AN EMPIRICAL MODEL OF THE LEARNING ORGANISATION

Abstract
This paper seeks to address three problems in the learning organisation literature. Firstly there is no consensus view of what constitutes a learning organisation. Secondly empirical studies of the learning organisation have been both challenging to conduct and sparse in number. Finally, it is unknown whether the learning organisation is still a popular concept. Using content analysis of 11 of the most influential publications a syncretic model was developed. This was subsequently tested, modified and validated. Structural equation modeling was used on an instrument responded to by 170 Chief Executives and Human Resource Directors of FTSE- and AIM-listed companies. Descriptive statistics demonstrated that the learning organisation concept, contrary to the views of some commentators, is still very popular amongst practitioners.

Keywords
Learning organisation, empirical study, structural equation model

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Introduction

The learning organisation is a concept that has been around for some twenty years now. However the efficacy of the concept and its impact on practitioners has never been evaluated. This research tests the efficacy of the learning organisation by building a structural equation model from latent variables inductively developed from the literature.

The concept of the learning organisation was popularised by Peter Senge's book *The Fifth Discipline: The Art and Practice of the Learning Organization* (Senge 1990) The concept of the learning organisation had been around for some considerable time before Senge's publication. Indeed many scholars trace the concept variously to the work of Cyert and March (1963) and/or Cangelosi and Dill (1965).

Whilst the topic has remained popular with practitioners, the reification of the learning organisation is fraught with difficulties. As Kirby (2005) points out, *In Search of Excellence*, (Peters and Waterman 1982), despite all its shortcomings, was the first to really consider the underlying variables that drive commercial success. This publication has a considerable impact on managers of organisations, and indeed continues to be popular. The impact of practitioner-oriented literature is overlooked by academics. The same could be said to be true of *The Fifth Disciple.*

Searching for "the learning organisation" is going to be, by any measure, a quixotic pursuit. Firstly, there is no agreed definition of the learning organisation, in fact it is a contested term. Since the publication of *The Fifth Discipline* the literature that is available to practitioners on the learning organisation has proliferated. This has created a burgeoning array of interpretations of concepts that surround the concept. There has been no real attempt to consider any convergence of theory and test this empirically. Secondly, providing evidence of causality in organisational performance is fraught with difficulty. There are so many intervening variables that it is virtually impossible to calculate using even the most sophisticated time-based multivariate analysis tools. The legacy of *In Search of Excellence* taught us that success is ephemeral.

Ontology of 'Learning' and 'Organisation' Concepts

Much of the excitement about the learning organisation is that for an organisation to survive it needs to learning quicker than its conditions are environment. As Dixon (1994) points out this concept can be written as $L \geq C$, where L=Learning and C=Conditions. Whilst this is a flawed interpretation of Darwinian thinking, it is an appealing concept to managers. The first problem created in the literature, however, is how the:

> ... magic juxtaposition of the terms 'organization' and 'learning' stresses, rather than hides the need for a clear and elaborate conceptualizations of what is meant by both 'organizations' and 'learning.' (Easterby-Smith et al. 2001, p.17)

Tsang (1997) has been credited by Burnes (2000) with first making the division clear between the learning organisation and the learning organisation. Indeed this conceptual clarification has been distinctive in the literature (e.g. Ayas 2001; Finger and Brand 2001) and has been subsequently built upon (Sun and Scott 2003). What has not particularly helped is a further distinction between 'the' learning organisation and 'a' learning organisation (Õrtenblad 2002; Sun 2003).

An investigation of the academic-oriented and practitioner-oriented literature seems to suggest four different meanings used by the two different schools. Therefore, a taxonomy has been derived that shows the different ways in which the terms organisational learning and the learning organisation can be interpreted. Whilst a taxonomy is nothing new in the literature on learning at an organisational level (e.g. Crossan et al. 1999a; Sun 2003; Shipton 2006) previous attempts usually overlook the ideal type, or try and integrate the two schools.

The four different orientations in the organisational learning school are shown in Table 1. The 'cynical school' doubt that organisations can learn. Members of the threshold school consider when and/or if organisational learning has taken place. The universal school believes that all organisations learn. The ideal type, meanwhile, recognises the bifurcation in the literature and considers the learning organisation. Ideal types can be described as 'useful fictions against which the real can be compared' (Burrell and Morgan 1979, p.257) such as bureaucracy, economic man and capitalism.

1. Cynical Weick 1991; Argyris and Schön 1996; Baumard and Starbuck 2006	**2. Threshold** Levitt and March 1988; Cook and Yannow 1993; Dodgson 1993; Kim 1993; Lähteenmäki et al. 2001 *Questioning* Popper and Lipshitz 1998
3. Universal Levitt and March 1988; Klimeki and Lassleben 1998; Lähteenmäki et al. 2001; Williams 2001	**4. Ideal type** Senge 1997; Easterby-Smith et al. 2001; Huysman 2001

Table 1 - Taxonomy of Organisational Learning Manifestations

The same categories mostly apply for the learning organisation school. Indeed the ubiquitous and promiscuous use of the magical term 'learning organisation' is confirmed by (Smith 2008). He confirms that previous editors of *The Learning Organization* journal have interpreted the concept in their own fashion. The taxonomy of learning organisation manifestations is shown in Table 2. Thus the cynical school believes that there is no such thing as a learning organisation. The threshold school in this literature believes that there is a difference between 'ordinary organisations' and 'learning organisations'. The universal school is the default position as it implies 'all organisations learn'. The ideal type school believes that the learning organisation is a useful fantasy. The collectivist model believes a learning organisation to be one that provides appropriate training for its staff.

1. Cynical Tosey 2005; Cavaleri 2008; Grieves 2008	**2. Threshold** Beck 1989; DiBella 1995; Gardiner and Whiting 1997; Argyris 2000; Garvin 2000; Mahoney 2000; West and Burnes 2000; Goh 2001; Jones 2001; Lennon and

	Wollin 2001
3. Universal This is the default position (e.g. Senge 1997; Garvin 2000).	**4. Collectivist** Keep 2000; Keep and Rainbird 2000

Table 2 Taxonomy of Learning Organisation Manifestations

Of course, it is possible for different authors to appear in different categories at different times. It is also clear that some authors are unaware of the various ontologies. For example authors who identify the bifurcation in the literature (Tsang 1997; Sun 2003; Sun and Scott 2003) fail to mention the use of ideal types. Others still discuss the different schools and consciously sit on the fence (e.g. Popper and Lipshitz 1998).

This paper, therefore, considers 'the learning organisation' to be an ideal type, whilst we recognise that all organisations learn in the sense that it will be an emergent property of a system, the journey towards a learning organisation is one without a final destination. It is therefore impossible to decide whether an organisation is a learning organisation, rather this research is used to validate or falsify common ideas proposed in the literature by evaluating these against a 'panel of 170 experts'.

The survey instrument comprised of three sections. The first section, which is not reported in this paper, was concerned with respondents' views of business and management theory. The second section of the questionnaire was concerned with building the structural equation model. Finally, the third section was concerned with the respondents' disposition towards the learning organisation concept.

A Syncretic Model of the Learning Organisation Concept

One of the challenges of researching in the area of organisational learning and the learning organisation is that the field is positively littered with the remnants of esoteric frameworks (e.g. Daft and Weick 1984; Lyles and Schwenk 1992; Kim 1993; Crossan et al. 1999b; Williams 2001; Gnyawali and Stewart 2003). These are rarely empirically tested. Figure 1 shows a syncretic model of the learning organisation concept. It was derived from content analysis of the literature and empirically validated from the responses of 170 Chief Executives and Human Resource Directors of FTSE- and AIM-listed companies. Thus Figure 1 shows that leadership drives learning, strategy and change. Learning drives strategy and change, whilst strategy influences change.

Chief Executives and Human Resource Directors of FTSE- and AIM-listed companies were targeted for the following ++ reasons. 1. The penalty for failing to learn in commercial organisation threatens the very existence of the enterprise. 2. These companies are large organisations that require coordination between divisions or companies. This implies a more sophisticated set of systems for organisational learning. 3. The stakeholders in publicly-quoted companies are at the mercy of the market for raising capital. This probably makes their management more complicated as they disclose performance results. 4. As members of the top management team they are more likely to have a holistic view of their enterprise.

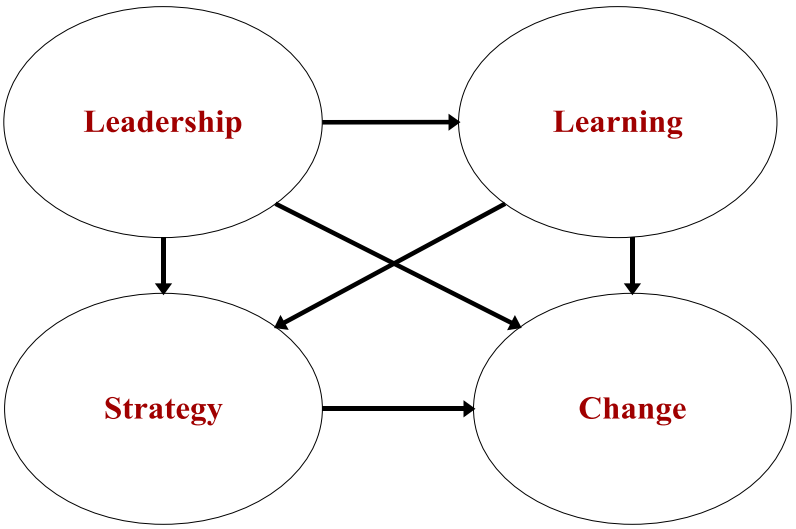

Figure 1 - A Syncretic Model of the Learning Organisation Concept
Source: Author

A syncretic model of the learning organisation concept was derived using SmartPLS (Ringle et al. 2005). Structural equation modelling is well suited to this method as it indirectly measures views and opinions. Thus a theme that needs to be tested becomes a latent variable. Each theme then has a number of questions that are different, indirect manifestations of that theme (Hair et al. 2010). However, whilst the respondents are asked a number of different questions, they are unaware of the over-arching theme that is being tested. To increase the integrity of the latent variables the questions in the survey instrument were randomised.

In all, twelve latent variables were identified. This is referred to as the first-order model. These were grouped into four meta-variables. In the structural equation model this is referred to as second order, as they are latent variables of latent variables (ibid.). The relationship between the first- and second-order latent variables is shown in Table 3.

First-order variable	Proposition	Second-order latent variable
Leadership	A learning organisation will concentrate on enabling structures rather than negative behaviours.	Structures
	Learning organisation will have appropriate staff.	Staff
Learning	Learning organisations will make time to contemplate the future.	Future
	The Learning organisation will make time to reflect on the past.	Past
	The Learning organisation will create room for dialogue.	Dialogue
Strategy	A learning organisation will have a culture of playful experimentation.	Experiment
	A learning organisation will constantly challenge the rules of the industry.	Rules
	A learning organisation is committed to the longevity of the enterprise.	Longevity
	A learning organisation will have a unitary culture.	Unitary
Change	The tension between hierarchy and learning is managed in a learning organisation.	Hierarchy
	In a learning organisation planning is more important than the plan.	Planning
	Organisational politics will be minimised in a learning organisation.	Politics

Table 3 - Model Derivation

It is important to point out that Figure 1 is *not* a framework of the learning organisation. Rather it is representation of construct validity, a consensus view if you like, of the management philosophy of senior managers in currently successful organisations. Whilst it is a consensus view there is still a distribution of answers to the questions. Each variable creates a score for the β, the path coefficients, and the R^2 which is a measure of variance. Thus there are scores for β and R^2 for both the first- and second-order model.

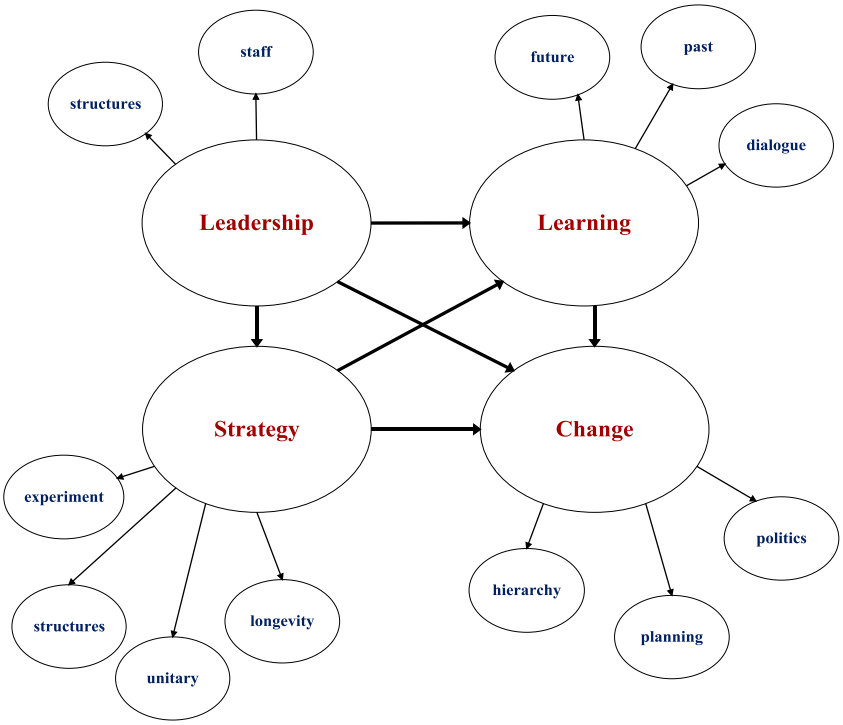

Figure 2 - First- and Second-Order Model of the Learning Organisation

Figure 2 shows the first- and second-order path diagrams. Thus leadership is driven by latent variables that have been named *structures* and *staff*. Learning is driven by constructs that have been named *future*, *past* and *dialogue*. Strategy is driven by latent variables that have been named *experiment*, *structure*, *unitary* and *longevity*. Finally change is driven by latent variables that have been named *hierarchy*, *planning* and *politics*. These first-order constructs will be explained below.

Deriving the Latent Variables from Literature

The first stage to derive a model was to carry out content analysis on the literature on the learning organisation.

Table 4 shows the map of how the latent variables map on to themes identified from the literature. Twelve themes were inductively developed from 11 books. Of the 132 permutations, 65 are represented from the literature. This represents 49% of coverage. The yellow squares show that the particular theme is covered by the author. The last column is the sum of authors who have written on a particular theme. The bottom row is how many of the identified themes have been covered by the relevant author.

Proposition	First-order variable	Senge	Garvin	de Geus	Pedler *et al.*	Burgoyne *et al.*	Garratt	Watkins & Marsick	Dixon	Lampel (in Mintzberg)	Collins & Porras	Collins	**Total**
4	(leadership, structures)	■		■	■			■		■		■	6
5	(leadership, staff)		■				■		■		■	■	5
6	(learning, future)	■	■	■	■								4
7	(learning, past)		■		■		■		■	■	■		6
8	(learning, dialogue)	■	■		■	■	■	■	■	■		■	9
9	(strategy, experiment)		■	■	■			■	■	■	■	■	8
10	(strategy, rules)		■		■					■			3
11	(strategy, longevity)	■		■								■	3
12	(strategy, unitary)	■		■							■	■	4
13	(change, hierarchy)	■	■	■	■	■	■		■	■			8
14	(change, planning)		■				■				■	■	4
15	(change, politics)	■		■	■	■		■					5
	Total	7	8	7	8	3	5	4	5	6	5	7	65

Table 4- Mapping of Literature to Latent Variable

Table 4 also shows the abbreviations used throughout this paper for each first-order latent variable. Thus leadership is an aggregation of *structures* and *staff*, learning is aggregated from *past*, *future* and *dialogue*, strategy from *experiment*, *rules* and *longevity*; change from *hierarchy, planning* and *politics*. The relationship between first- and second order variables is shown by putting them both in brackets. Second order variable first, delimited by a comma, followed by the first-order variable. For example (strategy, structures). The second-order variables, meanwhile, are referred to throughout this thesis as the four *quadrates* of the syncretic model.

Table 5 also shows the Amazon rank and a ranking systems derived by Davenport et al. (2003). Clearly there are some incompatibilities between these two metrics. The first nine books are specifically on the learning organisation of which Senge's appears the most influential. Pedler et al. (1991), however, have the second highest Amazon sales rank among the nine learning organisation books and yet do not have a ranking from Davenport. With a sales rank that goes below two million Garratt (2000) is the lowest ranked book. Books, as opposed to academic papers were chosen as it assumes that managers are more likely to read these than academic journals.

Name of Book	Author(s)	Amazon.co.uk Sales Rank	Davenport's Rank
The Fifth Discipline	Senge (1997)	10,500	6
Learning in Action	Garvin (2000)	671,102	131
The Learning Company	Pedler et al. (1991)	168,584	-
Towards the Learning Company	Burgoyne et al. (1994)	676,368	-
The Living Company	de Geus (1999)	244, 326	124
The Organizational Learning Cycle	Dixon (1994)	437, 797	178
The Learning Organization	Garratt (2000)	2, 013, 674	-
Sculpting The Learning Organization	Watkins and Marsick (1993)	809, 481	-
Strategy Safari	Mintzberg et al. (1998)	10, 775	16
Built to Last	Collins and Porras (2000)	6,283	76 (Porras)
Good to Great	Collins (2001)	424	84

Table 5 - Literature Review of the Learning Organisation

It is noteworthy that all the authors in Table 5 are either from the United States or the United Kingdom. Therefore it is worth considering whether British management theory is comparable and indeed compatible with American management theory. So far as these issues are concerned the views are divided. Collins (2000) states the Britain and America are often 'paired'. Meanwhile Brindle and Stearns (2001) assert American management is widely modelled in Europe. However, in the field of learning at the organisational level Easterby-Smith and Araujo (2001) claim that Americans rarely cite Europeans and vice-versa. This claim is not substantiated by any bibliographic analysis, however. For the purpose of this paper it is assumed that UK and American literature is, for the large part, compatible. However, the strongest influence appears to be from the direction of the world's largest economy.

Thus the most influential books on the learning organisation concept can be considered as comprising of eleven books. The first nine books are referred to as the classical school of the learning organisation. These are *The Fifth Discipline* (Senge 1997); *The Learning Company* (Pedler et al. 1991); *Towards the Learning Company* (Burgoyne et al. 1994); *Learning in Action: A Guide to Putting the Learning Organization to Work* (Garvin 2000); *The Living Company* (de Geus 1999); *The Learning Organization* (Garratt 2000); *Sculpting The Learning Organization* (Watkins and Marsick 1993); *The Organizational Learning Cycle* (Dixon 1994). The final book is actually an excerpt from *Safari Strategy* (Mintzberg et al. 1998) by Lampel (1998). At just under 700 words this article offers a pithy summary of the learning organisation concept.

The remaining two books are from what we have termed *the neo-learning organisation* literature. These are successors to the theme of corporate longevity. The first book is *Built to Last: Successful Habits of Visionary Companies* by Collins and Porras (2000). The second is *Good to Great: Why Some Companies make the leap... and others don't* by one of the co-authors of the previous book (Collins 2001).

It is worth considering to what extent the literature selected is influential and representative of the concept. In his analysis DiBella (1995), for example, draws upon *The Fifth Discipline* (Senge 1997); *Learning in Action* (Garvin 2000); *The Learning Company* (Pedler et al. 1991); *The Learning Organization* Garratt (2000) and *Sculpting The Learning Organization* by (Watkins and Marsick 1993). However, his review is restricted to those books that *specifically* use the phrase learning organisation somewhere in their title. This excludes *The Living Company* (de Geus 1999). Furthermore, whilst de Geus only uses the term learning organisation only once in his work he has a great deal in common with other authors from the classical learning organisation literature. The other work DiBella did not include from the classical learning literature is *Towards the Learning Company: Concepts and Practices* (Burgoyne et al. 1994).

Jackson (2001) uses fantasy theme analysis to examine the structure of the messages in *The Fifth Discipline*. In his definitions of learning organisations he uses the following references: *The Fifth Discipline* (Senge 1997); *The Learning Company* (Pedler et al. 1991); *The Knowledge Creating Company* (Nonaka and Takeuchi 1995); *Learning in Action* (Garvin 2000); *Sculpting The Learning Organization* (Watkins and Marsick 1993); *Management Learning Organizations* (Kilman 1996) and *The Living Company* (de Geus 1999). Thus with the exception of Kilman (1996) and Nonaka and Takeuchi (1995) these are the same references as those cited in the introduction to this chapter. The former is an academic paper

(and therefore outside the scope of the criteria for this research) whilst the latter is a book on knowledge management, arguably the successor to the learning organisation.

In their empirical studies in organisational learning Lähteenmäki et al. (2001) draw upon Senge, Garvin, Pedler *et al.*, Dixon. Meanwhile Klimeki and Lassleben (1998) draw upon Senge, Garvin, Pedler, and de Geus. Õrtenblad (2002) in his typology of the learning organisation reviews Watkins and Marsick Garratt, Senge, Pedler *et al.*, Garvin. However, he also reviews Lessem 1991; Jones and Hendry 1992; McGill et al. 1992; Jones and Hendry 1994; Marquardt and Reynolds 1994; West 1994; Pedler and Aspinwall 1998. Of the seven not included in this study four are journal articles, one of which is unpublished. These latter publications would not, therefore, meet the selection criteria. Of the three books Lessem (1991) is out of print, as is Marquardt and Reynolds (1994).

Pedler and Aspinwall (1998) is an interesting case in point as it is a synthesis of learning organisation theory. In fact seven out of the 11 works cited in this work are referenced in *A Concise Guide the Learning Organization*. The ones excluded from their work, but included in this paper are (Burgoyne et al. 1994; Mintzberg et al. 1998; Collins and Porras 2000; Collins 2001). Whilst the first two of these are from the classical learning organisation literature, the latter two are from the neo-learning organisation literature. However, with the exception of Burgoyne et al. (1994) these books were published in the same year as Pedler and Aspinwall (1998).

From the classical learning literature six out of the seven have been consistently reviewed by other authors, acting independently. Indeed, as is shown in Table 4, *Towards the Learning Company: Concepts and Practices* (Burgoyne et al. 1994), makes the weakest contribution to the model. Deciding the criteria and which books to include and exclude is always going to be a matter of debate. However, it *seems* that the books selected provide some sort of foundation for the learning organisation concept.

Table 4 shows that Garvin and Pedler et al. cover the highest amount of themes, scoring 8 out of 12. This is closely followed by Senge and de Geus with 7 out of 12. The least amount of coverage came from the Burgoyne et al. book. The most common theme was (learning, dialogue), which scored 9 out of a possible 11. This is closely followed by (strategy, experiment) and (change, hierarchy). The most underrepresented themes with a score of 3 out of 11 were (strategy, rules) and (strategy, longevity).

Whilst this map is a useful summary it represents qualitative, rather than quantitative analysis. As such it does have its limitations. As an extreme example, a theme may be represented by a whole chapter in one book, and only a sentence in another book. This analysis has tried to avoid such extremes. Table 4 also illustrates how close the neo-learning organisation is to the classical learning organisation themes. This helps to justify their inclusion into the sample of literature chosen.

The following is a list of propositions that were mostly inductively derived from the literature. Some of the propositions are of the authors' invention. The final section "Disposition Towards the Learning Organisation" is for the collection of descriptive statistics to see if the learning organisation still has resonance with managers.

List of Propositions

Leadership

Proposition 4: A learning organisation will concentrate on enabling structures rather than negative behaviours.

5. In my company people feel they have the independence to make their own decisions in areas that directly affect their work.
6. My company regularly monitors the performance of individuals.
7. My company pays a great deal of attention on incentives to motivate people.
8. In my company poor performance is punished.
9. My company makes a sustained effort to minimise the number of rules and regulations.

Proposition 5: Learning organisation will have appropriate staff.

10. My company is successful in attracting good quality individuals.
11. My company is successful in retaining talented individuals.
12. Compared to the competition my company has a relatively low turnover amongst key staff.
13. Compared to the competition my company has an effective succession programme for our senior and middle managers.
14. My company prefers to develop future leaders from within the organisation.

Learning

Proposition 6: Learning organisations will make time to contemplate the future.

15. There is always sufficient time to consider what the future might hold for us.
16. In my company we feel we are in control of our collective destiny.
17. Discussing the distant future is actively encouraged in my company.

Proposition 7: The Learning organisation will make time to reflect on the past.

18. Before a project is started we always reflect on what we did last time we were in a similar position.
19. In my company we have a tendency to make the same mistakes repeatedly.
20. In my company we regularly review areas we need to improve upon.

Proposition 8: The Learning organisation will create room for dialogue.

21. Achieving consensus in decision making is important in my company.
22. In my company considering ‘what is right’ is more important than ‘who is right’.
23. In my company challenging assumptions is encouraged.
24. In my company the word ‘learning’ is used a lot.

Strategy

Proposition 9: A learning organisation will have a culture of playful experimentation.

25. Independent experimentation in new product development is encouraged here.
26. Middle managers are empowered to implement innovative management processes here.
27. Employees in my company are encouraged to undertake minor projects on their own initiative.

28. Generally speaking, errors can be considered an opportunity for learning in my company.

Proposition 10: A learning organisation will constantly challenge the rules of the industry.

29. We constantly challenge the traditionally-held beliefs of our business sector.
30. We are viewed as unconventional in our industry.
31. We constantly introduce products and/or services to the markets before our competitors.

Proposition 11: A learning organisation is committed to the longevity of the enterprise.

32. We would be willing to diversify to different sectors of the economy.
33. In my company the needs of the organisation take priority over individual needs.
34. Company loyalty is rewarded in this organisation.

Proposition 12: A learning organisation will have a unitary culture.

35. My company seeks to employ people that will fit into the organisation's culture.
36. In my company it is considered important that everybody agrees with the company strategy.

Change

Proposition 13: The tension between hierarchy and learning is managed in a learning organisation.

37. Once objectives have been set by senior management they are non-negotiable.
38. The rate of change within my company feels too slow to respond to the number of external pressures.
39. My company is mostly successful at implementing change.

Proposition 14: In a learning organisation planning is more important than the plan.

40. Organisation in my company feels disordered.
41. Everything in my company mostly goes according to plan.
42. My company acknowledges that chance sometimes contributes to success.
43. In my company we are flexible enough to respond to unexpected opportunities and/or threats.

Proposition 15: Organisational politics will be minimised in a learning organisation.

44. Rivalry between departments/divisions in my company has a positive impact on organisational effectiveness.
45. Individual success in my company is largely dependent on our original professional training (e.g. engineer, accountant, lawyer etc.).
46. Loyalty is felt more towards the departments/divisions of the organisation than it is to the company as a whole.

Disposition Towards the Learning Organisation

Proposition 16. More successful organisations will have adopted the learning organisation concept.

47. I believe we are working towards the successful implementation of the learning organisation at my company.
48. I believe we have implemented the learning organisation at my company.
49. Implementation of the learning organisation concept was unsuccessful in my company.
50. I believe the implementation of the learning organisation to be an unattainable goal in my company.
51. The learning organisation is, I believe, unattainable in *any* company.

Model Development

Once the questionnaires had been returned they were entered into a Microsoft Excel spreadsheet. The original return was archived and given a unique identifier. The name of the company and the iteration response was recorded along with the returned data. Missing data was represented by a value of -1. The file was converted into a CSV file (Comma separated variables) so it could be read by SmartPLS (Ringle et al. 2005).

The model built is a second order structural equation model. The propositions are represented by the latent variables in the first-order. These are aggregated into a second-order model that represents the four quadrates of leadership, learning, strategy and change. The model is reflective in character and takes a minimum of four observations to make a calculation.

Each variable creates a score for the β, the path coefficients, and the R^2 which is a measure of variance. Thus there are scores for β and R^2 for both the first- and second-order model. Table 6 shows the process of model development.

Model 01	First iteration of model building.
Model 02	Where negative numbers appeared the answers were reversed. This had no other effect than to change the sign.
Model 03	By trial and error the AVEs were increased to 0.5 successively removing low scoring Betas. Anything less than 0.6 was considered low, though in some cases exceptions were made to maximise the Beta and AVE values (Hair et al. 2010).
Model 04	Having eliminated certain questions an attempt was made to see if they mapped on to any other variables. On two occasions this worked well. However, in terms of the propositions these did not make any sense at all.

Table 6- Iterations of Model Development

In the first stage the data was placed in the hypothesised model. In the second stage the questions that produced a negative β were reversed. In the third stage the questions with the lowest βs were excluded until the AVEs (Average Variance Extracted) in the first-order model were greater or equal than 0.5. This follows a recommendation from Fornell and

Larcker (1981). Generally these were identified as questions that had a loading of less than approximately 0.6 (Hair et al. 2010).

	AVE	R^2
Leadership		
Structures	0.3795	0.7181
Staff	0.5066	0.8561
Learning		
Future	0.5205	0.6562
Past	0.5672	0.6691
Dialogue	0.3934	0.717
Strategy		
Experiment	0.4554	0.7105
Rules	0.5495	0.5991
Longevity	0.3346	0.3622
Unitary	0.5647	0.2242
Change		
Hierarchy	0.4943	0.7676
Planning	0.4484	0.8418
Politics	0.3251	0.292

Table 7 - Initial Iteration of the Model

Table 7 shows the first iteration of the model, with a number of the AVEs for the first-order latent variables being below 0.5.

	AVE	R^2
Leadership		
Structures	0.5735	0.7002
Staff	0.5067	0.8791
Learning		
Future	0.5205	0.6556
Past	0.5671	0.6719
Dialogue	0.501	0.6934
Strategy		
Experiment	0.5407	0.6805
Rules	0.5493	0.6099
Longevity	0	0.3912
Unitary	0.5648	0.2158
Change		
Hierarchy	0.7385	0.7659
Planning	0.5813	0.8362
Politics	0.4695	0.2814

Table 8- Final Iteration of the Model

Table 8 shows the final iteration of the model. It will be noted that the AVEs are all > 0.5 with the exception of (change, politics) which falls slightly short and (strategy, longevity) which has only one manifestation. The values for R^2 are mostly above 0.6 with the exception of (strategy, longevity), (strategy, unitary) and (change, politics). The R^2 for (leadership, structures) and (change, hierarchy) are both above 0.7, whilst (leadership, staff) and (change planning) are both above 0.8.

In all a total of 9 out of the 42 questions were removed as they not making a significant contribution These were; (leadership, structures), question 8 and question 9, (learning, dialogue), Question 21, (strategy, experiment) Question 27, (strategy, longevity), Question 32 and Question 33, (change, hierarchy) Question 37, (change, planning) Question 42, (change politics) Question 45. This means the finalised model relies on 33 questions driving 12 constructs. The model is thus empirically validated.

Second-Order Model Results

Figure 3 shows the path model for the second-order variables. As these are latent variables of latent variables their scores are going to be lower than that of the first-order model. However the numbers are still very respectable.

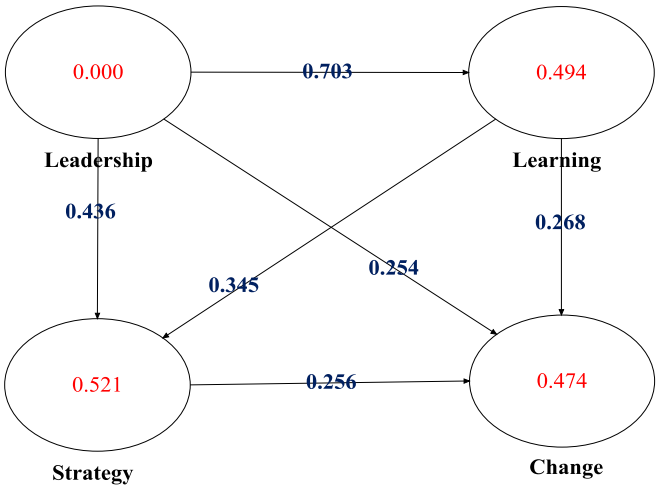

Figure 3 - Second-order Model Results

Table 9 shows a summary of the path coefficients and variance. For a second-order model these results are very respectable. In particular it will be noted that the link between leadership and learning. A β of 0.703 and with an R^2 of 0.494 implies that 49% of the data is captured in the causality between the latent variable *Leadership* and *Learning*. The high scores demonstrate how the questions captured the propositions hierarchically between the second- and first-order models. The lowest R^2 in the model is, in fact, 0.474. The lowest path coefficient is between *Leadership* and *Change*; a value of 0.254.

Driver	Influences	Beta	R^2
Leadership	Learning	0.703	0.494
	Strategy	0.436	0.521
	Change	0.254	0.474
Learning	Strategy	0.345	0.521

	Change	0.268	0.474
Strategy	Change	0.256	0.474

Table 9 - Second-order Model Results

Table 10 shows the contribution of each question for the independent path coefficients to leadership. The lowest value for a path coefficient is 0.587, whilst the highest is 0.727.

Question	Leadership β
5	0.587
6	0.646
7	0.666
10	0.621
11	0.736
12	0.592
13	0.727
14	0.641

Table 10- Second-order Model Results for Leadership

Table 11 shows the contribution of each question for the independent path coefficients to learning. The lowest value for a path coefficient is 0.444, whilst the highest is 0.657 for both Questions 18 and 20.

Question	Learning β
15	0.477
16	0.592
17	0.665
18	0.657
19R	0.533
20	0.657
22	0.444
23	0.639
24	0.659

Table 11- Second-order Model Results for Learning

Table 12 shows the contribution of each question for the independent path coefficients to strategy. The lowest value for a path coefficient is 0.332, whilst the highest is 0.713.

Question	Strategy β
25	0.589
26	0.607
28	0.622
29	0.713
30	0.469
31	0.519
34	0.625
35	0.365
36	0.332

Table 12- Second-order Model Results for Strategy

Table 13 shows the contribution of each question for the independent path coefficients to change. The lowest value for a path coefficient is 0.342, whilst the highest is 0.816.

Question	Change β
38R	0.684
39	0.816
40R	0.731
41	0.586
43	0.758
44	0.383
46R	0.342

Table 13 - Second-order Model Results for Change

First-order Model Results

Figure 4 shows the latent variables for the first- and second order models. This is a screen capture that has been taken directly from SmartPLS. Refinement on the model was conducted on the first-order model, which explains why some of the path coefficients are relatively low in the second-order. The results of the first-order are higher and conform to the criteria of having an AVE greater or equal to 0.5.

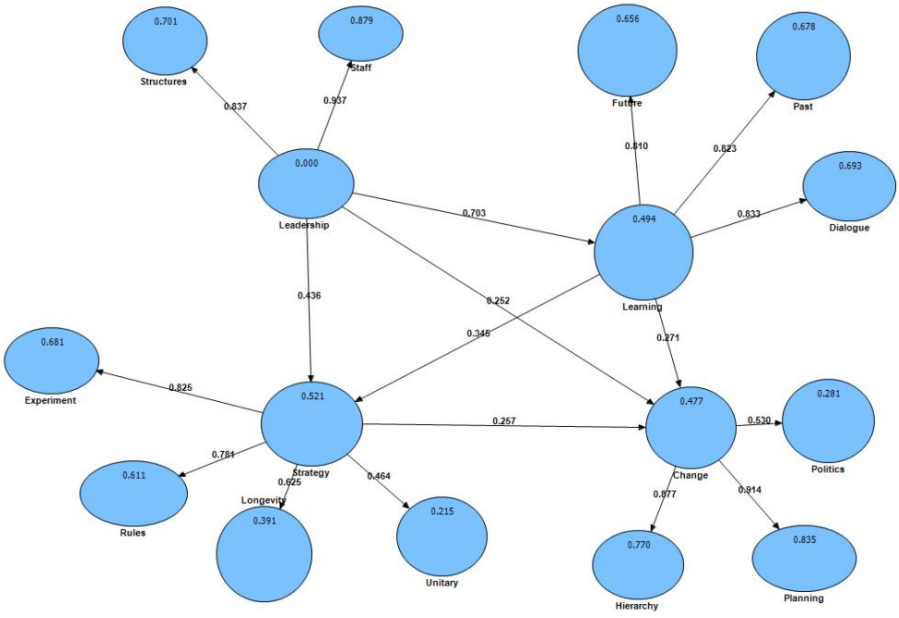

Figure 4 - Latent Variables in the First- and Second-Order Model

The result for each latent variable in the first-order is given graphically from SmartPLS and in table format.

Leadership Quadrate

Thus Figure 5 shows the results for the leadership quadrate which is composed of the two latent variables *Structures* and *Staff*. As previously described, two questions were deleted from (strategy, structures), which were questions 8 and questions 9.

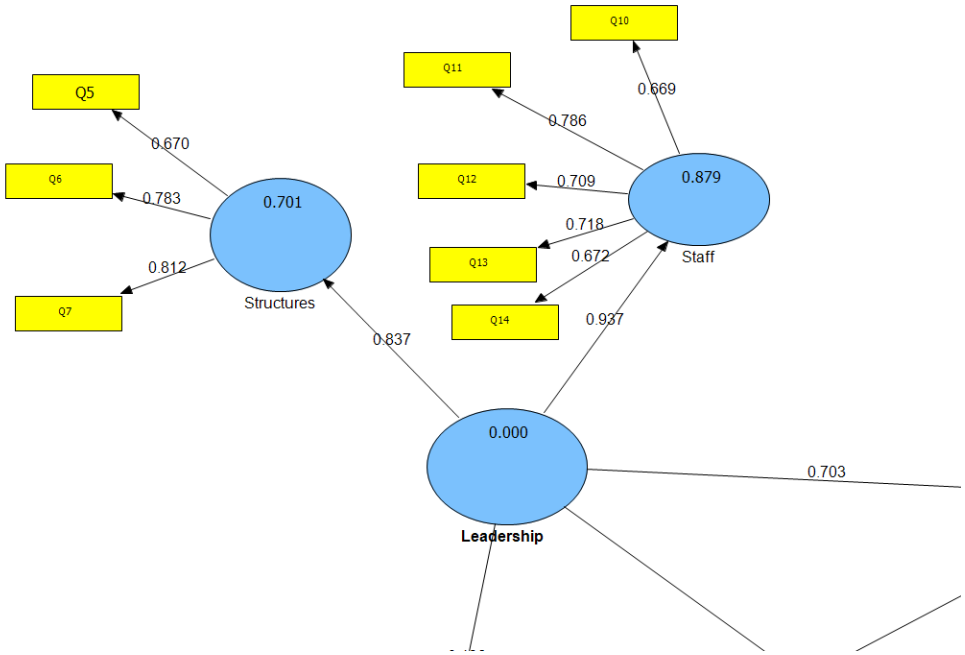

Figure 5- Results for the Leadership Quadrate

Table 14 shows the results for the strategy quadrate, consisting of (strategy, structures) and (strategy, staff). It will be noted that the lowest β in the first-order is 0.670. The highest first-order β is 0.812. These results are exceptionally high as they account for 70% and 88% of the variance in the second-order model. The second-order β scores, meanwhile, are 0.837 and 0.937. As leadership is a driver the R^2 is zero; this is not a score as such. Overall the leadership quadrate produced the most successful results.

Latent Variable	Question	First-order β	First order R^2	Second-order β	Second-order R^2
Structures	5	0.670	0.701	0.837	0.000
	6	0.783			
	7	0.812			
Staff	10	0.669	0.879	0.937	
	11	0.786			
	12	0.709			
	13	0.672			
	14	0.672			

Table 14 - Results for Leadership Quadrate

Learning Quadrate

Figure 6 shows results for the learning quadrate. The lowest path coefficient is from Question 22, which is part of the latent variable for (learning, dialogue). The highest path coefficient is Question 18, which is part of (learning, past). All the R^2 values in the first-order model are > 0.6, whilst the R^2 in the first-order model for the latent variable is 0.494, as previously discussed.

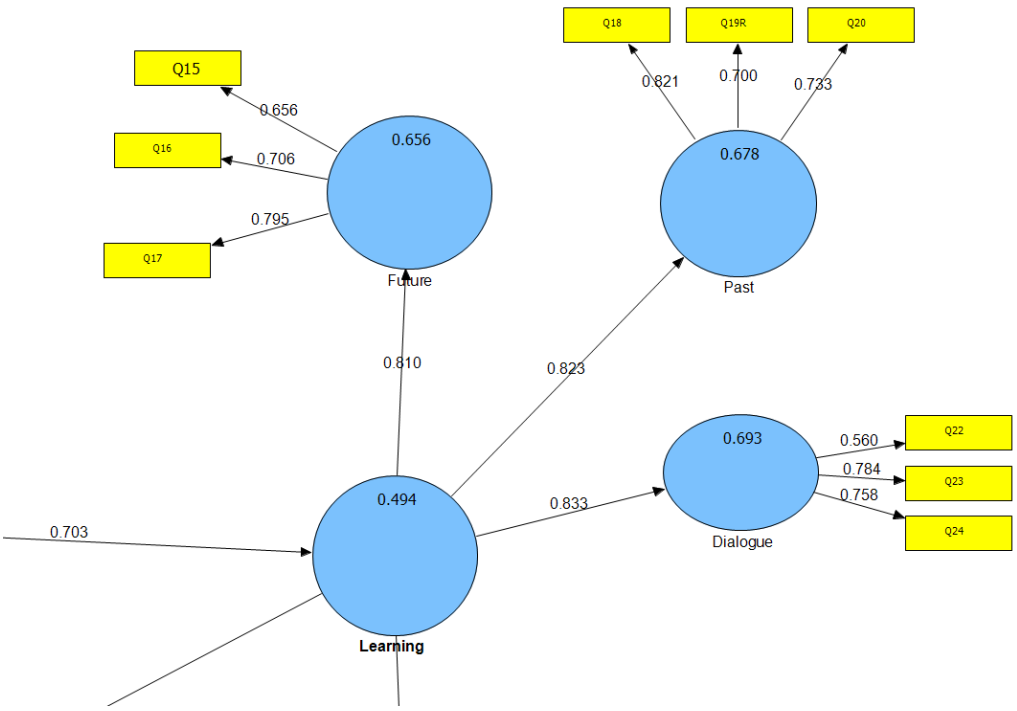

Figure 6- Results for Learning Quadrate

Table 15 summarises the results, and shows the hierarchical relationship between the second- and first-order models. The 'R' at the end of Question 19 shows that this question was reversed in the model. The results for the learning quadrate are relatively straight forward. Only one question was removed from the learning quadrate. Question 21 was concerned with achieving consensus in decision making.

Latent Variable	Question	First-order β	First order R^2	Second-order β	Second-order R^2
Future	15	0.656	0.656	0.810	0.494
	16	0.706			
	17	0.795			
Past	18	0.821	0.678	0.823	
	19R	0.700			
	20	0.733			
Dialogue	22	0.560	0.693	0.833	
	23	0.784			
	24	0.758			

Table 15 Results for Learning Quadrate

Strategy Quadrate

Figure 7 shows the results for the strategy quadrate. The first-order path coefficients have a range from 0.674 (Question 30) to 0.832 (Question 29). Generally speaking the β scores are high for the strategy quadrate. The leadership quadrate had two latent variables captured in five questions each. The strategy quadrate has four propositions that attempted to capture the latent variable with 12 questions. Thus (strategy, experiment) had four question, (strategy, rules) had three questions, (strategy, and longevity) had three questions and (strategy, unitary) had two questions.

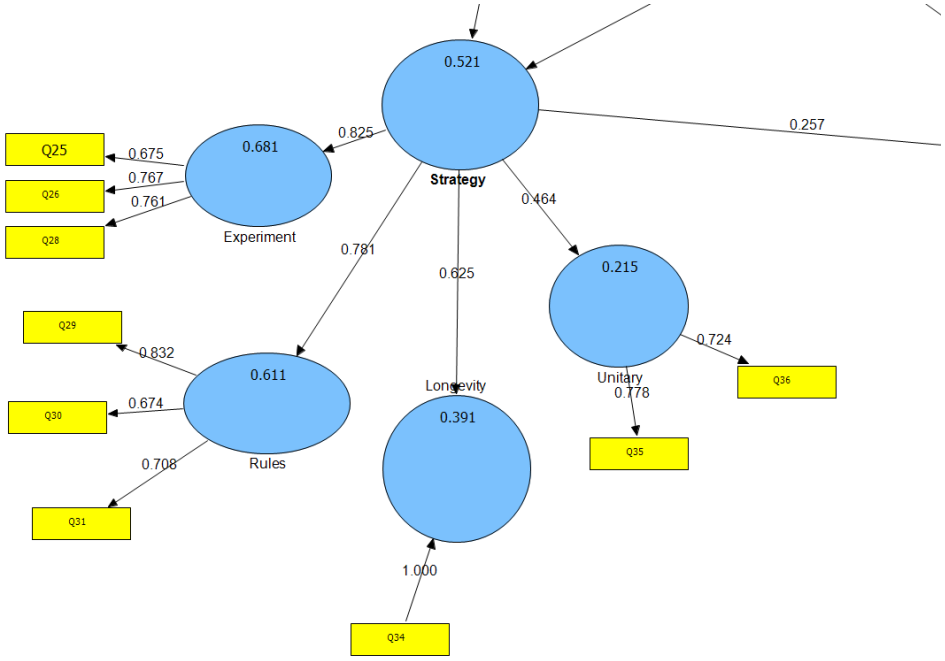

Figure 7- Results for the Strategy Quadrate

Trying to capture (strategy, unitary) with two questions was, on reflection, perhaps a little ambitious. However, the survey instrument was restricted to 51 questions and this was one of the compromises that had to be made.

In many respects the strategy quadrate was the least successful latent variable to capture. In all three questions were removed from this quadrate. Question 27 from (strategy, experiment) and two questions from (strategy, longevity). These were Question 32 and Question 33. Whilst the removal of Question 27 did not provide too many problems, the removal of Questions 32 and Question 33 changed the context of this latent variable as there is only one question. The remaining question, Question 34, is concerned with company loyalty. This implies that part of a company's strategy is company loyalty. The implication of this is that, whilst, managers' views of a company is utilitarian their strategy is that they are 'in the business of employing people.' This view is reinforced by the results from the leadership quadrate.

Latent Variable	Question	First-order β	First order R^2	Second-order β	Second-order R^2
Experiment	25	0.675	0.681	0.825	0.521
	26	0.767			
	28	0.761			
Rules	29	0.832	0.611	0.781	
	30	0.674			
	31	0.708			
Longevity	34	1.000	0.391	0.625	
Unitary	35	0.778	0.215	0.464	
	36	0.724			

Table 16 Results for the Strategy Quadrate

Table 16 shows the results for the strategy quadrate in table form. It will be noted that the R^2 values for (strategy, longevity) and (strategy, unitary) are relatively low. This implies that

there is not much consensus on these matters, or that the issue was not appropriately captured in the questions. This implies that longevity as a construct is not as important as some authors would claim. The creation of a unitary culture, meanwhile, are somewhat mixed.

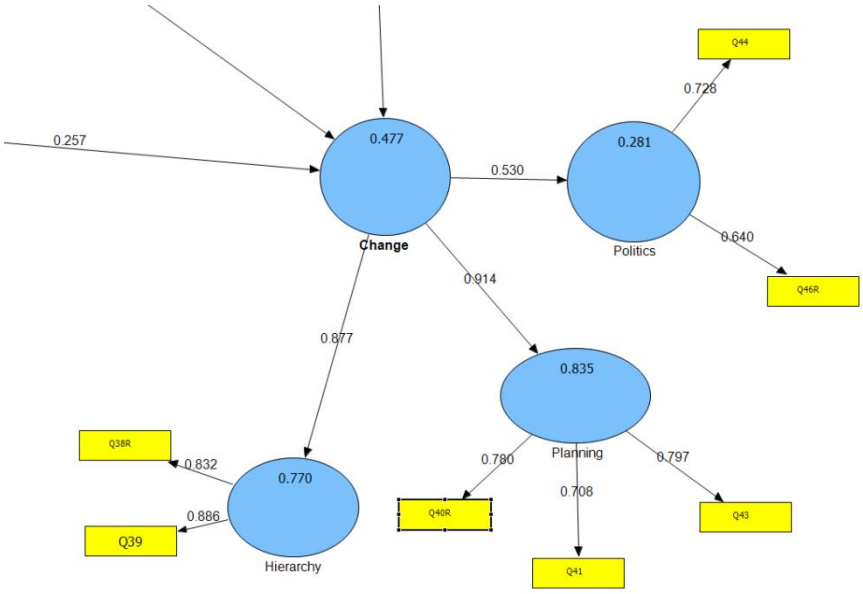

Figure 8 - Results for the Change Quadrate

Change Quadrate

Figure 8 shows the results for the change quadrate. The highest β score from a question score is 0.886, whilst the lowest is 0.640. Most of these scores are very respectable. Three questions were reversed in this quadrate, Questions 38, Question 40 and Question 46. These are justified in the context of the question, and demonstrate that the respondents were paying close attention to the issue being addressed.

Three questions were removed from the model as they did not sufficiently meet the criteria required. In fact, one was removed from each of the latent variables. These were Question 37 from (change, hierarchy), Question 42 from (change planning) and Question 45 from (change politics).

Latent Variable	Question	First-order β	First order R^2	Second-order β	Second-order R^2
Hierarchy	38R	0.832	0.770	0.877	0.477
	39	0.886			
Planning	40R	0.780	0.835	0.914	
	41	0.708			
	43	0.797			
Politics	44	0.728	0.281	0.530	
	46R	0.640			

Table 17 - Results for Change Quadrate

Table 17 shows the results for the change quadrate in table format. It will be noticed that the R^2 for (change, hierarchy) and (change, planning) are quite respectable. The R^2 for (change,

politics) however, is relatively low. Whilst it is above an acceptable level for the social sciences, this score demonstrates that there was little consensus over this issue, or that the issue was not sufficiently captured in the questions.

Organisational politics is of course, a highly complex area. This may suggest that politics is a highly-context dependent phenomenon that cannot be sufficiently captured in two questions. It is, arguably, a thesis in its own right. However, it does suggest that organisational politics is almost a 'necessary evil', an emergent property of an occupational system. To a large extent this confirms the findings of Buchanan (2008) who found a wide range of responses, with little consensus. Ultimately this suggests that 'politics' is a pejorative term that is just a reflection of a normal, functioning organisation.

Disposition Towards The Learning Organisation

Section 3 of the questionnaire is not part of the structural equation model. Whilst section 1 recorded a measure of the respondent's attitude towards business theory in general, section 3 seeks the respondent's view of the learning organisation in particular. The questions are thus concerned with a self-evaluation of whether they feel they are working towards a learning organisation (Question 47), or indeed have implemented it (Question 48). Question 49 implies that the company has tried and failed to implement the learning organisation concept.

Question 50 asks whether they think the learning organisation is an unattainable goal at their company, whilst Question 51 asks if they believe the learning organisation is unattainable in any organisation. These questions were all of our creation, with no reference to the literature required.

Question 47: I believe we are working towards the successful implementation of the learning organisation at my company.

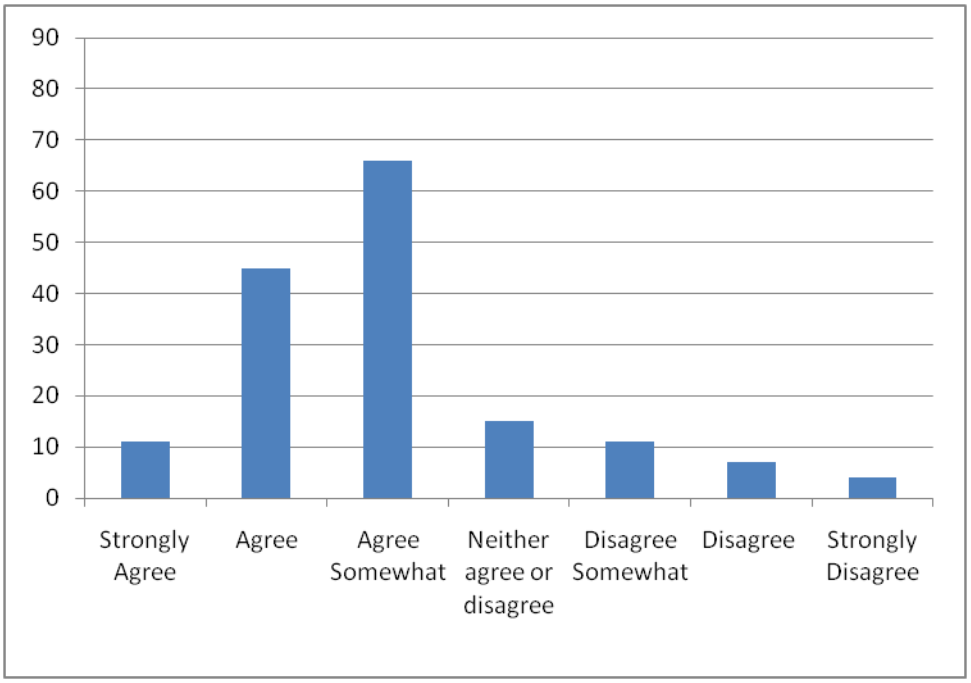

Figure 9 - Working Towards Successful Implementation

	Strongly Agree	Agree	Agree Somewhat	Neither agree or disagree	Disagree Somewhat	Disagree	Strongly Disagree	Non-respondents
Data	11	45	66	15	11	7	4	11
%	7	28	42	9	7	4	3	
Σ	122			15	22			-
%Σ	77			9	14			
Mean			3.0	Position #				23
Standard Deviation			1.3	Position #				16

Table 18 -Working Towards Successful Implementation

The mode is around Agree Somewhat. The category Agree is shortly behind. The mean for the question, meanwhile, is Agree somewhat with a relatively small amount of variance when compared to other questions in the survey instrument. Table 18 shows that vast majority, 77% of the respondents, agreed to some extent with this statement. Table 18 also shows there were 11 non respondents.

Question 48:

I believe we have implemented the learning organisation at my company.

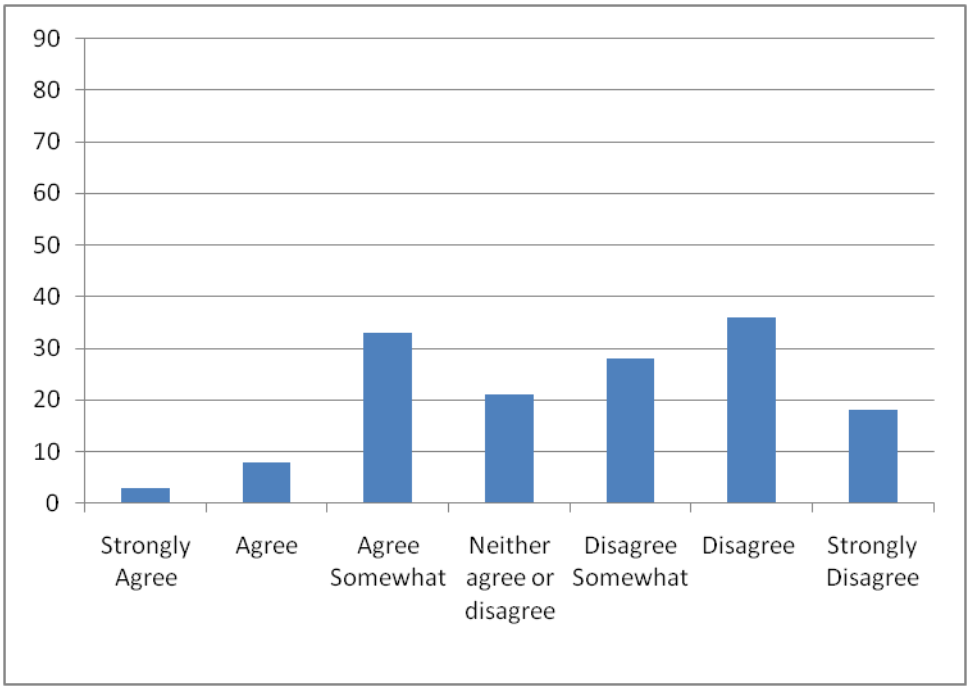

Figure 10 - Implemented the Learning Organisation

	Strongly Agree	Agree	Agree Somewhat	Neither agree or disagree	Disagree Somewhat	Disagree	Strongly Disagree	Non-respondents
Data	3	8	33	21	28	36	18	23
%	2	5	22	14	19	24	12	
Σ	44			21	82			-
%Σ	30			14	56			
Mean			4.7	Position #				45
Standard Deviation			1.6	Position #				42

Table 19 - Implemented the Learning Organisation

When it comes to whether they feel they have actually implemented the learning organisation Figure 9 shows the response to be somewhat mixed. Table 19 shows a tiny minority, 2% of respondents, under the category Strongly Agree. Whilst 30% agree to some extent, 14% of respondents chose the neutral response. The majority, 56%, disagreed to some extent. The mean for this question is towards Agree somewhat and shows one of the highest levels of disagreement. The variance, meanwhile, is also shown, as reflected in the ranking of the standard deviation. Table 19 also shows 23 non respondents.

Question 49 [Q.49]: Implementation of the learning organisation concept was unsuccessful in my company.

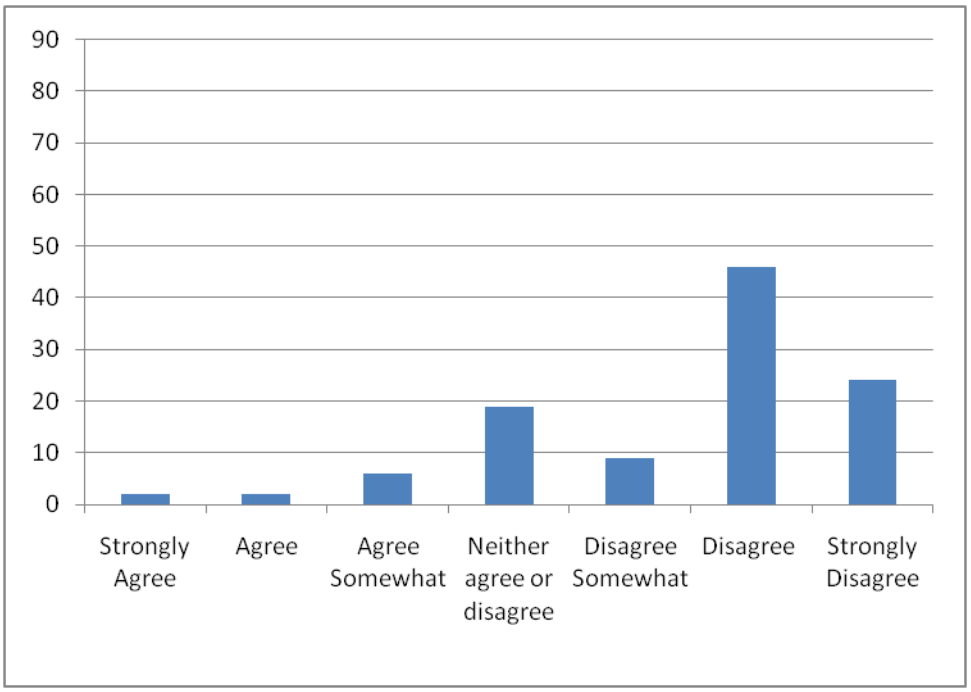

Figure 11 - Implementation Unsuccessful

	Strongly Agree	Agree	Agree Somewhat	Neither agree or disagree	Disagree Somewhat	Disagree	Strongly Disagree	Non-respondents
Data	2	2	6	19	9	46	24	62
%	2	2	6	18	8	43	22	
Σ	10			19	79			-
%Σ	9			18	73			
Mean			5.5	Position #				49
Standard Deviation			1.4	Position #				27

Table 20 - Implementation Unsuccessful

Question 49 is the corollary of Question 48 and requires greater commitment in the answer. When asked if they felt the implementation of the learning organisation was unsuccessful in their organisation, 73% of the respondents disagreed. Table 20 shows the mode is within the category Disagree, however there were 62 non-respondents. Figure 11 shows there was no clear pattern within the answers.

Question 50:
I believe the implementation of the learning organisation to be an unattainable goal in my company.

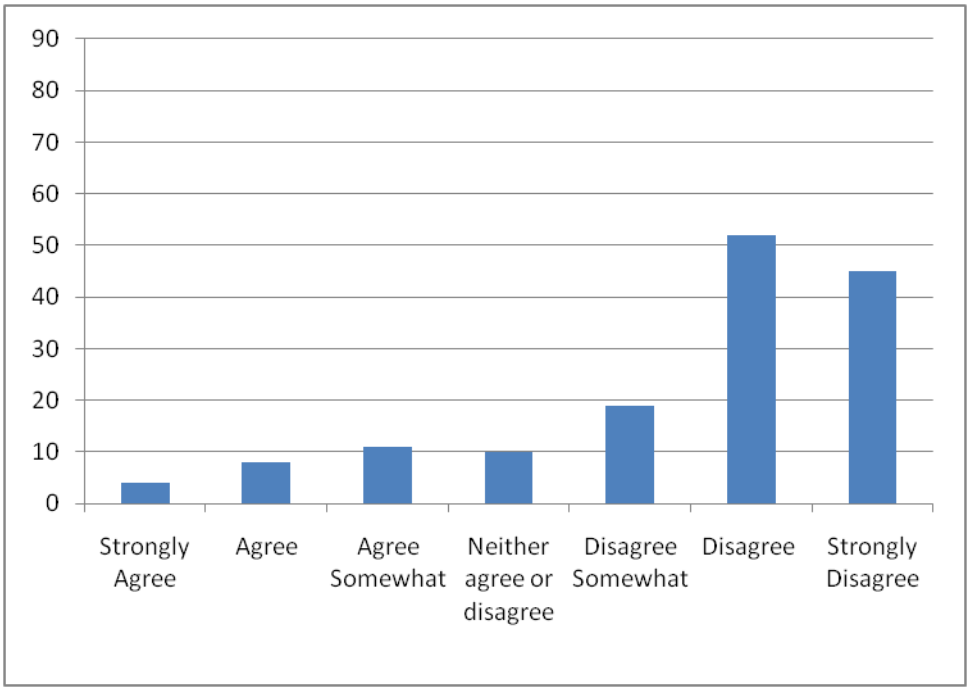

Figure 12 - Unattainable Goal in my Company

	Strongly Agree	Agree	Agree Somewhat	Neither agree or disagree	Disagree Somewhat	Disagree	Strongly Disagree	Non-respondents
Data	4	8	11	10	19	52	45	21
%	3	5	7	7	13	35	30	
Σ	23			10	116			-
%Σ	15			7	78			
Mean			5.5	Position #				50
Standard Deviation			1.6	Position #				47

Table 21 - Unattainable Goal in my Company

Following on from Question 49 which asked whether the implementation of the learning organisation was unsuccessful, Question 50 asks if they feel the learning organisation is an unattainable goal in their organisation. Table 21 shows that the vast majority, 78%, disagree that the learning organisation is an unattainable goal in their organisation. The mean for this question is very high, in fact it is the second highest recorded. Unfortunately the standard deviation is also very high, indicating a relatively large amount of variance in the answers. Table 21 also shows there were 21 non-respondents.

Question 51:

The learning organisation is, I believe, unattainable in any company.

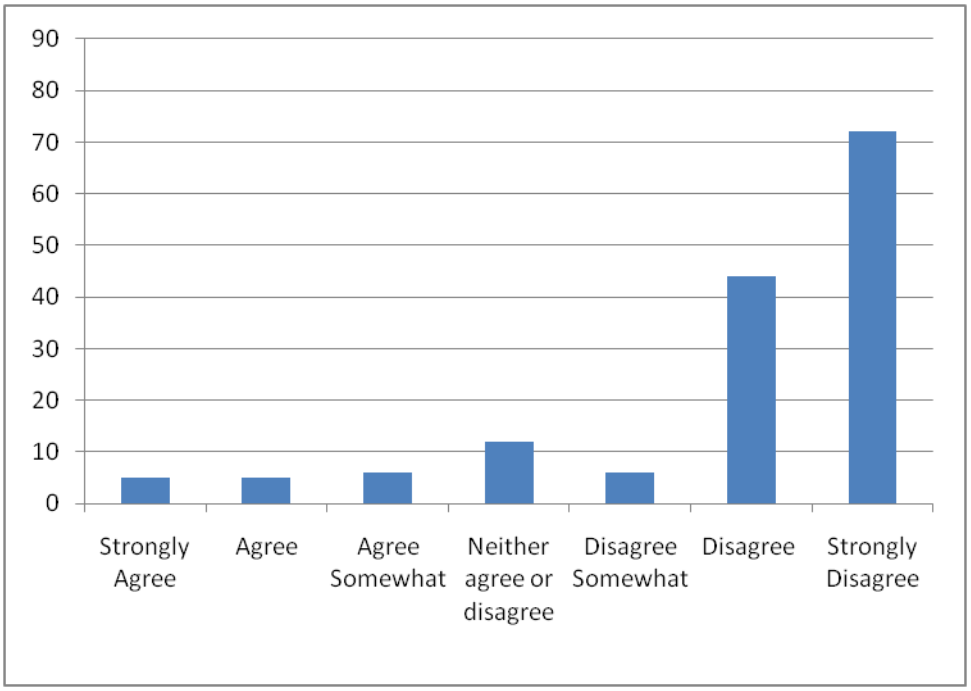

Figure 13 - Unattainable Goal in any Company

	Strongly Agree	Agree	Agree Somewhat	Neither agree or disagree	Disagree Somewhat	Disagree	Strongly Disagree	Non-respondents
Data	5	5	6	12	6	44	72	20
%	3	3	4	8	4	29	48	
Σ	16			12	122			-
%Σ	11			8	81			
Mean			5.9	Position #				51
Standard Deviation			1.6	Position #				45

Table 22 -Unattainable Goal in any Company

Question 51, the final question, asks whether the respondents think the learning organisation is an unattainable goal in any company. A resounding 81% disagree with this statement, as shown in Figure 13. Table 22 shows there were 20 non-respondents. Even taking into consideration the number of non-respondents, when the answers are weighted Question 50 was the one over which there was the highest disagreement, as shown in the mean of Disagree. However, there was also a relatively large amount of variance in the answers, as shown in a relatively high standard deviation.

This shows quite a considerable belief in the learning organisation from the respondents. Indeed, whilst the majority feel they are working towards the learning organisation they do not think this is an unattainable goal; they just have not arrived yet. Within the limitations of a structured questionnaire this tends to suggest respondents *agree* that the learning organisation is a journey rather than a destination. This suggests an ideal type as shown in Table 2.

Summary and Conclusions

Table 8 summarises what 170 Chief Executives and Human Resource Directors of FTSE- and AIM-listed and companies feel are the ingredients of a successful company. This can now be compared to the characteristics of a successful.

The R^2 for (strategy, longevity), (strategy, unitary) and (change, politics) are relatively low. This implies that there was little consensus around these issues and/or the latent variables did not adequately capture these constructs. Thus a successful is not necessarily concerned with longevity, as de Geus proposed. It is also not about developing a unified culture, as Senge proposed. This is confirmed by the falsification of Question 21 and Question 37 from the model. Finally, politics is not seen as a substantial barrier to a successful organisation. Indeed it appears to be viewed as an emergent property of an occupational system.

Analysis for the descriptive statistics from Questions 36 and 37 tend to suggest that decision making seems to be about building consensus rather than authoritarianism. Question 37 stated 'Once objectives have been set by senior management they are non-negotiable.' This question was falsified in the syncretic model. It should be pointed out, though, that these two questions are from different propositions.

Contrary to the learning organisation as conceived by Senge, leadership is the most important element. Or, at least, the one with the greatest level of convergent validity. Given the responses for leadership and change, it appears that establishing appropriate systems is

important, but ultimately control is derived through legitimate authority and not through egalitarian control and democracy.

The $L \geq C$ proves to be a correct, albeit, weak metaphor for change: the scores for learning were roughly equal for learning from the past, present and the future. Finally, within the strategy quadrate experimentation was found to be important, along with learning by challenging the inherited wisdom within the industry.

Thus in the comparison between the literature and reality leadership is the most important element. This is facilitated through the attraction and retention of the appropriate staff and creating sufficient space for them to operate. Learning is embedded by anticipating the future, learning from the past and enabling good communication. However, the latter is balanced by change which is derived through legitimate authority and a high reliance on planning. Finally, a strategy of experimentation is balanced by challenging industry rules.

Researchers into the learning organisation should be heartened by the results from section 3. Far from being written off, as some observers have had cause to do, the learning organisation concept remains a popular one. The results from Section 3 also suggest that Chief Executives and Human Resource Directors of the FTSE- and AIM-listed companies who responded view the learning organisation as an ideal type. Indeed whilst the survey was based in representative of the top management team, more research needs to be conducted on what this means for individual companies.

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