UNIVERSITY OF COPENHAGEN

Københavns Universitet

Strategy amongst food industry firms

a cluster analysis of results of a Danish survey, and comparisons with classical models of strategy

Baker, Derek; Graber-Lützhøft, Kimmie; Lind, Kim Martin

Publication date:
2007

Document version
Publisher's PDF, also known as Version of record

Citation for published version (APA):
Baker, D., Graber-Lützhøft, K., & Lind, K. M. (2007). *Strategy amongst food industry firms: a cluster analysis of results of a Danish survey, and comparisons with classical models of strategy*. Institute of Food and Resource Economics, University of Copenhagen. Report / Institute of Food and Resource Economics No. 190

Download date: 06. Oct. 2026

Institute of Food and Resource Economics

Report no. 190

Strategy amongst food industry firms

A cluster analysis of results of a Danish survey, and comparisons with classical models of strategy

Derek Baker, Kimmie Graber-Lützhøft and Kim Martin Hjorth Lind

Copenhagen 2007

ISBN 978-87-92087-14-0 (print, Strategy amongst food industry firms)
ISBN 978-87-92087-15-7 (on-line, Strategy amongst food industry firms)

Contents:

Preface 7

Summary 9

1. Introduction 11
   1.1. Background 11
   1.2. Purpose and scope of the study 12
   1.3. The “Food Chain Project” 12
   1.4. Outline of report 13

2. Models of firms’ business strategy 15
   2.1. Strategic typologies 15
      2.1.1. Miles and Snow 15
      2.1.2. Porter 17
      2.1.3. Downes 18
   2.2. Food sector studies 19
      2.2.1. Marketing focus 19
      2.2.2. Business form and capabilities 20
      2.2.3. Innovation 21
      2.2.4. External influences on the food industry 22
   2.3. Hypotheses carried forward 22

3. Data and method 25
   3.1. Survey 25
      3.1.1. Approach taken 25
      Overview of survey dataset 27
   3.2. Survey questions regarding strategy 28
      3.2.1. Strategic orientation 28
      3.2.2. Strategic actions 29
   3.3. Cluster analysis 30
      3.3.1. Overview 30
      3.3.2. Alternative methods 31
   3.4. Principal component analysis 32
   3.5. Cluster method used 33
   3.6. Comparison of clusters 33
      3.6.1. “Adherence” 33

3.6.2. "Coherence" 34

4. Survey results 35
4.1. Strategic orientation in 2005 35
4.1.1. Sector 35
4.1.2. Firm size 35
4.1.3. Stage of chain 36
4.2. Categories derived from the data 37
4.3. "Cost" strategies 38
4.4. "Quality" strategies 39
4.5. "Information" strategies 40
4.6. "Price" strategies 41
4.7. "Brand" strategies 42
4.8. "Specialisation" strategies 43
4.9. "Employee" strategies 44
4.10. "Marketing" strategies 45
4.11. "Market share" strategies 46
4.12. "Regulation" strategies 47
4.13. "Research" strategies 48

5. Cluster analysis 49
5.1. Assignment of scores to categories 49
5.2. Preliminary analysis 49
5.2.1. Covariance 49
5.2.2. Principal components 49
5.3. Cluster procedure 50

6. Results 53
6.1. Clusters delivered 53
6.2. Differences between clusters 56
6.3. Clusters' strategic orientation 58
6.4. Clusters' strategic actions 59
6.4.1. Cluster 1 – small, buyer-oriented, local specialisation 59
6.4.2. Cluster 2 – small, price followers, high sales/employee 59
6.4.3. Cluster 3 – price discriminators, range of markets, research oriented 60
6.4.4. Cluster 4 – large, price discriminators, unspecialised 60
6.4.5. Cluster 5 60

6.4.6. Cluster 6 – domestic market, high quality, customer loyalty 60
6.4.7. Cluster 7 – "all things to all people" 61
6.4.8. Cluster 8 – small, price discriminators, little information exchange 61

7. Adherence to strategic typologies 63
7.1. Adherence to Miles' and Snow's taxonomy 63
7.2. Adherence to Porter's taxonomy 64
7.3. Adherence to Downes' taxonomy 65
7.4. Adherence to Strandskov et al.'s classification 65
7.5. Adherence to other classifications 66
7.5.1. Organics 66
7.5.2. Product differentiation 66
7.5.3. Regulation 67

8. Coherence amongst strategies 69
8.1. Notes on coherence 69
8.2. Coherence within Miles' and Snows' taxonomy 69
8.3. Coherence within Porter's taxonomy 70
8.4. Coherence within Downes' taxonomy 70
8.5. Coherence within Strandskov et al.'s classification 70
8.6. Coherence within Gehlbar et al.'s classification 71
8.7. Coherence within Avermaete et al.'s classification 71

9. Results and discussion 73
9.1. Overview 73
9.2. Strategies delivered 74
9.3. Clusters delivered 76
9.4. Adherence to classical models of strategy 79
9.5. Coherence in classical models of strategy 82
9.6. Discussion of hypotheses examined 85
9.6.1. Occurrence of strategic types 85
9.6.2. Description of strategic types 85
9.6.3. Size, sector, stage of chain, location 86
9.6.4. Performance 86
9.6.5. Innovation 87
9.6.6. Resource orientation 87
9.6.7. Marketing behaviour 88

9.6.8. Relations within the food marketing chain 89
9.6.9. Regulation 89
9.6.10. Adherence to classical models of strategy 90
9.6.11. Coherence amongst model-related strategies 91

10. Conclusions 93
10.1. General conclusions 93
10.2. Commercial implications 95
10.3. Policy implications 96
10.4. Methodological issues 97
10.5. Future research 98

References 101

Appendix A. Detail of paired means tests 103

Appendix B. Detail of correlations amongst firms' within-cluster adherence to specific strategies 105
Miles and Snow's strategies 105
Porter's strategies 112
Downes' strategies 119
Strandskov et al.'s strategies 122
Gehlbar et al.'s strategies 129
Avermaete et al's strategies 133

Preface

This report investigates the strategies employed by a sample of Danish food industry firms. Business literature and a few applied food industry studies are reviewed to generate a set of hypotheses that are then tested. Based on survey data for 2000 and 2005, principal components and cluster analyses are used to generate a taxonomy of firms entailing eight clusters. A key element of the methodology is its reliance on the data itself, rather than a priori expectations about the ways in which firms might act according to sector, location, stage of the marketing chain and size. The clusters have many distinct properties that are able to be used in hypothesis tests, and size is the only conventional one that shows any systematic variation amongst clusters. A methodology is developed for assessing the usefulness of established models of strategy: both for individual strategies ("adherence") and pairs of strategies ("coherence") predicted by those models.

This research is conducted under the auspices of the project "Perspektiver for og Udvikling af den danske fødevarekæde (phase 2)", commonly known as "The food chain project". This project is funded under the Innovationslov and administered by the Directorate for Food, Fisheries and Agribusiness (DFFE) of the Danish Ministry of Food, Agriculture and Fisheries.

Anja Skadkær Møller managed all testing of the questionnaire and training of student interviewers, and data entry. Research Director Mogens Lund and Senior Researcher Henning Otte Hansen commented on draft versions of this report. Numerous food industry firms co-operated with the project in formulating the questionnaire and testing it. The authors are most grateful to these firms, and to the 131 firms that provided staff time for interviews.

Institute of Food and Resource Economics
Copenhagen, April 2007

Director General Søren E. Frandsen

Summary

This study investigates the strategic behaviour of a sample of Danish food industry firms, characterises that behaviour and assembles clusters of firms with similar strategic stances, and examines the usefulness of conventional models of strategy. A set of 14 testable hypotheses is established from a literature review, and all are able to be tested adequately. Survey data from 131 firms (a 30% response rate) are employed across 11 strategic orientations and 57 strategic actions in the years 2000 and 2005. Strategic actions yielded far better research information for further analysis than did strategic orientation. The chosen method imposed as little structure as possible on the models of behaviour, by exercising the cluster analysis on strategic variables only.

The derived clusters are composed of firms with either distinct strategies, or distinct sets of strategies that occur in unique combinations. The clusters are distinct in a surprisingly large number of ways, including their strategies for growth of market share, pricing behaviour, approach and response to regulation, and use of export markets and retailers' own-label brands. However, clusters were not able to be differentiated by some intuitively obvious strategic variables, including use of technology and approach to costs, and new product introduction. The principal components and cluster analysis performed reasonably well, and yielded clusters of firms can be described as:

1. "Small, buyer oriented, local specialisations"
2. "Small, price followers, high value"
3. "Price discriminators, range of markets, research-oriented"
4. "Large, unspecialised, price discriminators"
5. (omitted, as only one firm appeared in this cluster)
6. "Domestic market, high quality, customer loyalty"
7. "All things to all people"
8. "Small, price discriminators, little information exchange"

In general, the more specific and applied are the taxonomies offered by the business strategy literature, the more applicable is that classification to the firms studied here: general statements tended to have little relevance to the clusters identified in this study. There is substantial agreement between the characteristics of firms in clusters derived here, and the clusters predicted by models reviewed in the study. This is both in terms of the strategies pursued ("adherence") and the combinations in which firms in each cluster pursue them ("coherence"). Although anomalies were identified, the correspondence between adherence and coherence was quite strong.

This study identified key variables that determine firms' types in relation to their suitability as trading partners and as compliers with policy. However, the types were found to be poorly predicted by variables such as sector, stage of chain and location. Rather the appropriate taxonomy would include size, choice of markets, pricing behaviour, brand characteristics, product introduction practices and sales per employee. The report concludes with identification of applications of the results for commercial firms and for policy makers, a summary of the weaknesses of the methodology, and proposals for future research.

1. Introduction

1.1. Background

A firm's strategy is the pattern of behaviour it uses to pursue its goals (Laugen et al., 2006). Ideally, research would identify the "best strategy": one that yielded the best performance. However, because firms have different goals and definitions of performance this outcome has eluded researchers. Using a general goal of "competitive success", Wiklund and Brännback (2001) identified important characteristics of strategy: its foundation in intentional actions; and that those actions are co-ordinated and scheduled according to resources, opportunities, strengths and weaknesses of the firm. Consideration of the modern food supply chain requires inclusion of the firms' "allied agencies" (Wiklund and Brännback, 2001; Wijnands and Ondersteijn, 2006). Laugen et al. expand on this theme with regard to strategy implementation: successful strategy implementation requires that strategies (i) be consistent with, and supportive of, each other and (ii) reflect the characteristics of the firm.

Most study of firms' strategies has addressed large firms across the industrial spectrum, and been based on executive interviews and case studies. From this body of work a number of taxonomies of business strategy have emerged and evolved. Two well-known studies (Strandskov et al., 1999; Traill, 2000) have addressed the European food industry, and included some Danish firms. Both those studies, and a number of others based on case studies (e.g. Avermaete and Viaene, 2002) define strategies from the business literature, and determine the extent to which food industry firms' activities relate to those strategies. Uniquely, the Strandskov et al. work relates the identified strategies to performance.

The current study uses survey data drawn from a sample of Danish food industry firms. Rather than adhering to pre-determined strategic types, this study first classifies firms by their (reported) strategic actions. Following Laugen et al., and Wiklund and Brännback, clusters of firms are defined according to strategy, and the make-up of the clusters is examined. As in Traill's work, characteristics of firms from auxiliary survey data are then used to characterise the clusters. Also as in Traill's work, firms' performance receives little emphasis in this study because survey data provides few reliable performance indicators. Rather, the study focuses on the extent to which strategies can be expected to be adopted in particular combinations and/or by firms

with particular characteristics. Secondarily, the clusters are examined for evidence of conventional strategic types drawn from the literature.

1.2. Purpose and scope of the study

The purpose of this research is to characterise and explain Danish food industry firms' strategies. Characterisation of strategies identifies the actions taken by firms, and identification of strategic clusters of firms points out the variety and distribution of strategic actions. Allocation of those clusters to existing strategic taxonomies allows an examination of both the taxonomies and the focus of firms' strategies.

For policy makers and policy implementation agencies, this study highlights the aspects of business that Danish food industry firms are currently emphasising. This provides a basis for indicators of policy relevance and targeting.

For food industry firms the study provokes examination of their placement within, or possibly beyond, the spectrum of strategies and strategic clusters identified from the sample addressed in the survey. By examining the actions and resource base of firms in each cluster, and the core and periphery of stated strategies, firms will question and evaluate their own strategic stance.

For researchers, this study tests the cluster methodology and the empirical approach taken in applying general business theory to a surveyed sample of Danish food industry firms. Rather than taking firms characteristics as a staring permit, this study is driven by the data itself. Having established a set of clusters of firms in this way clusters strategic characteristics can then be assessed and the relevance of existing theories of strategy examined. To that end, hypotheses centre on the extent to which firms in a given cluster employ certain strategies ("adherence" to a classical typology), or employ pairs of them ("coherence").

1.3. The "Food Chain Project"

This research is conducted under the auspices of the project[1] known as "Perspektiver for og Udvikling af den danske fødevarekæde (phase 2)"[2] commonly known as "the Food Chain Project". This project is funded under the Innovationslov and administered by the Food Economy Directorate of the Danish Ministry of Agriculture (DFFE). The objectives of the project are to:

[1] Further information about the project are available from the author at **db@foi.dk**.
[2] "Perspectives and outlook for the Danish food marketing chain"

- measure changes in function, structure and commercial practice in the Danish food industry and compare and contrast these with developments in other countries;
- characterise vertical and horizontal relationships in the Danish food chain and their role in delivering optimal levels of food quality, variety and safety;
- evaluate the efficiency and competitiveness of the Danish food system at each stage of the marketing chain;
- review and evaluate instruments of Danish, EU and foreign public policy in the development of the food marketing chain; and
- communicate research results in a number of media.

1.4. Outline of report

Section 2 presents reviews of two relevant threads of the literature. First, relevant business literature is reviewed to generate some "classical" taxonomies of firms' strategies. Next, studies of food industry firms are reviewed and their resulting strategic classifications are presented. Section 2 is concluded by a presentation of hypotheses for testing. Section 3 describes the data and the method used, particularly focusing on implementation of cluster analysis.

Section 4 is a summary of survey results and the claims made by firms regarding their strategic orientation and actions. Section 5 presents the results of the cluster analysis, and concludes with a description of the revealed clusters. Those clusters are then described in some detail in section 6, which includes statistical tests of between-cluster heterogeneity across a range of key variables. Details of the pair-wise means tests used are presented in appendix A.

Sections 7 and 8 assess the degree to which the clusters can be associated with taxonomies delivered from the literature review in section 2. Section 7 deals with "adherence" to the taxonomies: the % of firms in each cluster exhibiting strategic behaviour consistent with each of the classified elements. Section 8 deals with "coherence" within each strategic taxonomy: the % of firms that claim *both* strategic actions of any given pair of actions associated with a classification. Detailed results of the examination of strategic coherence are presented in appendix B. Section 9 is a discussion of the study and its findings, and section 10 presents conclusions.

2. Models of firms' business strategy

2.1. Strategic typologies

Firms' business strategies have been subjected to a number of studies and analyses throughout the decades in attempting to extract the fundamental factors that determine firms' behaviour. In the following, the most distinctive of these studies, in relation to the aim of the present study are presented and hypotheses are derived for subsequent empirical analysis.

2.1.1. Miles and Snow

In characterising strategy, Miles and Snow (1978) investigated firms' various organisational and contextual attributes. This included the rate of change in the organisation's products and markets, technology, structure, managerial processes and power distribution.[3] Miles and Snow argued that companies base their strategies on the way they address three nominated "problems":

- the entrepreneurial problem (management of market share);
- the engineering problem (implementation of the solution to the entrepreneurial problem); and
- the administrative problem (the structuring of the company in order to manage the implementation of the solutions to the two problems above).

This reasoning led to a classification of firms into four strategic groups: "defenders", "prospectors", "analysers" and "reactors" (see table 2.1). The latter (reactors) is associated with instability in marketing or other activities, and in firm organisation. From that taxonomy, Laugen et al. (2006) examined 8 "prospectors", 27 "analysers" and 7 "defenders", classified using two criteria: the newness of the firm's product portfolio and the respondents' assessment of whether they regarded themselves as primarily product or process innovative, or both product and process innovative. From comparisons of means of key variables, they concluded that the motives and practices these types use for new product development are similar across types, rather than different. Their explanation is that the boundaries delineating the strategic types are dis-

[3] For a review see Laugen et al. (2006)

appearing over time, forced by changes in competition and enabled by new technologies and management systems.

Table 2.1. Miles and Snow's strategic typology

Strategic group	Attributes of firms in the group
Defenders	Companies engaged in limited new product or market development, competing in secure market niches. Such companies exhibit cautious growth, and: • narrow product-market domains; • do not search for new opportunities outside of their domain; • seek to protect their market niche through efficient production, reliability, continuity and strong control mechanisms; and • ignore developments outside of their market segments, and get deeper into the current market.
Prospectors	Proactive firms seeking new market opportunities by new product and/or market development. Growth in this group is uneven and is generated by new markets and products. They exhibit: • their main skills in marketing and R&D; • a wide range of technologies and product types; • continual monitoring of trends and opportunities; • experimentation with potential responses to trends; and • change and uncertainty for their competitors.
Analysers	Firms that avoid excessive risk but excel in delivering new products and/or services. Growth occurs through market penetration as well as product and market development. Firms exhibit: • a mixture of products and markets, both changing and stable; • successful imitation that features quality enhancement based on market surveillance; • adaptation and response to change and actions of competitors; • a limited range of products/technologies; and • quality enhancement.
Reactors	Firms with unfocused deviations from strategies. They have: • little control over their external environment; • no, or limited, ability to adapt or respond to competition; • an organizational environment that features change and uncertainty; and • no consistency between strategy and structure.

Source: adapted from Gimenez (1999).

2.1.2. Porter

In search of explanations of competitive advantage, Porter (1980) proposes three generic strategies: "cost leadership";[4] "differentiation"; and "focus"; as well as a fourth ("stuck in the middle") to capture other firms (see table 2.2). As noted by Strandskov et al. (1999), this taxonomy uses two dimensions of competition: the firm's position in the industry and its source(s) of competitive advantage.

Table 2.2. Porter's strategic typology

Strategic group	Attributes of firms in the group
Cost Leadership	Lowest cost producer for a given level of quality, with sales at an industry average level. Firms: • win market share on the basis of price; • focus on efficiency and cost reduction; and • address a broad market.
Differentiation	Competing by distinguishing the firm's products from their competitors' and charging a price premium. Firms have: • a strong focus on innovation, creativity and marketing.
Focus	Serving a narrow market segment and building customer loyalty. Firms: • may use cost advantages or differentiation; and • discourage direct competition due to customer loyalty.
Stuck in the Middle	No fixed strategy and may select from the above strategies in a given situation. Firms: • may never achieve a competitive advantage.

Source: Porter (1980)

Porter's and Miles and Snow's strategy frameworks have been shown to be compatible in both an intuitive and empirical sense, as they both deal with firms' activities in changing their portfolio of products, and their address to markets (Banker et al., 2005). Pennings et al. (2001) successfully extended this reasoning to product differentiation, to examine product lines (specialisation vs. diversification) from the point of view of capacity utilisation. However, the importance of the attributes of individual firms, rather than their products and markets is recognised by Gimenez (1999), who concludes that none of Porter's strategic orientations delivers the best performance within a particular industry.

[4] Otherwise referred to as "low cost".

Banker et al. (2006) examined the relationship between firms' strategic positioning and the sustainability of their financial performance. In essence, this entails the longevity of the advantages (e.g. cost advantage) sought through selected strategies. The authors empirically investigated this proposition by developing scales to measure the realized strategies of firms, using publicly available archival financial data. In further analysis, Banker et al. asked whether capital market participants recognize the difference in the sustainability of firms' performance based on their strategic positioning. They found that a realized differentiation or an efficiency strategy was associated with firms attaining superior contemporaneous performance. Notably, the differentiation strategy was associated with firms sustaining their financial performance to a greater extent than was the efficiency strategy. Furthermore, market participants recognize these differences in expected future performance, and accordingly place a higher price-earnings multiple on shares in firms with a realized differentiation strategy than on firms with a realized efficiency strategy. The portfolio analysis indicated that additional excess returns are earned following an investment strategy favouring differentiation over efficiency, but that such a portfolio may be more risky. Banker et al. emphasise the difference between firms' "intended" and "realised" strategies. This calls into question the wisdom of surveys that seek information about firms' actions from respondents with an incentive to justify those actions (see also Crawford, 1987).

2.1.3. Downes

In the light of apparent lack of robustness over time of the existing models, Downes (1997) identifies "three new forces" (digitalization, globalization, and deregulation) that require a new strategic framework and a set of very different analytic and business design tools from those of the past (table 2.3). Its elements are described in table 2.3, with information technology (IT) as a key driver of change, in contrast to Porter's typology where IT is a tool for implementing change.

Table 2.3. Downes' "new forces"	
New Force	**Impacts of the new force**
Digitalization	Thanks to IT and its growing number of applications, new business models and the basis of competition will emerge as more information becomes more widely available between and within industries
Globalization	Firms' operation and collaboration on a global level has been enabled by improvements in distribution logistics and communications. Customers can similarly compare prices, and the combined effect is that firms face international competition even if they do not trade internationally. Competitive advantages now entail lasting relationships with suppliers and customers.
Deregulation	Key industries (finance, banking, communications, utilities and airlines) face new opportunities that are only available following restructuring.

Source: Downes (1997).

2.2. Food sector studies

2.2.1. Marketing focus

In a study of the European food industry, Strandskov et al. (1999) employed Porter's three main dimensions of strategy: strategic focus and objectives; market targeting and marketing positioning. In that work a firm's strategy is interpreted as focusing on two questions: "where to compete" and "how to compete":

- strategic focus or "where to compete" defines organisational strategies, branding, approach to market share, productivity, costs and quality.
- market targeting involves defining products, segmenting buyers, deciding on locations, vertical integration and relations with other firms.
- market positioning is described with the question" how to compete".

Although none of these dimensions can be directly associated with success for the firm, some inferred indicators of performance and innovative behaviour are its orientation toward the customer (targeting buyers), technology (choice and use of technologies), and competition. Competitive orientation involves the analysis and response to competitors' actions, and the development and use of partners and competitors within the chain (see also Buhr, 1999).

Strandskov et al. identified clusters of meat processing firms by their marketing strategies, in order to define the position of each in the marketplace. The six identified clusters were examined for differences in performance, outcomes and corporate attitudes and goals. They found that in the European meat industry there are two clearly focused strategic types – "quality differentiated specialists" and "international innovative branders". They also concluded that cost leadership strategies provide strong performance in a stable and predictable environment, while differentiation strategies are appropriate in dynamic and uncertain environments.

With reference to certain evolving features of the European food industry, Traill (2000) considered strategic actions as expressed by branding (including retailers' own-label brands), consumer market segmentation, the advent of functional foods, and the perception of R&D-driven transition from low-tech towards more intensive uses of technology. He found that firms with competence in international sales linked to process or product innovation are better placed than those relying on local or national brand strategies. He identified Denmark as a country with a large share of such internationally-oriented firms, but noted that "all kinds of firm are found in all countries" and that the Danish firms do not all occur in any one of the 8 clusters he identified.

Traill profiled his 8 identified strategic clusters from survey data, and sought sources of comparative advantage using paired means tests to examine differences between cluster averages for several key variables. These included production efficiency, foreign sales skills, quality, brand skills, local supply skills, private label skills, product innovation, market skills, international process innovation, and image and reputation.

2.2.2. Business form and capabilities

Nilsson (1999) focused on changes in organisational models adopted by agricultural marketing co-operatives. His results emphasise the importance of economies of scale in strategy. Traditional co-operatives are, in his view, a tool for selling large quantities of commodities at low prices (a cost leadership strategy). However, in newer forms of co-operatives the members' investments represent true risk capital: hence, the members are willing to invest larger amounts than in traditional co-operatives. Nilsson's logic is that because such investments are made for a specified purpose, a focused strategy is implied. That strategy targets highly processed, "preferably unique" (i.e. differentiated) products, rather than the traditional co-operatives' cost leadership. Nilsson also noted that risk is offset by specific technological approaches.

Martinez and Poole (2004) report the results of an industry-level study of the relationships between Spanish firms' strategy, management style, organisational structure and performance in fresh produce. Notably, the strategic groups were identified according to "focused", "diverse" or "no clear" strategies. They found that performance did not differ systematically amongst (six) identified strategic groups, but was influenced by the alignment between entrepreneurial culture and organisational structure.

Gehlbar et al. (2005) compared and contrasted a dominant strategic position with the capacity of firms to use their unique resource endowments in product and process innovation. They used three case studies to illustrate the importance of a firm's unique capabilities as an innovator in shaping its product differentiation strategy. The study addressed firms that had shown clear leadership positions in one or more product category in global food markets. All such firms view themselves as having a unique identity within their industry, often based on a unique resource base. The authors find that a successful product differentiation strategy does not require a single dominant orientation toward product differentiation.

2.2.3. Innovation

The reasoning of Borch and Forsman (2001) was that in the context of a global production surplus and declining consumption of basic agricultural products, successful firms must be innovative. Similarly to Strandskov et al., they described capabilities and competitive positioning of small-scale food processors in Norway, Sweden and Finland. Strategies were assigned to a four-cluster solution in each country. Unlike Traill, they found consistent differences between countries. These included the kinds of linkages employed with large retail firms and the approach taken to media advertising. They also found international differences between farm and non-farm ventures: in Norway, for example, farm-based firms were oriented towards tourism while in Finland they emphasised ethical production methods. Swedish non-farm firms were oriented towards product development to a greater extent than in the other countries. They concluded that due to intense rivalry in those food markets, positioning in the food market is a key strategic choice for firms, although the role of innovation is less clear.

In a study of innovation in the Belgian food industry, Avermaete and Viaene (2002) outlined three strategies ((1) quality and safety systems; (2) environmental systems and (3) the labelling of food specialities) and examined their applicability to five case study firms. These authors claimed that regulation and standardisation have led food

manufacturers away from conventional innovations based on R&D activities and toward innovations in communication and networking. In particular, food safety and quality strategies aim to assure customers that products or services conform to requirements. In addition, environmental management strategies target environmental performance targets set by either regulators or customers.

2.2.4. External influences on the food industry

In examining possible future development paths for the Finnish food industry, Wiklund and Brännback (2001) studied its recent changes in terms of "dominant logic" for knowledge management and strategic planning. From three alternatives (functional food, genetically modified food, and organic food) interview data was used to show that the food and pharmaceutical industries are converging, specifically toward functional foods.

2.3. Hypotheses carried forward

Table 2.4 details the hypotheses investigated in this study.

Table 2.4. Research hypotheses

Topic	Hypothesis	Supporting literature
Occurrence of strategic types	Clusters of firms will be able to be identified, based on strategic behaviour.	Traill (2000); Strandskov et al. (1999)
Strategic types	The strategic types identified will be more evident from their strategic actions, than from their more general statements of strategic orientation.	Downes (1997); Borch and Forsman (2001)
Size, sector, stage of chain, location	Strategic types are more likely to be characterised by the attributes, activities and context of their constituent firms, rather than their more general industrial classification.	Miles and Snow (1978); Downes (1997)
Performance	Single clusters are unlikely to be associated with superior performance.	Giminez (1999); Pennings et al. (2001); Martinez and Poole (2004), Nilsson (1999)
Innovation	Some clusters will exhibit more innovation than others, possibly in association with technology use	Downes (1997)
Resource orientation	Some clusters will base their strategies on a single resource, perhaps uniquely available to, or nurtured by, the firm	Gehlbar et al. (2005)
Marketing behaviour (i)	Individual clusters will, for the most part, differ in their marketing behaviour	Banker et al. (2006); Wiklund and Brännback (2001)
Marketing behaviour (ii)	Product differentiation may be so widespread amongst firms that it will not be identified with any specific cluster	Gehlbar et al. (2005)
Marketing behaviour (iii)	If a cluster features mainly small firms, that cluster's product differentiation activities may fully define its strategy,	Buhr (1999)
Relations within the food marketing chain	Individual clusters will follow different strategies in forming and maintaining linkages with other firms in the marketing chain.	Traill (2000);
Regulation	Accommodation of, adaptation to or avoidance of regulation will define strategies for some clusters	Avermaete and Viaene (2002)
Adherence to classical models of strategy	A few clusters' strategic behaviour will coincide with that predicted by classical models drawn from the business literature	Strandskov et al. (1999)
Coherence amongst model-related strategies (i)	In general, an individual cluster will exhibit coherence in its strategic behaviour: one stated strategy will generally be adopted in association with others predicted by classical models from the business literature.	Laugen et al. (2006), Porter (1980)
Coherence amongst model-related strategies (ii)	In general, coherence will be observed regardless of whether or not a cluster adheres to the classical models	Laugen et al. (2006)

3. Data and method

3.1. Survey

3.1.1. Approach taken

An interview-based survey of Danish food industry firms[5] was conducted November – December 2005 and March - May 2006. Draft questionnaires were prepared, and repeatedly circulated to 15 organisations with an interest in food industry research and policy, during the period May-October 2005. Six food industry firms made themselves available for testing of the later drafts of the questionnaire, in many cases being the subjects of numerous mock interviews. The comments, criticisms and proposals of both stakeholders and firms were, as far as possible, incorporated into questionnaire and research design.

The questionnaire comprised five sections. In the first, basic descriptive numeric information about firms was requested. The second section requested information about firms' strategic emphases and actions, the third addressed new product introduction and branding, the fourth firms' views on their competitive environment and the final section sought firms' views on actual events and possible future ones.

A team of six students were trained in all aspects of the survey from initial telephone contacts to detail of interview technique and data processing.[6] A commercial database of contact details was purchased, with stratified sampling based on size and sector. Firms with less than five employees, and firms from several commodity sectors, were excluded. This sampling procedure yielded 986 firms, in almost every case being the total number of eligible firms, despite the stratified sample. After eliminating defunct firms, incorrect contact details, subsidiaries of other contacted firms in the sample and those firms not currently active, telephone contacts were made with 444 firms. A telephone protocol was followed, and some 200 interviews were arranged with the firms' "marketing manager" or if that position did not exist for that firm, then "the person that knows the most about marketing and relations with other firms". Each interview lasted 50 minutes.

[5] The targeted firms were, by design, not from non-farm stages of the marketing chain.
[6] Communications, logistics, training, data management and survey financing were all managed by student worker Anja Skadkær Møller.

The survey procedure yielded 131 valid responses (a 30% response rate on 444 firms). The degree to which the survey is representative of the population of Danish food industry firms cannot be directly estimated, although table 3.1 below provides an overview. Eleven firms from the sectors "ingredients", "primary agriculture" and various "services" also appear in the survey dataset. These firms are classified by Statistics Denmark as being one of retailers, processors or wholesalers, but claim to operate at another stage of the chain.

The numbers of firms in the population (Statistics Denmark, 2006) includes firms with less than 5 employees, defunct firms, subsidiary firms and/or firms otherwise ineligible for the survey. Coverage rates range from the very low (8 unspecialised retail firms out of 3129 in the country) to quite large (3 of 8 poultry processors, 9 of 39 fruit and vegetable processors, and 17 of 61 dairy processing plants (including ice cream manufacturers)). Many of the largest and best-known of Denmark's food industry firms participated in the survey.[7] Clearly, coverage and representative-ness are greatest amongst processing firms, although sufficient wholesale and retail firms are included to allow some inference to be drawn.

Table 3.1. Numbers of firms: sample and population characteristics

	Numbers of firms							
	-- Processing --		----- Retail -----		--- Wholesale ---		----- Other -----	
Commodity sector	Popn.	Survey	Popn.	Survey	Popn.	Survey	Popn.	Survey
Feed	43		na		na			1
Fruit and vegetables	39	9	556		219	2		1
Dairy	61	17	119		130	4		2
Beef	24	5	na		na			
Pork	26	3	na		na			
Poultry	8	3	na		na	1		2
Unspecialised meat	na	10	724	8	235	6		1
Unspecialised	na	7	3129	17	241	28		4

na not available.
Source: Statistics Denmark

[7] Confidentiality precludes disclosure of firms' names, and detailed discussion of their sector and location.

Overview of survey dataset

By design, firms in just 8 commodity sectors were surveyed, including "unspecialised" and "unspecialised meat", which together make up 81 firms of 131. By design, processing, wholesale, distribution and retailing firms dominate the dataset. The four firms classified as primary agriculture are firms that describe themselves in that way despite having functions (and being registered with commercial authorities) at other stages of the chain. Firms in the survey averaged annual sales of 812.5 million DKK and employed an average of 333.4 employees. Figures 3.1 and 3.2 display the firms' distributions according to revenue and labour force size classes. In both cases a reasonable cross-section was achieved. The survey addressed all of Denmark's regions (amter), with useable responses returned from all regions except Bornholm.

Figure 3.1. Survey's firms' size group (sales)

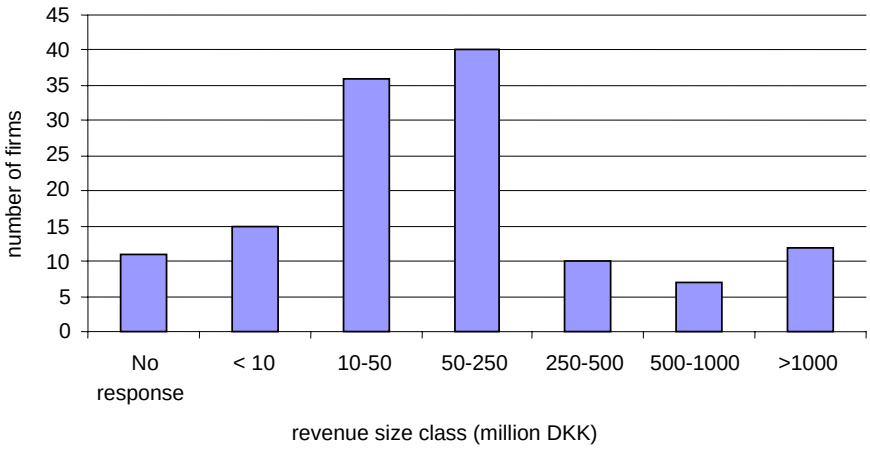
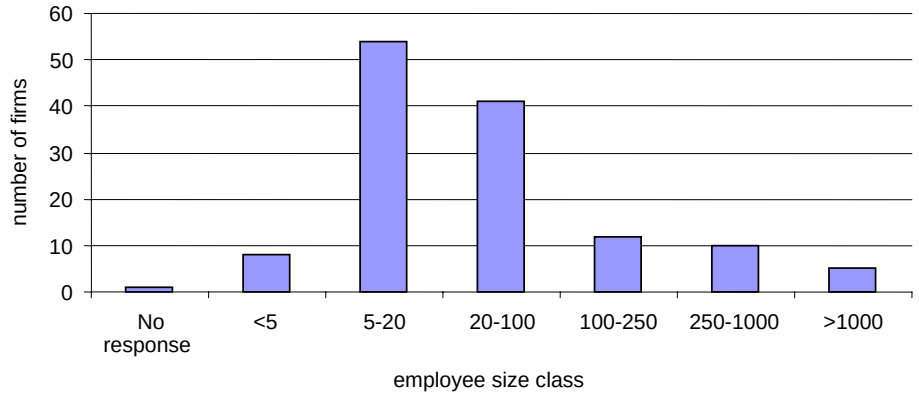


Figure 3.2. Survey's firms' size group (number of employees)



3.2. Survey questions regarding strategy

3.2.1. Strategic orientation

Firms were asked to state their strategy at two "levels" for both 2000 and 2005. The first level was characterised with 11 different "strategic orientations" (table 3.2):

Table 3.2. Categories for "strategic orientation"

Cost	Employees
Quality	Marketing
Information	Market share
Prices	Regulation
Brands	Research
Specialisation	

Firms were also given the opportunity to respond "other strategic orientation not shown here", and "this firm has no specific strategic orientation". Firms could also choose not to respond at all.

3.2.2. Strategic actions

For the second level each strategic orientation was sub-divided into 4-7 categories, each corresponding to a specified "strategic action" or an alternative "other". The strategic actions associated with each strategic orientation are listed in table 3.3. Firms were asked to classify, again for 2000 and 2005, the strategic actions that they carried out.

Table 3.3. Categories for "strategic action" in each "strategic orientation"

Strategic orientation	Strategic action
Cost	"Low cost due to large scale" "Low cost due to high capacity utilization" "Low cost due to advanced technology" "Low cost due to management skills" "Low cost raw materials" "Low cost due to investments/activities" "Other cost strategies"
Quality	"Delivering higher quality than any competitor's" "Offering a range of qualities" "Focused on a specific quality level" "Other quality strategies"
Information	"A focus on information-sharing with suppliers" "A focus on information-sharing with buyers" "Internal information systems focused on buyer requirements" "Internal information systems focused on performance" "Other information strategies"
Prices	"Selling at lower prices than the competition" "Generally following the lead of other firms in setting prices" "Price levels that reflect the entire product range sold to each buyer" "Somewhat high prices that reflect convenience, quality and service" "Other price strategies"
Brands	"An active system for new brand introductions" "Purchase, management and sale of brands" "Specialisation with in retailers' own label brands" "A core of established brands with few introductions and withdrawals" "Other brand strategies"
Specialisation	"Specialisation in a few products" "Specialisation in a few markets" "Specialisation in a narrow area of staff skills" "Specialisation based on a specifik raw material" "Specialisation in organic products" "Other specialisation strategies"
Employees	"A large investment in training" "Providing better working conditions than those of our competitors" "Replacing low-skilled labour with technology" "Replacing low-skilled labour with out-sourcing of tasks"

Table 3.3. Continued	
Marketing	"Increasing sales volumes" "Adding more value to existing sales volumes" "Attracting new consumers/buyers" "Building loyalty amongst existing consumers/buyers" "Other marketing strategies"
Market share	"Growth in market share by merger and acquisition" "Growth in market share by pricing behavior" "Growth in market share by non-price competition (e.g. advertising and promotion)" "Growth in market share maintaining close relationships to buyers" "Other market share strategies"
Regulation	"Avoiding heavily-regulated products, processes and markets" "Anticipating regulation" "Shifting costs of regulation to suppliers" "Passing on costs to buyers" "Other regulation strategies"
Research	"Research into final consumers' preferences" "Research into buyers needs" "Research into competitors' product lines" "Research into technology and costs" "Research into new product development" "Other research strategies"

3.3. Cluster analysis

3.3.1. Overview

Cluster analysis is a multivariate technique for grouping elements (in the current context, firms) according to their characteristics (in this case, strategies). Its purpose is to create a taxonomy of the elements with the aim of collecting the elements into homogenous groups. Clusters are formed such that the elements within a group are similar to one another (i.e. they are homogenous) with respect to specific characteristics, whereas elements in different clusters are dissimilar to one another (they are heterogeneous). The objective is to produce distinctive, identifiable groups that, in the current application, can be interpreted in terms of strategy and theories thereof.

Cluster techniques come in a variety of forms according to the specific problems and elements being analysed. Thus, different clustering techniques produce different types of clusters (e.g. hierarchical, disjoint and/or fuzzy)[8] and apply clustering algorithms with different properties. In this case, the clustering techniques applied are

[8] For a review of the possible range of procedures see Everitt et al. (2001).

commonly used algorithms providing disjoint clusters (i.e. elements are placed in one, and only one, cluster).

Implementation of, and inference from, cluster analysis is not governed by a single well-defined statistical procedure. Rather, it relies on several statistical measures that together provide indications of the degree of success of an analysis, and the way in which results can or cannot be interpreted. As one example, Ward's method (see below) begins with every element making up its own cluster. Subsequently, the procedure progresses by continuously merging the two closest clusters toward one large single cluster comprised by all the elements under examination. The point between these two extremes at which the analysis should be stopped is a key decision in which several statistics play an indicative role.

3.3.2. Alternative methods

Ward's method (also known as the minimum-variance method) is an agglomerative hierarchical clustering procedure, where each element begins in a cluster by itself. Subsequently, the two most similar clusters are merged to form a single new cluster that replaces the two old clusters. The degree of similarity of clusters is, in most cluster algorithms, based on the Euclidean space.[9] The algorithms proceed by repeatedly merging the two "closest" clusters until just one cluster remains, which contains all the elements being examined. Ward's method is distinct from most other methods in that it applies a variance approach to measure distances or similarities between clusters. Hence, similarity is measured by the sum of squares between the clusters, summed over all the variables or characteristics. At each step in the clustering procedure, the within-cluster sum of squares is calculated for all partitions obtainable by combining two clusters from the previous stage. The partition yielding the minimum sum of squares is selected for the next step in the hierarchical clustering procedure. The method has the property that it tends to favour clusters where the numbers of elements in the different clusters are not too diverse.

Hierarchical clustering procedures (such as Ward's) are irreversible in the sense that once an element has been assigned to a cluster, it cannot later be removed and added to a different cluster. This property has mixed implications: in its favour, the hierarchical procedure tells a coherent story that can be a help in facilitating a theoretical interpretation of the unfolding order of clusters as well as the particular partition se-

[9] where distances are measured in straight lines through the space – so-called Euclidean distances.

lected; however, it is conceivable that later agglomerations of clusters could change the mean cluster characteristics to the extent that an element placed in a cluster at an early stage may later be a more natural candidate for another cluster.

In the non-hierarchical procedure (denoted "k-means" methods), clusters are based on least-squares estimation and Euclidean distances, and the number of clusters is assigned before the procedure begins. This number could have come from, for example, a hierarchical clustering procedure but it may also have technical or logistic origins. Each anticipated cluster is assigned a "seed" from which the cluster develops.[10] An observation is assigned to the cluster with the "nearest seed" using Euclidian distances. An advantage of the non-hierarchical procedure compared to the hierarchical is that an element can change cluster if the updating of clusters leads to another cluster being nearer to that element. On the other hand, the non-hierarchical procedure cannot generate the number of clusters, and cannot produce a "tree" showing the evolving partitions.

3.4. Principal component analysis

Cluster analysis requires that the number of elements (in this case, firms) exceed the number of characteristics (in this case, strategies) being used to cluster the elements. In general, the cluster analysis performs better, the higher is the ratio of elements to characteristics. Principal component analysis (PCA) provides a method of reducing the number of characteristics. An improvement in the performance of clustering procedures can be expected because PCA reduces covariance amongst characteristics.[11] Where cluster analysis aims at grouping elements into common clusters, PCA produce a mirror image, essentially grouping characteristics into common variables.

The principal components in the data are found by identifying linear combinations of variables with high covariation while at the same time providing the best explanation of variation in the data. The criterion by which to extract the appropriate number of components is the eigenvalue of each linear combination. Eigenvalues are derived from the standardised space, so that each strategic action is standardised to a variation of unity. Following Kaiser (1958) only eigenvalues exceeding unity are retained, based on the argument that a principal component must at least account for the same variance as any single variable in the data set (Bjørnskov and Lind, 2005).

[10] Often the initial seed is simply the mean of the cluster characteristics.
[11] From such a significant covariance, it may be inferred that a firm's behaviour regarding one strategic action is not independent of its behaviour regarding other strategic actions.

Principal components often fail to lend themselves to easy interpretation because the first component ordinarily displays a general factor with high loadings on all characteristics. Therefore, components are "rotated" to produce components with high loadings on only a few characteristics, facilitating interpretation of factors. The rotation does not alter the total variation accounted for, but it does change the variation explained by the individual principal components. Several rotation methods are identified in the literature, the most frequently-used being Kaiser's "varimax" procedure (Bjørnskov and Lind, 2005). The principal components produced by the rotation are then used to form a new (reduced) set of characteristics that can be used in a cluster analysis. Each element (firm) receives a "score" for each of the principal components. In the current application, this score is the sum of the firm's score of each strategic action multiplied by the number produced by the rotation for that action. In this way, the number of clustering characteristics is reduced in a manner that preserves the number of elements and efficiently eliminates correlated characteristics.

3.5. Cluster method used

This study employs two complementary types of cluster analysis. First, Ward's method is used to determine the number of clusters. Second, a k-means algorithm is used that takes the number of clusters as given. The number of characteristics used is reduced by principal components analysis and a re-scoring of elements according to the principal components.

3.6. Comparison of clusters

Clusters are compared in three ways. First, the nature and context of the firms within clusters is compared, where possible using simple statistical tests (following Traill (2000). Second, available information on within-cluster firms' activities are analysed in the same way. Third, the strategies pursued by each cluster are compared.

3.6.1. "Adherence"

The extent to which the identified clusters adopt strategies as predicted by models drawn from the business literature are identified. To do this, selected strategic actions and orientations are used as proxies for those described in that literature. The percentage of firms within each cluster that adopt the selected strategies is interpreted as a measure of "adherence" to the models described.

Clusters in which a large proportion (over 50% as a guide) of the constituent firms adopt most or all of the selected strategies are said to "adhere" to the strategic taxonomy applied by the literature.

3.6.2. "Coherence"

Consistency amongst strategies is measured. Each classical model reviewed above dictates the combinations of strategies that would be adopted by firms within a cluster of a given strategic type. The extent to which the identified clusters' strategies are (i) adopted consistently and (ii) associated with those predicted by the literature is interpreted as "coherence" amongst strategies.

For each cluster, a matrix of correlations is constructed for which the elements are pairs of strategic actions and orientations. "Perfect coherence" would be interpreted as either a 0% or a 100% correlation: all firms in a cluster do not adopt, or do adopt (respectively) both strategies in question. A large number of high (over 50% as a guide) or low (around 0% as a guide) correlations is interpreted as coherence. Notably, the main diagonal of the matrix is trivial: it refers to the same strategic action or orientation. The study of coherence is used primarily to profile clusters' underlying logic. Secondarily, it further tests the robustness of existing theory.

4. Survey results

4.1. Strategic orientation in 2005

Almost all firms (93%) claim to have a strategic orientation for "quality" and 84 % for "cost". All firms are represented in the bottom rows of tables 4.1-4.3. The least popular strategic orientation is "research and development" (37% of all firms).

4.1.1. Sector

When examined by sector (table 4.1) few obvious patterns emerge. Notably, a majority of firms in the fruit and vegetables sector claim "research" as a strategic orientation, and rather few poultry firms (33%) claim a strategic focus on "marketing".

Table 4.1. Strategic orientation by sector

Percent of firms in sector with this strategy in 2005	Cost	Quality	Information	Prices	Brands	Specialisation	Employees	Marketing	Market share	Regulation	Research
1. Fruit and vegetables	83	100	75	100	75	75	67	75	58	42	67
2. Dairy	78	96	48	96	74	83	65	70	65	61	43
3. Beef	80	100	60	80	60	80	80	40	40	60	0
4. Pork	100	100	33	67	33	67	100	100	67	33	0
5. Poultry	100	83	67	67	33	83	67	33	83	50	33
6. Unspecialised meat	80	88	56	72	68	72	68	72	52	64	32
7. Unspecialised	86	93	73	91	71	66	70	82	70	46	36
All firms	84	93	64	87	69	73	69	74	64	53	37

4.1.2. Firm size

The lowest revenue size group has "quality" as the most popular strategic orientation, and research, market share and information as the least popular (see table 4.2). In general, the smaller firms are oriented to "quality" and "specialisation" to a greater degree than are larger firms. For the larger firms, "cost" and "price" are the most commonly-claimed strategic orientations. About 60-70% of firms from all size categories claim to have a strategic orientation on "brands". For small and medium-sized firms, "information" and "market share" are claimed as strategic orientations by a minority or small majority of firms.

Table 4.2. Strategic orientation by revenue size class

Percent of firms in size group with this strategy in 2005	Cost	Quality	Information	Prices	Brands	Specialisation	Employees	Marketing	Market share	Regulation	Research
0. No Reply	82	91	82	82	73	82	55	100	91	73	45
1. <10 million	47	93	40	73	60	87	60	67	33	60	13
2. 10-50 million	92	94	56	86	67	69	69	58	56	44	19
3. 50-250 million	85	93	65	95	70	63	70	75	65	53	45
4. 250-500 million	100	90	60	100	70	90	90	70	60	80	70
5. 500-1000 million	100	86	100	71	71	86	57	86	100	43	57
6. >1000 million	83	100	83	83	75	67	83	100	83	33	50
All firms	84	93	64	87	69	73	69	74	64	53	37

4.1.3. Stage of chain

When dis-aggregated by stage of the food marketing chain (see table 4.3), there is surprisingly little pattern to firms' statements of strategic orientation. Firms at the "service" stage claim to pursue strategies in every category, as do almost all "ingredients" firms (with the notable exception of a strategic orientation on "brands"). The most popular orientations for processing and wholesale firms are quality, costs and price: wholesale firms appear to put greater emphasis on "cost" and "information" than do processing firms. "Research" is again the least popular strategic orientation across all stages of the chain. There appears to be substantial variation across stages of the chain in the emphasis given to strategies concerning "employees".

Table 4.3. Strategic orientation by stage in the food marketing chain

Percent of firms in stage with this strategy in 2005	Cost	Quality	Information	Prices	Brands	Specialisation	Employees	Marketing	Market share	Regulation	Research
1. Primary	75	75	25	75	25	75	25	0	50	25	25
2. Service	100	100	100	100	100	100	100	100	100	100	100
3. Processing	83	94	54	83	72	76	69	76	63	56	44
4. Wholesale	90	90	74	90	72	72	64	79	69	56	38
5. Retail	74	100	67	89	67	63	78	70	52	37	11
6. Ingredients	100	80	100	100	40	80	100	80	100	80	80
All firms	84	93	64	87	69	73	69	74	64	53	37

4.2. Categories derived from the data

A closer examination of the survey results is occasioned by the firms' responses about their strategic actions: the "second level" referred to above. To best present this data, firms' responses are categorized. Initial draft versions of the survey questionnaire had invited firms to assign scores or rankings to strategic orientations or strategic actions. However, in test interviews firms declined to use a Likert scale and simpler versions of it. As a consequence, use or non-use of strategies was recorded by simple "yes" and "no" answers. The two years of data were then combined to generate a record of whether firms had, or had not, applied a nominated strategic orientation (at the first level) or implemented a specific strategic action (at the second level).

The resulting classification is "Always", "Adopt", "Drop" and "Never" indicating whether a strategy was pursued in the entire period 2000-2005, adopted or dropped between the two years, or was never followed as a strategy during the period (see table 4.4). These classifications are used to generate scores for the clustering procedures.

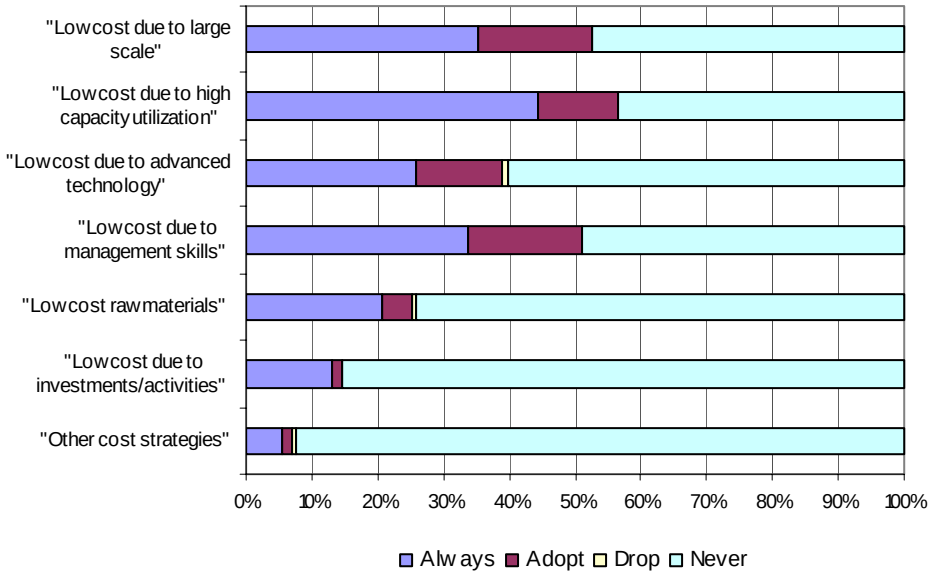
Table 4.4. Categorization of strategies

Category	Interpretation
Always	The strategy was employed in both 2000 and 2005
Adopt	The strategy was adopted between 2000 and 2005
Drop	The strategy was dropped between 2000 and 2005
Never	The strategy was employed in neither 2000 nor 2005

4.3. "Cost" strategies

Although almost all firms claim to have a strategic orientation to "cost", just four of the "cost" strategies dominate firms' responses (figure 4.1). Notably, just 25% of firms claim to have employed a strategy involving low cost raw materials. Cost reduction by high capacity utilisation has "always" been used by 44% of firms, and adopted by a further 10% in the last 5 years. The most popular cost-based strategies for adoption have been scale and applied management skills.

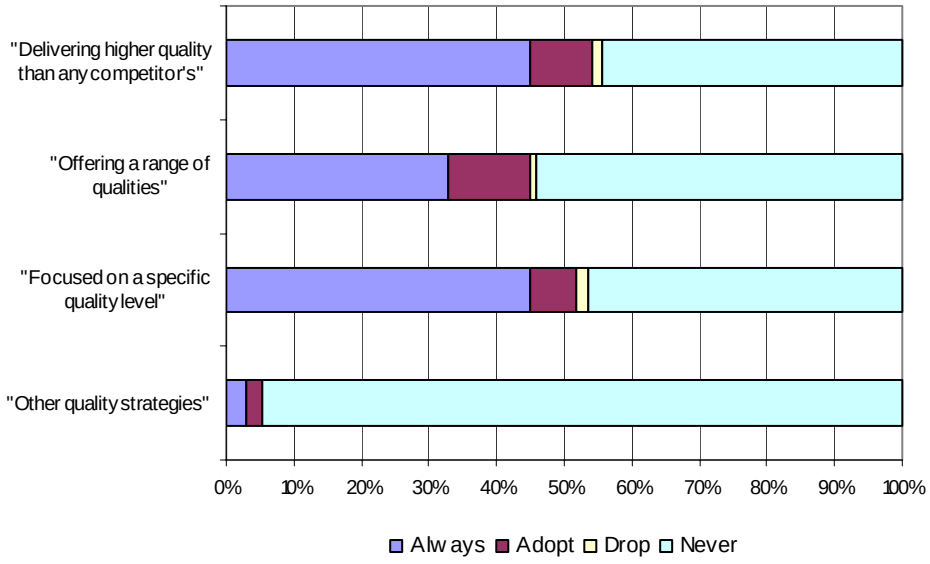
Figure 4.1. Cost strategies



4.4. "Quality" strategies

Almost 60% of firms claim to follow a strategy of delivering higher quality than that offered by the competition (figure 4.2), and some 50% claim to have always focused on a specific quality level. The largest growth area (around 12% of firms) has been in offering a range of qualities. Across all strategic actions, "quality" is one of the few strategic orientations featuring "dropped" strategic actions.

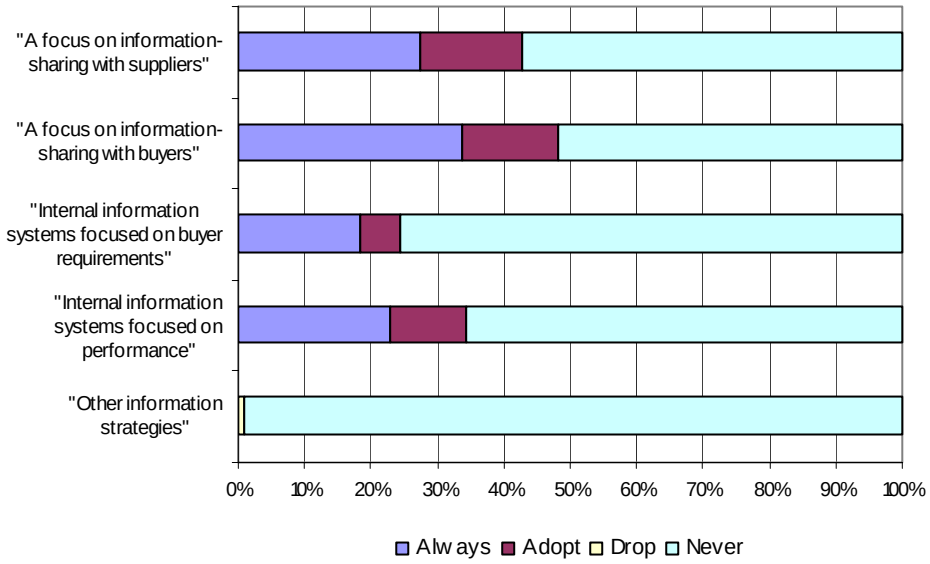
Figure 4.2. Quality strategies



4.5. "Information" strategies

Around 15-20% of firms have adopted strategies associated with generation of information with trading partners in the supply chain (figure 4.3). It is notable that there is a clear difference between the proportion of firms sharing information and the proportion using internal information to satisfy buyer requirements. Surprisingly, only about 35% of firms claim to have emphasised information systems focused on performance measurement, and of this number just 8% have adopted this practice between 2000 and 2005.

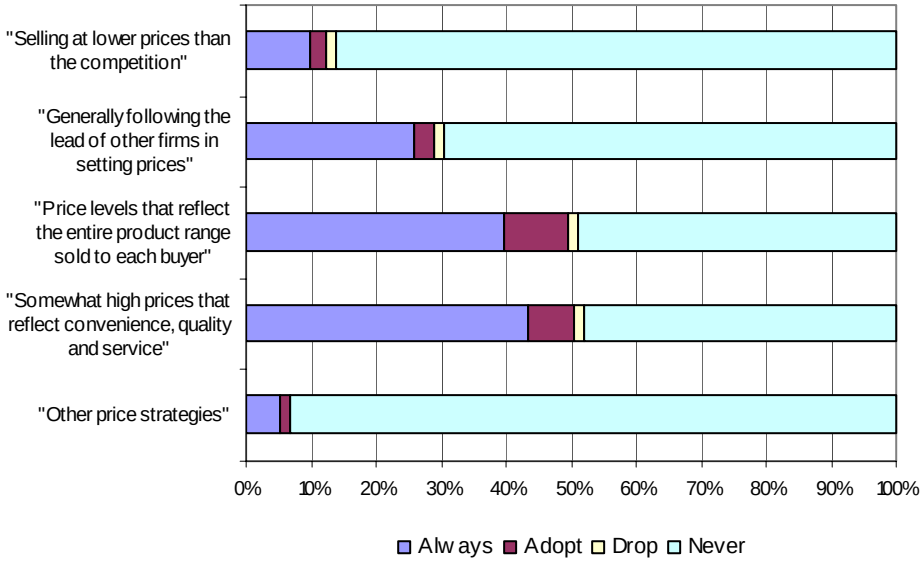
Figure 4.3. Information strategies



4.6. "Price" strategies

Just 14% of firms pursue a low-price strategy and 30% act as price followers (figure 4.4). Very few firms either adopt or drop these two strategies. Some 44% of firms claim that their high-price pricing strategy has always reflected quality and service, with another 6% of firms adopting this strategy between 2000 and 2005. Conversely, 11% of firms report adopting a pricing strategy that reflects the whole range of products sold to a buyer: this is most relevant to sales to large retail firms.

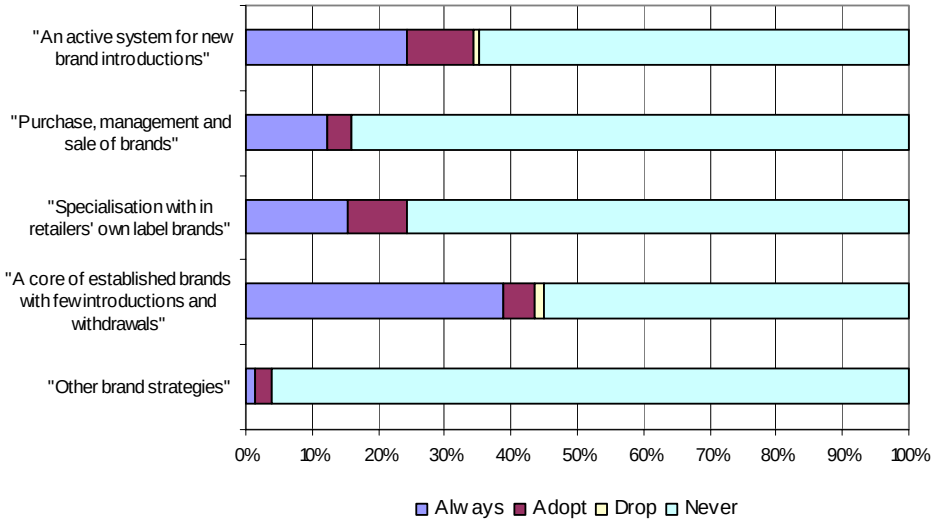
Figure 4.4. Price strategies



4.7. "Brand" strategies

Just 35% of firms report using a branding strategy (figure 4.5) that entails an "active system of new brand introductions". This number is surprisingly low, and is reinforced by the observation that 45% of firms report a strategy involving few brand introductions and withdrawals. Just 15% of firms report purchase and sales of brands, and there is significant growth in the number of firms adopting retailers' own-label brand as a specialist strategy.

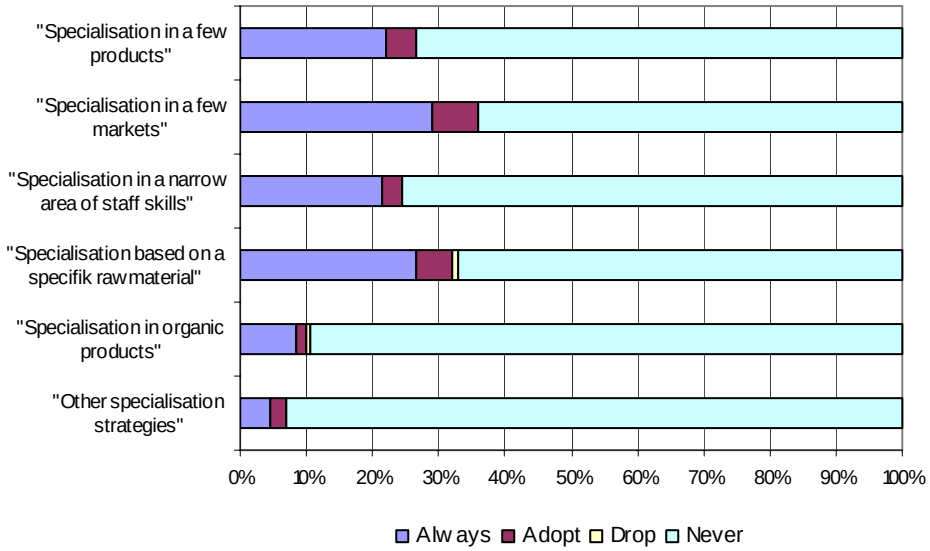
Figure 4.5. Brand strategies



4.8. "Specialisation" strategies

Firms display a broad distribution of specialisation strategies (figure 4.6), with 25-35% reporting each of a range of strategies involving products, markets, staff skills and specific raw materials.

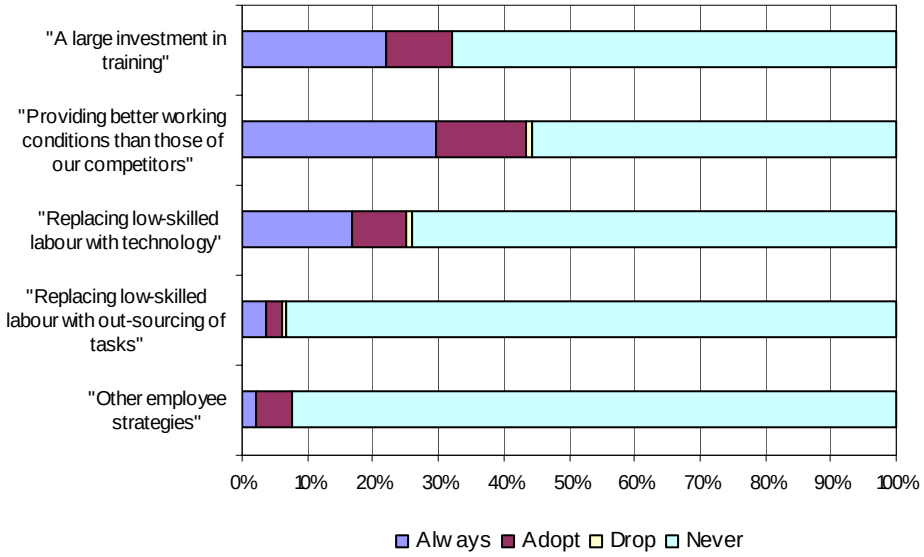
Figure 4.6. Specialisation strategies



4.9. "Employee" strategies

Firms' reported strategies favour increasing the value generated by employees rather than offsetting high staff costs by outsourcing and mechanisation (figure 4.7). In 2005 "providing better working conditions than those of our competitors" was reported by more than 40% of all firms. This strategy was adopted by approximately 13% of firms between 2000 and 2005. "A large investment in training" was reported by 22% in 2000 and a full 32% in 2005.

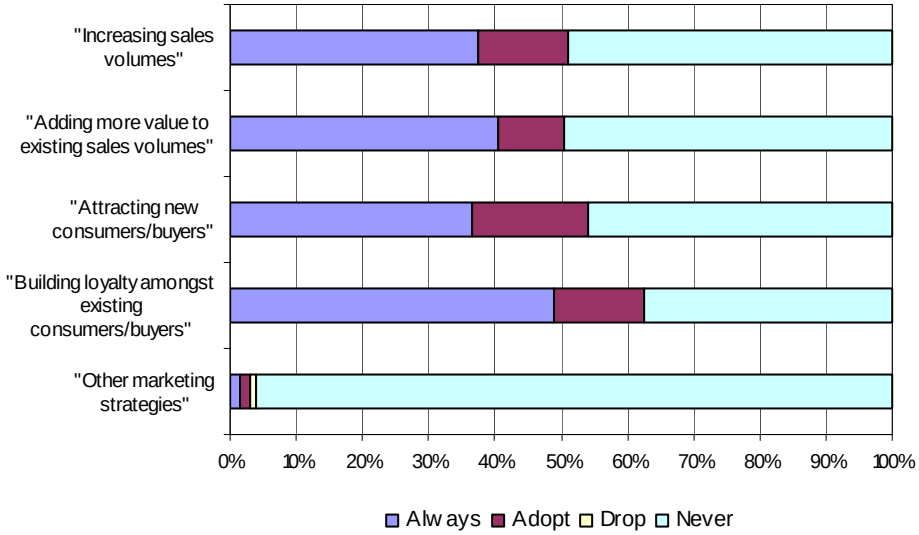
Figure 4.7. Employees strategies



4.10. "Marketing" strategies

All four of the nominated "marketing" strategic actions (figure 4.8) were reported by a majority of firms. Notably, a majority of firms reported *both* increasing sales volumes and adding value to existing sales volumes. Equally notably, firms reported strategies to *both* attract new customers and build loyalty amongst existing ones.

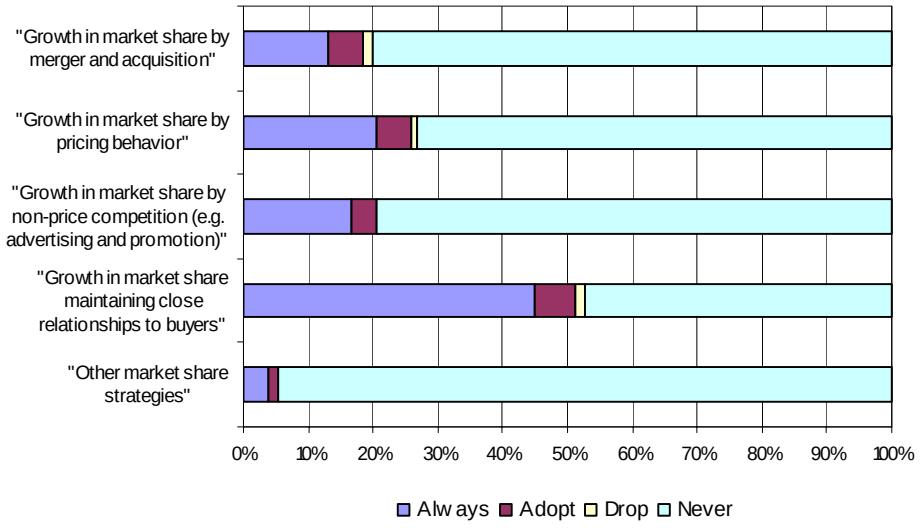
Figure 4.8. Marketing strategies



4.11. “Market share” strategies

In terms of strategic orientation to market share, over half the firms reported implementing a strategy targeting close relationships with buyers (figure 4.9). Just 20% of firms reported a strategy of merger and acquisition, while 20-30% reported each of price and non-price competition as a means of boosting market share. An unexpected result is that just 64% of firms acknowledge pursuing any strategy involving market share.

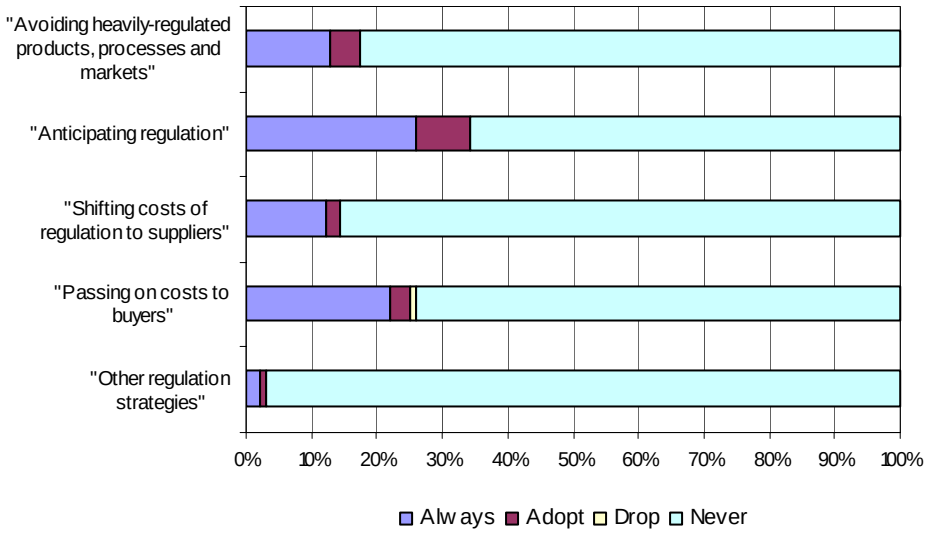
Figure 4.9. Market share strategies



4.12. "Regulation" strategies

Some 35% of firms report strategically anticipating regulation (figure 4.10), of which some 8% adopted such a strategy between 2000 and 2005. A minority of firms claim to strategically avoid regulation. Minorities also claim to strategically pass on compliance costs to either suppliers (15%) or buyers (25%).

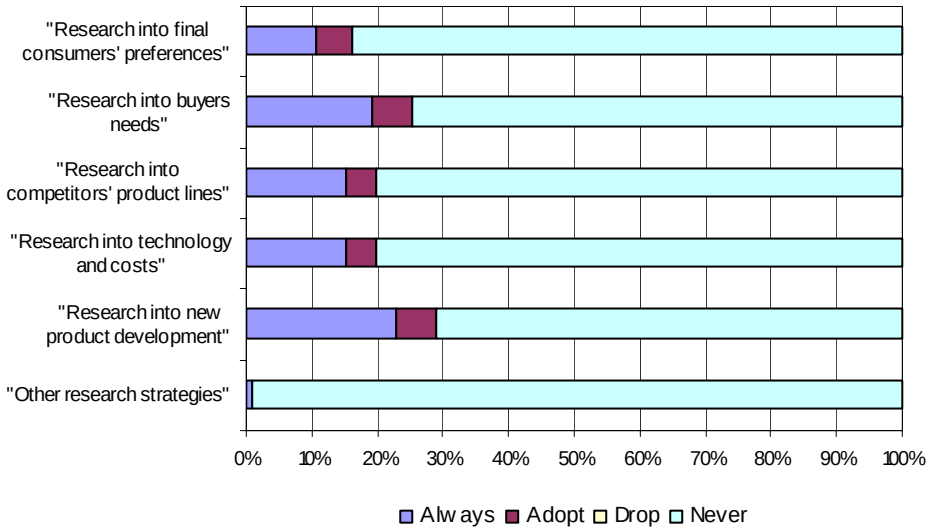
Figure 4.10. Regulation strategies



4.13. “Research” strategies

The research strategies offered are each applied by 15-30% of firms (figure 4.11). Additionally, each of them has been adopted by around 5% of all firms between 2000 and 2005. “Research into new product development” is the most popular of these strategies with approximately 29% of firms pursuing this in 2005.

Figure 4.11. Research strategies



5. Cluster analysis

5.1. Assignment of scores to categories

Categories were assigned a score to be used in the cluster analysis (see table 5.1).

Table 5.1. Categorization of strategies

Category	Score	Interpretation
Always	5	The strategy was employed in both 2000 and 2005
Adopt	4	The strategy was adopted between 2000 and 2005
Drop	2	The strategy was dropped between 2000 and 2005
Never	1	The strategy was employed in neither 2000 nor 2005

5.2. Preliminary analysis

5.2.1. Covariance

Preliminary attempts at clustering the firms were confounded by the large number of characteristics (57 strategic actions) relative to the number of elements (131 firms). In one example, some 30 clusters were required to explain 50% of the observed variation in strategy. Examination of the pattern of covariance amongst firms revealed its moderate level ($25\% \leq R^2 \leq 40\%$) in around 15% of the 3192 interactions amongst strategies. No correlation above 40% was found.

Considering the large number of clusters needed to account for only a moderate proportion of the variance a reduction in the number of strategic actions is pursued. To this end factor analysis in the form of principal components is applied aiming at reducing the number of variables characterising firms' strategies.

5.2.2. Principal components

Table 5.2 details the principal components of the dataset. The cut-off is imposed at the last principal component for which the eigenvalue exceeds unity. The resulting 19 principal components explain 69.6% of the variation in the dataset. Consequently, the PCA identifies 19 factors consisting of linear combinations of the original 58 variables to be used subsequently in the cluster analysis.

Table 5.2. Factors retained by principal component analysis

Eigenvalues of the Correlation Matrix: Total= 58 Average = 1

Factor	Eigen-value	Diffe-rence	Propor-tion	Cumula-tive	Factor	Eigen-value	Diffe-rence	Propor-tion	Cumula-tive
1	8,645	5,392	0,149	0,149	**30**	0,656	0,062	0,011	0,850
2	3,253	0,137	0,056	0,205	**31**	0,594	0,008	0,010	0,860
3	3,117	0,261	0,054	0,259	**32**	0,586	0,031	0,010	0,870
4	2,856	0,518	0,049	0,308	**33**	0,555	0,004	0,010	0,880
5	2,338	0,443	0,040	0,348	**34**	0,551	0,020	0,010	0,889
6	1,895	0,060	0,033	0,381	**35**	0,531	0,028	0,009	0,898
7	1,834	0,012	0,032	0,413	**36**	0,503	0,043	0,009	0,907
8	1,822	0,158	0,031	0,444	**37**	0,459	0,024	0,008	0,915
9	1,664	0,051	0,029	0,473	**38**	0,436	0,031	0,008	0,923
10	1,613	0,121	0,028	0,501	**39**	0,405	0,031	0,007	0,929
11	1,492	0,117	0,026	0,526	**40**	0,373	0,013	0,006	0,936
12	1,374	0,004	0,024	0,550	**41**	0,360	0,020	0,006	0,942
13	1,370	0,040	0,024	0,574	**42**	0,341	0,041	0,006	0,948
14	1,330	0,048	0,023	0,597	**43**	0,300	0,010	0,005	0,953
15	1,282	0,072	0,022	0,619	**44**	0,290	0,021	0,005	0,958
16	1,210	0,081	0,021	0,640	**45**	0,269	0,013	0,005	0,963
17	1,129	0,038	0,020	0,659	**46**	0,256	0,017	0,004	0,967
18	1,092	0,068	0,019	0,678	**47**	0,239	0,018	0,004	0,971
19	1,024	0,028	0,018	0,696	**48**	0,221	0,011	0,004	0,975
20	0,996	0,051	0,017	0,713	**49**	0,210	0,009	0,004	0,979
21	0,945	0,018	0,016	0,729	**50**	0,201	0,026	0,004	0,982
22	0,927	0,048	0,016	0,745	**51**	0,175	0,004	0,003	0,985
23	0,879	0,022	0,015	0,760	**52**	0,172	0,012	0,003	0,988
24	0,857	0,064	0,015	0,775	**53**	0,160	0,017	0,003	0,991
25	0,793	0,013	0,014	0,789	**54**	0,142	0,024	0,003	0,993
26	0,780	0,040	0,013	0,802	**55**	0,118	0,016	0,002	0,995
27	0,741	0,032	0,013	0,815	**56**	0,103	0,020	0,002	0,997
28	0,709	0,042	0,012	0,827	**57**	0,083	0,004	0,001	0,999
29	0,667	0,011	0,012	0,839	**58**	0,079		0,001	1,000

5.3. Cluster procedure

Table 5.3 presents a summary of the cluster history. Recall that Ward's procedure begins with all 131 firms and steadily combines them to form clusters. The choice of cut-off point utilises several diagnostic indicators, as shown in the columns of table 5.3.

As discussed earlier, the choice of the number of clusters is not governed by measures derived from a solid statistical foundation. This is because the number of different, quite diverse, variables makes the sampling distributions intractable. Rather, some guiding tests based on simulation studies provide for indicative measures. In table 5.3 the tests for the cluster procedure are displayed, where the 131 companies are grouped in clusters progressively. The first column shows the number of clusters remaining at each stage of the procedure and at the same time gives the cluster number for the two most recently joined clusters shown in column two (a double column). The third col-

umn displays the number of firms in the cluster. In column four, the semipartial R^2 (SPRSQ, representing the decline in the proportion of variance accounted for by joining the two clusters in column two) is given. The fifth column displays the proportion of variance accounted for by the clusters, and the expectation of R^2 is given in column six.

The next three columns display indicative test statistics. In column seven (CCC, the Cubic Clustering Criterion) is shown. This provides an indication of how homogenous the clusters produced are. Ideally, the value of CCC should be greater than 2. The test statistic in column eight is the pseudo F statistic, PSF. As clustering proceeds, a local peak of the pseudo F statistic indicates a candidate taxonomy. In the last column, column nine, the pseudo t^2 statistic is shown. Again moving down the progression of taxonomies, a value markedly larger than the previous one indicates a candidate taxonomy, with the choice of taxonomy given by the number prior to that markedly larger value.

Table 5.3 shows that the firms in the sample are quite diverse, with no obvious homogenous clustering taxonomy as shown by the cubic clustering criterion. Using the pseudo F statistic, several taxonomies are indicated, however the number of clusters needs to be larger than two. The pseudo t^2 statistic narrows the choices considerably. Values markedly higher than the previous appear at 2, 4 and 7 clusters (resulting in potential taxonomies with 3, 5 and 8 clusters). At 3 clusters the variation accounted for is quite low ($R^2 = 0.478$), therefore. the choice is limited to lie between 5 and 8 clusters. Subsequent characterisations of the resulting clusters produce more interpretable characteristics with a taxonomy of eight clusters as compared to five. Consequently, the hierarchical clustering procedure results in eight clusters. This number of clusters was then used to seed the k-means clustering procedure.

Table 5.3. Cluster history

Number of clusters	Clusters Joined		Frequency	SPRSQ	RSQ	ERSQ	CCC	PSF	PST2
130	CL67	CL117	2	0,0003	1	.	.	29,4	.
129	CL81	CL130	2	0,0003	0,999	.	.	28,2	.
…	…	…	…	…	…	…	…	…	…
12	CL37	CL27	10	0,0094	0,696	0,717	-1,9	24,8	3,4
11	CL19	CL17	15	0,0103	0,686	0,707	-1,9	26,2	2,6
10	CL25	CL34	12	0,0111	0,675	0,697	-1,9	27,9	5
9	CL13	CL21	26	0,0134	0,661	0,685	-1,8	29,8	6
8	CL15	CL32	18	0,0145	0,647	0,672	-1,9	32,2	4,9
7	CL14	CL18	39	0,0145	0,632	0,656	-1,8	35,5	8,2
6	CL12	CL10	22	0,0196	0,612	0,638	-1,6	39,5	6,1
5	CL11	CL8	33	0,0302	0,582	0,615	-2,1	43,9	7,7
4	CL9	CL6	48	0,0416	0,541	0,585	-2,7	49,8	12,6
3	CL4	CL5	81	0,063	0,478	0,541	-3,1	58,5	14,4
2	CL3	CL16	92	0,1808	0,297	0,45	-5,2	54,5	36,8
1	CL2	CL7	131	0,2969	0	0	0	.	54,5

6. Results

6.1. Clusters delivered

The cluster analysis yielded 8 clusters, with firms distributed as described in table 6.1. Notably, cluster 5 contains just one firm, so subsequent discussion generally ignores that cluster. The remaining clusters contain 5-37 firms. Mean values for key variables within each cluster are shown in table 6.2. Figures 6.1-6.5 present the distribution of the clusters according to sector, size, stage of the marketing chain, company form and location.

Table 6.1. Cluster summary

Cluster	Frequency	RMS Standard Deviation	Maximum Distance from Seed to Observation	Nearest Cluster	Distance Between Cluster Centroids
1	15	2,69	13,69	4	13,74
2	37	2,12	11,77	4	16,13
3	9	3,21	16,88	6	12,26
4	35	2,69	15,21	1	13,74
5	1	.	0,00	2	20,18
6	22	3,10	16,90	3	12,26
7	7	2,47	12,71	3	17,36
8	5	3,27	15,53	6	16,00

Table 6.2. Cluster means

Cluster	Number of firms	Sales*2005	Sales*per employee 2005	Number of employees 2005	New products 2005	Percentage exported 2005	Percentage of sales retailers own brand 2005	Percentage of employees with university degree 2005
1	15	30,8	1,9	13,3	22,6	27,8	5,1	1,9
2	37	130,8	5,5	23,2	28,2	14,2	7,9	11,7
3	9	399,1	2,2	275,0	66,8	48,6	12,0	4,6
4	35	498,8	4,7	186,8	170,0	15,7	10,9	4,5
5	1	28,0	1,3	21,0	150,0	0,0	0,0	0,0
6	22	285,8	2,6	112,8	369,6	10,8	5,1	6,6
7	7	11.039,2	3,8	4.302,0	111,4	60,0	7,1	7,2
8	5	234,8	5,4	134,8	3,4	35,6	9,8	3,4

Sales 2005 and sales per employee 2005 in million Dkr.

Figure 6.1. Sector composition of clusters

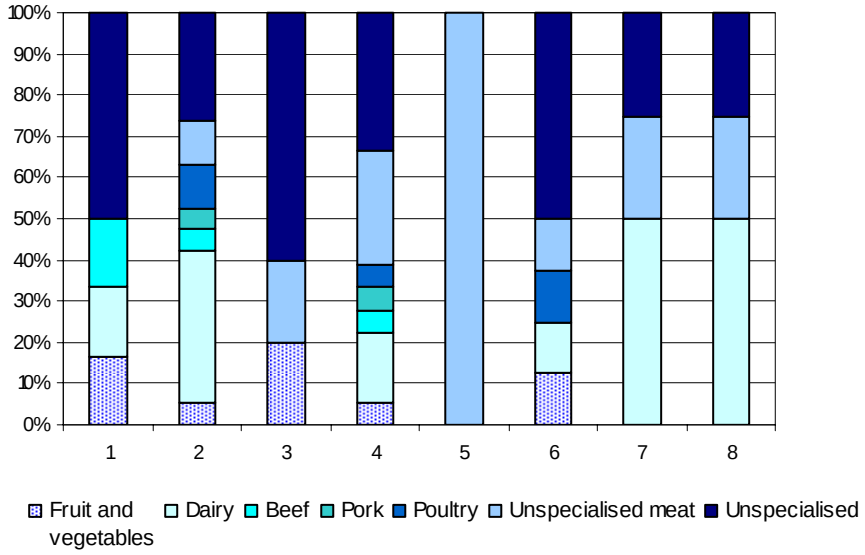


Figure 6.2. Sizegroup by cluster

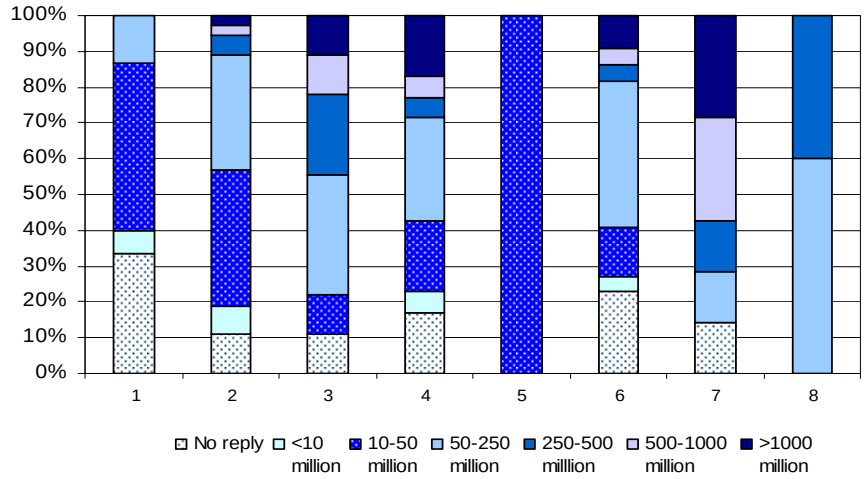


Figure 6.3. Stage by cluster

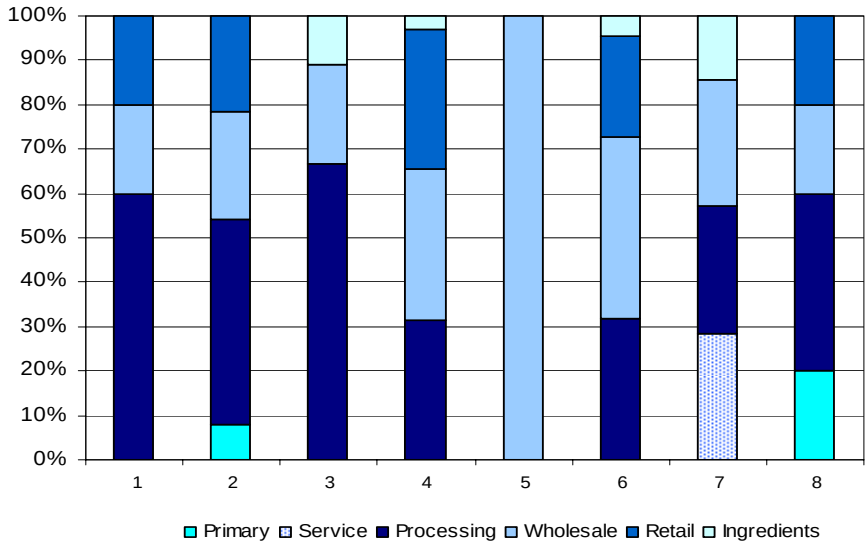


Figure 6.4. Company form by cluster

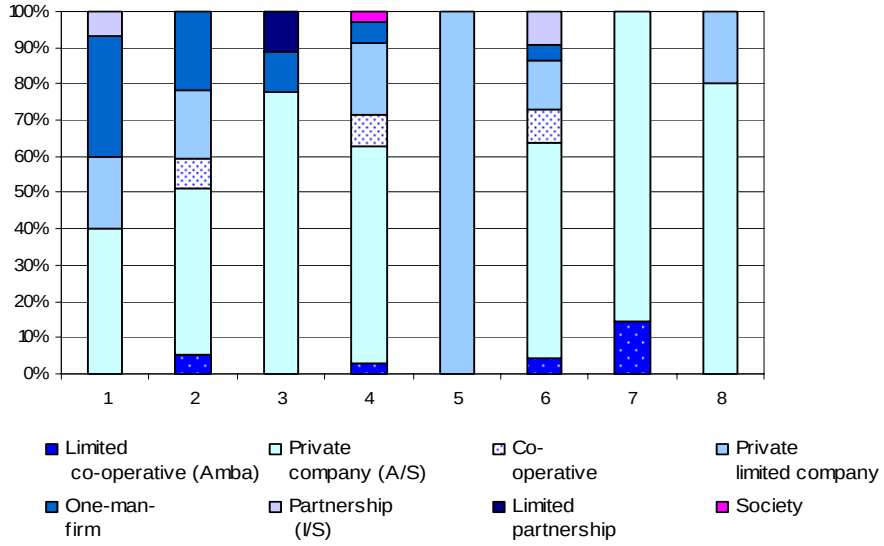
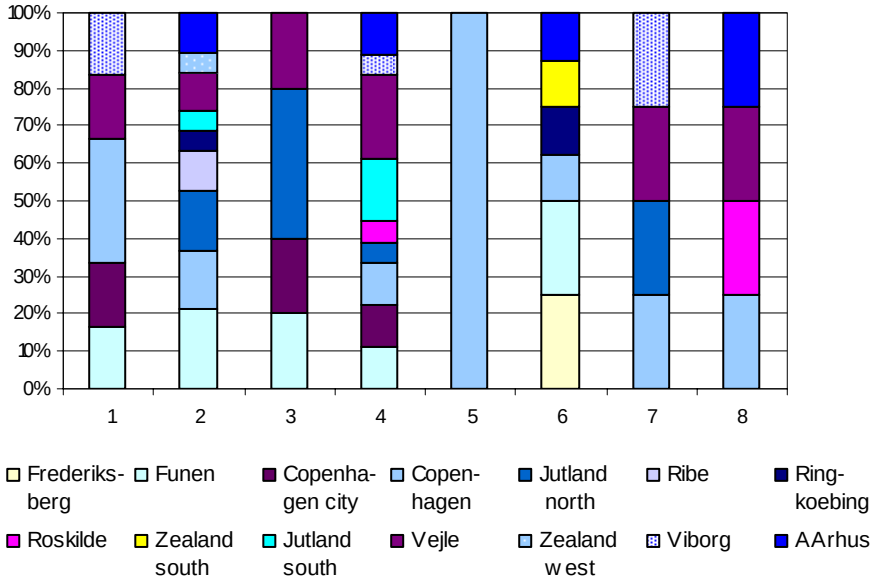


Figure 6.5. Location by cluster



6.2. Differences between clusters

Paired means tests were used to identify differences between clusters (see table 6.3, and appendix A for details), and table 6.4 presents an overview of the clusters as defined here.

Table 6.3. Variables with significant between-cluster differences in means

Cluster means 2005	Percent sales of firms own brand	Percent of expenses on new product introduction (incl. advertising and promotion)	Brands owned referring to 2-9 products	Corporate brands owned by firm	Months spent on market research for new product introduction	Total calender time for introduction of new product
1	74.93	0.54	2.00	.	0.33	6.67
2	30.55	2.02	1.71	1.00	0.63	7.80
3	65.22	4.06	8.80	1.00	2.00	6.50
4	24.38	2.00	3.33	7.00	1.05	3.84
5						
6	51.68	3.29	1.83	1.25	0.92	4.40
7	70.00	13.00	50.00	1.00	3.70	15.50
8	54.40	1.20	7.50	1.00	0.67	11.20

In table 6.4, it is apparent that clusters 1,2 and 8 comprise the small firms, with the largest firms being in clusters 3, 4 and 7. Cluster 6's members have an average size near to the average for the whole dataset. Clusters 3, 4 and 6 include a wide range of sizes of firm. Unspecialised firms are found in all clusters, and indeed there is little evidence of commodity specialisation in any cluster. Food processors dominate clusters 1, 2 and 3, while most clusters feature retail members (only cluster 7 excludes retailers). There is little apparent association between the business form adopted and cluster membership, although 1, 2 and 8 feature private companies and some co-operatives. Notably, no cluster features a strong co-operative dominance.

From table 6.2, we observe that pronounced differences between clusters include export orientation (highest for clusters 3 and 7, lowest for cluster 6), university education amongst staff (lowest for cluster 1, highest for 2), use of retailers' own-.label brands and other branding details. Cluster 7's new product introduction behaviour is notably different from other clusters.

Table 6.4. Cluster characteristics		
Cluster	**General descripton**	**Characteristics of firms in the cluster**
1	• Small, one-man firms • Unspecialised food processors	• Smallest firms (sales and employees) • Low sales per employee • Fewest employees with university degree • High sales of brands owned by the firm
2	• Private companies and co-operatives • Dairy and unspecialised food processors	• Second smallest firms by sales and employment • Highest sales per employee • Highest percentage of employees with university degree
3	• Private companies • Unspecialised food processors • All sizes of firm	• Average-high sales • Large number of employees • Highly export-oriented • Highest percentage of sales from retailers' own-label brand
4	• Large firms • All business forms • All stages of chain • Unspecialised, unspecialised meat	• Average-high sales • High sales per employee • High percentage of sales from retailers' own-label brand • Large number of corporate brands
5		
6	• Average sized firms • All business forms • All stages of chain • Unspecialised	• Highest number of new products • Lowest percentage of exports
7	• Large firms • Processing, wholesale and service • Dairy, unspecialised and unspecialised meat	• Largest firms (sales and number of employees) • Highest percentage of exports • 2-9 products per brand • High expenditure on new product introduction • Most time spent on market research • Slow new product introduction
8	• Small private firms • All stage of chain • Dairy, unspecialised, unspecialised meat	• Low-average sales • High sales per employee • Few new products • High percentage of sales from retailers' own-label brands • Few employees with university degree

6.3. Clusters' strategic orientation

Table 6.5 presents the % of firms in each cluster that claim each of the 11 strategic orientations addressed in the survey. In general, most firms claim most strategic orientations, with cluster 7 being an extreme case (almost all firms' claims to have followed almost all strategic orientations). Amongst strategic orientations, "regulation" and "research" feature very few firms from clusters 2 and 4. Amongst clusters, 2 and

4 show the greatest degree of discrimination. These two clusters appear to have few structural characteristics in common.

Table 6.5. Strategic orientation by cluster

Strategic orientation by cluster	Cost	Quality	Information	Prices	Brands	Specialisation	Employees	Marketing	Market share	Regulation	Research
1	80%	93%	80%	93%	87%	93%	80%	73%	60%	93%	33%
2	68%	86%	32%	70%	46%	73%	32%	38%	27%	14%	11%
3	100%	100%	78%	89%	100%	89%	89%	100%	89%	89%	100%
4	91%	94%	66%	91%	63%	51%	51%	97%	74%	31%	9%
5											
6	86%	95%	91%	95%	86%	77%	86%	95%	86%	86%	73%
7	100%	100%	100%	100%	100%	86%	69%	100%	100%	100%	100%
8	100%	100%	60%	100%	40%	80%	80%	20%	80%	100%	80%

6.4. Clusters' strategic actions

6.4.1. Cluster 1 – small, buyer-oriented, local specialisation

Cluster 1 contains firms that specialise in specific lines of business: it has the greatest emphasis on "specialisation based on a specific raw material" and has a quality-based product differentiation strategy encouraging buyer loyalty. Existing customers receive strategic emphasis ahead of new customers. Cluster 1's firms emphasise information exchange with buyers, but pointedly *not* with suppliers. Being composed of small firms, this cluster may well feature local raw materials from specific locations. It is notable that cluster 1 includes firms from many commodity sectors. Cluster 1 has the lowest emphasis of all clusters on "offering a range of qualities", which again alludes to small and locally specialised firms. Innovation strategy does not feature new, but rather an established range, of brands.

6.4.2. Cluster 2 – small, price followers, high sales/employee

Cluster 2, composed largely of small firms, is not strongly distinguished by a consistent set of strategies. A minority of its constituent firms claim most strategic actions and little pattern can be discerned. A notable result is that 32% of cluster 2's firms claim to "follow other firms in setting prices" (a higher share than for any other cluster) and cluster 2's firms claim not to engage in price competition. This cluster fea-

tures the highest average share of employees with a university education, and the highest sales per employee, of any cluster. There appears to be no association between these features of the cluster and its lack of stated interest in research and development, and product innovation.

6.4.3. Cluster 3 – price discriminators, range of markets, research oriented

Cluster 3's firms claim to be highly research-oriented, with that research being directed in two directions: consumer and buyer needs and the product lines of competitors. Strategy includes information sharing both up and down the chain and the attraction of new customers. Confusingly, innovation strategy features both "few new brand introductions and removals" *and* "an active system for new brand introductions". Cluster 3's firms claim a quality-differentiated range of products with associated price premia. More of cluster 3's firms (56%) claim to specialise in retailers' own-label brands than do firms from any other cluster. These claims of wide-ranging strategies are further blurred by the fact that the cluster is both highly export-oriented and derives the highest share of revenue of any cluster from sales of retailers' own-label brands..

6.4.4. Cluster 4 – large, price discriminators, unspecialised

Cluster 4's large firms emphasise new brands, with a price-discriminated range of qualities and no specialisation in products, markets, staff skills, or raw materials. Notably, cluster 4's firms do not target the highest possible level of quality. About half of cluster 4's firms each claim to pursue close relationships with both buyers and sellers, and associated information exchange. However, cluster 4's firms are less keen on research-related strategies than are those from any other cluster. Confusingly, a large majority of firms claim to emphasise *both* finding new customers *and* existing customers' loyalty. In general, cluster 4's firms do not have a clear marketing strategy.

6.4.5. Cluster 5

Cluster 5 contains just one firm and is not considered further here.

6.4.6. Cluster 6 – domestic market, high quality, customer loyalty

Firms in Cluster 6 claim that their strategy features the highest possible quality. Cluster 6 has the lowest share of sales exported of any cluster. Emphasis is over-

whelmingly on building (domestic) customer loyalty, and strategic actions include rather more emphasis on information sharing with buyers than with suppliers. Accordingly, cluster 6's firms do not generally offer a range of qualities to buyers, and they do not emphasise research into competitors' product lines.

6.4.7. Cluster 7 – "all things to all people"

Cluster 7's strategic stance is obscured by its constituent firms having indicated that they implemented almost all of the 57 available strategic actions.

6.4.8. Cluster 8 – small, price discriminators, little information exchange

Cluster 8 features small firms that do not pursue the highest possible quality, but instead use quality-differentiated price premia across a range of qualities. They are specialised in a few products and a specific raw material, and offer few new products. Cluster 8's firms place relatively little emphasis on information exchange in the marketing chain, which is consistent with their private ownership form. Although the average level of use of retailers' own-label brands is high, some of the firms do not use them at all.

7. Adherence to strategic typologies

7.1. Adherence to Miles' and Snow's taxonomy

Table 7.1 details the proportion of firms in each cluster implementing strategies associated with each of Miles' and Snows' 4-way classification. No cluster from the current study can be classified as a "reactor", as a minority of firms in all clusters claim to implement the reactor-type strategy. Clusters 1 and 3 feature "analyser"-type strategies, while clusters 3, 6 and 8 feature "prospector"-type actions. Cluster 7 claims so many strategic actions that it appears to fit into all categories. Clusters 2 and 4 fit poorly into Miles' and Snows' categories.

Table 7.1. Miles' and Snow's strategies by cluster

Strategies 2005 by cluster	1	2	3	4	5	6	7	8
				Defenders				
"Research into technology and costs"	7%	3%	100%	3%		23%	100%	40%
"A core of established brands with few introductions and withdrawals"	73%	30%	56%	26%		55%	100%	40%
				Prospectors				
"Offering a range of qualities"	0%	43%	**56%**	54%		**41%**	71%	**100%**
"An active system for new brand introductions"	20%	11%	**78%**	29%		**68%**	86%	**0%**
"Price levels that reflect the entire product range sold to each buyer"	20%	35%	**78%**	54%		**59%**	86%	**80%**
Research orientation	33%	11%	**100%**	9%		**73%**	100%	**80%**
				Analysers				
Quality orientation	**93%**	86%	**100%**	94%		95%	100%	100%
"A core of established brands with few introductions and withdrawals"	**73%**	30%	**56%**	26%		55%	100%	40%
"Specialisation in a few products"	**60%**	32%	**22%**	6%		14%	43%	80%
"Attracting new consumers/buyers"	**33%**	16%	**89%**	83%		73%	100%	0%
"Research into competitors product lines"	**0%**	3%	**67%**	6%		36%	100%	40%
				Reactors				
"Generally following the lead of other firms in setting prices"	7%	32%	0%	46%		23%	29%	40%

7.2. Adherence to Porter's taxonomy

Table 7.2 details the proportion of firms in each cluster that claim to implement each of a set of strategies selected in the current study to reflect Porter's strategic typology. As above, cluster 7 might be classified as any of Porter's types except "stuck in the middle". Cluster 8 may be classified a "cost leader", although that cluster's proclaimed strategy on market share does not feature low pricing. Although clusters 1, 3, 6 and 7 have some features of "differentiation", only cluster 7 claims to use non-price competition. Clusters 1, 3 and 6 adhere to the "focus" type. Cluster 4 claims an emphasis on existing customers and close relations with buyers, which suggests "focus". Cluster 2 does not easily fit into Porter's taxonomy.

Table 7.2. Porter's strategies by cluster

Strategies 2005 by cluster	1	2	3	4	5	6	7	8
				Cost leadership				
Costs orientation	80%	68%	100%	91%		86%	100%	**100%**
"Selling at lower prices than the competition"	0%	11%	0%	17%		5%	29%	**60%**
"Growth in market share by pricing behaviour"	7%	11%	11%	34%		50%	71%	**0%**
				Differentiation				
Brands orientation	87%	46%	100%	63%		86%	100%	40%
Research orientation	33%	11%	100%	9%		73%	100%	80%
"Delivering higher quality than any competitors"	60%	46%	67%	46%		73%	71%	40%
"Somewhat high prices that reflect convenience, quality and service"	80%	27%	56%	34%		77%	100%	60%
"Growth in market share by non-price competition"	13%	5%	33%	17%		27%	86%	20%
				Focus				
"A focus on information-sharing with buyers"	**73%**	22%	**78%**	26%		**86%**	86%	60%
"Internal information systems focused on buyer requirements"	**27%**	3%	**33%**	14%		**45%**	100%	40%
"Specialisation in a narrow area of staff skills"	**40%**	5%	**44%**	11%		**45%**	86%	0%
"Building loyalty amongst existing consumers/buyers"	**60%**	16%	**100%**	86%		**91%**	100%	20%
"Growth in market share maintaining close relationships to buyers"	**60%**	14%	**67%**	51%		**77%**	100%	80%
				Stuck in the middle				
"Generally following the lead of other firms in setting prices"	7%	32%	0%	46%	0	23%	29%	40%

7.3. Adherence to Downes' taxonomy

From Downes' classification, only the globalisation-related strategic issues were examined, as these are most relevant to the opportunities faced by Danish food industry firms, and are the ones best reflected in the survey data. Cluster 7 (which again claims all strategies) is not discussed further here, while clusters 3, 6 and 8 fit Downes' classification well. Elements of cluster 4's strategy adhere well to this classification, which is as highly applicable to supplier and/or buyer relations in the context of new information technologies.

Table 7.3. Downes' strategies by cluster

Strategies 2005 by cluster	1	2	3	4 Globalization	5	6	7	8
"Building loyalty amongst existing consumers/buyers"	60%	16%	**100%**	86%		**91%**	100%	**20%**
"Growth in market share maintaining close relationships to buyers"	60%	14%	**67%**	51%		**77%**	100%	**80%**
"A focus on information-sharing with supplierss"	33%	11%	**67%**	51%		**64%**	86%	**60%**
"A focus on information-sharing with buyers"	73%	22%	**78%**	26%		**86%**	86%	**60%**

7.4. Adherence to Strandskov et al.'s classification

In general, adherence to elements of Strandskov et al.'s classification (see table 7.4) provides considerable insight, thanks to the "where" and "how" to complete orientation. Clusters 1, 3 and 8 offer a clear signal of "where to compete": clusters 1 and 8 in just a few products and cluster 3 by using retailers' own-label brands.

Clusters 3, 4 and 6 all exhibit close contacts with buyers as "how to compete", but they achieve this in different ways: cluster 3 with own-label brand and brand introductions, cluster 6 through price competition and cluster 4 through building customer loyalty without new brand introductions. Strandskov's classification allows some insight into cluster 7 (referred to earlier as "all things for all people"): most firms claim most methods ("how to compete") but there is little consistency about where to compete. Cluster 8 is the only cluster with a majority of firms claiming to grow market share by merger and acquisition. Only clusters 3 and 6 (if we exclude cluster 7) have a majority of firms with a strategy involving many new product introductions, while the other clusters strategically avoid introductions and withdrawals. Cluster 2 adheres poorly to this classification.

Table 7.4. Strandskov et al.'s strategies by cluster

Strategies 2005 by cluster	1	2	3	4	5	6	7	8
				Where to compete				
"Specialisation in retailers' own brands"	13%	8%	**56%**	31%		41%	29%	0%
"Specialisation in a few products"	**60%**	32%	22%	6%		14%	43%	**80%**
				How to compete				
"Growth in market share by merger and acquisition"	0%	0%	22%	31%		18%	43%	80%
"Growth in market share by pricing behaviour"	7%	11%	11%	34%		50%	71%	0%
"Growth in market share by non-price competition"	13%	5%	33%	17%		27%	86%	20%
"Growth in market share maintaining close relationships to buyers"	60%	14%	**67%**	**51%**		**77%**	100%	**80%**
"An active system for new brand introductions"	20%	11%	**78%**	29%		**68%**	86%	0%
"A core of established brands with few introductions and withdrawals"	73%	30%	56%	26%		55%	100%	40%
"Building loyalty amongst existing consumers and buyers"	60%	16%	100%	86%		91%	100%	20%

7.5. Adherence to other classifications

7.5.1. Organics

Although no cluster features a majority of firms targeting organics, clusters 1, 6 and 7 feature far larger minorities doing so, than do the other clusters (table 7.5).

Table 7.5. Traill and Wiklund et al.'s strategies by cluster

Strategies 2005 by cluster	1	2	3	4	5	6	7	8
				Organics				
"Specialisation in organic products"	27%	3%	0%	0%		27%	29%	0%

7.5.2. Product differentiation

According to Gehlbar et al.'s specialisation-based classification (table 7.6), each of clusters 1, 3, 6, 7 and 8 may be described as one (but not both) of the specialisation bases. Moreover, clusters 2 and 4 do not fit at all: this result may be interpreted as a lack of specialisation strategy, as is generally revealed in those clusters' strategic orientation.

Table 7.6. Gehlbar et al.'s strategies by cluster

Strategies 2005 by cluster	1	2	3	4	5	6	7	8
				Product differentiation				
"Specialisation in a narrow area of staff skills"	40%	5%	44%	11%		45%	86%	0%
"Specialisation based on a specific raw material"	73%	32%	67%	3%		27%	43%	60%

7.5.3. Regulation

Avermaete et al.'s classification of firms' strategic responses to regulation (see table 7.7) also offers some explanatory power in the current study. Clusters 2 and 4 are clearly unmotivated by policy. Clusters 1, 3, 6 and 8 can be classified as "anticipators" of regulation, but no cluster features a majority of firms that avoid regulated products or markets. Only cluster 8's firms pass on regulatory costs to suppliers (cluster 7 is ignored), while clusters 1 and 6 pass regulatory costs on to buyers only. Notably, no cluster claims to pass regulatory costs in both directions.

Table 7.7. Avermaete et al.'s strategies by cluster

Strategies 2005 by cluster	1	2	3	4	5	6	7	8
				Regulation				
Regulation orientation	93%	14%	89%	31%	0%	86%	100%	100%
"Avoiding heavily-regulated products, processes and markets"	40%	0%	11%	14%	0%	41%	0%	40%
"Anticipating regulation"	**53%**	5%	**67%**	11%	0%	**59%**	100%	**100%**
"Shifting costs of regulation to suppliers"	13%	3%	22%	3%	0%	18%	71%	**80%**
"Passing on costs of regulation to buyers"	**53%**	0%	44%	9%	0%	**55%**	57%	**40%**

8. Coherence amongst strategies

8.1. Notes on coherence

Space considerations require that tables presenting "coherence" amongst strategies be placed in an appendix (appendix B), with one table for each cluster, and a set of tables for each strategic classification. Each table is a square matrix, with rows and columns listing the same set of strategies as employed in the examination of adherence to strategies.

The cells of the matrices contain a number expressed as %. That number reports that proportion of firms that claim to either employ, or not employ, *both* strategies (row and column) in question. The main diagonal of each matrix is trivial (all are 100%), while cells in the northeastern half of the matrix (its top left hand corner) report the % of firms that employ *both* strategies. The cells in its southwestern half (its bottom right hand corner) report the % of firms that employ *neither* strategy.

A large number of cells in *either* the northeastern *or* the southwestern halves of the matrix are interpreted here as evidence of strategic coherence. Where the firms in a cluster consistently claim to implement neither of the pairs of strategies associated with a particular strategic classification, then that cluster coherently conforms to the classification because it is consistently excluded from the particular strategic classification. Where the firms in a cluster consistently claim to implement the pairs of strategies associated with a strategic classification, then that cluster also coherently conforms to that classification. Evidence for non-coherence occurs where the firms in a cluster implement some, but not all of the strategies: this occurs as either a mix of high and low % measures for co-occurrence across the whole matrix, or as consistent measures of 20-50% of firms in the cluster.

8.2. Coherence within Miles' and Snows' taxonomy

Table B1 shows that cluster 1 is clearly *not* made up of "prospectors". Although cluster 1's firms have a clear mission in combinations of specialisation, few new product introductions and a quality orientation, this does not extend to research into other companies' activities as Miles and Snow would describe an "analyser". Cluster 2 (table B2) displays strong coherence in its non-conformance with any of Miles' and Snows' strategic categories. Cluster 3 (table B3) shows strong coherence amongst its

strategic actions as a "defender", and some coherence (including a research orientation) as a "prospector". Cluster 4, although coherently *not* a "defender", is unable to be classified as any of Miles' and Snows' other types. Cluster 6 shows some coherence as an analyser, but lacks the necessary specialisation focus. Cluster 8's coherence is strong amongst strategic actions associated with being a "prospector".

8.3. Coherence within Porter's taxonomy

Cluster 1's coherence in relations to Porter-type strategies is poor (table B8), while cluster 2 is coherently exhibiting neither differentiation nor focus (table B9). Cluster 3 (table B10) is strongly coherent throughout: its firms do not engage in cost leadership, they are strong "differentiators"; and there is somewhat strong "focus". Cluster 4 (table B11) coherently does not implement the strategies associated with any of Porter's categories, while cluster 6 (B12) has strong coherence in "focus". Cluster 8's statements are also coherent (B14): its firms implement "differentiation" in consistent claims, and consistently do not feature "focus".

8.4. Coherence within Downes' taxonomy

Cluster 2 is strongly coherent in not implementing Downes-relevant ("globalisation") strategies (Table B16). Clusters 3 and 6 are strongly coherent in implementing all relevant Downes' strategies. Clusters 1 and 8 are not coherent within Downes' typology of strategies. Cluster 4's firms' stated strategies emphasise information sharing with suppliers, but not buyers.

8.5. Coherence within Strandskov et al.'s classification

Claims about strategy by firms in clusters 1 and 4 are generally not coherent in terms of Strandskov's classification. Some elements of coherence appear, such as Cluster 1's (table B22) lack of merger and acquisition co-occurring with a lack of a specified pricing strategy and the lack of a stated branding strategy. Cluster 2's firms coherently do not implement the Strandskov-type strategies on "how to complete" (table B23).

From table B24, it can be seen that cluster 3's firms are coherent in implementing loyalty amongst consumers and buyers with a brand strategy of few new introductions. As noted in the previous section, cluster 6 (see table B26) coherently implements loyalty amongst consumers and buyers, by maintaining close relations to buy-

ers but without a specified brand introduction strategy. Cluster 8's firms (see table B28) coherently implement growth by merger and acquisition along with maintaining close relationships to buyers, and also coherent pursue price competition in combination with new brand introductions.

8.6. Coherence within Gehlbar et al.'s classification

Strategies implemented by firms in clusters 1, 3, 6, 7 and 8 are in general not coherent regarding Gehlbar's product differentiation actions. However, firms in clusters 2 and 4 consistently claim to implement neither of the proposed strategies.

8.7. Coherence within Avermaete et al.'s classification

Firms that claim a "regulation orientation" are spread across all clusters except 2 and 4. All other clusters exhibit coherence in that they claim a strategic orientation to regulation as well as a strategy of anticipating regulation (see table B38 onwards). In addition, Cluster 1's and 6's firms are coherent in passing regulation-compliance costs on to buyers; clusters 7 and 8 pass them on to suppliers. As noted earlier, no cluster passes compliance costs on to both buyers and suppliers. For cluster 8, anticipation of regulation is coherently applied with shifting costs of regulation to suppliers, but no other cluster exhibits such coherence with regard to compliance with regulations.

9. Results and discussion

9.1. Overview

This study employs survey data to classify Danish food industry firms according to their strategic orientation and actions. On that basis, clusters of firms are created, each with supposedly homogenous strategies. Those clusters are then described, and their strategic stance is compared to classical and applied taxonomies and models of strategy from past research. A literature review describes these taxonomies and classifications and is used to generate testable hypotheses. In contrast to most other studies of firms' strategic behaviour this analysis employs as little theory as possible from the point of departure. Thus, classification of companies is not based on size, sector, market orientation, or any other prior convictions that could be reasoned to form a meaningful delineator. Instead, we allow the data to discriminate between firms by employing Principal Components Analysis and cluster analysis. Only subsequently are the more traditional measures of firm characteristics applied in order to test whether the information content in these measures are relevant in regard to strategic behaviour. This approach allows us to confront the hypotheses found in the literature with the actual behaviour of firms – to the extent of course that the data can be said to provide a fairly accurate picture of actual behaviour.

Based on available statistical diagnostic guidelines, the results of clustering procedures were of moderate strength. The performance of principal components analysis procedures was strong. Eight clusters were delivered from the procedures, of which one contained just one firm and was eliminated from much of the ensuing discussion and analysis. Although this cluster (number 5) was known to be most similar to cluster 2, the two were not combined because this would further have obscured differences between clusters. Cluster 7 (7 firms) was an anomaly because, in essence, all firms claimed to implement all available strategies all the time. However, some inference was able to be drawn from this outcome, and in addition it strengthened the overall analysis because those firms were able to be treated in isolation from the firms. Even with the above two clusters either ignored (cluster 5) or treated with some suspicion (cluster 7), just 8 of 131 firms were implicated and the remainder played a full part in the analysis.

Paired means tests were used to detect differences between clusters, that gave more meaningful survey responses. The different strategies pursued by each cluster were

then identified and discussed in association with the information about the firms' characteristics. A strong characterisation of the clusters was able to be made.

The review of past models of strategy was used to extract applicable strategic orientations and actions from the current study and use them as indications of firms' strategies' following these models. This analysis took two forms: "adherence" to taxonomies, measured as the % of firms in each cluster that report implementation of the indicator strategies; and "coherence" in those taxonomies, measured as the % of firms implementing, or not implementing, selected pairs of the indicator strategies. While some of the past models performed better than others, almost all had some predictive power regarding the strategies some clusters pursued.

9.2. Strategies delivered

In general, many firms claimed to have many strategic orientations[12]. Notable exceptions were "research" (37% of firms in 2005) and "regulation" (53%), which few firms claimed as a strategic orientation. Firms in cluster 2 claimed just a few strategic orientations, in contrast to the rest of the sample: at the other extreme, firms in cluster 7 claimed almost every strategic orientation and strategic action. The most popular strategic orientations were "quality" (93% of firms in 2005), "prices" (87%) and "cost" (84%).

Diversity amongst firms, and amongst clusters, was far more evident in their claims about strategic action than strategic orientation. As pointed out in the literature review, interviews with firms' executives are likely to encounter respondent bias, so it might be expected that the strategic actions provoked more thought amongst survey respondents than did strategic orientation.

Amongst "cost"-related strategic actions, large scale, high capacity utilisation, and management skill were claimed by over 50% of firms in 2005. These strategies were far more popular than, for example, low cost raw materials, specific investments and advanced technologies.

"Quality"-related strategic actions were more evenly spread, with equal popularity of each of "highest quality", "a range of qualities" and "a specific quality level". Very few firms claimed to have other strategic actions, and there was evidence of shifts be-

[12] Although this result was initially of same concern, it reveals the likely scenario that firms, and particularly sub-units within firms, do indeed have multiple strategic orientations.

tween the strategic actions. Over 10% of firms had adopted "a range of qualities" in the period 2000 to 2005.
The most extreme cases of adoption of strategies between 2000 and 2005 was in "information"-related strategy. Between 10 and 20% of firms adopted information sharing with each of buyers and suppliers in that period. Subsequent investigation showed that few firms shared information in both "directions". Information sharing in the chain was, in 2005, a more popular strategic action than was the generation of performance-related information for use inside the firm.

Just two strategic actions dominate the "price"-related results: high pricing to reflect added value ("convenience, quality and service") and a quality-differentiated price structure. Just 12% of firms claimed to implement a strategy of price competition, and around 28% of firms are price followers.

A surprising result was that more firms (43%) claim a "brand" strategy of "few new brand introductions" (favouring a core of established brands), than the 35% that claim an active system for new brand introductions. 25% of firms claimed a strategy that uses retailers' own-label brands, although this number had grown from just 15% in 2000.

Firms' reported "specialisation"-related strategies feature great variety, as do "employee"-related strategies. Notably, just 25% of firms claimed to strategically replace low-skilled labour with high technology solutions, and only 8% of firms claimed a strategy of out-sourcing low-skilled tasks. These two areas of strategic action were common across the clusters delivered in the study, and so contributed little to the later analysis.

A majority of firms claimed each proposed "marketing"-related strategic action. As these four actions were two pairs of mutually-exclusive strategic actions it is clear that firms pursue multiple marketing strategies (e.g. for different products, in different locations, or in different competitive settings). Later analysis (see below) showed that the divisions between firms "attracting new customers" and "building loyalty with existing customers" added substantial insight to the cluster analysis. The separate strategic action category "market share" generated rather less even variation. Over 50% of firms claimed to pursue an increased market share by "maintaining close relationships to buyers". This far outweighs the popularity of pursuing market share by "merger and acquisition" (18%), "pricing behaviour" (25%) and "non-price competition" (20%).

The most popular "regulation"-related strategic action was "anticipating regulation" (35% of firms): surprisingly few firms (16%) claimed to "avoid heavily regulated" aspects of business. 25% of firms claimed to strategically shift regulatory compliance costs to buyers, and just half that number shifted costs to suppliers. Interestingly, almost no firms nominated "other" regulation-related strategic actions. Few firms claimed any kind of "research"-related strategic action, although variety in this set of strategies offered support to later classification of derived clusters of firms.

9.3. Clusters delivered

Table 9.1 summarises the clusters of firms derived according to firms' stated strategic orientation (from 11 possible orientations) and actions (from 57 possible actions) in 2000 and 2005.

A striking result, and one anticipated in the hypotheses section, is that clusters do not conform strongly to either sector specialisation or stage of the food marketing chain. In general, each cluster is dominated by unspecialised firms (as is the entire sample of firms).

Somewhat surprisingly, business form and location did not differ strongly amongst clusters. Aside from co-operatives, business form is highly correlated with size and any effects on observed strategies may therefore be masked by that. However, the results do not suggest that any particular business form dominates any cluster other than that one-man firms appear in cluster 1. Despite the appeal of clusters' featuring "rural" and "urban" firms, the survey data do not allow such a comparison, although regions containing more rural or urban areas do not appear to dominate any of the clusters.

Firms' size differed considerably amongst clusters. Clusters 1, 2 and 8 are composed of small firms: cluster 1's firms are low value-added and employ staff with a low education level; by contrast clusters 2 and 8 feature firms with high value addition. Cluster 2's employees have (by far) the highest proportion of university graduates of any cluster. The clusters made up of these small firms provide a range in export intensity from 14.2% (cluster 2) to 35.6% (cluster 8) of sales.

Large firms dominate clusters 3, 4 and 7. Each of these clusters offers a unique profile of export orientation and product introduction behaviour. Amongst clusters of the

larger firms, only cluster 4 delivers high value added (approximated here as sales per employee). Export orientation, on the other hand, appears to be the domain of the largest firms, in clusters 3 and 7.

Clusters 6 and 7 are distinct from the others (and from each other) in their innovation behaviour. Cluster 6 (medium-sized firms from all stages of the chain) introduces the most new products and is entirely focused on the domestic market. Cluster 7 (the largest firms, primarily processing and wholesale) spends considerable resources on new product development, and particularly on market research. Cluster 7's firms are highly export-oriented. The results indicate that innovation activities are (i) adopted by firms with at least two different strategic profiles and (ii) can and do differ significantly according to firms' strategic profiles. It is also a notable result that neither clusters 6 or 7 feature small firms. Also notably, clusters with few university-trained employees seem to produce the fewest new products and also feature the smallest firms (i.e. clusters 1 and 8).

Table 9.1. Summary of clusters

Cluster	No. of firms	Label assigned	General description	Details of firms	Strategies pursued
1	15	**"Small, buyer oriented, local specialisations"**	Small (incl. one-man) firms Unspecialised food processors	Low sales per employee Fewest employees with university degree High sales of brands owned by the firm	Specialisation based on a raw material Customer loyalty Narrow product range, few new products
2	37	**"Small, price followers, high value"**	Private companies and co-operatives. Dairy and unspecialised food processors	Highest sales per employee Highest percentage of employees with university degree	Price followers, do not compete on price (indistinct pattern of strategies)
3	9	**"Price discriminators, range of markets, research-oriented"**	Private companies Unspecialised food processors All sizes of firm	Highly export-oriented Highest percentage of sales from retailers' own-label brand	Quality and price differentiated Retailers' own-label brands A variety of product introduction strategies
4	35	**"Large, unspecialised, price discriminators"**	Large firms All business forms All stages of chain Unspecialised, unspecialised meat	High sales per employee High percentage of sales from retailers' own-label brand Large number of corporate brands	Quality and price differentiated Retailers' own-label brands Many new products. A variety of approaches to customer loyalty
5	1				
6	22	**"Domestic market, high quality, customer loyalty"**	Average sized firms All business forms All stages of chain Unspecialised	Highest number of new products Lowest percentage of exports in sales	Highest possible quality Domestic market only. Customer loyalty with information exchange
7	7	**"All things to all people"**	Large firms Processing, wholesale and service Dairy, unspecialised and unspecialised meat	Highest percentage of exports in sales High expenditure on new product introduction Most time spent on market research Slowest cycle of new product introduction	(almost all strategies)
8	5	**"Small, price discriminators, little information exchange"**	Small private firms All stage of chain. Dairy, unspecialised, unspecialised meat	High sales per employee Few new products High percentage of sales from retailers' own-label brands Few employees with university degree	Highly specialised Quality and price differentiated Little information exchange in the chain. Either "few new products" or "retailers' own-label brands", but not both.

9.4. Adherence to classical models of strategy

The extent to which the reviewed models of strategy describe the strategy sets of the derived clusters is shown in table 9.2. Clusters 2 and 7 adhere to these models poorly, while the strategies of clusters 1, 3, 6 and 8 are quite compatible with some of those proposed by the models. However, none of the models offer an exhaustive and exclusive classification for the clusters, even leaving aside cluster 7 ("all things to all people").

Just two of Miles' and Snows' 4-way taxonomy apply to this study's clusters. The absence of "defenders" is unexpected, given the narrow product and/or market focus of several of the clusters. "Reactors" are not well defined in the literature (they are said to feature weak consistency between strategy and structure), so this term suits cluster 2 ideally. Cluster 3, as the most research-oriented of the clusters, qualifies as an "analyser", but also has many attributes of a "prospector". The 4 clusters that adhere to the "prospectors" group all appear to do so due to their use of information in the chain and their stated orientation to marketing.

Three of Porter's strategic types were able to be assigned to clusters, although "stuck in the middle" is somewhat arbitrarily applied to cluster 7. It is notable that none of the clusters fits Porter's description of "differentiation", as several widely-applied strategic actions imply differentiation by the firms in this study. This is probably because the firms implement differentiation in association with other strategies (e.g. relationships to buyers, specialisation, and diversification by offering a range of qualities). Clearly clusters 1, 3 and 6 are characterised by "focus", and in several different market segments. Support for cluster 8's description as a "cost leader" is rather weak, as a price discrimination strategy would normally be seen as an alternative strategy to being the "lowest cost producer".

Like Miles' and Snow's classification, Porter's taxonomy is more applicable in some cases than others. The "globalisation" label given to a category of firms by Downes (who, in 1997, criticised these two classifications for their lack of robustness) is the only suitable one for the current study. It applies, with some strong support, to 3 clusters. Most notably, two of these serve mainly domestic markets but are still characterised by lasting relationships with buyers and suppliers "even if they do not trade internationally". Such results were predicted by Downes.

Strandskov et al.'s classification performs relatively well in categorizing the clusters by strategy. Clusters 3 and 8 can be classified according to both "where" and "how"

to compete, clusters 4 and 5 on "how to compete" (but not "where") and cluster 1 on "where to compete" (but not "how"). Cluster 7's firms claim to compete in a large variety of ways and in many markets, so would in any case be unable to be classified according to this taxonomy. Cluster 2, which features few consistently-applied strategies, does indicate a "price follower" stance, which is information about "how to compete". Although cluster 2's firms deliver high sales per employee (interpreted here as "high value"), this has not been able to be associated with a statement that Strandskov's classification would embrace as "how to compete".

Gehlbar et al.'s strategic classification (on sources of specialisation) suits most of the clusters, and even extends to the problematic "all things to all people" cluster 7. Unfortunately, Gehlbar et al.'s classification seems to favour small firms' having "resource" bases for strategy and large firms' having staff skills. It is also notable that cluster 2 (with the highest proportion of university-educated staff amongst clusters) is not able to be classified as "staff skills".

Avermaete et al.'s topic (regulation) is useful in classifying firms, although the application in this study departs somewhat from Avermaete et al.'s purpose (which addressed innovation). Clusters 1,3, 6 and 8 anticipate regulation as part of their strategy, and as noted earlier very few firms claim strategically to avoid heavily-regulated products, procedures or markets. A clear line was able to be drawn between clusters 1 and 6 on the one hand and cluster 8 on the other, as to the direction in which regulatory compliance costs are passed strategically in the chain.

Table 9.2. Adherence to classical taxonomies

Cluster	Miles and Snow	Porter	Downes	Strandskov et al. "Where to compete"	Strandskov et al. "How to compete"	Gehlbar et al.	Avermaete et al.
1. "Small, buyer oriented, local specialisations"	"analysers"	"focus"		Specialisation in a few products		Resource specialisation	Anticipate regulation Pass costs to buyers
2. "Small, price followers, high value"	"reactors"				Price followers		
3. "Price discriminators, range of markets, research-oriented"	"prospectors" AND "analysers"	"focus"	"Globalized"	Retailers' own-label brands	Close contact with buyers – research oriented	Resource specialisation	Anticipate regulation
4. "Large, unspecialised, price discriminators"	"prospectors"				Customer loyalty without new products	Staff skill specialisation	
5. (omitted)							
6. "Domestic market, high quality, customer loyalty"	"prospectors"	"focus"	"Globalized"		Close contact with buyers Price competition		Anticipate regulation Pass costs to buyers
7. "All things to all people"		"stuck in the middle"			Compete in every conceivable way	Staff skill specialisation	
8. "Small, price discriminators, little information exchange"	"prospectors"	"cost leader"	"Globalized"	Specialisation in a few products	Merger and acquisition	Resource specialisation	Anticipate regulation Pass costs to suppliers

9.5. Coherence in classical models of strategy

Table 9.3 presents a summary of the clusters coherence in implementing strategies within classifications drawn from the literature. As outlined above, clusters' constituent firms are assessed for coherence of two forms: (i) consistent implementation of both of a number of pairs of strategies associated with a specific classification; and (ii) consistent implementation of no such pairs of strategies. Both cases are treated as coherence, with (i) referred to as co-occurrence and (ii) as co-non-occurrence.

The clusters show mixed coherence regarding Miles' and Snow's taxonomy. Clusters 1 (analysers) and 8 (prospectors) are confirmed from the overview of adherence, and cluster 1 is also clearly coherent in not behaving as a "prospector" (see first two columns of table 9.3). Cluster 4 adheres to a "prospector" strategy, but is coherent only in the sense of not implementing "defender"-type strategies. Cluster 6 cannot demonstrate any coherence, but adheres to "prospector" strategies. Cluster 2 appears coherent in not implementing any strategies relevant to Miles and Snow's taxonomy of strategy, but was earlier shown to adhere to "reactor" strategy.

In Porter's taxonomy, cluster 7 can intuitively be assigned coherence in following such a diverse and large number of strategies that it is "stuck in the middle". Clusters 3 and 6 are coherent and consistent with the assessment of their adherence to this classification. Cluster 2 showed no adherence to Porter's groupings, and this is consistent with its coherently *not* being able to be classified as "differentiation" or "focus". Cluster 4 simply falls outside Porter's classification: it is neither adherent nor coherent. In the only major contradiction, cluster 8's coherence is different to its adherence: the pairs of strategies its constituent firms pursue indicate that Porter would classify them as "differentiation" and definitely *not* as "focus", whereas in terms of single strategies (adherence), cluster 8 is a "cost leader".

Downes' classification works well for clusters 3 and 6: adherence to "globalisation" is reinforced in table 9.3 by coherence across the strategies implemented. Cluster 2 is seen to be coherent in *not* implementing pairs of strategies associated with "globalisation". Although cluster 8 adheres to this classification, its firms' strategies are not coherent.

Examination of clusters' firms' coherence within Strandskov et al's classification provides limited results. Two clusters demonstrated coherence, and in just one case (Cluster 8) is this consistent with the examination of adherence. Examination of Gehlbar et al.'s classification used just a few strategies, and found only one example

of coherence: that cluster 2 did not implement pairs of strategies associated with its a lack of specialisation.

Clusters appear to follow the most coherent set of strategies according to Avermaete et al.'s classification (see right hand columns of table 9.3). In almost all cases the adherence and coherence results are consistent. Notably, however, the examination of coherence fails to solve the problem that under this classification, a number of clusters get classified the same way.

Table 9.3. Coherence in classical taxonomies

	-- Miles and Snow --		------- Porter -----		------ Downes -----		Strandskov et al.		-- Gehlbar et al. --		-- Avermaete et al. --	
	C-OCC*	C-N-OCC**	C-OCC	C-N-OCC	C-OCC	C-N-OCC	C-OCC	C-N-OCC	C-OCC	C-N-OCC	C-OCC	C-N-OCC
1. "Small, buyer oriented, local specialisations"	"analysers"	"prospectors"									Anticipate regulation AND Pass costs to buyers	
2. "Small, price followers, high value"		ALL		"differentiation" AND "focus"		"Globalized"				No specialisation		No regulation orientation
3. "Price discriminators, range of markets, research-oriented"	"defender" AND "prospectors"		"focus"	"cost leadership"	"Globalized"		"Loyalty amongst consumers" AND "brand strategy"				Anticipate regulation	
4. "Large, unspecialised, price discriminators"		"defender"										No regulation orientation
5. (omitted)												
6. "Domestic market, high quality, customer loyalty"			"focus"		"Globalized"						Anticipate regulation AND Pass costs to buyers	
7. "All things to all people"			"Stuck in the middle"									
8. "Small, price discriminators, little information exchange"	"prospectors"		"differentiation"	"focus"			Growth by merger and acquisition	"brand Strategy"			Anticipate regulation AND Pass costs to suppliers	

Notes:
* consistent co-occurrence of indicative strategies
** consistent co-non-occurrence of indicative strategies

9.6. Discussion of hypotheses examined

9.6.1. Occurrence of strategic types

In agreement with our stated hypothesis (see table 2.4), clusters of firms were able to be identified, based on their strategic behaviour. In method and outcome, this result corresponds to work by Traill (2000) and Strandskov et al. (1999), although in the current study the recourse to classical models from the business literature is not used in the definition of strategies.

9.6.2. Description of strategic types

The first of the 2-level (first firms' strategic orientations, and then their strategic actions) survey technique used in this study offered limited insight, with a few notable exceptions. Cluster 2 was revealed to be more oriented to research and development than the other clusters, but no other results were forthcoming. The second level was much more informative, with just one cluster (cluster 7, labelled "all things to all people") claiming to implement most strategies.

An initial explanation of this result is that the questionnaire, in failing to restrict firms' number of possible strategic orientations, allowed firms to be indiscriminate. A second is that the form of response ("yes/no" rather than a score or rank) obscured statements of strategic orientations' importance to firms. In the first case, there is no *a priori* means of, or basis for, dictating the number of strategic areas a firm may have, especially given the very broad range of strategies addressed in the questionnaire. In the second, test interviews had ruled out the possibility of firms' assigning rankings.

A more reasoned explanation of the difference in discrimination between the first and second levels of strategic types is that the assumed correspondence between orientations and actions was incorrect. Firms may well have pursued a small number of strategic actions, but these were spread across a large number of strategic orientations. This explanation is supported by Borch and Forsmann (2001) and Downes (1997), who find that strategy is best explained by actions of firms with regard to trading actions or overall commercial stance, rather than their general statements about strategy. More generally, however, firms (and their various sub-components) may actually have a large number of strategic orientations.

9.6.3. Size, sector, stage of chain, location

An unexpected result is that many of the clusters of firms were dominated by firms of a particular size group. This contradicts the (non-food industry) results of Miles and Snow (1978) and Downes (1997). The current study pays particular attention to marketing approaches and linkages throughout the food chain, so might be expected to separate out, at least, the largest from the smallest firms. However, no cluster is totally populated by firms of any particular size.

The clusters composed largely of small firms were given three separate labels: "small, buyer-oriented, local specialisations" (cluster 1); small, price followers, high value" (cluster 2); and "small, price discriminators, little information exchange" (cluster 8). The clusters with many large firms (4, 6 and 7) were called "large, unspecialised, price discriminators"; domestic market, high quality, consumer loyalty"; and "all things to all people", respectively.

Clusters all demonstrate a blend of firms' sector, stage of chain and location. Some clusters are, to some degree, dominated by unspecialised firms and one (cluster 2) seems to contain the majority of the dairy firms but as a minority within the cluster. Because business form is strongly associated with firms' size, the clusters containing small firms (1, 2 and 8) also have most of the one-man firms, partnerships and private companies. Co-operatives are common in cluster 2 (perhaps in association with dairy firms), but also appear in other clusters. It is also notable, however, that clusters show unique distributions of constituent firms across a range of such class variables.

9.6.4. Performance

This study found variation between clusters in sales per employee, but no compelling reasons to associate this with membership of a particular cluster. Pair-wise tests of means showed no statistical differences in these means between clusters. Although no other measures of performance are available from the survey, this result agrees with those of Gimenez (1999), Pennings et al. (2001) and Martinez and Poole (2004), who found that strategic groups did not demonstrate differences in performance. This is an intuitively appealing result, as firms might be expected to choose individual methods of solving a profit maximisation problem, and strategic groupings would adhere to those methods rather than the outcome achieved. The current study also found variety amongst clusters in such variables as export intensity, branding behaviour and employee education levels, but these indicate more about strategy than performance.

9.6.5. Innovation

Clusters' claims about new product introductions are somewhat unclear. No cluster claims a strategy of new product or brand introduction, but four clusters claim to offer few new products but rather offer a range of established products. Notably, these four clusters also have a variety of research and development, as well as specialisation, strategies. Cluster 2 (small firms) claims no specific new product strategy and only cluster 3 claims to implement a strategy of new products. Examination of clusters' strategies revealed little about technologies and costs, which indicates no strong differences between clusters in the approach to technology.

A surprising result from firms' claims about strategy is that the majority of firms favour a set of established brands with few introductions and withdrawals, as opposed to many new introductions. To some extent this was observed in the clusters: cluster 1 (small firms with a local orientation) features a narrow product range and few introductions, in association with a strategic emphasis on customer loyalty; this is in contrast to cluster 4 (large unspecialised firms) which introduces many new products and a variety of marketing approaches. Cluster 7 (so-called "all things to all people") is particularly problematic regarding new product introductions: its constituent firms claim to follow many approaches simultaneously.

Beyond innovation by product introduction, Downes' (1997) work suggested a classification along the lines of the uses to which advanced technologies could be put by firms within a cluster, but the current study found little supporting evidence for this. From the data used here, only Downes' "globalisation" strategy was relevant, and this involved marketing rather than innovation.

9.6.6. Resource orientation

As proposed by Gehlbar et al. (2005), five of 7 clusters feature specialisation based on a specific resource: a raw material or a staff skill. In general, strategies based on a raw material are claimed by small clusters featuring small firms (clusters 1 and 8) while staff skills are employed strategically by clusters featuring large firms (clusters 4 and 7). Cluster 3 features a range of firm sizes, a range of markets served, retailers' own-label brand *and* export intensity. Surprisingly, firms in this cluster claim strategically to specialise based on a raw material.

9.6.7. Marketing behaviour

As found by Banker et al. (2006) and Wiklund and Brännback (2001), the clusters identified in this study are strongly differentiated by marketing behaviour. It should be noted that this result is partly due to the emphasis placed on marketing by the survey questions posed. However, a variety of price, target market, market share, quality and branding strategies emerged across the clusters. In these regards, the major differences amongst clusters are due to:

- pricing behaviour (e.g. cluster 2 (price followers) as opposed to clusters 3, 4 and 8 which are all price discriminators across quality levels and buyers);
- approach to quality (e.g. differentiation as above for 3, 4 and 8 as opposed to cluster 6's strategy of offering the highest possible quality);
- branding and product introductions (e.g. small firms that produce few new products (clusters 1 and 8); large firms with many new products, and multiple products per brand (cluster 4); a focus on retailers' own-label brands (cluster 3 for medium-sized firms, cluster 4 for large firms and cluster 8 for small firms).

For several key and interesting strategies, only a few clusters demonstrate strategic clarity. Most notably, this included new product introductions (see innovation section, above), and the strategic approach to market share. In regard to the latter, many firms reported that they targeted *both* new customers and increasingly loyalty amongst existing customers; and that they targeted *both* increasing sales and increasing value added from existing sales. Obviously the firms' responses can be explained in that they may refer to different product lines or different markets, but in any case the clusters generally failed to show many differences in these regards.

The current study disagrees with Gehlbar's (2005) proposal that product differentiation has become so fundamental to marketing strategies that any cluster will feature this activity. In fact, by concentrating on the manner in which differentiation is achieved, clusters were able to be quite clearly defined by differentiation strategy. Amongst topics investigated here, "quality" is the best example. A number of clusters claim to differentiate quality across customers, and prices across both customers and quality. The analysis has been able to identify several aspects of the role played by quality differentiation in such endeavours as clusters 3 (medium-sized firms), 4 (large firms) and 8 (small firms) in their use of retailers' own-label brands. For cluster 4, the range of buyers and markets served, and a large number of new product introductions, means that retailers' own-label brands are part of a portfolio of activities. For cluster 3, they interact with the firms' focus on export markets. For cluster 8's

highly specialised small firms, retailers' own-label brands are perhaps the only route to growth in the number of buyers, as firms either pursue retailers' own-label or produce few new products, but not both.

A final marketing hypothesis drawn from the literature concerns whether small firms' strategies are, in fact, defined only by their differentiation activities (Buhr, 1999). This study rejects this hypothesis, but rather identifies clusters of small firms by several other strategic features, including growth by acquisition (cluster 8) and approach to customer loyalty (high emphasis for cluster 1 and almost none for cluster 8). Cluster 1, for example, places the lowest emphasis of all clusters on "offering a range of qualities", while cluster 8 is quality and price differentiated. Information exchange (none in the case of cluster 8) further delineates the strategies pursued by small firms in different clusters.

9.6.8. Relations within the food marketing chain

The clusters display a range of information-exchange strategies, which mostly relates to marketing activities such as the strategy pursued with buyers and suppliers. This is in some contrast to Traill's (2000) reasoning based on linkages between firms. However, the current study's clusters are highly differentiated both by the extent and direction of information exchanges and the apparent purposes to which it is put. Cluster 3 (medium sized firms, highly export-oriented, substantial use of retailers' own-label brands) defines no clear approach to customer loyalty but shares information both up and down the marketing chain. Cluster 4 (large firms) also serves an array of market types and also shares information with both customers and buyers. Cluster 6 (large firms focused on the domestic market) emphasises information exchange with buyers, but *not* with suppliers. Clusters 1 and 8, both composed of small firms, have very different information exchange strategies: cluster 8 exchanges little information in the chain.

9.6.9. Regulation

Avermaete et al.'s (2002) case studies of the impact of regulation on firms' innovation suggest that clusters would differ in their reaction to, and co-existence with, regulation. This hypothesis is strongly supported in the current study, in that four clusters claim to "anticipate regulation" in a strategic setting. It is also notable that no cluster of firms (and indeed, few individual firms) claim to avoid strategically specific products, processes or markets. This result indicates that firms in the four delineated clusters consume resources in studying regulation, in order to anticipate it.

The capacity of firms to pass on compliance costs was also investigated, and yielded the interesting result that three clusters of firms do so as part of strategy, and all those clusters claim to anticipate regulation as above. Two clusters (one of small firms and one of large firms, both focused on the domestic market) claim to pass costs on to buyers, but *not* to sellers. Both of these clusters (1 and 6) similarly employ strategies involving communication with buyers but *not* with suppliers. Cluster 8 claims to pass on compliance costs to sellers, but *not* to buyers, and claims not to exchange much information with either buyers or sellers. It should be noted that the direction in which costs are passed onwards in the food marketing chain by clusters is not a function of the stage of the chain at which firms' operate, because no cluster is dominated by firms at any one stage.

9.6.10. Adherence to classical models of strategy

The clusters derived in this study are comprised of firms, and display collective (that is, within clusters) strategies largely as might be predicted from selected pieces of research. The economy-wide applications of Porter's work by Laugen et al. (2006) and of Miles' and Snow's work by Gimenez (1999) have some relevance to the clusters delivered here, at least to the extent that some "strategic types" can be readily identified. However, in each case several clusters adhere to each of just a few types drawn form these taxonomies: the classification is therefore neither exclusive nor exhaustive.

Laugen et al., as well as Downes (1997) might interpret this result in different ways: Laugen et al. would favour a breakdown in the classification system itself, in that "motives and practices" are common across types (clusters) rather than being different; and Downes would claim that firms' utilisation of advances in IT simply outmode the taxonomies. Although both critiques have resonance in the current study, neither is a complete explanation. First, the clusters are reasonably distinct in many elements of "motive and practice" (e.g. pricing, information exchange, exports, retailers' own-label brands). Secondly, the clusters derived in the current study have an even weaker adherence to Downes' classification than to Porter's and Miles' and Snow's: although just one element of Downes' work is used here. Thirdly, Porter's classification allows assignment of cluster 7's firms to "stuck in the middle": it is the only classification to which that clusters' firms' actions adhere.

Strandskov's classification is, first, a much more usable structure, as it is intuitively led by the fundamental questions "how" and "where" to compete. In general, the clusters from the current study answer one of those questions, but not both. Cluster

1's (small firms, narrow product range) specialisation strategy, for example, adheres very well to Strandskov's classification. Interpretation of firms' strategies regarding "how" to compete are also very applicable: six clusters adhere to the classification, if cluster 7 can be interpreted as "competing in every possible way". Cluster 8 is the only case where both "where" (specialisation in a few products) and "how" (merger and acquisition) both adhere strongly to Strandskov's classification.

As discussed above, a subset of the clusters adhere well to both the specialist taxonomies (Gehlbar's and Avermaete et al.'s). Although the current study supports the stated hypothesis that a few clusters would adhere to the classifications systems, it is also apparent that the more specific (and less general) is the classification system, the more strongly did the clusters from the current study adhere to it.

9.6.11. Coherence amongst model-related strategies

Coherence amongst the strategies depicted in the literature is apparent, in two senses: strategies indicating a particular strategy either co-occur or "co-non-occur" for many clusters across all the reported classifications. The intermediate case (limited co-occurrence) is somewhat rare. This supports the hypotheses derived from the work of Laugen et al. (2006) and Porter (1980), and the proposition of Wiklund and Brännback (2001).

This study's extension of Laugen's reasoning, that coherence would be observed regardless of adherence to the classical models, is refuted. The clusters identified here demonstrate a pattern of agreement between adherence and coherence, albeit one with anomalies and departures from central themes. Again, the clusters show the strongest coherence, and strongest consistency between adherence and coherence, within the two specialised classifications (Avermaete et al. and Gehlbar). As opposed to its performance in clusters' adherence, clusters' firms' strategies do not cohere well with those drawn from Strandskov et al.'s classification.

10. Conclusions

10.1. General conclusions

Strategies pursued by Danish food industry firms address a wide range of topics, although very few firms claimed to have strategies falling outside the nomenclature used in this study, which extended to eleven "orientations" and 57 "actions" within orientations. To some extent, all firms claimed to follow a large array of strategies, but the clustering procedure was able identify the most extreme cases and assign them to a single cluster. However, the first level of strategy description ("orientation") was not as useful in cluster analysis as was the second level.

In the second level "(action)", firms were far more discriminating but there were cases of multiple claims by firms. For example, at first glance a firm would not be expected to claim as strategies *both* of "growth in market share by attracting new customers" *and* "growth in market share by encouraging loyalty amongst existing customers". However, this may arise in the context of multiple product lines or customer groups, or a range of markets served. Such apparent contradictions, indeed, occur for clusters characterised by large firms and diverse marketing activities, often in combination with marketing strategies that were difficult to discern.

Firms claimed to have the least strategic interest in research and development (37% of firms claim to have a strategy oriented to this topic) and regulation (53%). Almost all firms claimed to have a strategic orientation towards "cost". Very little association is apparent between firms' claimed strategies (both orientation and action) and their general characteristics (size, stage of marketing chain, location, etc). As predicted by Laugen et al. (2006), the factors motivating strategy are common across firms in ways that might elude such preliminary analysis. This predisposes toward the approach taken here, which is data-driven rather than relevant on firms *a priori*

Using a combination of clustering procedures following principal components filtering, this study delivers a set of 7 clusters of Danish food industry firms (numbered 1-8, with number 5 omitted), specifically:

1. "Small, buyer oriented, local specialisations"
2. "Small, price followers, high value"
3. "Price discriminators, range of markets, research-oriented"
4. "Large, unspecialised, price discriminators"
5. (omitted)
6. "Domestic market, high quality, customer loyalty"
7. "All things to all people"
8. "Small, price discriminators, little information exchange"

These clusters are composed of firms with either distinct strategies, or distinct sets of strategies that occur in unique combinations. The clusters are distinct in a surprisingly large number of ways, including their strategies for growth of market share, pricing behaviour, approach and response to regulation, and use of export markets and retailers' own-label brands. However, clusters were not able to be differentiated by some intuitively obvious strategic variables, including use of technology and approach to costs, and new product introduction strategy.

Existing models of strategy that seek to classify firms have been examined as part of this study. In general, the more specific and applied are the taxonomies offered, the more applicable is that classification to the firms studied here. However, the more general classifications that assign generic descriptive words to strategic behaviour perform poorly. This is not because parallels cannot be drawn between the clusters identified here and the classical taxonomies, but rather because the association is not exclusive and exhaustive: too many cases arise where several clusters are assigned the same generic name despite their many differences, and similarly too many generic types fail to appear despite their intuitive appeal.

The clusters of firms identified in this study are distinct enough that certain of their basic descriptive components could be used to generate a taxonomy of Danish food industry firms. However, rather than comprising sector, stage of chain and location, this taxonomy would include size, choice of markets, pricing behaviour, brand characteristics, product introduction practices and sales per employee. This taxonomy would have applications and uses for both commercial firms seeking trading partners and characterising competitors or collaborators; and for policy makers seeking improved policies or means of implementing them.

10.2. Commercial implications

The differences between clusters in their targeted markets provides firms with information about the likelihood of their adopting different product introduction and branding strategies, and engaging in certain types of information provision. These are key variables in identifying likely competitors and/or partners in a modern food supply chain. The form of specialisation employed by firms is quite diverse across the clusters, providing guidance to firms about competition in different markets. In particular, small firms that that are highly specialised by way of raw material focus on customer relations with a very narrow product range (cluster 1) provide information up and down the chain and introduce few new products. This would pre-dispose toward vertical co-ordination with other firms. On the other hand, a highly specialised small firm with a range of price-differentiated quality levels and no communication strategy would make a poor partner: in fact cluster 8's strategy for increasing market shares has been by merger and acquisition rather than partnerships in the chain.

Quality considerations are also signalled strongly by this study. Cluster 6 aims at providing only the highest quality products, which disqualifies many potential chain partners that produce and market a range of qualities (clusters 3, 4 and 8), perhaps because their commodity is inherently heterogeneous in quality sector or perhaps because price discrimination is a tried-and-true strategy that will not lightly be abandoned.

Clusters 2 and 7, although poorly addressed in the analysis, are also revealing for commercial purposes. Cluster 7's firms claim a large number of strategies, and could not be easily analysed other than to call the cluster "stuck in the middle" under Porter's classification. These are generally very large firms with diverse markets, operating across several sectors. They spend considerable time and resources in market studies and new product development, and are export oriented. As partners in the chain, they offer a range of strategies and a large volume of production, so would appear to be attractive partners. Cluster 2 features high value sales and a highly educated workforce, but with a poorly defined strategy other than a reluctance to compete on price. One interpretation of cluster 2 is that it offers flexibility and could be a source of knowledge-led value addition as a trading partner.

Very few differences between clusters are revealed about cost-related strategies. This means that, across the set of clusters, the same distribution of cost behaviour is followed, and that no cluster was able to be identified on the basis of cost. It is notable, for example, that only one "cost leader" was identified under Porter's classification,

and this was cluster 8 which has a very narrow product range and a small sales volume. Whatever cluster 8's cost advantage, it is unlikely to be economies of scale or scope as employed throughout the food industry generally, and may be associated with cluster 8's resource-based specialisation.

10.3. Policy implications

An encouraging result from firms' statements of strategy is that very few firms strategically avoid heavily-regulated topics. A subset of firms actively anticipate policy, and cluster analysis has delivered some clues as to why: the small firms that do so are tied to a specific raw material and serve the domestic market; the large firms that do so serve the domestic market either exclusively (cluster 6) or significantly (cluster 3). The only research-oriented cluster identified is cluster 6, which indicates that at least some research effort addresses policy.

The clusters identified in this study provide clues about the conduits provided by particular types of firms for policy interventions in pursuit of policy objectives. Cluster 6 is an interesting case, and is unique in three respects: its firms' focus on the domestic market; their prolific new product development; and their targeting only the highest possible quality level. These are all topics of interest to policy makers, but these firms are unspecialised, come from all stages of the chain and locations, and have a range of firm sizes. This makes them difficult to identify and assist in pursuit of such objectives as enhancing innovation and boosting food quality. Moreover, the means and motivation for assistance would differ from those associated with large, specialised exporting firms.

Innovation-related policy implementation might focus on firms that pursue a research-related set of policies or implement specific branding or new product introduction strategies. The current studies has identified clusters of such firms, despite the overwhelming result that just 37% have a strategic orientation to "research".

In addressing small firms, the three clusters 1, 2 and 8 would provide very different arenas for problem definition and policy intervention. Cluster 2, for example, features highly educated staff and high value addition: this is in stark contrast to cluster 1's low value production and less educated staff. Cluster 8 supplies retailers' own-label brands, while cluster 1 has its own brands; cluster 1 embraces information exchange while cluster 8 does the opposite.

Firms' strategies in passing on compliance costs to buyers and sellers differ significantly between clusters. Notably, no cluster claims to pass such costs in both directions and just one (Cluster 8), comprising small firms, claims to pass costs back to suppliers. Policies targeting the food industry but not intended to penalise farmers may be best targeted at firms other than those in cluster 8. On the other hand, the consumer is likely to pay the costs of strictures imposed on firms in clusters 1 and 6. Notably, exporting firms belong to clusters where compliance costs are not passed on, in either direction.

10.4. Methodological issues

This analysis has shown that a theory-free data-based approach is capable of producing a detailed and unprejudiced picture of firms' behaviour. Moreover, this approach allows us to test the prevailing hypotheses found in the literature and it gives a basis for discriminating between measures of firm characteristics with relevance to strategic behaviour.

Nevertheless, the study suffers from several shortcomings associated with its survey-based database and the use of cluster analysis. In particular, the database is of questionable representativeness outside of the food processing sector, and is poorly representative of retail firms. It is quite representative of firm sizes, but focuses on just a few sectors.

Questionnaires and interviews targeted firms' executives that had, in many cases, designed and implemented firms' strategies. These individuals may contribute respondent bias as they seek to present their efforts in the best possible light. They also may have had imperfect memories of strategies and other information from the year 2000, for several reasons including poor memory, their arrival at the firm since 2000, and hindsight of strategy from that time.

The current study was not able to use ranking methods at the point of data collection (such as the Likert scale), because firms were reluctant to use such scales during test interviews. The resulting "yes/no" approach was rather less informative than a Likert-based one, and this probably resulted in the general lack of information derived from firms' statements about strategic orientation. Generation of a scale upon which to base clustering procedures then required the re-processing of the survey responses, which in practice utilised the changes in strategy over time referred to above, with their inherent flaws. The current study included testing of various forms and specifi-

cations of scaling, which delivered only small changes in the distribution of scores and resultant clusters.

Clustering procedures, while adept at utilising large volumes of qualitative information, are not subject to a set of robust and consistent tests, so interpretation plays a significant role in generating results. The current study employed principal component analysis to good effect in improving the efficiency of the clustering procedures. Complementary clustering procedures (Ward's and k-means) were used to deliver a set of clusters that proved to be defensible intuitively and statistically.

Differences amongst clusters were tested statistically where possible, but this played a minor role in describing the clusters. Notably, it identified key differences in marketing behaviour that were to dominate much of the later discussion and conclusions.

The assessment of clusters' consistency with existing models of strategy (adherence and coherence) was addressed in an *ad hoc* way with some inherent weaknesses. First, a small subset of strategies was used to represent concepts and strategic orientations defined in large and wide-ranging studies. Second, the terms "adherence" and coherence" have little theoretical foundation and were developed as part of hypothesis formulation. Third, the "classical" studies reviewed here were carried out for different purposes and different commercial settings than the examination of Danish food industry firms. However, the classical taxonomies of strategy were shown to have some application to the current study, and both the applications and departures were used to generate useful discussion. No criticism of the other models is intended, and it should be emphasised that the work most closely aligned to the current study provided the most adherence and coherence for the clusters derived here.

10.5. Future research

This study has derived a set of clusters of firms that provides insight into marketing behaviour, response to policies, exports and information exchange in the chain. The analysis is on the basis of interviews with firms and an implied scoring system for strategies, but still achieved its research objectives and provided insight into the applicability of existing models of strategy. Further research would ideally combine this study with elements of past work that this study has identified as useful, in order to generate guidelines for clustering firms.

Examination of impacts of planned or actual policies should dis-aggregate food industry firms in order to adequately reflect the incidence and localised extent of costs and

benefits. This study has shown that aside from firm size, the variables used for such dis-aggregation (location, commodity sector, stage of chain) may be of limited use. Rather, marketing behaviour, use of information, choice of markets, education of staff and research expenditures would be better guides to policy impacts.

References

Avermaete, and Viaene, (2002) On Innovation and Meeting Regulation the Case of the Belgian Food Industry, Paper to be presented at the DRUID Summer Conference on "Industrial Dynamics of the New and Old Economy - who is embracing whom?", Copenhagen/Elsinore 6-8 June 2002.

Banker, R. D., Mashruwala and A. Tripathy, (2005) Generic Strategies and Sustainability of Financial Performance, Temple University, Philadelphia.

Bjørnskov, Christian and Kim Martin Lind (2002) "Where Do Developing Countries Go after Doha? An analysis of WTO positions and potential alliances", FOI, Working Paper no. 02/2002.

Bjørnskov C. and K. M. Lind (2005) "Underlying policies in the WTO, the Harbinson Proposal and the modalities agreement" *Revue Économique* 56 (6): 1385-1411.

Borch, O. and S. Forsman (2001) The Competitive Tools and Capabilities of Micro Firms in the Nordic Food Sector - a comparative study, The Food Sector in Transition - Nordic Research. Oslo, 2001, Norsk institutt for landbruksøkonomisk forskning.

Buhr, B. (1999) "Outlook for North American Pork Industry: Competitive Challenges & Strategies" *Advances in Pork Production* 10: 23.

Crawford, M. (1987) New Products Management. Irwin. Homewood, IL.

Downes, L. (1997) "Beyond Porter" *Context on-line magazine* *http://www.contextmag.com/setFrameRedirect.asp?src=/archives/199712/technosynthesis.asp* as at 13 April 2007

Everitt, B.S., S. Landau and M. Leese (2001): Cluster Analysis. 4th ed. London: Arnold Publishers.

Gehlhar, M. J., A. Regmi, S. Stefanou and B. Zoumas (2005), Brand Leadership and Product Innovation as Firm Strategies in Global Food Markets, International Food and Agribusiness Management Association 15th Annual World Food and Agribusiness Forum: "Re-inventing the Food Chain: New Products, Consumers, and Markets" June 25-28.

Gimenez, A. P. F. (1999), "Miles and Snow's Strategy Model in the Context of Small Firms" in *Proceedings of the 1999 ICSB Naples Conference* Universidade Estadual de Maringá, Brazil (ed, Gimenez).

Kaiser, K.F. (1958) "The Varimax Criterion for Analytic Rotation in Factor Analysis" *Psychometrica* 23: 169-187.

Laugen, B. T., H. Boer and N. Acur, (2006) The New Product Development Improvement Motives and Practices of Miles and Snow's Prospectors, Analysers and Defenders, Journal Compilation, Blackwell Publishing, Volume 15, no. 1.

Martinez, M. G. and N. Poole (2004) "Analysing Linkages between Strategy, Performance, Management Structure and Culture in the Spanish Fresh Produce Industry" *International Food and Agribusiness Management Review* 7 (1): 16-39.

Nilsson, J. (1999) "Co-operative Organisational Models as Reflections of the Business Environments" The Finnish Journal of Business Economics 4: 449-470.

Pennings, E. and M. Natter (2001) "Strategic Diversification and Capacity Utilization" *International Journal of Production Economics* 72 (3): 261-272.

Porter, M. E. (1980) *Competitive Strategy: Techniques for Analysing Industries and Competitors* New York, NY: The Free Press

Strandskov, J., L. S. Hundahl and C. M. Laursen, (1999) Strategic Marketing Types: Evidence from the European Meat Processing Industry,. Working Paper no. 60, Centre for Market Surveillance – Research and Strategy for the Food Sector.

Traill, W. B. (2000) "Strategic Groups of EU Food Manufacturers" *Journal of Agricultural Economics* 51 (1): 45-60.

Wijnands, J. and C. Ondersteijn (2006) "Quantifying the Agri-food Supply Chain" in *Quantifying the Agri-food Supply Chain* (Ondersteijn et al., eds): 1-10. Springer.

Wiklund, P. and M. Brännback, (2001) On Dominant Logic, Knowledge Management, and Strategy Making: A Study of the Finnish Food Industry, Technical Reports No. 7, Turku School of Economics and Business Administration Department of Marketing.

Appendix A. Detail of paired means tests

Table A.1. Difference in means

Sales 2005

Cluster	1	2	3	4	5	6	7	8
1							***	
2							***	
3							***	
4							***	
5								
6							***	
7								***
8								

Number of employees 2005

Cluster	1	2	3	4	5	6	7	8
1							***	
2							***	
3							***	
4							***	
5								
6							***	
7								***
8								

Percent sales of firms own brand 2005

Cluster	1	2	3	4	5	6	7	8
1		***		***				
2								
3								
4								
5								
6								
7								
8								

Percent sales exported 2005

Cluster	1	2	3	4	5	6	7	8
1								
2							***	
3						***		
4							***	
5								
6							***	
7								
8								

*** denotes significant differences between means of clusters.

Table A.1. Difference in means

Percent of expenses on new product introduction (incl. advertising and promotion) 2005

Cluster	1	2	3	4	5	6	7	8
1							***	
2							***	
3								
4							***	
5								
6							***	
7								***
8								

Brands owned referring to 2-9 products 2005

Cluster	1	2	3	4	5	6	7	8
1							***	
2							***	
3							***	
4							***	
5								
6							***	
7								***
8								

Corporate brands owned by firm 2005

Cluster	1	2	3	4	5	6	7	8
1								
2				***				
3				***				
4						***	***	***
5								
6								
7								
8								

Months spent on market research for new product introduction 2005

Cluster	1	2	3	4	5	6	7	8
1							***	
2							***	
3								
4							***	
5								
6							***	
7								***
8								

Total calendar time for introduction of new product 2005

Cluster	1	2	3	4	5	6	7	8
1								
2								
3								
4							***	
5								
6							***	
7								
8								

*** denotes significant differences between means of clusters.

Appendix B. Detail of correlations amongst firms' within-cluster adherence to specific strategies

Miles and Snow's strategies

Table B.1. Correlations in Miles and Snow's strategies cluster 1

		Defenders	
Cluster 1		"Research into technology and costs"	"A core of established brands with few introductions and withdrawals"
"Research into technology and costs"	**Both strategies**		0%
"A core of established brands with few introductions and withdrawals"	**Neither strategy**	20%	

		Prospectors			
Cluster 1		"Offering a range of qualities"	"An active system for new brand introductions"	"Price levels that reflect the entire product range sold to each buyer"	Research orientation
"Offering a range of qualities"	**Both strategies**		0%	0%	0%
"An active system for new brand introductions"	**Neither strategy**	80%		0%	0%
"Price levels that reflect the entire product range sold to each buyer"		80%	60%		7%
Research orientation		67%	47%	53%	

		Analysers				
Cluster 1		Quality orientation	"A core of established brands with few introductions and withdrawals"	"Specialisation in a few products"	"Attracting new consumers/buyers"	"Research into competitors' products lines"
Quality orientation	**Both strategies**		67%	60%	33%	0%
"A core of established brands with few introductions and withdrawals"	**Neither strategy**	0%		40%	20%	0%
"Specialisation in a few products"		7%	7%		27%	0%
"Attracting new consumers/buyers"		7%	13%	33%		0%
"Research into competitors' products		7%	27%	40%	67%	

Table B.2. Correlations in Miles and Snow's strategies cluster 2

Cluster 2		Defenders: "Research into technology and costs"	Defenders: "A core of established brands with few introductions and withdrawals"
"Research into technology and costs"	Both strategies		3%
"A core of established brands with few introductions and withdrawals"	Neither strategy	70%	

Cluster 2		Prospectors: "Offering a range of qualities"	Prospectors: "An active system for new brand introductions"	Prospectors: "Price levels that reflect the entire product range sold to each buyer"	Prospectors: Research orientation
"Offering a range of qualities"	Both strategies		3%	22%	5%
"An active system for new brand introductions"	Neither strategy	49%		5%	3%
"Price levels that reflect the entire product range sold to each buyer"	Neither strategy	43%	59%		8%
Research orientation	Neither strategy	51%	81%	62%	

Cluster 2		Analysers: Quality orientation	Analysers: "A core of established brands with few introductions and withdrawals"	Analysers: "Specialisation in a few products"	Analysers: "Attracting new consumers/buyers"	Analysers: "Research into competitors' products lines"
Quality orientation	Both strategies		24%	30%	14%	3%
"A core of established brands with few introductions and withdrawals"	Neither strategy	8%		16%	8%	0%
"Specialisation in a few products"	Neither strategy	11%	54%		5%	0%
"Attracting new consumers/buyers"	Neither strategy	11%	62%	57%		0%
"Research into competi-	Neither strategy	14%	68%	65%	81%	

Table B.3. Correlations in Miles and Snow's strategies cluster 3

Defenders

Cluster 3		"Research into technology and costs"	"A core of established brands with few introductions and withdrawals"
"Research into technology and costs"		**Both strategies**	
"A core of established brands with few introductions and withdrawals"	**Neither strategy**	0%	76%

Prospectors

Cluster 3		"Offering a range of qualities"	"An active system for new brand introductions"	"Price levels that reflect the entire product range sold to each buyer"	Research orientation
"Offering a range of qualities"		**Both strategies**			
"An active system for new brand introductions"	**Neither strategy**	11%	44%	56%	56%
"Price levels that reflect the entire product range sold to each buyer"		22%	11%	67%	78%
Research orientation		0%	0%	22%	78%

Analysers

Cluster 3		Quality orientation	"A core of established brands with few introductions and withdrawals"	"Specialisation in a few products"	"Attracting new consumers/buyers"	"Research into competitors' products lines"
Quality orientation		**Both strategies**				
"A core of established brands with few introductions and withdrawals"	**Neither strategy**	0%	56%	22%	89%	67%
"Specialisation in a few products"		0%	33%	11%	44%	44%
"Attracting new consumers/buyers"		0%	0%	22%	22%	11%
"Research into com-		0%	22%	22%	0%	56%

Table B.4. Correlations in Miles and Snow's strategies cluster 4

		Defenders	
Cluster 4		"Research into technology and costs"	"A core of established brands with few introductions and withdrawals"
"Research into technology and costs"	**Both strategies**		0%
"A core of established brands with few introductions and withdrawals"	**Neither strategy**	71%	

		Prospectors			
Cluster 4		"Offering a range of qualities"	"An active system for new brand introductions"	"Price levels that reflect the entire product range sold to each buyer"	Research orientation
"Offering a range of qualities"	**Both strategies**		17%	31%	3%
"An active system for new brand introductions"	**Neither strategy**	34%		14%	3%
"Price levels that reflect the entire product range sold to each buyer"		23%	31%		6%
Research orientation		40%	66%	43%	

		Analysers				
Cluster 4		Quality orientation	"A core of established brands with few introductions and withdrawals"	"Specialisation in a few products"	"Attracting new consumers/buyers"	"Research into competitors' products lines"
Quality orientation	**Both strategies**		26%	3%	80%	3%
"A core of established brands with few introductions and withdrawals"	**Neither strategy**	6%		0%	20%	0%
"Specialisation in a few products"		3%	69%		3%	3%
"Attracting new consumers/buyers"		3%	11%	14%		3%
"Research into competitors' prod-		3%	69%	91%	14%	

Table B.5. Correlations in Miles and Snow's strategies cluster 6

Cluster 6		Defenders: "Research into technology and costs"	Defenders: "A core of established brands with few introductions and withdrawals"
"Research into technology and costs"	Both strategies		9%
"A core of established brands with few introductions and withdrawals"	Neither strategy	32%	

Cluster 6		Prospectors: "Offering a range of qualities"	Prospectors: "An active system for new brand introductions"	Prospectors: "Price levels that reflect the entire product range sold to each buyer"	Prospectors: Research orientation
"Offering a range of qualities"	Both strategies		27%	23%	36%
"An active system for new brand introductions"	Neither strategy	18%		36%	41%
"Price levels that reflect the entire product range sold to each buyer"	Neither strategy	23%	9%		50%
Research orientation	Neither strategy	23%	0%	18%	

Cluster 6		Analysers: Quality orientation	Analysers: "A core of established brands with few introductions and withdrawals"	Analysers: "Specialisation in a few products"	Analysers: "Attracting new consumers/buyers"	Analysers: "Research into competitors' products lines"
Quality orientation	Both strategies		55%	14%	73%	32%
"A core of established brands with few introductions and withdrawals"	Neither strategy	5%		9%	41%	14%
"Specialisation in a few products"	Neither strategy	5%	41%		14%	5%
"Attracting new consumers/buyers"	Neither strategy	5%	14%	27%		18%
"Research into competitors' products	Neither strategy	0%	23%	55%	9%	

.

Table B.6. Correlations in Miles and Snow's strategies cluster 7

Defenders

Cluster 7		"Research into technology and costs"	"A core of established brands with few introductions and withdrawals"
		Both strategies	
"Research into technology and costs"	**Neither strategy**		100%
"A core of established brands with few introductions and withdrawals"		0%	

Prospectors

Cluster 7		"Offering a range of qualities"	"An active system for new brand introductions"	"Price levels that reflect the entire product range sold to each buyer"	Research orientation
		Both strategies			
"Offering a range of qualities"	**Neither strategy**		57%	57%	71%
"An active system for new brand introductions"		0%		71%	86%
"Price levels that reflect the entire product range sold to each buyer"		0%	0%		86%
Research orientation		0%	0%	0%	

Analysers

Cluster 7		Quality orientation	"A core of established brands with few introductions and withdrawals"	"Specialisation in a few products"	"Attracting new consumers/buyers"	"Research into competitors' products lines"
		Both strategies				
Quality orientation	**Neither strategy**		100%	43%	100%	100%
"A core of established brands with few introductions and withdrawals"		0%		43%	100%	100%
"Specialisation in a few products"		0%	0%		43%	43%
"Attracting new consumers/buyers"		0%	0%	0%		100%
"Research into competitors' products		0%	0%	0%	0%	

Table B.7. Correlations in Miles and Snow's strategies cluster 8

Defenders

Cluster 8		"Research into technology and costs"	"A core of established brands with few introductions and withdrawals"
"Research into technology and costs"	**Both strategies**		
	Neither strategy		20%
"A core of established brands with few introductions and withdrawals"	**Neither strategy**	40%	

Prospectors

Cluster 8		"Offering a range of qualities"	"An active system for new brand introductions"	"Price levels that reflect the entire product range sold to each buyer"	Research orientation
"Offering a range of qualities"	**Both strategies**				
	Neither strategy		0%	80%	80%
"An active system for new brand introductions"	**Neither strategy**	0%		0%	0%
"Price levels that reflect the entire product range sold to each buyer"	**Neither strategy**	0%	20%		60%
Research orientation	**Neither strategy**	0%	20%	0%	

Analysers

Cluster 8		Quality orientation	"A core of established brands with few introductions and withdrawals"	"Specialisation in a few products"	"Attracting new consumers/buyers"	"Research into competitors' products lines"
Quality orientation	**Both strategies**					
	Neither strategy		40%	80%	0%	40%
"A core of established brands with few introductions and withdrawals"	**Neither strategy**	0%		20%	0%	0%
"Specialisation in a few products"	**Neither strategy**	0%	0%		0%	40%
"Attracting new consumers/buyers"	**Neither strategy**	0%	60%	20%		0%
"Research into competi-	**Neither strategy**	0%	20%	20%	60%	

Porter's strategies

Table B.8. Correlations in Porter's strategies cluster 1

			Cost leadership	
Cluster 1		Costs orientation	"Selling at lower prices than the competition"	"Growth in market share by pricing behaviour"
		Both strategies		
Costs orientation	**Neither strategy**		0%	7%
"Selling at lower prices than the competition"	**Neither strategy**	20%		0%
"Growth in market share by pricing behaviour"	**Neither strategy**	20%	93%	

			Differentation			
Cluster 1		Brands orientation	Research orientation	"Delivering higher quality than any competitors"	"Somewhat high prices that reflect convenience, quality and service"	"Growth in market share by non-price competition"
		Both strategies				
Brands orientation	**Neither strategy**		27%	60%	67%	7%
Research orientation	**Neither strategy**	7%		20%	33%	60%
"Delivering higher quality than any competitors"	**Neither strategy**	13%	27%		47%	0%
"Somewhat high prices that reflect convenience, quality and service"	**Neither strategy**	0%	20%	7%		13%
"Growth in market share by non-price competition"	**Neither strategy**	7%	7%	27%	20%	

			Focus			
Cluster 1		"A focus on information-sharing with buyers"	"Internal information systems focused on buyer requirements"	"Specialisation in a narrow area of staff skills"	"Building loyalty amongst existing consumers/ buyers"	"Growth in market share maintaining close relationships to buyers"
		Both strategies				
"A focus on information-sharing with buyers"	**Neither strategy**		27%	27%	40%	40%
"Internal information systems focused on buyer requirements"	**Neither strategy**	27%		13%	7%	13%
"Specialisation in a narrow area of staff skills"	**Neither strategy**	13%	47%		27%	33%
"Building loyalty amongst existing consumers/buyers"	**Neither strategy**	7%	20%	27%		33%
"Growth in market share maintaining close	**Neither strategy**	7%	7%	33%	13%	

Table B.9. Correlations in Porter's strategies cluster 2

Cluster 2		Costs orientation	"Selling at lower prices than the competition"	"Growth in market share by pricing behaviour"
		Cost leadership		
		Both strategies		
Costs orientation	**Neither strategy**		5%	11%
"Selling at lower prices than the competition"		27%		0%
"Growth in market share by pricing behaviour"		32%	78%	

Cluster 2		Brands orientation	Research orientation	"Delivering higher quality than any competitors"	"Somewhat high prices that reflect convenience, quality and service"	"Growth in market share by non-price competition"
		Differentation				
		Both strategies				
Brands orientation	**Neither strategy**		5%	27%	14%	3%
Research orientation		49%		5%	3%	0%
"Delivering higher quality than any competitors"		35%	49%		19%	3%
"Somewhat high prices that reflect convenience, quality and service"		41%	65%	46%		3%
"Growth in market share by non-price competition"		51%	84%	51%	70%	

Cluster 2		"A focus on information-sharing with buyers"	"Internal information systems focused on buyer requirements"	"Specialisation in a narrow area of staff skills"	"Building loyalty amongst existing consumers/ buyers"	"Growth in market share maintaining close relationships to buyers"
		Focus				
		Both strategies				
"A focus on information-sharing with buyers"	**Neither strategy**		0%	0%	5%	5%
"Internal information systems focused on buyer requirements"		76%		0%	3%	0%
"Specialisation in a narrow area of staff skills"		73%	92%		0%	0%
"Building loyalty amongst existing consumers/buyers"		68%	44%	78%		8%
"Growth in market share maintaining close		70%	84%	81%	78%	

Table B.10. Correlations in Porter's strategies cluster 3

Cost leadership

Cluster 3		Costs orientation	"Selling at lower prices than the competition"	"Growth in market share by pricing behaviour"
		Both strategies		
Costs orientation	**Neither strategy**		0%	11%
"Selling at lower prices than the competition"		0%		0%
"Growth in market share by pricing behaviour"		0%	89%	

Differentiation

Cluster 3		Brands orientation	Research orientation	"Delivering higher quality than any competitors"	"Somewhat high prices that reflect convenience, quality and service"	"Growth in market share by non-price competition"
		Both strategies				
Brands orientation	**Neither strategy**		100%	67%	56%	33%
Research orientation		0%		67%	56%	33%
"Delivering higher quality than any competitors"		0%	0%		56%	22%
"Somewhat high prices that reflect convenience, quality and service"		0%	0%	33%		22%
"Growth in market share by non-price competition"		0%	0%	22%	33%	

Focus

Cluster 3		"A focus on information-sharing with buyers"	"Internal information systems focused on buyer requirements"	"Specialisation in a narrow area of staff skills"	"Building loyalty amongst existing consumers/ buyers"	"Growth in market share maintaining close relationships to buyers"
		Both strategies				
"A focus on information-sharing with buyers"	**Neither strategy**		33%	44%	78%	56%
"Internal information systems focused on buyer requirements"		22%		11%	33%	22%
"Specialisation in a narrow area of staff skills"		22%	33%		44%	22%
"Building loyalty amongst existing consumers/buyers"		0%	0%	0%		67%
"Growth in market share maintaining close relationships to		11%	22%	11%	0%	

Table B.11. Correlations in Porter's strategies cluster 4

Cost leadership

Cluster 4		Costs orientation	"Selling at lower prices than the competition"	"Growth in market share by pricing behaviour"
	Both strategies			
Costs orientation	**Neither strategy**		17%	34%
"Selling at lower prices than the competition"		9%		9%
"Growth in market share by pricing behaviour"		9%	57%	

Differentation

Cluster 4		Brands orientation	Research orientation	"Delivering higher quality than any competitors"	"Somewhat high prices that reflect convenience, quality and service"	"Growth in market share by non-price competition"
	Both strategies					
Brands orientation	**Neither strategy**		3%	29%	17%	14%
Research orientation		31%		3%	0%	0%
"Delivering higher quality than any competitors"		20%	49%		14%	11%
"Somewhat high prices that reflect convenience, quality and service"		20%	57%	34%		6%
"Growth in market share by non-price competetion"		34%	74%	49%	54%	

Focus

Cluster 4		"A focus on information-sharing with buyers"	"Internal information systems focused on buyer requirements"	"Specialisation in a narrow area of staff skills"	"Building loyalty amongst existing consumers/ buyers"	"Growth in market share maintaining close relationships to buyers"
"A focus on information-sharing with buyers"	**Both strategies**		9%	0%	17%	17%
"Internal information systems focused on buyer requirements"	**Neither strategy**	69%		0%	11%	11%
"Specialisation in a narrow area of staff skills"		63%	74%		11%	3%
"Building loyalty amongst existing consumers/buyers"		6%	11%	14%		37%
"Growth in market share maintaining close rela-		40%	46%	40%	0%	

Table B.12. Correlations in Porter's strategies cluster 6

Cost leadership

Cluster 6		Costs orientation	"Selling at lower prices than the competition"	"Growth in market share by pricing behaviour"
		Both strategies		
Costs orientation	**Neither strategy**		5%	45%
"Selling at lower prices than the competition"		14%		5%
"Growth in market share by pricing behaviour"		9%	50%	

Differentation

Cluster 6		Brands orientation	Research orientation	"Delivering higher quality than any competitors"	"Somewhat high prices that reflect convenience, quality and service"	"Growth in market share by non-price competition"
		Both strategies				
Brands orientation	**Neither strategy**		59%	64%	68%	27%
Research orientation		0%		45%	50%	9%
"Delivering higher quality than any competitors"		5%	0%		64%	223%
"Somewhat high prices that reflect convenience, quality and service"		5%	0%	14%		27%
"Growth in market share by non-price competition"		14%	9%	23%	23%	

Focus

Cluster 6		"A focus on information-sharing with buyers"	"Internal information systems focused on buyer requirements"	"Specialisation in a narrow area of staff skills"	"Building loyalty amongst existing consumers/ buyers"	"Growth in market share maintaining close relationships to buyers"
		Both strategies				
"A focus on information-sharing with buyers"	**Neither strategy**		45%	41%	77%	68%
"Internal information systems focused on buyer requirements"		14%		32%	36%	41%
"Specialisation in a narrow area of staff skills"		9%	41%		36%	41%
"Building loyalty amongst existing consumers/buyers"		0%	0%	0%		68%
"Growth in market share maintaining close relationships to		5%	18%	18%	0%	

Table B.13. Correlations in Porter's strategies cluster 7

Cost leadership

Cluster 7		Costs orientation	"Selling at lower prices than the competition"	"Growth in market share by pricing behaviour"
		Both strategies		
Costs orientation	**Neither strategy**		29%	71%
"Selling at lower prices than the competition"		0%		29%
"Growth in market share by pricing behaviour"		0%	29%	

Differentation

Cluster 7		Brands orientation	Research orientation	"Delivering higher quality than any competitors"	"Somewhat high prices that reflect convenience, quality and service"	"Growth in market share by non-price competition"
		Both strategies				
Brands orientation	**Neither strategy**		100%	71%	100%	86%
Research orientation		0%		71%	100%	86%
"Delivering higher quality than any competitors"		0%	0%		71%	57%
"Somewhat high prices that reflect convenience, quality and service"		0%	0%	0%		86%
"Growth in market share by non-price competition"		0%	0%	0%	0%	

Focus

Cluster 7		"A focus on information-sharing with buyers"	"Internal information systems focused on buyer requirements"	"Specialisation in a narrow area of staff skills"	"Building loyalty amongst existing consumers/ buyers"	"Growth in market share maintaining close relationships to buyers"
		Both strategies				
"A focus on information-sharing with buyers"	**Neither strategy**		86%	71%	86%	86%
"Internal information systems focused on buyer requirements"		0%		86%	100%	100%
"Specialisation in a narrow area of staff skills"		0%	0%		86%	86%
"Building loyalty amongst existing consumers/buyers"		0%	0%	0%		100%
"Growth in market share maintaining close relationships to		0%	0%	0%	0%	

Table B.14. Correlations in Porter's strategies cluster 8

Cost leadership

Cluster 8		Costs orientation	"Selling at lower prices than the competition"	"Growth in market share by pricing behaviour"
		Both strategies		
Costs orientation	**Neither strategy**		60%	0%
"Selling at lower prices than the competition"		0%		0%
"Growth in market share by pricing behaviour"		0%	40%	

Differentation

Cluster 8		Brands orientation	Research orientation	"Delivering higher quality than any competitors"	"Somewhat high prices that reflect convenience, quality and service"	"Growth in market share by non-price competition"
		Both strategies				
Brands orientation	**Neither strategy**		40%	20%	40%	20%
Research orientation		20%		40%	60%	20%
"Delivering higher quality than any competitors"		40%	20%		20%	0%
"Somewhat high prices that reflect convenience, quality and service"		40%	20%	20%		20%
"Growth in market share by non-price competition"		60%	20%	40%	40%	

Focus

Cluster 8		"A focus on information-sharing with buyers"	"Internal information systems focused on buyer requirements"	"Specialisation in a narrow area of staff skills"	"Building loyalty amongst existing consumers/ buyers"	"Growth in market share maintaining close relationships to buyers"
		Both strategies				
"A focus on information-sharing with buyers"	**Neither strategy**		40%	0%	0%	60%
"Internal information systems focused on buyer requirements"		40%		0%	0%	40%
"Specialisation in a narrow area of staff skills"		40%	60%		0%	0%
"Building loyalty amongst existing consumers/buyers"		20%	40%	80%		20%
"Growth in market share maintaining close relationships		20%	20%	20%	20%	

Downes' strategies

Table B.15. Correlations in Downes' strategies cluster 1

		Globalization			
Cluster 1		"Building loyalty amongst existing consumers/buyers"	"Growth in market share maintaining close relationship to buyers"	"A focus on information-sharing with suppliers"	"A focus on information-sharing with buyers"
"Building loyalty amongst existing consumers/buyers"	**Both strategies**		33%	13%	40%
"Growth in market share maintaining close relationship to buyers"	**Neither strategy**	13%		13%	40%
"A focus on information-sharing with suppliers"		20%	20%		33%
"A focus on information-sharing with		7%	7%	27%	

Table B.16. Correlations in Downes' strategies cluster 2

		Globalization			
Cluster 2		"Building loyalty amongst existing consumers/buyers"	"Growth in market share maintaining close relationship to buyers"	"A focus on information-sharing with suppliers"	"A focus on information-sharing with buyers"
"Building loyalty amongst existing consumers/buyers"	**Both strategies**		8%	0%	5%
"Growth in market share maintaining close relationship to buyers"	**Neither strategy**	78%		27%	5%
"A focus on information-sharing with suppliers"		73%	78%		8%
"A focus on information-sharing with buyers"		68%	70%	76%	

Table B.17. Correlations in Downes' strategies cluster 3

Cluster 3		Globalization: "Building loyalty amongst existing consumers/buyers"	"Growth in market share maintaining close relationship to buyers"	"A focus on information-sharing with suppliers"	"A focus on information-sharing with buyers"
"Building loyalty amongst existing consumers/buyers"	Both strategies		67%	67%	78%
"Growth in market share maintaining close relationship to buyers"	Neither strategy	0%		56%	56%
"A focus on information-sharing with suppliers"	Neither strategy	0%	22%		67%
"A focus on information-sharing with buyers"	Neither strategy	0%	11%	22%	

Table B.18. Correlations in Downes' strategies cluster 4

Cluster 4		Globalization: "Building loyalty amongst existing consumers/buyers"	"Growth in market share maintaining close relationship to buyers"	"A focus on information-sharing with suppliers"	"A focus on information-sharing with buyers"
"Building loyalty amongst existing consumers/buyers"	Both strategies		37%	43%	17%
"Growth in market share maintaining close relationship to buyers"	Neither strategy	0%		29%	17%
"A focus on information-sharing with suppliers"	Neither strategy	6%	26%		23%
"A focus on information-sharing with buyers"	Neither strategy	6%	40%	46%	

Table B.19. Correlations in Downes' strategies cluster 6

Cluster 6		Globalization: "Building loyalty amongst existing consumers/buyers"	"Growth in market share maintaining close relationship to buyers"	"A focus on information-sharing with suppliers"	"A focus on information-sharing with buyers"
"Building loyalty amongst existing consumers/buyers"	Both strategies		68%	59%	77%
"Growth in market share maintaining close relationship to buyers"	Neither strategy	0%		50%	68%
"A focus on information-sharing with suppliers"	Neither strategy	5%	9%		59%
"A focus on information-sharing with buyers"	Neither strategy	0%	5%	9%	

Table B.20. Correlations in Downes' strategies cluster 7

		Globalization			
Cluster 7		"Building loyalty amongst existing consum-ers/buyers"	"Growth in market share maintaining close relationship to buyers"	"A focus on information-sharing with suppliers"	"A focus on information-sharing with buyers"
"Building loyalty amongst existing consum-ers/buyers"	**Both strategies**				
"Growth in market share maintaining close rela-tionship to buyers"	**Neither strategy**	0%		86%	86%
"A focus on information-sharing with suppliers"	**Neither strategy**	0%	0%		71%
"A focus on information-sharing with buyers"	**Neither strategy**	0%	0%	0%	

Table B.21. Correlations in Downes' strategies cluster 8

		Globalization			
Cluster 8		"Building loyalty amongst existing consum-ers/buyers"	"Growth in market share maintaining close relationship to buyers"	"A focus on information-sharing with suppliers"	"A focus on information-sharing with buyers"
"Building loyalty amongst existing consum-ers/buyers"	**Both strategies**				
"Growth in market share maintaining close rela-tionship to buyers"	**Neither strategy**	20%		60%	60%
"A focus on information-sharing with suppliers"	**Neither strategy**	20%	20%		60%
"A focus on information-sharing with buyers"	**Neither strategy**	20%	20%	40%	

Strandskov et al.'s strategies

Table B.22. Correlations in Strandskov et al.'s strategies cluster 1

	Where to compete						
Cluster 1	"Specialisation in retailers' own-label brands"		"Specialisation in few products"				
"Specialisation in retailers' own-label brands"	Both strategies						
	Neither strategy		13%				
"Specialisation in few products"		40%					
	How to compete						
Cluster 1	"Growth in market share by merger and acquisition"	"Growth in market share by pricing behavior"	"Growth in market share by non-price competition (e.g. advertising & promotion)"	"Growth in market share maintaining close relationships to buyers"	"An active system for new brand introductions"	"A core of established brands with few introductions and withdrawals"	"Building loyalty amongst existing consumers/ buyers"
"Growth in market share by merger and acquisition"	**Both strategies**	0%	0%	0%	0%	0%	0%
"Growth in market share by pricing behavior"	93%		7%	7%	0%	0%	7%
"Growth in market share by non-price competition (e.g. advertising and promotion)"	87%	87%		13%	0%	7%	7%
"Growth in market share maintaining close relationships to buyers"	40%	40%	40%		7%	40%	33%
"An active system for new brand introductions"	80%	73%	67%	27%		13%	13%
"A core of established brands with few introductions and withdrawals"	27%	20%	20%	7%	20%		47%
"Building loyalty amongst existing consumers/	40%	40%	33%	13%	33%	13%	

Table B.23. Correlations in Strandskov et al.'s strategies cluster 2

			Where to compete					
Cluster 2	"Specialisation in retailers' own-label brands"			"Specialisation in few products"				
	Both strategies							
"Specialisation in retailers' own-label brands"	**Neither strategy**			5%				
"Specialisation in few products"		65%						
	How to compete							
Cluster 2	"Growth in market share by merger and acquisition"		"Growth in market share by pricing behavior"	"Growth in market share by non-price competition (e.g. advertising & promotion)"	"Growth in market share maintaining close relationships to buyers"	"An active system for new brand introductions"	"A core of established brands with few introductions and withdrawals"	"Building loyalty amongst existing consumers/ buyers"
"Growth in market share by merger and acquisition"	**Both strategies**							
"Growth in market share by pricing behavior"	**Neither strategy**	89%		3%	5%	0%	3%	3%
"Growth in market share by non-price competition (e.g. advertising and promotion)"		95%	86%		0%	3%	3%	0%
"Growth in market share maintaining close relationships to buyers"		86%	81%	81%		3%	5%	8%
"An active system for new brand introductions"		89%	78%	86%	78%		3%	0%
"A core of established brands with few introductions and withdrawals"		70%	62%	68%	62%	62%		11%
"Building loyalty amongst existing consumers/ buyers"		84%	76%	78%	78%	73%	65%	

Table B.24. Correlations in Strandskov et al.'s strategies cluster 3

		Where to compete	
Cluster 3		"Specialisation in retailers' own-label brands"	"Specialisation in few products"
"Specialisation in retailers' own-label brands"		**Both strategies**	
	Neither strategy		11%
"Specialisation in few products"		33%	

		How to compete					
Cluster 3		"Growth in market share by merger and acquisition"	"Growth in market share by pricing behavior"	"Growth in market share by non-price competition (e.g. advertising & promotion)"	"Growth in market share maintaining close relationships to buyers"	"An active system for new brand introductions"	"A core of established brands with few introductions and withdrawals"	"Building loyalty amongst existing consumers/ buyers"
"Growth in market share by merger and acquisition"	**Both strategies**							
"Growth in market share by pricing behavior"	**Neither strategy**	78%		0%	11%	0%	0%	11%
"Growth in market share by non-price competition (e.g. advertising and promotion)"		44%	56%		22%	22%	22%	33%
"Growth in market share maintaining close relationships to buyers"		33%	33%	22%		56%	44%	67%
"An active system for new brand introductions"		11%	11%	11%	11%		56%	78%
"A core of established brands with few introductions and withdrawals"		22%	33%	33%	22%	22%		56%
"Building loyalty amongst existing consumers/ buyers"		0%	0%	0%	0%	0%	0%	

Table B.25. Correlations in Strandskov et al.'s strategies cluster 4

	Where to compete	
Cluster 4	"Specialisation in retailers' own-label brands"	"Specialisation in few products"
"Specialisation in retailers' own-label brands"	**Both strategies**	
"Specialisation in few products"	**Neither strategy**: 63%	0%

	How to compete						
Cluster 4	"Growth in market share by merger and acquisition"	"Growth in market share by pricing behavior"	"Growth in market share by non-price competition (e.g. advertising & promotion)"	"Growth in market share maintaining close relationships to buyers"	"An active system for new brand introductions"	"A core of established brands with few introductions and withdrawals"	"Building loyalty amongst existing consumers/ buyers"
"Growth in market share by merger and acquisition"	**Both strategies**						
"Growth in market share by pricing behavior"	**Neither strategy**: 49%		14%	17%	11%	11%	26%
"Growth in market share by non-price competition (e.g. advertising and promotion)"	60%	63%		14%	9%	3%	11%
"Growth in market share maintaining close relationships to buyers"	34%	31%	46%		14%	20%	37%
"An active system for new brand introductions"	51%	49%	63%	34%		3%	23%
"A core of established brands with few introductions and withdrawals"	49%	51%	60%	43%	49%		26%
"Building loyalty amongst existing consumers/ buyers"	6%	6%	9%	0%	9%	14%	

Table B.26. Correlations in Strandskov et al.'s strategies cluster 6

		Where to compete	
Cluster 6		"Specialisation in retailers' own-label brands"	"Specialisation in few products"
"Specialisation in retailers' own-label brands"	**Both strategies**		
"Specialisation in few products"	**Neither strategy**	59%	14%

		How to compete						
Cluster 6		"Growth in market share by merger and acquisition"	"Growth in market share by pricing behavior"	"Growth in market share by non-price competition (e.g. advertising & promotion)"	"Growth in market share maintaining close relationships to buyers"	"An active system for new brand introductions"	"A core of established brands with few introductions and withdrawals"	"Building loyalty amongst existing consumers/ buyers"
"Growth in market share by merger and acquisition"	**Both strategies**		14%	5%	14%	9%	9%	18%
"Growth in market share by pricing behavior"		45%		9%	45%	32%	23%	41%
"Growth in market share by non-price competition (e.g. advertising and promotion)"		59%	32%		27%	27%	18%	27%
"Growth in market share maintaining close relationships to buyers"		18%	18%	23%		50%	41%	68%
"An active system for new brand introductions"		23%	14%	32%	5%		9%	32%
"A core of established brands with few introductions and withdrawals"		36%	18%	36%	9%	23%		50%
"Building loyalty amongst existing consumers/ buyers"		9%	0%	9%	0%	14%	5%	

Table B.27. Correlations in Strandskov et al.'s strategies cluster 7

Where to compete

Cluster 7	"Specialisation in retailers' own-label brands"	"Specialisation in few products"
"Specialisation in retailers' own-label brands"	**Both strategies**	0%
"Specialisation in few products"	29%	

	How to compete						
Cluster 7	"Growth in market share by merger and acquisition"	"Growth in market share by pricing behavior"	"Growth in market share by non-price competition (e.g. advertising & promotion)"	"Growth in market share maintaining close relationships to buyers"	"An active system for new brand introductions"	"A core of established brands with few introductions and withdrawals"	"Building loyalty amongst existing consumers/ buyers"
"Growth in market share by merger and acquisition"	**Both strategies**	29%	29%	43%	29%	43%	43%
"Growth in market share by pricing behavior"	14%		57%	71%	57%	71%	71%
"Growth in market share by non-price competition (e.g. advertising and promotion)"	0%	0%		86%	86%	86%	86%
"Growth in market share maintaining close relationships to buyers"	0%	0%	0%		86%	100%	100%
"An active system for new brand introductions"	0%	0%	14%	0%		86%	86%
"A core of established brands with few introductions and withdrawals"	0%	0%	0%	0%	0%		100%
"Building loyalty amongst existing consumers/ buyers"	0%	0%	0%	0%	0%	0%	

Neither strategy

Table B.28. Correlations in Strandskov et al.'s strategies cluster 8

Where to compete

Cluster 8	"Specialisation in retailers' own-label brands"	"Specialisation in few products"
"Specialisation in retailers' own-label brands"	**Both strategies**	
"Specialisation in few products"	**Neither strategy**: 20%	0%

How to compete

Cluster 8	"Growth in market share by merger and acquisition"	"Growth in market share by pricing behavior"	"Growth in market share by non-price competition (e.g. advertising & promotion)"	"Growth in market share maintaining close relationships to buyers"	"An active system for new brand introductions"	"A core of established brands with few introductions and withdrawals"	"Building loyalty amongst existing consumers/ buyers"
"Growth in market share by merger and acquisition"	**Both strategies**						
"Growth in market share by pricing behavior"	**Neither strategy**: 20%		0%	0%	100%	0%	0%
"Growth in market share by non-price competition (e.g. advertising and promotion)"	20%	80%		20%	0%	20%	20%
"Growth in market share maintaining close relationships to buyers"	20%	20%	20%		0%	40%	20%
"An active system for new brand introductions"	20%	0%	80%	20%		0%	0%
"A core of established brands with few introductions and withdrawals"	20%	60%	60%	20%	60%		20%
"Building loyalty amongst existing consumers/	20%	80%	80%	20%	80%	60%	

Gehlbar et al.'s strategies

Table B.29. Correlations in Gehlbar et al.'s strategies cluster 1

		Product differentiation	
Cluster 1		"Specialisation in a narrow area of staff skills"	"Specialisation based on specific raw material"
		Both strategies	
"Specialisation in a narrow area of staff skills"	**Neither strategy**		27%
"Specialisation based on specific raw material"		13%	

Table B.30. Correlations in Gehlbar et al.'s strategies cluster 2

		Product differentiation	
Cluster 2		"Specialisation in a narrow area of staff skills"	"Specialisation based on specific raw material"
		Both strategies	
"Specialisation in a narrow area of staff skills"	**Neither strategy**		3%
"Specialisation based on specific raw material"		65%	

Table B.31. Correlations in Gehlbar et al.'s strategies cluster 3

	Product differentiation	
Cluster 3	"Specialisation in a narrow area of staff skills"	"Specialisation based on specific raw material"
	Both strategies	
"Specialisation in a narrow area of staff skills"		44%
"Specialisation based on specific raw material"	33%	

Neither strategy

Table B.32. Correlations in Gehlbar et al.'s strategies cluster 4

	Product differentiation	
Cluster 4	"Specialisation in a narrow area of staff skills"	"Specialisation based on specific raw material"
	Both strategies	
"Specialisation in a narrow area of staff skills"		0%
"Specialisation based on specific raw material"	86%	

Neither strategy

Table B.33. Correlations in Gehlbar et al.'s strategies cluster 6

		Product differentiation	
Cluster 6		"Specialisation in a narrow area of staff skills"	"Specialisation based on specific raw material"
		Both strategies	
"Specialisation in a narrow area of staff skills"	**Neither strategy**		18%
"Specialisation based on specific raw material"		45%	

Table B.34. Correlations in Gehlbar et al.'s strategies cluster 7

		Product differentiation	
Cluster 7		"Specialisation in a narrow area of staff skills"	"Specialisation based on specific raw material"
		Both strategies	
"Specialisation in a narrow area of staff skills"	**Neither strategy**		43%
"Specialisation based on specific raw material"		14%	

Table B.35. Correlations in Gehlbar et al.'s strategies cluster 8

	Product differentiation	
Cluster 8	"Specialisation in a narrow area of staff skills"	"Specialisation based on specific raw material"
	Both strategies	
"Specialisation in a narrow area of staff skills"	**Neither strategy**	0%
"Specialisation based on specific raw material"	40%	

Avermaete et al's strategies

Table B.36. Correlations Avermaete et al.'s strategies cluster 1

Cluster 1		Regulation: Regulation orientation	"Avoiding heavily-regulated products, processes and markets"	"Anticipating regulation"	"Shifting costs of regulation to suppliers"	"Passing on costs of regulation to buyers"
Regulation orientation	Both strategies		40%	53%	13%	53%
"Avoiding heavily-regulated products, processes and markets"	Neither strategy	7%		20%	13%	20%
"Anticipating regulation"	Neither strategy	7%	27%		13%	20%
"Shifting costs of regulation to suppliers"	Neither strategy	7%	60%	47%		0%
"Passing on costs of	Neither strategy	7%	27%	13%	33%	

Table B.37. Correlations Avermaete et al.'s strategies cluster 2

Cluster 2		Regulation: Regulation orientation	"Avoiding heavily-regulated products, processes and markets"	"Anticipating regulation"	"Shifting costs of regulation to suppliers"	"Passing on costs of regulation to buyers"
Regulation orientation	Both strategies		0%	5%	3%	0%
"Avoiding heavily-regulated products, processes and markets"	Neither strategy	86%		0%	0%	0%
"Anticipating regulation"	Neither strategy	86%	95%		0%	0%
"Shifting costs of regulation to suppliers"	Neither strategy	86%	97%	92%		0%
"Passing on costs of regulation to	Neither strategy	86%	100%	95%	97%	

Table B.38. Correlations Avermaete et al.'s strategies cluster 3

Cluster 3		Regulation orientation	"Avoiding heavily-regulated products, processes and markets"	"Anticipating regulation"	"Shifting costs of regulation to suppliers"	"Passing on costs of regulation to buyers"
Regulation orientation	**Both strategies**					
	Neither strategy		11%	67%	22%	44%
"Avoiding heavily-regulated products, processes and markets"		11%		11%	0%	0%
"Anticipating regulation"		11%	33%		11%	33%
"Shifting costs of regulation to suppliers"		11%	67%	22%		11%
"Passing on costs of regulation to		11%	44%	22%	44%	

Table B.39. Correlations Avermaete et al.'s strategies cluster 4

		Regulation				
Cluster 4		Regulation orientation	"Avoiding heavily-regulated products, processes and markets"	"Anticipating regulation"	"Shifting costs of regulation to suppliers"	"Passing on costs of regulation to buyers"
Regulation orientation	**Both strategies**					
	Neither strategy		14%	11%	3%	9%
"Avoiding heavily-regulated products, processes and markets"		69%		3%	0%	3%
"Anticipating regulation"		69%	77%		0%	3%
"Shifting costs of regulation to suppliers"		69%	83%	86%		0%

Table B.40. Correlations Avermaete et al.'s strategies cluster 6

Cluster 6		Regulation orientation	"Avoiding heavily-regulated products, processes and markets"	"Anticipating regulation"	"Shifting costs of regulation to suppliers"	"Passing on costs of regulation to buyers"
Regulation orientation	Both strategies		41%	59%	18%	55%
"Avoiding heavily-regulated products, processes and markets"	Neither strategy	14%		27%	5%	32%
"Anticipating regulation"	Neither strategy	14%	27%		9%	36%
"Shifting costs of regulation to suppliers"	Neither strategy	14%	45%	32%		14%
"Passing on costs of regula-	Neither strategy	14%	36%	23%	41%	

Table B.41. Correlations Avermaete et al.'s strategies cluster 7

Cluster 7		Regulation orientation	"Avoiding heavily-regulated products, processes and markets"	"Anticipating regulation"	"Shifting costs of regulation to suppliers"	"Passing on costs of regulation to buyers"
Regulation orientation	Both strategies		0%	100%	72%	57%
"Avoiding heavily-regulated products, processes and markets"	Neither strategy	0%		0%	0%	0%
"Anticipating regulation"	Neither strategy	0%	0%		71%	57%
"Shifting costs of regulation to suppliers"	Neither strategy	0%	29%	0%		43%
"Passing on costs of	Neither strategy	0%	43%	0%	14%	

Table B.42. Correlations Avermaete et al.'s strategies cluster 8

		Regulation				
Cluster 8		Regulation orientation	"Avoiding heavily-regulated products, processes and markets"	"Anticipating regulation"	"Shifting costs of regulation to suppliers"	"Passing on costs of regulation to buyers"
Regulation orientation	**Both strategies**					
	Neither strategy		40%	100%	80%	40%
"Avoiding heavily-regulated products, processes and markets"		0%		40%	20%	20%
"Anticipating regulation"		0%	0%		80%	40%
"Shifting costs of regulation to suppliers"		0%	0%	0%		40%
"Passing on costs of		0%	40%	0%	20%	