, p90)

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.

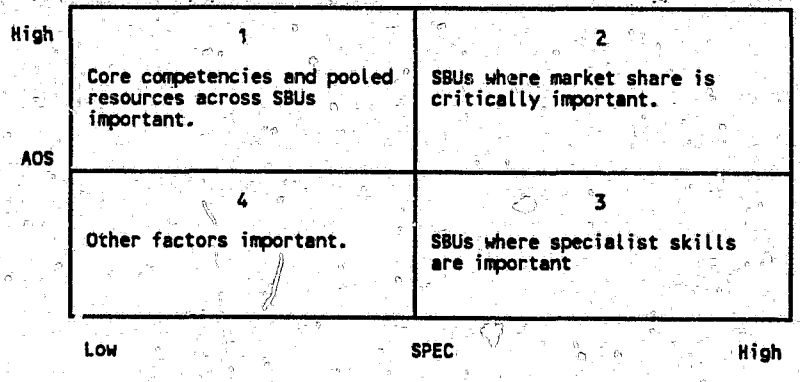


Fig 10.3 Strategic categorisation of business

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.

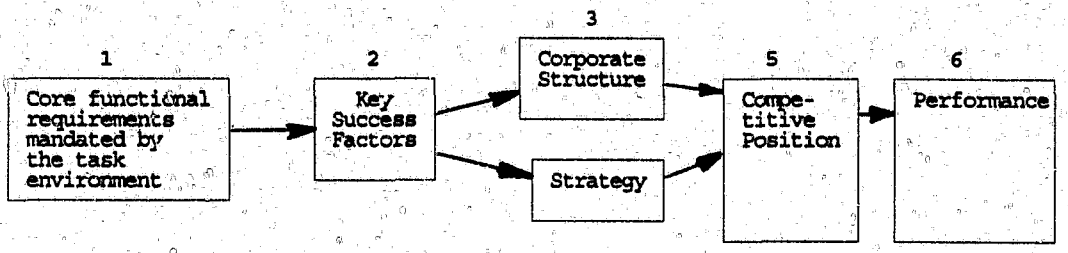


Fig 10.4 Basic Paradigm

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.

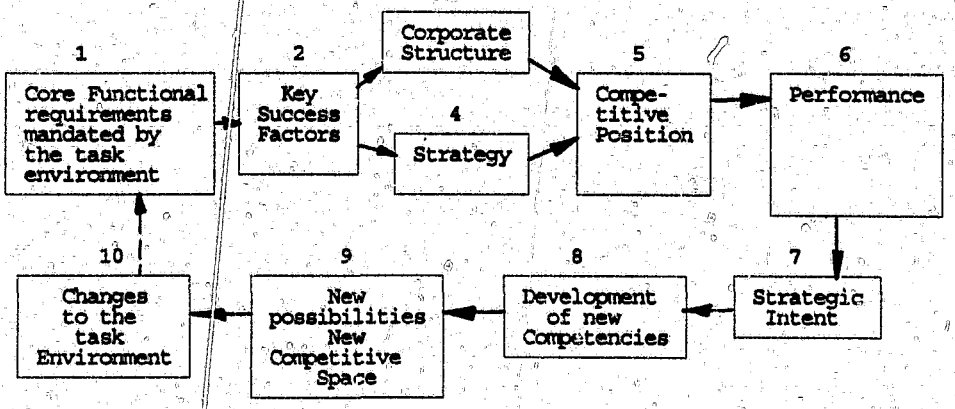


Fig 10.5 Extended Paradigm

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 is 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 that 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).

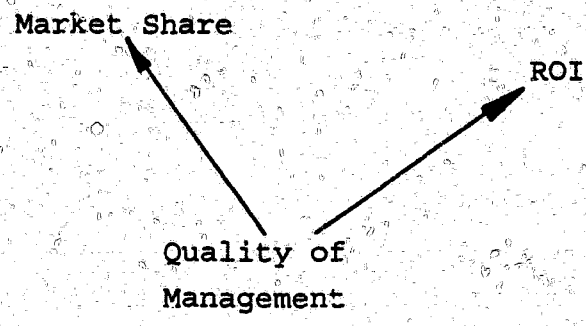


Fig 10.6 Spurious Correlation

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.

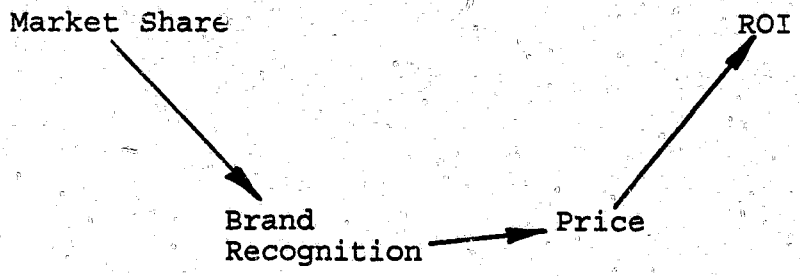


Figure 10.7 Indirect causal effect

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;

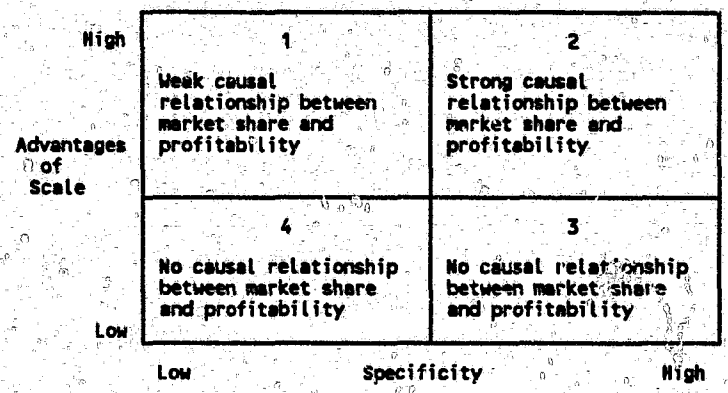


Fig 10.8 Summary of Theory
(Repeat of Fig 7.5 p183)

- 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 sugggested 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 theor, 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 formulation 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.

REFERENCES

Abell, D.F. 1980. Defining the Business. Prentice-Hall.

Abell, D.F. and Hammond, J.S. 1979. Strategic Market Planning. Prentice-Hall.

Allison, G.T. 1971. Essence of Decision. Little Brown, Boston, Mass.

Alwin, D.F. and Hauser, R.M. 1975. "The decomposition of effects in path analysis", American Sociological Review, 40, pp. 37-47.

Anderson, C.R. and Paine, F.T. 1978. PIMS : A Re-Examination Management Review, July, pp. 602-611.

Andrews, K. 1971. The Concept of Corporate Strategy. Dow-Jones-Irwan.

Anon 1981. "South Africa : Market Shares", Banker (UK), Vol. 31, No. 664, pp. 25-26.

Ansoff, H.I. 1969. Business Strategy. Penguin Education.

Ansoff, H.I. 1984. Implanting Strategic Management, Prentice Hall

Bailey, K.D.F. 1982. Methods of Social Research. The Free Press.

Bain, J.S. 1951. "Relation of Profit Rate to Industry Concentration : American Manufacturing 1936 - 1940", Quarterly Journal of Economics 65, pp. 293-324.

Bain, J.S. 1959 Industrial Organisation John Wiley and Son, New York.

Baldwin, W. 1983. "The Market Share Myth". Forbes, Vol. 131, No. 6, pp. 109-114.

Basar, T. and Olsder, G.J. 1982. Dynamic Non-Cooperative Game Theory. Academic Press.

Bass, F.M., Cattin, P. and Wittink, D.R. 1978. "Firm effects and industry effects in the analysis of market structure", Journal of Marketing Research, February, Vol. XV, pp. 3-10.

Bayvel, C.E. ST C., 1982. The Impact of Market Share on Corporate Turnaround Strategies. MBA Dissertation, University of Witwatersrand.

Best, R.J. and Kahle, L.R. 1985. "Managing a capital equipment business's market share", Industrial Marketing Management, Vol. 14, pp. 159-164.

Bettis, R.A. and Hall, K. 1983. "The

business portfolio approach where it falls down", Long Range Planning, Vol. 16, No. 2, pp. 95-104.

Bhattacharya, K. 1985. "Strategies for businesses with low market share", Accountancy (UK), Vol. 96, No. 1103, pp. 106-108.

Bloom, P.N. and Kotler, P. 1975. "Strategies for high market share companies", Harvard Business Review.

Bothwell, J.L., Cooley, T.F. and Hall, T.E., 1984, "A new view of the market structure performance debate", Journal of Industrial Economics, Vol. 32, No. 4, p. 397.

Bourgeois, L.J. 1980. Performance and Concensus, Strategic Management Journal, 1, pp. 227-248.

Bourgeois, L.E. 1985. "Strategic goals perceived uncertainty and economic performance in volatile environments", Academy of Management Journal, Vol. 28, No. 3, pp. 548-573.

Boynton, A.C. and Zmud, R.W. 1984. "An assessment of critical success factors", Sloan Management Review, Summer, Vol. 25, No. 4, pp. 17-27.

Buttle, F. 1985. "The marketing strategy

worksheet", Long Range Planning, Vol. 18, No. 4.

Buzzell, R.D. "Calibrating the cost of gaining market share". PIMS Letter No.37 SPI

Buzzell, R.D. and Gale, B.T. 1987. The PIMS Principles. The Free Press, New York.

Buzzell, R.D. and Wiersema, F.D. 1981. "Successful share - Building strategies", Harvard Business Review, 59 (1), pp. 135-144.

Buzzell, R.D. and Wiersema, F.D. 1981. "Modelling changes in market share : A cross sectional analysis", Strategic Management Journal, Vol. 2, pp. 27-42.

Buzzell, R.D. and Gale, B.T., Sultan, R.G.M. 1975. "Market share - A key to profitability", Harvard Business Review.

Buzzel, R.D., Quelch, J.A. and Bartlett, C.A. 1992. Global Marketing Management: Cases and Readings 2nd Ed Addison Wisley, New York.

Carpenter, G.S. and Lehmann, D.R. 1985. "Model of marketing mix, brand switching and competition, Journal of Marketing Research, Vol. 22, No. 3,

pp. 318-329.

Caves, R.E., Gale, B.T. and Porter, M.E. 1977. "Interfirm profitability differences", Quarterly Journal of Economics. pp. 667-674.

Chandler, A.D. 1962. Strategy and Structure. MIT Press Cambridge, Mass.

Child, J. 1972. "Organisational structure environment and performance", Role of Strategic Choice Sociology. 6:1, January, pp. 2-22.

Clifford, D.K. and Cavanagh, R.E. 1985. The Winning Performance. Bantam Books.

Cook, V.J. Jr. 1985. "The net present value of market share", Journal of Marketing. Vol. 49, No. 3, pp. 49-63.

Cooper, R.A. and Weeks, A.S. 1983. Data. Models and Statistical Analysis. Philip Allan.

Cowley, P.R. 1988. "Market structure and business performance : An evaluation of buyer/seller power in the PIMS database", Strategic Management Journal. Vol. 9, pp. 271-278.

Daughety, A.F. 1988 Cournot Olipopoly. Cambridge University Press, New York.

Day, G. 1983. "Gaining insights through strategy analysis", The Journal of Business Strategy.

Dess, G.G. and Davis, P.S. 1984. "Porters (1980) generic strategies as determinants of strategy group members and organisations", Academy of Management Journal. Vol. 27, No. 3, pp. 467-488. 250°

de Vasconcellos, J.A.S. and Hambrick, D.C. 1989. "Key success factors : Test of a general theory in the mature industrial-product sector", Strategic Management Journal. Vol. 10, pp. 376-382.

Dixit, A. 1979. A model of duopoly suggesting a theory of entry barriers. The Bell Journal of Economics Spring pp.20-32.

Dolan, R.J. and Jeuland, A.P. 1981. "Experience Curves and Dynamic Demands Models - Implications for Optimal Pricing Strategies", Journal of Marketing, 45, pp. 52-62.

Duncan, O.D. 1971. Path Analysis : Sociological Examples. Aldine-Atherson, Chigaco. pp. 115-138.

Eaton, B.C. and Ware, R. 1987. "A theory of market structure with sequential entry", Rand Journal of Economics.

Spring, Vol. 18, pp. 1-16.

Emery, F.E. and Trist, E.L. "The causal texture of organisational environments", Human Relations, pp. 21-31.

Fellner, J. 1965. Competition Among the Few. New York, Kelly.

Ferguson, C.R. and Dickinson, R. 1982. "Critical factors for directors in the 80s", Business Horizons, June, pp. 14-18.

Fombrun, C. and Astley, W.G. 1987. "Beyond corporate strategy", Journal of Business Strategy, Spring, Vol. 3, No. 4, pp. 47-50.

Foster, R.N. 1986. Innovation: The Attackers Advantage, Summit Books.

Freund, Y.P. 1988. "Critical success factors", Planning Review, August, pp. 20-22.

Fruhan, W.E. 1972. "Pyrrhic victories in fights for market share", Harvard Business Review, Vol. 50, No. 5.

Fundenburg, D. and Tirole, J. 1984. "The fat cat effect, the puppy-dog ploy and the lean and hungry look", American Economic Review Papers and Proceedings, 74, 2, pp. 361-366.

Galbraith, C. and Schendel, D. 1983. "An empirical analysis of strategy types", Strategic Management Journal. Vol. 4, pp. 153-173.

Gale, B. 1972. "The existence and direction of casualty in X-sect analysis of hypotheses : Proceed", American Statistics Association, pp. 314-319.

Gale, B.T. and Branch, B. 1981. "Cash flow analysis : More important than ever", Harvard Business Review.

Gale, B.T. and Branch, B.S. 1982. "Concentration vs market share : Which determines performance and why does it matter?", The Anti-Trust Bulletin. Spring, pp. 83-105.

Georgescu-Roegen, N. 1971. "The entropy process and the economic process", Harvard University Press.

Geroski, P.A., Masson, R.T. and Shaanan, J. 1987. "The dynamics of market structure", International Journal of Industrial Organisation. Vol. 5.

Ghemawat, P. 1984. "Capacity expansion in the titanium dioxide industry", Journal of Industrial Economics. December, XXXIII, pp. 145-163.

Ghemawat, P. 1985. "Building strategy on the

experience curve", Harvard Business Review.

Ghemawat, P. and Spence 1985.

Gilbert, R.J. 1989. "Mobility barriers and the value of incumbency", Handbook of Industrial Organisation. Schmalensee R and Willig.

Gluck, F.W. 1985. "A fresh look at strategic management", The Journal of Business Strategy, pp. 4-19.

Goold,M. and Quinn, J.J. , 1990. Strategic Control - Milestones for long term perfornace. Hutchinson.

Green, H.L. 1987. "Good site analysts know where to put a new store", Marketing News. Vol. 21, p. 6.

Gupta, A.K. and Govindarajan, V. 1984a. "Build hold harvest; converting strategy intent into reality", Journal of Business Strategy. Vol. 4, No. 3, p. 34.

Gupta, A.K. and Govindarasan, V. 1984b. "Business unit strategy, management, characteristics and business unit effectiveness", Academy of Management Journal. Vol. 27, No. 1, pp. 25-41.

Hall, G. and Howell, S. 1985. "The

experience curve from the economist's perspective", Strategic Management Journal, Vol. 6, pp. 197-212.

Hall, W.K. 1978. "SBUs hot new topic in the management of diversification", Business Horizons.

Hall, W.K. 1980. "Survival strategies in a hostile environment", Harvard Business Review.

Hambrick, D.C. 1983a. "High profit strategies in mature capital goods industries; a contingency approach", Academy of Management Journal, Vol. 26, No. 4, pp. 68-77.

Hambrick, D.C. 1983b. "Some tests of effectiveness and functional attributes of Miles and Snow's strategic types", Academy of Management Journal, pp. 5 - 26.

Hambrick, D.C. 1983c. "An empirical typology of mature industrial-product Environments", Academy of Management Journal, Vol. 26, No. 2, pp. 213-230.

Hambrick, D.C., MacMillan, I.C. and Day, D.L., 1982. "Strategic attributes and performance in the BCG matrix - a PIMS based analysis of industrial product", Academy of Management

Journal, Vol. 225, No. 33, pp. 510-531.

Hambrick, D.C. and MacMillan, I.C. 1982. "The product portfolio and mans best friend", California Management Review, Vol. 25.

Hambrick, D.C. and Schecter, S.M. 1983."Turn around strategics for mature industrial products business units", Academy of Management Journal, Vol. 26, pp. 231-248.

Hamel, G. and Prahalad, C.K. 1989. "Strategic intent", Harvard Business Review, pp. 63-76.

Hamel, G. and Prahalad, C.K. 1991. "Corporate Imagination and Expeditionary Marketing". Harvard Business Review July-August pp.81-92.

Hamermesh, R.G. and White, R.E. 1984. "Manage beyond portfolios analysis", Harvard Business Review, Vol. 62, pp. 103-109.

Hamermesh, R.G., Anderson, M.J. and Harris, J.E. 1978. "Strategies for low market businesses", Harvard Business Review, Vol. 3.

Hanan, M. 1981. "Sales strategies - if you're running 2nd here's how to mix

it up with the market leader", Sales and Marketing Management. Vol. 127, No. 1, pp. 64-69.

Harrigan, K.R. 1980. Strategies for Declining Businesses. Lexington.

Harrigan, K.R. 1983. "Research methodologies for contingency approach to business strategy", Academy of Management Review. Vol. 8, No. 3, pp. 398-440.

Hartigan, J.A., 1975. Clustering Algorithms John Wiley & Sons, New York.

Heany, D.F. 1985. "Business in profit trouble", Journal of Business Strategy. Spring, Vol. 5, No. 4, pp. 4-12.

Henderson, B.D. 1979. "Henderson on corporate strategy", The Boston Consulting Group.

Hofer, C.W. Schendel. 1978. Strategy Formulation : Analytical Concepts. West Publishing Company.

Jacobson, R. and Aaker, D.A. 1985. "Is market share all that its cracked up to be?", Journal of Marketing. Vol. 49, pp. 11-22.

Karnani, A. 1984. "Generic competitive strategies - an analytical approach", Strategic Management

Journal. Vol. 5.

Karnani, A. 1983. "A minimum market share", Marketing Science. Winter, pp. 75-93.

Kehoe, W.J. 1983. "Strategic marketing planning : The PIMS model", Advanced Management Journal. Spring, Vol. 48, No. 2, pp. 45-49.

Kiechel, W. 1981. The Decline of the Experience Curve. Fortune. pp. 139-146.

Kotler, P. 1980. Principles of Marketing. Prentice-Hall.

Kotler, P. and Singh, R. "Marketing warfare in the 1980s", The Journal of Business Strategy.

Leftwick, A. 1974. South Africa : Economic Growth and Political Change. Allison & Busby : London.

Leidecker, J.K. and Bruno, A.V. 1984. "Identifying and using critical success factors", Long Range Planning. Vol. 17, No. 1, pp. 23-32.

Liddell Hart, B.H. 1967. Strategy : The Indirect Approach. Faber and Faber Limited.

Lieberman, M.B. 1989. "The learning curve, technology barriers to entry and

competitive survival in the chemicals industries", Strategic Management Journal, Vol. 10, pp. 431-447.

Lieberman, M.B. and Montgomery, D.B. 1988. "First-mover advantages", Strategic Management Journal, Vol. 9, pp. 41-58.

Lippman, S.A. and Rumelt, R.P. 1982. "Uncertain imitability: An analysis of interfirm differences in efficiency under competition", Bell Journal of Economics 13, Autumn, pp. 418-438.

Lubatkin, M. and Pitts, M. 1985. "The PIMS & the policy perspective: A rebuttal", The Journal of Business Strategy, Summer, pp. 88-92.

Lytle, J.F. 1982. "Defending market share; the enduring lesson of Little Big Horn", Marketing Times, Vol. 29, No. 6, pp. 43-46.

MacMillan, I. 1985. "Pre-emptive strategies", Journal of Business Strategy, Fall, Vol. 4, No. 2.

MacQueen, J.B. 1967. "Some methods for classification and analysis of multi-variate observations". Proceedings of the Fifth Barkeley Symposium on Mathematical Statistics

and Probability.

Maasdorp, G. 1978. "Unemployment in South Africa and its implications". Change, Reform and Economic Growth in South Africa. Ravan Press ed. by L Schlemmer and E Webster.

Maher, P. 1984. "New PIMS data ties and outlay to market share", Business Marketing. June, Vol. 69, No. 6.

Mancke, R.B. 1974. "Causes of Interfirm Profitability Differences : A new Interpretation of the Evidence", Quarterly Journal of Economics. Vol. 88, pp. 181-193.

Mauleon, S. and Willingston, T. 1984. "How to find success", Management Today. 50.

McGee, J.S. 1988. Industrial Organization. Prentice Hall, New York.

McGuire, T.W. and Weiss, D.L. 1976. "Logically consistent market share models", Journal of Marketing Research. pp. 299-302.

McLagan, D.L. 1981. "Market share : Key to profitability?", Planning Review. Vol. 9, No. 2, pp. 26-29.

Miles, R.E. and Snow, C. 1978. Organisational Strategy, Success and

Process. Macgraw-Hill.

Miller, A. 1988. "A taxonomy of technological settings, with related strategies and performance levels", Strategic Management Journal. Vol. 9, pp. 239-254.

Miller, D. 1981. "Toward a new contingency approach: The search for organisational gestalts", Journal of Management Studies. 18.

Miller, D. and Friesen, P.H. 1977. "Strategy making in context: 10 empirical archetypes", Journal of Management Studies. October.

Mills, H. 1961. "Notes on game theory in marketing competition - marketing as science", Harvard Business Review. pp. 137-142.

Mintzberg, H. 1973. "Strategy making in three modes", California Management Review. 16:2, Winter, pp. 44-53.

Mintzberg, H. 1978. "Patterns in strategy formulation", Management Science. May, Vol. 24, No. 9.

Montgomery, C.A. 1988. "Guest editors introduction to the special issue on research in the content of strategy", Strategic Management Journal. Vol. 9, pp. 3-8.

Myint, H. 1965. The Economics of Developing Countries 2nd edition. Hutchinson University Library : London.

Newton, J.K. 1983. "Market share - key to higher profitability?", Long Range Planning (UK). Vol. 16, No. 1, pp. 37-41.

O'Dowd, M.C. 1978. "The stages of Economic Growth and the future of South Africa", Change, Reform and Economic Growth in South Africa. Ravan Press.

Ohmae, K. 1982. The Mind of the Strategist. McGraw-Hill.

Ohmae, K. 1987. Beyond National Borders. Dow Jones-Irwin, Homewood, Illinois.

Ohmae, K. 1988. "Getting back to strategy", Harvard Business Review. Nov/Dec.

Oliva, T.A., Day, D.L. and Desarbo, W.S. 1987. "Selecting competitive tactics - try a strategy map", Sloan Management Review. Spring.

Page, A.L. 1979. "A test of the share/price market planning relationship in one retail", Academy of Marketing Science Journal. Vol. 7, No. 1, pp. 25-39.

Pascarella, P. 1984. "Beyond market share", Industry Week, Vol. 221, No. 7, pp. 37,40,46.

Peters, T. 1992. "Rethinking Scale" California Management Review". Fall Vol 35, No 1 pp7-29.

Phillips, L.W., Chang, D.R. and Buzzell, R.D. 1983. "Product quality, cost position and business performance, a test of hypothesis", Journal of Marketing, pp. 26-43.

Pickering, J.F. 1974. Industrial Structure and Market Conduct. Bath : The Pitman Press.

Pitts, R.A. 1980. "Toward a contingency theory of multibusiness organisation design", Academy of Management Review, 5:2, pp. 203-210.

Porter, M.E. 1979. "How competitive forces shape strategy", Harvard Business Review, pp. 137-145.

Porter, M.E. 1980. Competitive Strategy : Techniques for Analysing Industries and Competitors. The Free Press.

Porter, M.E. 1984. Competitive Advantage. New York : The Free Press.

Porter, M.E. 1985. "How to attack the industry leader", Fortune, 29.

Porter, M.E. 1990a. The Competitive Advantage of Nations. The Macmillan Press, London.

Porter, M.E. 1990b. "The competitive advantage of nations", Harvard Business Review, pp. 73-93.

Porter, M.E. 1990c. "Why nations triumph", Fortune, pp. 54-60.

Porter, M.E. and Millar, V.E. 1985. "How information gives you competitive advantage", Harvard Business Review, pp. 149-160.

Prahalad, C.K. and Hamel, G. 1990. "The core competence of the corporation", Harvard Business Review, May/June, pp. 79-91.

Pratten, C.F. 1971. Economics of scale in Manufacturing Industry. University Press, Cambridge.

Prescott, J.E., Kohli, A.K. and Venkatraman, N. 1986. "The market share - profitability relationship; an empirical assessment, Strategic Management Journal, Vol. 7, pp. 377-394.

Ramanujam, V. and Venkatraman, N. 1984. "An inventory and critique of strategy research using the PIMS database", The Academy of Management Review,

Vol. 9, No. 1.

Rao, R.C. and Bass, F.M. 1985. "Competition strategy and price dynamics : A theoretical and empirical investigation", Journal of Marketing Research, Vol. 22, No. 3.

Ravenscraft, D.J. 1983. "Structure/profit relationships at the line of business and industry level", Review of Economics and Statistics, February.

Reddy, J. 1980. "Incorporating quality in competitive strategies", Sloan Management Review, 21, Spring.

Robinson, G. 1986. Strategic Management Techniques. Butterworths.

Rumelt, R.P. 1974. Strategy, Structure and Economic Performance. Boston : Harvard University Press.

Rumelt, R.P. 1979. Evaluation of Strategy : Theory and Models - Strategic Management. Schendel and Hofer, Little Brown, pp. 196-212.

Rumelt, R.P. and Wensley, R. 1981. "In search of the market share effect", Proceedings of The Academy of Management.

Scherer, F.M. 1980. Industrial Market

Structure. Rand McNally College Publishing Company, 2nd Edition.

Schmalensee, R. 1981. "Economies of scale and barriers to entry", Journal of Political Economy, 89, pp. 1228-1238.

Schoeffler, S., Buzzell, R. and Heany, D. 1974. "Impact of strategic planning on profit performance", Harvard Business Review, 52, pp. 137-145.

Schumacher, E.F. 1973. Small is Beautiful. Penguin Books, Middlesex, England.

Schumacher, E.F. 1979. Good Work. Harper Colophon Books, New York.

Schuster, L. 1984. "Profitability and market share of banks", The Journal of Bank Research, Spring, Vol. 15, No. 1.

Shaw, R.W. and Shaw, S.A. 1984. "Late entry market shares and competitive survival : The case of synthetic fibres", Managerial and Decision Economics, 5, pp. 72-79.

Shepherd, W. 1972. "The elements of market structure", Review of Economics and Statistics, pp. 25-37.

Shepherd, W.G. 1983. "Economics of Scale and Monopoly Profits". **Industrial Organisation, Antitrust and Public**

Policy edited by J.V. Craven. Kluwer, Nijhoff Publishing, Boston.

Simon, H.A. 1954. "Spurious correlation : A causal interpretation", The Journal of The American Statistical Association, 49.

Smirlock, M. 1985. "Evidence on the non-relationship between concentration and profitability in banking", The Journal of Money, Credit and Banking, Vol. 17, No. 1.

Spence, M. 1979. "Notes on advertising economics of scale and entry barriers discussion paper 702", Harvard Institute of Economic Research, Cambridge, Mass.

Speirs, A. 1990. Business Size and Economic Performance. Syncom.

Tellis, G.J. and Fornell, C. 1988. "The relationship between advertising and product quality over the product life cycle", Journal of Marketing Research, February, Vol. 25.

Thackray, J. 1984. "The mature management of Emhart", Management Today, July.

Thompson, A.A. and Strickland, A.J. 1989. Strategy Formulation and Implementation. BPI Irwin.

Thompson, J.D. 1967. Organisations in Action. McGraw-Hill.

Uchida, K. 1978. "Existence of a Nash equilibrium point in N-preson non-zero sum diff games", Siam J Control Option, 16, pp. 142-149.

Urban, G.L., Carter, T., Gaskins, S. and Mucha, Z. 1986. "Market share rewards to pioneering brands : An empirical analysis and strategic implication", Management Science, Vol. 32, No. 6, pp. 645-659.

van den Bogaerde F. 1978. Elements of Price Theory. J L van Schaik Limited, Pretoria.

van der Walt, N.A. and van Pletsen, J.L. 1987 Modern Trends in Industrialisation with Reference to South Africa. Rand Afrikaans University.

Varadarajan, P. and Dillon, W.R. 1981. "Competitive position effect and market share : An exploratory investigation", Journal of Business Research, Vol. 9, No. 1, pp. 49-64.

Wagner, H.M. 1972. Principles of Operations Research. Prentice/Hall International.

Ward, J.L. and Stasch, S.F. 1986. "When are market leaders most likely to be attached?", Journal of Consumer

Marketing, Vol. 3, No. 4, pp. 41-48.

Weigelt, K. and MacMillan, I. 1988. "An interactive strategic analysis framework", Strategic Management Journal, Vol. 9, pp. 27-40.

Weiss, L.W. 1989. Concentration and Price. The MIT Press, Massachusetts.

Wernerfelt, B. 1984. "Consumers with differing reaction speeds, scale advantages and industry structure", European Economic Review, Vol. 24.

Wernerfelt, B. 1985. "The dynamics of prices and market share over the product life cycle", Management Science, Vol. 31.

Wernerfelt, B. 1986. "The relationship between market share and profitability", Journal of Business Strategy, 67, Spring.

Woo, C.Y. 1983. "Evaluation of the strategies and performance of low ROI market share leaders", Strategic Management Journal, Vol. 4.

Woo, C.Y. 1984. "Market share leadership - not always so good", Harvard Business Review, Jan/Feb, pp. 50.

Woo, C.Y. 1987. "Path analysis of the relationship between market share, business level conduct and risk",

Strategic Management Journal, Vol.8.

Woo, C.Y. and Cooper, A. 1981. "Strategies of effective low share businesses", Strategic Management Journal, Vol. 2.

Woo, C.Y. and Cooper, A. 1982. "The surprising case for low market share", Harvard Business Review.

Yavitz, B. and Newman, W. 1982. Strategy in Action. The Free Press.

Zeithaml, C.P. and Fry, L.W. 1984. "Contextual and strategic differences among mature businesses in 4 dynamic performance situations", Academy of Management Journal, Vol. 27, No. 4, pp. 841-860.

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. _____

	PIMS MEAN	STANDARD DEVIATION	DATA FOR THIS BUSINESS
COMPETITIVE POSITION & ACTION			
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: OVER ____ YEARS

20% OVER 5 YEARS ☐

	%DOWN	%BUILD
MARKET SHARE	_____	_____
INVESTMENT/VALUE ADDED	_____	_____

© THE STRATEGIC PLANNING INSTITUTE 1980

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)

RELATIVE PRODUCT QUALITY (Lines 8 - 11)

8. Percentage of sales from: superior products _____%

9. equivalent products _____%

10. inferior products _____%
(8 + 9 + 10 = 100 %)

11. 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 businesses 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

©, 1978, The Strategic Planning Institute

INCOME STATEMENT

	$000	% OF SALES	
16. Sales	$_____	100 %	
17. Purchases	_____	_____	
18. Value Added (16 – 17)	$_____	_____ %	(12)
19. Manufacturing and Distribution	_____	_____	
20. Depreciation	_____	_____	
21. Total Marketing	_____	_____	(8)
22. R&D (Process and Product)	_____	_____	(7)
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	_____	_____	(11)
27. Net Plant & Equipment	_____	_____	
28. Other Assets	_____	_____	
29. Investment (25 + 27 + 28)	$_____	_____ %	(9)

*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)

The Strategic Planning Institute
955 Massachusetts Avenue
Cambridge, Massachusetts 02139
(617) 491-9200
TWX: 710 320 0893

Appendix III INITIAL ANALYSIS

Initial Analysis and Graphs of the PIMS (SA) Data Base

This appendix contains a graphical overview of the intitial 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).

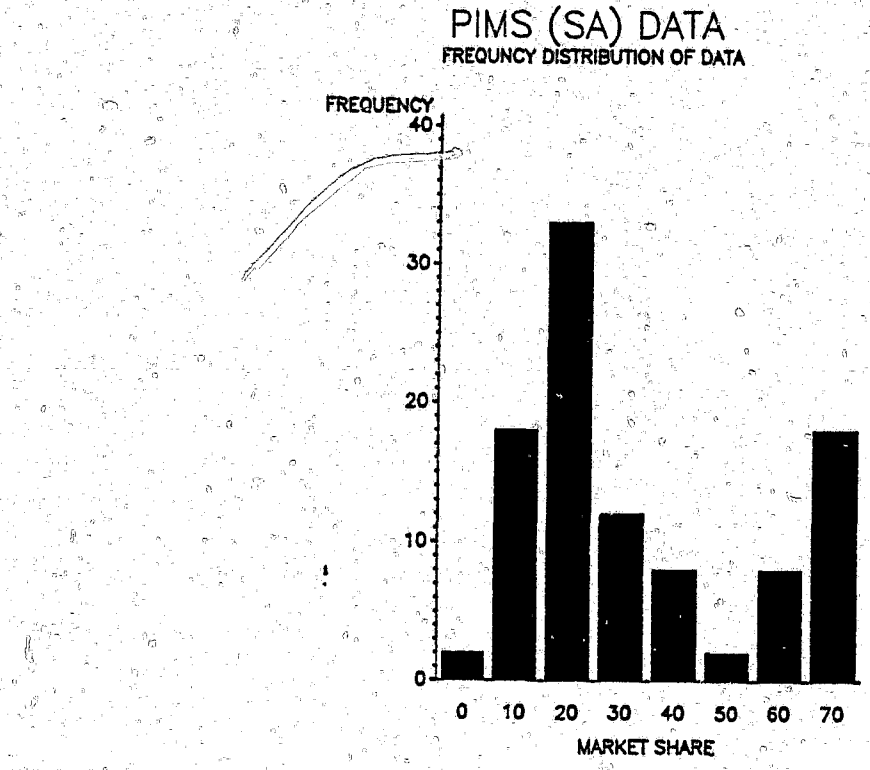
The appendix takes the following form:

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.



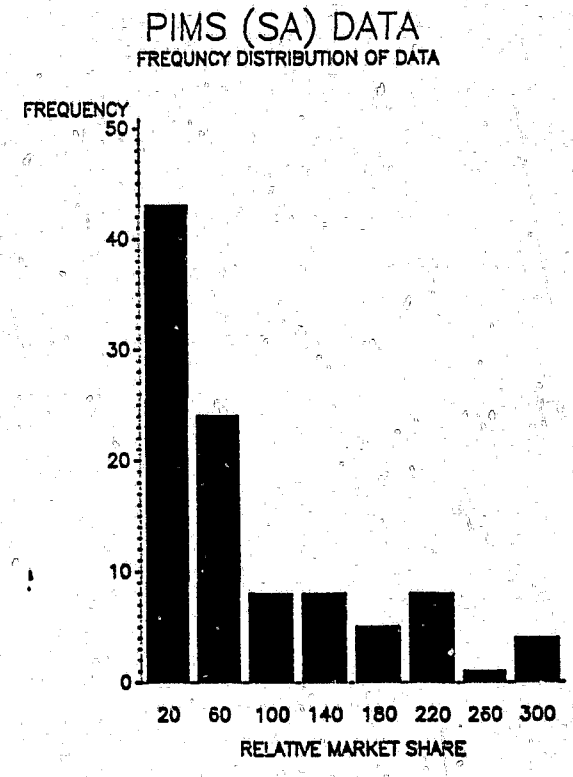
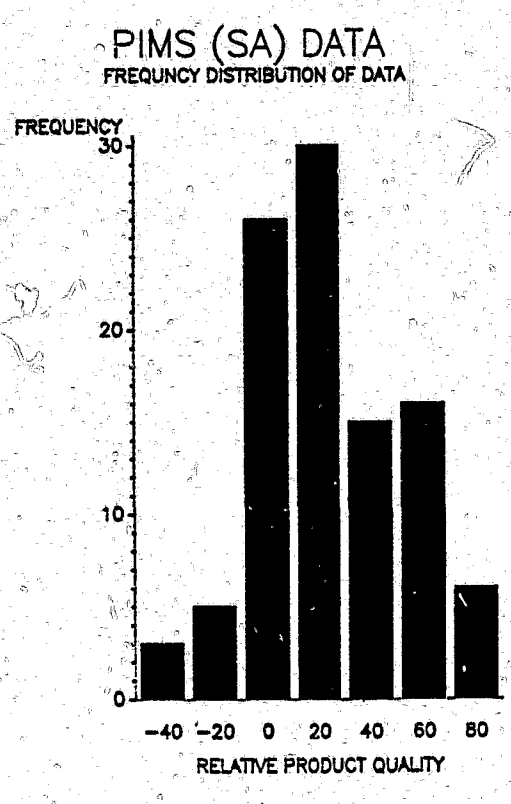


Fig A3.01 & .02 **Frequency Distribution of Market Share and Relative Market Share**



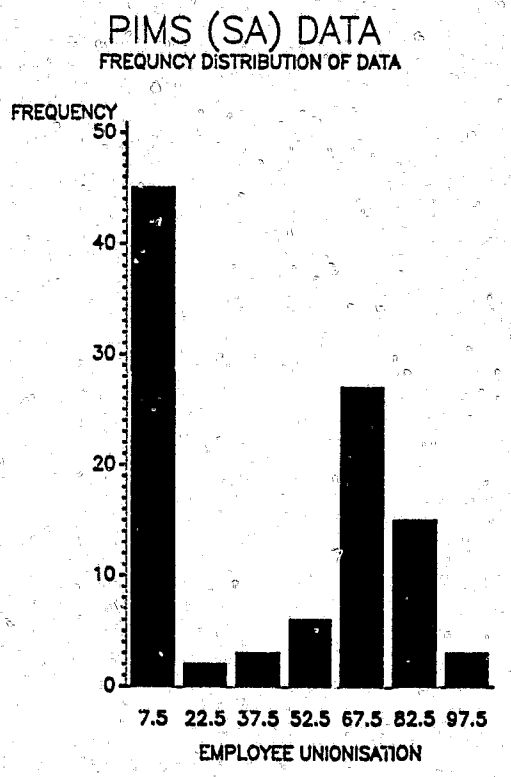
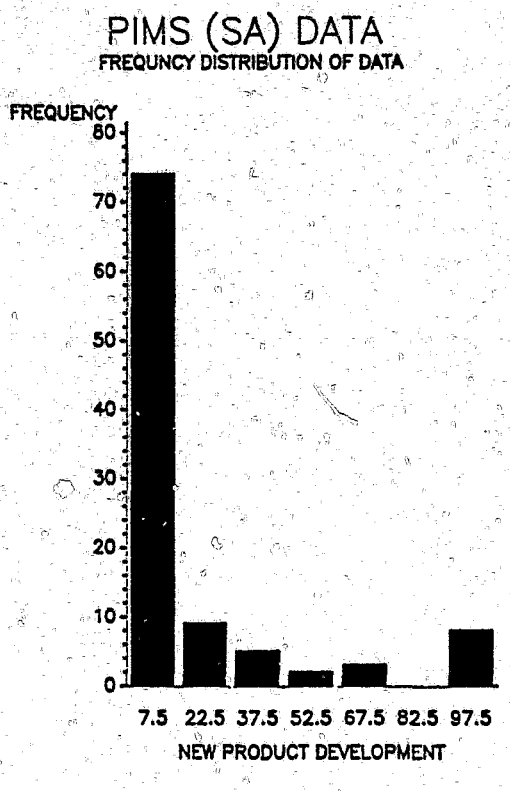


Fig 3.03 & .04 Frequency Distribution of Relative Product Quality & Employee Unionisation



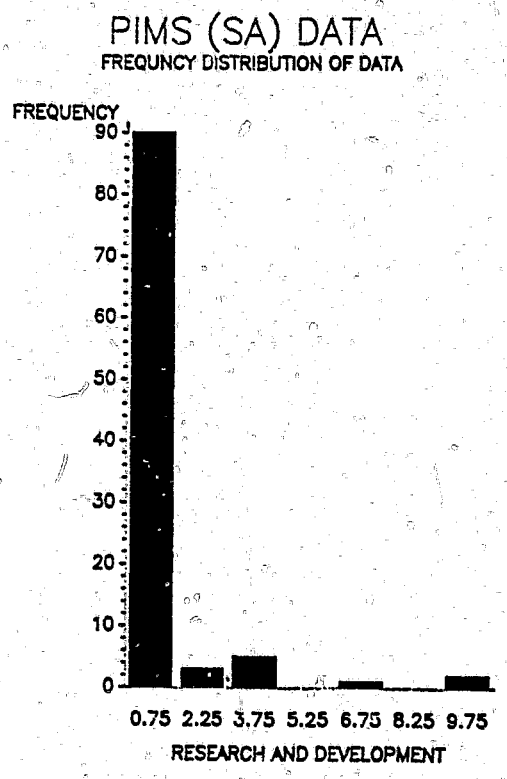
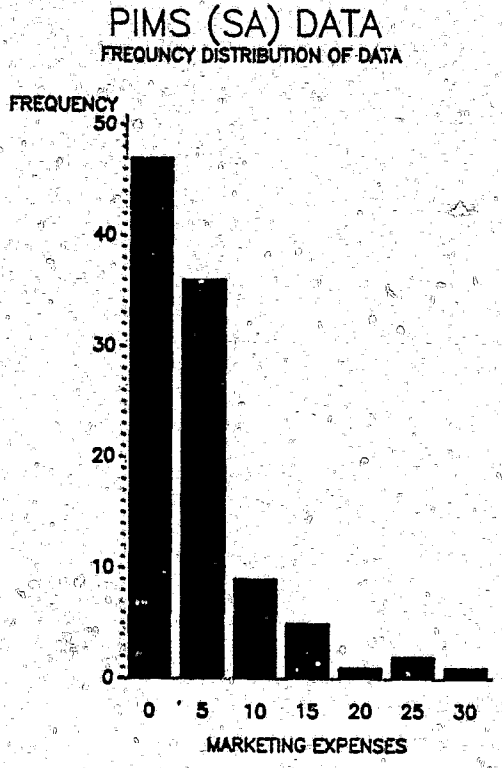


Fig A3.05 & .06 Frequency Distribution of New Products/Sales and R&D/Sales



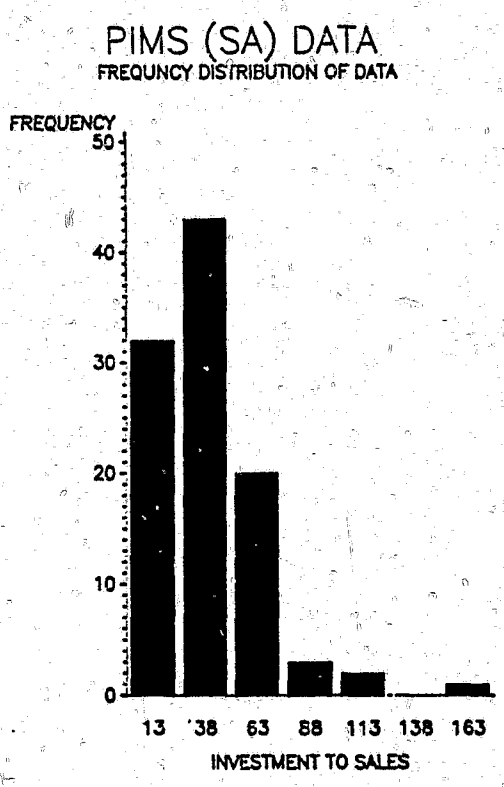
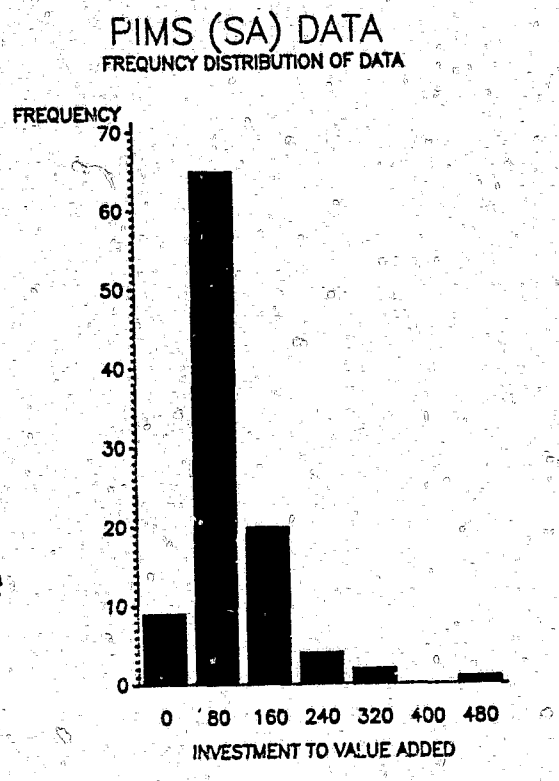


Fig A3.07 & .08 **Frequency Distribution of Marketing Expenses/Sales & Investment/Sales**



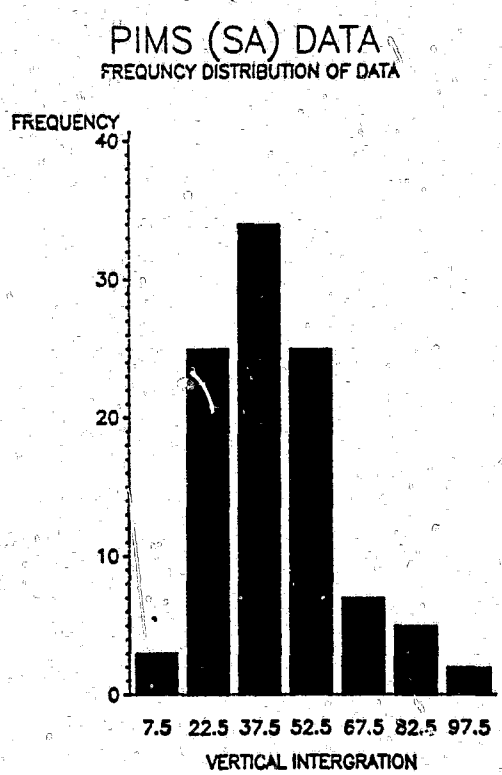
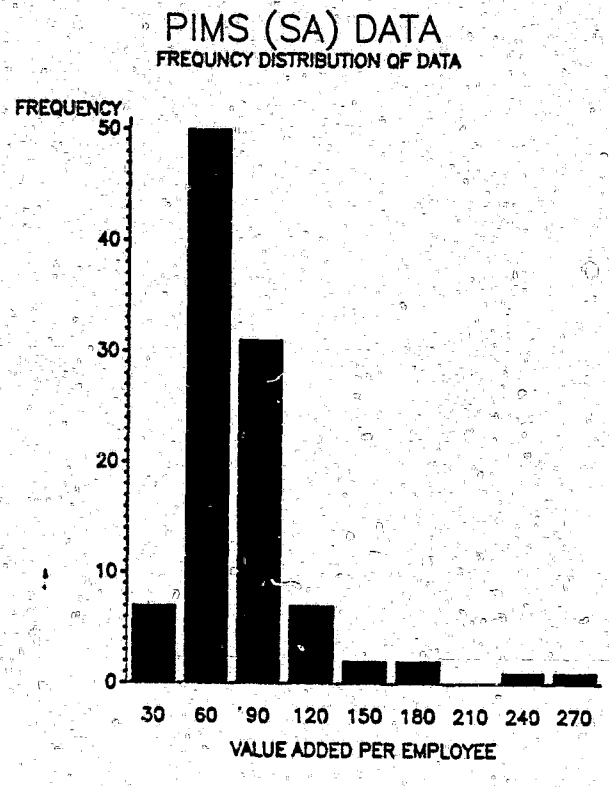


Fig A3.9 & 10 Frequency Distribution of Investment to Value Added & Vertical Integration



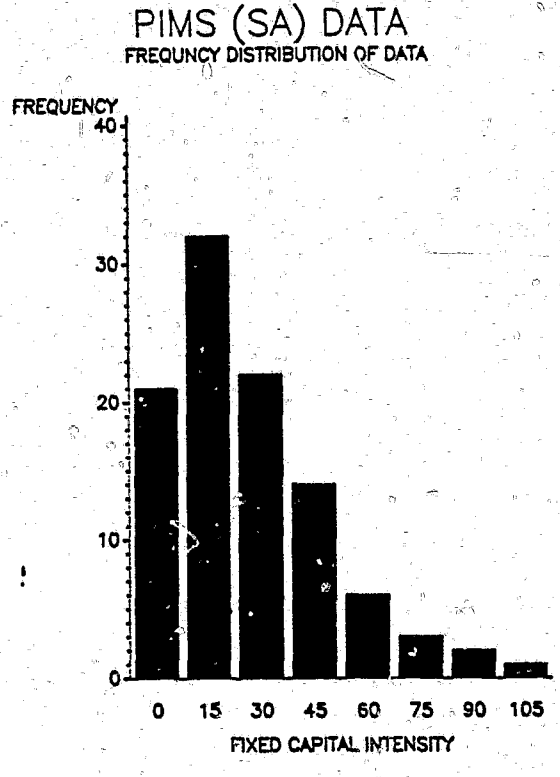
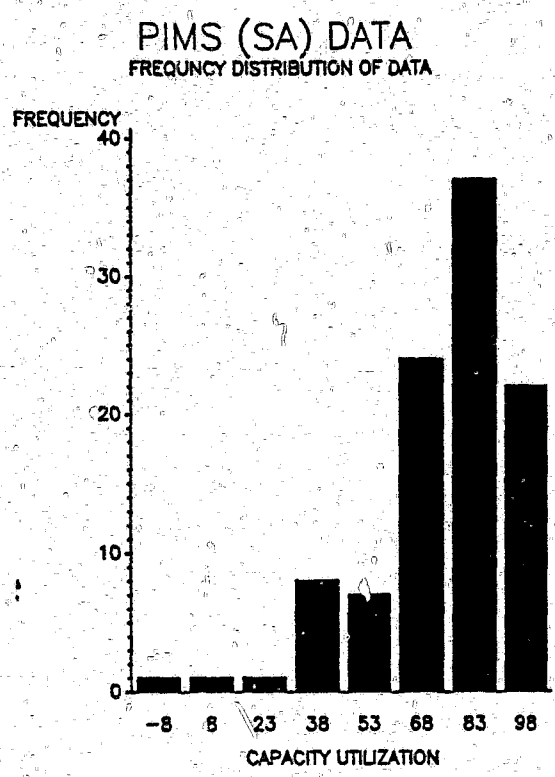


Fig A3.11 & 12 Frequency Distribution of Value Added per Employee & Fixed Capital Intensity



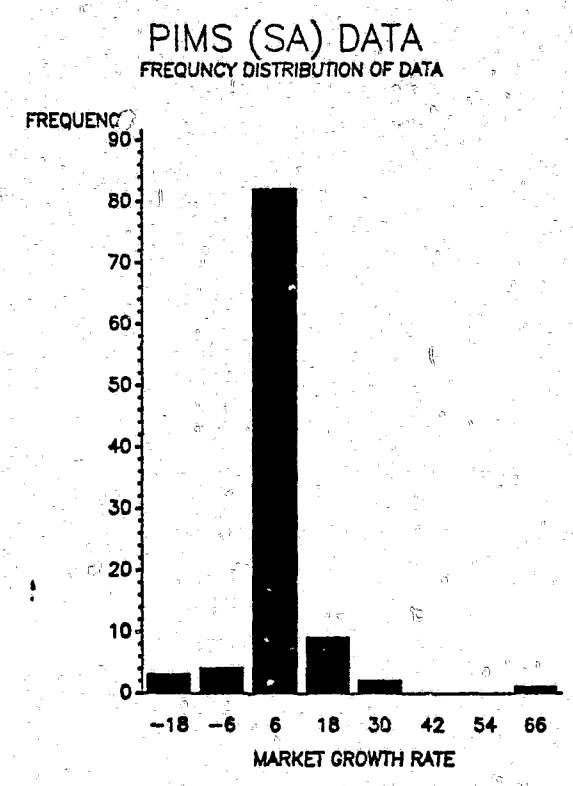
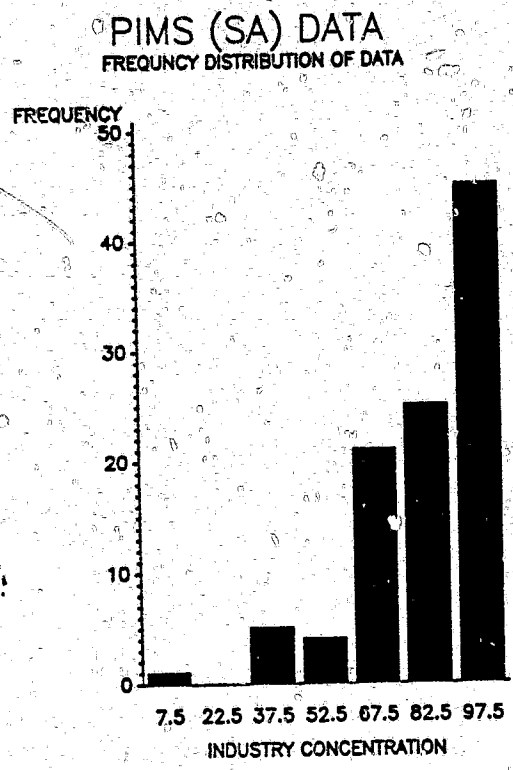


Fig A3.13 & 14 Frequency Distribution of Capacity Utilization & Market Growth



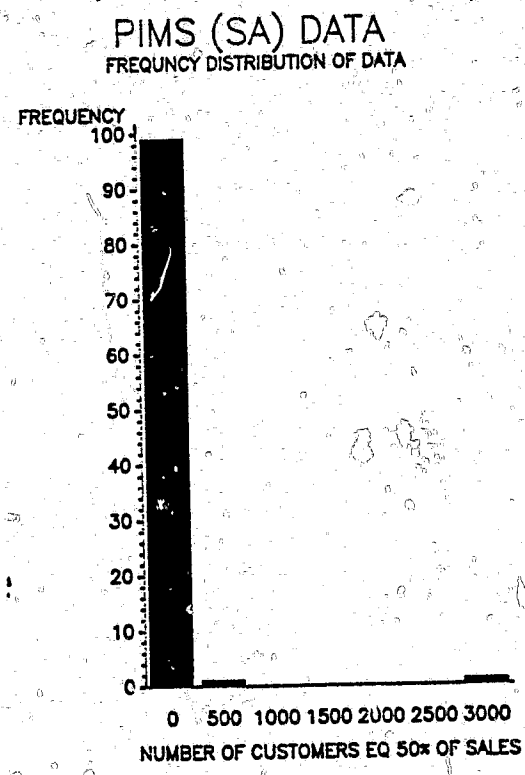
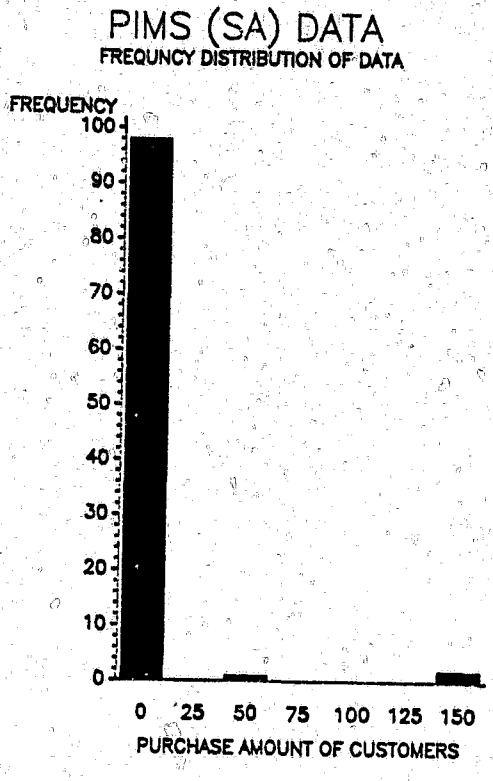


Fig A3.15 & 16 Frequency Distribution of Industry & Customer Concentration



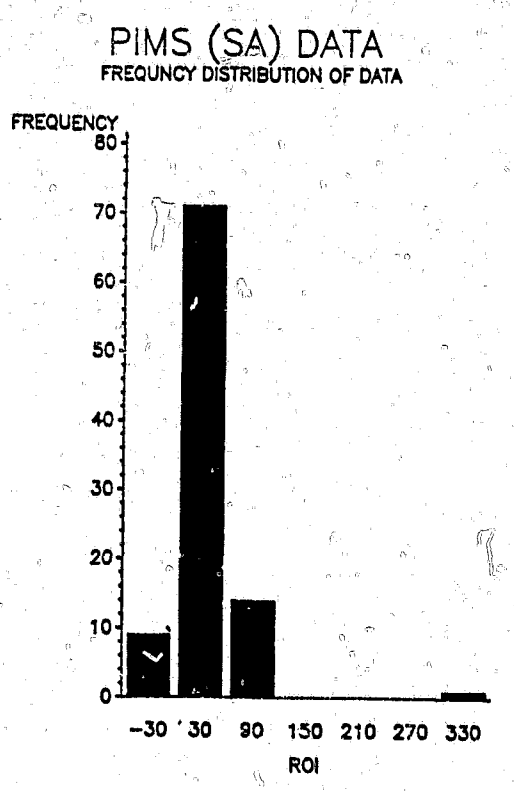


Fig A3.17 & 18 **Frequency Distribution of Purchase Amount & Return on Investment**

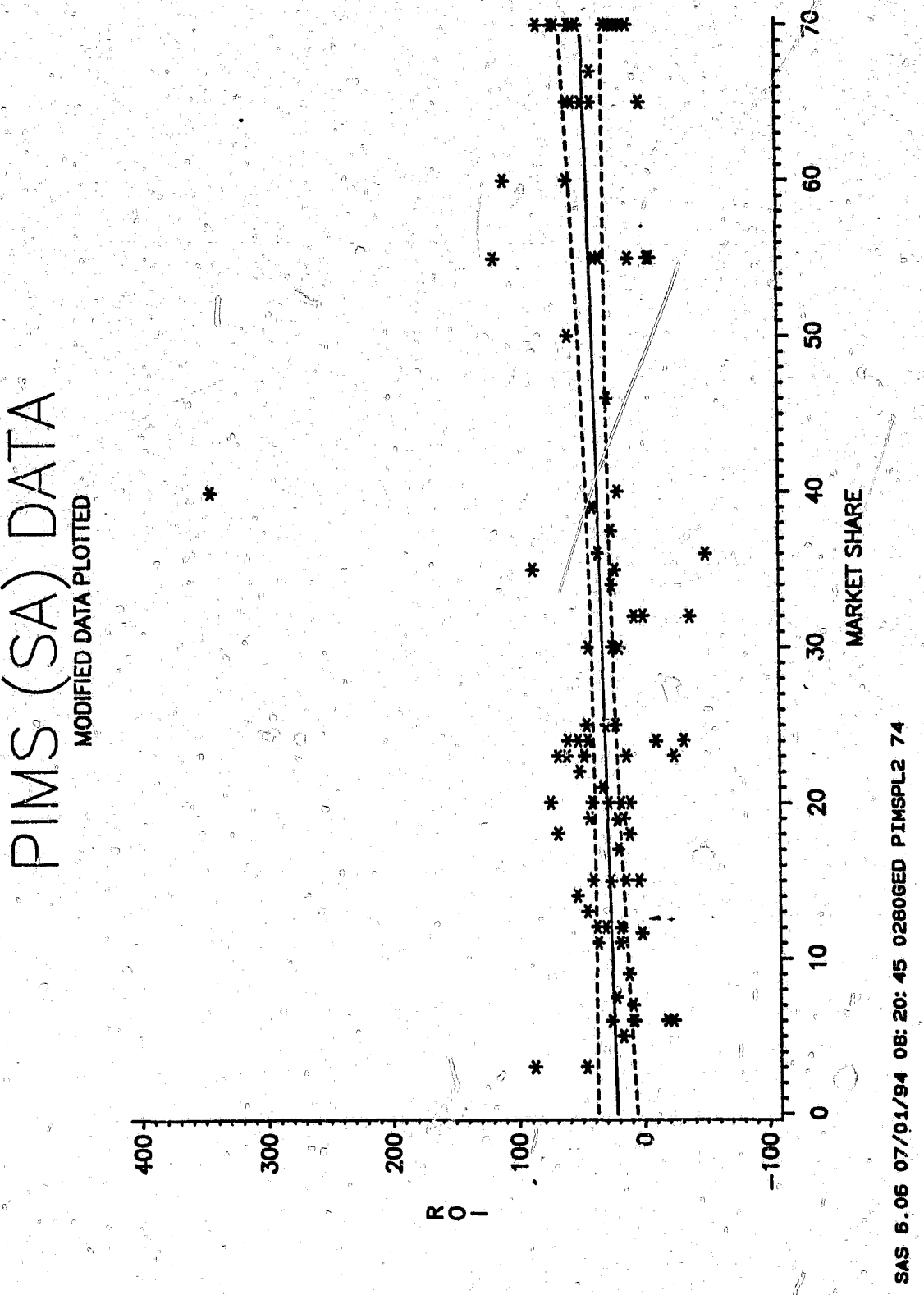


Fig A3.19 Plot of Market Share vs ROI

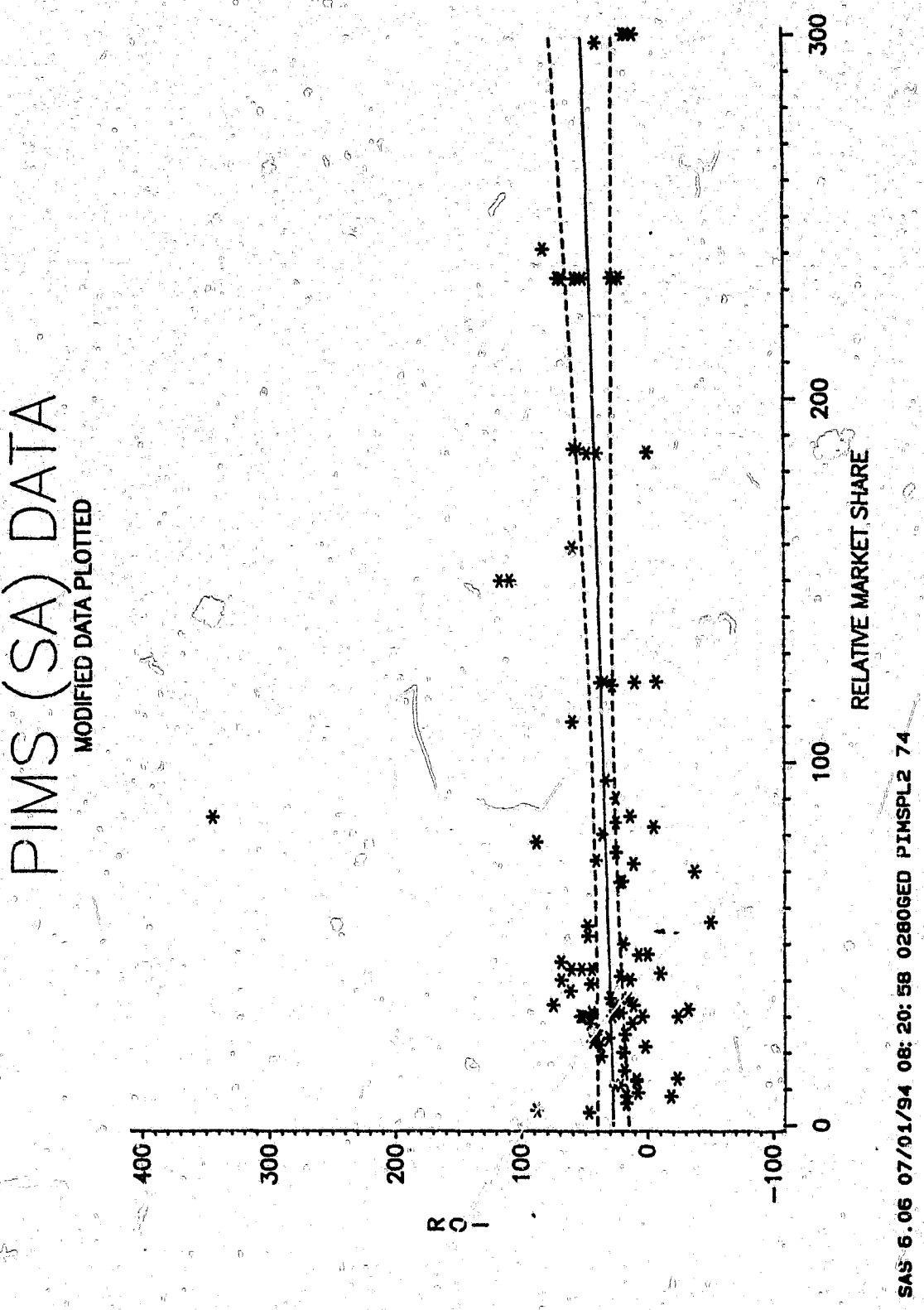


Fig A3.20 Plot of Relative Market Share vs ROI

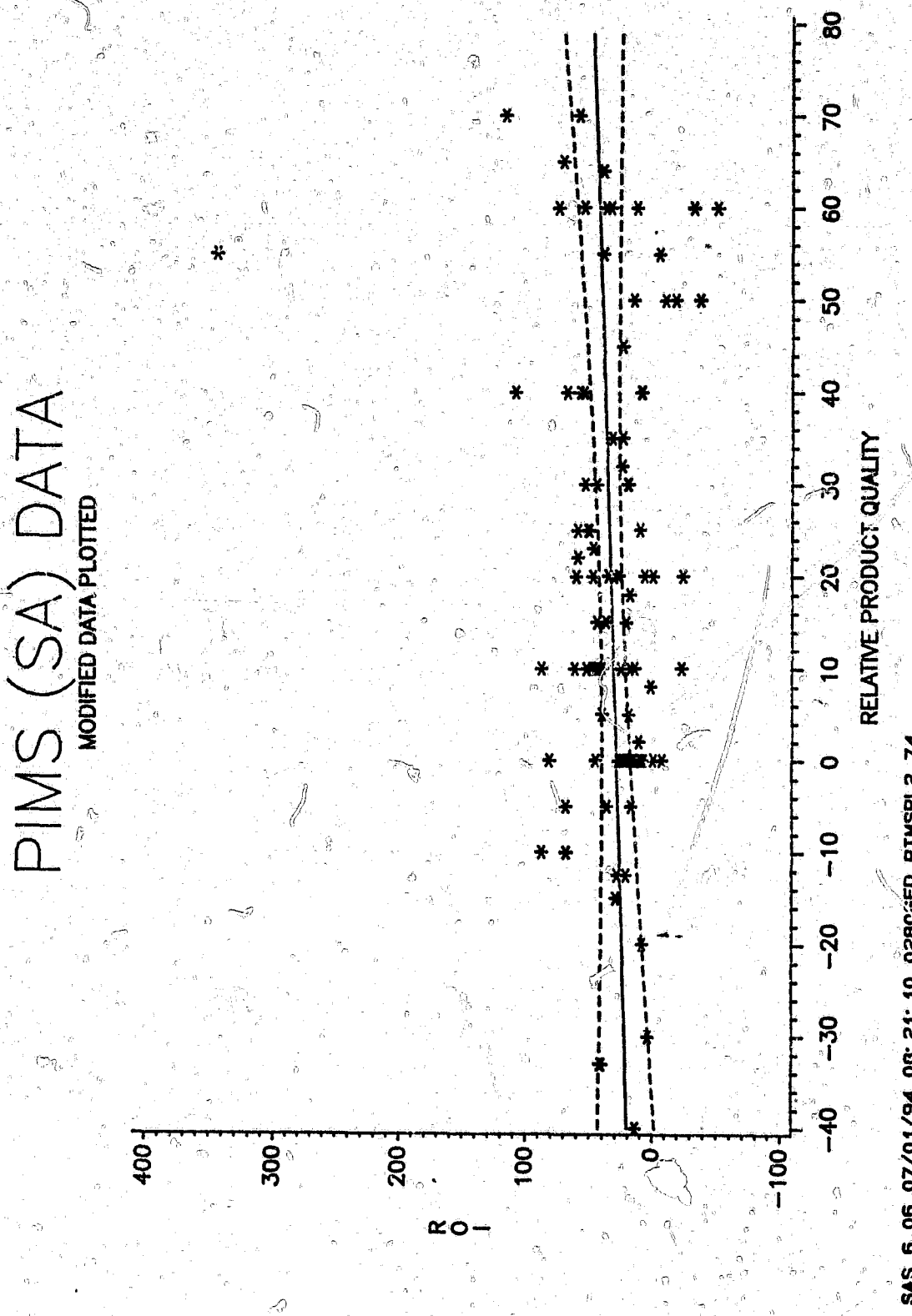


Fig A3.21 Plot of Relative Product Quality vs ROI

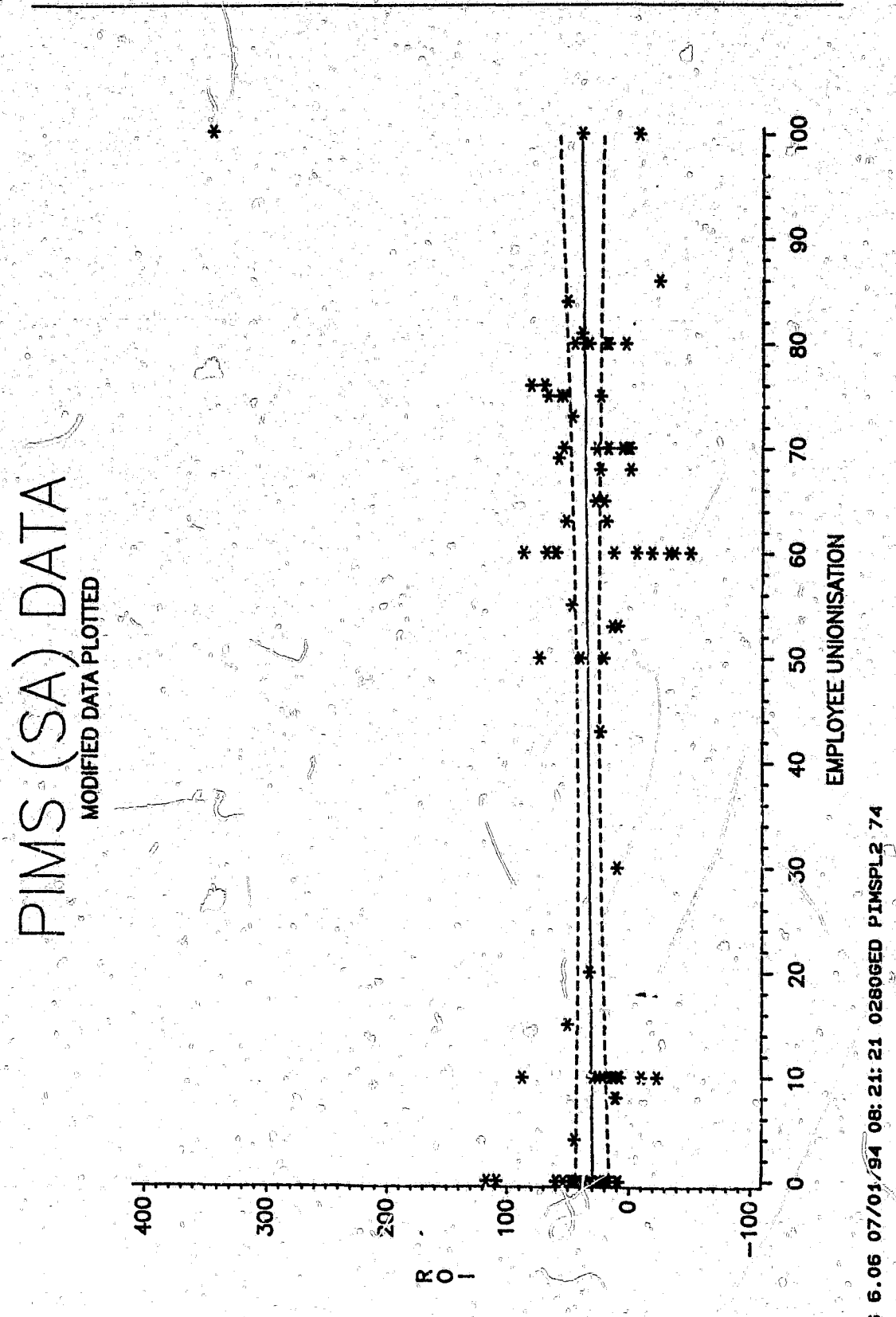


Fig A3.22 Plot of Employee Unionisation vs ROI

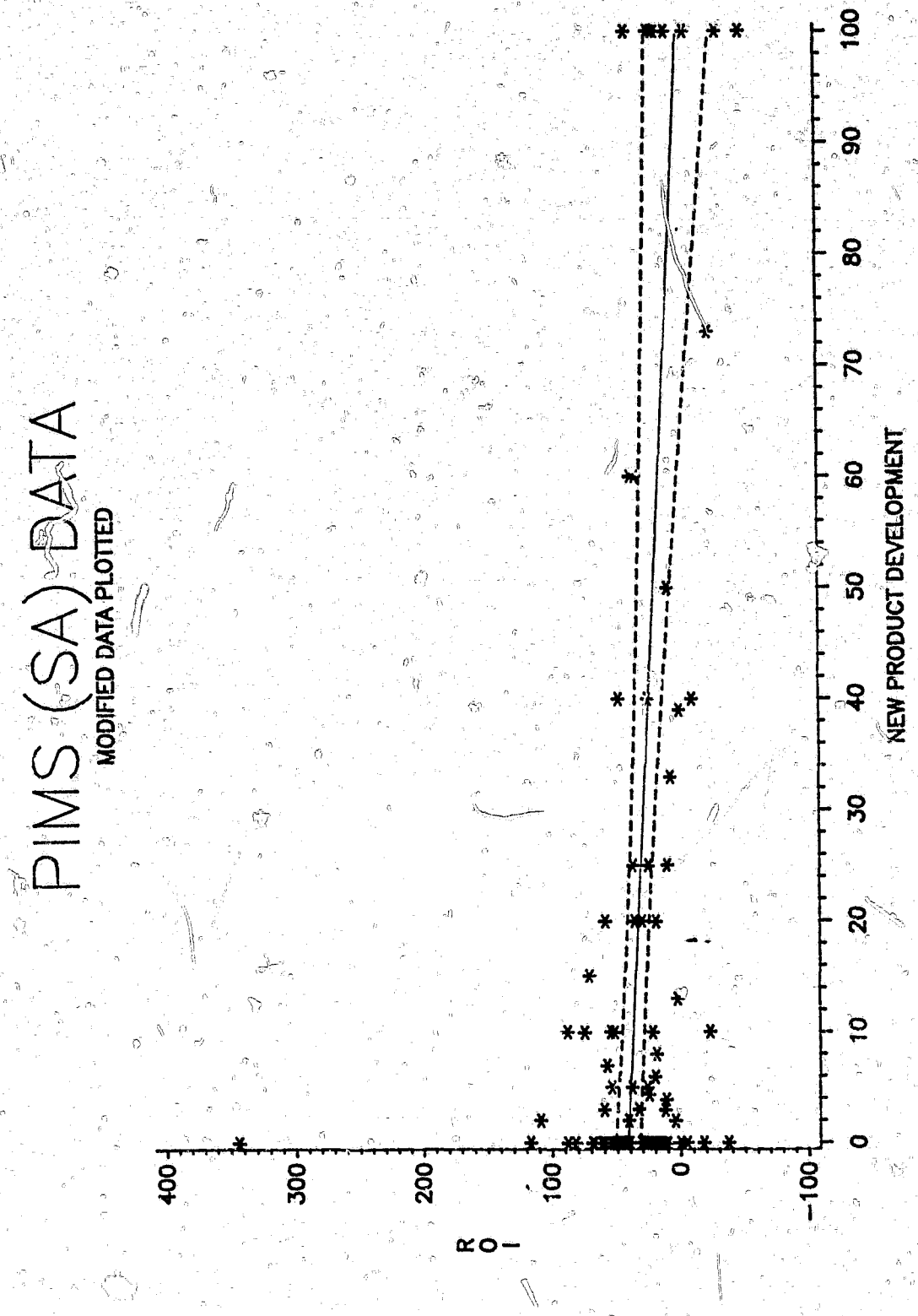


Fig A3.23 Plot of New Products/Sales

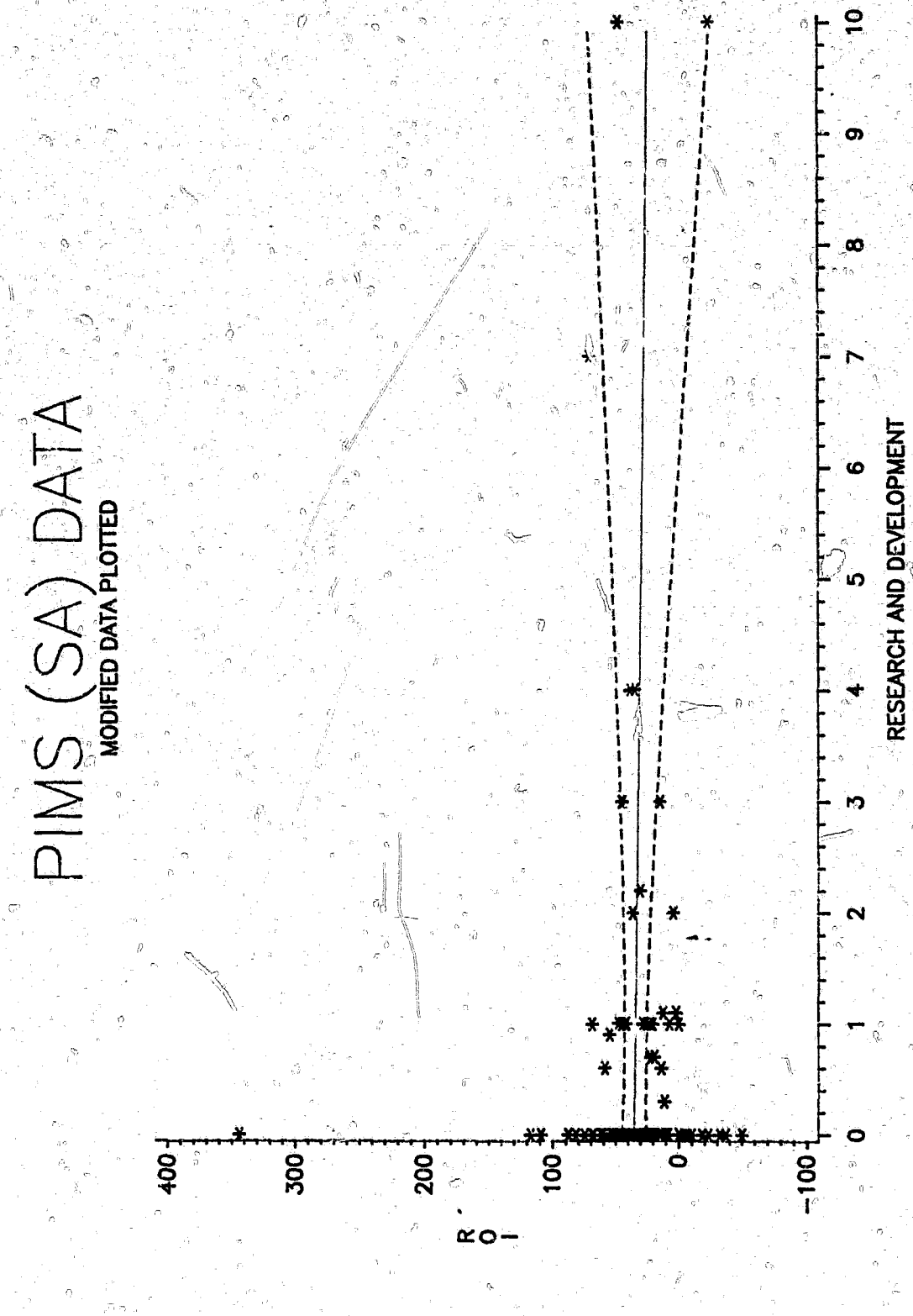


Fig A3.24 Plot of R&D/Sales

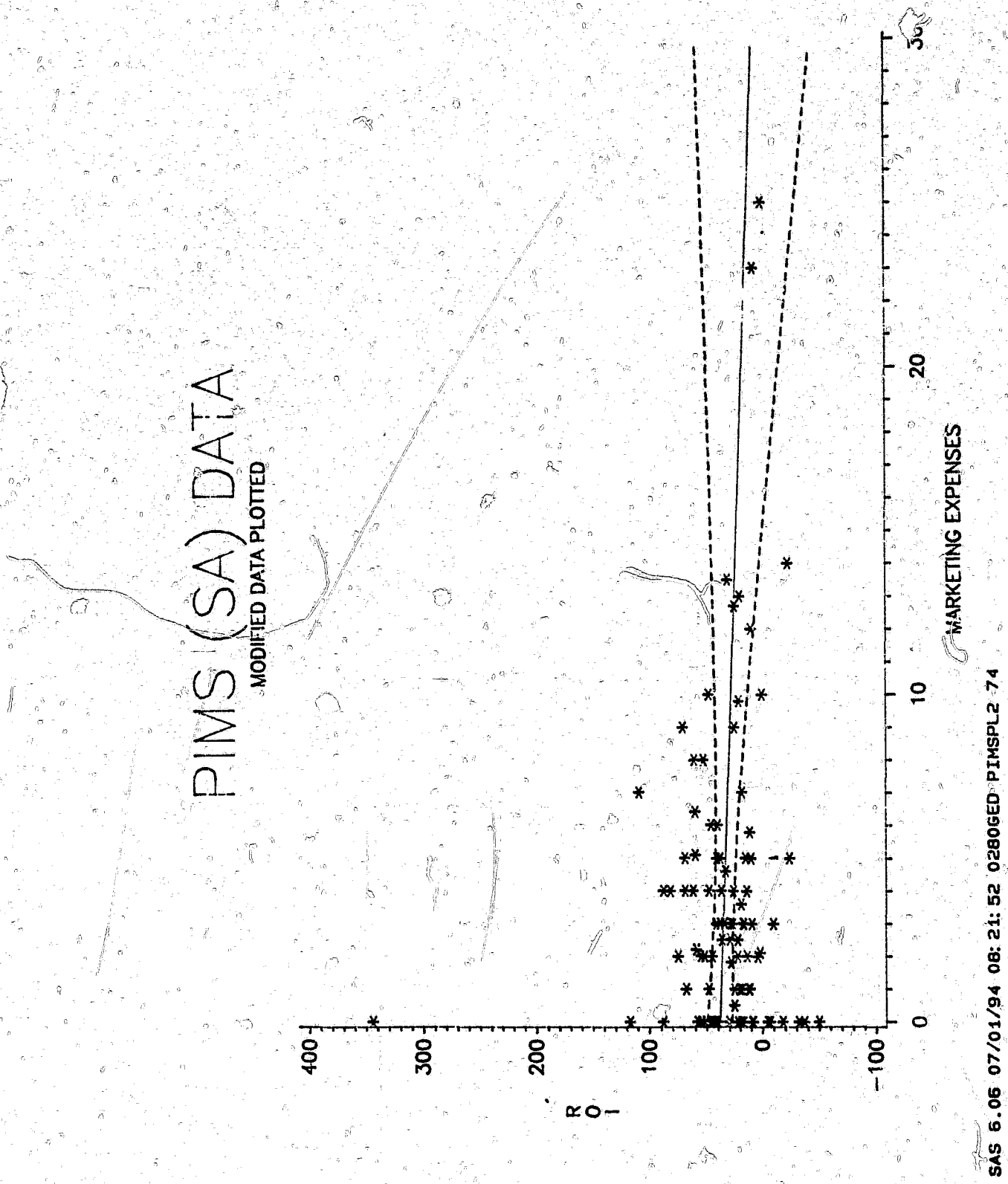


Fig A3.25 Plot of Marketing Expenses/Sales

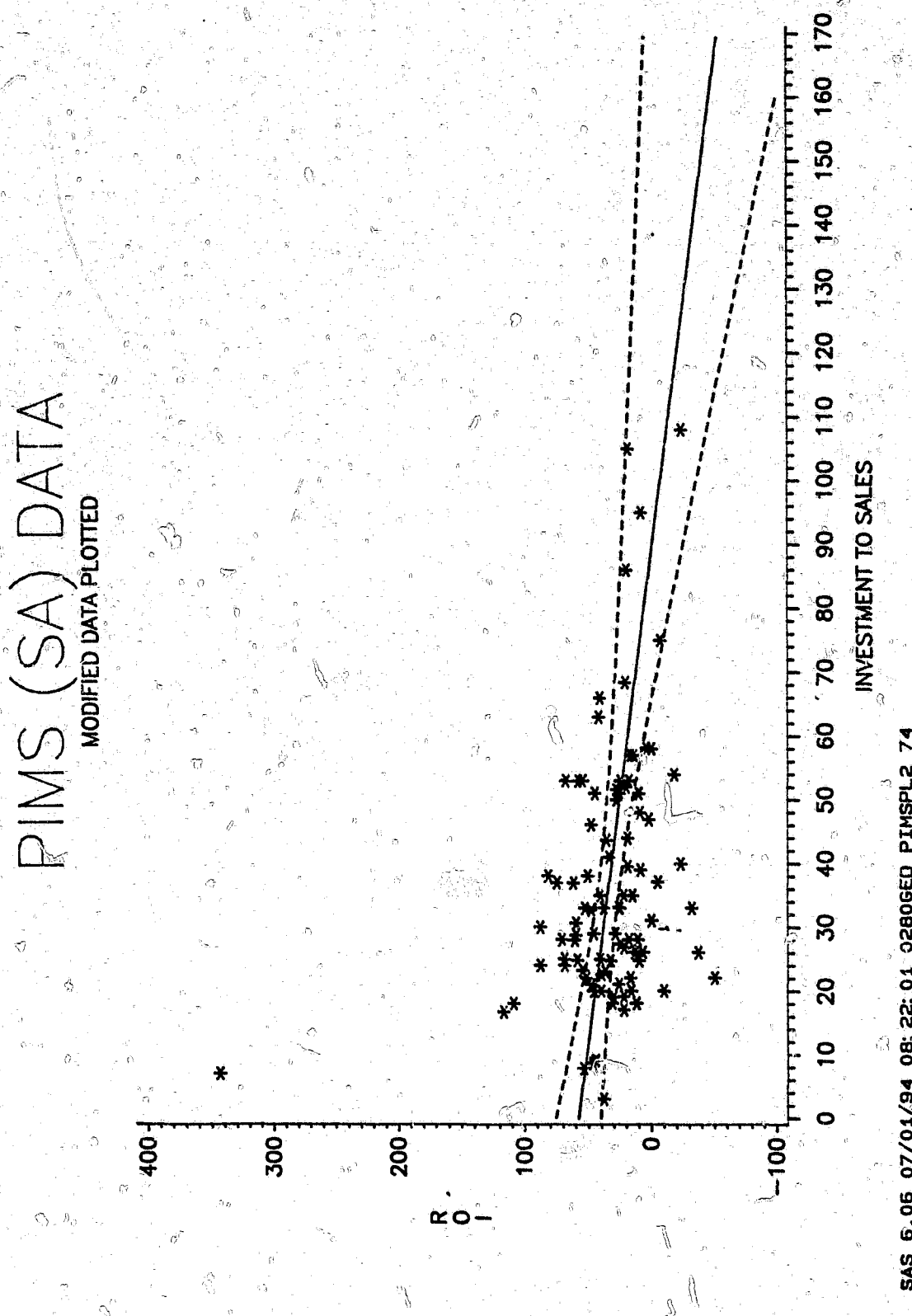


Fig A3.26 Plot of Investment/Sales

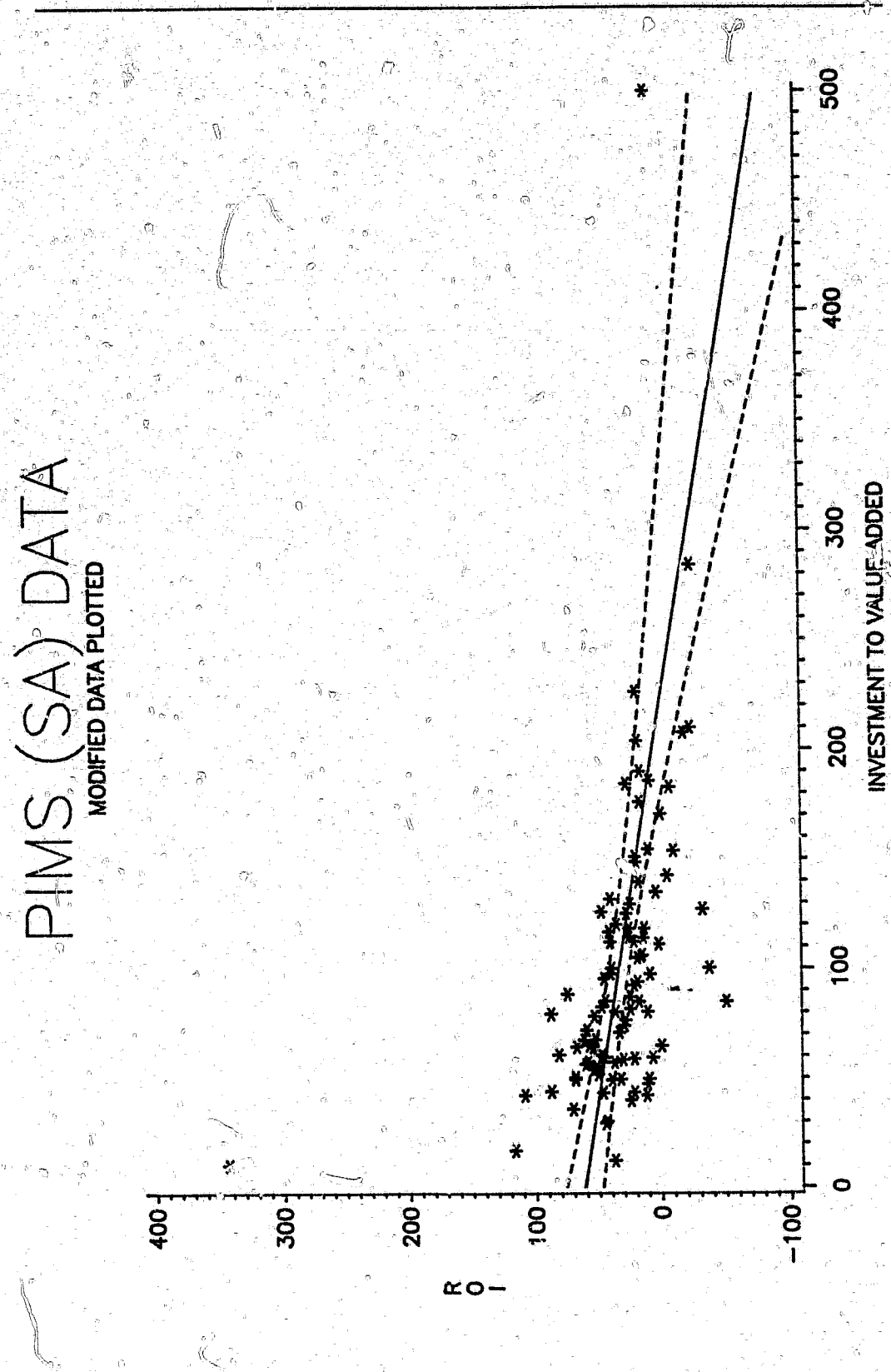


Fig A3.27 Plot of Investment/Value Added

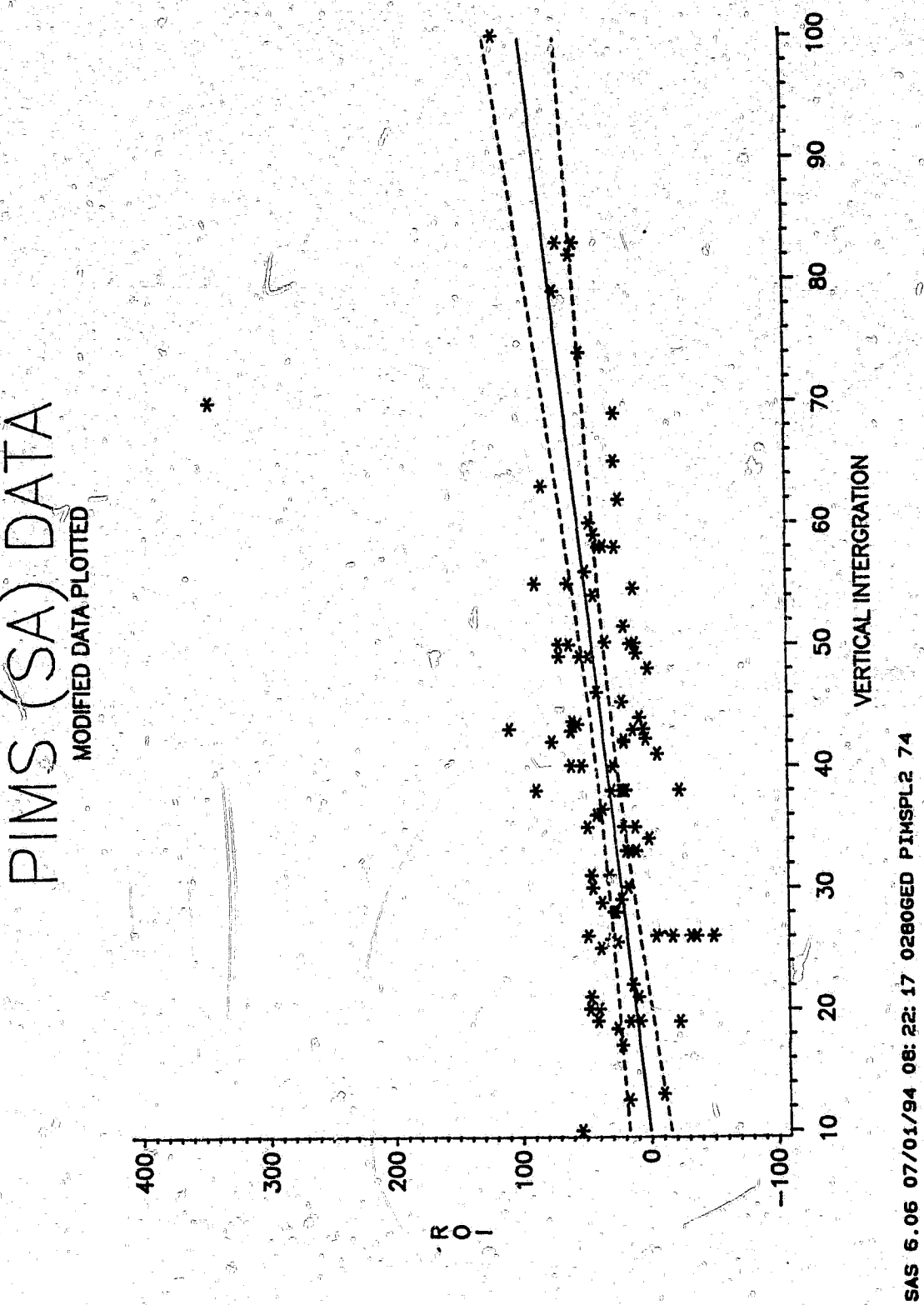


Fig A3.28 Plot of Vertical Integration

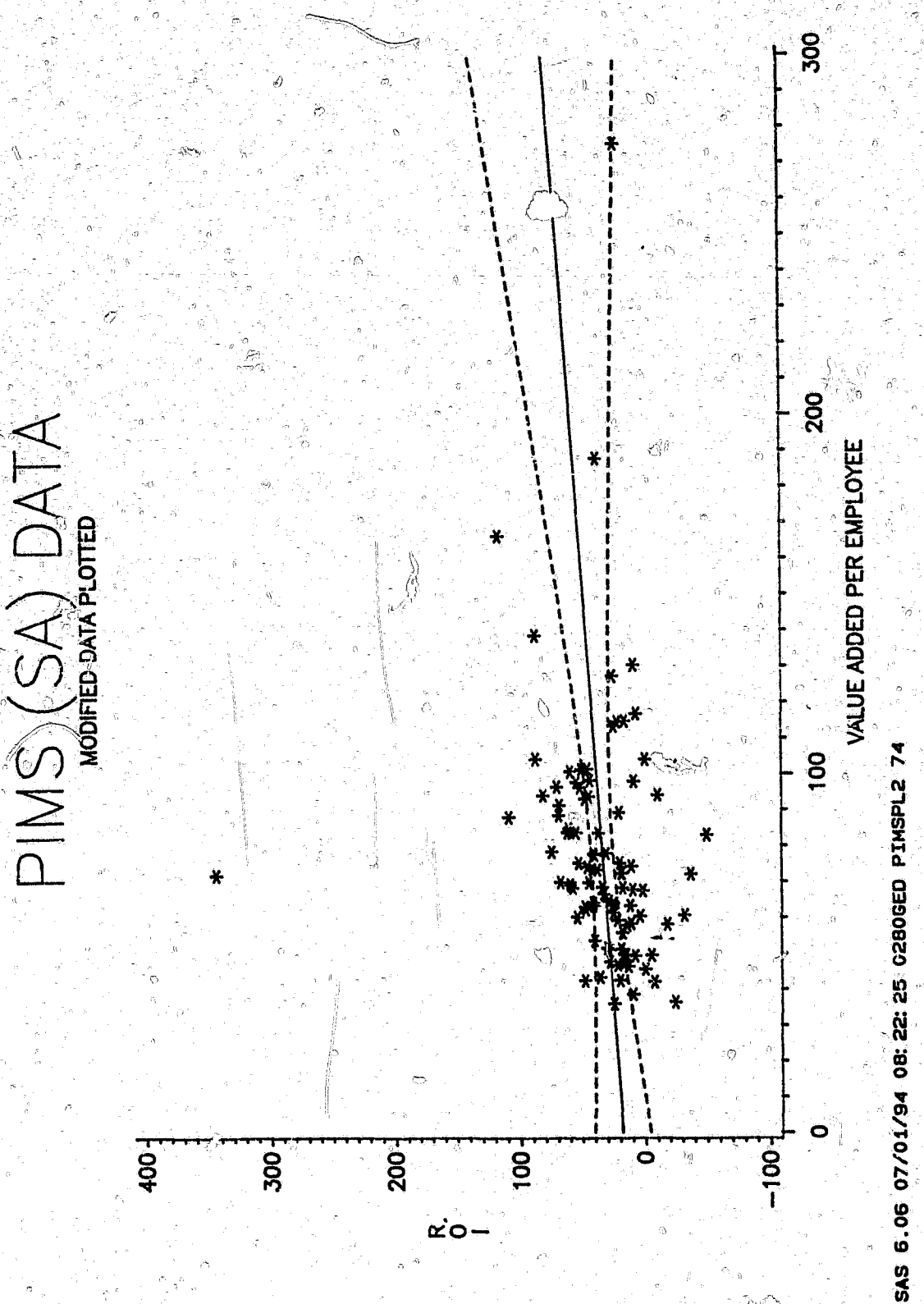


Fig A3.29 Plot of Value Added per Employee

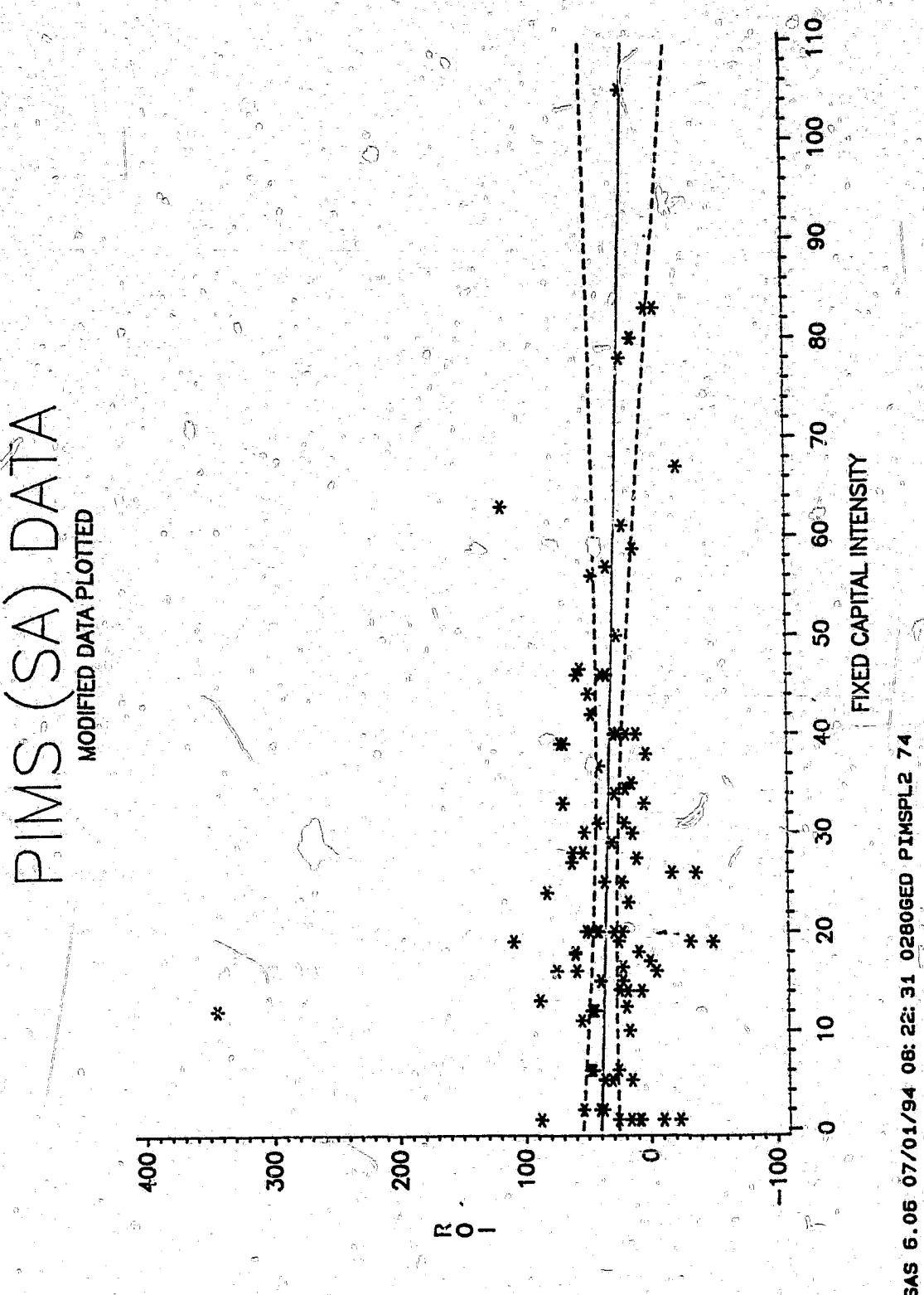


Fig A3.30 Plot of Fixed Capital Intensity

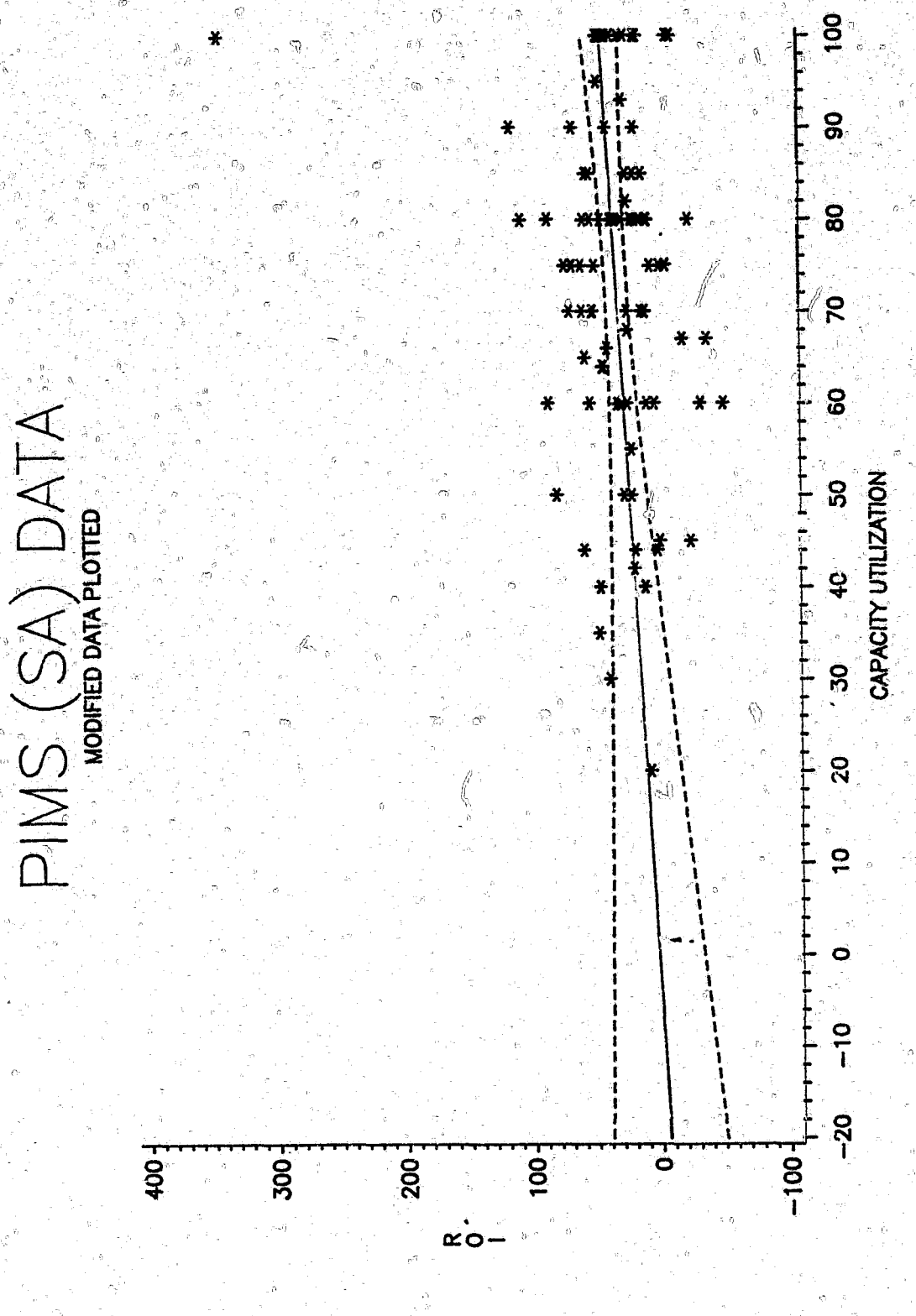


Fig A3.31 Plot of Capacity Utilization

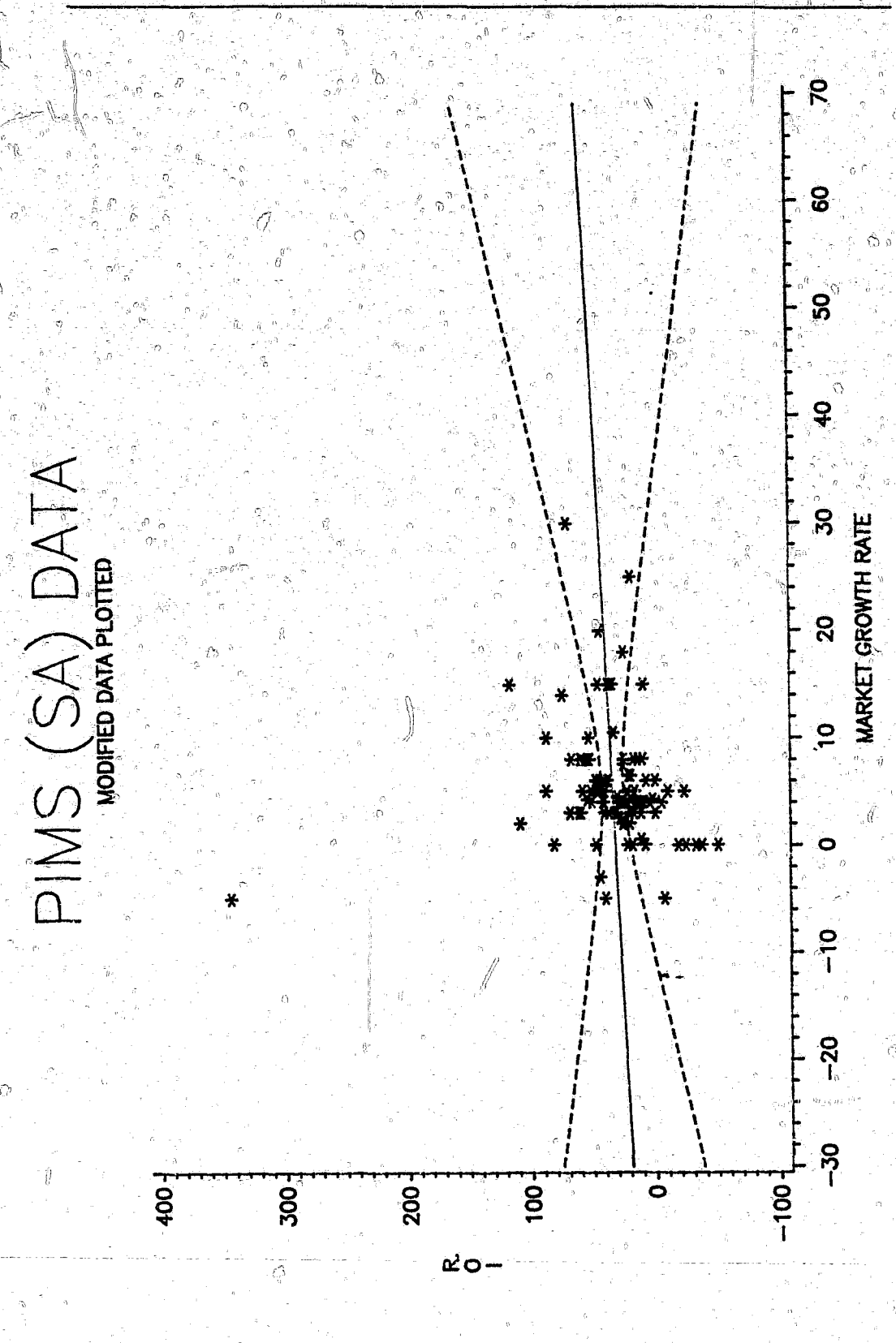


Fig A3.32 Plot of Market Growth

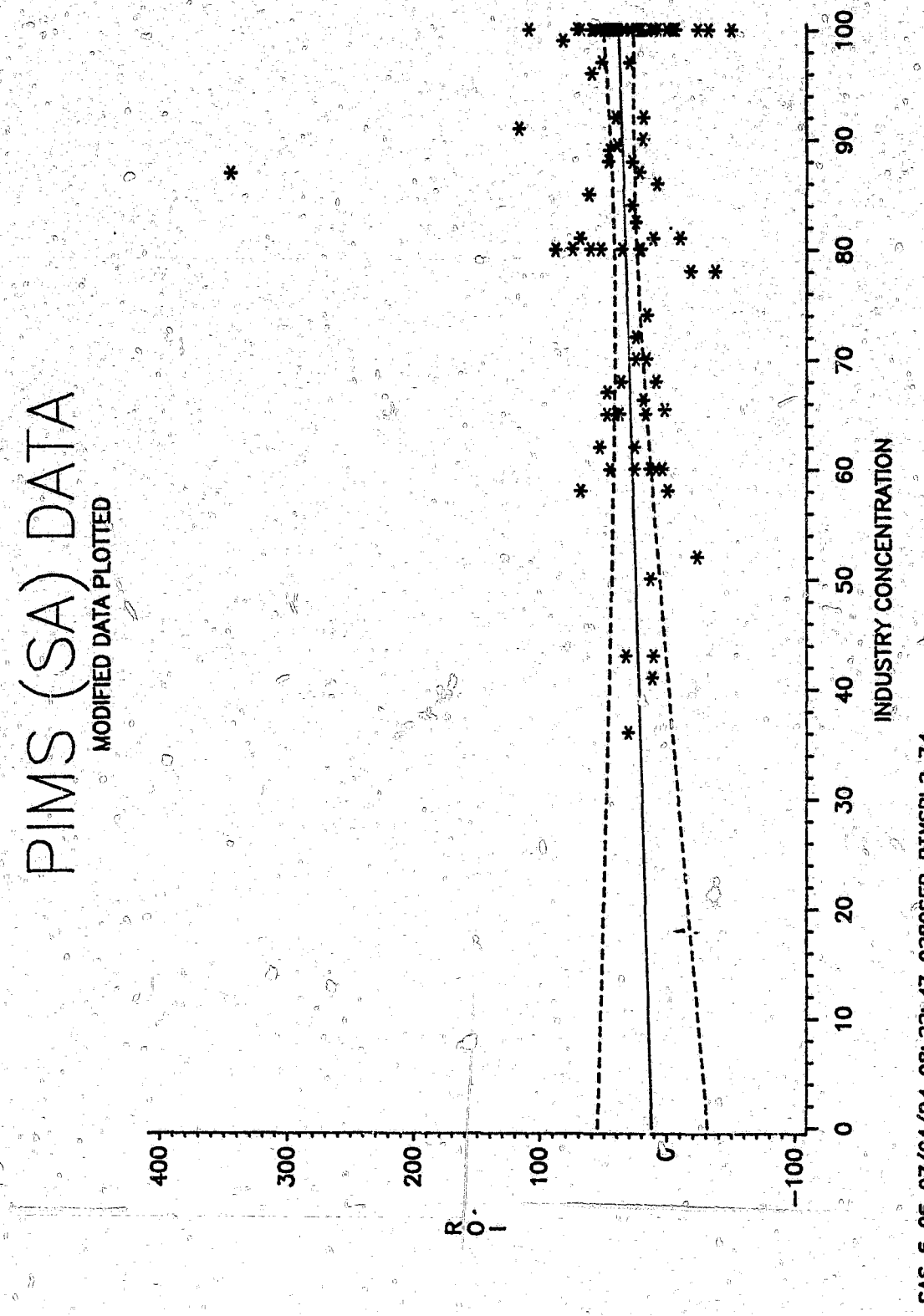


Fig A3.33 Plot of Industry Concentration

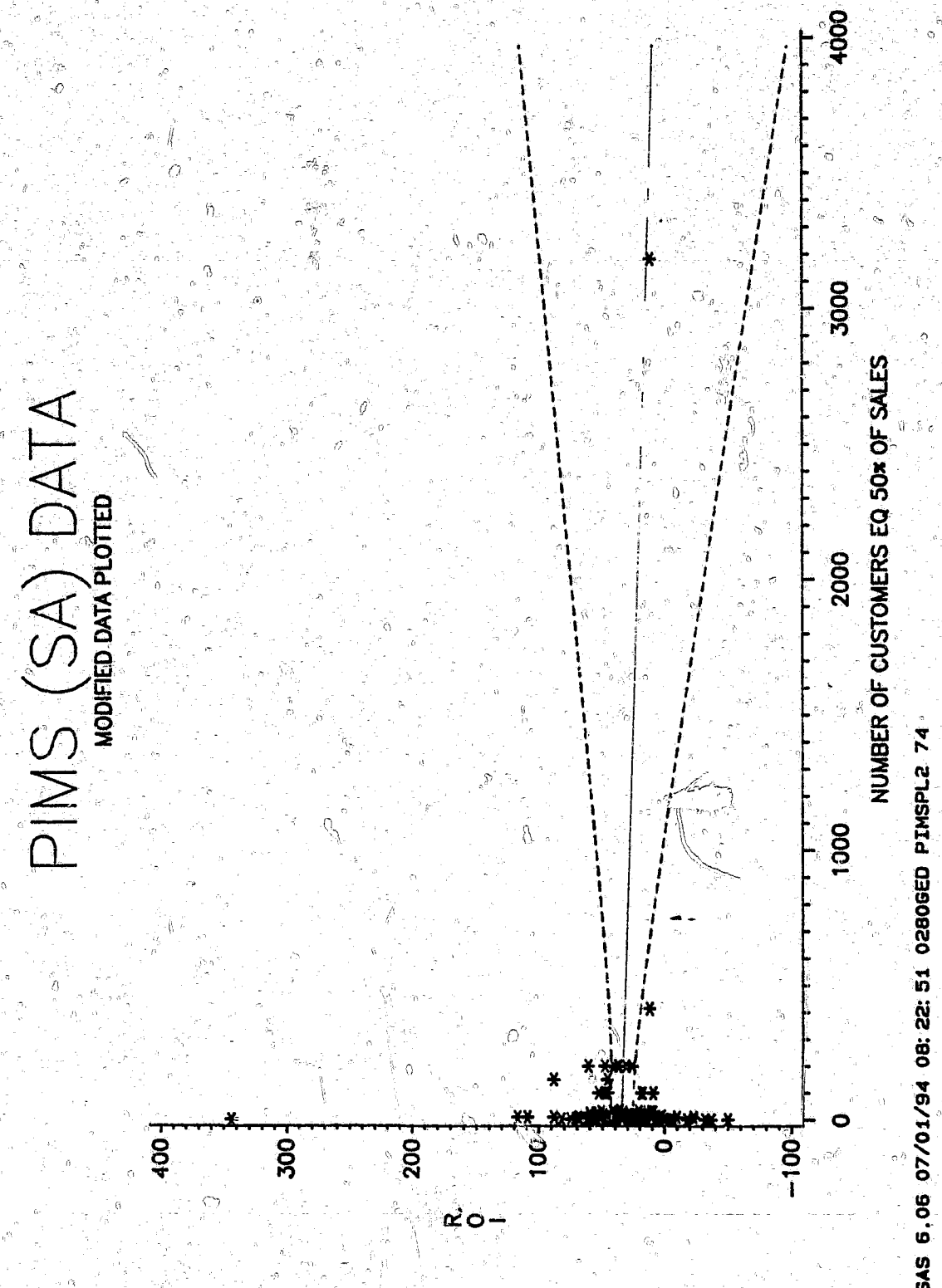


Fig A3.34 Plot of Customer Concentration

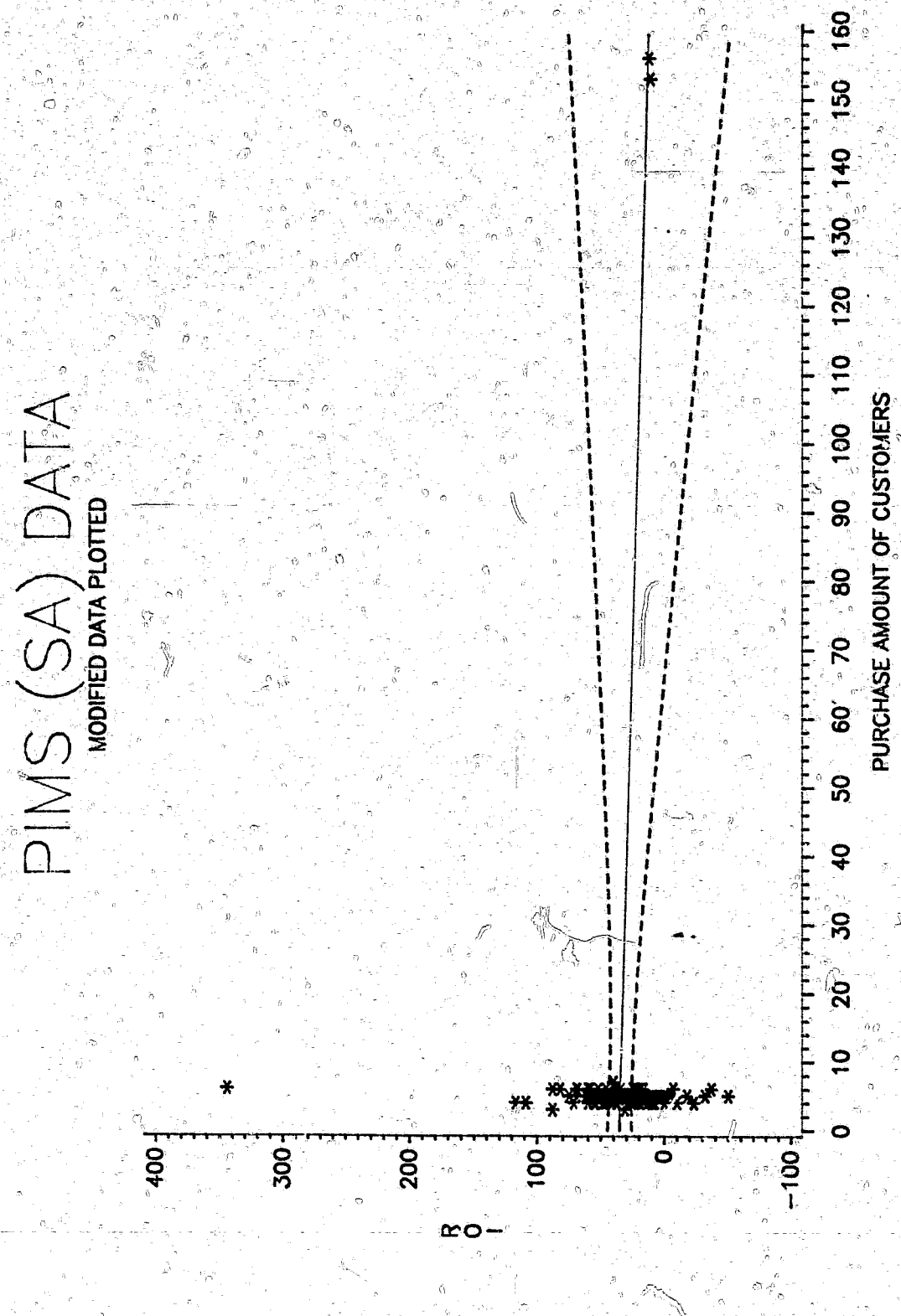


Fig A3.35 Plot of Purchase Amount vs ROI

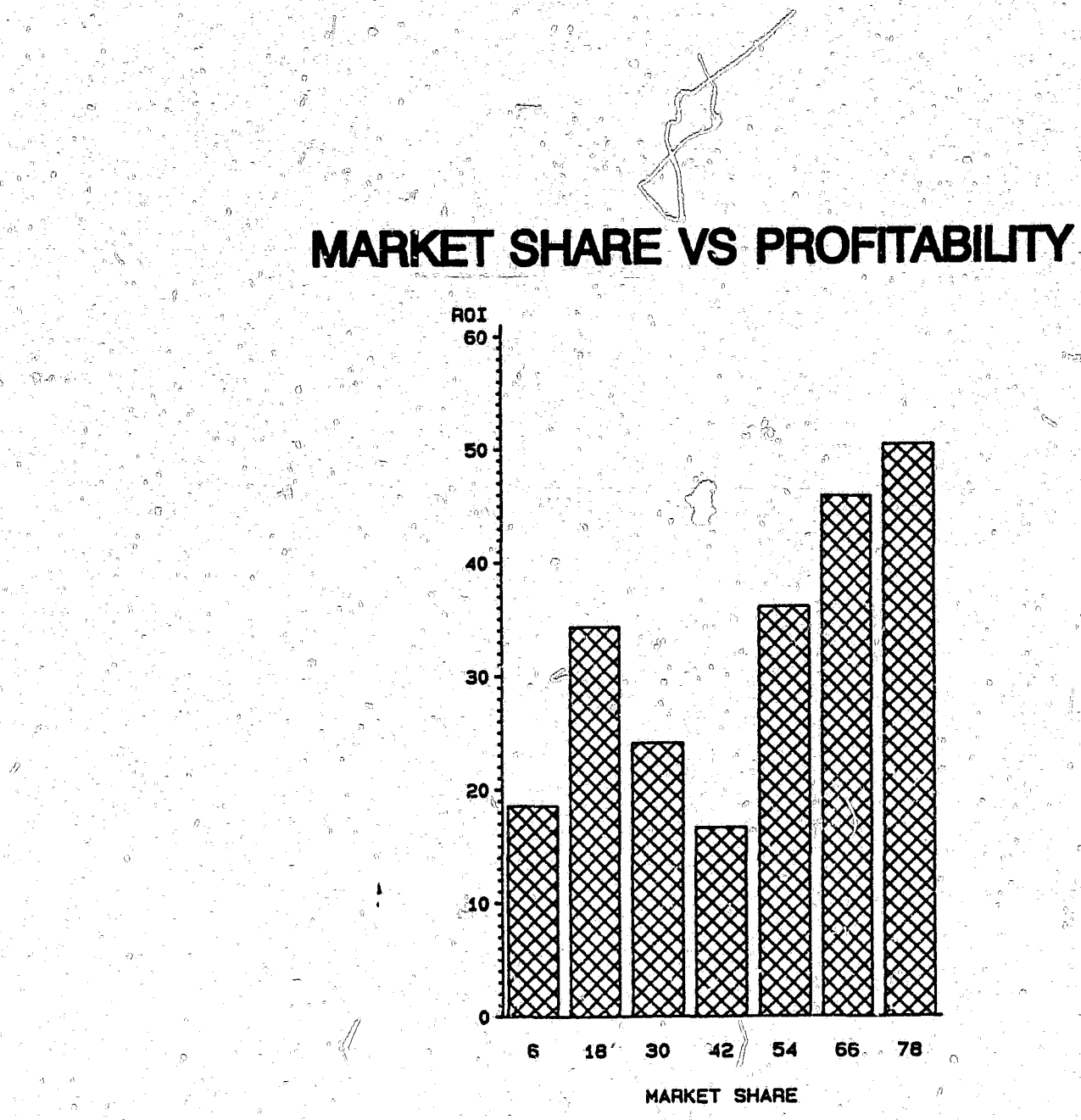


Fig A3.36a Chart of Market Share vs ROI

Author Edwards G N
Name of thesis Market share, profitability and implications for strategy formulation 1994

PUBLISHER:
University of the Witwatersrand, Johannesburg
©2013

LEGAL NOTICES:

Copyright Notice: All materials on the University of the Witwatersrand, Johannesburg Library website are protected by South African copyright law and may not be distributed, transmitted, displayed, or otherwise published in any format, without the prior written permission of the copyright owner.

Disclaimer and Terms of Use: Provided that you maintain all copyright and other notices contained therein, you may download material (one machine readable copy and one print copy per page) for your personal and/or educational non-commercial use only.

The University of the Witwatersrand, Johannesburg, is not responsible for any errors or omissions and excludes any and all liability for any errors in or omissions from the information on the Library website.