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**AN ANALYSIS OF STRATEGIC MANAGEMENT  
IN THE NSW WINE PRODUCTION INDUSTRY**

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## Introduction

The analysis of the determinants of organisational performance is difficult. The analytical power of economic theory to contribute to such efforts reduces as product heterogeneity, non-price competition and impediments to contestability of markets increase. In its place are models of management behaviour which have been developed to capture the main characteristics of organisational functioning which differentiate relatively successful from relatively unsuccessful organisations. These models focus on competitive strategy, the deliberately contrived approach adopted by the management of an organisation to deal with its operating environment.

Non-farm, downstream agribusiness organisations commonly have, as features of that environment, the effects of instability in the demand for and supply of farm output. Principal amongst these effects are variability in farm output volumes and quality, and prices of output.

This fact leads to a question as to the applicability of strategic models, developed with reference to non-agribusiness domains, to agribusiness organisations. Specifically, do variability in farm output quality and quantity, via input supply, and farm output price, via input cost, undermine the benefits argued by theorists to attach to particular competitive strategies? This question has not previously been addressed.

The principal objective in the present study is to test the applicability of a strategic model to an agribusiness sector. In particular, it focuses on a comprehensive model developed, over industrial organisation theory, by Michael Porter (1980). Porter's model comprises a typology of three generic competitive strategies which provide a basis for relative success. While many alternatives have been posited in management literature, few have directly tied the concepts of organisation theory with those of economics. Porter's neat meshing of these disciplines presents a solid rationale for the adoption of particular generic strategies and a comprehensive framework for analysis.

## Theoretical Overview

Of particular interest to the agribusiness researcher is the concept of 'strategic groups'. Strategic groups comprise those firms within an industry who employ a similar mix of competitive methods to formulate a strategy to achieve their objectives and goals. In general, industries comprise a number of these groups although it is possible for only a single group to exist. The particular value of strategic group theory is its potential to explain why some firms consistently under-perform and others thrive. This co-existence presents a conundrum for classical economists who assume the rational firm would adopt the successful strategy. They recognise entry barriers to an industry but commonly assume perfect mobility within it. Strategic group theory has extended the notion of industry barriers to strategic groups. As noted by McGee and Thomas (1986, p. 150) 'a firm within a group makes strategic decisions which cannot readily be imitated outside the group without substantial costs, significant elapsed time, or uncertainty about the outcomes of decisions'. These strategic advantages act as a mobility barrier to would-be imitators, thereby affording protection to group members' investment.

Mobility barriers are not equally prohibitive. Their strength lies in the type of advantage they have gained a firm and the potential 'cost' to competitors of overcoming the barrier. It is not unusual for there to be a high degree of mobility in one sector of an industry and virtually none in another. Further, some industries may have relatively low or non-existent barriers, in which case a uniform strategy may prevail and competition revert to the price and cost structure advantages of the economist's competitive model. In general, though, at least one mobility barrier will be present.

By utilising the concept of strategic groups in industry studies analysis can be enriched, answering questions such as: What are the competitive methods which act as isolating mechanisms? Why is there greater turnover in one section of the industry than another? Where does the potential lie for high performance and which firms are most likely to succeed? In answering these questions we can then begin to tackle some of the issues and concerns outlined above.

The search for a set of generic strategies has been the objective of a number of studies (K Owen 1989, p.7). The particular appeal of Porter's typology is the construction of generic types on the basis of 'unique competence' which satisfies 'mobility barrier' requirements. Porter (1979) in fact focused an earlier study around this concept stating 'it (provided) an explanation for stable differences in competitive strategies among firms within an industry, and for persistent intra-industry profit differences among firms'.

Porter's typology focuses on three viable generic strategies: 'cost leadership', 'differentiation' and 'focus'. Overall cost leaders tend to operate in all segments of a market. They seek high market share, taking advantage of economies of size or scope to operate at minimum cost and provide a competitively priced product. Their motto is 'efficiency' and they seek to minimise costs through tight control of expenses, overheads and ancillary services such as sales, research and development and advertising. As a result they usually experience above average returns despite strong competition. By definition there will be only one cost leader in an industry; mimics will generally fail, particularly if the cost leader is experienced.

The second generic type present in most industries is the differentiator. Unlike a cost leader, industries can have as many differentiators as there are viable market opportunities for differentiation. Firms who employ this strategy typically seek to locate and exploit particular market segments or niches by concentrating and investing resources to satisfy unique requirements (for example: technology; customer services; products; or distribution). In general, differentiation precludes high market share. Above average profits are extracted through either a perceived or actual unique benefit to customers.

The third group, focusers, target on niches within a market segment. While focusers are often associated with specialised products or services provided at a premium price, some pursue cost advantages available in a specific niche (which cost leaders are unable to fully exploit because of their broad market coverage). The former is referred to as a 'focus differentiation' strategy and the latter as 'focus cost'. In character they exhibit many of the attributes of their larger counterparts.

Finally, Porter categorises those firms who do not follow a consistent strategy, trying to be all things to all people, as 'stuck in the middle'. These firms are frequently under-performers as they extend their resources in all directions.

The principle underlying the three viable strategies is that each possesses a unique attribute(s) which acts as a barrier to potential entrants. However, aside from cost leaders, the particular isolating mechanism used can vary from industry to industry. Further, not every industry will necessarily contain firms which collectively pursue all three strategies.

### Key Features of the Australian Wine Industry

The agribusiness area to which Porter's typology is applied is the NSW wine industry. Its complete reliance on a natural input, high degree of vertical integration and product differentiation enhances the probability that at least one of Porter's generic strategies will be utilised by producers. This is particularly important since an environment theoretically ripe for competitive strategies is required in order to provide sufficient grounds for assessing the applicability of the model.

Turning first to the characteristics of the Australian wine industry in general, the relatively high degree of fragmentation provides, on the one hand, opportunities for those willing to invest in high technology and in differentiation, and on the other, the threat of declining market share for those presently operating in the industry. The latter applies particularly to smaller operators relying on domestic sales.

While the threat of substitutes and buyer and supplier power are present across the industry, their impact appears to vary according to firm position and demand for inputs. The power of grape suppliers tends to fluctuate according to demand and only in times of severe shortage do they have any substantive power. The principal threat to producers is uncertainty associated with reliance on a natural input which can significantly raise the price of input or, particularly for firms employing aggressive expansion, result in severe underproduction and loss of market share.

Beer is generally claimed to be the closest substitute for wine. However, estimates of cross price elasticities suggest that substitution is relatively low (Abdalla and Duffus 1988). Whether this applies to all segments is unknown but it is possible that the casual drinker may be more sensitive to movements in relative prices.

In assessing the impact of key features of the industry on strategic groups and firms it would appear that intra-industry competition poses a greater threat to firm performance than external factors. Many of the small producers operate in the premium segment. Since they are catering to a small exclusive clientele their principal avenue for gaining a competitive advantage is by producing a consistently superior product and providing specialised customer service. Securing a supply of grape of constant quality also appears to offer an opportunity for strategic advantage, particularly for firms who are in an active expansion stage.

With the stagnation in domestic consumption it is probable that growth in profitability for firms dependent on the domestic market will be at the expense of other producers. Firms who increasingly have secured a niche(s) and who nurture their clientele would be expected to achieve higher than average performance. For those pursuing an expansionary strategy the export market presents a potential avenue for growth but any movement into exporting requires a commitment to marketing/sales and a willingness to invest heavily.

In conclusion, the Australian wine industry appears to be reaching maturity but is hampered by a number of features which limit rationalisation and constrain the total profitability available in the industry. As such, the author expects that relatively successful firms will exhibit clearly focused and consistent strategies, along the lines outlined above.

#### Sample Characteristics and Methodology

Although only representing a single region of the industry the NSW wine industry is quite diverse, ranging from the high yield, low quality regions of the Murrumbidgee Irrigation Area (MIA) and Sunraysia to the low yield, high quality regions at Mudgee and the Hunter Valley. Producers in the latter regions tend to focus on premium wines although larger firms possess vineyards in the former regions to supplement local production. In all, approximately 125 wineries were in operation in 1987, although not all were included in the survey.

To test for the existence of Porter's strategic types, a four stage process was undertaken. The first stage incorporated discussions with industry members and experts, collection of statistics and other information on the NSW wine industry. In Stage 2 an earlier interpretation of Porter's competitive methods (Dess and Davis 1984 pp. 475-476) was adapted to reflect the nature of the wine industry. To ensure the study covered only those producers deriving the majority of their income from wine production the survey was limited to the population comprising firms crushing greater than 100 tonnes of grapes in 1987; a total of 48 producers. Each was mailed a questionnaire and accompanying letter explaining the reasons for the research and requesting their assistance.

In the first section of the questionnaire respondents were asked to rank, on a five point scale of ordinal numbers, each of 18 competitive methods in accordance with the relative importance they placed on each method. The choice of ordinal numbers as opposed to an attitude scale ranging from 'not at all important' to 'extremely important' was prompted by a concern that respondents would consider most competitive methods important, thus

biasing results towards the higher end of the scale. Questions were specifically constructed to test for the existence of Porter's typology and to identify strategic groupings. Each item was constructed to elicit a response which would identify a producer as possessing (or not) an attribute consistent with one of the three types. For all of Porter's types to exist then, three producers would have had to score in the manner outlined in Table 1.

Table 1 is somewhat ideal but acts as a useful reference point. In reality the delineation between types may be less clear. Nevertheless, we would not, for example, expect an overall cost leader to be investing in technology to produce a specialised product, nor would we expect a differentiator to be concerned equally with image building and the pursuit of cost minimisation. To enhance producer definition a number of items and sub-divisions were added to the questionnaire. These were introduced primarily for additional information rather than for their ability to categorise a producer into one of the three types. Where this information is valuable is in distinguishing between focus types, an aspect which was not addressed by Dess and Davis. Consequently, Table 1 separates focus items into primary and secondary to facilitate distinction between producers focusing on cost advantages as against differentiation.

The identification of firm posture was also enhanced by subdividing the items Control over Distribution Channels and Employment of Skilled Personnel. The former is commonly associated with cost leaders on the assumption that control equates with cost minimisation. However, control over distribution channels may be motivated by a desire for quality/service maintenance which is more generally associated with differentiators. In the latter item, Porter identifies 'willingness to employ highly skilled people' (assumedly at a premium) with differentiators. The author does not entirely agree with this association since the employment of skilled labour can be an effective means of cost minimisation. Of more interest is the relative importance of skilled labour in the firm's operations. Highly skilled finance people may be an integral part of a cost leader strategy while a focus on sales/marketing personnel part of a differentiation strategy. To gauge whether there are clear distinctions between producers, skilled personnel was subdivided into production, sales/marketing and finance.

In winemaking, production is inextricably tied to a natural input. The fortune of producers is heavily reliant on the yields and quality of grapes. A number of strategies are available to ensure adequate input. First, producers can buy grape on a need only basis. However, they are then susceptible to fluctuations in price and availability. For greater security, contracting for grape or purchasing additional vineyards provide enhanced stability. Rather than restricting the item to procurement of raw materials, each of these



**TABLE 1**  
**Expected Scores for Porter's Generic Types**

Generic Type	Item No.	Competitive Method	Expected Score	
A. Differentiation	15	New Product Development	High	
	1	Label/Image Identification	"	
	13	Innovations in Marketing Techniques and Methods	"	
	27,28	Advertising	"	
	12	Competitive Pricing	Low	
	22	Procurement of Inputs	"	
	24,25	Minimising the Use of Outside Finance	"	
B. Overall Low Cost	5	Maintain and Pursue Overall Cost Efficiency	High	
	12	Competitive Pricing	"	
	22	Procurement of Inputs	"	
	26	Adoption/Innovation in Technological Developments to Minimise Costs	"	
	6	Customer Service	Low	
	13	Innovation in Marketing/Sales Techniques and Methods	"	
	8	Serving a Specific Market	"	
	23	Capability to Produce Special Wines	"	
	21	Producing for Premium Markets	"	
C. Focus				
	Primary	8	Serving Specific Markets	High
		7	Developing Broad Product Range	Low
	Secondary <sup>a</sup>	5	Maintain and Pursue Overall Cost Efficiency	High
	Cost	12	Competitive Pricing	High
		26	Adoption/Innovation in Technological Developments to Minimise Costs	High
	Differentiation	1	Label/Image Identification	High

(a) Note Focusers may also score highly on other competitive methods such as innovation in Marketing/Sales. However, the items listed are particularly important in distinguishing between the two.

Source: adapted from Dess and Davis 'expert' categorisation.

strategies was presented as an alternative since it was assumed that these latter strategies indicated a desire to exert greater control over procurement of raw materials.

The second stage of the survey was designed to gauge relative performance among producers. To be consistent with Porter's typology, firms identified as falling into one of the three generic groups should produce above average performances. Two performance measures were used: percentage growth in gross profit; and percentage growth in dollar sales. Percentage growth was used in preference to actual figures for two reasons. First, initial tests indicated a reluctance to divulge actual figures for confidentiality reasons or difficulty in compiling the information. Second, percentages provide a standardised measure which enable measurement of relative performance among producers. While producers may perform relatively well in both items, above average performance on both measures was not a prerequisite for relative success, since a firm may forego above average profits in the short term to gain market share or, alternatively, sacrifice growth in sales for high profits.

In the third stage a factor analytic method was initially proposed to determine whether Porter's generic types existed within the sample and to reduce the data requirements for subsequent clustering. The method essentially produces a number of groups (factors) comprising variables which, to varying degrees, describe that factor (by weights). By examining variables with high weights it may be possible to characterise a factor as representing a category within the sample. In the present case factors should characterise a strategic type.

Unfortunately the application of factor analysis proved particularly troublesome and was abandoned after extensive testing. While the principal problem lay in the relatively small sample size and the high ratio of variables to observations, difficulties were also experienced with the nature of the data itself due to the variety of scalar measures utilised (K Owen pp. 32-45). Further, it became apparent that the structure of strategies themselves was a contributing factor. Factor analysis seeks subsets of variables within a data set each possessing a feature in common which, ideally, fully explains those variables. However, most competitive methods (variables) are present in any strategy to differing degrees. Therefore, factor analysis tended to obscure the distinction between strategies, particularly between differentiation and focus differentiation where the two share common attributes.

It is this last aspect in particular which suggested that a more structured approach to identifying strategies was necessary. Therefore, an alternative approach to identifying strategies where data is classified into 'critical' and 'definitional' competitive methods was

adopted. Critical competitive methods include those methods which provide strict criteria for strategy type. Definitional methods assist in identifying and further defining the strategies that firms follow within the initially identified strategies. Unlike factoring, this approach is sympathetic to the structure outlined in Table 1 in that it recognises the essentially hierarchical nature of Porter's strategies. Strategies become increasingly well-defined as additional competitive elements are identified. Further it overcomes the problem of similar weighting of variables on consecutive strategies.

To analyse the data, a clustering technique was used as was proposed in the original scheme of analysis (albeit in a more central role). Cluster analysis is a comparatively new technique, which aims to identify groupings within a sample on the basis of similarity in attributes. Everitt (1980, p. 60) defines clusters as 'continuous regions of space containing a relatively high density of points, separated from other such regions by regions containing a relatively low density of points'. A number of methods are available for clustering. Among the better known are hierarchical agglomerative, hierarchical divisive, iterative partitioning and mode seeking. Everitt (1980) and Aldenderfer and Blashfield (1984) provide comprehensive explanations of each method.

For initial classification in the present study the author used Product Range. Product Range provides a simple yet effective criterion for distinguishing between the generic types since, by definition a focuser will concentrate on a single segment, a cost leader will operate in the majority of market segments and a differentiator in a few specific segments. From this tentative classification a more comprehensive set of criteria was applied to ascertain whether firms are truly members of a generic group.

The choice of clustering method can be a difficult task. Unfortunately there are no hard and fast rules as to the appropriate method for a given data sample even though results often differ according to the algorithm employed. The principal difficulty lies in the nature of the clusters that different methods seek to form. For example Ward's Method, one of the more commonly used, is an agglomerative space-dilating technique which seeks clusters which are hyperspherical and of similar sizes. On the other hand, average linkage is an agglomerative space-conserving method and allows for clusters of unequal size.

While the final choice of method is primarily a matter of 'heuristics', there are a number of tests that can be applied for a rough guide to the appropriate measure (Aldenderfer and Blashfield pp 59-61). Average linkage was preferred for the present research since its cluster solutions fitted the pattern of similarities better than others and the clusters themselves were more meaningful than the solutions provided by other algorithms.

## Results

Initially only 13 producers replied with a further 11 responding after telephone contact. Of the original 48, 5 firms had been absorbed by others or changed ownership reducing possible responses to 43.

Data analysis was conducted on 22 responses from a total of 24 replies (representing a 58% response rate). Two cases did not meet the criteria for inclusion. One was not principally in the business of wine making and the other had only recently been sold and, therefore, their proposed strategy could not be assessed against performance criteria.

Although small, the final sample was surprisingly representative of the population in terms of location and size. Therefore, it was expected that there would be sufficient divergence in strategies for the purposes of the study. In addition, 91% of the sampled firms had been in operation for a period in excess of 5 years. This latter aspect considerably enhanced the ability to draw conclusions as to the relationship between strategy and performance.

As proposed, firms were initially classified according to their 'Product Range'. Of immediate interest was the presence of several firms with a broad product range, the implication being that all follow a cost leader strategy. Two explanations are possible. First, the item was not sufficiently defined to establish a cost leader strategy or, second, with the possible exception of one firm, each was vying for a cost leadership position.

Having established three distinct groups the next phase was to compute cluster solutions for each group employing the competitive methods listed in Appendix A. The competitive methods listed for each group were chosen for their ability to distinguish between those firms who had developed a consistent strategy which reflected a generic type, and those who could be classified as 'stuck in the middle' or who exhibited some inconsistency in their strategic profile. It is quite possible that competitive methods excluded from those lists may have a bearing on a firm's strategy. Therefore, whenever clarification was necessary the respondent's questionnaires were referred to.

Inevitably there is a degree of subjectivity in the choice of methods for clustering and it is probable that no two authors will adopt the same methods for distinction. Further, preference for clustering technique may also differ given the absence of strict rules and precedent. Consequently, the resulting cluster solutions were tested for 'robustness' by

applying Ward's and Density (Wishart 1987) to the data in the expectation that only marginal changes would occur. The choice of variables is left open to debate.

In determining the number of cluster solutions to produce for each general classification two aspects were considered:

1. the scope for consistent but dissimilar sets of competitive methods within a given strategy. For example only one set of competitive methods is viable for a cost leader but a number may apply to a focus differentiator; and
2. the density or 'lightness' of cluster formations assessed on a visual inspection of the dendrogram.

A final note before turning to the cluster solutions relates to the limited number of observations in the sample. Intuitively, limited observations will reduce the probability that clustering will form internally homogeneous solutions. Consequently, generalisations as to the strategic profile of a cluster solution are limited to competitive methods which exhibit insignificant variance for that method. Since the data is ordinal and the range identical for most competitive methods, the standard deviation was adopted to assess this variance. What was of interest is the absolute value of the standard deviation not the value of the standard deviation with respect to the mean.

Tables 2 to 4 present the solutions for each strategic group. The competitive methods listed are limited to those which distinguish between clusters. Competitive methods adopted in general will be discussed in a review of each group.

For the cost leader strategy the cluster solution indicated three distinct groups with two, four and one member respectively. As a group these firms had a number of features in common. First, all were keen to develop a label image to promote the firm but were also reasonably concerned with cost minimisation. Control over inputs and innovations in technology to gain cost efficiency was also a focal concern of firms operating this general strategy. Finally most firms operated in premium markets. Clearly, these competitive methods are quite inconsistent with a cost leading strategy. Therefore, it is probable that their broad product range is in fact limited to one or two broad segments, possibly bottled wine, representing differentiation rather than cost leadership.

Table 2  
Cluster Statistics for 'Cost Leaders' Producers

Variable	Cluster 1		Cluster 2		Cluster 3	
	Mean	St Dev	Mean	St Dev	Mean	St Dev
V12 Aggressive Pricing Policy	5.00	0.00	2.00	0.82	3.00	0.00
V13 Innovative Marketing/Sales Techniques	1.50	0.71	3.50	1.29	4.00	0.00
V15 R & D for New Markets	5.00	0.00	4.50	0.58	1.00	0.00
V20 Forecasting Demand	4.00	0.00	3.75	0.50	5.00	0.00
V23 Investing in Technology to Produce Specialty Wines	4.50	0.71	3.50	1.00	1.00	0.00
V27 Mass Media Advertising	1.00	0.00	3.75	0.50	1.00	0.00
V28 Wine Specialist Media Advertising	1.50	0.71	3.50	1.00	1.00	0.00
Cluster Size	2		4		1	

Table 3  
Cluster Statistics for 'Differentiators'

Variable	Cluster 1		Cluster 2	
	Mean	St Dev	Mean	St Dev
V1 Developing a Label Image	2.00	1.41	4.00	0.16
V13 Innovative Marketing/Sales Techniques	1.00	0.00	3.20	1.10
V14 R & D for Existing Markets	1.00	0.00	3.20	0.84
V15 R & D for New Markets	1.00	0.00	3.20	1.64
V17 Skilled Personnel in Marketing/Sales	1.00	0.00	4.40	0.55
V22 Procurement of Grapes	0.50	0.71	2.40	1.34
V23 Investing in Technology to Produce Specialty Wines	2.00	0.00	4.00	1.00
V27 Mass Media Advertising	1.00	0.00	3.00	1.87
Cluster Size	2		5	

Table 3a  
Cluster 2 Statistics for 'Differentiators'

Variable	Cluster 2A		Cluster 2B	
	Mean	St Dev	Mean	St Dev
V10 Control of Distribution for Cost	2.67	0.58	4.00	0.00
V13 Innovative Marketing/Sales Techniques	3.67	1.15	2.50	0.71
V15 R & D for New Markets	4.33	0.58	1.50	0.71
V22 Procurement of Grapes	3.00	0.00	1.50	2.12
V27 Wine Specialist Media	3.33	1.53	1.00	0.00
Cluster Size	3		2	

Table 4

Cluster Statistics for 'Focusers'

Variable	Cluster 1		Cluster 2		Cluster 3		Cluster 4	
	Mean	St Dev	Mean	St Dev	Mean	St Dev	Mean	St Dev
V1 Developing a Label Image	4.00	1.41	4.00	0.00	1.00	0.00	4.00	0.00
V2 Producing the Best Quality Wine	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
V5 Cost Minimisation	3.50	0.71	2.80	0.45	4.00	0.00	3.00	0.00
V6 Specialised Customer Service	5.00	0.00	4.40	0.89	1.00	0.00	1.00	0.00
V10 Control of Distribution for Cost	5.00	0.00	2.60	1.41	3.00	0.00	4.00	0.00
V11 Control of Distribution for Quality	5.00	0.00	4.40	0.16	2.00	0.00	3.00	0.00
V12 Aggressive Pricing Policy	2.50	0.71	1.20	0.45	3.00	0.00	2.00	0.00
V13 Innovation in Marketing/Sales Techniques	3.50	0.71	2.60	1.52	2.00	0.00	4.00	0.00
V17 Skilled Personnel in Marketing/Sales	4.00	1.41	3.40	1.34	1.00	0.00	4.00	0.00
V21 Producing for Premium Segments	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
V23 Investing in Technology to Produce Specialty Wines	4.50	0.71	3.40	1.82	5.00	0.00	2.00	0.00
V25 Avoiding Outside Finance for Capital Investment	4.00	1.41	2.00	1.41	5.00	0.00	2.00	0.00
V26 Technological Innovations to Increase Cost Efficiency	4.50	0.71	3.20	1.30	4.00	0.00	4.00	0.00
V29 Direct Mailing	4.50	0.71	4.60	0.87	1.00	0.00	1.00	0.00
Cluster Size	2		5		1		1	



Turning to the clusters in Table 2, firms in Cluster 1 employ an aggressive pricing policy, show little interest in advertising and marketing but are actively involved in new product development and adopting technology to produce specialised wines. Together with the overall strategy of the group the competitive methods adopted here are clearly inconsistent, both for a differentiation and a cost leader strategy. Aggressive pricing implies relatively low margins but prudent innovation and development requires substantial investment. A closer inspection revealed that one firm avoided outside financing for investment while the other employed it heavily, the latter approach being more consistent with a focus on development. On the whole the strategy employed by this cluster appears to emphasize market share rather than profits and would be unsustainable in the long term.

The second cluster is less distinctive than the first. These firms appear to adopt all the competitive methods but with a general lack of commitment to any one. The principal difference between the two clusters is the second cluster's relatively high score on advertising and low score on aggressive pricing. While the competitive methods employed by this cluster are relatively consistent there is an overall absence of focus implying that they are 'stuck in the middle'. The final cluster, containing one member, operates a highly focused strategy concentrated on marketing and sales. It has no interest in advertising, product development for new markets or innovations to produce specialised wines. Price is of medium concern but market forecasting and marketing/sales innovation is prominent in their strategy, the latter being complemented with the employment of highly skilled personnel in this area. The strategy is clearly one of differentiation as opposed to cost leading, and is seeking market share but not aggressively so.

From the preceding discussion it is apparent that the strategies employed above are not cost leadership as was suspected. Of all the clusters only the final one is clearly differentiating while the members of the first cluster appear to be in a transitional stage employing an aggressive market share strategy. On the basis of these findings the author expected Cluster 3 to have an above average performance, Cluster 2 to be at or below average and Cluster 1 to have relatively low profit but high growth in dollar sales.

Turning now to the second group comprising firms who operate in different particular segments. Results produced two broad, distinctly different strategies, one of which had three underlying focuses as would be expected of differentiators. Discussion will commence with the two cluster solution followed by a further dissection of the second cluster.

As a group, firms have more in common in the competitive methods they do not emphasise than in the competitive methods they focus on. In general, aggressive pricing was not considered an important strategy although the mean response for Cluster 2 indicated that pricing was a consideration in their strategy. Consistent with a differentiation strategy neither cluster avoided outside financing for capital investment nor was occupied with controlling distribution for cost reasons. However, controlling distribution to maintain quality/image was relatively important to most firms. At the individual level, Table 3 highlights the significant departure in strategies of the two clusters. At first glance the members of Cluster 1 are remarkable in their apparent lack of commitment to any competitive method. However, on further inspection this was found not to be the case. The neutrality of the cluster arises because of the very broad level at which they have fused as a cluster, and the criteria used for clustering. The distinction between the two is indicated in the standard deviation for Labelling (V1). Case 1 is strongly customer orientated, providing specialised service, quality distribution and focusing on direct mail. The other is not at all concerned with image or specialised customer service and generally focuses on cost minimisation. These characteristics lead to the conclusion that these firms are probably focus differentiation and focus cost respectively.

In Cluster 2, members are closely aligned in their focus on the premium market segment, developing a label image, employing skilled personnel, adopting technology to produce specialist wines and to increase cost efficiency and in their concern for quality distribution. While adoption and innovation in technology to increase cost efficiency is generally aligned with cost leadership, it is probable that the question was not couched appropriately to distinguish relative emphasis. Since cost efficiency is an ongoing concern in any firm the high score for this competitive method is not interpreted as an inconsistency. The broad strategy of Cluster 2 is consistent with differentiation. However, it is evident from the high standard deviations on some competitive methods that strategies would be further clarified by dissecting the cluster as highlighted earlier.

Table 3a presents statistics on distinguishing variables for the two sub-clusters. Cluster 2A, representing three firms, emphasises product development for new markets, advertising and innovation in marketing and sales. In addition they place a high priority on securing grape input, through either contract and/or purchase of vineyard holdings. In contrast, Cluster 2B places little emphasis on these methods but does place a higher priority on control of distribution for cost reasons rather than for maintaining quality or image. Overall Cluster 2B has a bias against competitive marketing methods and a bias for cost minimising methods. Of the two, Cluster 2A presents a clearer more positive differentiation strategy which should lead to higher than average performance, while the strategies of

Cluster 2B could be below or simply average and may be unsustainable against the more active firms in the industry.

The final group to be analysed are the focusers. Unlike the preceding broad segment groups, there should be no misallocation of firms. Thus firms will either be following a strategy consistent in its focus or will be classified as 'stuck in the middle'. The clustering solution on five variables produced two distinct clusters and two outliers (Figure 6.4). Apart from Cluster 4 all firms operate in the premium wine segment. Beyond this, differences in emphasis are clearly apparent and, a priori, each should be operating in a separate niche.

The statistics for a four cluster solution are presented in Table 4 Cluster 1 contains two members who provide specialised customer service and are reasonably keen to develop a label image. Distribution is a central concern on cost and quality grounds, far more so than for the other clusters. Employing highly skilled personnel in marketing/sales and adopting innovations in technology to produce specialist wines and for cost efficiency is also central to their strategy. The consistency with a focus differentiator is further supported by their relative disinterest in aggressive pricing. Although the mean score for cost minimisation is slightly above average, it is lower relative to development and marketing considerations. While the two firms follow a similar overall strategy, one is less committed to marketing/sales and stresses the avoidance of external financing for capital investment, indicating a more conservative outlook.

It seems that Cluster 2 exhibits less overall commitment to any particular set of competitive methods than Cluster 1. However, the reasonably high standard deviations present for some competitive methods imply that the clustering obscures distinctive scores by individual firms. As a group these firms operate in the premium segment, have little concern with cost minimisation, provide specialised customer service, prefer to control distribution to maintain quality/image, are label conscious and do not participate in aggressive pricing activities. In short, they are highly focused towards their customers and operate in a limited market through direct mail. Beyond this common strategy the distinction between firms, indicated by the standard deviation, appears to be confined to the degree to which innovations in technology and marketing and sales are seen as a priority for a particular firm's strategy. The competitive methods adopted by this cluster are highly consistent with targeting a premium and suggest a recipe for success. The degree to which they attain above average performance will largely depend on the quality of the product they produce.

The strategy adopted by the firm in Cluster 3 is difficult to define. The firm places no emphasis on developing a label image, but operates in a premium segment. Further it is not interested in serving special customer needs nor in promoting its product in any way. Its strategy places equal emphasis on adopting technology to produce speciality wines and for cost minimisation. Their apparent focus on cost minimisation within a premium segment points to a possible classification as focus cost. However, while the emphasis is on adopting innovative technology they avoid outside finance for investment. They will be classified as 'stuck in the middle'.

The final cluster with a single firm presents a different form of focus differentiation' and is the only cluster which does not operate in the premium wine segment. It places a high priority on developing a reputation for overall value and focuses on marketing/sales innovations and personnel. It exhibits little interest in producing specialised wines or serving special customer needs, but stresses adoption of technology to minimise costs. In many respects the firm could also be seen as focus cost. However, its complete disinterest in competitive pricing suggests it is specialising in producing a product which fulfils the need of a particular niche, rather than competing on the basis of a cost advantage it has derived through specialisation.

The preceding analysis provides substantial evidence in support of the presence of common strategies in the NSW wine industry. Further, these strategies clearly reflect Porter's differentiators and focus differentiators. The findings are summarised under Expected Performance in Table 5.

### Strategy and Performance

Respondents were not completely forthcoming with performance figures. Only 13 supplied data for the five year period and a further three for a four year period. Consequently, a clustering procedure was performed for both periods to assess whether there were substantial differences in the relative placings of firms between the period.

Ward's method was adopted as the preferred clustering technique since the author found its tendency to form relatively tight hyperspherical clusters (Aldenderfer and Blashfield p.59) enhanced distinction between performance outcomes as illustrated in Figure 2. An examination of the cluster solutions for both periods revealed little difference in the relative space occupied by cases, or in the allocation of cases to clusters. Therefore, to gain as high a coverage of the sample as possible, the four year performance solution was adopted for analysis.

Table 5  
Summary Results of Cluster Classifications

Cluster	Cases	Classification	Expected Performance Relative to Sample Average		Actual Performance		
			Profit	Sales	Profit	Sales	
Broad Products							
Cluster 1	2 5	Transition Differentiation	P ≤	S ≥	P ≥	S <*	
Cluster 2	9 17 20 15	Stuck in the Middle	P ≤	S ≤	P <	S <	
Cluster 3	12	Differentiation	P ≥	S ≥	P >	S >	
Different Products							
Cluster 1	1	Focus Differentiation	P ≥	S ≥	-	-	
	19	Focus Cost	P ≥	S ≥	P =	S >	
Cluster 2a	4 18 23	Differentiation	P ≥	S ≥	P ≥	S ≥	
Cluster 2b	7 14	Stuck in the Middle	P ≤	S ≤	P ≤	S ≤	
Particular Segment							
Cluster 1	3 13	Focus Differentiation	P ≥	S ≥	P ≥	S ≤*	
Cluster 2	6 8 11 16 21	Focus Differentiation	P ≥	S ≥	P ≤*	S ≥	
Cluster 3	10	Stuck in the Middle	P ≤	S ≤	P <	S <	
Cluster 4	22	Focus Differentiation	P ≥	S ≥	-	-	

Note: Not all cases provided performance results. Therefore actual performance results only reflect the performance of cases depicted in Fig. 6.6.

\* Actual performance not in accord with expected performance.

An initial examination of the scatterplot for both performance measures (Figure.1) suggested the presence of two comprehensive clusters and three, or possibly four, outliers. A five cluster solution was settled upon since, in the six cluster solution, two of the cluster means were not significantly different from one another.

Table 6 presents figures for comparative performance between clusters as illustrated in Figure 2. The solutions themselves simply reflect the scatterplot. Clusters 4 and 5 contain firms who underperformed both in growth in gross profit and in dollar sales with 0.70 and 0.43 and -0.87 and -0.04 respectively against the sample mean of 1.0. The members of Cluster 1 performed around the mean on both performance measures. In total these clusters represent 81 per cent of firms who supplied performance data, suggesting the probability that average or below average performance is experienced by a large proportion of firms in the NSW wine industry. Of the three cases who performed above average on at least one performance criterion, Cluster 3 (with two cases) performed well above average on both criteria and Cluster 2 (Case 3) well above on profit but below average on sales.

In Table 5 these results are compared against expected performance. On average actual performance reflected expected performance. Firms who had been classified as 'stuck in the middle' consistently underperformed in the three groups, while those classified as following a differentiation strategy exhibited above average performance on one or both criteria. Apart from these, results were less distinct. Performance among focus differentiators ranged from slightly above to below average. However, this is not surprising since relative success is dependent upon achieving product quality and it is probable that firms are not equally successful in this respect. In addition, many of these firms operate in the premium segment and to an extent, are competing for similar customers. Thus product quality would play a significant part in performance. As posited earlier the extent to which product quality is determined by a natural input as opposed to winemaking skill is of particular interest to researchers in the agribusiness domain, since it is this element which provides the fundamental difference between a manufacturing and an agribusiness firm. The preceding results suggest that further research in this area is warranted and may significantly enhance the application of models, such as Porters', to the agribusiness sector.

In conclusion, the consistent underperformance of 'stuck in the middle' against the frequently above average performance of generic strategies lends firm support for a positive link between generic strategies and firm performance. Further, it is apparent that the technique adopted does offer a viable alternative to factor analysis. While it imposes a subjective weighting on variables as opposed to the objective weighting of factor analysis, it

Growth in Profit

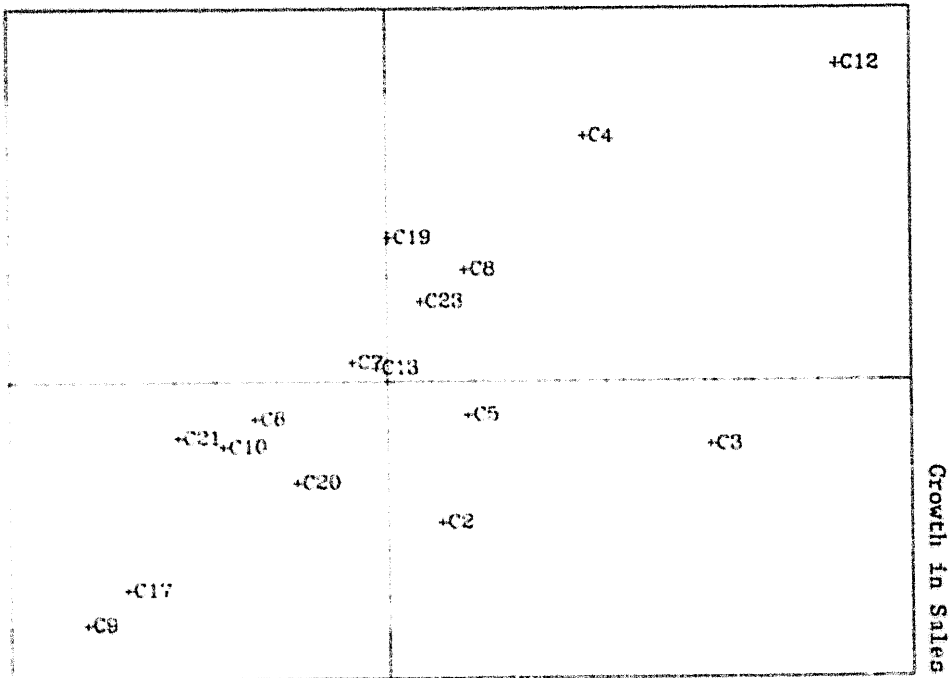


Figure 1. Performance Results: Average growth in gross profit and dollar sales for the four year period ending 1987/88

Growth in Profit

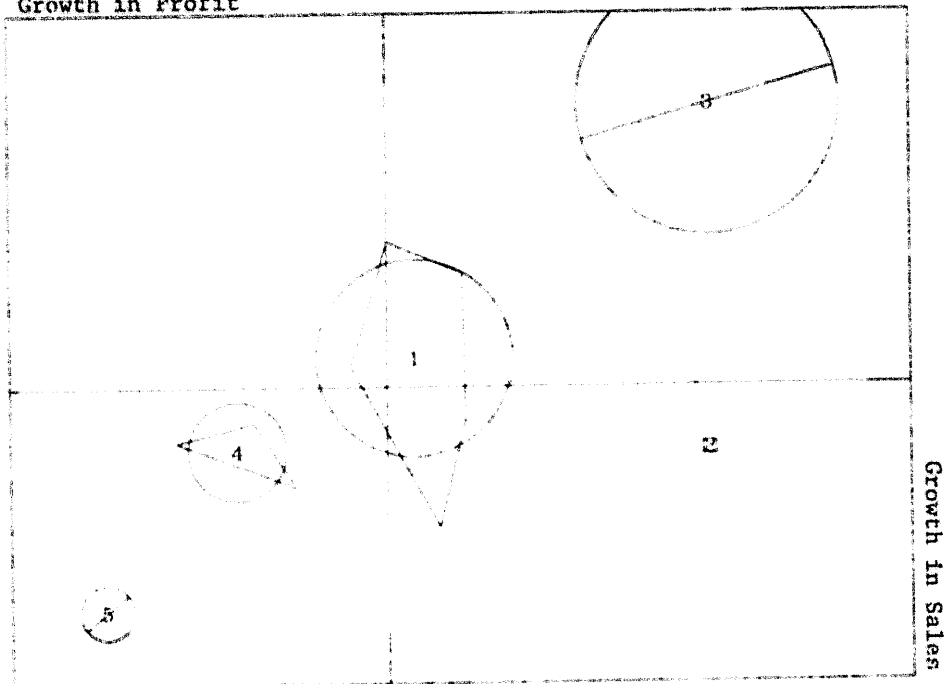


Figure 2. Cluster solutions for Firm Performance.

Table 6  
Comparative Performance in Gross Profit and Dollar Sales  
for the Four Year Period Ending 1987/88

Cluster		Growth in Gross Profit	Growth in Dollar Sales
No.	Size		
1	7	1.37	0.92
2	1	2.76	0.57
3	2	2.32	2.23
4	4	0.70	0.43
5	2	-0.87	-0.04
Total	16	1.00	1.00

Note: The figures in columns 2 and 3 represent standardised measures from the sample mean.



can be argued that a subjective but informed weighting is preferable to an indiscriminant objective weighting. This is not to say that the latter should be rejected in favour of subjectivity. On the contrary, it is only after these avenues have been exhausted and the researcher has solid grounds for imposing their judgement that a technique, such as employed here, should be adopted.

### Conclusion

This study was commenced with the objective of testing whether a typology developed in industrial organisation theory is applicable to, and can enhance, analysis of an agribusiness sector. In addition it explored the feasibility of utilising a methodology, proposed by Dess and Davis, based on intended strategies which employ attitudinal scales and incorporates both factor analysis and clustering techniques.

In testing the latter it was found that, although intuitively appealing, the methodology has a number of shortcomings. Inherent in any attitudinal survey is the presence of bias and risk of misinterpretation. In the present research the latter was evident in the misclassification by respondents into the segments in which they operated. Further, without the assistance of 'hard' data it was difficult to ascertain why those following a generic strategy actually varied in terms of relative success. This is a particularly important question given the possibility that performance may be affected by reliance on a natural input. While there is considerable scope and advantage in adopting an attitudinal approach, future research would do better by complementing the attitudinal approach with factual evidence.

The problems associated with factor analysis (K Owen pp 32-41) led the author to an alternative approach for analysis which proved particularly fruitful. A series of cluster solutions was produced starting with a broad classification of firms and moving to increasingly finer classifications. This approach is simple and provided clear distinctions between firm strategies. However, it is more intuitive and less rigorous than factor analysis and imposes subjective rather than objective weightings on the data. The author does not consider this a fault but does stress that it should not be used to the exclusion of established objective techniques.

Choosing clustering algorithms required considerable experimentation since no hard and fast rules apply to their application. The effects of the small sample were particularly evident in the production of 'loose' clusters. With limited observations, clustering was

forced to broad classifications in some instances. Therefore, although two cases may have had a number of features in common they were distinctly different in others.

The preceding discussion highlights the difficulties one can encounter in constructing and implementing a study of this kind. Careful consideration of both data requirements and data analysis is essential to minimising the potential for inadequate results or tedious and time consuming data analysis.

The analysis of the Australian wine industry suggested it was reaching maturity and that aggregate returns in the industry were unlikely to show significant growth, particularly in the domestic market. Consequently, it was expected that to build a successful mobility barrier relatively successful producers would need to exhibit a high degree of commitment to clearly focused consistent strategies. The results largely support this expectation; in virtually every case producers exhibiting these characteristics outperformed those with less defined strategies. However, firms with distinctly better results paid particular attention to their customer base and most were heavily marketing/sales orientated. Further, none of these had adjusted their strategies significantly over the past decade, implying that they have developed a sustainable strategy with effective barriers to competition.

Of those surveyed few had adjusted their strategies since entering the industry. Adjustments that had been made were either in response to the changes in consumer demand from red to dry white wine in the early 1980s or to the growing demand for a better quality wine. This response was predominantly one among firms who had originally concentrated on bulk sales in the lower quality segment of the market.

In conclusion, the results obtained in this study indicate that a model developed in organisational theory can be applied to an agribusiness sector and can assist in our understanding of the sector. However, the analysis conducted here is only preliminary to the extent that it indicates appropriate concepts and techniques for conducting research into this field.

Future research needs to concentrate on the specific implications for strategy of a reliance on natural inputs. Does this influence performance to the extent that a theoretically feasible strategy is no longer effective? What strategies does agribusiness adopt to overcome the uncertainty of supply and can the industrially-oriented models be refined to fully reflect the idiosyncrasies of agriculture?

A further avenue for research is the extent to which mobility barriers and strategic advantage result in socially dysfunctional responses to public policy initiatives. In this area organisational theory models would appear to offer a valuable tool for policy makers.

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APPENDIX A

## GENERIC STRATEGIES AND COMPETITIVE METHODS

'Cost Leaders' and 'Differentiators'

- 1 - Label identification
- 5 - Cost minimisation
- 10 - Control of distribution - cost
- 11 - Control of distribution - quality
- 12 - Aggressive pricing
- 13 - Innovation in marketing/sales
- 14 - Product development for existing markets
- 15 - Product development for new markets
- 17 - Skilled marketing/sales personnel
- 18 - Skilled finance personnel
- 21 - Operate in premium segments
- 22 - Control inputs
- 23 - Technology for specialised wines
- 25 - Avoid outside finance for investment
- 26 - Technology for cost minimisation
- 27 - Mass advertising
- 28 - Wine specialist media

Focused Segments

- 1 - Label identification
- 2 - Label 'best quality wine'
- 3 - Label 'best in supplying services'
- 5 - Cost minimisation
- 6 - Specialised customer service
- 10 - Distribution control for cost
- 11 - Distribution control for image
- 12 - Aggressive pricing
- 13 - Innovation in marketing/sales
- 17 - Skilled marketing/sales personnel
- 21 - Operate in premium segments
- 23 - Technology for specialised wines
- 25 - Avoid outside financing for investment
- 26 - Technology to minimise cost
- 29 - Direct mailing