RESEARCH NOTE

Validation of a Multi-Dimensional Measure of Strategy Development Processes[1]

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In this paper, we present evidence on the measurement properties of an instrument that assesses six dimensions of organizational strategy development. These dimensions are labelled planning, incrementalism, cultural, political, command and enforced choice. Using data from 5332 managers, results indicate the instrument has acceptable reliability and validity. Exploratory factor analysis confirms its underlying structure. Generally, the sub-scales have acceptable internal reliability and inter-rater reliability at the organizational level (n = 770 organizations). Further, using data aggregated at the organizational level, the sub-scales are judged to have acceptable validity from the pattern of correlations amongst the six dimensions and with other variables.

Introduction

In normative management literature, the process by which strategies develop in organizations has often been presented as a rational, analytical, systematic and deliberate process of planning and intent (e.g. Ansoff, 1965; Argenti, 1980). However, processes of strategy development can also be explained in other ways. Strategies have been shown to develop as the outcome of the social, political and cultural processes of organizations (Johnson, 1987; Mintzberg, Raisinghani and Theoret, 1976; Noel, 1989; Pettigrew, 1973, 1985) as well as through external constraints and pres-

sures (Hannan and Freeman, 1984). There are, then, a variety of explanations and theories on the nature of strategy development processes (Derkinderen and Crum, 1988; Eisenhardt and Zbaracki, 1992; Fredrickson, 1983). The aim of this paper is to present evidence on the measurement properties of a new instrument that attempts to measure organizational strategy development across several dimensions. By using such an instrument, it is hoped to provide a platform for larger-scale studies across many organizations, to allow greater generalizability than is possible with contextual case and historical analyses that have been common in this area of research (e.g. Boswell, 1983; Johnson, 1987; Mintzberg and Waters, 1982; Pettigrew, 1973, 1985).

Background to the instrument

Decision-making is one of the essential functions of management (Simon, 1977), and strategic decision-making is central to understanding the evolution of organizations' strategies, structures

and processes (Eisenhardt and Zbaracki, 1992). Consequently, a good deal of research has examined the processes of decision-making (e.g. Hickson, Butler, Cray, Mallory and Wilson, 1986; Lyles, 1981; Mintzberg *et al.*, 1976). Whilst such research has illuminated the specific processes of given decisions, it has also illustrated the interdependence amongst different decisions (Langley, Mintzberg, Pitcher, Posada and Saint-Macary, 1995) and that relatively enduring characteristics, such as CEO risk propensity, corporate control and planning formality, influence decisions (Papadakis, Lioukas and Chambers, 1998). Others have argued it is difficult to trace specific decisions to specific organizational actions, and it is better to examine continuity in strategy processes (Mintzberg and Waters, 1990; Pettigrew, 1990). These arguments imply that there may exist enduring patterns between firms in how strategies are developed. It is these enduring patterns that we seek to examine in this paper. We acknowledge that these patterns may not explain specific decision processes entirely (Butler, 1990), but they may be a major influence on such decisions.

Different explanatory theories as to the nature of the strategy development process have been advanced. Some of the literature in the field emphasizes a deliberate process of managerial choice (Child, 1972). One approach to managerial choice emphasizes the role of top executives, usually CEOs, as personally responsible for the direction of strategy (e.g. Christensen, Andrews, Bower, Hammermesh and Porter, 1987; Drucker, 1970). Ansoff (1965), Steiner (1969) and others who advocate a planning approach suggest that strategy formulation is an intentional process of choice involving a logical, sequential, analytic and deliberate set of procedures. Given the complexity of strategic decisions, others have argued that decisions evolve in an incremental manner. Quinn (1980) suggests that this is a deliberate process involving extensive lobbying, bargaining and debate as decisions come about through a process of iteration. Lindblom's (1959) notion of 'muddling through' also describes an incremental approach, but is closer to the explanation of strategy development as the outcome of decision-making processes rooted in the social fabric of organizations (Mintzberg and Waters, 1985). Here the political (Cyert and March, 1963; Pfeffer and Salancik, 1978) and cultural nature of the organization (Johnson, 1987) is seen to be of particular

significance. As well as perspectives emphasizing choice or social processes, another approach to strategy development indicates that factors in the environment impinge on the organization in such a way as to select, encourage or force the adoption of organizational structures and activities which best fit that environment (DiMaggio and Powell, 1983; Hannan and Freeman, 1989). These external constraints – either competitive or legislative – operate to prescribe or constrain strategies and limit the role organizational members play in their selection (Aldrich, 1979).

Therefore, within three broad approaches to strategy development – strategic choice, social processes and environmental factors – it is possible to discern six discrete dimensions of strategy development. In this study these are labelled: command (cf. Bourgeois and Brodwin, 1984); planning (cf. Ansoff, 1965); incrementalism (cf. Lindblom, 1959); political (cf. Pfeffer and Salancik, 1978); cultural (cf. Johnson, 1987); and enforced choice (cf. Hannan and Freeman, 1989). These six dimensions of strategy development have been described in detail elsewhere (Bailey and Johnson, 1991, 1995; see also, Johnson and Scholes, 1999). Table 1 summarizes the characteristics of these six dimensions, and cites studies examining each of the dimensions. These six dimensions build upon or are related to other models of strategy development (see Bailey and Johnson (1991) for more details). Most notably, five of the six dimensions are related closely to Hart's five dimensions of strategy development, labelled: command, rational, transactive, generative and symbolic. These correspond most closely to the command, planning, incremental, political and cultural dimensions here. However, the six dimensions presented here extend Hart's model, which emphasizes managerial intention in all aspects of the strategy development process. In contrast, we do not assume managerial discretion to the same extent, building in, as we do, the dimensions of culture and enforced choice.[2]

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[2] Hart and Banbury (1994) developed an instrument to assess Hart's five dimensions. In contrast to this research, Hart and Banbury used single respondents (CEOs) to assess strategy development. Individual ratings are likely to be affected by factors such as personality (Spector, 1992). Therefore, the inter-rater reliability of Hart and Banbury's instrument is unknown, and it cannot be assumed that single respondents, even CEOs, give accurate reports of complex organizational processes (Bowman and Ambrosini, 1997).

Table 1. Characteristics of six dimensions of strategy development

	Description	Key references
Command	A particular individual is seen to have a high degree of control over the strategy followed; for example the chief executive or a similar figure with institutionalized authority. Less commonly, such influence may relate to the power of a small group of individuals at the top of the organization. Control and influence may be exercised in different ways, for example through personality, the rigid enactment of rules or through expertise. Alternatively, strategic aspirations and strategy may emerge from a vision associated with the powerful individual(s), which represents the desired future state of the organization.	Bennis and Nanus (1985) Shrivastava and Nachman (1989) Westley and Mintzberg (1989) Kotter (1990) Farkas and Wetlaufer (1996) Hayward and Hambrick (1997)
Planning	An intentional process involving a logical, sequential, analytic and deliberate set of procedures. The organization and its environment are systematically analysed. Strategic options are generated and systematically evaluated. Based on this assessment, the option is chosen that is judged to maximize the value of outcomes in relation to organizational goals. The selected option is subsequently detailed in the form of precise implementation plans, and systems for monitoring and controlling the strategy are determined. There is an assumption here that strategy is developed by top executives and implemented by those below.	Ansoff (1965) Mintzberg (1978) Steiner (1969) Argenti (1980) Rowe, Dickel, Mason and Snyder (1994)
Incremental	Strategic choice takes place through 'successive limited comparisons'. Strategic goals and objectives of the organization are not likely to be precise but general in nature. The uncertainty of the environment is accepted and as such managers are not able to know how it will change: rather they attempt to be sensitive to it through constant scanning and evaluation. Commitment to a strategic option may be tentative and subject to review in the early stages of development.	Lindblom (1959) Mintzberg *et al.* (1976) Quinn (1980) Quinn (1982) Johnson (1988)
Political	Organizations are political arenas in which decision-making and strategy development is a political matter. Differences amongst stakeholders are resolved through bargaining, negotiation and compromise. Coalitions may form to pursue shared objectives and to sponsor different strategic options. The level of influence these stakeholders are able to exercise is conditional upon the organization's dependency upon such groups for resources. Further, information is not politically neutral, but rather is a source of power for those who control it.	Cyert and March (1963) Pettigrew (1973) Hinings *et al.* (1974) Pfeffer and Salancik (1978) Wilson (1982) Feldman (1986) Hickson *et al.* (1986)
Cultural	Strategy is influenced by taken-for-granted frames of reference shared amongst organizational members. These frames of reference help to simplify the complexity of situations, provide a ready-made interpretation of new situations, enable decisions to be made in a way which makes contextual sense and provide a guide to appropriate behaviour. Their usefulness increases as situations become more ambiguous and the efficiency of formal decision-making processes decreases. These frames of reference are underpinned by routines, rituals, stories and other symbolic artefacts which represent and reinforce the organizational culture. These cultural artefacts embed frames of reference in organizational activities and provide a repertoire for action; but are in turn likely to be resistant to change.	Weick (1979) Deal and Kennedy (1982) Schon (1983) Gioia and Poole (1984) Trice and Beyer (1985) Johnson (1987) Spender (1989)
Enforced choice	Factors in the environment encourage the adoption of organizational structures and activities which best fit that environment. These external constraints may take the form of regulative coercion, competitive or economic pressures or normative pressures as to what constitutes legitimate organizational action. These pressures limit the role organizational members play in the choice of strategy. So the strategies an organization can follow tend to be common to organizations within their industrial sector or organizational field; with changes coming about through variations in organizations' processes and systems which may occur unintentionally or through imperfect imitation of successful structures, systems or processes.	Aldrich (1979) DiMaggio and Powell (1983) Hannan and Freeman (1989) Deephouse (1996)

The six dimensions outlined above form the basis of the new instrument for which it was decided to adopt a self-report quantitative survey format. There were three reasons for this. First, in choosing a quantitative approach, we wished to develop an instrument that could be applied with

relative ease to large numbers of individuals and/or organizations to enable research with greater generalizability. Second, in choosing a self-report methodology over archival measures, we noted that archival measures are limited in their ability to successfully measure internal organizational processes (Boyd, Dess and Rasheed, 1993). Measures based on self-report are superior in this regard, as they elicit the informed opinion of organizational insiders to allow for more accurate detection of subtle local variations than may be achieved through data gathered through documents or external observers (Pugh, Hickson, Hinings and Turner, 1968). Third, we noted that self-report methods have been employed successfully in previous research on strategic decisions (Hickson *et al.*, 1986) and strategy development processes (Hart and Banbury, 1994).

Our expectations were that the instrument would consist of six underlying factors or subscales corresponding to each of the theoretical dimensions outlined earlier; the scales would have acceptable internal consistency; that the scales would have acceptable inter-rater reliability amongst several managers rating their own organization; and the six scales comprising the instrument would correlate with each other and a number of variables relevant to strategy. Table 2 summarizes these. In particular, the extant literature on strategy development might indicate a number of relationships between dimensions. We would expect these to include negative relationships of command with planning and incrementalism, but positive relationships with political processes. Command reflects the application of power through institutionalized authority or personality (Bennis and Nanus, 1985; Shrivastava and Nachman, 1989), rather than the rational application of planning processes or wider participation in decisions associated with Quinn's (1980) notion of logical incrementalism. We might also expect negative relationships between planning and the political, cultural and enforced choice scales, given that planning may be employed more readily in contexts that are less constraining or turbulent (Mintzberg and Waters, 1985). Reflecting Quinn's notion of logical incrementalism, we might also expect a positive relationship between planning and the incremental dimension. There should be positive correlations amongst the political, cultural and enforced choice scales: power structures might reinforce cultural influences on strategy development (Hickson, Hinings, Lee, Schneck and Dennings, 1971; Johnson, 1987) and normative political and cultural influences may be stronger in institutionalized regulated or coercive environments (DiMaggio and Powell, 1983). Measures of organizational performance might be positively related to high scores on the planning (cf. Pearce, Robbins and Robinson, 1987; Rhyne, 1986) and incrementalism scales (Quinn, 1980). Given that some level of consensus is necessary for higher performance (Hrebiniak, 1982), and political activity can increase in difficult times (Johnson, 1987), we might expect a negative relationship between scores on the political scale and performance. The enforced-choice scale might also be associated with lower performance and lower industry growth, given coercive competitive pressures in mature and declining industries that serve to limit strategic choice (Grant, 1995). In contrast, we might expect industry growth to be related positively to incrementalism, as experimentation might be easier during conditions of industry growth.

Similarly, we might expect a negative association between incrementalism and organizational size, as experimentation might be easier in smaller organizations. A positive association between political processes and size might be expected, however, as there exists greater potential for the emergence of conflicting stakeholder groups in larger organizations (unions, middle management, functional departments and so on). Table 2

Table 2. *Expected pattern of correlations amongst scale scores and other variables*

	Command	Planning	Incremental	Political	Cultural	Enforced choice	Size	Performance	Growth
Command		−	−	+					
Planning	−		+	−	−	−		+	
Incremental	−	+					−	+	+
Political	+	−			+	+	+	−	
Cultural		−		+		+			
Enforced choice		−		+	+			−	−

shows that it is expected that there is a unique pattern of correlations for every sub-scale of the new instrument.

Methodology

Item development

The questionnaire items were derived from the literature on strategic management processes (Bailey and Johnson, 1991). There were two reasons for this. First, the research aimed to assess a framework built on dimensions on strategy development prominent within the literature, but which lack a combined and systematic evaluation of their utility. Second, it was possible to inform questionnaire design by reference to much richer, fine-grained studies since much of the literature from which the dimensions were derived is based on research carried out on the basis of in-depth, contextual, qualitative case-based work in a broad range of organizational settings.[3] Item development comprised three stages: generation of a pool of items which reflected the distinctive characteristics of each dimension and which were suitable for use in a self-completion questionnaire; the evaluation of the item pool by an expert panel of academics; and the evaluation of the item pool by managers.[4]

Through a detailed review of the literature, items were developed thought to represent the characteristics singularly attributable to each of the underlying dimensions. To ensure content validity, an expert panel of ten strategy academics evaluated the representativeness of each item to the dimensions being measured. For each dimension, those ten items were chosen for further development of the questionnaire that the expert panel thought best represented the underlying theoretical dimensions. To help establish the face validity of the instrument, five practising senior managers were interviewed from five separate organizations. Each had experience in several organizations and sectors. Each of the six

dimensions was described to the managers, who indicated the extent to which the dimensions made sense in relation to strategy development within their present organization or a previous organization. Subsequently, managers were asked to work through the item pool and indicate any items that from their experience were inappropriate in explaining, or unrelated to, strategy development, and to identify those items which were ambiguous or were couched in 'academic language' or jargon. Such items were removed or modified. A draft questionnaire was then developed for pre-testing with three managers. After reading the draft, these managers suggested further minor refinements to the questionnaire.

These processes produced a final selection of 39 items. These are shown in Table 3. Items were rated on a seven-point scale. The scale was anchored only at the extremes with 'strongly disagree' (1) and 'strongly agree' (7). To ensure a consistent frame of reference in rating the items, respondents were informed that the items were designed to assess 'how strategic decisions are made in your organization'. Strategic decisions were defined for respondents as those: 'characterised by a large commitment of resources and deal with issues of substantial importance to the organization usually with longer rather than just short term impact; they usually involve more than one function and involve significant change'. Respondents were asked to rate each item with respect to the organizational unit most relevant to them (single business unit, division or corporate whole) and the organizational unit as it exists at present.

Sampling and sample characteristics

For adequate data analysis and to ensure the questionnaire was applicable across organizational contexts, a large sample was required of managers who might reasonably have knowledge of strategy development processes in their organization, and from a large number of organizations with a broad range of characteristics (e.g. different sectors, sizes and turnovers). It was also necessary to obtain multiple respondents from a large number of organizations to check the inter-rater reliability and validity of the questionnaire. The sample consisted of organizations connected to Cranfield University, either through teaching, consultancy or research links. The sample was

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[3] For example the initial construction of dimensions and items was informed by the 'five modes of managing' identified in the conclusion to the longitudinal case research by Johnson (1987, p. 298).

[4] A complete explanation of how the items and scales were developed is available in the fuller version of this report.

therefore not a random sample. This was employed as the most efficient strategy for obtaining a large number of organizations and managers to participate in the research. This strategy did not appear to constrain the sample in terms of overall size, sector, number of employees and turnover. Only currently practising managers were included in the sample. Over 80% of those organizations contacted agreed to participate.

To ensure managers were sampled who had knowledge of strategy development processes within their organizations, the first author and senior managers determined potential respondents based on the number of managers within the top management team for that organization and one to two levels below. Therefore, for each organization studied, respondents had good awareness of the strategy development process, and rated only that organization. The senior manager was then asked to distribute the questionnaires as agreed with the first author. Respondents returned the completed questionnaires directly to the researcher. This procedure allowed confidentiality to be maintained within organizations both in terms of responses and organizational members' participation. This procedure produced a questionnaire return rate of approximately 40%.

The sample consisted of 5332 managers from 937 organizations. On average, these managers had been working for their organization for 10.64 years (sd = 8.69, range = 0–45), had occupied their current post for 3.18 years (sd = 3.32, range = 0–45) and were 2.23 levels from the CEO or equivalent (sd = 1.45, range = 0–18). The sample reported working in a variety of management functions, although general management was reported most frequently (36.7%). On average, the organizations employed 7257.5 people (sd = 17 636.8, range = 1–167 000). Turnover was rated on an ordinal scale. The modal turnover was £11–100 million (30.5%, range < £1 million–>£1 billion). The vast majority of organizations were from the services sector (38.0%), the public sector (22.6%) or manufacturing (20.3%). Only organizations with more than three respondents were selected for analyses to establish the inter-rater reliability of the instrument and associations of the strategy development scales with related variables at the organizational level. Three respondents were considered the smallest number for meaningful inter-rater reliability statistics and

stable aggregation of individual level data. This restricted sample consisted of 770 organizations.[5]

Additional measures

Organizational performance was measured by four items ranked on a five-point fully-anchored scale (1 = 'well below average', 5 = 'well above average'). Example items include 'profitability' and 'market share increase'. (Scale mean = 12.82, sd = 3.49, α = 0.66).[6] Industry growth was measured by three semantic-differential items rated on a seven-point scale (e.g. 'low growth' = 1, 'high growth' = 7). (Scale mean = 11.39, sd = 3.68, α = 0.70.) Each measure was aggregated at the organizational level for subsequent analyses. Inter-rater reliability for each scale was assessed by James, Demaree and Wolf's (1984, 1993) within-group index. This creates a correlation-like index for every organization. Unlike intra-class correlations, this index is less likely to yield inaccurate or artificially low estimates of agreement (James *et al.*, 1984). The average agreement for each scale across organizations was: 0.95 for performance and 0.79 for growth. All these figures indicate reliability of raters within organizations.[7]

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[5] Compared to those excluded: tests revealed that this sub-sample employed more people (F = 6.41, df = 1/932, p < 0.05, η^2 = 0.01) and had a higher turnover (χ^2 = 31.7, df = 6, p < 0.001, λ = 0.01). They were more likely to be in the services sector and less likely to be in the public sector (χ^2 = 60.6, df = 6, p < 0.001, λ = 0.01). Nevertheless, as indicated by the effect size statistics, the differences were small, the vast majority of organizations were retained and the full range of organizational characteristics was represented in the final sample. Full details of this sub-sample are available in the fuller version of this report.
[6] This performance index is applicable to many public-sector organizations, due to legislative reforms during the 1990s, such as the introduction of NHS Health Trusts and compulsory competitive tendering. Nevertheless, for some public-sector organizations, this index is not applicable and missing data were returned for this index.
[7] Variables such as performance and industry growth can be measured through financial and economic indicators. It was decided to use self-reports here for three reasons. First, financial indicators of performance are not necessarily comparable across industries, and applied to the public sector, they are problematic. Second, there is some evidence that senior managers' self-reports can correlate strongly with financial and economic indicators (Dess and Robinson, 1984; Venkatraman and Ramanujam, 1987). Third, given the high levels of intra-rater reliability, it can be assumed these self-report measures conform reasonably well to more objective indicators.

Results

Alpha factoring[8] was used to examine the latent structure of the items. Alpha factoring is a form of exploratory factor analysis (EFA). As the six strategy-development dimensions were expected to correlate, an oblique rotation was used. All 5332 managers in the sample were used for this analysis. The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.90, and the Bartlett test of sphericity was significant (64 660.07, $p < 0.00001$). Both indicated the suitability of the data for EFA (Norusis, 1988). Prior to rotation, seven factors had eigenvalues greater than unity. However, the scree plot indicated a clear break in the eigenvalues between the sixth and seventh factors. For example, the fifth and sixth factors had eigvenvalues of 1.67 (4.3% of variance) and 1.60 (4.1% variance) respectively. The seventh and eighth factors had eigenvalues of 1.08 (2.8% variance) and 0.96 (2.5% variance) respectively. Therefore, six factors were extracted, accounting

for 49.0% of the variance prior to rotation. All six factors had eigenvalues greater than unity after rotation, accounting for 39.9% of the variance post-rotation. Table 3 shows the factor loadings (pattern matrix) for the rotated factor solution. Loadings less than 0.30 are omitted. Table 3 shows that: each item has its highest loading on its hypothesized factor and this was in the same direction as all other items in that factor; all hypothesized factor loadings exceed 0.30; no cross-loading reaches the 0.30 threshold. Overall then, EFA lends support to the construct validity of the scales: EFA provided evidence of six clear factors and the factors extracted conformed to the hypothesized structure.

Scale scores were calculated by summing the responses to each item, and then dividing by the number of items in the scale. Table 4 shows the means, standard deviations and reliability coefficients at both the individual and organizational level. At the individual level, α coefficients exceed 0.70 for all of the strategy development scales, except for the incrementalism scale (0.63). These results indicate that five of the scales have acceptable internal reliability at the individual level, and one scale has marginal internal reliability. Inter-rater reliabilities were estimated using James *et al.*'s (1984) index calculated for each organization from managers' individual scale scores within each organization. Table 4 shows that all inter-rater reliabilities exceed 0.95 for the strategy development scales. Therefore, at the organizational level, inter-rater reliabilities are acceptable, indicating convergence amongst managers within an organization rating strategy-development processes using the new instrument. Table 4 also shows correlations amongst the scales and other variables, using mean scores of managers' ratings within organizations to allow organizational-level analyses. To avoid type 1 error, the familywise error was set at $p < 0.05$. From the binomial distribution, the error rate was set at $p < 0.001$ for each correlation (Hays, 1988, p. 316). The number of employees was used as the index of organizational size. The natural log of this was used in the correlation analyses, since this variable had a massive positive skew. All the expected relationships in Table 2 correspond to significant correlations in the expected direction in Table 4. This pattern of results adds further support to the construct validity of the scales.

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[8] Although we had an *a priori* structure for the items, we opted for exploratory factor analysis (EFA), rather than confirmatory factor analysis (CFA) for a number of reasons (see Kelloway, 1995; Hurley *et al.*, 1997). First, EFA is more appropriate during scale development. Unlike CFA, EFA is able to uncover non-hypothesized cross-loadings. Second, EFA is less influenced by items' deviations from multivariate normality than CFA. Third, the provision of eigenvalues in EFA provides direct diagnostic information on the number of factors underlying the data. Fourth, it is highly likely that even small non-hypothesized loadings would be statistically significant in large sample sizes, obscuring the adequacy of fit indices. Fifth, although the sample size is large enough to split in two, to perform EFA on one half and CFA on the other half, the data in the sub-samples would be collected by the same researchers using the same protocols and procedures. Therefore, there are likely to be common errors across both samples, making true cross-validation problematic. We chose alpha factoring for two reasons (Tabachnick and Fidell, 1989). First, alpha factoring belongs to the family of factor analysis, rather than principal components analysis (PCA). As such, alpha factoring analyses the covariance amongst items, without examining items' unique and error variances. Therefore, alpha factoring is more appropriate than PCA for examining theoretical questions, rather than empirical summaries of samples. Second, the goal of alpha factoring is to extract factors with the highest reliability, which is appropriate for instrument development.

Table 3. Items and factor loadings

	1	2	3	4	5	6
1. Command						
A senior figure's vision is our strategy	0.77					
The chief executive determines our strategic direction	0.74					
The strategy we follow is directed by a vision of the future associated with the chief executive (or another senior figure)	0.67					
Our strategy is closely associated with a particular individual	0.62					
Our chief executive tends to impose strategic decisions (rather than consulting the top management team)	0.51					
2. Planning[a]						
Our strategy is made explicit in the form of precise plans		−0.76				
When we formulate a strategy it is planned in detail		−0.75				
We have precise procedures for achieving strategic objectives		−0.72				
We have well-defined planning procedures to search for solutions to strategic problems		−0.72				
We meticulously assess many alternatives when deciding on a strategy		−0.66				
We evaluate potential strategic options against explicit strategic objectives		−0.66				
We have definite and precise strategic objectives		−0.65				
We make strategic decisions based on a systematic analysis of our business environment		−0.64				
3. Incremental						
Our strategy develops through a process of ongoing adjustment			0.66			
Our strategy is continually adjusted as changes occur in the market place			0.62			
To keep in line with our business environment we make continual small-scale changes to strategy			0.59			
Our strategies emerge gradually as we respond to the need to change			0.50			
We keep early commitment to a strategy tentative and subject to review			0.48			
We tend to develop strategy by experimenting and trying new approaches in the market place			0.47			
4. Political						
Our strategy is a compromise which accommodates the conflicting interests of powerful groups and individuals				0.64		
The vested interests of particular internal groups colour our strategy				0.61		
Our strategies often have to be changed because certain groups block their implementation				0.47		
Our strategy develops through a process of bargaining and negotiation between groups or individuals				0.43		
The information on which our strategy is developed often reflects the interests of certain groups				0.35		
The decision to adopt a strategy is influenced by the power of the group sponsoring it				0.34		
5. Cultural						
There is a way of doing things in this organization which has developed over the years					0.74	
Our strategy is based on past experience					0.66	
The strategy we follow is dictated by our culture					0.62	
The attitudes, behaviours, rituals, and stories of this organization reflect the direction we wish to take it in					0.57	
Our organization's history directs our search for solutions to strategic issues					0.55	
There is resistance to any strategic change which does not sit well with our culture					0.53	
The strategies we follow develop from 'the way we do things around here'					0.52	
6. Enforced choice[a]						
Our freedom of strategic choice is severely restricted by our external business environment						−0.57
Forces outside this organization determine our strategic direction						−0.54
Barriers exist in our business environment which significantly restrict the strategies we can follow						−0.51
We have strategy imposed on us by those external to this organization, for example the government						−0.49
We are not able to influence our business environment; we can only buffer ourselves from it						−0.46
We are severely limited in our ability to influence the business environment in which we operate						−0.43
Many of the strategic changes which have taken place have been forced on us by those outside this organization						−0.30

Note: [a]Negative loadings on the planning and enforced scales are an artefact of using an oblique rotation. Note that all loadings are in the same direction. In subsequent analyses, scale scores on these two scales were computed so that high scores indicate high planning or enforced choice respectively.

Table 4. Means, standard deviations, α coefficients, inter-rater reliabilities and organizational level correlations

| | Individual level analyses | | | Organizational level analyses | | | | | | | | | | |
	Mean	SD	α	Mean	SD	IRR	1	2	3	4	5	6	7	8	9
1. Command	4.14	1.27	0.80	4.00	0.74	0.97	–								
2. Planning	3.99	1.16	0.89	4.15	0.80	0.99	–0.21*	–							
3. Incremental	4.38	0.78	0.63	4.39	0.40	0.98	–0.17*	0.20*	–						
4. Political	4.02	1.07	0.78	4.01	0.62	0.98	0.24*	–0.45*	–0.03	–					
5. Cultural	4.20	0.91	0.71	4.20	0.53	0.97	0.10	–0.35*	0.07	0.46*	–				
6. Enforced choice	4.00	1.10	0.80	4.00	0.74	0.98	0.06	–0.15*	–0.10	0.38*	0.19*	–			
7. No. of employees				7932	18 707	–	0.05	0.07	–0.13*	0.15*	0.03	–0.01	–		
8. Performance	12.82	3.49	0.66	12.62	2.65	0.95	–0.05	0.19*	0.15*	–0.21*	–0.08	–0.39*	0.09	–	
9. Industry growth	11.39	3.68	0.70	11.51	2.58	0.79	0.02	0.00	0.13*	–0.02	0.04	–0.24*	–0.05	0.21*	–

Notes: $n = 5332$ $n = 732–770$ * $p < 0.001$ (overall familywise α rate set at approximately $p < 0.05$).
IRR = average inter-rater reliability across all organizations.

Discussion

The analyses support the validity of the instrument and show the instrument to have acceptable reliability, especially inter-rater reliability. This study has a number of limitations, most notably the reliance on cross-sectional analysis; the use of (aggregated) self-report data to assess performance and growth; the use of a convenience sample; and that construct validity was inferred from correlations amongst sub-scales and three other variables only. These limitations, and the marginal internal reliability of the incrementalism scale, suggest there are areas of further development for the scales.[9] Notwithstanding these limitations, in developing these scales, a number of implications and opportunities emerge for research.

One area of research may seek to understand the relationship of strategy development processes to differing contexts. Pettigrew (1985) has emphasized the importance of seeking to understand strategy development processes within context because context will influence the way in which strategies develop. Eisenhardt and Zbaracki

(1992) have, however, expressed concern regarding the concentration of strategy development research on specific industry sectors. The instrument developed here provides the opportunity for comparative work across industries but also other layers of analysis. For example, we might expect reliable differences amongst organizations, industries and countries (cf. for example Oliver, 1991).

It is not suggested here that researchers should try to build a contingency model sophisticated enough to account for all variations. A parsimonious approach may seek archetypes or configurations of strategy development (cf. Meyer, Tsui and Hinings, 1993). Strategic typologies developed by Miles and Snow (1978), Miller (1986) and Mintzberg (1979) provide notable precedents for such an approach. Indeed, the pattern of correlations reported here indicate it is likely that the dimensions we have used occur in combination. If a finite number of archetypes are uncovered, they could be related to different contexts more easily than six dimensions in isolation. The extent to which any configurations can be explained by contextual factors will influence the extent to which any patterns move beyond empirical description of strategy development to developing causal models (cf. Doty and Glick, 1994).

Pettigrew and Whipp (1991) have also raised the prospect of a link between organizational performance and managerial processes. There are significant correlations reported here between some of the strategy development scales and performance. However, simple bivariate relationships are unlikely to provide robust explanations.

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[9] As noted earlier, a similar instrument (Hart and Banbury, 1994) has unknown inter-rater reliability. Further, Hart and Banbury report two internal reliabilities of α < 0.70. The average reliability of their scales is α = 0.69. Here, the average reliability for the six scales is α = 0.77. As well as the theoretical reasons noted earlier, there are then empirical reasons for claiming the scales presented here are a development of previous research.

Hart and Banbury (1994) and Mintzberg, Ahlstrand and Lampel (1998) have argued that organizations with multiple approaches to strategy development have superior performance to those with uni-dimensional or more limited approaches to strategy development. The question of the links between process and performance has therefore been raised and needs to be further tested. In terms of the discussion above, such a relationship might be refined to embrace configurations and context. The question which emerges is the extent to which a relationship between different measures of organizational performance can be demonstrated in relation to different configurations within industry or organizational contexts.

Importantly, the instrument also allows researchers to track changes in strategy development processes over time, both within organizations and within defined populations of organizations, and to examine whether any such changes are related to changes in other organizational processes, performance or in economic and institutional environments.

Overall, then, whilst we recognize the substantial contributions to the understanding the complexity of strategy development processes by case-based, qualitative research, it is hoped that the instrument presented here can enable researchers to address better questions which require large-scale comparative studies and empirically tested generalizations.

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