

The Strategic Planning-Environment-Performance Relationship Re-visited in HTSFs

Nicholas O'Regan*, Martin A. Sims David Gallear *****

Middlesex University Business School*

Hertfordshire University Business School**

Brunel Business School***

* Corresponding author N.O'Regan@mdx.ac.uk
Telephone 00 44 208 411 6162

Nicholas O'Regan is Professor of Strategic Management at Middlesex University Business School. His research interests include the organisational culture, leadership and the strategic planning processes of small and medium sized organisations.

Martin Sims is Senior Research Fellow at Hertfordshire University Business School. His research interests include the advancement of competitive advantage in manufacturing SMEs.

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Abstract

Recent research has shown that the degree of strategic planning within a company has a significant impact on performance of HTSFs. However, external operating environmental threats are often ignored or at best marginalized by firms, often leading to a negative impact on corporate performance.

This paper develops and tests a methodology using a number of characteristic footprints to represent the emphasis on strategic planning, financial performance and the observance of external threats from the operating environment. The footprints are used to assess the link between the variables and overall corporate performance. The paper uses a new approach to multi-variate analysis based on the conditional formatting of spreadsheets and the use of nested logical operators for complex comprehension as well as established statistical techniques.

The findings indicate that the degree of awareness of external environmental threats is associated with the degree of emphasis on the strategic planning process. The findings also show that strategic planning is positively linked to overall corporate performance.

Key words: strategy, planning, environment, performance

Introduction

Over the past two decades, academics, consultants and business practitioners have stressed the challenges facing business. Porter (1991:111) states 'the starting point for the [dynamic] theory is that environmental change is relentless'. This statement encompasses the challenges facing most companies as they seek to grapple with change. D'Aveni (1994) sees intense and rapid competitive activity as 'hypercompetition'. Another strategy guru, Peter Drucker (1999:ix) agrees and says that 'we live in a period of profound transition'. Changing environmental conditions impact on most, if not all companies, leading to a greater emphasis on external environment, strategic direction and overall performance. Firms have already sought to address their internal environment by a series of continuous improvements to minimize operating costs. Rigby (2003) commenting on the Bain and Co, annual survey of business executives, states 'surprisingly, given the pressure to control expenses, executive's choice of tools shows a clear bias towards growth over cost cutting. The message is moving ahead, not retrenching...'

Gavetti et al (2005) suggests that strategy making is most critical in times of change and in unfamiliar environments. In a critical review of the strategic planning literature, Mintzberg (1994) comments that the 'missing detail' in the area is an understanding of how strategies are made. This echoes Capon et al (1990:1158) who conclude that the role of organizations in strategic planning is 'badly in need of more work'. Accordingly, one would expect strategy making to be growing in importance in firms of all sizes. Research on strategic planning yields a mixed picture. Some findings stress the benefits of strategic planning in an increasingly turbulent and competitive business environment (Timmons et al, 1987; Robinson and Pearce, 1988; Armstrong, 1982). However, the literature suggests that the level of planning in smaller firms including HTSFs is low – Perry, (2001), Bhide, (1994), Robinson and Pearce (1984).

The awareness and understanding of the external operating environment is of the utmost importance to firms, to enable business leaders to align their firm's strategies with external environment conditions – Bettis and Hitt (1995), Wholey and Brittain (1989). The importance of the external operating environment cannot be understated, and directly impacts on decision making processes as well as decisions taken – Eisenhardt (1989), Bogner & Barr (2000).

The paper is organized into five sections. Strategy, environment and performance constructs are discussed in the next three sections followed by a section on

methodology and data collection. Analysis using dynamic normative analysis (DNA) comes next followed by conclusions.

Strategy

Strategy is depicted as a set of beliefs on how a firm can achieve success – Wood and Joyce (2003). This is consistent with the contention that strategy involves significant intuition and philosophical thinking – Brockman and Anthony 2002, Beaver, (2003). However, it is much more than beliefs and encompasses ‘a deliberate search for a plan of action that will develop a business’s competitive advantage and compound it. For any company, the search is an iterative process...’ Henderson (1989:139). The iterative process includes predictions and forecasts on challenges and opportunities that the company is likely to encounter in the external environment. However, an iterative process assumes a rational process and approaching strategy in the ‘right way’ - Sauer and Willcocks (2003). But what is the right way? And is it possible to achieve consensus on a possible ‘right way’ given that there is no one right answer in business? Even if there were strong pointers to a possible right way, it is arguably difficult for CEOs and strategists to make decisions without reference to their own views on how strategy should be determined – Kotey and Meredith (1997), Hendry (2000), Frishammer (2003). In short, there are many competing ideals and multiple perspectives in business – Barney (2001), Priem and Butler (2001).

A review of the findings of previous studies suggests that the impact of strategy on overall performance is not as clear cut as one might expect. Several studies show a link between strategy and performance - Rue & Ibrahim, 1998; Bracker, Keats, & Pearson, 1988; Naffziger and Kuratko (1991), Lyles, Baird, Orris, & Kuratko, (1993). Several meta-analyses concluded that planning leads to greater financial returns – Robinson and Pearce (1984), Boyd (1991), Schwenk and Shrader (1993), Miller and Cardinal (1994). Other studies stress resultant benefits of strategic planning other than financial results, for example, reducing uncertainty (Matthews and Scott 1995), longer term focus with structured processes (Schwenk and Shrader 1993), an enhanced awareness of strategic options and direction (Lyles et al 1993). Arguably the quality of planning is also an important consideration.

Findings where strategy does not lead to any noticeably impact on smaller firms include O’Gorman and Doran (1999), McKiernan and Morris, 1994; Orpen, 1985; Robinson et al 1986, Gabel and Topol, 1987, Cragg and King, 1988; Shrader, Mulford and Blackburn, 1989; Watts and Ormsby, 1990). Nevertheless, based on the extant empirical literature, we can conclude that strategic planning has a largely positive impact on performance. This is consistent with the contention of Barry and Elmes (1997:430) that strategy must ‘rank as one of the most prominent, influential and

costly stories told in organizations'. It is therefore vital to the organization but is not without its attendant risks. In addition, the literature suggests that smaller firms such as growing HTSFs' performance suffers due to 'a lack of reference to strategy' Hudson et al (2001).

This led us to derive the following research question:

'Does strategy impact on the performance of manufacturing firms, and if so, to what extent'.

Following an extensive examination of the literature we adopted the following characteristics to represent the key factors used to craft strategy: external orientation, internal orientation, departmental or functional integration, staff creativity, employee involvement, the use of analytical techniques, resources for strategy (managerial and financial), and a focus on control. Their relevance was further examined through qualitative interviews with six managing directors of HTSFs.

Environment

The external operating environment is seen as a significant influence on the performance of small and medium sized firms and especially in the case of micro firms – Hambrick (1981). It's importance increases during period of extreme uncertainty and turbulence. But what do we mean by environmental turbulence? Aspects of turbulence described in the literature include changes: in the market, technology, customer demands and competition- Cadogan et al (2002) and Jaworski and Kohli (1993).

Each aspect of change is subject to varying degrees of intensity. The literature contends that environmental dynamism drives the degree of emphasis on strategic planning – McLarney (2001). For example, Lang et al (1997) and Pineda et al (1988) state that when small to medium sized firms are confronted with a threat or opportunity, they tend to increase their search for information by scanning the external environment. However, it should be noted that this is a relatively recent trend in smaller firms [Lang *et al.*, 1997; Smith, 1998], and runs parallel to their increasing attention to aspects of the strategic planning process. Indeed, it is arguably that small to medium sized firms have little choice but to engage in strategic planning, if they are to survive.

The greater use of information on the environment is consistent with the contention by Murray and Kotabe (2005), that firm's strategy and environment need to interact in a dynamic co-alignment process. If effective alignment operates, then enhanced

performance is more likely - Venkatraman and Prescott (1990). A review of the literature indicates that greater awareness of the operating environment impacts positively on degrees of profitability – Thomas et al (1993).

Surprisingly, the literature presents a mixed picture on the impact of the environment on strategic planning. Grant (2003:494) encapsulates the extant literature by stating that 'evidence of the impact of environmental turbulence upon strategic planning is limited. Cross-sectional studies have produced inconsistent findings. Longitudinal evidence is fragmented'.

We considered the extant literature as well as consulting with the Managing Directors of HTSFs to ascertain the aspects that describe the environment. While the environment as a concept is extremely broad and diverse (Sharfman and Dean, 1991), we followed the work of Miller (1988), by focusing on narrowly defined parts of the environment rather than on overall industry parameters. The reasons for this approach were twofold. First, managers select specific market segments for attention and second, they tend to identify a specific customer focus. These aspects can only be ascertained by examining managers' perceptions - Dess and Beard, (1984). In any even, the literature suggest that perceived measures have strong associations with strategic planning as CEOs tend to act on their perceptions (Miller and Friesen, 1984), Collier et al (2004).

In our survey, we assessed three dimensions of the operating environment: turbulence, dynamism, and munificence. Turbulence is concerned with the unpredictability of environmental change, dynamism is concerned with the rate of foreseeable product, process, and regulatory change, and munificence is concerned with environments ability to support sustained growth of an organisation (Rasheed and Prescott, 1992). Munificence has three distinct dimensions: capacity, growth/decline and opportunity/threat (Castrogiovanni 1991). In this study, we focused on growth/decline and the threat elements of munificence by ascertaining the level of perceived threat from home, overseas, and substitute products. Past research on the impact of munificence on organisational strategies, structure, and process is limited (Goll and Rasheed, 1997

This led us to formulate the following research question:

Is there a link between the degree to which external environmental threats are taken into account during the strategic planning process and superior financial performance?.

Organizational Performance

Organizational performance management and control is increasingly seen by managers as a key activity – Langfield-Smith (1997). Performance ‘can be defined as the ability of an object to produce results in a dimension determined, a priori, in relation to a target’ - Laitinen (2002). This is consistent with the suggestion by Ittner and Larcker (2003) that performance measurement is used to allocate resources and map progress towards the achievement of strategic goals. This suggests that performance must be linked to actions emanating from strategic planning. To date, most studies tend to focus on financial related performance measures such as profitability. However, the trend is moving from reliance on financial orientated measures towards a stronger emphasis on a more comprehensive performance measurement system needs to comprise both financial and non-financial measures, intermittent and outcome measures – Dyson, (2000), Hillman and Keim (2001), McAdam and Bailie (2002). Laitinen (2002) encapsulates the increasing emphasis on broader performance measurement concepts by stating that ‘when financial and non-financial measures are incorporated in the same model, managers can survey performance in several areas simultaneously in order to enable efficient strategic decision making’. However, the literature contends that ‘to date, researchers have not reached consensus about many of the factors that may influence performance’ - Short et al (2002).

We conducted a range of exploratory interviews with MDs/CEOs and employer bodies on appropriate performance measures to the sectors under examination on the basis that a ‘multiple assessment’ of a firms performance using financial and non financial measures – Pett and Wolff (2003). The findings indicate that the following are important measures of performance: customer satisfaction, customer retention, market share, innovation, and long and short term measures. However, obtaining objective data from HTSFs is often very difficult. A number of scholars have advised caution when examining performance in privately owned or independent firms - Durand and Vargas (2003), Barney (2002), Schulze et al (2001). Garg et al (2003) pointed to the reluctance of CEOs/ MDs to provide detailed accounting data on their firm’s performance. The problem is more acute in the case of privately held HTSFs. Therefore, they suggest the use of ‘subjective, self-reporting measures of performance’. Measures such as overall perceived performance/success have been found to be highly correlated with objective measures of firm performance – Robinson and Pearce (1988), Venkatraman and Ramanujam (1987). Moreover the literature suggests that subjective measures should be used when interest centres on capturing the perspective of organization members - Boyd et al (1993). From a practical perspective, Jennings and Beaver (1997) contend that few small to medium

sized firms are able to find a balance between short term performance measures and longer-term growth orientated measures. However, financial measures are well used as the main measure of performance – Hammermesh et al (1978), Robinson (1983). Based on the work of Haleblian and Finkelstein (1993), we used a categorical approach based on 'gross profit per FTE to assess the association between strategic planning and performance. Pett and Wolff (2003) suggest that this provides a multiple assessment of a firm's performance. The literature suggests that non financial aspects of performance should also be measured. However there is a dearth of empirical studies using non financial measures particularly in HTSFs – Hudson et al (2001). Greenley (1994) suggests that the lack of studies relates to measurement inconsistencies.

Methodology

We used a self-reported postal survey to collect data for three reasons. First, to fulfill the objectives of the study we required a large number of observations in our data set. Second, the alternatives such as telephone survey and personal interviews were impractical because of the questionnaire's size and the costs involved respectively. Previously empirically tested and validated constructs were used for strategic planning (Kargar and Parnell 1996), organizational performance (Kargar and Parnell 1996) and environmental turbulence (Jaworski and Kohli, 1993).

We used a staged approach to validate the questionnaire that included; an extensive literature review, in-depth interviews with six HTSF CEOs to ensure that issues raised were appropriate, and in-depth interviews with three employer representative organizations. Following these stages, a draft questionnaire was formulated and subsequently piloted. A number of adjustments were made following the pilot stage.

The initial sample of 1,000 randomly selected small and medium sized UK electronics and engineering firms was reduced to 702 firms as 198 firms did not meet the size criterion, had ceased operations, or were not contactable. The sample was based on the first two digits of the standard industrial classification (SIC) code because industry conditions influence the strategy-performance linkage. Questionnaires were targeted to the Chief Executives as they are perceived to be the most appropriate respondents for strategy research (Tan and Tan 2005), Bracker and Pearson (1986).

Others argue that CEOs tend to use the views and actions of other managers in the same sector as a reference point in the formulation of strategy – Fiegenbaum and Thomas (1995), Peteraf and Shanley (1997). Selecting the CEO as the a self-reporting respondent is an established approach as they are seen as having a wide breadth of knowledge of all the organizations functions, activities and operating environment – Frost et al (2002). Avolio et al (1991 p. 571) state that the self reporting survey approach is ‘virtually indispensable in many research contexts’. We were careful to reduce or eliminate any contextual effects that might arise by basing the survey on pre selected sectors, extensive research and in depth interviews with practitioners and employer representative bodies as well as previously validated and tested constructs.

We received 194 valid responses - a response rate of 27 percent. This is a relatively high response rate as typical response rates for studies addressing strategic issues is 10-12 per cent (Geletkanycz, 1997). Contact prior to the dispatch of the questionnaire and follow up calls accounted for the high response rate.

A T-test was used to examine the difference between early and late informants’ response to key questions. This is an effective test for non-response bias because late respondents are likely to respond in a manner similar to non-respondents (Lambert and Harrington, 1990). We only found statistically significant differences at 10 per cent confidence level in the case of couple of questions. Based on this test and telephone contact with non-respondents, we conclude that non-response is not a significant issue and should not affect our conclusions. Data reliability was confirmed using Cronbach’s alpha – a commonly used statistical tool to consider data reliability when perceptual measures are used – Hambrick (1982).

Analysis

The literature suggests that many of the commonly used models and statistical techniques are not readily accessible or understood by practitioners and consequently fail to bridge the gap between theory and practice Chiles (2003), Hambrick (1990:251). These include cognitive mapping Laukkanen, 1996: 28), Forbes, 1999), complexity theory Tsoukas & Chia, 2002), process theory Chiles (2003), and a range of statistical techniques. From a practitioner perspective, we can conclude from the low usage rates of existing developed techniques by HTSF managers, that a more practical approach is needed. Arguably, the relative ‘newness’ of the field of management strategy research might be a reason why HTSF practitioners are slow to adopt some tools and techniques. In addition, practitioners may be daunted by the range and complexity of existing initiatives,

tools and techniques. Accordingly, we contend that a practical analytical tool is essential for deployment by HTSFs as they grow and strive to achieve competitive advantage. We have developed and tested an easily understood and useable method based on conditionally formatted spreadsheets to produce a visual picture of the attribute/s under consideration. Such an approach complements current research techniques and enables HTSF managers and academics to obtain a preliminary view of data based on the use of 'attribute footprints'. Each footprint calculation encompasses three or more numerically scored responses to questions. In order to overcome the difficulties associated with responses where different scales are used, we developed 'attribute footprints' for strategy, the operating environment and performance as described in the following paragraphs.

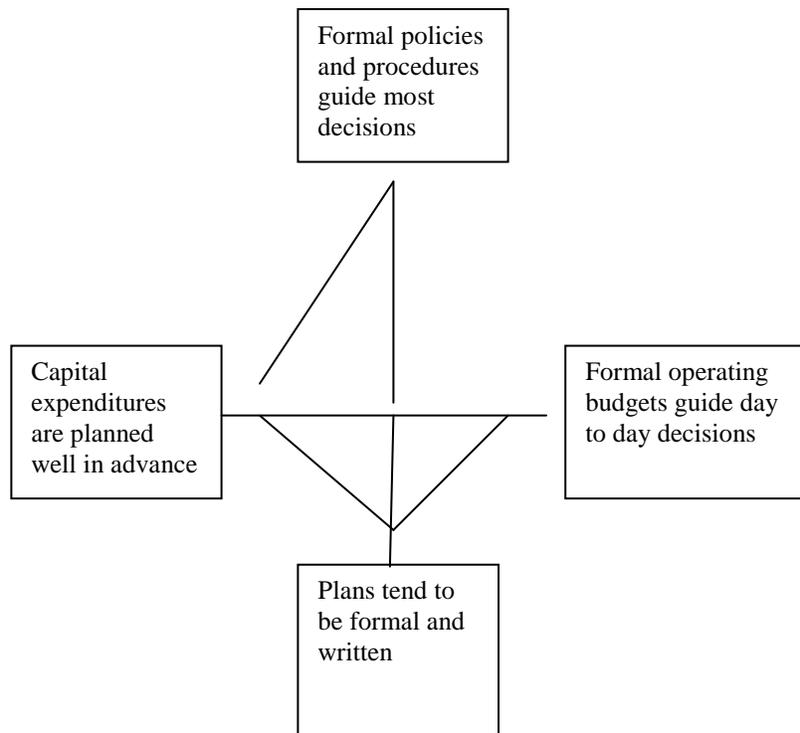
Strategy footprint

The strategy footprint is designed to capture those companies with activities that are commonly used to shape strategic planning but do not consider themselves to have a formalized strategic planning function. Further more, we also include in the strategy footprint firms with a formal planning process.

The first part of the footprint calculation involves four 'non strategically labeled' questions from various parts of the questionnaire and which were responded to by the participants in terms of a 1 to 5 scale where 5 is considered to be very important and 1 not important. So, for example, if a respondent perceived that "formal policies guide most decisions", was very important then they would circle the 5. They might score the question about capital expenditures with a '4' and say a '3' for the question as to the formality of plans and a '3' for formal budgets. The resultant calculation for this part of the footprint would be;

$(5*4/2)+(4*3/2)+(3*3/2) = 20.5$, ie the area contained within the three right angled triangles illustrated in figure 1.

Figure 1 Illustration of the initial elements of a strategy footprint



The areas of each of the three right angled triangles that make up this part of the footprint are calculated and then added together. The maximum possible score from this part of the footprint would be 37.5 [(5*5/2)+(5*5/2)+(5*5/2) = 37.5) while the minimum would be 1.5 ((1*1/2)+(1*1/2)+(1*1/2) = 1.5].

Chief Executives were asked if they had developed a written strategic plan. If the respondents answer yes, then 50 is added to their footprint score. This has the effect of providing a step in the ranked strategy footprint scores enabling the authors to differentiate between 'non planners', 'planners' and 'strategic planners'.

The degree of strategic planning is assessed by counting the number of responses to the following questions [responses were yes/no]:

- Did you consider the strategic planning future horizon?
- Did you specify goals and objectives?
- Did you consider alternative strategies?
- Did you develop plans for functional areas?

Did you consider future resources required?

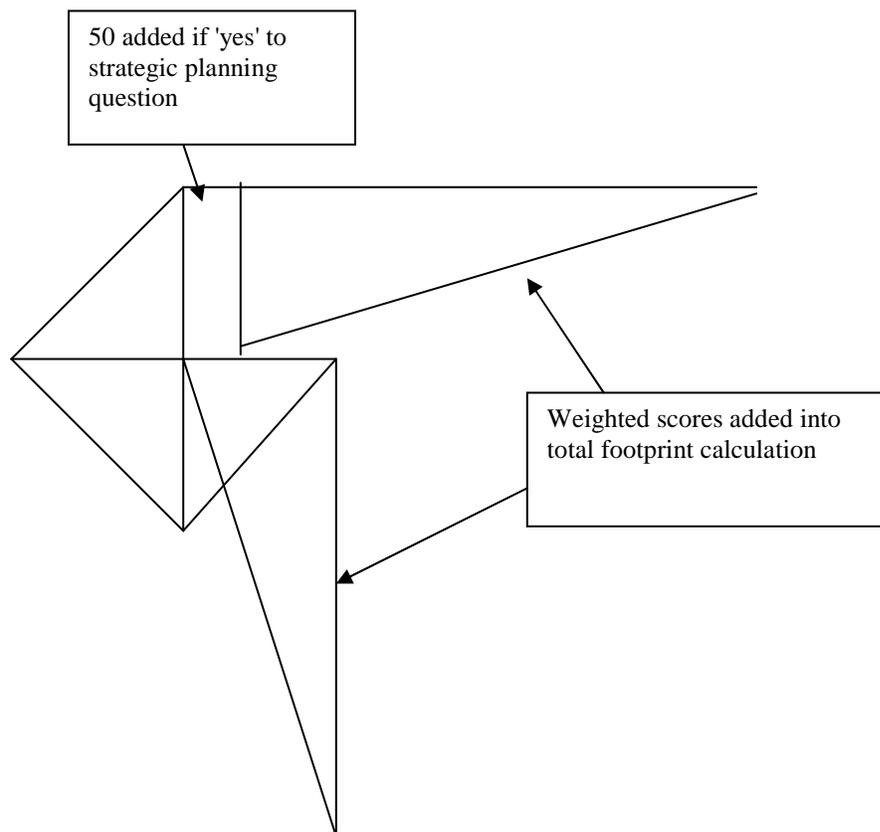
Have you procedures for anticipating, detecting errors in, or failures of the plan and for preventing or correcting them on a continuing basis?.

The number of positive responses was totaled and multiplied by 10 in order to weight the responses from the very important strategy questions. If the respondent had indicated a maximum for each of the initial questions in the first part of the footprint AND had said 'yes' to each of the questions on strategy, then that companies strategy footprint would be calculated thus;

$$(5*5/2)+(5*5/2)+(5*5/2) + 50 + ((6*5/2)*10) + ((6*5/2)*10) =387.5$$

and the 'best possible' strategy footprint score is shown in figure 2

Figure 2 Depiction of largest strategy footprint.



The resultant possible footprint score ranged from 1.5 to 387 which was sufficiently sensitive to enable the authors to differentiate between 200 or so different firms and their propensity to plan strategically when the sample was ranked in terms of strategic footprint score.

multiplying it by the gross profit margin and dividing the result by the number of full time employees..

Analysis using a DNA Methodology

Dynamic Normative Analysis (DNA) involves the use of data located in a spreadsheet. Each of the spreadsheet cells usually contains a number representing a response to a given question. Most conventional methods used for the subsequent analysis of this data usually involve statistical manipulation / interpretation resulting in output in the form of more numbers or graphs. However the authors suggest that the majority of people who make up the audience interested in any statistically based report might be helped by the inclusion of a 'picture' of the information being described rather than a picture of the statistical results.

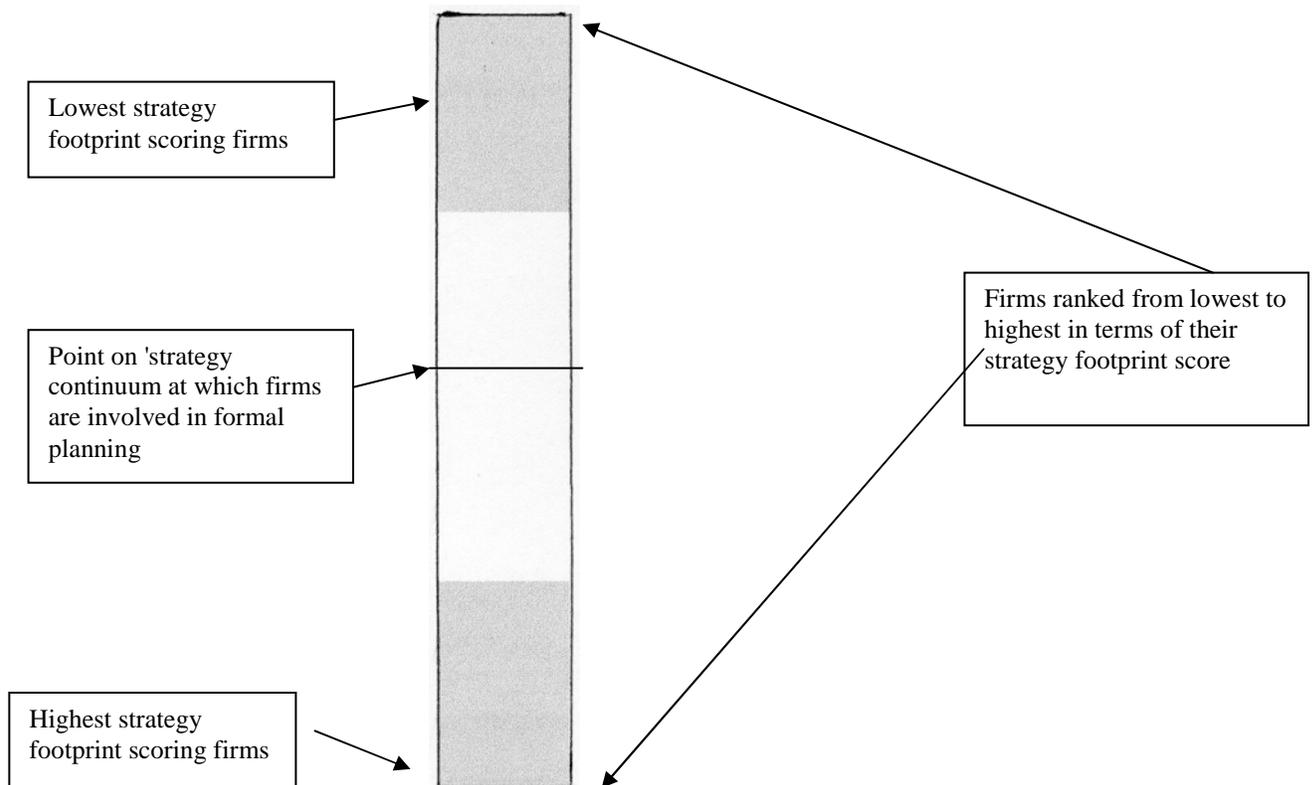
The pictures are made up from cells in a spreadsheet that highlight an attribute value of interest. The steps that need to be taken in creating a 'data picture' are comparatively simple. The first and perhaps most important step is to rank the data in terms of the 'investigative focus' of interest to the researcher. (in this paper the authors have ranked the database in terms of a calculated 'strategy footprint'). The second step is to conditionally format the ranked data in terms of a 'trigger' or 'highlight default' cell. This cell requires an input value from the user and can be changed by the user. In order to create the different data pictures, the researcher simply has to change the highlight default cell value thus ensuring that the DNA analysis is 'dynamic'.

In order to 'see the whole picture', a third step might be to reduce the spreadsheet row height to a fraction of the standard default setting of say 12. (in order to create a picture with 200 rows on a single piece of paper, a row height setting of 2 is recommended). The final step is to combine the first set of ranked, formatted data with other similarly ranked and formatted data so that two or more variables can be viewed simultaneously and different pictures painted in a dynamic environment by changing the values in the highlight default cells.

Strategy / Performance

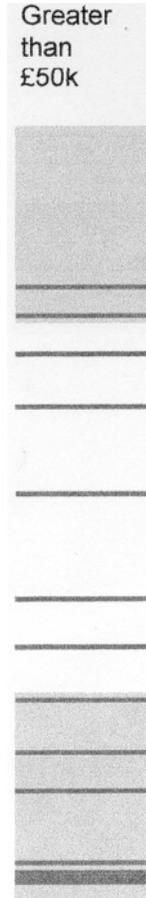
Figure 4 shows a column where all the company's are ranked in terms of their strategy footprint score from the worst score (1.5) at the top of the column to the highest score (387) at the bottom of the column. The lowest and highest quartiles of 'strategists' are highlighted along with the point on the continuum that formal strategic thinking starts.

Figure 4 Firms Rank by emphasis on Strategy



If we now include data for each company's financial performance and set a 'highlighting default' to $\geq \text{£}50,000$, the companies whose gross profit per annum per FTE is equal to or greater than $\text{£}50,000$ are highlighted in figure 5.

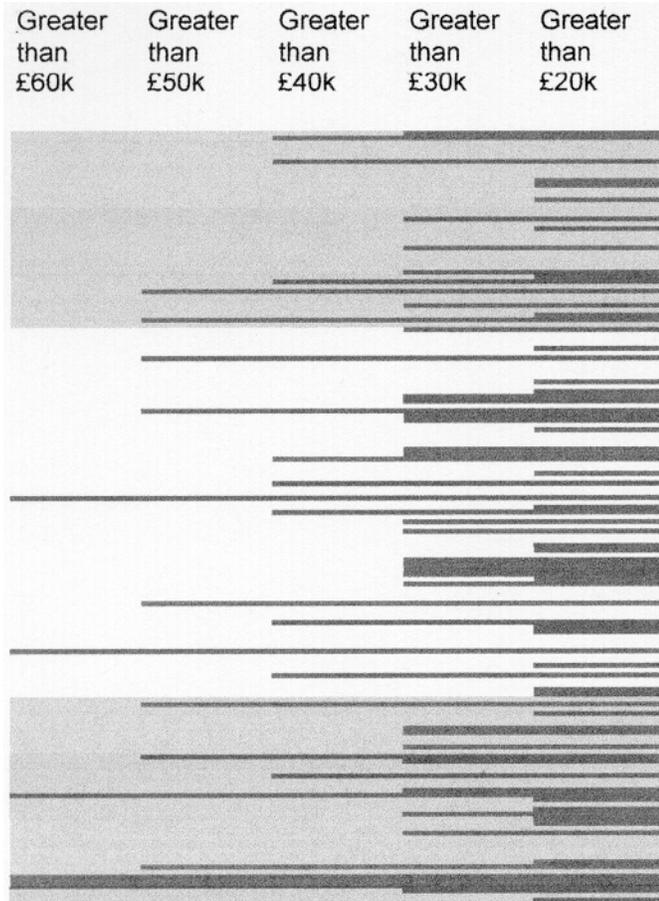
Figure 5 Rank ordered strategy footprint with highlighted high financial performance.



It can see that there is a distinct clustering in the leader quartile of the strategy footprint continuum and an even greater clustering by companies with the greatest focus on strategic planning and **all** the companies highlighted involve themselves in some degree of formalized planning.

If the 'highlighting default' is now changed to reveal the patterns associated with a range of different performances, the patterns illustrated in figure 6 result.

Figure 6 Rank ordered strategy footprint with highlighted varying financial performance.



The analysis of the patterns in figure 6 can be summarized in the form of table 1 and it can be seen that high or very high company performance is most often associated with firms who involve themselves in a high degree of strategic planning.

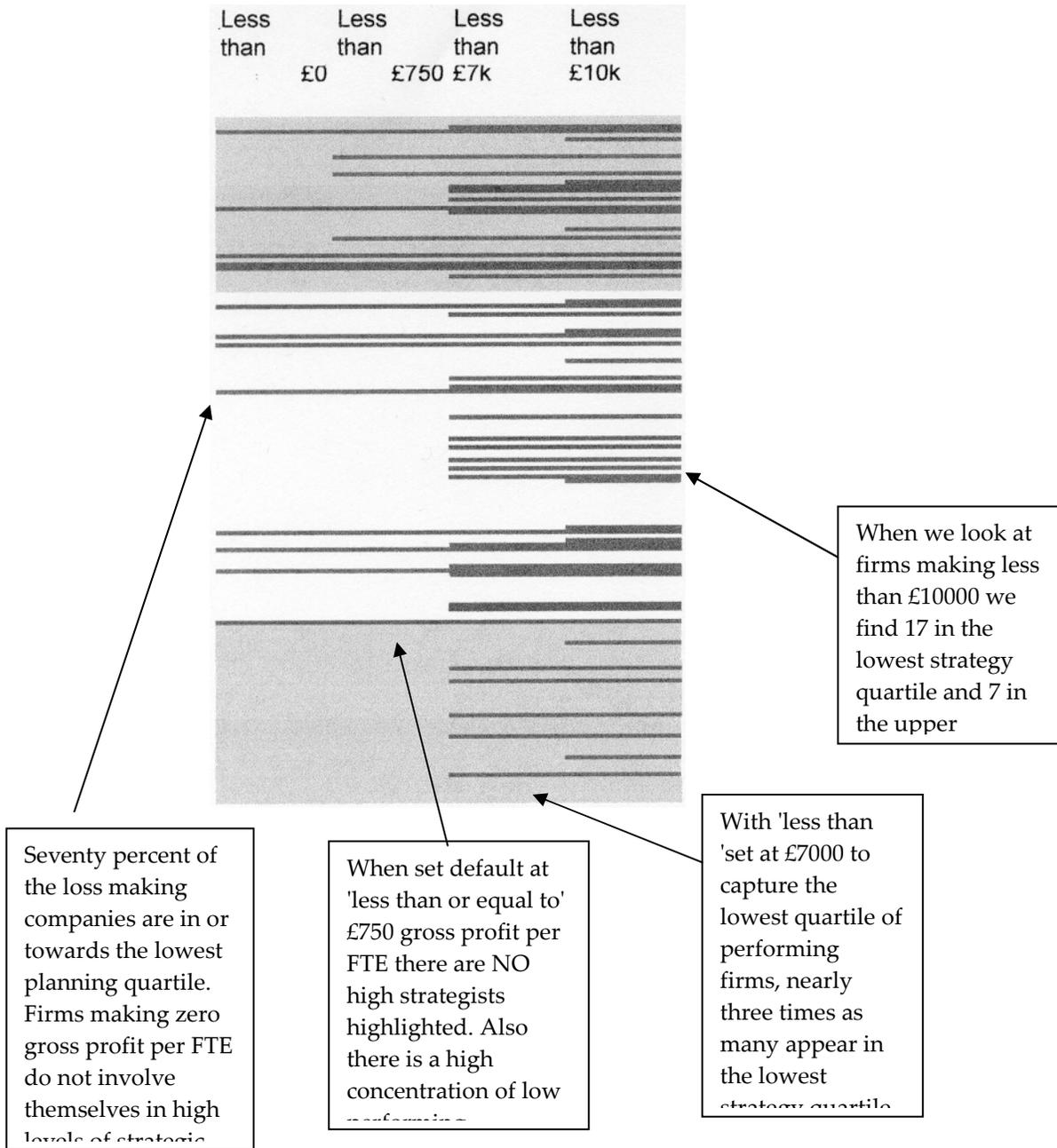
Table 1 **The proportions of each financial performance cohort associated with the various strategic planning quartiles**

	>=£60000	>=£50000	>=40000	>=£30000	>=20000
Lowest planning Performance quartile	0	14%	22%	20%	21%
Middle planning Performance quartiles	33%	36%	43%	48%	49%
Highest planning Performance quartile	67%	50%	35%	32%	30%

Two thirds of the highest financial performers are to be found in the highest planning quartile with none of the financial 'high flyers' being found in the area where little or no planning takes place.

As the financial performance hurdle is lowered, so the percentage of firms to be found in the lowest 'planning quartile' increases. It can be seen that, even at the lowest level of financial performance, strategic planning has a high profile. To enable a closer look at the 'lowest financial performers', the conditional formatting of the financial performance range of cells was adjusted to highlight those firms whose financial performance is less than 'X'. So with the highlighting default set at a range of low values, figure 7 emerges.

Figure 7 Rank ordered strategy footprint with highlighted varying low financial performance.



The analysis of the DNA output from figure 7 is depicted in descriptive format in table 2

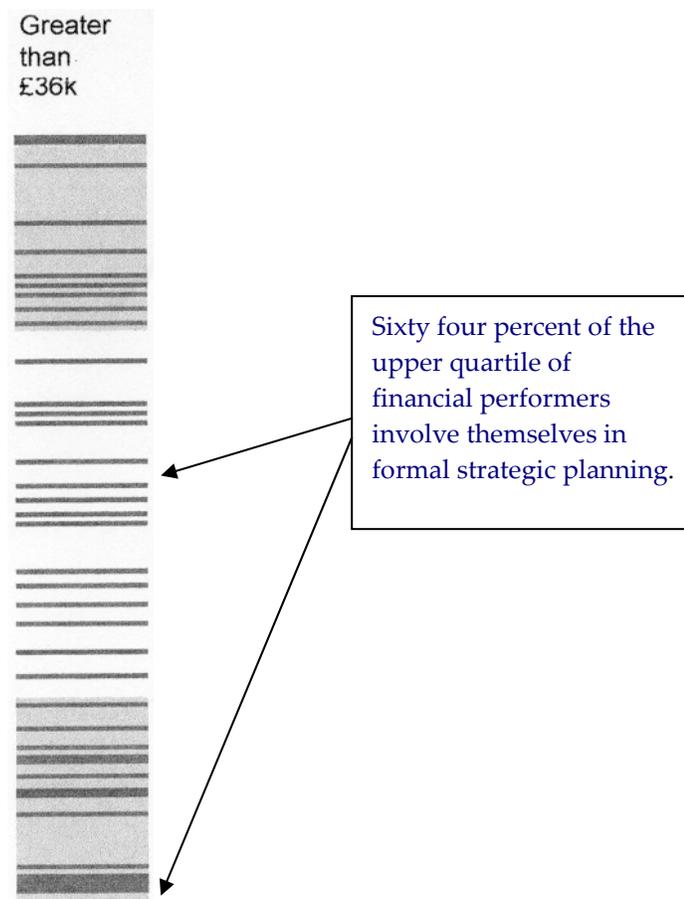
Table 2 The proportions of each financial performance cohort associated with the various strategic planning quartiles

	<=£0	<=£750	<=7000	<=10000
Lowest planning Performance quartile	38%	50%	34%	33%
Middle planning Performance quartiles	62%	50%	54%	53%
Highest planning Performance quartile	0%	0%	12%	14%

The results illustrated in figure 7 and reported in table 2 suggest that poor company performance, ie annual gross profit per employee of less than £10,000 is associated with the lower end of the strategic planning spectrum.

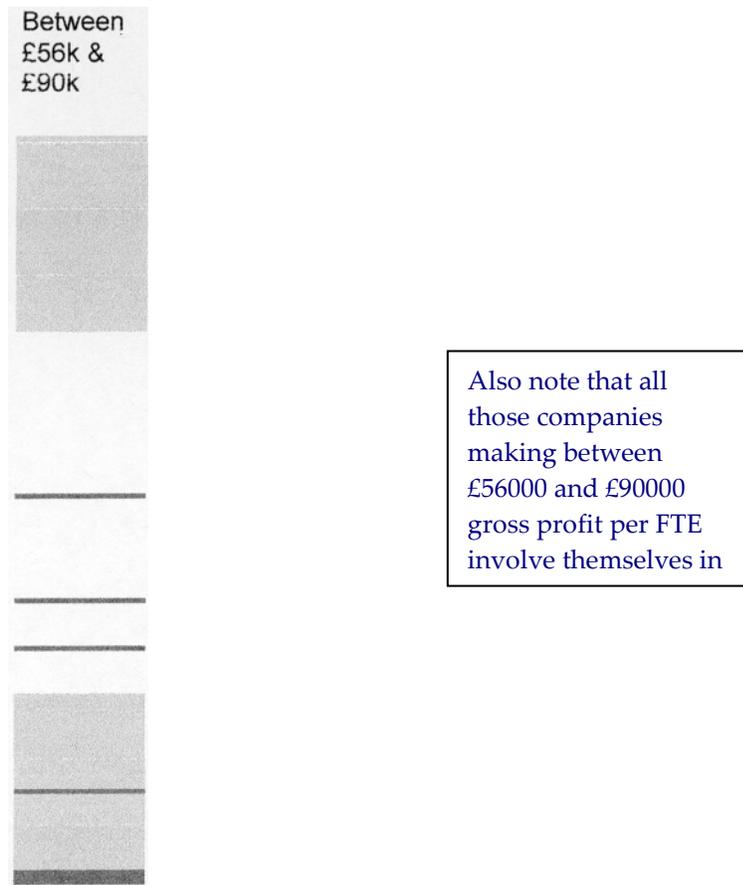
With performance set at >=£36000 we capture the highest performing quartile of companies – 39 in total. Of the upper quartile of financial performers, 10 are in the lowest strategy footprint quartile and 14 are in the highest strategy quartile.

Figure 8 Location of upper quartile of financial performers



If the financial default is set to highlight firms who make between £56000 and £90000 gross profit per employee per year, figure 9 results;

Figure 9 Location of the top 3% of financial performers on the strategy continuum



Given the relative positions of the high and low performers on the strategic planning continuum illustrated in figures 6,7,8 and 9 and summarized in tables 1 and 2, we can conclude that the degree to which a company indulges in the planning process will impact positively on their financial performance. Thus saying yes to the first research question '*Does strategy impact on the performance of manufacturing firms, and if so, to what extent*'. However the 'extent' of the impact has yet to be quantified.

Environmental Threat / Performance

Maintaining our firms ranked in terms of their strategy footprint, consideration was given to the degree of 'environmental threat recognition' by the respondent companies. With the left hand column 'highlighting default' set at ≤ 10 and the right hand column set at ≥ 20 , the two ends of the environmental threat recognition spectrum are highlighted in figure 10. In figure 3, we labeled firms at the extremities of the environmental threat continuum 'Leaders' and 'Loungers'.

Figure 10 Relative positions on the strategy continuum of the environmental loungers and leaders.

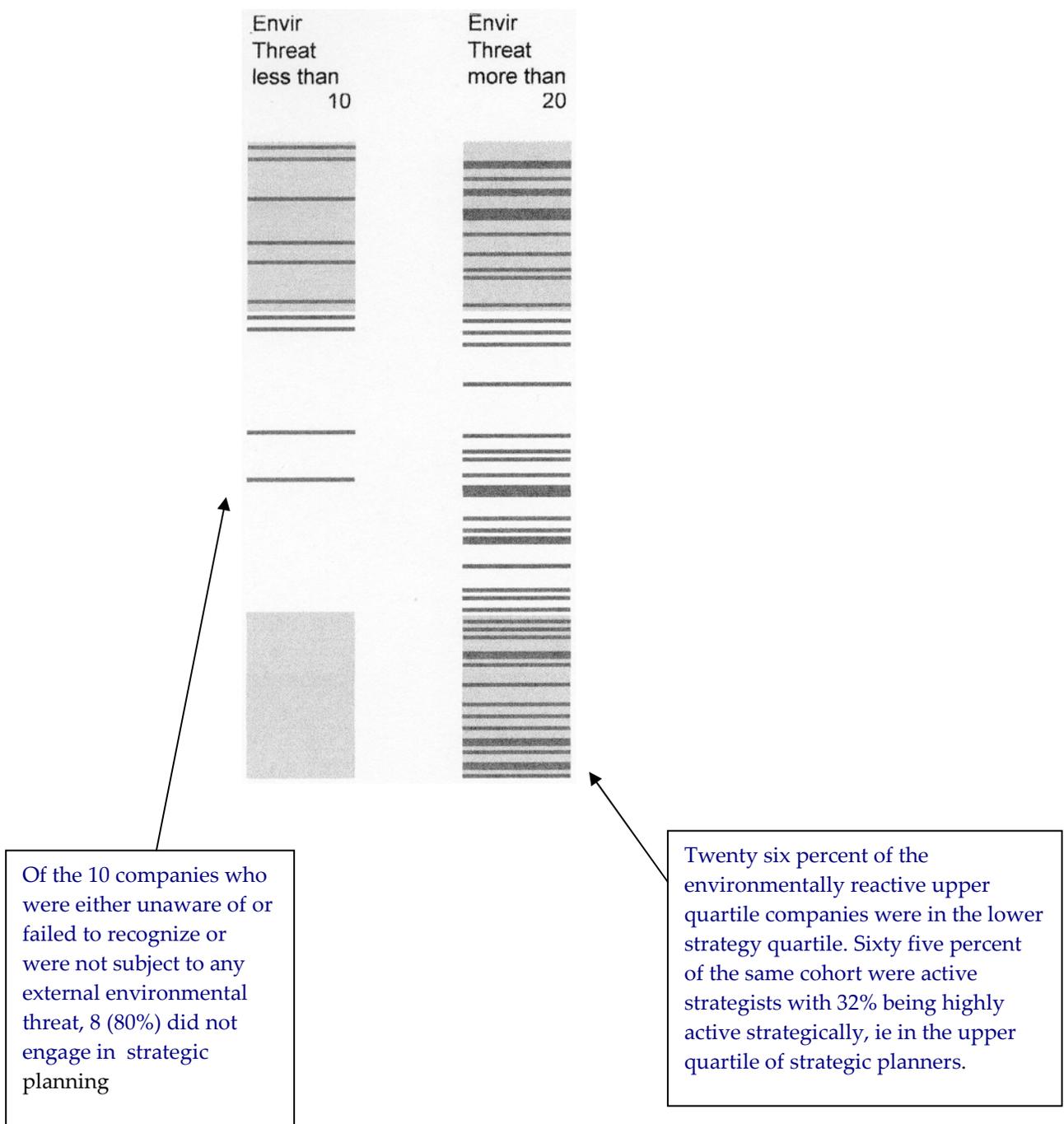
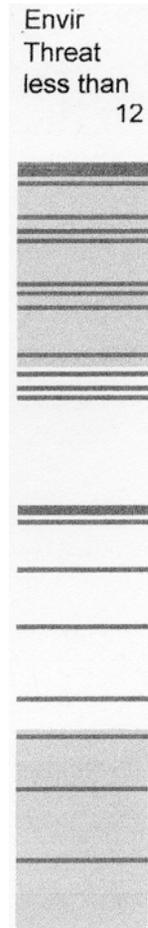


Figure 11 illustrates the position of the 23 companies with an environmental score of less than 12. Eleven (48%) found themselves to be in the lowest strategy quartile and only three (13%) in the upper strategy quartile.

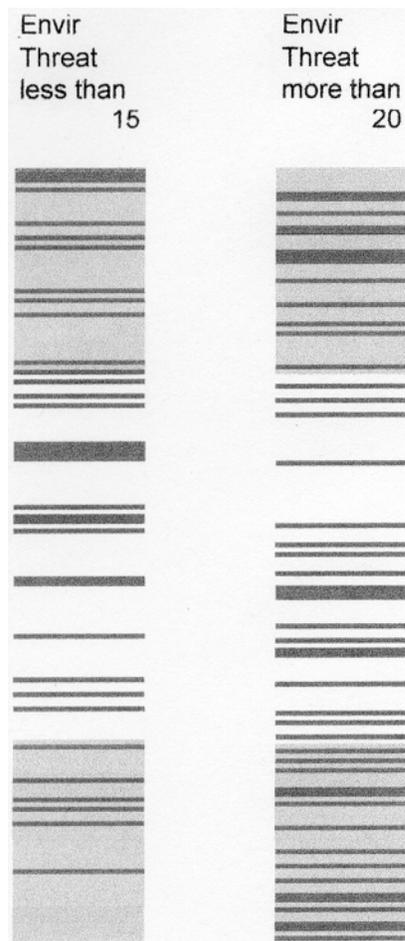
Figure 11 Location of some more environmental loungers on the strategy continuum



Environmental threat / Strategy / Performance

In order to capture the lowest quartile of environmental loungers, the 'highlight default' value was adjusted to <15 and to >20 in order to capture our environmentally aware leaders. The results of this adjustment are shown in figure 12.

Figure 12 Location of the lower quartile of environmental loungers and the upper quartile of environmental leaders.



With the 'less than or equal to ' environmental footprint trigger set at 15, the 'lowest environmentally aware / active' quartile are illustrated. Almost half (44%) do not involve themselves in any formal strategic planning and the average gross profit per FTE in the lower planning quartile was £17826 which rose to £25562 in the upper planning quartile.

To capture the more environmentally aware/responsive quartile (in this case 48 firms) set 'more than' trigger at 20. With trigger set at >20, 16 companies (33%), are found in the upper planning quartile with an average gross profit per FTE of £23898. Thirteen firms companies (26%) are to be found in the lower planning quartile with an average profit of £15174.

Table 3 locates summarizes an analysis of figure 12.

Table 3 Average financial performance [Gross profit /FTE] of Leaders and Loungers

	Highly environmentally aware (leaders)	Low environmental Impact / Care /Awareness (loungers)
Lower strategic quartile	£15174	£17826
Upper strategic quartile	£23898	£25562

It can be seen that, amongst both the leaders and the loungers, financial performance increases significantly with the degree of planning undertaken. This finding leads us to conclude that *'there a link between the degree to which external environmental threats are taken into account during the strategic planning process and superior financial performance'*.

Conclusions and recommendations

The development and application of 'attribute footprints' has been shown to be a useful tool for the analysis of company characteristics. When used as a ranked listing and with the ability to adjust the 'highlight default' setting, the user may experiment with the data and extract trends or patterns which may not otherwise be immediately obvious or visible. The major advantage of the research methodology described is its 'accessibility'. Spreadsheets in business are almost as common as pen and paper but are very rarely used to their full potential. The authors are suggesting that, with comparatively little effort, companies can start to analyze their own data in a meaningful way without having to rely on expensive, sometimes time consuming and sophisticated statistical packages. The Data Mining method explored in this paper, enables a firm to deal with large or small amounts of data in an accurate efficient manner.

The results of our investigations have shown that strategic planning impacts positively on financial performance and that where an environmental threat exists, that the threat should be recognized and taken into account during the planning process. It is interesting to note that, where the external environment is of little or no consequence to a companies operation, the average performance (gross profit per FTE) is significantly higher for both the planners (upper quartile) and the non planners (lower quartile).

The lower average performance on the part of the 'highly environmentally aware' firms in both the lower and upper planning quartiles may be a consequence of the dampening effect of the external environment on a firms performance. However it is interesting to note the positive effect of strategic planning. Among the 'highly environmentally aware' there is a 57% difference between the high and low planners compared to a 43% difference in the 'non environmentally aware' group. The effect therefore of strategic planning is to significantly reduce the effect of any external environmental threat illustrated in table 4 (below) by the closing of the performance gap by the upper quartile strategic planners.

Table 4 An indication of the extent to which strategic planning closes the performance gap

		Highly environmentally aware		Low environmental Impact / Care /Awareness
Lower strategic profile		£15174 ←	17.5% diff	→ £17826
Upper strategic Profile		£23898 ←	7% diff	→ £25562

57% difference between high and low strategists where environment matters

Therefore strategic planning closes the performance gap from 17.5% to 7%.

43% difference between planning regimes where environment less of an issue.

Summary and Conclusions

The results of this study aims to help practicing managers by emphasizing the need to focus on strategic planning and ensure alignment with the external environment. The research findings fill a gap in the strategic management literature by clarifying the strategy-performance relationship – an issue where the consensus of previous research is unclear.

We approached the study by developing a series of footprints for strategic planning and the environment. This is an approach not hitherto used extensively in the case of manufacturing HTSFs. We identified firms as ‘planners’, non-planners’ or ‘strategic planners’. In the case of ‘strategic planners’, we identified the degree of emphasis on strategic planning having regard to the extent that they used formal policies and procedures guide most decisions, planned capital expenditure well in advance, used formal and written plans, and used formal operating budgets to guide day to day decision making. In the case of the environment we used a range of measures to determine if a firm is environmentally optimistic (where the environment is perceived to be of little threat or concern) or environmentally pessimistic (where environmental threats are recognized and actions taken).

The findings indicate that the degree of awareness of external environmental threats is associated with the degree of emphasis on the strategic planning process. The findings also show that strategic planning is positively linked to overall corporate performance. In line with the mainstream position within the literature, the external environment had a significant impact on relationship between strategic planning and performance.

Our study redresses a number of limitations associated with prior studies. We adopted a new approach to multi-variate analysis based on the conditional formatting of spreadsheets and the use of nested logical operators. Moreover, we also took care to ensure that our constructs were grounded in theory increasing their validity.

There are also a number of limitations of this study. The variety and number of strategy making process variables means that any single investigation of this relationship is unlikely to be exhaustive. In this study, we focus on identifying strategy footprints underpinned by a limited range of variables.

From a practical point of view our study suggests that increased strategic focus improves performance, but without longitudinal objective measures we can not quantify the size of benefit. To increase the intensity of focus a manager needs to know not only that it is beneficial, but also the potential magnitude of the benefit. Augmenting the subjective measures with temporal objective measures would have strengthened the study by providing an answer to this question as well as providing additional support for the use of subjective measures.

Only small manufacturing firms were surveyed. Therefore, the generalizability of the results to other industries, or firms of larger size, must await future research. Moreover, we only established whether the level of emphasis on strategic planning is related to performance. We recognize that many organizational factors affect performance and as a result cause and effect relationships are extremely difficult to establish. Having shown that strategic planning has a direct affect on company performance we are left with the question as to why our loungers consistently out performed our leaders. One explanation might be that a significant proportion of 'loungers' might have lesser need to consider the external environment. Another limitation relates to the degree of product differentiation among loungers. Future research directions should seek to quantify the extent of the impact of strategic planning and to identify a possible third group, ie loungers who are at risk but who do nothing about their situation (we could call them laggards) as well as a sector analysis.

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